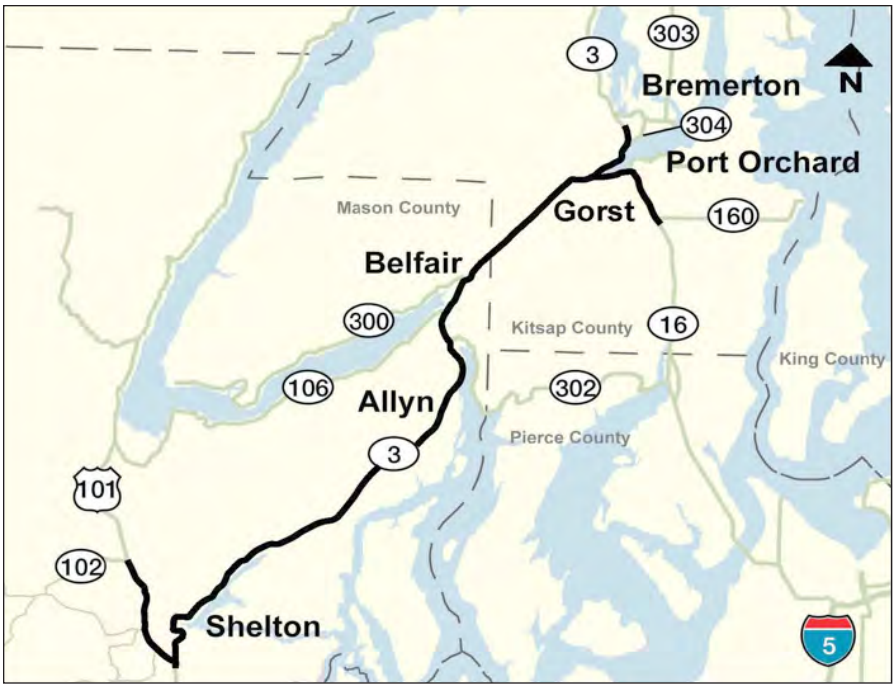
Washington State
Department of Transportation

Bremerton Economic Development Study

Kitsap and Mason Counties, Washington

US 101, SR 3, and SR 16



FINAL REPORT

March 2012

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FINAL REPORT

March 2012

Prepared by

Washington State Department of Transportation

In Association with:

H W Lochner, Inc.
EnviroIssues, Inc.

Acknowledgements

The following agencies and organizations participated in the Bremerton Economic Development Study. The Washington State Department of Transportation (WSDOT) would like to acknowledge and thank everyone involved.

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Allyn Community Association

Bremerton Chamber of Commerce

City of Bremerton

City of Port Orchard

City of Shelton

Economic Development Council of Mason County

Kitsap County

Kitsap Economic Development Alliance

Kitsap Transit

Mason County

Mason County Transit

North Mason Chamber of Commerce

Port of Allyn

Port of Bremerton

Port of Shelton

Puget Sound Naval Ship Yard

Shelton-Mason County Chamber of Commerce

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Washington State Department of Transportation

Olympic Region

Bremerton Economic Development Study

US 101, SR 3, and SR 16 in Kitsap and Mason Counties

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ACRONYMS

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
AAWDT	Annual Average Weekday Traffic
ADT	Average Daily Traffic
ARM	Accumulated Route Mile
ATR	Automatic Traffic Recorder
AWSC	All Way Stop Controlled
BEDS	Bremerton Economic Development Study
BNSF	Burlington Northern Santa Fe (Railway)
CARA	Critical Aquifer Recharge Area
CCTV	Closed Circuit Television
CWG	Corridor Working Group
DAHP	Department of Archaeology and Historic Preservation
EB	Eastbound
EBL	Eastbound left-turn
EBR	Eastbound right-turn
EBT	Eastbound through-movement
EMME/2	Equilibre Multimodal, Multimodal Equilibrium
E/O	East of
FEMA	Federal Emergency Management Agency
FGTS	Washington State Freight and Goods Transportation System
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
GIS	Geographical Information Systems
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
HNS	Highway of National Significance
HSP	Washington State Highway System Plan
HSS	Highway of Statewide Significance
ICU	Intersection Capacity Utilization
ID	Identification
ITS	Intelligent Transportation Systems
LOS	Level-of-Service
MP	Milepost
N/A	Not applicable
NB	Northbound
NBL	Northbound left-turn
NBR	Northbound right-turn
NBT	Northbound through-movement
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
N/O	North of
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
O&D	Origin and Destination
OC	Overcrossing
OFM	Washington State Office of Financial Management
PAL	Pedestrian Accident Location

ACRONYMS – continued

P&R	Park & Ride
PHS	Priority Habitat and Species
PSRC	Puget Sound Regional Council
RCW	Revised Code of Washington
SB	Southbound
SBL	Southbound left-turn
SBR	Southbound right-turn
SBT	Southbound through-movement
SEPA	State Environmental Policy Act
S/O	South of
SR	State Route
SR 3	State Route 3
SR 16	State Route 16
SRMP	State Route Milepost
TAZ	Traffic Analysis Zone
TWSC	Two-Way Stop Controlled
UC	Undercrossing
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
US 101	United States Route 101
VMS	Vehicle Management Systems
WB	Westbound
WBL	Westbound left-turn
WBR	Westbound right-turn
WBT	Westbound through-movement
WDFW	Washington State Department of Fish and Wildlife
WDNR	Washington State Department of Natural Resources
W/O	West of
WSDOT	Washington State Department of Transportation
WSF	Washington State Ferries
WTP	Washington State Transportation Plan

Executive Summary

What is the Bremerton Economic Development Study?

The Bremerton Economic Development Study (BEDS) is a planning study focused within the South Kitsap/North Mason County area. The study corridors are comprised of the following three principal highways and has a total length of approximately 47.1 miles:

- US 101, beginning at the intersection of State Route (SR) 102 north of Shelton and continuing southward to its intersection with SR 3;
- SR 3, beginning at the intersection of US 101 and continuing northeastward through Shelton, Allyn, Belfair, and Gorst, ending at the intersection with Loxie Eagans Boulevard in Bremerton; and
- SR 16, beginning at the intersection of SR 3 in Gorst and continuing southeastward to the intersection with SR 160 in Port Orchard (Sedgwick Road).

These highways provide regional access for Mason and Kitsap Counties and are the primary commercial, freight, military and recreational travel routes within and through these counties. The highways are part of the federal National Highway System (NHS) and classified as part of Washington State's Highways of Statewide Significance (HSS) system.

The study has its origins in a July 8, 2004 transportation summit hosted by the Port of Bremerton. The purpose of the summit was to determine how to address transportation and economic issues in the south Kitsap County area; especially in regards to the South Kitsap Industrial Area (SKIA). Recognizing the need to develop a coordinated and comprehensive plan outlining current and future transportation needs community leaders agreed to fund a study to develop such a plan.

The cities of Bremerton, Port Orchard; Kitsap County; and the Ports of Allyn, Bremerton, and Shelton contributed a total of $173,500 to help fund a study. Additionally, in 2007 the state legislature appropriated $500,000 (ESHB 1094) for "the SR3/SR16 corridor

study to plan and prioritize state and local improvements needed over the next 10-20 years to support safety, capacity development, and economic development within the corridor."

This $673,500 total funded the Bremerton Economic Development Study. The study efforts, beginning in March 2008, were led by the Urban Planning Office of the Washington State Department of Transportation with assistance from a private transportation consulting firm, H.W. Lochner.

Who was involved in the study?

The Washington State Department of Transportation (WSDOT) and its consultants were assisted throughout the study by a stakeholders group. At the beginning of the study WSDOT formed this stakeholders group to help provide input and guidance to the study process and acted as a sounding board regarding the development of the recommendations. The stakeholders provided valuable insight into the economic and transportation concerns of their respective agencies and which project recommendations would or would not be acceptable to their management, elected officials and communities.

The stakeholder group was comprised of representatives from:
Allyn Community Association
Bremerton Chamber of Commerce
City of Bremerton
City of Port Orchard
City of Shelton
Economic Development Council of Mason County
Kitsap County
Kitsap Economic Development Alliance
Kitsap Transit
Mason County
Mason County Transit
North Mason Chamber of Commerce
Port of Allyn
Port of Bremerton
Port of Shelton
Puget Sound Naval Ship Yard
Shelton-Mason County Chamber of Commerce
WSDOT – Olympic Region

What is the long-range vision for the corridor?

The overall vision for the corridor is to provide a safe and efficient transportation system that supports the economic vitality of the region, allows the region to grow, improved safety, meets community values and provide multi-modal travel opportunities for area residents, while minimizing impacts to the local environment and preserving the existing infrastructure. Input for community values was provided by the stakeholders and includes the following measurements: job creation or preservation, community support, and local comprehensive plan consistency.

To reflect the varying conditions within the study area, the BEDS long-range corridor vision for the study corridors varies by study segment and highway, as defined in Chapter 4 of this report. Each segment vision represents the long-range goal for the corridor, which in some areas may be beyond the planning horizon, years 2020 and 2030, of this study. Depending upon a segment's needs and /or if its performance is below WSDOT's predefined threshold, improvements could range from preservation and maintenance; to safety; to managing demand; or adding capacity strategically and where it is most cost effective to do so.

What are the goals for the corridor?

The Bremerton Economic Development Study considered all six policy goals established by the state legislature for WSDOT, namely: economic vitality, preservation, safety, mobility, environment, and stewardship. The study process focused on safety and mobility issues, while preserving the existing transportation infrastructure, minimizing impacts to the environmental character of the study corridors, and investigating low cost improvements. For safety, fatal and serious injury collision reduction is a focus along the US 101, SR 3 and SR 16 study corridors and is in accordance with "Target Zero;" the state's effort to attain zero fatal and serious injury traffic crashes by year 2030. For mobility, the three state highways within the study area are all part of the National Highway System, and have been designated as Highways of Statewide Significance by the state legislature. For this corridor system, the BEDS Study has established a goal of maintaining an operating speed of at least 70 percent of posted speeds.

What are the recommended improvements?

The BEDS Plan identifies 37 projects ranging between $2 million and $258 million dollars. The proposed improvement projects were evaluated by the project team and stakeholders based on five categories involving 16 criteria. The stakeholders group considered community and agency input, as well as the technical evaluation results to prioritize the proposed project improvement list. The recommended top three projects for the communities along the study corridors are:

- **Belfair Bypass** – Construct an alternate 4-lane highway, with limited access, around the community of Belfair. The Bremerton Economic Development Study did not reanalyze the Belfair Bypass but did adopt the findings from previous studies regarding this project. Further information on improvements in the Belfair area can be found at: www.wsdot.wa.gov/projects/sr3/belfairimprovements/
- **SR 3/Johns Prairie Road** – Relocate the intersection north of its current terminus with SR 3. This would require re-aligning Johns Prairie Road. Additionally, provide intersection controls, such as a roundabout, signal and/or channelization, as warranted. It should be noted that the 2009 Legislature required that the WSDOT conduct a public outreach process to identify and respond to community concerns regarding the portion of John's Creek Road that connects SR 3 and US 101. WSDOT was also directed to issue a report on this public outreach effort. The Bremerton Economic Development Study has adopted the report's recommendations for this location. The report can be found at: www.wsdot.wa.gov/News/2010/07/16_101_johnsprairiereport.htm
- **Gorst Area Improvements** – Heavy peak period travel through the Gorst area from SR 304, SR 3 and SR 16 has created a traffic congestion issue that cannot be easily improved with a single project. Improvements to SR 3 through the SR 304 interchange, widen SR 3 through the Gorst area to four-lanes with HOV lanes north of its junction with SR 16; grade separate the Sam Christopherson Road/SR 3 intersection with a new interchange; and, widen connecting ramps to maintain traffic flows are all needed as well as a new interchange at SR 304 and HOV lanes extended north along SR 3 and south along SR 16. Information on projects in the Gorst area can be found at: www.wsdot.wa.gov/Projects/SR3/UnstableSlopes/

Recognizing that the above projects would be costly and take time to implement, the BEDS stakeholders also endorsed projects that are less expensive and potentially quicker and easier to construct. The list of projects can be found in Chapter 5, Exhibit 5-2.

Depending upon economic conditions within the next five to ten years, it may be necessary to reevaluate and update the project list if future traffic conditions along the corridor evolve differently than anticipated in the study.

Lastly, an analysis was conducted to identify low-cost, high-return safety and mobility locations along the study corridors. This analysis indicated that there are four intersections that meet this criteria. These four locations are:

- SR 3/Pickering Road (MP 10.76) – This location is identified as a safety need location.
- SR 3/SR 302 Victor Cutoff Road (MP 23.23) – This location is identified as a safety need location.
- SR 3/Sam Christopherson Road/SR 16 Spur (MP 34.26) – This location is identified as a mobility need location.
- SR 3/Werner Road/Loxie Eagans Blvd. (MP 37.31) – This location is identified as a safety need location.

WSDOT proposes that these four locations be improved based on their position on WSDOT's priority list.

Further and more detailed discussion of this safety and mobility analysis can be found on pages 40 through page 45.

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Chapter 1 - Project Overview

This chapter describes the Bremerton Economic Development Study's purpose, the process used, how the public was involved, and summarizes the key findings and recommended improvements along the study corridors.

What is the purpose of the Bremerton Economic Development Study (BEDS)?

The Bremerton Economic Development Study (BEDS) is a planning study focused within the South Kitsap/North Mason County area. Through this study, the Washington State Department of Transportation (WSDOT) in conjunction with local stakeholders determined the 20-year vision for the state highways encompassed by this study effort. The following issues were assessed and identified:

- Current and future transportation needs within the study area
- Recommendations to current safety needs and both existing and future mobility needs
- Improvement strategies that support the economic objectives within the study area.

Funding for the study was provided by the Washington State Legislature during the 2007 Legislative Session along with local contributions from the Port of Bremerton, the city of Bremerton, Kitsap County, the Port of Shelton, the city of Port Orchard, and the Port of Allyn.

What are the origins of BEDS?

The genesis for the Bremerton Economic Development Study began nearly six years ago. On July 8, 2004 the Port of Bremerton hosted a Transportation Summit in Bremerton. The focus of the discussion was on transportation improvements needed for the South Kitsap Industrial Area (SKIA) proposal. See page 29 of this report and Appendix 2 for a brief summary of SKIA.

This summit was attended by approximately 60 people and included state legislators, various local port commissioners, Kitsap County Commissioners, city council members, Kitsap Transit, public works directors, The Puget Sound Regional Council, staff from economic development agencies, the Washington State Patrol, staff from the Naval Station Kitsap, Senator Maria Cantwell's office, land owners, WSDOT Olympic Region and Urban Planning Office staff, and the press.

Discussions focused on: ferry service; safety and economic development; capacity improvements needed for relieving congestion in the Gorst area; potential Sinclair Inlet crossings; and how Kitsap and Mason Counties should prioritize their projects and present a united front to the legislature to obtain funding for such projects.

Eventually, it became evident that two things were needed to advance projects for funding by the legislature. The first step was to have a well thought out, coordinated projects list. This list would show a priority ranking of projects that would be constructed. The second step was to ensure that projects were supported by data. A project had to show it addressed a specific need or purpose, such as a safety or mobility issue and that it was also accompanied by a cost benefit analysis and a planning level cost estimate to construct the project.

With this in mind local elected officials and legislators from Kitsap and Mason Counties set about to secure funding for a study that would achieve the two steps listed above. Ports, cities, and the two counties agreed to contribute funding to a study that would analyze roadway improvements needed to help support economic development in and around SKIA. Along with local funding the state legislature allocated funding towards the study in the 2007-2009 budget.

WSDOT was asked to lead the BEDS study. Interlocal agreements were established between the funding agencies and WSDOT to commence the study.

What is the study area assessed in BEDS?

The study area encompasses parts of two counties, one US highway, two state routes, and six communities.

The counties and communities within the study area include:

- Mason and Kitsap Counties
- Cities of Shelton, Bremerton, and Port Orchard
- Unincorporated Communities of Allyn, Belfair, and Gorst.

The study corridors are approximately 47.1 total miles in length. The limits for the study corridors are:

- US 101, beginning at the intersection of State Route (SR) 102 north of Shelton and continuing southward to its intersection with SR 3;
- SR 3, beginning at the intersection of US 101 and continuing northeastward through Shelton, Allyn, Belfair, and Gorst, ending at the intersection with Loxie Eagans Boulevard in Bremerton or approximately milepost (MP) 37.30; and
- SR 16, beginning at the intersection of SR 3 in Gorst (SR 16 MP 29.16) and continuing southeastward to the intersection with SR 160 in Port Orchard (Sedgwick Road SR 16 MP 25.43).

Exhibit 1-1
Study Area

What information is contained in the plan?

This BEDS report presents the long-range corridor vision, provides analysis and evaluation of the existing and future transportation conditions, identifies current and future needs, and provides recommended actions to improve safety and mobility along the principal study corridors. The information in this report is presented in six chapters, as follows:

- Chapter 1 presents the project overview, including an outline of the study's purpose and origin, the study area and principal corridors, the involvement of local agencies, tribes, and the public, and it summarizes the key findings and recommended improvements.
- Chapter 2 describes the existing conditions along the study corridors.
- Chapter 3 describes the future 2020 and 2030 traffic conditions along the study corridors.
- Chapter 4 presents the long-range vision for the study corridors, as developed by the stakeholders.
- Chapter 5 describes the recommended improvements along the study corridors and how they were prioritized.
- Chapter 6 discusses the next steps in the planning process.

There are also several appendices and referenced documents included.

Documents incorporated by reference include:

- *Belfair Bypass Study*
- *SR 3 Belfair Area Widening and Safety Improvements Project*

What is the study process?

The study was a collaborative process between WSDOT and local agencies and organizations within the study area. The study was organized and developed by taking the following steps:

- Establishing a Stakeholders Group of local agencies and organizations along the study corridors to help direct the study and prioritize recommended safety and mobility improvements.
- Engaging citizens, special interest groups (including recreational travelers, freight users, and labor groups), and public agencies through maintaining an open community involvement process.
- Summarizing and analyzing existing traffic conditions, identifying existing safety and mobility needs, and developing improvement recommendations for existing safety and mobility conditions.
- Reviewing local agency comprehensive plans to assess projected population and employment growth in the study area. This growth contributes to future traffic volumes and influences recommended improvement strategies for the study corridors.
- Analyzing and summarizing future traffic conditions to determine where mobility needs will exist in the future if no improvements are made.
- Identifying mobility improvements that support projected population and job growth.
- Evaluating and prioritizing transportation improvements that can be implemented within the area as funding becomes available.
- Developing broad-based support of final recommendations from local jurisdictions, including Kitsap and Mason Counties; the cities of Bremerton, Shelton, and Port Orchard; the ports of Bremerton, Shelton, and Allyn; and the communities of Allyn, Belfair, and Gorst.

BEDS Study Process & Schedule

March 2008 – September 2008
Identify Stakeholders
Hold Key Stakeholders Interviews
Establish Study Goals and Process
Review Previous Reports
Collect & Analyze Traffic & Safety Data
Identify Existing Transportation Needs
Attend Fairs and Festivals
Conduct First Stakeholders Meeting

September 2008 – March 2009
Develop Traffic Forecasts
Analyze 2030 Traffic Operations
Develop Long-Range Vision
Analyze 2020 Traffic Operations
Identify Transportation Needs
Develop Evaluation Process
Identify Improvement Options
Analyze Improvement Options
Conduct Second Stakeholders Meeting
Continue Public Outreach

April 2009 – June 2009
Refine Project List
Stakeholders and Team Evaluate Projects
Conduct Third Stakeholders Meeting
Prioritize Projects & Recommendations
Continue Public Outreach

December 2010 – January 2011
Write Draft BEDS Report
Finalize Report
Obtain Final Approvals

How have local agencies been involved in the study?

Throughout the study process, local agencies were involved. This began with stakeholder interviews held to identify transportation concerns along the corridor, continued through development, evaluation, and prioritization of proposed projects, and ended with approval of the study report.

Stakeholder group - The stakeholder group consisted of 16 local agencies and organizations. Members of the group acted as liaisons to their agencies and communities throughout the study. Meeting three times during the course of the project, the group reviewed traffic and safety information, improvement projects, and discussed community and economic development issues. During the final stakeholders meeting, the group endorsed the project list and corridor plan.

Agency and organization briefings - Throughout the duration of the project, WSDOT provided periodic briefings to local agencies and organizations represented by the stakeholder group. These briefings allowed elected officials and others to hear first-hand how the project was progressing and what recommendations were being developed.

How has the public been involved in the process?

Involving local communities in the study is important to WSDOT. By using various methods of public involvement and outreach, the project team successfully gathered the input of the public throughout the study to create a plan that reflects the communities' character and concerns.

Fairs and festivals - WSDOT staffed booths at local events between July and September 2008. Staff shared information about the study in the form of fact sheets and display boards and asked the public for their thoughts, ideas, and concerns about the three corridors (SR 3, SR 16, and US 101). Staff noted conversation highlights, tallied common themes, and reported them back to the project team and stakeholders group. More than 900 community members visited a project booth at local fairs and festivals. (See Appendix One, Public Outreach Summary for more information).

Website and comment form - Throughout the project, WSDOT maintained a project website to keep the public informed of project progress. General project information and stakeholders meeting summaries were posted on the site. In addition, the locations of community booths and briefings were posted there for those who were interested in attending. The project website also included an online comment form allowing anyone to submit comments or questions to the project team.

Feedback from fairs and festivals, the online comment form, the stakeholders group, and briefings helped us identify concerns and issues along the project corridors. Common concerns included congestion, safety, and the need for more bicycle and pedestrian facilities.

Common suggestions from the communities included:

- Building the Belfair Bypass
- Improving throughput in the Gorst area
- Fixing the Johns Prairie Road/SR 3 intersection
- Widening the roadways in general
- Installing turn lanes, passing lanes, and signals in select locations.

Project kiosks & information materials - After the project recommendations were endorsed by the stakeholders, WSDOT developed project kiosks, a folio, and fact sheets to share results and recommendations with community members along the corridors. These materials were placed in the following six locations in the area:

- Norm Dicks Government Center in Bremerton
- Fred Meyer at 5050 State Highway 303 NE in Bremerton
- Kitsap County Administration Building in Port Orchard
- Theler Center in Belfair
- Port of Allyn at 18560 SR 3 in Allyn
- Shelton Civic Center at 525 West Cota Street in Shelton

Media - WSDOT maintained contact with local media at major milestones throughout the study, generating several news articles and one radio spot. WSDOT also placed ads in local papers to notify the public of locations of project kiosks and information materials.

What transportation issues does the plan address?

The BEDS considered all five policy goals established by the state legislature for WSDOT, namely: preservation, safety, mobility, environment, and stewardship. The study process focused on safety and mobility issues, while preserving the existing transportation infrastructure, considering the environmental character of the study corridors, and investigating low cost improvements.

Safety - Collision reduction is a focus area along the US 101, SR 3, and SR 16 study corridors. WSDOT has developed a new system that identifies sections of a highway that are considered "Sites with Potential for Improvement" or SWPI, which includes identifying "Collision Analysis Corridors" (CAC) and "Collision Analysis Locations" (CAL). These corridors and locations typically have multiple collisions that involve fatalities.

There are four sites along SR 3 that have been identified as SWPI sites plus one CAL and CAC. These sites are located south of Shelton, north of Allyn, through Belfair, and south of the Bremerton National Airport. See page 32 for further discussion on the safety analysis for this study and pages 35-36 for a description of the CAC and CAL locations..

Mobility - The three state highways (US 101, SR 3, and SR 16) within the study area are all part of the National Highway System (NHS), having been designated as Highways of Statewide Significance (HSS) by the state legislature and are functionally classified as Urban or Rural Principal Arterials depending on location.

To analyze the state highway system, WSDOT has revised their analysis tools and methods to be consistent with current times and be good stewards of the highway system in their current *2007-2026 Highway System Plan*. Previously, WSDOT targeted highway improvements to maintain free-flow conditions (or traveling at the posted speed 24 hours per day). This approach resulted in expensive projects that limited the ability of the state to address congestion on a statewide basis. Furthermore, highway officials realized that there simply is not enough state and local money or land to build sufficient capacity to reach free-flow conditions. As a result, WSDOT has set a new goal in their plan to manage the state system to achieve maximum vehicle throughput. Typically, maximum

throughput of vehicles on a highway with a posted speed of 60 mph is achieved at speeds of 42 to 51 mph or about 70 to 85 percent of the posted speeds, during the p.m. peak period. When speeds fall below 70 percent, the highway no longer operates efficiently. Hence, WSDOT has targeted this condition (operating speed below 70 percent of posted speeds) as the threshold for determining when capital improvements to improve operating conditions should be considered.

Traffic analysis for the existing 2008 traffic conditions indicates that the operating speed along the corridors is below 70 percent of the posted speed for about 12.5 miles or nearly 27 percent of the corridor. Future year analyses indicate that the operating speed along the corridors will fall below 70 percent of the posted speed for about 25.8 miles in 2020 and for about 35.5 miles by 2030 with no improvements.

For intersection analysis, the 2000 Highway Capacity Manual (HCM), published by the Transportation Research Board (TRB) provides the guidelines to analyze intersection level-of-service (LOS). Based on these procedures, the level-of-service at 23 of the 29 intersections analyzed will be below LOS D by 2020. The number of failing intersections operating below adopted standards increases to 26 by 2030 if no improvements are made.

What are the top recommended improvements?

Proposed safety and mobility projects were evaluated based on five categories, involving 16 criteria. The evaluation categories included:

- Safety
- Constructability
- Congestion/Mobility
- Environmental Impact
- Community Issues

The stakeholders prioritized the project list based on the evaluation results, community and agency input, and desires. The recommended top three priority projects are:

- **Belfair Bypass -** Construct an alternate highway around the community of Belfair. The highway was to be 4-lanes with full limited access control. The 2009 legislature, in a proviso, directed the WSDOT to conduct a public outreach process to be used in reconsidering the scope and budget of the Belfair Bypass project.

  With the aid of elected officials, stakeholders and members of the community, WSDOT has identified four alternatives for consideration. On June 23, 2010 a report was delivered to the legislature documenting the findings and recommendations instructed by the proviso.

  The proviso, report and status of the Belfair Bypass project can be found at: www.wsdot.wa.gov/Projects/SR3/BelfairBypass/

- **SR 3/Johns Prairie Road -** Relocate the intersection[1] north of its current terminus with SR 3. This would require realigning Johns Prairie Road. Additionally, provide intersection controls, such as a roundabout, signal and/or channelization, as warranted.

  It should be noted that the 2009 State Legislature required that the WSDOT: "conduct a public outreach process to identify and respond to community concerns regarding the portion of John's Creek Road[2] that connects state route number 3 and state route number 101. The process must include representatives from Mason county, the legislature, area businesses, and community members. The department shall use this process to consider, develop, and design a project scope so that the community's needs

[1] The original recommendation adopted by the BEDS stakeholders was to relocate the intersection south of its current terminus. The recommendation has been modified to be consistent with the findings from the Johns Prairie Road proviso.

[2] This should have read "Johns Prairie Road" in the above legislature text.

are met for the lowest cost. The department shall provide a report on the process and outcomes to the legislature by June 30, 2010." The report required by legislative proviso in the 2009 transportation budget was submitted to the legislature by the June 30, 2010 deadline. The report can be found at www.wsdot.wa.gov/News/2010/07/16_101_johnsprairiereport.htm.

The proviso report to the legislature can be found at: www.wsdot.wa.gov/News/2010/07/16_101_johnsprairiereport.htm

- **Gorst Area Improvements -** Widen SR 3 through the Gorst area to four-lanes with HOV lanes north of its junction with SR 16; grade separate the Sam Christopherson Road/SR 3 intersection with a new interchange; and widen connecting ramps to maintain traffic flows. SR 16 will be re-striped to provide two general purpose lanes and one HOV lane in each direction from SR 166 to SR 3.

What are the next steps?

Recognizing that the above projects would be costly and take time to implement, the BEDS stakeholders also endorsed a list of projects that are less costly and would be easier and quicker to construct. The list of prioritized projects can be found in Chapter 5, Exhibit 5-2.

Depending upon economic conditions within the next five to ten years, it may be necessary to reevaluate and update the project list if future traffic conditions along the corridor evolve differently than anticipated in the study.

Only one of the thirty-three recommended projects has existing funding. With the high demand for transportation dollars and limited funds, it was important that the stakeholders agreed on the prioritization of area projects so that funds can be sought in a cooperative manner. Specific actions that can be taken be taken by the local agencies and communities to encourage implementation of the BEDS prioritized projects, including:

- Incorporate the BEDS' recommendations in the state Highway System Plan and in regional agency plans; and
- Encourage local agencies within the study area to adopt the BEDS' recommendations as part of their comprehensive plans.

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Chapter 2 - Existing Conditions Inventory and Analysis

This chapter describes the existing conditions along the three main highways through the study area. This includes how the corridor is classified, its physical characteristics, the multimodal facilities along the corridor, summaries of environmental, land use, and population changes in the study area, and a summary of the safety analysis conducted for this study.

How were the study corridors analyzed?

The study corridors are divided into four segments to account for varying regional geographies and transportation characteristics. These corridor segments are illustrated in Exhibit 2-1.

A brief description of each corridor segment is defined from west to east:

- Segment 1 is defined as the segment of the corridor that provides access to the city of Shelton. It contains highway segments that range from limited access highways (part of US 101) to city streets as SR 3 passes through Shelton. This segment begins on US 101 at Dayton Airport Road (SR 102) and continues south along US 101 until it intersects SR 3. The segment then turns north, running along SR 3 through Shelton before ending at East Mason Lake Road. Terrain along the US 101 portion is characterized as rolling with marginal slopes. As SR 3 enters the city of Shelton, the terrain along the corridor becomes level and remains so until it exits the city, where it becomes rolling again.
- Segment 2 is defined as the segment that encompasses the unincorporated, rural area between Shelton and Allyn. This segment begins at East Mason Lake Road along SR 3 and runs northeast until the northern intersection of East Grapeview Loop Road and SR 3. The terrain is marginally rolling throughout this segment. The segment is marked by controlled and non-controlled intersections and driveways.

Segment 3 is defined as the segment that transverses the rural communities of Allyn and Belfair with lower posted speed limits. This segment begins on SR 3 at the intersection of East Grapeview Loop Road, and runs northeast through the areas of Allyn and Belfair until SR 3 intersects with SW Lake Flora Road in Kitsap County. The terrain in this segment is rolling. This segment is marked by controlled and non-controlled intersections and driveways.

Additionally, this segment is where SR 302 terminates with SR 3, just north of Allyn and where SR 106 and SR 300 terminate with SR 3 in the Belfair area.

Segment 4 includes SR 3 and SR 16 that lead into the unincorporated area of Gorst and the cities of Bremerton and Port Orchard. This segment continues northeast along SR 3 until it forks directly before the Sinclair Inlet. The top leg turns north and runs northeast along SR 3, ending at Loxie Eagans Boulevard in Bremerton. The bottom leg becomes SR 16 and heads southeast until the end of the study area at the intersection of SR 16 and SR 160/Sedgwick Road, south of the city of Port Orchard. The terrain in Segment 4 is rolling until the SR 3/SR 16 intersection, at which point it becomes level through the Gorst area. As SR 3 heads north into Bremerton, it remains level along the shore of Sinclair Inlet to Loxie Eagans Boulevard. Along SR 3 there are both controlled and non-controlled intersections and driveways between the Mason County and Kitsap County line. North of SR 16 to Bremerton, SR 3 is a limited access highway. There is some business access and driveways at the SR 3/SR 16 terminus. SR 16 is mostly a limited access freeway.

Additionally, this segment is where SR 304 terminates with SR 3 in Bremerton, and SR 166 terminates with SR 16 west of Port Orchard.

Exhibit 2-1
Corridor Segments

How are the study corridors designated and classified?

There are several roadway classification systems that apply to the three main highways (US 101, SR 3, and SR 16) in the study area. These systems include national, statewide, and functional classifications, as well as freight designations.

Federal Classification: The Federal Highway Administration (FHWA) established a National Highway System (NHS) that in 1995 was approved by the United States Congress. To become part of the NHS, a roadway must be deemed important to the nation's economy, defense, and mobility. The segments of US 101, SR 3, and SR 16 encompassed by the study area are all part of the NHS.

State Classification: At the state level, Highways of Statewide Significance (HSS) were established by the 1998 State of Washington Legislature through House Bill 1487 and coded as RCW 47.06.140. HSS are considered to be important to the movement of people, goods, services, and the military on a statewide basis, and have beneficial effects on the welfare of the state economy. US 101, SR 3, and SR 16 within the study area are part of the HSS.

Functional Classification: WSDOT in partnership with the Puget Sound Regional Council (PSRC) and the FHWA establish the functional classifications for state highways. The functional classification is primarily a reflection of the type of travel associated with a highway facility. For all three state highways (US 101, SR 3, and SR 16) the functional classification is either "Rural Principal Arterial - R1" or "Urban Principal Arterial - U1," dependent upon the location. By definition, principal arterials serve corridor movements having travel characteristics indicative of substantial statewide and interstate travel.

Freight Designations: All three major roadways (US 101, SR 3, and SR 16) are part of the Strategic Freight Corridor System. The three state highways are classified as follows within the study area:

- US 101: from SR 3 to Wallace Road is classified as T-2; and from Wallace Road to SR 102, it is classified as T-3.
- SR 3: from US 101 to Sunnyslope Road is classified as T-3; from Sunnyslope Road to Gorst, it is classified as T-2; and from Gorst to SR 308, it is classified as T-1.
- SR 16: Its entire length within the study area is classified as T-1 with the Gorst Spur classified as T-2.

See Appendix 2 for a definition of the freight classifications.

The Washington State Freight and Goods Transportation System (FGTS) was created to classify state highways, county roads, and city streets according to their annual freight tonnage. There are five freight categories, ranging from T-1 to T-5.

Access Control: In the state of Washington, state highways are divided into two access control classes, limited access and managed access, and further divided into three and five sub-classes, respectively. All classes are based on the amount of restrictions, with WSDOT controlling approaches to limited access routes, and cities controlling approaches within their boundaries on managed access routes. Approaches in unincorporated areas to managed access routes require state authorization.

The study corridors traverse various regions and jurisdictions, thus access control classifications vary accordingly. The access classifications along the study corridors are illustrated in Exhibit 2-3.

Exhibit 2-2

Access Control Types		
Main Classes	Limited Access	Managed Access
Description	Highway access property rights purchased from owners of property abutting highway. WSDOT controls approaches to highway.	Abutting property owner has right to access highway, but this right is subordinate to a safe and efficient highway system. Cities control approaches within their boundaries, others controlled by WSDOT.
Sub-classes	Full Control, Partial Control, Modified Control	Class 1, Class 2, Class 3, Class 4, Class 5
Characteristics	Full Control most restrictive, Modified Control least restrictive. At-grade intersections and commercial approaches prohibited or selectively permitted.	Class 1 most restrictive, Class 5 least restrictive. Accesses spaced at least 1250' apart for Class 1 and at least 125' apart for Class 5. Other classes have distances that lie between these two values.

Source: WSDOT Design Office

Exhibit 2-3
Access Controls

What are the physical characteristics of the study corridors?

US 101 is a national highway traversing Washington, Oregon, and California. A 7.6 mile segment of this roadway on the west side of Shelton is within the study area. This section of US 101 is an undivided, two-lane highway between its intersection with SR 102 at MP 343.44 and MP 349.30 near the SR 3 interchange, except for a one-mile segment between the Wallace Boulevard off-ramp and the Shelton-Matlock Road on-ramp where an additional northbound lane is added. South of its junction with the SR 3 ramps, US 101 becomes a divided highway and transitions from a two-lane facility to a four-lane facility near MP 351.00.

SR 3 is a state highway originating at its junction with US 101, south of the city of Shelton. From there, it runs northeast through Mason County and Kitsap County. Upon reaching Bremerton, it continues north through Kitsap County before terminating at SR 104 on the eastern end of the Hood Canal Floating Bridge. The total length of SR 3 is 59.8 miles, 37.8 miles of which are included in the study area. SR 3 is generally a two-lane undivided highway from its beginning at US 101 (SR 3 MP 0.00) to SR 16 (SR 3 MP 34.31), except for a short segment (0.06 miles) in the city of Shelton, where it becomes a four-lane, undivided roadway. Between SR 16 and Sherman Heights Road, SR 3 becomes a divided highway that transitions to a six-lane facility. North of Sherman Heights Road to Loxie Eagans Boulevard, SR 3 is generally a four-lane divided highway, except in the vicinity of SR 304 where the southbound direction is reduced to a single lane.

SR 16 is a state highway that begins in the city of Tacoma at its connection to I-5. From there it continues north through Pierce County and into Kitsap County. It continues northwest past the city of Port Orchard before ending at SR 3 in Gorst, an unincorporated community at the head of Sinclair Inlet. SR 16 is a total of 27 miles long, of which the last 4.3 miles are in the study area. SR 16 is a four-lane, limited access, divided highway from Sedgwick Road (SR 160) near MP 24.68 to the SR 166 interchange where it becomes a six-lane highway, to its junction with SR 3 (SR 16 MP 29.06).

Exhibit 2-4 summarizes the general physical configuration of the three major highways along the study corridors.

Exhibit 2-4
Summary of Physical Characteristics

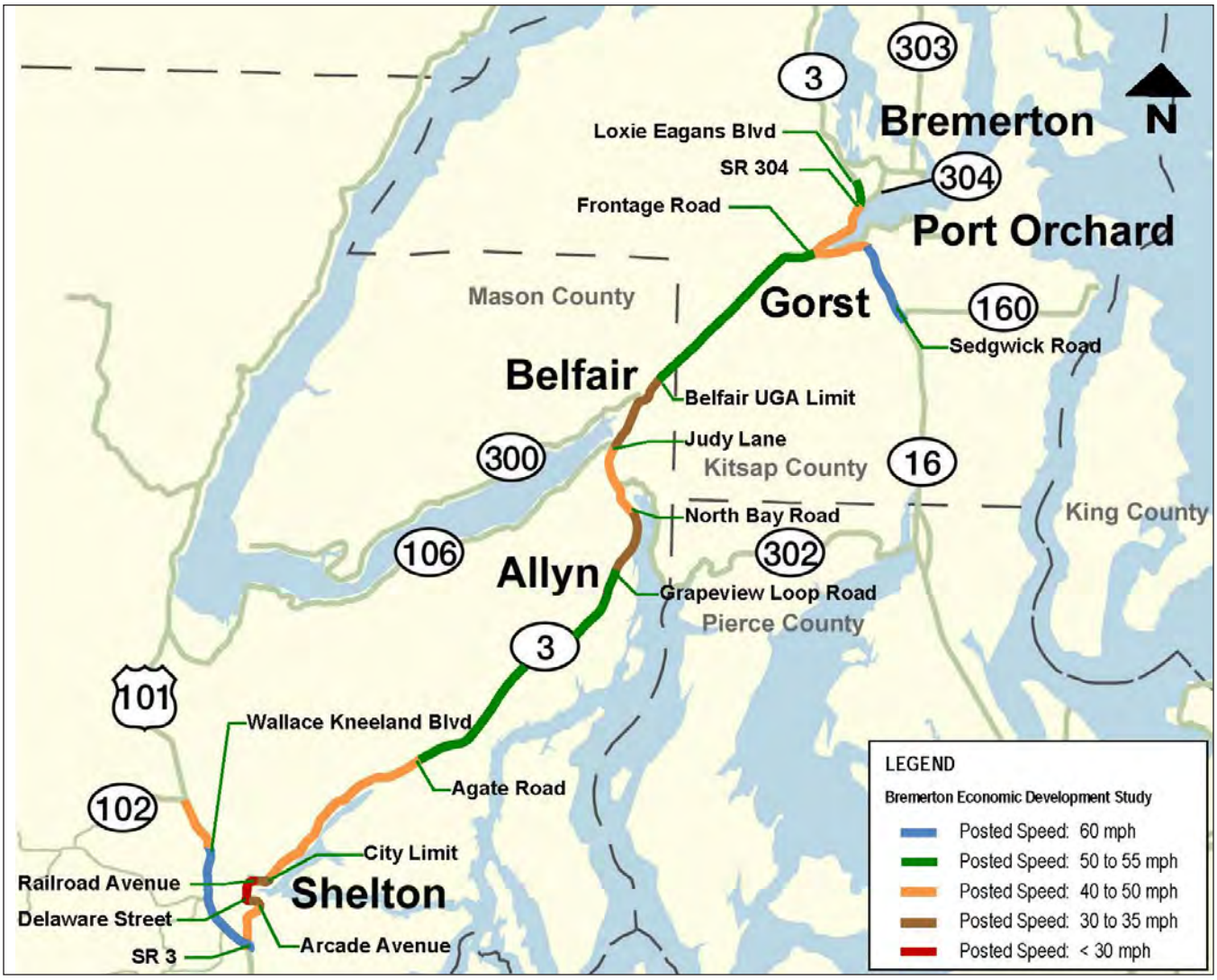
Roadway Physical Characteristics						
Segment	**Hwy**	**Milepost**	**Location**	**EB lanes**	**WB lanes**	**Div/Undiv**
1	US 101	343.44 - 345.47	Intersection w/SR 102 to Wallace Blvd Off-ramp	1	1	Undivided
1	US 101	345.47 - 346.47	Wallace Blvd Off-Ramp to Shelton-Matlock Rd On-ramp	1	2	Undivided
1	US 101	346.47 - 349.30	Shelton-Matlock Rd On-ramp to directly after SR 3 bridge	1	1	Undivided
1	US 101	349.30 - 350.17	Directly after SR 3 bridge to directly before the Off-ramp to SR 3	1	1	Divided
1	US 101	350.17 - 350.23	Off-ramp to SR 3 vicinity	2	1	Divided
1	US 101	350.23 - 351.00	No significant landmarks	2	2	Divided
1	SR 3	0.00 - 2.71	Intersection w/SR 101 to intersection w/Railroad Avenue in Shelton	1	1	Undivided
1	SR 3	2.71 - 2.77	Railroad Avenue to Front Street	2	2	Undivided
1	SR 3	2.77 - 7.24	Front Street to Mason Lake Road	1	1	Undivided
2	SR 3	7.24 - 20.32	E. Mason Lake Road to E Grapeview Loop Road	1	1	Undivided
3	SR 3	20.32 - 26.93	E Grapeview Loop Road to North of Cokelet Lane	1	1	Undivided
3	SR 3	26.93 - 27.66	North of Cokelet Lane to North of NE Peninsula Place	2	1	Undivided
3	SR 3	27.66 - 28.78	North of NE Peninsula Place to Lake Flora Road	1	1	Undivided
4	SR 3	28.78 - 32.30	Lake Flora Road to South of Sunnyslope Road	1	1	Undivided
4	SR 3	32.30 - 34.07	South of Sunnyslope Road to South of W Pleasant Street	1	2	Undivided
4	SR 3	34.07 - 34.51	South of W Pleasant Street to SR 16 EB Off-ramp	1	1	Undivided
4	SR3	34.31 - 34.51	SR 16 EB Off-ramp to SR 16 EB intersection	1	1	Divided
4	SR 3	34.51 - 34.67	SR 16 EB intersection to end of SR 16 bridge	1	3	Divided
4	SR 3	34.67 - 34.81	End of SR 16 bridge to Sherman Heights Road vicinity	3	3	Divided
4	SR 3	34.81 - 36.37	Sherman Heights Road vicinity to vicinity of Off-ramp to SR 304	2	2	Divided
4	SR 3	36.37 - 36.75	Off-ramp to SR 304 to vicinity of On-ramp from SR 304	2	1	Divided
4	SR 3	36.37 - 36.75	On-ramp from SR 304 to On-ramp from Loxie Eagans Boulevard	2	2	Divided
4	SR 16	24.68 - 28.16	On-ramp from SR 160 (Sedgwick Rd) to SR 166 intersection	2	2	Divided
4	SR 16	24.16 – 29.06	SR 166 to intersection w/SR 3	3	3	Divided

Source: WSDOT State Highway Log

EB is increasing mile post, WB is decreasing

Highway Speed Limits: Speed limits range from 25 mph to 60 mph in the study area. As would be expected, speed limits are generally higher along multi-lane divided highways, as well as areas more rural in character. Lower speed limits occur in more urban areas, such as Shelton, Allyn, and Belfair. Exhibit 2-5 depicts speed limits throughout the corridor.

Exhibit 2-5
Speed Limits



Source: WSDOT State Highway Log

Intersections: The study corridors have a total of 88 intersections, not including interchanges. Of these intersections, 29 were selected for analysis based on collision history and level of congestion. Exhibit 2-6 identifies the location of the intersections selected for analysis and the type of traffic control features that currently exist.

Exhibit 2-6
Intersection Locations for Analysis & Type of Traffic Control

Source: WSDOT State Highway Log

Segment 1 contains the highest number of intersections. Although these intersections are spaced farther apart along the rural segments of US 101, they are densely spaced in the city of Shelton.

As SR 3 moves into Segment 2, development is less intensive, with intersections spaced almost one mile apart on average.

Segment 3, at 8.46 miles in length, is shorter than Segment 1, and yet contains nearly as many intersections. Segment 3 intersections are more closely spaced on average than any other segment in the study corridors. Intersections through the Belfair area were analyzed as part of various Belfair area studies and were not re-analyzed as part of this study.

In Segment 4, SR 3 starts near the border of Mason and Kitsap Counties with most of the intersections in this segment being evenly spaced, except those that lie in the Gorst area, where they are more concentrated.

A total of 29 intersections were selected for traffic analysis, including interchange on/off ramps. Of the 29 intersections analyzed, two were located outside of the immediate study corridors. These two intersections, Mason Lake Road with McEwan Prairie Road and McEwan Prairie Road with Brockdale Road, are both located north of the city of Shelton. These two intersections were included to investigate potential benefits of an alternate route for SR 3 across the area north of Shelton. This alternative route was examined to determine if it would divert commercial truck traffic from downtown Shelton and provide a more conducive access to SR 3 than the SR 3/ Johns Prairie Road intersection. Exhibit 2-7, Intersection Summary, provides details on the four corridor segments.

Exhibit 2-7

Intersection Summary

Segment	Total Intersections	Average Intersection Spacing (miles)	Number of Intersections Analyzed
1	30	0.49	7
2	14	0.93	9
3	27	0.31	4
4	17	0.79	9

Traffic Control: Most of the intersections are stop-controlled with the stop signs located on cross streets or at ramp terminals. There are no stop signs on US 101 or SR 16 mainline within the study area. On SR 3 northbound, there are two stop signs in Shelton, but no stop sign on SR 3 in the southbound direction.

There are 13 signalized intersections along the study corridors; of this total, five are in the Shelton area in Segment 1, two in the Belfair area in Segment 3, and six in Segment 4, including the SR 3/Imperial Way and SR 3/Sam Christopherson Road intersections and the ramp terminals of Loxie Eagans Boulevard and SR 160 (two at each interchange location). There are no signalized intersections along Segment 2. Of these signalized intersections, only the six signalized intersections in Segment 4 are included in the list of locations to be analyzed. The type of traffic control at each location to be analyzed is also shown on Exhibit 2-6. There is also a signalized crosswalk in the Belfair area.

Interchanges: There are a total of nine interchanges in the study area; all are located in Segments 1 or 4. Interchanges in Segment 1 are on US 101 where the speed limit is 60 mph. Segment 1 interchanges are located at SR 3, Shelton Matlock Road, and Wallace Kneeland Boulevard. Those in Segment 4 begin at the Gorst Spur and intermittently lie along SR 3 and SR 16 until the end of the segment. Segment 4 interchanges are located at SR 3/SR 16, SR 3/SR 304, SR 3/Loxie Eagans Boulevard, SR 16/SR 16 Spur/SR 166, SR 16/SR 160 (Sedgwick Road), and Old Clifton Road/Tremont Street.

Left-Turn Pockets: There are a total of 33 intersections with left-turn lane channelization along the study corridors, with 15 in Segment 1, three in Segment 2, eight in Segment 3, and seven in Segment 4. The highest frequency of left-turn pockets exists where development is more intensive.

Crosswalks: Along the study corridors, crosswalks are predominantly located in the urbanized areas of Shelton, Allyn, and Belfair. In Segment 1, there are 23 crosswalk locations, all located in Shelton where traffic speeds are low and development is most intense. Segment 2 contains no crosswalks. In Segment 3, one crosswalk is located in the Allyn area, and four are located in the Belfair vicinity; of these four, two are mid-block pedestrian crossings (one signalized and one unsignalized). Segment 4 contains crosswalks at Imperial Way (three crosswalks) and at Sam Christopherson Road (three crosswalks), both at signalized intersections. In addition, crosswalks are located at the SR 3 ramp terminals with Loxie Eagans Boulevard and at the SR 16 ramp terminals with SR 160.

Two-Way Left-Turn Lanes: Two-way left-turn lanes (TWLTL) are added along corridors to make mid-block left-turns from blocking the through lanes. Segment 1 contains six locations where TWLTL are present, including two along US 101 south of SR 102 and four along SR 3 in Shelton. Four TWLTL segments are located in Segment 3 in the Belfair area. The longest TWLTL is approximately 2,700 feet, providing access to the Bremerton National Airport and the South Kitsap Industrial Area, in Segment 4.

Bridges and Structures: Along the study corridors there are a total of 30 structures. The oldest structure, built in 1923, is the Goldsborough Creek Bridge in Shelton. The newest structure is Sweetwater Creek Culvert in Segment 3 constructed in 2001. Exhibit 2-8 provides a summary of the bridges and structures, with their sufficiency rating, along the study corridors. All bridges along the study corridors were rated using a load factor method. Based on the calculated results, WSDOT can determine whether or not a bridge or other structure is in need of repair or in need of replacement. A sufficiency rating below 50 indicates that a structure needs repair or replacement. Based on the ratings listed in Exhibit 2-8, all structures along the study corridors have ratings above 50; although there are four structures that are close to the 50 threshold sufficiency rating.

Exhibit 2-8
Summary of Bridge and Structure Data

Segment	Corridor	Mile Post	Bridge Number	Bridge Name	Year Built	Operating Tonnage[a]	Sufficiency Rating[b]
1	US 101	345.11	101/423	US 101 OC, Wallace Blvd	1993	75/F	99.00
1	US 101	346.18	101/424	US 101 OC, C St	1973	59/F	82.71
1	US 101	346.51	101/425	Goldsborough Creek & RR OC	1973	54/F	90.28
1	US 101	346.79	101/426	Matlock Rd OC	1973	56/F	93.52
1	US 101	348.08	101/427	US 101 OC, Lost Lake Rd	1972	44/F	77.08
1	US 101	348.44	101/428	Mill Creek	1973	51/F	83.26
1	SR 3	0.00	101/429	SR 3 OC	1972	69/F	92.90
1	SR 3	0.92	3/2	Mill Creek	1921[c]	61F/	70.13
1	SR 3	2.45	3/3	Goldsborough Creek	1923	43/F	50.02
1	SR 3	6.59	3/8	Johns Creek	1948	54/F	84.67
2	SR 3	8.56	3/10	Cranberry Creek	1957	39/F	51.98
2	SR 3	8.92	3/11	Deer Creek	1957	40/F	53.44
3	SR 3	20.36	3/15	Sherwood Creek	1952	58/F	52.21
3	SR 3	25.33	3/19.25	Sweetwater Creek Culvert	2001	60/N	84.96
4	SR 3	34.42	3/103N	SR 16 OC	1988	59/F	87.00
4	SR 3	34.56	3/104	Gorst Creek Bridge	1988	87/F	83.75
4	SR 3	34.57	3/104.25	Gorst Creek	1960	99/N	81.00
4	SR 3	36.59	304/1W-S	W-S Ramp SR 3 OC	1991	99/F	94.69
4	SR 3	37.31	3/114	SR 3 OC, K St	1972	99/F	80.00
4	SR 3	37.82	3/116P	Searle St Pedestrian UC	1974	0/N	0.00
4	SR 3	38.29	3/118E	SR 310 - Kitsap Way OC	1983	88/F	90.16
4	SR 3	38.29	3/118W	SR 310 - Kitsap Way OC	1974	81/F	90.11
4	SR 16	23.74	16/202	SR 16 OC, Bethel Rd	1977	51/F	94.93
4	SR 16	25.15	160/5	SR 16 OC	1977	65/F	99.00
4	SR 16	25.95	16/204W	Sidney Rd OC SB	1977	91/F	97.10
4	SR 16	25.96	16/204E	Sidney Rd OC NB	1977	91/F	98.10
4	SR 16	26.68	16/204.5E	Tremont St O/C	1988	63/F	98.10
4	SR 16	26.69	16/204.5W	Tremont St O/C	1988	65/F	90.93
4	SR 16	27.81	16/205	SR 166 OC	1956	57/F	65.57
4	SR 16	28.7	16/208N-S	N-S Ramp SR 16 OC	1988	56/F	82.80

a - 99 - is the operating rating tonnage
F - means the ratings are calculated by the load factor method.
N - means that no calculations were conducted.
b - If the value in this column is < 50, the structure needs repair or replacement.
c - This bridge was rebuilt in 1966.
OC = Overcrossing
UC = Undercrossing
Source: WSDOT Bridge and Structures Office

What multimodal facilities and other transportation services are available along the study corridors?

Transit: Mason County Transportation Authority (MCTA) and Kitsap Transit are the two agencies responsible for public transit in the study area. There are a total of six bus routes provided by MCTA that traverse the study corridors. There are a total of ten park & ride facilities along or near the study corridors. The location of these facilities along with the regular bus routes in the study corridors are depicted in Exhibit 2-9.

Kitsap Transit provides Worker/Driver Program routes within the study area. The Worker/Driver Program was started during World War II when fuel rationing and the use of buses proved to be most efficient in a time of tight resource supplies.

Kitsap Transit inherited 12 routes when it took over the transportation needs of Kitsap County residents. Today, the current program operates 26 routes to the Puget Sound Naval Shipyard (PSNS) and Naval Station Bremerton. These buses are driven by full-time employees ("workers") of the military facilities and are also part-time employees of Kitsap Transit ("drivers"). This system transports thousands of employees to and from work. Its buses traverse sections of SR 16 and SR 3 that lie within the study area.

Exhibit 2-9
Transit Routes and Park & Ride Locations

Ferry Service: Portions of SR 3 and SR 16 are located next to Sinclair Inlet and Port Orchard Bay, which provide waterway access to Puget Sound. Within the study area, ferry service from Seattle to Bremerton, from West Seattle (Fauntleroy) to Vashon Island, and on to Southworth in Kitsap County are operated by Washington State Ferries (WSF). In addition, Kitsap Transit operates a passenger- only ferry that operates between downtown Port Orchard and downtown Bremerton and downtown Bremerton to Annapolis (to the east of downtown Port Orchard). People who are traveling between the two cities may choose to use this transportation option to avoid driving through the Gorst area. Both Washington State Ferries and Kitsap Transit Foot Ferry operate daily.

Passenger Rail: Neither Mason nor Kitsap Counties have operational passenger rail facilities.

Freight Rail Service: There is a freight railway that follows the same general alignment as SR 3 from Shelton to Gorst. When it reaches Gorst, it branches into two segments: one branch travels north through Bremerton to its endpoint at the Bangor Naval Reservation, and the other branch follows the SR 3 and SR 304 alignments until it terminates at the PSNS. This railway is used to transport materials and equipment to and from the military stations and installations located in the Kitsap Peninsula.

Non-Motorized Facilities: As documented in the *2005 Comprehensive Plan*, Mason County has two designated pedestrian/bicycle trails:

- On Brockdale Road from Wallace Boulevard to Island Lake Drive
- On Arcadia Road from SR 3 to Binns-Swiger Road.

On the Mason County Recreation Map dated December 2008, the Mason Lake Loop, 24-miles long, and the Grapeview Loop Road, 7.8-miles long are listed as two of Mason County's favorite bicycle rides. Both of these loops have access to SR 3.

Bicycle and pedestrian travel, even on these routes, is mainly on the roadway or roadway shoulder, although there may be informal paths off the roadway within neighborhoods. Shoulders along US 101 are generally wide enough to accommodate bicycle travel; however, in many areas along SR 3, the shoulders do not have sufficient width for bicycles to operate outside the travel lanes.

Currently, there is considerable bicycle traffic to and from the Puget Sound Naval Shipyard. During the week of April 19 - 25, 2009, there were 288 persons reported entering the shipyard by bicycle and 274 persons leaving from the east gates. For the west gate entrances, the Naval Shipyard personnel estimate that approximately 35 to 50 persons arrive or leave by bicycle a day, many of which use SR 3, SR 304, or SR 16 for a portion of their commute. The lower number of bicyclists using the west gates may be attributed to the smaller shoulder widths on the heavier traveled highway. These counts show that there is a demand for better bicycle facilities in the area.

Kitsap County has developed a more extensive non-motorized transportation plan with major north-south and east-west routes, as described in the county's Non-Motorized Transportation System Elements. Along the study corridors, part of the planned Mosquito Fleet Trail extends along SR 166, SR 16, and SR 3 around Sinclair Inlet.

What are the land uses in the study area?

US 101 is surrounded by the city of Shelton and other urban growth areas through Mason County. Along SR 3, most of the corridor traverses rural areas except for the urban growth areas of Shelton, Allyn, and Belfair. There is also a section of long-term commercial forest area along SR 3 south of Allyn.

Much of SR 3 and SR 16 pass through the incorporated cities of Bremerton and Port Orchard, which include both residential and commercial developments in Kitsap County.

Along SR 3, there are also areas of rural development, urban industrial, rural residential, and commercial/mixed use developments, such as the planned expansion of the South Kitsap Industrial Area (SKIA). The adoption of the SKIA Sub-Area Plan in 2003 set the stage for the allocation of industrial capacity and land-use designations to locate what is envisioned as a major, private sector employment center. The goal of this plan is to allow development of compact, individually master planned industrial and business parks that will provide opportunities for development and create or retain professional, technical, and manufacturing employment.

What are the population growth trends in the study area?

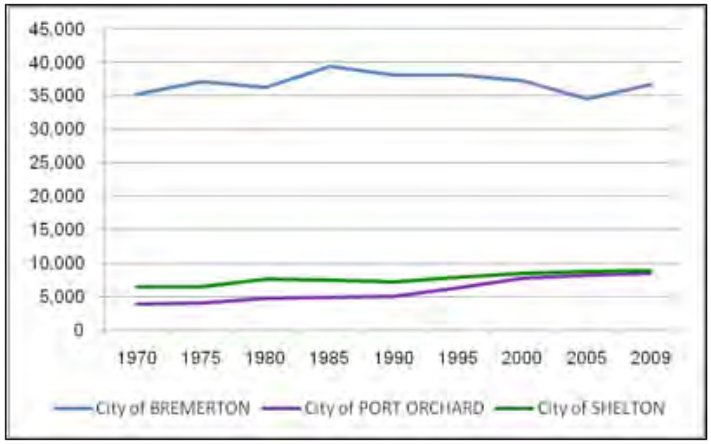
In 2009, the estimated population of the entire state of Washington was about 6.7 million people. Only five percent of that figure resides in the two counties that comprise the study area, with estimates of 56,800 and 247,600 residents for Mason and Kitsap counties, respectively.

There are five incorporated cities within Mason and Kitsap Counties: Shelton in Mason County; Bremerton, Bainbridge Island, Poulsbo, and Port Orchard in Kitsap County. The remaining communities are unincorporated, yet comprise a large part of the residential population, especially in Mason County.

During the 15-year period from 1990 to 2005, the population of Bremerton, the largest city in Kitsap County, decreased by approximately nine percent, but has rebounded by nearly six percent from 2005 to 2009. This decrease in Bremerton's population has been offset somewhat by an increase in neighboring Port Orchard of 65 percent for the same 15-year period. Between 2005 and 2009, Port Orchard's growth has slowed to nearly two percent.

Shelton, in Mason County, experienced modest population growth, from 7,241 in 1990 to 8,965 in 2009 or approximately a 24 percent increase.

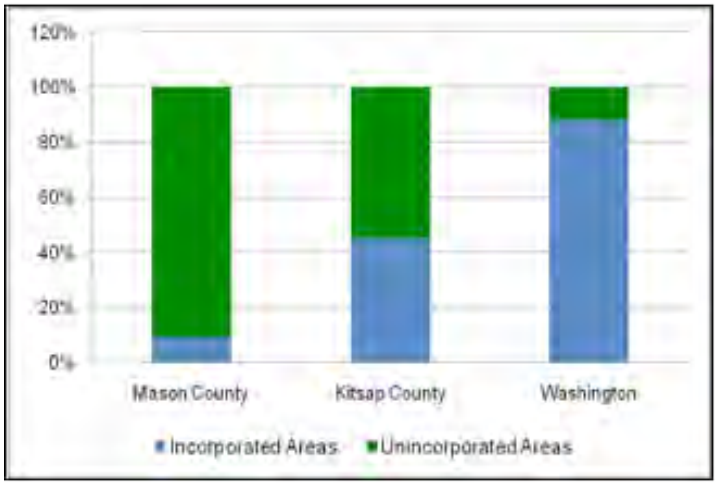
Exhibit 2-10
Population Growth by Cities in the Study Area



Source: Office of Financial Management (Intercensal and Postcensal Estimates, Revised June 2009)

A significant percentage of the population for both Mason and Kitsap Counties live in unincorporated areas and this is where the majority of population growth during the 19-year period from 1990 to 2009 has occurred in both counties; whereas on a statewide basis the growth in population has occurred in incorporated areas.

Exhibit 2-11
Incorporated Area and Unincorporated Area Population Increase (1990-2009)



Source: Office of Financial Management (Intercensal and Postcensal Estimates, Revised June 2009)

What are the environmental conditions within the study area?

The study area is included in the Puget Sound region. The Puget Sound ecosystem is one of the most ecologically diverse in North America, containing a wide range of internationally significant species and habitats. It is a place of rare biological diversity and high economic value. Its health and productivity affects the region's quality of life.

Within the study area, there are several streams and wetlands that drain into Puget Sound. Increased run-off from traffic, if not treated properly, can impact the quality of the Puget Sound ecosystem.

There are also many species of wildlife, including several species that are classified as threatened or endangered that live within the study area. Consideration of wildlife needs to be given during the design of any improvement to these habitat areas.

A general summary of the region's environment was prepared as part of this study and is included in Appendix 2.

What is the safety analysis along the study corridors?

The WSDOT uses two procedures that make use of GIS data to screen state highways to identify Sites with Potential for Improvement. The first procedure is Collision Analysis Location, or CAL. The CAL is a quarter-mile analysis, using the last five years of collision data and entered into MS Excel to generate results that are then mapped in GIS. Fatal, serious, and evident injury collisions become points for each Accumulated Route Mile (ARM) along a route. These points are compared to adjacent points and if they are located within one-quarter mile of each other it becomes a segment and is assigned a segment number with a beginning and ending ARM value. The segments are analyzed to determine the various (Fatal, Serious Injury, or Evident Injury) collision totals. If the segment has six or more Evident Injury collisions and four or more Fatal and Serious Injury collisions, as well as no planned safety (subprogram I-2) project over the next six years, the segment is retained on the CAL list. If not, no additional analysis is performed.

The second procedure is the Collision Analysis Corridor, or CAC. The CAC is an analysis, using the latest five-year period of collision data, inputted into MS Excel to generate results which are then mapped in GIS. Fatal and Serious Injury collisions become points along a route. Any five-mile segment with a history of 11 or more Fatal or Serious Injury collisions would then be included in the CAC list.

A third analysis procedure was approved by WSDOT in June 2010 as part of a federal safety stewardship agreement. This procedure is the Intersection Analysis Location (IAL) which produces a list of prioritized safety improvement needs that ranks the intersections by the societal costs which are generated from fatal, serious, and evident injury accidents at the intersection during a five-year period and consideration of collisions that involve “entering at an angle”, “rear-end”, and “opposite direction” collision types. These improvement projects are prioritized on a statewide basis, using average societal cost per each target intersection.

The most recent safety data assembled (2004 – 2008) for the CAC and CAL analysis shows that SR 3 contains both a CAC and a CAL.

Types of Collisions

- Fatality Collisions are collisions that resulted in at least one fatality.
- Serious Injury Collisions applies to collisions where an injury occurs which prevents the injured person from walking, driving, or continuing normal activities at the time of the collision.
- Evident Injury Collisions are collisions that involve any injury other than fatal or serious injuries that can be observed at the scene.
- Possible Injury Collisions are collisions that include any injury reported to the officer or claimed by the individual.
- No Injury (Property Damage Only) Collisions are collisions in which the officer at the scene has no reason to believe that, at the time of the collision, the person received any bodily harm due to the collision.

The CAC stretches for five miles from milepost 0 (at the junction with SR 101) to milepost 5 (to the northeast of the city limits of Shelton.)

According to the safety data there were a total of 402 collisions along this CAC, with 4 fatalities that occurred between MP 0.0 (SR 3/SR 101 junction) and MP 1.0 (just south of the Shelton city limits.) A further breakdown of the analysis shows that the predominant collision types were: rear end (152 collisions or 56%) followed by striking or being struck by an object (79 collisions or 20%) and entering at an angle (46 collisions or 11%). The main recorded contributing factors to these collisions were: following too closely (77 collisions or 19%) and not yielding the right-of-way (54 collisions or 13%).

The data also shows that of the 402 collisions, a majority of the collisions (224 or 56%) reported no injuries followed by possible injury (121 collisions or 30%) and then evident injury (37 collisions or 9%).

There is also a CAL on SR 3 for about one-half mile from Lake Flora Road north to the Bremerton National Airport (milepost 28.78 to milepost 29.30). This CAL contains 35 total collisions and one fatality, which occurred at the SR 3/Lake Flora Road intersection.

The safety analysis shows that the two leading causes of collisions were: speeding (12 collisions or 34%) and not granting the right-of-way (7 collisions or 21%) with other categories comprising the remaining 16 collisions.

Of the 35 total collisions, the safety analysis shows that 17 collisions (49%) reported no injuries; 8 collisions (23%) reported possible injury; and 6 collisions (17%) reported evident injury.

Based on a review of the collision data from 2004 to 2008, there were two other sites along SR 3 that were initially identified as possible CALs. These sites were within the Belfair area:

- MP 23.00 to MP 24.05 between Lucky Lane and south of E. Hemming Way Lane to just south of the SR 3/SR300 intersection in downtown Belfair
- MP 24.35 to MP 26.10 from north of E. Hemming Way Lane in Belfair

Federal law 23 United States Code 409 governs use of the data contained in this discussion regarding collisions. Under this law data maintained for purposed of evaluating potential highway safety enhancements: "…Shall not be 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." If anyone attempts to use this data in an action for damages against WSDOT, the State of Washington, or any other jurisdiction involved in the locations mentioned in the data, these entities expressly reserve the right, under Section 409, to object to the use of the data, including any opinions drawn from the data.

The analysis showed that both of the segments had six or more Evident Injury collisions and four or more Fatal and Serious Injury collisions. However, because the SR 3 Belfair Area Widening and Safety Improvements project is being planned and is currently funded for construction in 2012, these segments are not included in the statewide CAL list.

The IAL analysis used the most recent safety data with the societal costs generated from fatal, serious, and evident injury accidents at the intersection during a five-year period from 2004 through 2008. This analysis identified the list of intersection locations that meets the IAL criteria. There are four intersections along the SR 3 corridor within the BEDS study area that meet the IAL criteria, as listed below:

Intersection Description	Programmed
MP 37.31 SR3/Werner Rd. On- and Off-Ramp	No
MP 25.51 SR3/Roessel Rd. Intersection	Yes (I2 Safety: Project ID 300344D)
MP 23.23 SR3/SR 302 Victor Cutoff Rd. Intersection	No
MP 10.76 SR3/Pickering Rd. Intersection	No

One of the four intersections, SR 3 Roessel Road intersection, is located in Belfair and is already programmed and funded for safety improvements, as part of the Belfair Area Safety & Widening Improvements Project.

The mobility analysis also identified one intersection as a mobility need location, based on the BEDS traffic analysis. This intersection is the SR 3/Sam Christopherson Road/SR 16 Spur intersection.

Based on these analyses, there are three intersections that are identified as safety need locations and one intersection is identified as a mobility need location. Due to the economy, an emphasis was placed on identifying these safety and mobility needs for the next six to ten years, rather than the longer-term needs as identified in the BEDS study.

How are safety issues being addressed?

As part of a federal safety stewardship agreement, the WSDOT Safety Executives identified the analysis tools and the minimum acceptable performance levels required to obtain the Target Zero goals on state highways to reduce fatalities and serious injury accidents to zero in the state of Washington by 2030. For more information on Target Zero, please see http://targetzero.com/

WSDOT receives a federal safety apportionment on an annual basis for addressing statewide safety needs. These safety funds will be used to address the safety needs identified from the Collision Analysis Locations (CAL), Collision Analysis Corridors (CAC), and Intersection Analysis Locations (IAL), as part of the federal safety stewardship agreement.

The identified CAC/CAL needs are currently being addressed using the federal safety apportionment. For the CAC along SR 3 from MP 0.0 to MP 5.0 (from US 101 to Shelton), safety improvements, including the installation of guiderails and rumble strips along the sides and in the median, were implemented. For the CAL along SR 3 from MP 27.78 to MP 29.30 (from Lake Flora Road to a half mile north), safety improvements, including the installation of a right-turn lane at Lake Flora Road, the construction of a center acceleration lane, widen SR 3 in the vicinity of the intersection and the installation of shoulder and centerline rumble strips, are already programmed to be implemented.

Most of the identified current needs in transportation improvements along the BEDS corridor are already addressed, or will be addressed as part of the 2020 improvements. However, there are some locations that still need safety and mobility improvements, as identified through the IAL analysis.

The safety and mobility locations that should be improved when funding is available are as follows:

1. SR 3/Sam Christopherson Road/SR 16 Spur, MP 36.26 - This location is identified as a Mobility Need Location. This intersection is recommended for improvement. A detailed geometric, traffic and safety analysis of the intersections is needed to determine the appropriate improvement, including consideration for additional channelization, signal modifications, or redesign to a roundabout configuration.
2. SR 3/SR 302 Victor Cutoff Road intersection, MP 23.23 - This location is identified as a Safety Need Location. This intersection is recommended for improvement. A detailed geometric, traffic and safety analysis of the intersections is needed to determine the appropriate improvement, including consideration for additional channelization, signalization, or redesign to a roundabout configuration.
3. SR 3/Pickering Road, MP 10.76 - This location is identified as a Safety Need Location. This intersection is recommended for improvement. A detailed geometric, traffic and safety analysis of the intersection is needed to determine the appropriate improvement, including consideration for additional channelization, signalization, or redesign to a roundabout configuration.
4. SR 3/Werner Road/Loxie Eagans Boulevard northbound and southbound ramp intersections, MP 37.31 - This location is identified as a Safety Need Location. These intersections are recommended for improvement. A detailed geometric, traffic and safety analysis of the intersections is needed to determine the appropriate improvement, including consideration for additional channelization, signal modifications, or redesign to a roundabout configuration.

As the economy recovers, and if future conditions along the corridor evolve differently than anticipated in this study, the data used to develop the recommendations for this study should be updated or reevaluated.

Chapter 3 – Existing and Future Traffic Conditions

This chapter describes the existing and future traffic analyses along US 101, SR 3, and SR 16. The methodology to project 2020 and 2030 traffic volumes, as well as the corridor analysis and intersection analysis used to determine corridor bottlenecks and needs are presented for this study.

How was the traffic analysis conducted?

For roadway operations along the study corridors, the Highway Capacity Software (HCS) was used to evaluate the level of service and operating speeds. Synchro software was used to analyze signalized and stop controlled intersections. Each of these software techniques are used to analyze specific locations and do not reflect delays and queues resulting from other intersections.

These software packages use capacity and level-of-service to analyze roadway operations, based on the *2000 Highway Capacity Manual* (HCM), developed by the Transportation Research Board. Capacity is defined on page 2-2 of the 2000 HCM as "the maximum hourly rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions."

To analyze the quality of service on a roadway and at intersections, the *2000 Highway Capacity Manual* uses level-of-service (LOS) which is "a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience" (See HCM, Transportation Research Board, 2000; page 2-2).

Six LOS categories are used to describe the quality of the transportation system. These LOS categories range from LOS 'A' through LOS 'F' with LOS 'E' being the point where the traffic demand on the roadway is equal to the capacity of the roadway. LOS is defined differently for different roadway classifications and intersections.

For highway segments, WSDOT has developed a congestion measurement approach, using a comparison of posted speeds and operating speeds. WSDOT's Congestion Measurement Thresholds are listed in Exhibit 3-1 (Based on 60 MPH Posted Speeds on State Highways).

Exhibit 3-1
Congestion Measurement for State Highways

Condition	Highway Speed
Posted Speed	52 mph or above (Posted Speed)
Maximum Throughput	51 mph to 42 mph (about 85% to 70% of Posted Speed
Congestion	Less than 41 mph (below 70% of Posted Speed)

Source: WSDOT's Congestion Measurement Approach: Evaluating System Performance, January 2008

As part of their 'Highway System Plan 2007-2026,' WSDOT has used the rating of 'below 70% of posted speed' as the threshold to determine if a roadway segment performs below WSDOT's predefined threshold. This threshold was used for this study.

For intersections, LOS is defined differently for signalized and unsignalized intersections. For signalized intersections, LOS is defined by the amount of control delay, which is a measure of a driver's discomfort, frustration, fuel consumption, and increased travel time. LOS at signalized intersections is stated in terms of the average control delay per vehicle for all approaches, typically for a 15-minute analysis period, and the overall intersection.

For unsignalized intersections, LOS is defined by the amount of control delay, but the LOS thresholds are different from those of a signalized intersection to reflect different driver expectations. LOS is also measured differently for Two-Way Stop Controlled (TWSC) intersections and All-Way Stop Controlled (AWSC) intersections. For TWSC intersections, controlled delay is defined for each minor (stopped controlled) movement. LOS is not defined for the whole intersection. For AWSC intersections, LOS is calculated for each approach, as well as the whole intersection. A summary of the LOS thresholds for signalized and unsignalized intersections is shown in Exhibit 3-2.

Exhibit 3-2
Intersection LOS standards

LOS - SIGNALIZED INTERSECTIONS		LOS - UNSIGNALIZED INTERSECTIONS	
LOS	AVERAGE CONTROL DELAY PER VEHICLE (Sec/Veh)	LOS	AVERAGE CONTROL DELAY PER VEHICLE (Sec/Veh)
A	=/< 10 sec.	A	=/< 10 sec.
B	>10 - 20 sec.	B	>10 - 15 sec.
C	>20 - 35 sec.	C	>15 - 25 sec.
D	>35 - 55 sec.	D	>25 - 35 sec.
E	>55 - 80 sec.	E	>35 - 50 sec.
F	>80 sec.	F	>50 sec.

Source: 2000 Highway Capacity Manual

What are the existing traffic conditions along the study corridors?

Average Daily Traffic (ADT) is the conventional method by which planners and engineers gain an initial perspective about traffic and congestion in any given corridor. These traffic volumes are based on actual vehicle counts which are adjusted by seasonal factors to account for traffic volume variations that occur during the course of a year. These seasonal adjustment factors are applied to ADT values to give Annual Average Daily Traffic (AADT) values which are more indicative of daily traffic volumes. For this study, traffic counts were taken only on April 8-10, 2008 at 15 locations along the study corridors and at 26 intersections. Intersection volumes are available at three other selected locations.

Exhibit 3-3 presents a summary of the 2008 AADT traffic data collected along the study corridors. The highest AADT volumes are in Segment 4 in the Gorst area, while the lowest are in Segment 3 through rural Mason County.

Well designed intersections are critical to the smooth and steady flow of traffic along the roadways, as well as safety. It is here that conflicting movements emerge with potential negative effects on throughput and safety. Intersection performance is one way of determining the quality of traffic flow.

Exhibit 3-4 summarizes the roadway and intersection analysis results. As shown on the exhibits, there are currently five intersections along the study corridors that operate below WSDOT's standard of LOS D. Four of these intersections are unsignalized and one intersection is signalized. The below standard intersections are listed here:

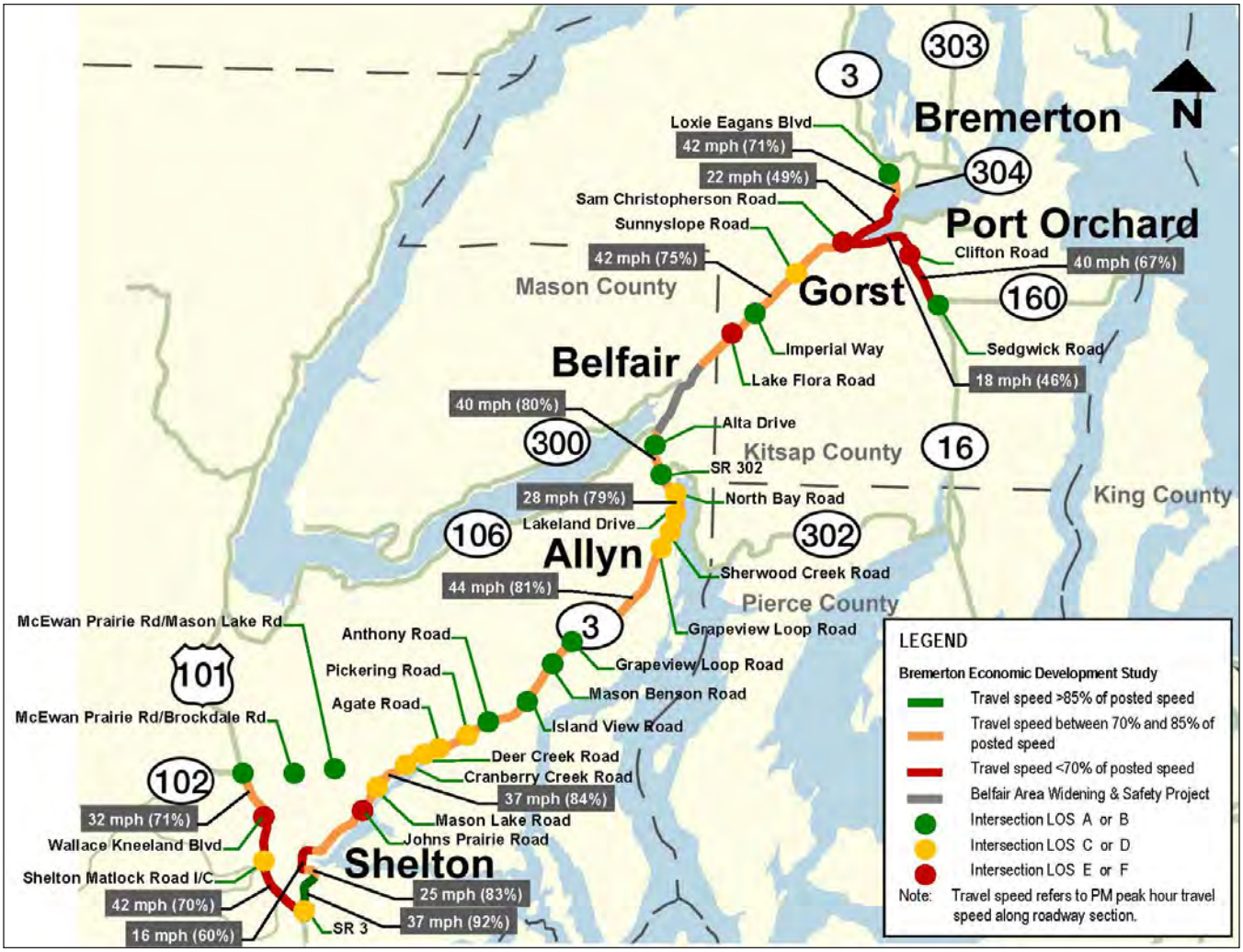
- Johns Prairie Road currently operates at LOS F. Its intersection with SR 3 is skewed and has high left-turning traffic onto SR 3.
- The US 101 NB ramp with Wallace Kneeland Boulevard operates at LOS F, because of the amount of traffic exiting US 101 through a stop control intersection.
- The SR 16 NB ramp intersection with Old Clifton Road/Tremont Street operates at LOS F due to heavy traffic movements, especially exiting traffic from the northbound off-ramp.
- The SR 16 SB ramp intersection with Clifton Road/Tremont Street operates at LOS F due to heavy traffic movements, especially exiting traffic turning right from the off-ramp.
- The SR 3 signalized intersection with SR 16 Spur/Sam Christopherson Road in the Gorst area currently operates at an overall rating of LOS E. It contains multiple movements that operate at LOS E or F.

There are also approximately 12.5 miles of roadway that fall below the 70 percent threshold. These sections include:

- SR 3 within the Shelton area
- SR 3 from Sam Christopherson Road to SR 304
- SR 16 from Sedgwick Road (SR 160) to its junction with SR 3
- US 101 from SR 3 to the Wallace Kneeland Interchange.

Exhibit 3-3
2008 Annual Average Daily Traffic Summary

Exhibit 3-4
2008 Traffic Conditions Summary



What are the future traffic conditions?

To determine future operational performance of the study area, long-range traffic forecasts for the year 2030 were estimated, as well as for the interim year 2020. These volumes were then analyzed to determine the interim and long-range traffic conditions.

The forecast assumes that the Lake Flora Connector (also referred to as the South Kitsap Industrial Area Connector) between SR 3 and SR 16 is completed, as well as the new roadway around the east side of the Bremerton National Airport.

Forecast Methodology: Two travel demand models were found to be applicable for providing 2008-2030 traffic growth rates for the study area:

- The most current Kitsap County travel demand model
- The city of Shelton Transportation Plan model.

For the study area, traffic forecasts were developed using data from both models. For these forecasts, the SR 3 corridor was divided into three sections: one section west of the Shelton Urban Growth Area (UGA) northern boundary; another between the Shelton UGA boundary and the Kitsap/Mason County line; and the last east of the Kitsap/Mason County line to the end of the study area.

For the area west of the Shelton UGA northern boundary, the year 2030 annual average weekday traffic (AAWDT) PM peak-hour forecasts were based on the Shelton transportation forecasting model as stated above. Because the model network included US 101, SR 3, and the intersecting arterials, the intersection turning movement forecasts were obtained directly from the model. These forecasts were then post-processed to provide the adjusted intersection turning movements and corridor balancing along with the rest of the corridor forecasts for the year 2030.

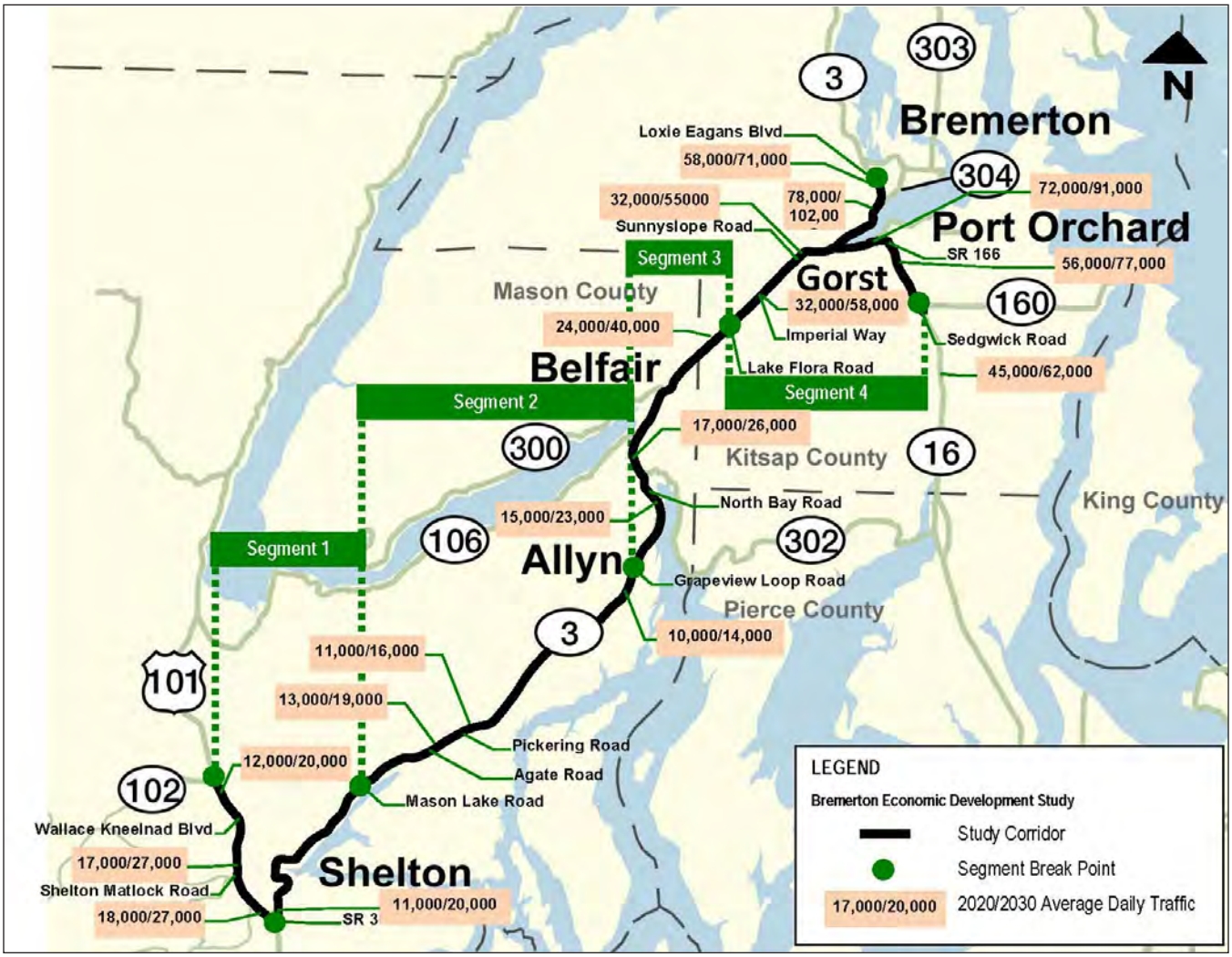
For the area east of the Kitsap/Mason County line to the end of the study area, traffic forecasts were based on the current Kitsap County travel demand model. The post-processed traffic forecasts were developed by Kitsap County and provided to the project team.

The area between the Shelton UGA boundary and the Kitsap/Mason County Line was not part of either the city of Shelton transportation plan model or Kitsap County travel demand model. To develop 2030 corridor and intersection turning movement forecasts, a growth rate was calculated by averaging the growth rates from the intersections located at the east end of the Shelton model (Mason Lake Road) and west end of the Kitsap model (Lake Flora Road). The resulting 4.2 percent annual growth rate was developed and applied to the 2008 PM peak hour intersection approach and corridor volumes.

For the interim year 2020 forecasts, the existing 2007/2008 volumes and the forecasted 2030 volumes were used. Based on the growth rate at each analysis point, 2020 traffic volumes were projected over the base 2008 volumes.

Future Year Volumes: The estimated 2020 and 2030 future year AADT volumes are shown on Exhibit 3-5. These increase in range from a growth of nearly 37 percent on SR 16 north of the Sedgwick Road Interchange to almost 260 percent on SR 3 through the SKIA industrial area.

Exhibit 3-5
2020/2030 Average Daily Traffic Summary



Future Year Traffic Analyses: A summary of the 2020 and 2030 future year highway and intersection analyses are shown on Exhibits 3-6 and 3-7.

The Belfair area was not included in these analyses because this area has been extensively analyzed in the Belfair Bypass Study and the SR 3 Belfair Area Widening and Safety Improvements Project. The results and recommendations of these recent studies are included in this study by reference. More details about these studies are available on the WSDOT web site: www.wsdot.wa.gov/projects/sr3/belfairbypass/

The highway segment performance analysis for the study corridors uses the WSDOT's "Percent of Posted Speed" method to be consistent with the current Highway System Plan. By applying this methodology, the 2020 roadway performance of the state highways within the study area degrades to 'less than 70% of the posted speed' for most of the corridor. More than 25 miles of the corridor will be operating at 'less than 70% of the posted speed' in 2020.

By 2030, nearly 35 miles of the corridor within the study area degrades to less than 70 percent of the posted speed. The only exception is the roadway section on SR 3 between Pickering Road to Grapeview Loop Road (north end), which maintains about 72 percent of the posted speed in 2030 and along US 101 between SR 102 and the Wallace Kneeland Interchange, which maintains about 71 percent of posted speed. This last area is likely to deteriorate if the capacity through the segment to the south is widened to four lanes.

The intersection performance analysis was conducted using the Highway Capacity Manual level-of-service (LOS) methodology and minimum threshold of LOS D. The 2020 intersection results showed that 22 of the 29 intersections analyzed are below LOS D without improvements.

By 2030, the number of intersections below LOS D increases to 26 locations. Many of the intersections poor performance are caused by excess delays on the cross streets or ramps where vehicles are waiting to access the main highways.

Exhibit 3-6
2020 Traffic Conditions Summary

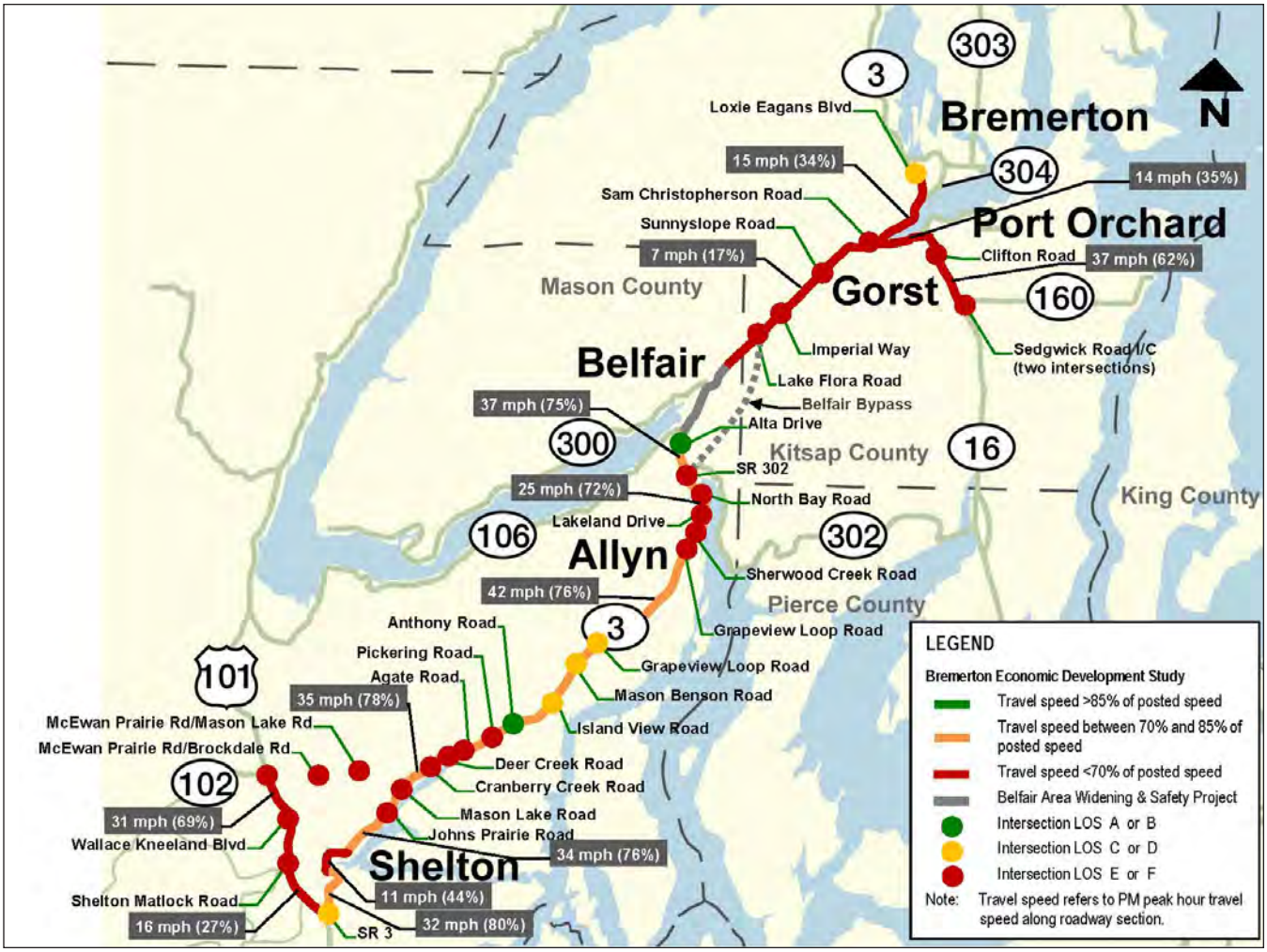
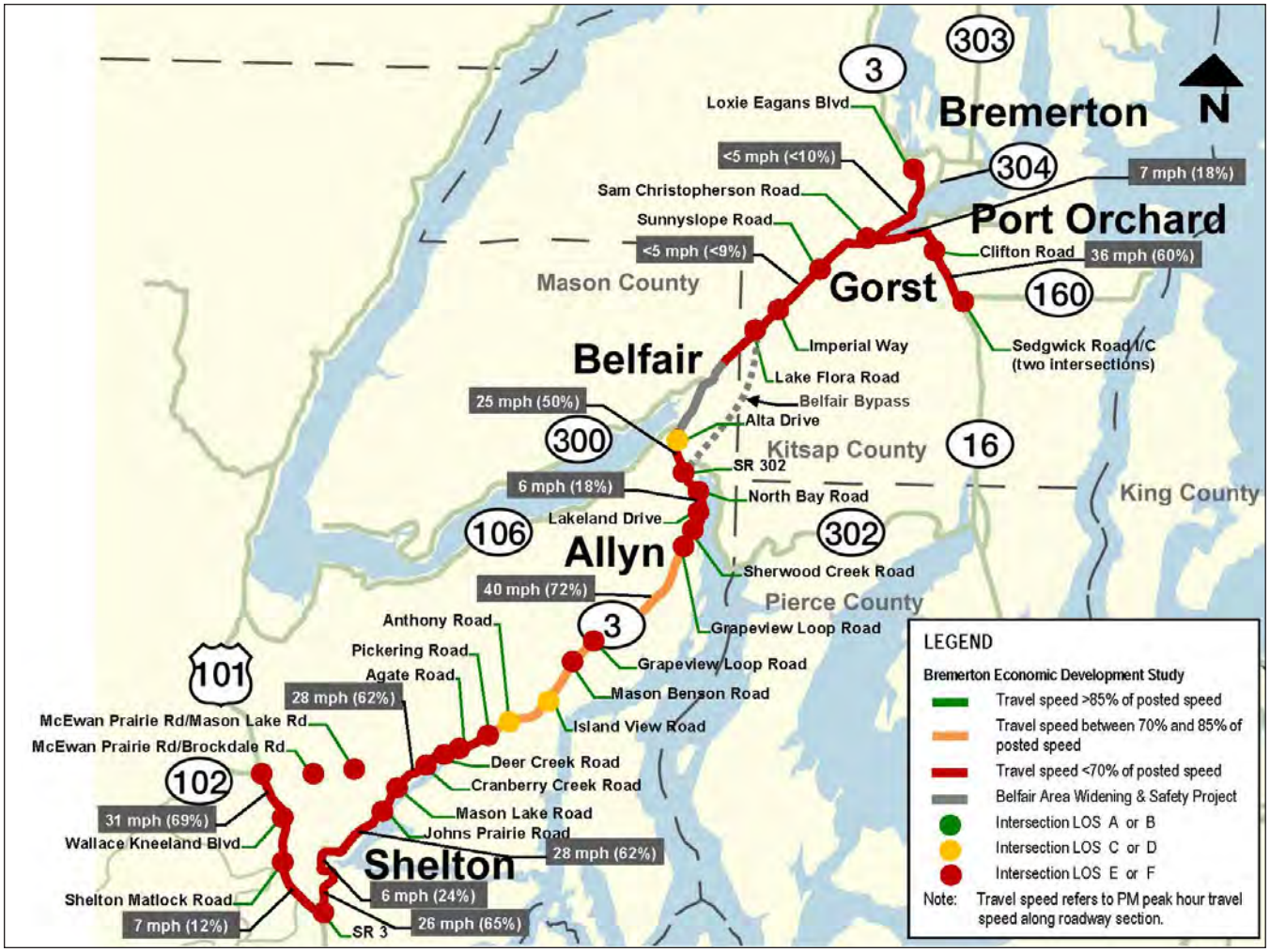


Exhibit 3-7
2030 Traffic Conditions Summary



Where are the existing and future bottlenecks and congested areas?

Corridor segments are considered to be in need when they operate below 70 percent of the posted speed during the peak period. Intersections are considered to be in need when they operate below the LOS D threshold. In addition, corridor segments are also considered in need where they have a documented safety problem.

For this study, the intersections and study corridor's segments highlighted in red on Exhibit 3-6 and Exhibit 3-7 are considered to be in need based on the operational analysis.

From a safety perspective, the key areas to examine along SR 3 include:

- MP 0.58 to MP 1.19 between King Road and the south Shelton city limit
- MP 7.76 to MP 8.73 from north of Mason Lake Road to Cranberry Creek Road
- MP 23.00 to MP 24.05 between north of Lake Devereaux Road and south of Judy Road between Allyn and Belfair
- MP 24.35 to MP 26.10 in the Belfair area
- MP 28.78 to MP 29.30 between Lake Flora Road and south of Imperial Way
- MP 0.00 to MP 5.00 from the SR 3/US 101 interchange to just outside the northeast city limits of Shelton.

Collisions, especially those involving injuries and fatalities, along the study corridors also result in the highway being closed for extended periods while the collision is being investigated. There is no easy way for traffic to pass safely around a collision site along much of the SR 3 corridor.

Was a Sinclair Inlet Bridge analyzed?

The possibility of constructing a bridge across Sinclair Inlet was briefly looked at towards the end of the study. For decades there has been interest in having a bridge span the Inlet. The theory is a bridge would reduce travel times and distance between Bremerton and Port Orchard, thereby reducing congestion on SR 3 in the Gorst area.

Evaluating a bridge was not originally in the BEDS scope of work or budget. However, various local policy makers requested that a bridge be analyzed and the study team incorporated such an analysis into the project scope.

The project team examined past efforts and analyses that were done regarding a Sinclair Inlet Bridge. In January 1994, the "SR16/SR3 Corridor Analysis" (referred from here on as the "1994 Analysis") was released. This report was done in conjunction with WSDOT, Kitsap County, and the city of Bremerton and prepared by Parametrix, Inc; a private transportation consulting firm.

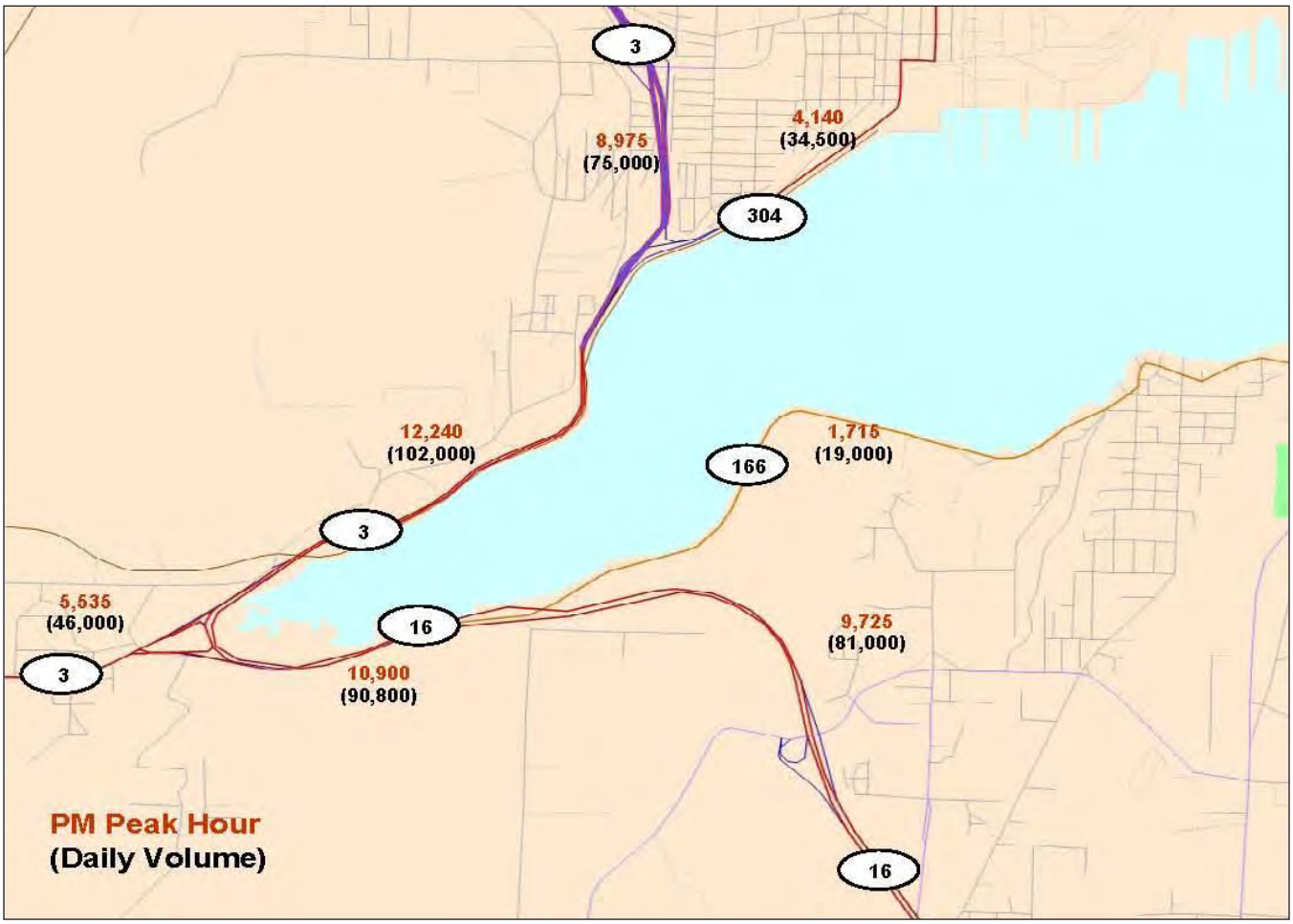
While the "1994 Analysis" contained three potential alignments (I, J, and K) for a bridge across the Sinclair Inlet, the BEDS project team focused on an alignment similar to Alignment K, which would span from Port Orchard to the SR3/SR304 interchange. This alignment was chosen due to discussions with local policy makers in which most of them expressed such an alignment as their preference for an analysis.

For consistency with other traffic modeling efforts done for BEDS, the project team used the year 2030 for its traffic model analysis and a full SKIA build out. For this analysis, the PSRC regional model was used. It produced similar data to the model used in the original analysis. The analysis looked at how many vehicles would utilize the proposed alignment, the travel time saved by drivers using the alignment, and if the alignment would negate the need to widen SR 3 between the SR 16 and SR 304 interchanges. Summaries of traffic volumes around the Sinclair Inlet area without and with a new Sinclair Inlet Bridge are shown on Exhibits 3-8 and 3-9.

The analysis showed:

- Travel time would be reduced by 10 minutes between Port Orchard and Bremerton if a bridge was constructed and no improvements were made to SR 3 between the SR 16 and SR 304 interchanges.
- The 102,000 vehicle trips on SR 3 between SR 16 and SR 304 interchanges would be reduced to 31,000 vehicles.
- Approximately 76,000 vehicle trips would be drawn onto the new bridge from the segment of SR 16 between the SR 3/SR 16 interchange and Port Orchard.
- The amount of traffic on the 4 lane bridge would have a slightly higher level of congestion than SR 3 north of the Gorst area where in 2006 traffic volumes were 71,000 vehicles per day.
- A new or reconstructed interchange would be needed at the bridge's start/touchdown point at or before SR 16 and SR 166.
- A new or reconstructed SR 3/SR 304 interchange would be required
- Connection to SR 166 would be difficult due to elevations
- SR 3 between SR 16 and Sam Christopherson Road would still need to be widened since the bridge is not a logical option for travelers on SR 3 headed to or from the Bremerton Airport/Belfair/Mason County areas
- The SR 3/SR 16 interchange would still need to be improved

Exhibit 3-8
2030 Sinclair Inlet Area Traffic Volumes without New Bridge

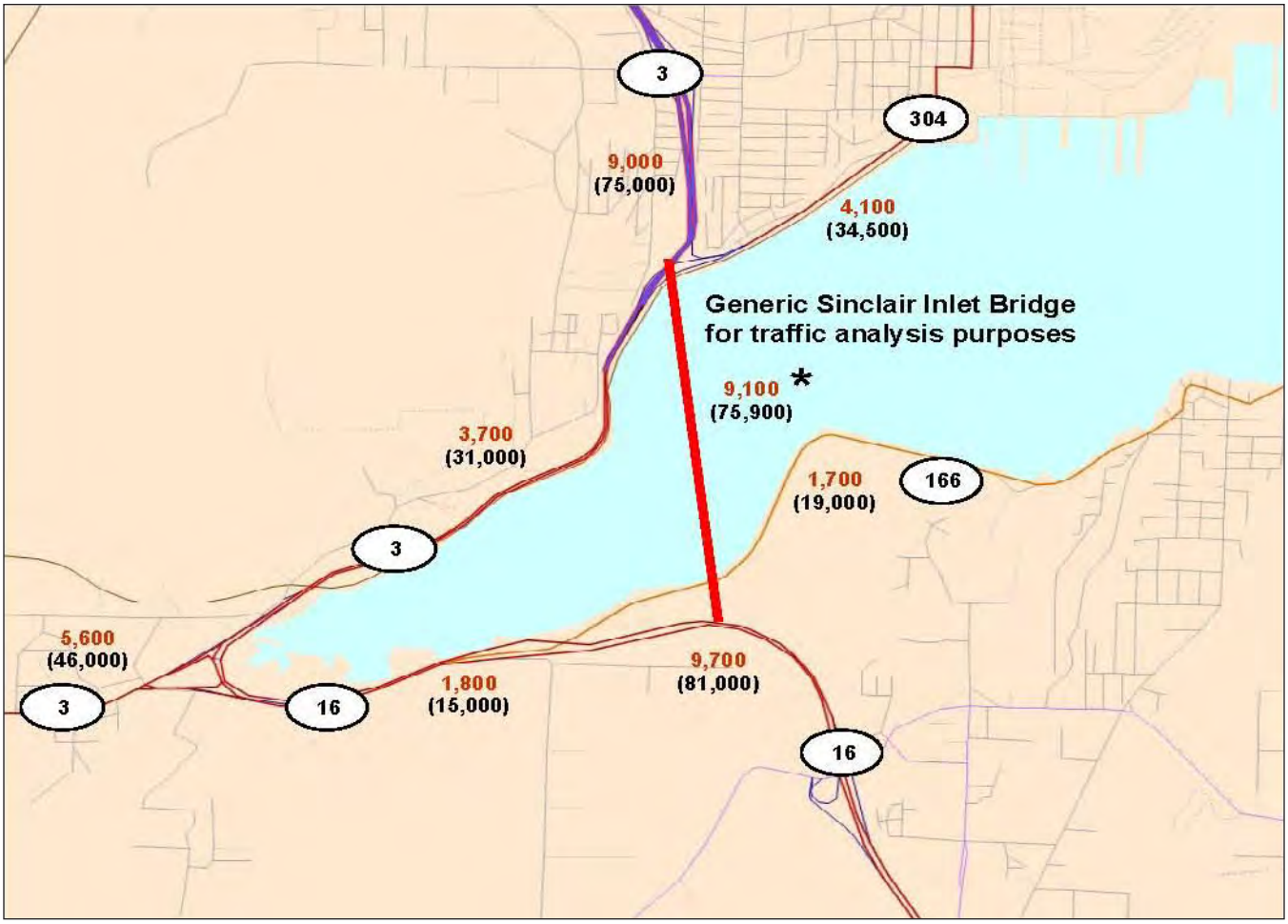


2030 Baseline Assumptions:
- No highway improvements
- SKIA build out

Volumes:
- 2030 PM peak hour (in red) and daily (in black) two-way traffic volumes are shown

Results:
- SR 3 and SR 16 are in failing condition during PM peak hour in 2030

Exhibit 3-9
2030 Sinclair Inlet Area Traffic Volumes with New Bridge



Bridge Assumptions:

- 4-lane bridge structure
- 2030 Forecast Year
- No widening of SR 3 between SR 3/SR 16 interchange and the SR3/SR304 interchange
- SKIA build out
- Cost estimates – TBD

*Bridge alignment is not final and is only for traffic modeling analysis for this report. A specific bridge alignment, plus its take off/touch down points, would need to be studied further in any future analysis that might be done regarding a possible span across the Sinclair Inlet.

Volumes:

- 2030 PM peak hour (in red) and daily (in black) two-way traffic volumes are shown

Given the limited availability of state transportation revenues and pressing demands for state and federal investments to address transportation problems elsewhere in the state, it is highly unlikely a bridge across the Sinclair Inlet would become a state priority and, if pursued, would likely need to be a local endeavor.

There was discussion regarding tolls helping to pay for a bridge. However, an analysis would need to be conducted to determine toll rates and what affects those rates would have on traffic diversion. Would a toll divert a significant amount of traffic from the bridge to SR 3, thereby overloading that highway and requiring expensive improvements and upgrades and neutralizing any benefits of a bridge?

The BEDS report is not making a recommendation regarding the pursuit of a bridge. It is a complex issue that requires a more in-depth analysis that would need to review tolling, potential environmental impacts, tribal fishing rights, navy and civilian maritime operations, public outreach, and cost estimates to construct such a structure. These items are more than what could have been accomplished under the limited BEDS project budget.

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Chapter 4 – Study Corridors Long-Range Vision

This chapter describes the long range vision of the corridor to meet future traffic projects, encourage growth, and provide a sound transportation infrastructure to support the area economy.

How were the study corridors long-range visions developed?

Each corridor segment vision was drafted by the study team and refined by the project stakeholders. Each vision takes into consideration the long-range infrastructure related to future population and employment growth based on the adopted local land use plans, future year traffic projections, community visions compatibility, and environmental concerns.

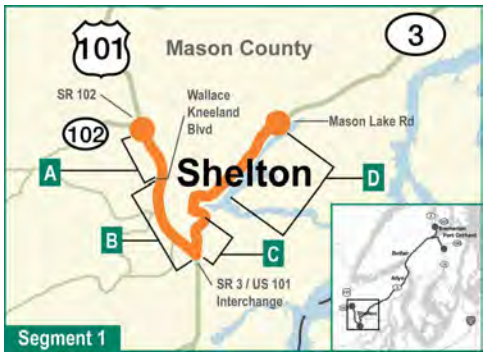
A safety analysis was also performed that included a review of the collisions that have occurred between 2004 and 2008 (see Chapter 2) and through discussions with stakeholders and the public. This process identified recommended improvements that could reduce the severity and frequency of collisions and injuries, as well as ways to provide for emergency vehicle access to collision sites. These improvements included improved intersection operations to reduce conflicts, wider shoulders for more vehicle recovery area and emergency access, rumble strips to warn drivers that they are straying out of the designated lane, and improved signage.

To enhance mobility, each segment vision implies that over time various strategic transportation investments will be needed to meet the long-range traffic needs beyond 2020. Investments will be needed to support area employment and population growth, reduce conflict points, provide optimal intersection spacing, maintain traffic flow while allowing safe access, and, within population centers, include traffic calming techniques to maintain safe and steady traffic speeds.

The vision for each corridor segment also provides for improved non-motorized travel by providing bike lanes through growing urban areas, such as Belfair and Allyn, providing wider shoulders, and supporting off-corridor trails.

What is the long-range vision for the corridor?

The transportation infrastructure needed to maintain economic growth varies by safety and traffic issues, community values, and the environment. To better reflect varying conditions within the study area, the BEDS' long-range corridor vision varies by study segment and highway, as defined on the following pages. Each segment vision represents the long-range goal for the corridor, which in some areas may be beyond the planning horizon of this study. Exhibits 4-1 through 4-13 show visions for each section of the four segments in the corridor.



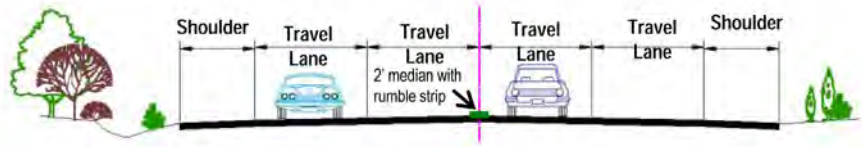
What is the vision for Segment 1?

Through Segment 1, the long-range vision includes safety and mobility improvements for US 101 and SR 3, varying by access control and location.

Section A: US 101 from Wallace Kneeland Boulevard to SR 102 – The vision for this section includes:

- Widen the two-lane highway to a four-lane highway with eight-foot shoulders and rumble strips
- Improve the US 101/SR 102 intersection as warranted with roundabout, signal, and/or additional channelization
- Limit all other side street access to right-in/right-out only
- Provide a two-foot centerline median with rumble strip.

Exhibit 4-1
Typical Cross Section - US 101
(Wallace Kneeland Boulevard to SR 102)

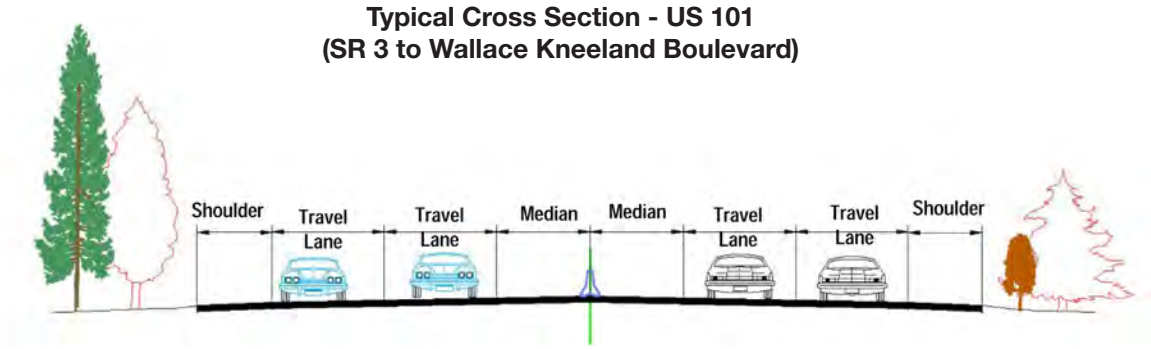


Segment 1 - Section A Conceptual Design

Section B: US 101 from SR 3 to Wallace Kneeland Boulevard –
The vision for this section includes:

- Extend the existing limited access, four-lane highway from south of SR 3 to the Wallace Kneeland Boulevard Interchange
- Improve ramp terminal intersections by providing roundabouts, signals, or additional channelization, as warranted
- Limit all side street access to right-in/right-out only.

Exhibit 4-2
Typical Cross Section - US 101
(SR 3 to Wallace Kneeland Boulevard)

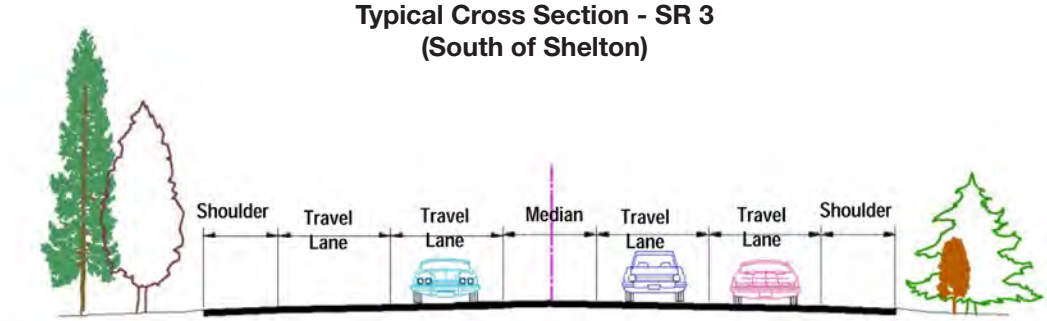


Segment 1 - Section B Conceptual Design

Section C: SR 3 from US 101 to south City Limits –
The vision for this section includes:

- Four-lane highway with a center median that may be used for left turns and eight-foot outside shoulders with rumble strips
- Improve intersections where warranted with additional channelization
- Provide intersection spacing in accordance with WSDOT's access management requirements and limit driveways to right-in/right-out.

Exhibit 4-3
Typical Cross Section - SR 3
(South of Shelton)



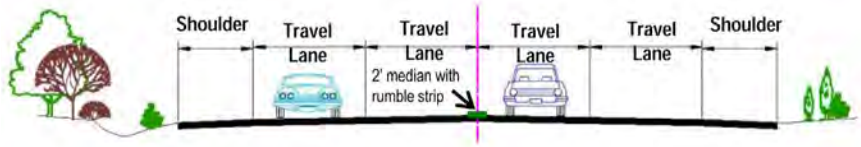
Segment 1 - Section C Conceptual Design

Section D: SR 3 from the eastern Shelton City Limits north to Mason Lake Road – The vision for this section includes:

- Four-lane highway with eight-foot outside shoulders with rumble strips
- Improve intersections where warranted with additional channelization
- Provide intersection spacing in accordance with WSDOT's access management requirements and limit driveways to right-in/right-out
- Provide a two-foot centerline median with a rumble strip.

Through the city of Shelton - The two-mile section through the Shelton area will remain as it is currently configured as either a two- or four-lane city street with curbs, gutters, sidewalks, and parking lanes.

Exhibit 4-4
Typical Cross Section - SR 3
(North of Shelton)



Segment 1 - Section D
SR 3 – Shelton eastern City Limits to Mason Lake Road
Conceptual Design

What is the vision for Segment 2?

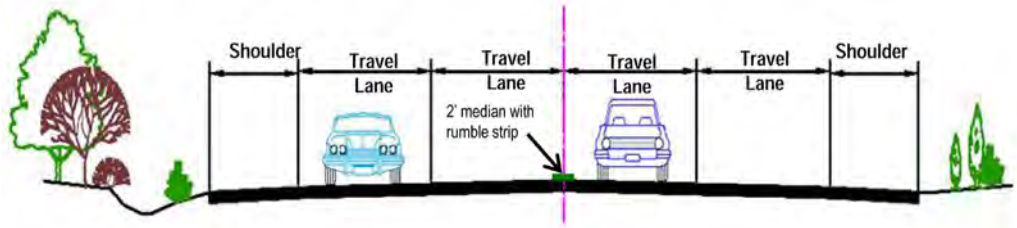
Through Segment 2, the long-range vision includes safety and mobility improvements developed for SR 3, depending on area development, traffic needs, and the rural nature of the segment.

Section A: SR 3 from Mason Lake Road to Pickering Road – The vision for this section includes:

- Four-lane highway with eight-foot outside shoulders and rumble strips
- Improve intersections as warranted with roundabouts, signals, and/or added channelization
- Provide intersection spacing in accordance with WSDOT's access management requirements and limit driveways to right-in/right-out
- Provide a two-foot centerline median with rumble strip.

Exhibit 4-5

Typical Cross Section - SR 3
(Mason Lake Road to Pickering Road)



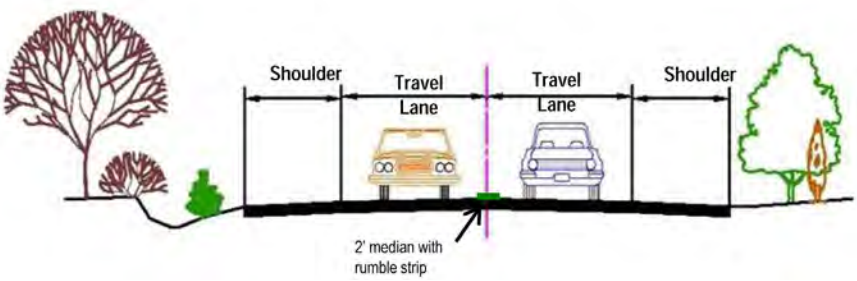
Segment 2 - Section A Conceptual Design

Section B: SR 3 from Pickering Road to the north intersection of Grapeview Loop Road – This vision includes:

- Maintain a two-lane highway with twelve-foot lanes and eight-foot outside shoulders with rumble strips
- Improve intersections as warranted with roundabouts, signals, and/or added channelization
- Upgrade bridges as necessary to meet new roadway configurations
- Provide intersection spacing in accordance with WSDOT's access management requirements
- Provide a two-foot centerline median with rumble strip
- Provide passing lanes as warranted to maintain traffic flow by allowing safe passing of slower moving vehicles.

Exhibit 4-6

Typical Cross Section - SR 3
(Pickering Road to Grapeview Loop Road)



Segment 2 - Section B Conceptual Design

What is the vision for Segment 3?

The vision for Segment 3 through the Allyn and Belfair area, included safety and mobility improvements developed in accordance with community involvement and planned improvements from the Belfair Bypass Study and the SR 3 Belfair Area Widening and Safety Improvements Project.

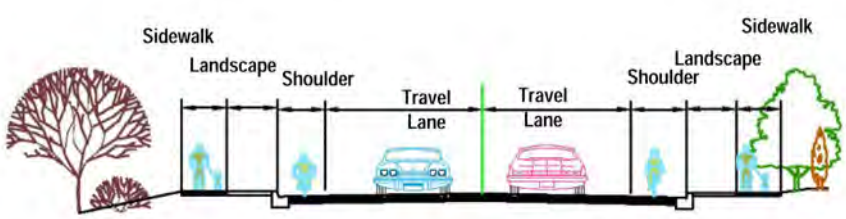
Section A: SR 3 from Grapeview Loop Road to North Bay Road (Downtown Allyn Area) – The vision for this section includes:

- An urban two-lane highway section with a five-foot shoulder, curbs, gutters, and sidewalks
- A landscaping area may be added where there is sufficient right-of-way and land owners agree to maintain it.

Traffic forecasts for the Allyn area indicate the long-term need for a four-lane facility through the community. However, a four-lane highway is inconsistent with the community context and the Allyn Community Association expressed a preference to pursue a long-term, through traffic by-pass rather than expanding the current roadway to four lanes through Allyn. Further study is needed to determine the most appropriate alternate route.

Exhibit 4-7

Typical Cross Section - SR 3 (Downtown Allyn Area)



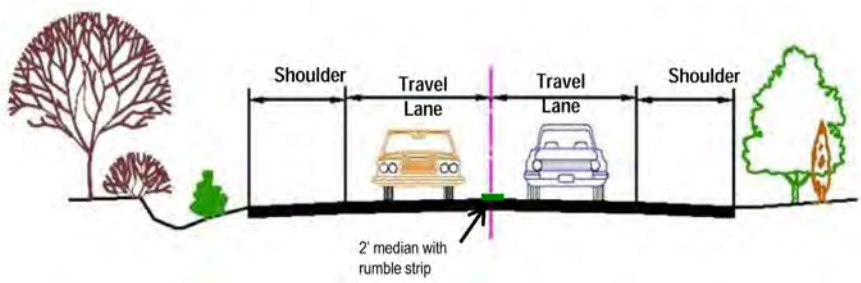
Segment 3 - Section A Conceptual Design With Optional Landscaping Area

Section B: SR 3 from North Bay Road to Belfair & south of Allyn -
The vision for this section includes:

- Maintain a two-lane highway with twelve-foot lanes and eight-foot outside shoulders with rumble strips
- Improve intersections as warranted with additional channelization
- Provide intersection spacing in accordance with WSDOT's access management requirements and limit driveways to right-in/right-out
- Provide a two-foot centerline median with rumble strip.

Exhibit 4-8

Typical Cross Section - SR 3
(Allyn to Belfair & south of Allyn)



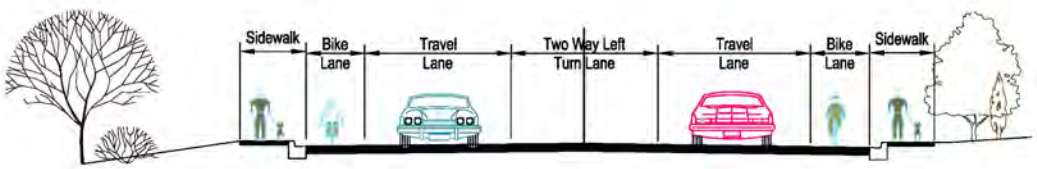
Segment 3 - Section B
SR 3 – Allyn to Belfair Conceptual Design

Section C: SR 3 through Belfair - Planned improvements from the *SR 3 Belfair Area Widening and Safety Improvements Project* were used to develop the vision for this section:

- A two-lane highway with an improved, two-way, left-turn lane and revised access points to reduce congestion and provide more efficient traffic movement
- Improve bicycle and pedestrian safety by adding a bicycle lane and sidewalks
- Add street lighting throughout the section
- New stormwater treatment facilities are proposed to reduce pollutants in highway run-off.

Exhibit 4-9

Typical Cross Section - SR 3 (Belfair Area)



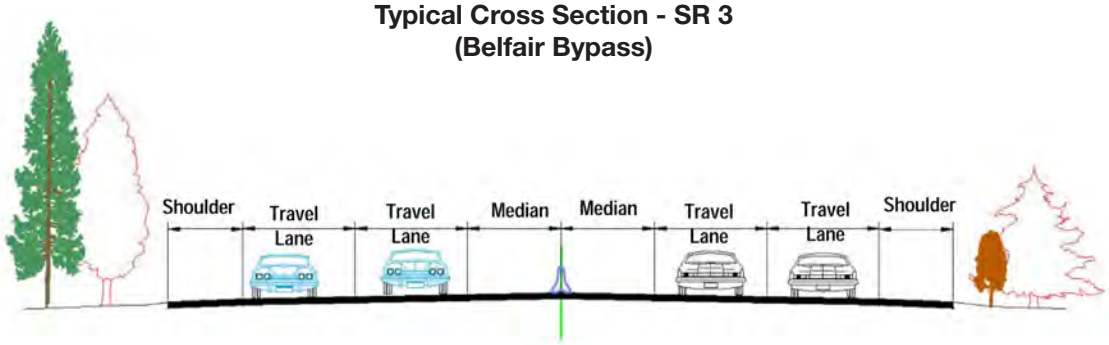
Segment 3 - Section C Conceptual Design
WSDOT – SR 3 Belfair Widening & Safety Project

Section D: SR 3 – Belfair Bypass - Planned improvements from the Belfair Bypass Study were used to develop this vision, which includes:

- A four-lane, divided, limited access bypass around the Belfair area with standard shoulders
- Initially construct as a two-lane highway
- Controlled intersections as warranted based on access management requirements
- New stormwater treatment facilities.

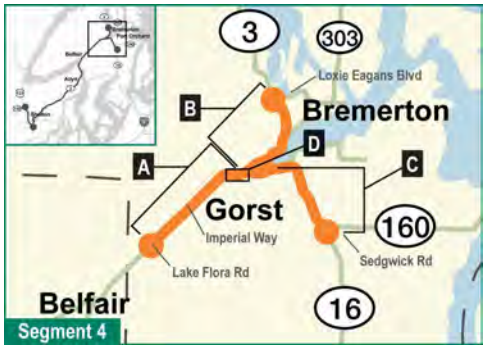
Exhibit 4-10

Typical Cross Section - SR 3 (Belfair Bypass)



Segment 3 - Section D
Belfair Bypass Conceptual Design
WSDOT – Belfair Bypass Project

What is the vision for Segment 4?



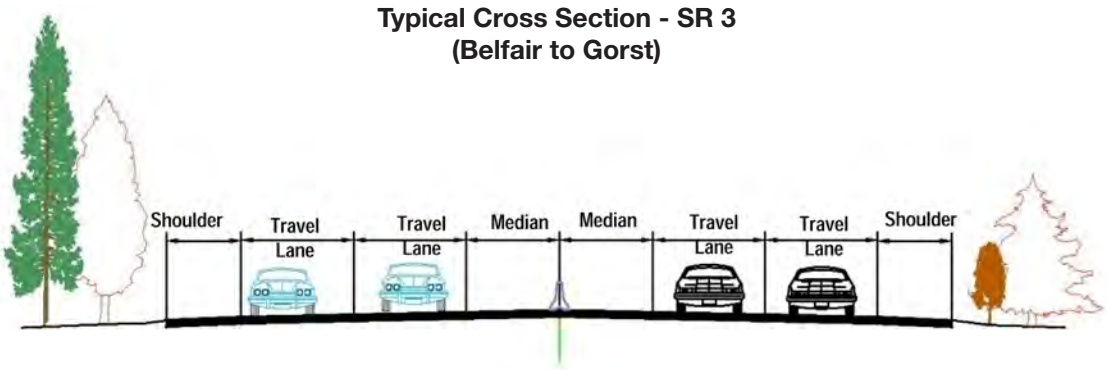
Through Segment 4, the long-range vision includes safety and mobility improvements developed separately for SR 16 and SR 3, and varying by access control and location.

Section A: SR 3 from Belfair area to Gorst - The vision for this section includes:

- From Belfair to Gorst, widen SR 3 to a four-lane, divided highway with full inside and outside shoulders and rumble strips
- Improve intersections as warranted with roundabouts, signals, and/or added channelization
- Provide intersection spacing in accordance with WSDOT's access management requirements and limit driveways to right-in/right-out (U-turn locations will be provided).

Exhibit 4-11

Typical Cross Section - SR 3 (Belfair to Gorst)



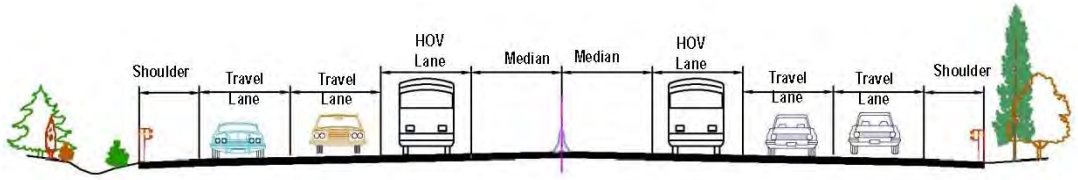
Segment 4 - Section A Conceptual Design

Sections B & C: SR 3 from Gorst to Loxie Eagans Boulevard Interchange and SR 16 from Gorst to Sedgwick Road Interchange -
The vision for this section includes:

- A six-lane, divided, limited access highway, including High Occupancy Vehicle (HOV) lanes and full inside and outside shoulders with rumble strips
- Access will mainly be from interchange locations (other local street and driveway access will be limited to right-in/right-out only).

Exhibit 4-12

Typical Cross Section - SR 3 & SR 16
(SR 3 – Gorst to SR 304 & SR16 – Gorst to SR 160)



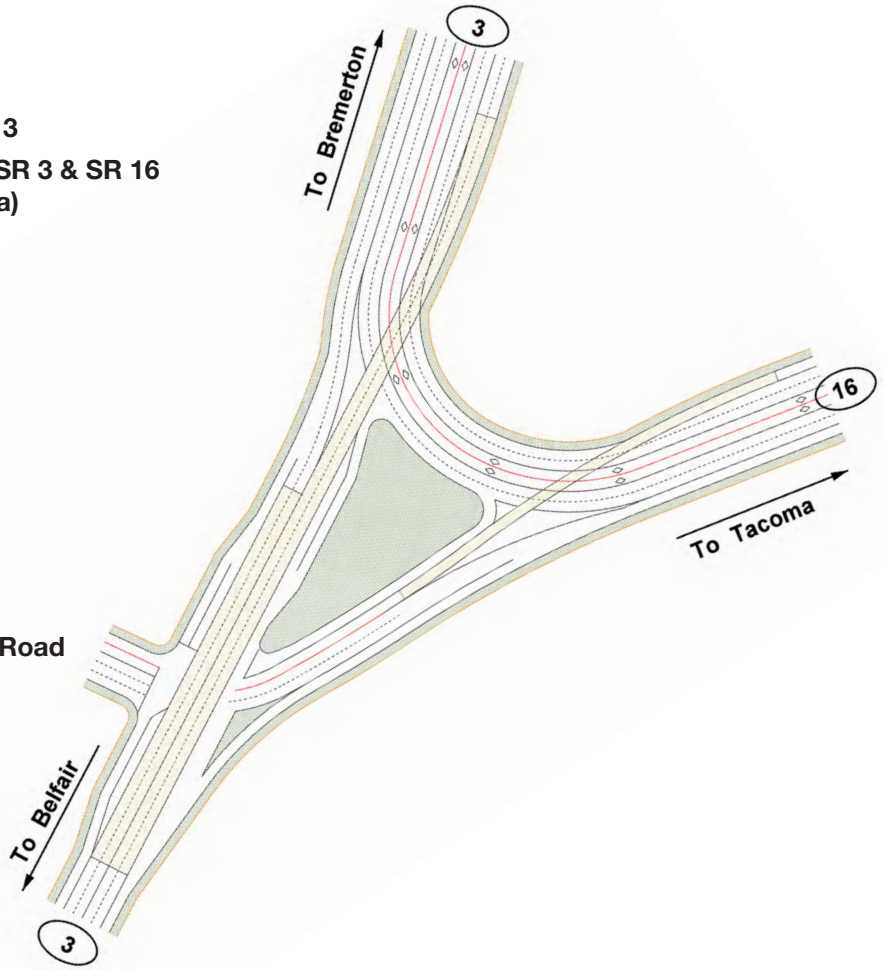
Segment 4 - Sections B & C Conceptual Design

Section D: SR 3 & SR 16 through the Gorst Area - A preliminary concept for the Gorst area improvements for the vision for this area includes:

- Provide a new interchange at the SR 3/Sam Christopherson Road intersection via a four-lane bridge with shoulders extended over Sam Christopherson Road and the SR 16 ramps
- Improve SR 3 ramp terminal intersections with Sam Christopherson Road with new signals and channelization or roundabout
- Provide for continuous HOV lanes from SR 3 to SR 16
- Widen SR 3 and SR 16 ramps to accommodate traffic flows
- Limit access from local streets to right-in/right-out only.

Exhibit 4-13

Conceptual Layout – SR 3 & SR 16 (Gorst Area)



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Chapter 5 – Recommended Improvements

This chapter discusses the methodology and process for identifying and evaluating potential improvement projects. Based on the stakeholders' review of these projects, the recommended improvement projects and their priority are summarized.

How were the potential improvements identified?

Together with input from the public collected as part of the public outreach activities, the stakeholders and project team used the information and data presented in the first three chapters of this corridor plan to identify the proposed mobility and safety improvements outlined in Chapter 4.

The bottlenecks, safety concerns, and roadway conditions were first reviewed on a segment basis. Improvements were developed to address each specific need.

Once a total list of improvements was developed by segment, the list was reviewed to determine if there was proper transition between improvements. The various improvements were then adjusted to ensure compatibility with adjacent improvements.

How were the potential improvements evaluated?

The evaluation methodology for BEDS was designed to provide an unbiased rating for each proposed project to assist in prioritizing the improvements for implementation as funds become available. The methodology and criteria were presented to the stakeholders at their March 18, 2009 meeting. After some discussion, the stakeholders agreed upon the methodology, criteria, and the points allocated to each category.

The methodology is based upon the evaluation criteria used in state, regional, county, and local grant decision processes. These criteria include the following categories:

- Safety
- Constructability
- Congestion/Mobility
- Environmental Impact
- Community Issues

Specific evaluation criteria were developed for each category, based on available data, knowledge of the area, and grant programs. The criteria are listed below by category:

- Safety
  - o Five-Year Period of Total Collisions
  - o Five-Year Period of Total Injury Collisions
  - o Five-Year Period of Total Fatality Collisions
- Constructability
  - o 2008 Planning Level Cost Estimate
  - o Benefit/Cost Ratio
  - o Right-of-Way (ROW) Needed
- Congestion/Mobility
  - o 70% of posted speed limit for segments
  - o LOS E for intersections.
  - o Average Daily Traffic (ADT)
  - o 2020 Level-of-Service without improvement
  - o Non-Motorized Benefit
- Environmental Impact
  - o Wetlands
  - o Cultural Sites
  - o Endangered Species Impacts
  - o Unsafe Soils or Slopes
- Community Issues
  - o Job Creation or Preservation
  - o Community Support
  - o Local Comprehensive Plan Consistency

Based on discussions with the stakeholders, it was agreed that the project team would enter the data for all the categories except "Community Issues," which was the responsibility of the stakeholders to complete. It was also agreed that there would be one score from each stakeholder agency.

After the "Community Issues" category was completed by the stakeholders and submitted to the project team, the project team entered scores into a combined scoring sheet for final tabulation. These final scores were sent to the stakeholders before their April 29, 2009 meeting. This information was used to guide the discussion of project prioritization.

A preliminary set of maximum points available for each category, as well as the scoring method for each criterion is summarized on the following pages. The stakeholders reviewed and approved the categories and criteria, maximum point, and scoring process before it was applied to the project.

EVALUATION CRITERIA & SCORING SUMMARY

Safety: (Maximum Points – 20)
Calculated - Rate per million vehicles miles traveled compared to 2007 WSDOT Olympic Region average rate for similar class of highway:

(Rural Principal Arterial – Olympic Region)

- Collision Rate 1.15
- Injury Collision 0.39
- Fatality Collision 2.20

- Five-Year Average Rate - Total Collisions
- Five-Year Average Rate – Injury Collisions
- Five-Year Average Rate - Fatality Collisions

Safety Scoring:
5 = > twice average
4 = 10% more to twice average
3 = around average rate
2 = 50% to 90% of average
1 = 1% to 50% of average
0 = < 1% of average

Constructability: (Maximum Points – 15)

- 2008 Planning Level Cost Estimate
- Benefit/Cost Ratio – Based on WSDOT planning level benefit cost analysis
- ROW Needed - Based on rough planning estimate

2008 Cost Scoring
5 = Tier 1 - < $5M
4 = Tier 2 - $5M to $15M
3 = Tier 2 - $15M to $25M
2 = Tier 3 - $25M to $40M
1 = Tier 3 - >$40M

Benefit Cost Scoring
5 = > 2.5
4 = 1.1 to 2.5
3 = 0.9 to 1.1
2 = 0.6 to 0.9
1 = < 0.6

Right of Way Scoring
5 = < 0.5 acre
4 = 0.5 to 1 acre
3 = 1 to 2 acres
2 = 2 to 3 acres
1 = 3 to 4 acres
0 = > 4 acres

Congestion/Mobility: (Maximum Points - 40)

- ADT (PM peak hour volumes times 10)
- 2020 Level-of-Service without improvement (Based on the 2000 Highway Capacity Manual analysis procedures)
- Non-Motorized Benefit

ADT Scoring
5 = > 60,000
4 = 40,000 to 60,000
3 = 25,000 to 40,000
2 = 10,000 to 25,000
1 = < 10,000

Level-of-Service (LOS) Scoring
5 = LOS >F-
4 = LOS F-
3 = LOS F minimum
2 = LOS E
1 = LOS < D

Non-Motorized Scoring
5 = dedicated non-motorized facility
3 = shared use facility (shoulders/intersection)
1 = little or no improvement

Environmental Impact: (Maximum Points - 10)
Based on currently available plans from county wetland and sensitive designated areas, national wetland data, and wildlife areas

- Wetland Impacts
- Cultural Site Impacts
- Species Impacts
- Unsafe Soils or Slopes

Environmental Scoring
5 = little or no adverse impact potential
3 = moderate adverse impact potential
1 = high adverse impact potential

Community Issues: (Maximum Points – 15)

- Job Creation or Preservation (qualitative evaluation based on personal knowledge)
- Community Support (qualitative evaluation based on personal knowledge)
- Local Comprehensive Plan Consistency (based on project consistency with current state, regional, and local agency plans)

Job Creation & Community Support Scoring
5 = high potential
3 = moderate potential
1 = low potential

Plan Consistency Scoring
5 = consistent with state, regional, and local plans
3 = consistent with two of the three plans
1 = consistent with one plan
0 = not included in any current plans

What are the evaluation results?

Using the safety information, the 2020 traffic volumes, level-of-service analysis, conceptual level cost estimates, benefit/cost analysis, right-of-way, and environmental impacts associated with each of the potential improvements along the corridor, the project team scored the safety, constructability, congestion/mobility, and environmental categories. The stakeholders evaluated the community issues category, using their knowledge of the area, project benefits, and public comments.

The project list and final scores are presented in Exhibit 5-1. These scores ranged from a high of 75 points out of a possible 100 points for two projects to a low of 46 points. The two highest scoring projects included:

- Project 20 - Intersection improvement at the SR 3/Imperial Way intersection near the Bremerton National Airport
- Project 33 - Non-motorized improvements along SR 3 in Belfair that connects to the funded Belfair widening project.

Exhibit 5-1
Summary of Project Evaluation Scoring

	Proposed Project	Location		Project Issues	Category Scores					
Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	Safety 20 points	Construct-ability 15 points	Congestion/ Mobility 40 points	Environ-mental 10 points	Community Issues 15 points	Total Score
1	**US 101 Widening** - Widen to 4-lanes from Wallace Kneeland Blvd to Shelton Matlock Rd; improvements for Matlock Rd interchange; limited access, freeway section	345.40	347.11	Rural congestion: travel speed will be less than 70% of posted speed by 2020	12	3	16	10	15	59
2	**US 101 Widening** - Widen to 4-lanes from Shelton Matlock Rd to SR 3; limited access, freeway section	347.11	349.16	Rural congestion: travel speed will be less than 70% of posted speed by 2020	13	2	16	9	15	57
3	**US 101/SR 102** - Intersection improvements; Install roundabout or traffic signal, based on detailed traffic study and warrants	343.44	343.44	Extensive delay (average 473 sec) on SR 102 at the intersection with 912-ft queue in 2020 (total intersection approach volume = 1,535 in peak hour)	12	11	24	10	12	69
4	**US 101 SB Ramps/Wallace Kneeland Blvd** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	345.12	345.12	Average intersection delay = 116 sec (WB delay 211 sec) in 2020 (total intersection approach volume = 1,505 in peak hour)	5	11	21	10	12	60
5	**US 101 NB Ramps/Wallace Kneeland Blvd** - Intersection improvements; install traffic signal or roundabout, based on detailed traffic study and warrants	345.12	345.12	Ramp queue length and delay exceed analysis limitations, Expect ramp backups onto mainline US 101 delaying all northbound traffic in 2020. (total intersection approach volume = 2,500 in peak hour)	3	15	29	10	15	72

Exhibit 5-1
Summary of Project Evaluation Scoring - Continued

	Proposed Project	Location		Project Issues	Category Scores					
Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	Safety 20 points	Construct-ability 15 points	Congestion/ Mobility 40 points	Environ-mental 10 points	Community Issues 15 points	Total Score
6	**US 101 SB Ramps/Shelton** - Matlock Road - Intersection improvements; Install new SB off ramp; install traffic signal or roundabout, based on detailed traffic study and warrants	346.82	346.82	SB Off-Ramp delay = 36 sec for 87 vehicles in 2020. (total intersection approach volume = 1,100 in peak hour)	5	15	19	10	13	62
7	**US 101 NB Ramps/Shelton** - Matlock Road - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	3462.8	346.82	NB Off-Ramp left turn delay = 739 sec for 324 vehicles in 2020 with a queue length of 630 feet. (total intersection approach volume = 1,344 in peak hour)	4	15	27	10	11	67
8	**SR 3/Johns Prairie Road** - Intersection improvements including relocating intersection to the south ; improve intersection angle; and add in new roadway link	6.57	6.57	Johns Prairie EB approach delay = 736 sec with 870-foot queue length and 362 vehicles in 2020; safety issues; geometric issues for turning movements; natural feature limitations (total intersection approach volume = 1,700 in peak hour)	13	8	27	9	12	69
9	**SR 3/Mason Lake Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	7.24	7.24	Mason Lake Rd. SB approach delay = 271 sec with 189 vehicles (including 251-foot queue length and 557 sec delay for left turns) in 2020 (total intersection approach volume = 1,800 in peak hour)	13	10	24	9	11	67

Exhibit 5-1
Summary of Project Evaluation Scoring - Continued

	Proposed Project	Location		Project Issues	Category Scores					
Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	Safety 20 points	Construct-ability 15 points	Congestion/ Mobility 40 points	Environ-mental 10 points	Community Issues 15 points	Total Score
10	**SR 3/Cranberry Creek Road** - (Interim) Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	8.76	8.76	East Cranberry Creek Rd. SB approach delay = 158 sec for 26 vehicles; NB approach delay = 157 sec for 7 vehicles in 2020 (total intersection approach volume = 1,828 in peak hour)	5	14	24	10	9	62
11	**SR 3/Agate Road** – (Interim) Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	8.99	8.99	East Agate Rd. NB approach delay = 602 sec with 551 feet queues for 231 vehicles in 2020 (total intersection approach volume = 1,860 in peak hour)	7	11	27	10	13	67
12	**New County Road & Improved SR 3 Intersection** - (Long-term) Install new county connector roadways to combine traffic from Cranberry Creek Rd, Deer Creek Rd, and Agate Rd; install roundabout or traffic signal at common point for traffic movements with SR 3, limit access at other locations to right-in/right-out. (This project replaces SR 3/ Agate Rd and SR 3/Cranberry Creek Rd projects)	8.76	8.99	Extensive delays on the side streets; intersection spacing too close to meet recommended spacing	11	9	27	9	10	65
13	**SR 3/Pickering Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	10.76	10.76	East Pickering Rd NB approach delay = 317 sec with 400 feet queues for 222 vehicles in 2020 (total peak hour approach volume = 1,500)	13	11	24	10	12	70

Exhibit 5-1
Summary of Project Evaluation Scoring - Continued

	Proposed Project	Location		Project Issues	Category Scores					
Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	Safety 20 points	Construct-ability 15 points	Congestion/ Mobility 40 points	Environ-mental 10 points	Community Issues 15 points	Total Score
14	**SR 3 Safety Improvements** - Widen shoulders from Pickering Rd to Grapeview Loop Rd; install SB left-turn lane at South Grapeview Loop Rd; install NB right-turn lane at North Grapeview Loop Rd; add passing lanes	10.76	20.32	Lack of shoulders; vehicle and pedestrian access issues, emergency vehicle access during incident.	11	2	16	7	10	46
15	**SR 3/Grapeview Loop Road (north intersection)** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	20.32	20.32	E Grapeview Loop Rd EB approach delay = 141 sec with 85 feet queues for 29 vehicles in 2020; WB approach delay = 33 sec with 64 feet queues for 110 vehicles in 2020 (total peak hour approach volume = 1,300)	13	11	21	8	10	64
16	**SR 3 Safety Improvements** - Standardizing shoulders from Grapeview Loop Rd to Sherwood Creek Rd	20.32	20.48	Lack of non-motorized facilities, vehicle and pedestrian access issues, emergency vehicle access during incident	13	11	16	8	10	58
17	**SR 3 Allyn Non-motorized Improvements** - Install sidewalks, curbs, gutters within Allyn business zone	20.48	21.17	Lack of non-motorized facilities	11	8	21	9	15	64
18	**SR 3/Lakeland Drive/Evans Street** - Intersection improvements; install traffic signal, based on detailed traffic study and warrants	20.93	20.93	East Lakeland Dr EB approach delay = 263 sec with 218 feet queues for 97 vehicles in 2020; Evans St WB approach delay = 42 sec for 7 vehicles in 2020 (total approach volume = 1,570 in peak hour)	13	11	24	10	15	73

Exhibit 5-1
Summary of Project Evaluation Scoring - Continued

	Proposed Project	Location		Project Issues	Category Scores					
Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	Safety 20 points	Construct-ability 15 points	Congestion/ Mobility 40 points	Environ-mental 10 points	Community Issues 15 points	Total Score
19	**SR 3/North Bay Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	21.24	21.24	East North Bay Dr WB approach delay = 205 sec with 316 feet queues for 210 vehicles in 2020; wye intersection (total approach volume = 1,490 in peak hour)	13	13	24	10	14	74
20	**SR 3/Imperial Way** - Intersection improvements by adding additional channelization improvements	30.51	30.51	Extensive Delay at the intersection; average delay = 413 sec with intersection v/c ratio = 2.7 (total peak hour approach volume = 3,265)	13	15	24	10	13	75
21	**SR 3 Widening** - Widen to 4 lanes from Imperial Way to Sunnyslope Rd	30.51	32.60	Exceed maximum throughput in 2020; travel speed will be less than 70% of posted speed by 2020	9	7	29	9	11	66
22	**SR 3 Widening** - Widen to 4 lanes from Sunnyslope Rd to Gorst	32.60	34.18	High traffic volumes on a 2/3 lane facility cause congestion	12	7	24	9	12	64
23	**SR 3/Sunnyslope Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	32.60	32.60	Sunnyslope Rd queue length and delay exceed analysis limitations in 2020; WB left turn on SR 3 delay = 68 sec with 142-foot queues (total peak hour approach volume = 3,560)	12	15	24	10	10	71
24	**SR 3 Widening** – Eliminate lane drop on SR 16 to northbound SR 3 by extending the lane north of the railroad bridge and extend the northbound SR 3 lane for longer merge area (interim)	34.81	35.04	Various lane drops and the merging leads to congestion (Gorst area interim improvement)	8	5	27	8	13	61

Exhibit 5-1
Summary of Project Evaluation Scoring - Continued

	Proposed Project	Location		Project Issues	Category Scores					
Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	Safety 20 points	Construct-ability 15 points	Congestion/ Mobility 40 points	Environ-mental 10 points	Community Issues 15 points	Total Score
25	**SR 3 Widening** - Widen to 6 lanes (creating one HOV lane in each direction) from Gorst to SR 304	34.26	36.59	Exceed maximum throughput by 2020; travel speed will be less than 70% of posted speed by 2020 (Gorst area improvement)	5	6	27	7	12	57
26	**SR 3/Sam Christopherson Road** - (Interim Intersection Improvements to meet 2008 demand) Intersection improvements - provide channelization or signal modifications or replace with a roundabout, based on detailed safety and traffic warrant analysis.	34.26	34.26	2008 Level of Service of E; 2020 average intersection delay = 428 sec with v/c ratio = 2.12 and queues ranging from 162 feet to 3,670 feet (total intersection approach volume = 3,970 in peak hour) (Gorst area interim improvement)	5	15	29	10	10	70
27	**SR 3/Sam Christopherson Road** - 2020 Intersection improvements - provide channelization or signal modifications or replace with a roundabout, based on detailed safety and traffic warrant analysis.	34.26	34.26	LOS F by 2020 with interim improvements; 2020 average intersection delay = 428 sec with v/c ratio = 2.12 and queues ranging from 162 feet to 3,670 feet (total intersection approach volume = 3,970 in peak hour) (Gorst area interim improvement)	5	14	29	10	12	71
28	**SR 16 Ramps/Sedgwick Road** - Widen Sedgwick Rd to 4 lanes plus turn lanes	25.14	25.14	NB ramp average intersection delay = 93 sec with v/c ratio = 1.44 queue > 620 feet and cross street queues > 1,393 ft; SB ramp average delay = 108 sec with queues of 142 to >967 ft	9	7	24	9	13	62
29	**SR 16 Ramps/Tremont Street** - Widen Tremont St to 4 lanes, install new signals at both NB and SB ramp interchanges	26.69	26.69	NB off ramp average delay 2,306 sec with backup onto SR 16; SB off ramp average delay = 673 with queues of 2,107 ft	4	9	29	9	14	65

Exhibit 5-1
Summary of Project Evaluation Scoring - Continued

	Proposed Project	Location		Project Issues	Category Scores					
Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	Safety 20 points	Construct-ability 15 points	Congestion/ Mobility 40 points	Environ-mental 10 points	Community Issues 15 points	Total Score
30	**SR 16 Widening** - Widen to 6-lanes (creating one HOV lane in each direction) from SR 160 to SR 166 and re-strip from SR 166 to Gorst	25.14	29.05	50% of posted speed in 2020 (part of Gorst area improvement)	7	5	27	7	11	56
31	**Belfair Bypass** - Construct an alternate 2-lane divided highway around Belfair to be eventually widened to 4-lanes with full limited access control; access points will be located at about 1 mile intervals	23.26	28.78	Ramp queue length and delay exceed analysis limitations, Expect ramp backups onto main line US 101 delaying all northbound traffic in 2020 (total intersection approach volume = 2,500 in peak hour)	13	5	21	7	15	62
32	**Belfair Area Safety & Widening Improvements** - Widen existing 2-lane roadway to add two-way left turn lane (TWLTL) with a bike lane and sidewalk in each direction	24.91	26.34	SB Off-Ramp delay = 36 sec for 87 vehicles in 2020 (total intersection approach volume = 1,100 in peak hour)	13	6	27	9	15	70
33	**SR 3 Belfair Additional Non** - Motorized Improvements - Widen exiting 2-lane roadway to include a bike lane and sidewalk in each direction	26.34	27.98	NB Off-Ramp left turn delay = 739 sec for 324 vehicles in 2020 with a queue length of 630 feet (total peak hour approach volume = 1,344)	13	10	27	10	15	75
35A	**Extend SB SR 3 Through SR 304 Interchange** - Extend SB SR 3 two-lanes though SR 304 Interchanges and adjust SR 304 SB ramp to merge instead of add lane.	35.85	36.75	Traffic congestion at bottle neck where SR 3 narrows to one lane southbound	9	9	21	9	15	64
35	Revise SR 3/SR 304 Interchanges to allow for HOV lanes	35.85	36.75	Exceeds highway capacity	9	4	21	9	15	59

How were the improvements prioritized?

The project information including safety, traffic, congestion, costs and other impacts, as well as the evaluation scoring results and public comments from the outreach activities were presented to the stakeholders at their April 29, 2009 meeting. After a lengthy discussion about the pros and cons of the alternatives, scoring criteria, and public comments, the stakeholders decided that highest priority should focus on improvements to three major safety and bottleneck locations, as identified through the public outreach activities and interviews with stakeholder agencies. These three locations include the Belfair area, the Gorst area, and the SR 3/Johns Prairie Road intersection. The stakeholders believed that improvements to these three locations would benefit overall traffic operations and encourage economic activity along the corridor.

The three projects noted above are generally the most constrained and consequently more expensive, which resulted in lower evaluation scores. However, the stakeholders agreed that if sufficient funds are available, these projects should be considered first. If funding is not sufficient for these improvements then lower cost improvements on the prioritized lists should receive any available funding.

The stakeholders then decided that the prioritization of the remaining projects would follow the evaluation scores, based on safety, constructability, congestion, environmental overview, and community issues.

What are the recommended 2020 improvements?

The stakeholders reviewed the project list and identified the following projects as their top priorities:

- **Project 31 - Belfair Bypass –** Construct an alternate 2-lane divided highway around Belfair to be eventually widened to 4 lanes with full limited access control; access points will be located at approximately one-mile intervals.
- **Project 8 - SR 3/Johns Prairie Road –** Relocate the intersection to the south to improve the intersection angle and add a new roadway link.

Gorst Area Improvements - Widen all roadways through the Gorst area to six lanes with HOV lanes, grade separate Sam Christopherson Road/SR 3 intersection, and widen SR 3 and SR 16 ramps to accommodate future traffic flows. This vision would include the following improvements:

- **Project 26 - SR 3/Sam Christopherson Road** – (to meet existing demand) provide intersection improvements such as re-channelization and signal modifications or replace with roundabout, based on detailed geometric, safety and traffic analyses of the intersection (interim).
- **Project 27 - SR 3/Sam Christopherson Road** – (to meet projected 2020 demand) provide intersection improvements such as re-channelization, additional lanes, and signal modifications or replace with a roundabout, based on detailed geometric, safety and traffic analyses of the intersection (interim).
- **Project 24 - SR 3 Widening –** Eliminate lane drop on SR 16 to northbound SR 3 by extending the lane north of the railroad bridge, rebuild the railroad bridge, and extend the northbound SR 3 lane for a longer merge area (interim).
- **Project 25 - SR 3 Widening –** Widen to 6 lanes (creating one HOV lane in each direction) from Gorst to SR 304 and rebuild SR 304/SR 3 interchange.

- **Project 30 - SR 16 Widening –** Widen to 6 lanes by adding one HOV lane in each direction from SR 160 to SR 166 and re-stripe from SR 166 to Gorst.
- **Project 34 - SR 3/Sam Christopherson Interchange –** Grade-separate the SR 3/Sam Christopherson Road intersection by building a new interchange.
- **Project 35 - SR3/SR304 Interchange –** Rebuild the interchange to provide additional lanes along SR 3.
- **Project 36 - SR 3 Widening –** Widen to 6 lanes by adding one HOV lane in each direction from SR 304 to Loxie Eagans Interchange and maintain the NB drop lane to off-ramp to Loxie Eagans Boulevard.

As noted under "What are the recommended improvements" page 4, the stakeholders recognized that the above projects would be costly and take time to implement. With this recognition, the BEDS stakeholders also endorsed a list of projects that are less costly and would be potentially easier and quicker to construct. This list of projects can be found in Exhibit 5-2, below.

Depending upon economic conditions within the next five to ten years, it may be necessary to reevaluate and update the project list if future traffic conditions along the corridor evolve differently than anticipated in this study.

The complete list of improvement projects to meet 2020 needs by priority ranking is presented in Exhibit 5-2.

Exhibit 5-2
Priority of Corridor Improvements

		Proposed Project	Location		Project Issues	2008 Planning Level Cost Estimate *
Priority Ranking	Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	($ Millions)
1	31	**Belfair Bypass** - Construct an alternate 2-lane divided highway around the town of Belfair; this highway will be designed to 4-lanes with full limited access controlled but initially built to 2-lanes; access points will be located at approximately 1 mile intervals; R/W will be acquired for 4-lane design	23.26	28.78	Existing travel speed is less than 70% of the posted speed; a large amount of through traffic on SR 3 travelling through a congested developing area	$76m (2007 $ from Belfair Bypass Project)
2	8	**SR 3/Johns Prairie Road** - Intersection improvements - relocate intersection to the south; improve the intersection angle; and add in new roadway link	6.57	6.57	Johns Prairie Rd EB approach delay = 736 sec with 870-foot queue length and 362 vehicles in 2020; safety issues; geometric issues for turning movements; natural feature limitations (total peak hour approach volume = 1,700)	$20m (2009 $ from Mason County)
3	**Gorst Area Improvements** (includes the following projects)				Congestion along all roadways through Gorst area; travel speed less than 70% of posted speed.	
3	35A	**Extend SB SR 3 Through SR 304 Interchange** - Extend SB SR 3 two-lanes though SR 304 Interchanges and adjust SR 304 SB ramp to merge instead of add lane.	35.85	36.75	Traffic congestion at bottle neck where SR 3 narrows to one lane southbound	$19m
	26	**SR 3/Sam Christopherson Road** – (Interim Intersection Improvements to meet 2008 demand) Intersection improvements – provide channelization or signal modifications or replace with a roundabout, based on detailed safety and traffic warrant analysis.	34.26	34.26	2008 Level of Service of E; 2020 average intersection delay = 428 sec with v/c ratio = 2.12 and queues ranging from 162 feet to 3,670 feet (total intersection approach volume = 3,970 in peak hour)	$3m

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Exhibit 5-2
Priority of Corridor Improvements - Continued

		Proposed Project	Location		Project Issues	2008 Planning Level Cost Estimate *
Priority Ranking	Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	($ Millions)
3	27	**SR 3/Sam Christopherson Road** - 2020 Intersection improvements - provide channelization or signal modifications or replace with a roundabout, based on detailed safety and traffic warrant analysis.	34.26	34.26	LOS F by 2020 with interim improvements; 2020 average intersection delay = 428 sec with v/c ratio = 2.12 and queues ranging from 162 feet to 3,670 feet (total intersection approach volume = 3,970 in peak hour)	$6m
	24	**SR 3 Widening** - Eliminate lane drop on SR 16 to northbound SR 3 by extending the lane north of the railroad bridge and extend the northbound SR 3 lane for longer merge area (interim)	34.81	35.05	Various lane drops and the merging leads to congestion	$23m
	25	**SR 3 Widening** - Widen to 6 lanes (creating one HOV lane in each direction) from Gorst to SR 304.	34.26	36.59	Exceed maximum throughput; travel speed will be less than 70% of posted speed by 2020	$258m
	30	**SR 16 Widening** - Widen to 6-lanes (creating one HOV lane in each direction) from SR 160 to SR 166 and re-strip from SR 166 to Gorst	25.14	29.05	Rural congestion: travel speed will be less than 70% of posted speed by 2020	$145m
	34	**SR 3/Sam Christopherson Interchange** - Construct a new interchange to grade separating the SR 3/Sam Christopherson Road intersection and widen the SR 16 Spur	34.26	34.67	Exceed maximum throughput by 2030	$63m
	35	**SR 3/SR 304 Interchange** - Reconstruct interchange	36.59	36.60	Exceed maximum throughput	$48m
	36	**SR 3 Widening** - Widen to 6 lanes (creating one HOV lane in each direction) from SR 304 to Loxie Eagans Boulevard; and maintain the northbound auxiliary lane.	34.51	37.31	Exceed maximum throughput by 2030; travel speed will be less than 70% of posted speed by 2030	$31m

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Exhibit 5-2
Priority of Corridor Improvements - Continued

		Proposed Project	Location		Project Issues	2008 Planning Level Cost Estimate *
Priority Ranking	Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	($ Millions)
4	20	**SR 3/Imperial Way** - Intersection improvements; add additional channelization improvements	30.51	30.51	Extensive delay at the intersection; average delay = 413 sec with intersection v/c ratio = 2.7 (total intersection approach volume = 3,265 in peak hour)	$2m
	33	**SR 3 Belfair Additional Non-Motorized Improvements** - Widen exiting 2-lane roadway to include a bike lane and sidewalk in each direction with a closed drainage system from Old Belfair Highway to Belfair northern limit	26.34	27.08	Lack of non-motorized facilities in a developing area	$3m
5	19	**SR 3/North Bay Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	21.24	21.24	East North Bay Dr WB approach delay = 205 sec with 316 feet queues for 210 vehicles in 2020; wye intersection (total intersection approach volume = 1,490 in peak hour)	$2m
6	18	**SR 3/Lakeland Drive/ Evans Street** - Intersection improvements; install traffic signal, based on detailed traffic study and warrants	20.93	20.93	East Lakeland Dr EB approach delay = 263 sec with 218 feet queues for 97 vehicles in 2020; Evans St WB approach delay = 42 sec for 7 vehicles in 2020; (total intersection approach volume = 1,570 in peak hour)	$2m
7	5	**US 101 NB Ramps/Wallace Kneeland Boulevard** - Intersection improvements; install traffic signal or roundabout, based on detailed traffic study and warrants	345.12	345.12	Ramp queue length and delay exceed analysis limitations, expect ramp backups onto mainline US 101 delaying all northbound traffic in 2020 (total intersection approach volume = 2,500 in peak hour)	$2m

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Exhibit 5-2
Priority of Corridor Improvements - Continued

		Proposed Project	Location		Project Issues	2008 Planning Level Cost Estimate *
Priority Ranking	Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	($ Millions)
8	**23**	**SR 3/Sunnyslope Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	32.60	32.60	Sunnyslope Rd queue length and delay exceed analysis limitations in 2020; WB left turn on SR 3 delay = 68 sec with 142-foot queues (total intersection approach volume = 3,560 in peak hour)	$2m
9	**13**	**SR 3/Pickering Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	10.76	10.76	East Pickering Rd NB approach delay = 317 sec with 400 feet queues for 222 vehicles in 2020 (total intersection approach volume = 1,500 in peak hour)	$2m
10	**3**	**US 101/SR 102** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	343.44	343.44	Extensive delays (average 473 sec) on SR 102 at the intersection with 912-ft queue in 2020 (total intersection approach volume = 1,535 in peak hour)	$2m

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Exhibit 5-2
Priority of Corridor Improvements - Continued

		Proposed Project	Location		Project Issues	2008 Planning Level Cost Estimate *
Priority Ranking	**Project Number**	**Description of Improvement**	**From Milepost**	**To Milepost**	**Problems / Bottlenecks / Congestion / Delays**	**($ Millions)**
11	**11**	**SR 3/Agate Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	8.99	8.99	East Agate Rd NB approach delay = 602 sec with 551 feet queues for 231 vehicles in 2020 (total intersection approach volume = 1,860 in peak hour)	$2m
	9	**SR 3/Mason Lake Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	7.24	7.24	Mason Lake Rd SB approach delay = 271 sec with 189 vehicles (including 251-foot queue length and 557 sec delay for left turns) in 2020 (total intersection approach volume = 1,800 in peak hour)	$2m
	7	**US 101 NB Ramps/Shelton** - Matlock Road - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	346.82	346.82	NB off-ramp left turn delay = 739 sec for 324 vehicles in 2020 with a queue length of 630 feet (total intersection approach volume = 1,344 in peak hour)	$2m
12	**21**	**SR 3 Widening** - Widen to 4 lanes from Imperial Way to Sunnyslope Rd	30.51	32.60	Exceed maximum throughput in 2020; travel speed will be less than 70% of posted speed by 2020	$57m

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Exhibit 5-2
Priority of Corridor Improvements - Continued

		Proposed Project	Location		Project Issues	2008 Planning Level Cost Estimate *
Priority Ranking	Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	($ Millions)
13	12	**New County Road & Improved SR 3 Intersection** - Install new county connector roadways to combine traffic from Cranberry Creek Rd, Deer Creek Rd and Agate Rd; install roundabout or traffic signal at common point for traffic movements with SR 3, limit access at other locations to right-in/right-out (This project replaces Project SR 3/Agate Rd and SR 3/Cranberry Creek Rd projects)	8.76	8.99	Extensive delays on the side streets	$9m
	29	**SR 16 Ramps/Tremont Street** - Widen Tremont St to 4 lanes; install new signals at both NB and SB ramp interchanges	26.69	26.69	NB off-ramp average delay 2,306 sec with backup onto SR 16; SB off-ramp average delay = 673 with queues of 2,107 feet	$16m
14	15	**SR 3/Grapeview Loop Road** (north intersection) - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	20.32	20.32	East Grapeview Loop Rd EB approach delay = 141 sec with 85 feet queues for 29 vehicles in 2020; WB approach delay = 33 sec with 64 feet queues for 110 vehicles in 2020 (total peak hour approach volume = 1,300)	$2m
	17	**SR 3 Allyn Non-Motorized Improvements** - Install sidewalks, curbs, and gutters within Allyn business zone	20.48	21.17	Lack of non-motorized facilities	$8m
	22	**SR 3 Widening** - Widen to 4 lanes from Sunnyslope Rd to Gorst	32.60	34.18	High traffic volumes on a 2/3 lane facility cause congestion	$52m

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Exhibit 5-2
Priority of Corridor Improvements - Continued

		Proposed Project	Location		Project Issues	2008 Planning Level Cost Estimate *
Priority Ranking	Project Number	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays	($ Millions)
15	6	**US 101 SB Ramps/Shelton** - Matlock Road - Intersection improvements; install new SB off-ramp; install traffic signal or roundabout, based on detailed traffic study and warrants	346.82	346.82	SB off-ramp delay = 36 sec for 87 vehicles in 2020 (total intersection approach volume = 1,100 in peak hour)	$3m
	10	**SR 3/Cranberry Creek Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	8.76	8.76	East Cranberry Creek Rd SB approach delay = 158 sec for 26 vehicles; NB approach delay = 157 sec for 7 vehicles in 2020 (total intersection approach volume = 1,828 in peak hour)	$2m
	28	**SR 16 Ramps/Sedgwick Road** - Widen Sedgwick Rd to 4 lanes plus turn lanes	25.14	25.14	NB ramp average intersection delay = 93 sec with v/c ratio = 1.44 queue > 620 feet and cross street queues > 1,393 ft; SB ramp average delay = 108 sec with queues ranging from 142 ft to >967 feet	$16m
16	4	**US 101 SB Ramps/Wallace Kneeland Blvd.** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	345.12	345.12	Average intersection delay = 116 sec (WB delay 211 sec) in 2020 (total intersection approach volume = 1,505 in peak hour)	$2m
17	1	**US 101 Widening** - Widen to 4-lanes from Wallace Kneeland Blvd to Shelton Matlock Rd; improvements for Matlock Rd interchange; limited access - freeway section	345.4	347.11	Rural congestion: travel speed will be less than 70% of posted speed by 2020	$55m
18	16	**SR 3 Safety Improvements** - Standardizing shoulders from East Grapeview Loop Road to Sherwood Creek Road	20.32	20.48	Lack of non-motorized facilities, vehicle and pedestrian access issues	$2m

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Exhibit 5-2
Priority of Corridor Improvements - Continued

		Proposed Project	Location		Project Issues	2008 Planning Level Cost Estimate *
Priority Ranking	**Project Number**	**Description of Improvement**	**From Milepost**	**To Milepost**	**Problems / Bottlenecks / Congestion / Delays**	**($ Millions)**
19	**2**	**US 101 Widening** - Widen to 4-lanes from Shelton Matlock Rd to SR 3; improvements to the SR 3 interchange; limited access - freeway section	347.11	349.16	Rural congestion: travel speed will be less than 70% of posted speed by 2020	$58m
20	**14**	**SR 3 Safety Improvements** - Widen shoulders from Pickering Rd to Grapeview Loop Rd; install SB left-turn lane at South Grapeview Loop Rd; install NB right-turn lane at North Grapeview Loop Rd; and add passing lanes, as warranted	10.76	20.32	Lack of shoulders; vehicle and pedestrian access issues	$72m
PROJECT PREVIOUSLY FUNDED						
	32	**Belfair Area Safety & Widening Improvements** - Widen exiting 2-lane roadway to a 3-lane roadway (including two-way left turn lane (TWLTL)) with a bike lane and sidewalk in each direction with a closed drainage system from SR 106 to Old Belfair Hwy.	24.91	26.34	Existing travel speed is less than 70% of the posted speed; left-turning traffic slowing travel speed through the Belfair area; lack of non-motorized facilities in a developing area	$19m

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Are there other associated recommendations?

As part of the BEDS process, other transportation modes and facility improvements were discussed and reviewed. Based on this review, the following additional transportation improvement projects are supported by the stakeholders:

- Expanded park & ride facilities, especially in the SKIA area, are needed to encourage transit and carpools and reduce traffic along the corridor.
- Expanded transit service is also recommended as the SKIA industrial area grows and develops.
- Encourage local agencies to develop off-roadway trails, such as the Sinclair Inlet Trail Project, to provide alternative routes for pedestrians and bicyclists and avoid conflicts with vehicular traffic through heavily congested areas.

In addition to these improvements, another recommendation is to add an Active Traffic Management (ATM) system for the Gorst area. An ATM system represents a wide range of technologies and strategies that may be used to optimize traffic operations during periods of peak travel demand or when incidents and events occur that affect traffic operations and safety. An ATM system can be a highly cost-effective strategy to improve the efficiency and safety of the state highways in the Gorst area. An ATM system may include:

- **Variable Speed Limit Signs.** These are electronic speed limit signs that would enable WSDOT to temporarily reduce the speed of traffic on SR 16 and SR 3 during congested periods or when incidents occur that create unsafe conditions. The benefit of these signs would be to improve safety and maximize vehicle throughput during congested periods or when incidents occur.
- **Advanced Traveler Information Signs.** These are electronic variable message signs that provide travelers with information regarding travel conditions ahead. The safety benefit of these signs are that they warn travelers of conditions ahead, such as congestion ahead, lane blockages or incidents, while enabling travelers to choose alternate routes to avoid the incidents or delays.

- **Ramp Metering.** Ramp metering of the on-ramps can be an effective way to manage mainline congestion and improve safety during periods of peak travel demand. Ramp metering would control the quantity and frequency of traffic merging onto the state highways during congested periods. Ramp meters help reduce severe bottlenecks that form where on-ramps merge onto limited access state highways during congested periods, and maximize the number of vehicles that the state highways can handle without inducing gridlock.

  Managing the volume of traffic entering a limited access state highway improves safety by reducing the frequency of merge-related collisions.

  Ramp metering can also provide opportunities for transit and HOV bypass lanes on the on-ramps. However, ramp metering could degrade mobility on the local street system unless sufficient ramp meter storage space is provided on the ramps. The effects of implementing ramp metering without adding sufficient ramp storage can be long traffic queues on the local street system potentially resulting in the diversion of trips to other routes. The lack of available storage space on the existing ramps in the study area should be a primary consideration if ramp metering is implemented. To avoid local roadway queuing problems, a significant rebuild and lengthening of the on-ramps would be required.

These technologies would be used to improve the efficiency of SR 16 and SR 3 and provide travelers with real-time information about roadway conditions, congestion, and incidents so they can make better decisions about how and when to use these highways and when to use alternate routes or other modes of travel.

How will the improvements be implemented?

Overall, the BEDS Plan identified 36 projects needed to meet the corridor vision and 2020 needs. Of these projects, only one is partially funded. With the current recession, the available revenue needed to implement these improvements is very limited and cannot fund all of the projects in the near term. To assist with the implementation of the improvements, an action matrix was developed based on the guidelines outlined in WSDOT's 2007 Planning Studies Guidelines and Criteria Report. This action matrix, as presented in Exhibit 5-3, lists the project by their priority and classifies them in terms of the Washington Transportation Guidelines and the Highway System Plan implementation strategies.

Exhibit 5-3
BEDS Implementation Action Matrix

Priority Ranking	State Route/ Project Number	Recommendation	WTP Investment Guideline P=Preservation S=Safety EV=Econ. Vitality M=Mobility EQ=Environ. Qual.	HSP Implementation 1 = Tier 1 2 = Tier 2 3 = Tier 3	Estimated Costs 2008 ($-millions) *	Funding Source	Funding Programmed (Biennium)	Agency responsible for securing funding	Partners/ Resources
1	**SR 3/31**	**Belfair Bypass** - Construct an alternate 2-lane divided highway around the town of Belfair; this highway will be designed to 4-lanes with full limited access controlled but initially built to 2-lanes; access points will be located at approximately 1 mile intervals; R/W will be acquired for 4-lane design	**S/M/EV**	**3**	**$76m (2007 $ from Belfair Bypass Project)**	TBD	TBD	TBD	Mason County
2	**SR 3/8**	**SR 3/Johns Prairie Road** - Intersection improvements - relocate intersection to the south; improve the intersection angle; and add in new roadway link	**S**	**1**	**$20m (2009 $ from Mason County)**	TBD	TBD	Mason County	WSDOT, Shelton

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Exhibit 5-3
BEDS Implementation Action Matrix - Continued

Priority Ranking	State Route/ Project Number	Recommendation	WTP Investment Guideline P=Preservation S=Safety EV=Econ. Vitality M=Mobility EQ=Environ. Qual.	HSP Implementation 1 = Tier 1 2 = Tier 2 3 = Tier 3	Estimated Costs 2008 ($-millions) *	Funding Source	Funding Programmed (Biennium)	Agency responsible for securing funding	Partners/ Resources
3	**Gorst Area Improvements (includes the following projects)**		**S/M/EV**						
3	**SR 3/35A**	**Extend SB SR 3 Through SR 304 Interchange** - Extend SB SR 3 two-lanes though SR 304 Interchanges and adjust SR 304 SB ramp to merge instead of add lane.	**S / M**	**1**	**$19m**	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit
	SR 3/26	**SR 3/Sam Christopherson Road** - (Interim Intersection Improvements to meet 2008 demand) Intersection improvements - provide channelization or signal modifications or replace with a roundabout, based on detailed safety and traffic warrant analysis.	**S/M**	**1**	**$3m**	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit
	SR 3/27	**SR 3/Sam Christopherson Road** - 2020 Intersection improvements - provide channelization or signal modifications or replace with a roundabout, based on detailed safety and traffic warrant analysis**.**	**S/M**	**1**	**$6m**	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit

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Exhibit 5-3
BEDS Implementation Action Matrix - Continued

Priority Ranking	State Route/ Project Number	Recommendation	WTP Investment Guideline P=Preservation S=Safety EV=Econ. Vitality M=Mobility EQ=Environ. Qual.	HSP Implementation 1 = Tier 1 2 = Tier 2 3 = Tier 3	Estimated Costs 2008 ($-millions) *	Funding Source	Funding Programmed (Biennium)	Agency responsible for securing funding	Partners/ Resources
	SR 3/24	**SR 3 Widening** - Eliminate lane drop on SR 16 to northbound SR 3 by extending the lane north of the railroad bridge and extend the northbound SR 3 lane for longer merge area (interim)	**S/M/EV**	**2**	**$23m**	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit

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Exhibit 5-3
BEDS Implementation Action Matrix - Continued

Priority Ranking	State Route/ Project Number	Recommendation	WTP Investment Guideline P=Preservation S=Safety EV=Econ. Vitality M=Mobility EQ=Environ. Qual.	HSP Implementation 1 = Tier 1 2 = Tier 2 3 = Tier 3	Estimated Costs 2008 ($-millions) *	Funding Source	Funding Programmed (Biennium)	Agency responsible for securing funding	Partners/ Resources
3	**SR 3/25**	**SR 3 Widening** - Widen to 6 lanes (creating one HOV lane in each direction) from Gorst to SR 304	**M/EV**	**3**	**$258m**	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit, Puget Sound Naval Shipyard
	SR 16/30	**SR 16 Widening** - Widen to 6-lanes (creating one HOV lane in each direction) from SR 160 to SR 166 and re-strip from SR 166 to Gorst	**M/EV**	**3**	**$145m**	TBD	TBD	Kitsap County, Port Orchard, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit
	SR 3/34	**SR 3/Sam Christopherson Interchange** - Construct a new interchange to grade separating the SR 3/Sam Christopherson Road intersection and widen the SR 16 Spur	**M**	**3**	**$63m**	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit

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Exhibit 5-3
BEDS Implementation Action Matrix - Continued

Priority Ranking	State Route/ Project Number	Recommendation	WTP Investment Guideline P=Preservation S=Safety EV=Econ. Vitality M=Mobility EQ=Environ. Qual.	HSP Implementation 1 = Tier 1 2 = Tier 2 3 = Tier 3	Estimated Costs 2008 ($-millions) *	Funding Source	Funding Programmed (Biennium)	Agency responsible for securing funding	Partners/ Resources
3	SR 3	**SR 3/SR 304 Interchange** - Reconstruct interchange	M	3	$48m	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit, Puget Sound Naval Shipyard
	SR 3	**SR 3 Widening** - Widen to 6 lanes (creating one HOV lane in each direction) from SR 304 to Loxie Eagans Boulevard; and maintain the northbound auxiliary lane	M/EV	3	$31m	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit, Puget Sound Naval Shipyard
4	SR3/20	**SR 3/Imperial Way** - Intersection improvements; add additional channelization improvements	S/M	1	$2m	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit

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Exhibit 5-3
BEDS Implementation Action Matrix - Continued

Priority Ranking	State Route/ Project Number	Recommendation	WTP Investment Guideline P=Preservation S=Safety EV=Econ. Vitality M=Mobility EQ=Environ. Qual.	HSP Implementation 1 = Tier 1 2 = Tier 2 3 = Tier 3	Estimated Costs 2008 ($-millions) *	Funding Source	Funding Programmed (Biennium)	Agency responsible for securing funding	Partners/ Resources
4	**SR3/33**	**SR 3 Belfair Additional Non-Motorized Improvements** - Widen exiting 2-lane roadway to include a bike lane and sidewalk in each direction with a closed drainage system from Old Belfair Highway to Belfair northern limit	**S**	**1**	**$3m**	TBD	TBD	Mason County	WSDOT, Shelton
5	**SR3/19**	**SR 3/North Bay Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	**S/M**	**1**	**$2m**	TBD	TBD	Mason County	WSDOT, Port of Allyn
6	**SR 3/18**	**SR 3/Lakeland Drive/Evans Street** - Intersection improvements; install traffic signal, based on detailed traffic study and warrants	**S/M**	**1**	**$2m**	TBD	TBD	Mason County	WSDOT, Port of Allyn
7	**US 101/5**	**US 101 NB Ramps/Wallace Kneeland Boulevard** - Intersection improvements; install traffic signal or roundabout, based on detailed traffic study and warrants	**S/M**	**1**	**$2m**	TBD	TBD	Mason County, Shelton	WSDOT, Port of Shelton, Mason Transit

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Exhibit 5-3
BEDS Implementation Action Matrix - Continued

Priority Ranking	State Route/ Project Number	Recommendation	WTP Investment Guideline P=Preservation S=Safety EV=Econ. Vitality M=Mobility EQ=Environ. Qual.	HSP Implementation 1 = Tier 1 2 = Tier 2 3 = Tier 3	Estimated Costs 2008 ($-millions) *	Funding Source	Funding Programmed (Biennium)	Agency responsible for securing funding	Partners/ Resources
8	SR 3/23	**SR 3/Sunnyslope Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	S/M	1	$2m	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit
9	SR 3/13	**SR 3/Pickering Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	S/M	1	$2m	TBD	TBD	Mason County	WSDOT, Mason Transit
10	US 101/3	**US 101/SR 102** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	S/M	1	$2m	TBD	TBD	Mason County, Shelton	WSDOT, Port of Shelton, Mason Transit
11	SR 3/11	**SR 3/Agate Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	S/M	1	$2m	TBD	TBD	Mason County	WSDOT, Mason Transit
	SR 3/9	**SR 3/Mason Lake Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	S/M	1	$2m	TBD	TBD	Mason County	WSDOT, Mason Transit

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BEDS Implementation Action Matrix - Continued

Priority Ranking	State Route/ Project Number	Recommendation	WTP Investment Guideline P=Preservation S=Safety EV=Econ. Vitality M=Mobility EQ=Environ. Qual.	HSP Implementation 1 = Tier 1 2 = Tier 2 3 = Tier 3	Estimated Costs 2008 ($-millions) *	Funding Source	Funding Programmed (Biennium)	Agency responsible for securing funding	Partners/ Resources
11	**US 101/7**	**US 101 NB Ramps/Shelton-Matlock Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	**S/M**	**1**	**$2m**	TBD	TBD	Mason County, Shelton	WSDOT, Port of Shelton, Mason Transit
12	**SR 3/21**	**SR 3 Widening** - Widen to 4 lanes from Imperial Way to Sunnyslope Rd	**S/M/EV**	**3**	**$57m**	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit
13	**SR 3/12**	**New County Road & Improved SR 3 Intersection** - Install new county connector roadways to combine traffic from Cranberry Creek Rd, Deer Creek Rd and Agate Rd; install roundabout or traffic signal at common point for traffic movements with SR 3, limit access at other locations to right-in/right-out (This project replaces Project SR 3/Agate Rd and SR 3/Cranberry Creek Rd projects)	**M**	**2**	**$9m**	TBD	TBD	Mason County	WSDOT, Mason Transit

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BEDS Implementation Action Matrix - Continued

Priority Ranking	State Route/ Project Number	Recommendation	WTP Investment Guideline P=Preservation S=Safety EV=Econ. Vitality M=Mobility EQ=Environ. Qual.	HSP Implementation 1 = Tier 1 2 = Tier 2 3 = Tier 3	Estimated Costs 2008 ($-millions) *	Funding Source	Funding Programmed (Biennium)	Agency responsible for securing funding	Partners/ Resources
13	SR 16/29	**SR 16 Ramps/Tremont Street** - Widen Tremont St to 4 lanes; install new signals at both NB and SB ramp interchanges	S/M	2	$16m	TBD	TBD	Kitsap County, Port Orchard	WSDOT, Kitsap Transit
14	SR 3/15	**SR 3/Grapeview Loop Road** (north intersection) - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	S/M	1	$2m	TBD	TBD	Mason County	WSDOT, Mason Transit
	SR 3/17	**SR 3 Allyn Non-Motorized Improvements** - Install sidewalks, curbs, and gutters within Allyn business zone	S	1	$8m	TBD	TBD	Mason County	WSDOT, Mason Transit
	SR 3/22	**SR 3 Widening** - Widen to 4 lanes from Sunnyslope Rd to Gorst	S/M/EV	3	$52m	TBD	TBD	Kitsap County, Bremerton	WSDOT, Port of Bremerton, Kitsap Transit
15	101/6	**US 101 SB Ramps/Shelton-Matlock Road** - Intersection improvements; install new SB off-ramp; install traffic signal or roundabout, based on detailed traffic study and warrants	S/M	1	$3m	TBD	TBD	Mason County	WSDOT, Mason Transit

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BEDS Implementation Action Matrix - Continued

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15	**3/10**	**SR 3/Cranberry Creek Road** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	**S/M**	**1**	**$2m**	TBD	TBD	Mason County	WSDOT, Mason Transit
15	**16/28**	**SR 16 Ramps/Sedgwick Road** - Widen Sedgwick Rd to 4 lanes plus turn lanes	**S/M**	**2**	**$16m**	TBD	TBD	Kitsap County, Port Orchard	WSDOT, Kitsap Transit
16	**101/4**	**US 101 SB Ramps/Wallace Kneeland Blvd.** - Intersection improvements; install roundabout or traffic signal, based on detailed traffic study and warrants	**S/M**	**1**	**$2m**	TBD	TBD	Mason County, Shelton	WSDOT, Port of Shelton, Mason Transit
17	**101/1**	**US 101 Widening** - Widen to 4-lanes from Wallace Kneeland Blvd to Shelton Matlock Rd; improvements for Matlock Rd interchange; limited access - freeway section	**M**	**3**	**$55m**	TBD	TBD	Mason County, Shelton	WSDOT, Port of Shelton, Mason Transit
18	**3/16**	**SR 3 Safety Improvements** - Standardizing shoulders from East Grapeview Loop Road to Sherwood Creek Road	**S**	**1**	**$2m**	TBD	TBD	Mason County	WSDOT, Mason Transit

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19	**101/2**	**US 101 Widening** - Widen to 4-lanes from Shelton Matlock Rd to SR 3; improvements to the SR 3 interchange; limited access - freeway section	**M**	**3**	**$58m**	TBD	TBD	Mason County, Shelton	WSDOT, Port of Shelton, Mason Transit
20	**3/14**	**SR 3 Safety Improvements** - Widen shoulders from Pickering Rd to Grapeview Loop Rd; install SB left-turn lane at South Grapeview Loop Rd; install NB right-turn lane at North Grapeview Loop Rd; and add passing lanes, as warranted	**S**	**1**	**$72m**	TBD	TBD	Mason County	WSDOT, Mason Transit
Currently Funded	**3/32**	**Belfair Area Safety & Widening Improvements** - Widen exiting 2-lane roadway to a 3-lane roadway (including two-way left turn lane (TWLTL)) with a bike lane and sidewalk in each direction with a closed drainage system from SR 106 to Old Belfair Hwy	**S/M**	**1**	**$19m**	State Gas Tax	2014	WSDOT	Mason County

** The preliminary project costs are for planning purposes only and should be viewed as a starting point when determining a final cost estimate for a proposed project. The preliminary project costs were created to help the stakeholders prioritize projects for the Bremerton Economic Development Study. The preliminary project costs are in 2008 dollars, are planning level, and are not based on engineering analysis. They do not account for potential environmental mitigation (including right-of-way), rising material costs, or other unforeseen expenditures that may occur during design or construction. Cost to meet water quality is difficult to estimate without more design and may be higher than estimated. Also unknown utility relocation or undergrounding of utilities will increase the costs. These factors may increase the final costs of individual projects.*

What are the long-term (beyond 2020) improvements?

To meet the mobility needs of the area and to implement the long-range vision for the study corridors, additional improvements are needed along US 101, SR 3, and SR 16. The study team has identified additional projects that need further study. These long-range projects are listed in Exhibit 5-4.

Exhibit 5-4
Additional Long-Range Projects to Meet Transportation Needs Beyond 2020

	Proposed Project	Location		Project Issues
Segment	Description of Improvement	From Milepost	To Milepost	Problems / Bottlenecks / Congestion / Delays
1	**US 101 Widening from SR 102 to Wallace Kneeland Boulevard** - Widen from 2 lanes to 4 lanes	343.44	347.11	Rural congestion: travel speed will be less than 70% of posted speed by 2030
1	**SR 3 Widening from US 101 to south Shelton City limits** - Widen from 2 lanes to 4 lanes	0.00	1.58	Rural congestion: travel speed will be less than 70% of posted speed by 2030
1	**SR 3 Widening from south of Johns Prairie Road to Mason Lake Road** - Widen from 2 lanes to 4 lanes	5.00	7.24	Rural congestion: travel speed will be less than 70% of posted speed by 2030
2	**SR 3 Widening from Mason Lake Road to Pickering Road** - Widen from 2 lanes to 4 lanes	7.24	10.76	Rural congestion: travel speed will be less than 70% of posted speed by 2030
2	**SR 3/Mason Benson Road** - Intersection improvements; install roundabout, traffic signal, and/or additional channelization, based on detailed traffic study and warrants	14.24	14.24	Intersection LOS F by 2030
3	**SR 3 Improvements from Grapeview Loop Road to Belfair** - Traffic forecasts show traffic congestion through the Allyn area by 2030; further study is needed to investigate traffic flows through the Allyn area and determine appropriate solution	20.32	24.91	Congestion: travel speed will be less than 70% of posted speed by 2030
4	**SR 3 Widening from Belfair to Imperial Way** - Widen from 2 lanes to 4 lanes	28.78	30.51	Exceed maximum throughput by 2030; travel speed will be less than 70% of posted speed by 2030
4	**SR 3/Imperial Way** - Intersection improvements; additional channelization or grade separation may be needed to meet 2030 LOS standards; Monitor traffic increases to determine when further improvements are needed.	30.51	30.51	Exceed maximum throughput by 2030; Intersection LOS F by 2030 with interim improvements
4	**SR 3 Widening from Belfair to Imperial Way** - Widen to 4 lanes as a divided highway; restrict access to right-in/ right-out	27.08	30.51	Exceed maximum throughput by 2030

Chapter 6 – Next Steps

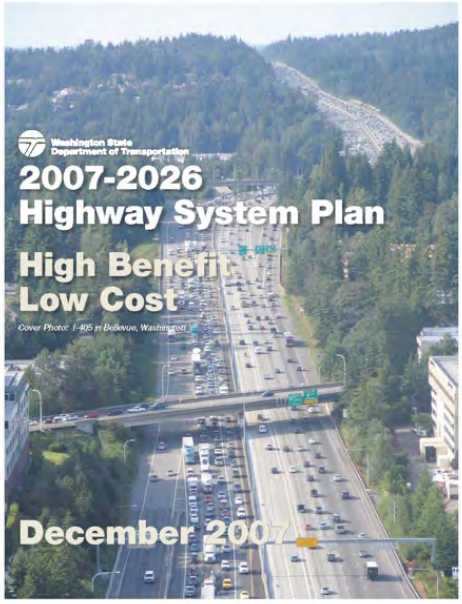
What are the next steps?

This chapter presents an overview of the next steps towards integration with other plans, obtaining project funding, and initiating implementation of the BEDS vision for study corridors.

The Bremerton Economic Development Study (BEDS) was initiated to identify transportation improvements to support the growth and employment projections within the study area. Existing and projected traffic volumes were analyzed, current safety issues were identified, and local agencies and area residents were invited to participate in the process with their assessments of the transportation issues in the corridor.

However, revenue to implement the identified improvements is very limited. Specific actions that should be taken to position the BEDS proposed improvements for future implementation include:

- Incorporate the BEDS recommended improvements in the State Highway System Plan (HSP) and the regional plan (Transportation 2040)
- Incorporate the BEDS recommended improvements, as appropriate, in county and city comprehensive plans
- Adopt a cooperative funding strategy with WSDOT and stakeholders.



What are the State's Transportation Policy Goals?

In 2007, the Washington State Legislature and the Governor created five investment policies for planning, operations, performance, and investment in the state's transportation system as outlined in RCW 47.04.280 (derived from Senate Bill 5412). A sixth policy goal was added by the legislature in 2010. Investment in the state transportation system must support one or more of the following policy goals:

- **Economic Vitality:** To promote and develop transportation systems that stimulate, support, and enhance the movement of people and goods to ensure a prosperous economy.
- **Preservation:** To maintain, preserve, and extend the life and utility of prior investments in transportation systems and services.
- **Safety:** To provide for and improve the safety and security of transportation customers and the transportation system.
- **Mobility:** To improve the predictable movement of goods and people throughout Washington state.
- **Environment:** To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment.
- **Stewardship:** To continuously improve the quality, effectiveness, and efficiency of the transportation system.

Washington Transportation Plan (WTP) - 2007-2026

The 2007-2026 Washington Transportation Plan (WTP) is the long range, multimodal transportation plan for the state.

The WTP covers all modes in the transportation system and is required by state and federal law. The current plan covers the period from 2007-2026. Because the plan projects nearly $38 billion in unfunded needs, it has established guiding principles for investments in current and future facilities. The guiding principles in the WTP largely reflect the policy goals adopted by the State Legislature in RCW 47.04.280 (see discussion on previous page under "Transportation Policy Goals"). According to the 2007-2026 Washington Transportation Plan, current law funding for the 20-year WTP period provides approximately $29 billion for transportation projects, including the 2003 Nickel Package and the 2005 Transportation Partnership Act (TPA).

Highway System Plan (HSP)

The Highway System Plan addresses current and forecasted needs for state-owned and operated highways in the state of Washington. As a "living" document, the HSP is updated every two years. The recommendations from studies such as this SR 518 Route Development Plan Amendment help provide the basis for each new iteration of the HSP.

The HSP contains a constrained and unconstrained section. The constrained section lists projects and revenue that would be available to fund the projects. The unconstrained section of the HSP lists additional projects and project needs without a funding source.

The HSP project list is re-prioritized every two years as WSDOT prepares its biennial budget. The recommendations contained in this report are currently not included in the HSP.

Why are regional plans important?

Metropolitan Planning Organizations (MPO) and Regional Transportation Planning Organizations (RTPO) have specific responsibilities under both federal and state law relating to transportation and growth management planning. The organizations that perform these planning functions within the study area are the Puget Sound Regional Council (PSRC), the MPO for Kitsap, King, Pierce, and Snohomish Counties and the Peninsula RTPO, which serves Mason, Kitsap, Jefferson, and Clallam Counties.

Transportation 2040 is the current transportation plan adopted by PSRC. This regional plan focuses on the transportation system investments needed to provide an integrated, multimodal transportation system in the Central Puget Sound. For transportation projects to receive federal funding, they must be consistent with and included in these regional transportation plans.

The Peninsula RTPO adopted its Regional Transportation Plan (RTP) in 1995 and last updated it in 2006. The RTPO is currently in the process of updating the entire plan, which is scheduled to be adopted in the summer of 2011. The RTPO intends it to be used as a blueprint for local jurisdictions within the region to develop and coordinate regional transportation priorities to better serve the region's needs as a whole.

Why are local agency plans important?

The two most important reasons a project should be incorporated into a regional plan are:

- It demonstrates to funding agencies that the plan has support at state, regional, and local levels
- It addresses a critical requirement under the Growth Management Act, which requires plans to be consistent between and among jurisdictions.

For which funding sources could the recommended projects compete?

There are a variety of funding sources that can be utilized to fund the BEDS recommendations. Given the current economic climate, coupled with the limited dollars that are available for projects and the stiff competition for available funding; one or all of the sources listed below might be needed to fund the improvements

These sources include:

Local Agency Funding - To be eligible for and competitive in most grant programs, local matching dollars are required – in fact, the more local participants are involved in and support a project financially, the more competitive a grant application can become.

In addition to local matching dollars for grants, some communities have formed transportation benefit districts to raise funds for transportation projects. These districts, formed by the local government(s) through legislative action or a vote of the people, levy a tax for a specific transportation project within that jurisdiction(s).

State law regarding benefit transportation districts should be consulted before such a district is established by the jurisdiction(s).

Development Impact Fees - The use of development impact fees to fund public facilities that are necessary to provide services for new developments and maintain acceptable level-of-service has been widely used in Washington and across the U.S. Development impact fees are one-time charges applied to new developments. Their goal is to raise revenue for the construction or expansion of capital facilities located outside the development to maintain an acceptable level-of-service for all users. Impact fees are assessed and dedicated principally for the provision of additional water and sewer systems, roads, schools, libraries, parks, and recreation facilities made necessary by the presence of new residents in the area. As new developments are approved, consideration should be given to their impact on the operation of local, county, and state highways within the proximity of the new development.

State Funding - The state of Washington also administers a number of funding programs that can be used for transportation projects. The most common source of state grant funds for projects along the BEDS corridors is the Transportation Improvement Board (TIB). "The Washington State Legislature created the Transportation Improvement Board (TIB) to foster state investment in quality local transportation projects. The TIB distributes grant funding, which comes from the revenue generated by three cents of the statewide gas tax, to cities and counties for funding transportation projects."

For the BEDS improvements, these funds can be used by the incorporated cities to lead selected improvement projects within their jurisdictions, such as intersection improvements or parallel street improvements than can divert traffic from the state highway along the corridor.

Federal Funds - One of the most common sources of funding for major highway projects is the federal SAFETEA-LU program or the Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users. "With guaranteed funding for highways, highway safety, and public transportation totaling $244.1 billion, SAFETEA-LU represents the largest surface transportation investment in our nation's history. The two landmark bills that brought surface transportation into the 21st century - the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) - shaped the

highway program to meet the nation's changing transportation needs. SAFETEA-LU builds on this firm foundation, supplying the funds and refining the programmatic framework for investments needed to maintain and grow our vital transportation infrastructure."

Within SAFETEA-LU, the Surface Transportation Program (STP) provides flexible funding that may be used by states and localities for projects on any federal-aid highway. In addition, the Congestion Mitigation and Air Quality Improvement Program (CMAQ) provides a flexible funding source to state and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act.

While there are many sources of federal grants, including direct legislative "earmarks", these two are the most commonly used for projects similar to those along the BEDS corridor.

SAFETEA-LU expired on September 30, 2009. Efforts are currently underway in the U.S. Congress, USDOT, and national organizations to help shape the next act. Each state and Regional Transportation Planning Organization should help shape the act and the types of projects to be funded within the act.

County Road Administration Board - The County Road Administration Board (CRAB) manages three grant programs to help counties meet their transportation needs. The programs are administered with maximum flexibility and minimum overhead.

- **Rural Arterial Program (RAP) -** The RAP is a road and bridge reconstruction funding program that counties compete for every two years within their respective regions. Taken from fuel tax revenues, the account generates approximately $40 million per biennium. Less than 3 percent is used for administration of the program (WAC 136-100).
- **County Arterial Preservation Program (CAPP) –** The CAPP program is designed to help counties preserve their existing paved arterial road networks. The program generates approximately $30 million per biennium. Less than 3 percent of the revenue is spent for administration (WAC 136-300).