
Executive Summary

Given prevailing economic conditions, the revenue from state resources needed to implement these improvement recommendations are either limited or non-existent. This study does not guarantee funding for the proposed improvement recommendations. The improvement recommendations in this study will need to compete with other similar proposed improvements around the state for future funding based on performance outcome. Partner agencies can use the list of improvement recommendations in this corridor study to solicit funding from local, state, federal sources, and the private sector to fund project design, environmental review, right-of-way acquisition, and construction.

Why is WSDOT studying I-90 between Bellevue and North Bend?

WSDOT and the Federal Highway Administration co-manage the Interstate system in Washington State. Any changes to the interstate system, including I-90, require FHWA approval. When the FHWA approved the I-90 Sunset Interchange in 2003, WSDOT agreed to conduct a corridor study before any future significant improvements. The 2005 Washington State Legislature provided \$2 million to conduct this study. The I-90 Corridor Planning Study prioritizes improvements needed during the next 10 to 20 years. These improvements support preservation, maintenance, safety, mobility, and economic development within the corridor.

Why is I-90 important to Washington State?

I-90 is the primary corridor connecting eastern and western Washington. As the primary route east to west, I-90 is critical to the state's economy and vital to the up to 40 million people who travel this corridor each year. I-90 is the only interstate facility that crosses the Cascade Mountain range in Washington State.

I-90 is a critical route in the state, regional, and national transportation networks. It is part of the Federal National Highway System (NHS) and is classified as a route of: Highway of Statewide Significance; T1 Freight Route (carrying more than 10,000 tons annually); and National Scenic Highway (Mountains to Sound Greenway).

What is the I-90 corridor study?

The I-90 corridor study is a planning process used to gather information to determine if improvements are needed to meet existing and future transportation needs. The process includes gathering input from local officials and the public, collecting and analyzing traffic and other data, reviewing existing local plans and their effect on transportation, projecting future travel demand, and evaluating improvement options.

Who was involved in the study?

The study was led by the WSDOT Urban Planning Office with assistance from consultants. WSDOT was further assisted by a stakeholder group. WSDOT formed this stakeholder group to provide input and guidance to the study process. The stakeholder group also acted as a sounding board for the development of the recommendations. They provided valuable insight into the transportation concerns of their respective agencies.

The stakeholder group was comprised of representatives from the city of Bellevue, city of Issaquah, city of Sammamish, city of North Bend, Sound Transit, King County, King County Metro Transit, Puget Sound Regional Council, and the Federal Highway Administration.

The Study Area

The I-90 Corridor Planning Study begins at Eastgate Interchange in Bellevue and ends at the eastern boundary of North Bend (MP 9 to MP 35). This approximately 26 mile section of I-90 connects the cities of Bellevue, Issaquah, Snoqualmie, and North Bend, as well as parts of rural unincorporated King County.

The Study: Corridor Planning Study Policy Foundations

The I-90 Corridor Planning Study considered all six policy goals established by the state legislature in RCW 47.04.280 for WSDOT planning documents: economic vitality, preservation, safety, mobility, environment, and stewardship. In addition, RCW 70.235.020 sets ambitious targets to reduce greenhouse gas (GHG) emissions, and RCW 47.01.440, also adopted in 2008, sets benchmarks to achieve per capita vehicle miles traveled (VMT) reductions over the next 40 years. The VMT benchmarks are per capita reductions of 18 percent by the year 2020, 30 percent by the year 2035, and 50 percent by the year 2050; these are based on an estimated VMT baseline of 75 billion miles in the year 2020.



Moving Washington

The recommendations in this study use the Moving Washington principles for making responsible and sustainable decisions. The recommendations also reflect WSDOT’s commitment to the “triple bottom-line” approach to sustainability by promoting robust economic growth, supporting an integrated multimodal transportation system and environmental stewardship. The recommendations include such sustainability practices as the use of variable speed-limit and lane status signs, proposed roundabouts to improve traffic flow and reduce the risk of fatal and serious collisions as well as reducing emissions, and maximizing the life of the existing pavement before replacement. Moving Washington and the I-90 Corridor Planning Study place the highest priority on maintaining and preserving the safe and long-lasting performance of existing infrastructure, facilities and services. Moving Washington and the I-90 Corridor Planning Study combine three essential transportation strategies to achieve and align our objectives and those of our partners:

- **Operate Efficiently** – This approach gets the most out of existing highways by using traffic-management tools to optimize the flow of traffic and maximize available capacity.
- **Manage Demand** – Whether shifting travel times, using public transportation or reducing the need to travel altogether, managing demand on overburdened routes allows our entire system to function better.
- **Add Capacity Strategically** – Targeting our worst traffic hotspots or filling critical system gaps to best serve an entire corridor, community or region means fixing bottlenecks that constrain the flow.

For more information on Moving Washington, visit our webpage:
www.wsdot.wa.gov/movingwashington/

As we developed the list of near and long-term investments for I-90 between Bellevue and North Bend, we took into consideration the relationship of all the plans and projects (regional, state and federal) for the interstate.

Recommendations

The recommendations identified in the I-90 Corridor Study were proposed recognizing the current financial situation. Although statewide transportation needs are large and growing, financial resources are limited. The graphic below outlines the uses of the gas tax as of July 1, 2008.

This I-90 Corridor Study identifies 12 projects ranging from \$1.6 million to \$61 million dollars. There are four existing safety projects and one existing preservation project already underway in the corridor.

The 12 proposed improvement projects were evaluated based on preservation, maintenance, safety, traffic impacts, constructability, and environmental red flags. Input from the public, stakeholders, and agencies was also taken into consideration during the evaluation process.

The planning level cost estimates are in 2009 dollars and are based on less than one percent design. Several of the recommendations will require more analysis and approval from WSDOT and FHWA. For example, the configuration of a possible new Front Street Interchange will require an Interchange Justification Report that will determine the final configuration.

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

Exhibit ES.1: Transportation Revenue

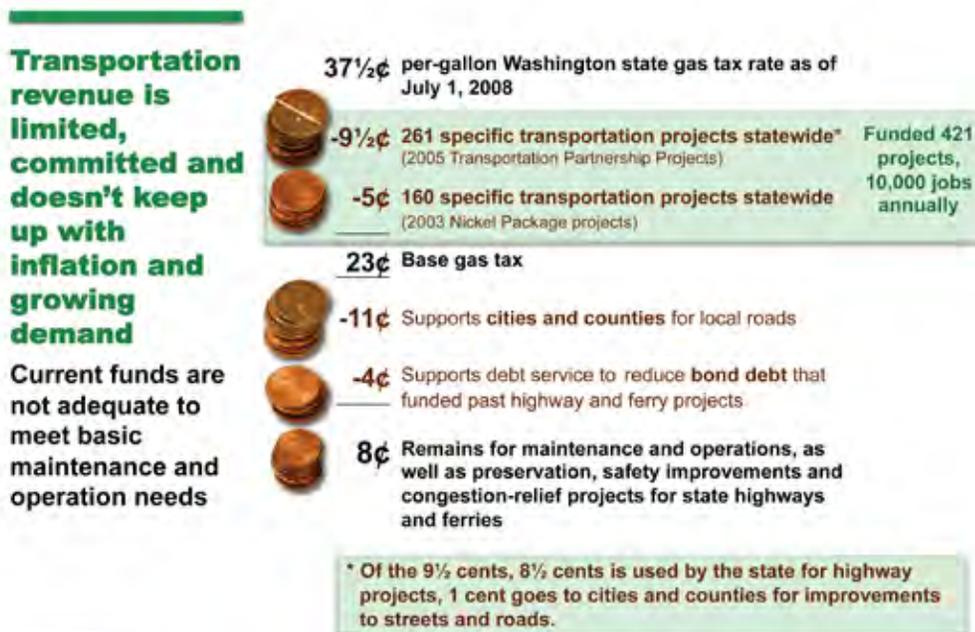


Exhibit ES.2: I-90 Corridor Planning Study Safety and Preservation Projects and Recommended Projects



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|---|---|---|--|
| <ul style="list-style-type: none"> 1. Convert Existing WB & EB HOV into High Occupancy Toll Lanes 2. ATM – Variable Speed Zone and Lane Control 3. I-90/WB W Lake Sammamish Parkway to E Sunset Way Peak Use Shoulder Lane 4. I-90/EB Eastgate to W Lake Sammamish Parkway – Peak Use Shoulder Lane | <ul style="list-style-type: none"> 5. Eastgate Interchange Rechannelization 6. W Lake Sammamish Parkway Roundabout 7. Lakemont Off Ramp Modification 8. Vicinity of 11th/12th Avenue NW Overcrossing/ Direct Access 9. Front Street Interchange Reconstruction 10. Preston-Fall City Road | <p>Ramp Traffic Control</p> <ul style="list-style-type: none"> 11. I-90/SR 18 Interchange ATM – Variable Speed Zone and Lane Control 12. 436th Avenue SE Traffic Control | <ul style="list-style-type: none"> A. Eastgate Interchange Area (signage and guardrail) B. Bridge Seismic Retrofit (Bellevue to Issaquah) C. I-90 ramps/ West Lake Sammamish (new roundabout) D. Preston-Fall City Interchange (guardrail) E. I-90/WB SR 18 Bridge Deck Rehab |
|---|---|---|--|

I-90 Corridor Planning Study Safety and Preservation Projects

Below is a list of existing and programmed safety and preservation projects.

Moving Washington	Project Number		Cost	Construction Phase
Existing Safety Projects				
	A	Eastgate Interchange Area (signage & guardrail)	\$.1 M	2011 Complete
	C	I-90 ramps/West Lake Sammamish (new roundabout)	\$ 1.8 M	2013 Construction
	D	Preston-Fall City Interchange (guardrail)	-	2012 Planning Phase
Keep Safe				
Existing Preservation Projects				
	B	Bridge Seismic Retrofit (Bellevue to Issaquah)	\$ 2.4 M	Construction 2012
	E	I-90/WB SR 18 Bridge Deck Rehab	\$.9 M	Complete 2013
Maintain				

I-90 Corridor Planning Study Recommended Projects¹

Below is a list of proposed improvements that were identified in the corridor study process. They are listed in order of direction, not priority. The planning level cost estimates are based on less than 1% design and the analysis years of 2015 and 2030 were used as for projecting the general timeframe when an improvement is needed to address traffic issues. The recommended projects and planning level cost estimates are listed in the following table. Proposed programming timelines are shown in Table 7-1 on page 165.

Moving Washington	Project Number	Improvement	Cost Estimate (2009 \$)	Analysis Year
 Operate Efficiently and Manage Demand	1	Convert the existing westbound and eastbound High Occupancy Vehicle (HOV) Lanes into High Occupancy Toll (HOT) Lanes	\$19M	2015
	2	Active Traffic Management (ATM) – Variable Speed Zone and Lane Control Eastgate to Sunset	\$27M	2015
 Operate Efficiently	5	Eastgate Interchange Rechannelization (Bellevue)	\$5M	2030
	7	Lakemont Off-Ramp Modification ⁴ Off ramp on the existing eastbound off-ramp	\$3M	2030
	9	Front Street Interchange Reconstruction ²	\$44M – \$66M	2030
	10	Preston-Fall City Ramp Traffic Control ³ Signal or Roundabout	\$4M	2030
	11	Active Traffic Management – Variable Speed Zone and Lane Control I-90/SR 18 Interchange	\$8M	2015
	12	436th Avenue SE Traffic Control ^{3,4} Signals or Roundabouts	\$3M – \$4M	2030
 Add Capacity Strategically	3	I-90/WB W Lake Sammamish Parkway to E Sunset Way – Peak Use Shoulder Lane	\$61M	2015
	4	I-90/EB Eastgate to W Lake Sammamish Parkway Peak Use Shoulder Lane	\$44M	2015
	6	West Lake Sammamish Parkway Roundabout ⁴ Widen existing	\$2M	2030
	8	8a. 11th/12th Avenue NW Overcrossing w/o Direct Access Ramp ² 8b. 11th/12th Avenue NW Overcrossing with Direct Access Ramps ²	\$48M – \$63M	2030

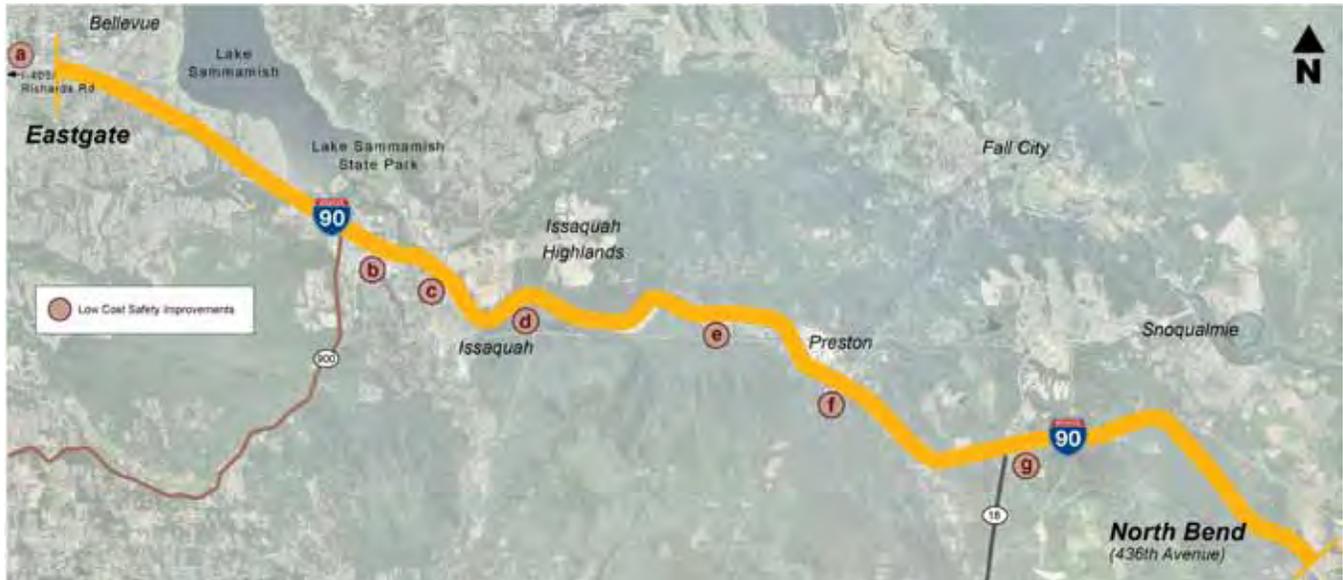
¹ Project Numbers are listed in directional order from west to east, not in order of priority.

² Revised or new access on Limited Access facilities requires an Interchange Justification Report (IJR) with WSDOT and FHWA approval to determine the final configuration.

³ The type of traffic control will be determined at a later date to better reflect future traffic.

⁴ Costs are estimates that were rounded up.

Exhibit ES.3: I-90 Corridor Planning Study Low Cost Safety Projects Improvement Suggestions



- a. I-405/Richards Road (Exit 10)
- b. West Lake Sammamish Parkway SE/
Lakemont Boulevard (Exit 13)
- c. SR 900/NW Sammamish Road (Exit 15)
- d. East Sunset Way/Highlands Drive (Exit 18)
- e. Mainline between Exit 19
- f. Preston-Fall City Road Interchange (Exit 22)
- g. SR 18 Interchange (Exit 25)

I-90 Corridor Planning Study Low Cost Safety Projects Improvement Suggestions

Below is a list of suggested low cost safety projects provided by WSDOT Traffic Engineers. They are listed directionally, not in order of priority.

Moving Washington	Project Number	Improvement Suggestions
		Low Cost Safety Projects Improvement Suggestions*
 Keep Safe		Corridor-Wide Replace multiple guardrail end-pieces throughout the corridor.
	a	I-405/Richards Road (Exit 10) Improve signage for westbound drop lane approaching I-405.
	b	West Lake Sammamish Parkway SE/Lakemont Boulevard (Exit 13) Installation of a sidewalk landing in the northeast corner of the signalized intersection of Newport Way and Lakemont Boulevard to improve safety for pedestrians and cyclists.
	c	SR 900/NW Sammamish Road (Exit 15) Improve signage for eastbound drop lanes approaching SR 900.
	d	East Sunset Way/Highlands Drive (Exit 18) Possible signalization, if warranted, of all movements at the westbound offramp intersection with East Sunset Way. This intersection is currently signalized for left turns only. Signalization of all movements may improve safety for Rainier Trail users by helping to minimize conflict with right-turning vehicles.
	e	Mainline between Exit 19 – Westbound near milepost 19: Install guardrail to reduce traffic exposure of eastern end of concrete wall. – Eastbound near milepost 19: Replace earth-berm at eastern end of guardrail with standard end-piece.
	f	Preston-Fall City Road Interchange (Exit 22) – Installation of guardrail in the median. – Installation of guardrail on the westbound mainline and onramp.
	g	SR 18 Interchange (Exit 25) – Extend ITS as costs allow. – Install a traffic camera at Echo Lake and Tanner. Cameras would provide a view of westbound traffic and weather conditions approaching the SR 18 interchange, and allow the posting of advisory messages. – New/improved signage for eastbound and westbound drop lanes approaching SR 18.

*Improvements suggestions are not included on the map locations in Exhibit 1.1

Next Steps

The I-90 Corridor Planning Study identifies corridor needs that are based on adopted WSDOT thresholds. The I-90 Corridor Planning Study proposes actions to address the identified corridor needs. While this study alone does not guarantee funding, the plan allows future consideration for funding requests to be focused on areas of greatest need in this corridor. These identified areas will compete with other similar locations around the state for future funding based on performance outcome.

Specific actions that should be taken to position the I-90 proposed improvements for future implementation include:

- Incorporate the recommended improvements into the State Highway System Plan (HSP)
- Incorporate the recommended improvements into PSRC's regional transportation plan (Transportation 2040)
- Incorporate the recommended improvements, as appropriate, into county and city comprehensive plans

For more information, visit the project website:

www.wsdot.wa.gov/planning/RDP/I90/EastgateTo465th/

Introduction and Background

Given prevailing economic conditions, the revenue from state resources needed to implement these improvement recommendations are either limited or non-existent. This study does not guarantee funding for the proposed improvement recommendations. The improvement recommendations in this study will need to compete with other similar proposed improvements around the state for future funding based on performance outcome. Partner agencies can use the list of improvement recommendations in this corridor study to solicit funding from local, state, federal sources, and the private sector to fund project design, environmental review, right-of-way acquisition, and construction.

The Corridor Vision

In July 2007, a Corridor Working Group consisting of transportation stakeholders representing a variety of interests convened to build the vision for the development of the I-90 corridor plan for the area between Eastgate to North Bend. Together they developed a vision for the corridor through the year 2030.

I-90 Eastgate to North Bend Corridor Vision

A sustainable multi-modal corridor that provides safe and efficient movement of people and goods, and contributes to the economic vitality and improves quality of life, with minimum environmental impacts.

The resulting vision is in agreement with the Governor's Connecting Washington Task Force ten year strategy, to promote principle based investments that are critical to Washington's economic future. For more information on Connecting Washington, visit this URL:

www.governor.wa.gov/priorities/transportation/connectwa.asp

The task force's vision is for a sustainable transportation system that supports a strong, healthy economy that in turn supports healthy communities. Effective transportation is critical to maintaining Washington's economy, environment and quality of life. This vision acknowledges that State Transportation investments:

- create jobs and spur economic recovery,
- create vibrant communities, and
- position businesses for the global economy.

Maintaining, preserving and improving Washington's statewide, multimodal transportation system is vital for this vision to succeed. Maintaining, preserving and improving the state transportation system is the foundation that moves goods to market, people to jobs and families to activities. Investing in transportation creates living-wage jobs. It builds the infrastructure to support long-term economic growth. It supports the flow of commerce and the health of businesses large and small.

Sustainable transportation investment is not an option – it is a necessity. Citizens and businesses expect an integrated transportation system that works to meet their needs. Local roads, highways, transit and rail options must work together to meet transportation demands. The recommended projects enhance mobility, the economy and the environment.

Over the course of the study, the corridor working group met several times to provide input. The vision was maintained through direct involvement of the Corridor Working Group in the development of the corridor plan recommendations. The working group's efforts were supported by information and input gathered about the study area during public meetings/open houses, and by technical reports prepared and presented by the Washington State Department of Transportation (WSDOT) Urban Planning Office staff.

The Purpose of Corridor Planning

Corridor plans are a tool for identifying the long-range vision of how a highway should look and function in the future. A corridor plan takes a 20 plus year look into the future at highway and travel conditions and needs. It involves collecting and analyzing facts and data about the study area and the communities that are served by the route. Information considered and analyzed during the study includes such things as operating conditions, environmental concerns, population and land use, right of way and other elements that affect the highway's development. It is important to the Washington State Department of Transportation (WSDOT) and its funding partners, such as the federal government, to know that any projects that are built as a result of the corridor planning effort will function well into the future to serve the increasing demands on our transportation system.

To ensure that the study recommendations are consistent with the vision and needs of local jurisdictions and communities located along the route, the corridor plan includes a public participation process. This process seeks public involvement on two levels; the creation of a corridor working group, and the hosting of meetings specifically designed to engage public participation.

The corridor working group committee's role is to inform WSDOT of community interests and concerns, create a vision for the route, determine decision criteria, and endorse route recommendations. During the public meeting process, community members can share their thoughts and ideas on the information presented.

The end result of a corridor plan effort is the corridor plan document. The document examines existing and forecasted deficiencies within the study area and proposes appropriate solutions.

Exhibit 1.1: I-90 Corridor Study area and proposed improvements



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|---|---|---|--|
| <ul style="list-style-type: none"> 1. Convert Existing WB & EB HOV into High Occupancy Toll Lanes 2. ATM – Variable Speed Zone and Lane Control 3. I-90/WB W Lake Sammamish Parkway to E Sunset Way Peak Use Shoulder Lane 4. I-90/EB Eastgate to W Lake Sammamish Parkway – Peak Use Shoulder Lane | <ul style="list-style-type: none"> 5. Eastgate Interchange Rechannelization 6. W Lake Sammamish Parkway Roundabout 7. Lakemont Off Ramp Modification 8. Vicinity of 11th/12th Avenue NW Overcrossing/ Direct Access 9. Front Street Interchange Reconstruction | <ul style="list-style-type: none"> 10. Preston-Fall City Road Ramp Traffic Control 11. I-90/SR 18 Interchange ATM – Variable Speed Zone and Lane Control 12. 436th Avenue SE Traffic Control | <ul style="list-style-type: none"> A. Eastgate Interchange Area (signage and guardrail) B. Bridge Seismic Retrofit (Bellevue to Issaquah) C. I-90 ramps/ West Lake Sammamish (new roundabout) D. Preston-Fall City Interchange (guardrail) E. I-90/WB SR 18 Bridge Deck Rehab |
|---|---|---|--|

How to Use this Corridor Plan

For WSDOT, the corridor plan provides detailed information for use in the Highway System Plan. It can also be used by transportation stakeholders such as local agencies, Regional Transportation Planning Organizations (RTPOs) and others in their own planning process. The information provided in the corridor plan can be used to ensure that the local projects and programs are consistent with, and complementary to, the efforts of WSDOT within their jurisdictions.

I-90 Corridor Planning Study Overview

This section covers the history and role of I-90, the purpose of the corridor planning study, and how it addresses state and regional policies. The study's website is located at:

www.wsdot.wa.gov/planning/RDP/I90/EastgateTo465th/.

The Interstate 90 Corridor Planning Study (Bellevue to North Bend)

The Interstate 90 Corridor Planning Study was conducted between the Eastgate Interchange in Bellevue (before milepost 9) and 468th Avenue SE in North Bend (milepost 35) as shown in Exhibit 1.1. The corridor planning study area covers an approximately 26-mile stretch of I-90 that includes the cities of Bellevue, Issaquah, Sammamish, Snoqualmie, and North Bend, as well as sections of unincorporated King County. The study area is a mixture of urbanized communities of Bellevue and Issaquah and pockets of development surrounded by rural open space around Snoqualmie and North Bend.

The study identifies low, medium, and high-cost improvements that could be incrementally implemented to improve safety and traffic operations and reasonably accommodate forecasted 2030 travel demand. Funding for these proposed improvements could come from a variety of funding mechanisms including federal, state, regional, and local sources (see Proposed Programming Matrix, Table 7.1, page 164).

What is the purpose of WSDOT Corridor Planning Studies?

A Corridor Planning Study is a planning study used by the WSDOT and local jurisdictions to identify existing and emerging transportation-related issues along a specific state highway and to develop recommendations to address those issues. The projects may be implemented during the next 20 years or later as funding becomes available. These studies are part of the WSDOT long-range planning program and are intended to prioritize investments in WSDOT-owned roads and ensure alignment with the Highway System Plan and Moving Washington.

WSDOT and the FHWA manage the interstate highway system in Washington state. Any changes to the interstate system, including I-90, require FHWA's approval. FHWA approved construction of the I-90 Sunset Interchange in Issaquah with the requirement that WSDOT fund and conduct a corridor planning study that addresses the mobility needs of this fast-growing corridor. The 2005 Washington State Legislature funded \$2 million for a study of I-90 between Eastgate in Bellevue and 468th Avenue SE in North Bend to meet this FHWA requirement.

State Policies

The I-90 Corridor Planning Study recommendations are consistent with the six investment guidelines set forth in RCW 47.04.280. Public investments in transportation should support achievement of these six 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 ensure 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.

The recommended improvements are also consistent with RCW 47.06.050, which requires WSDOT to first assess strategies to enhance operational efficiency of the existing system before expanding the system. Strategies to improve operational efficiencies include, but are not limited to, transportation systems management, transportation demand management, high-occupancy vehicle (HOV) facilities, and Express Toll Lanes/Hot Lanes. To measure the cost effectiveness of the improvements in relation to their potential, a cost-benefit analysis consistent with RCW 47.06.130 was conducted.

The recommendations in this corridor planning study also reflect the three-part strategy to address preservation, maintenance, and safety recommendations in WSDOT's Moving Washington program. This balanced, integrated program includes three strategies to address traffic congestion and mobility in our urban corridors and across the state. The three strategies of Moving Washington include:

- **Operating efficiently** to get the most use out of the roads and infrastructure we have
- **Managing demand** by offering more commute choices
- **Adding capacity strategically** to best use limited resources by targeting the most congested areas



Moving Washington improves the system's performance and could manage demand through variable pricing and other traffic management tools. This strategy provides more travel choices and options for people and freight, which helps improve the efficiency and effectiveness of our transportation system.

Regional Policies

The recommended improvements are consistent with the Puget Sound Regional Council's VISION 2040 Metropolitan Planning Policies, which was adopted in April 2008. VISION 2040 provides a framework for environmentally friendly regional growth policies. The I-90 Corridor Planning Study recommendations support the three transportation goals of VISION 2040 listed below.

- As a high priority, the region will maintain, preserve, and operate its existing transportation system in a safe and usable state.
- The future transportation system will support the regional growth strategy by focusing on connecting centers with a highly efficient multimodal transportation network.
- The region will invest in transportation systems that offer greater options, mobility, and access in support of the regional growth strategy.

The recommended improvements are also consistent with Puget Sound Regional Council's Transportation 2040, the region's new 30-year transportation plan, which was adopted in May 2010. Transportation 2040 will assist Puget Sound in moving forward by making transportation decisions and investments that move the region in the direction of sustainability, mobility, and environmental responsibility. Transportation 2040 includes:

- Transit, bike, pedestrian, and roadway investments needed to support the region's expected growth (1.5 million more people and 1.2 million more jobs by 2040).
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Strategies for reducing greenhouse gas emissions and protecting the health of the Puget Sound. These strategies are intended to complement steps being taken at the national level and are consistent with state programs and direction.
- Transportation investments that fully support the region's growth strategy, VISION 2040, focusing job and housing growth in vibrant centers and supporting livability throughout the region.
- An innovative and equitable financing plan that shifts how transportation improvements are funded, replacing traditional sources that are declining or no longer available.

What was the planning process?

The I-90 Corridor Planning Study process engaged the local jurisdictions and agencies to help identify transportation-related needs and develop, evaluate, and select recommended improvement projects. To identify transportation needs the following were considered:

- Population and employment growth
- Where future development is planned to occur
- Environmental issues and constraints
- Future travel demand and projected deficiencies
- Identify solutions
- Public and local agency input

The typical planning process is shown in Exhibit 1.2 and includes the following steps:

1. **Establish** a Corridor Working Group (CWG), composed of technical staff from local and regional agencies. The CWG provides input on the transportation safety and mobility needs and potential improvements for planning study area.
2. **Compile and analyze data** regarding existing and projected traffic conditions, existing roadway design compared to current design standards, the surrounding natural and built environment, and future population and employment growth in the area.
3. **Identify needs and potential projects** to improve safety and address preservation and mobility needs within the I-90 Corridor Planning Study limits.
4. **Evaluate proposed improvements** using criteria based on RCWs, planning policies, and guidelines in the corridor planning study. Evaluating proposed improvements using criteria based on RCWs, planning policies, and guidelines in the corridor planning study.
5. **CWG reviews** the recommended improvements in the I-90 Corridor Planning Study.
6. **Draft corridor planning study** documenting the study process, findings, and recommended improvements.
7. **WSDOT publishes** the I-90 Corridor Planning Study.

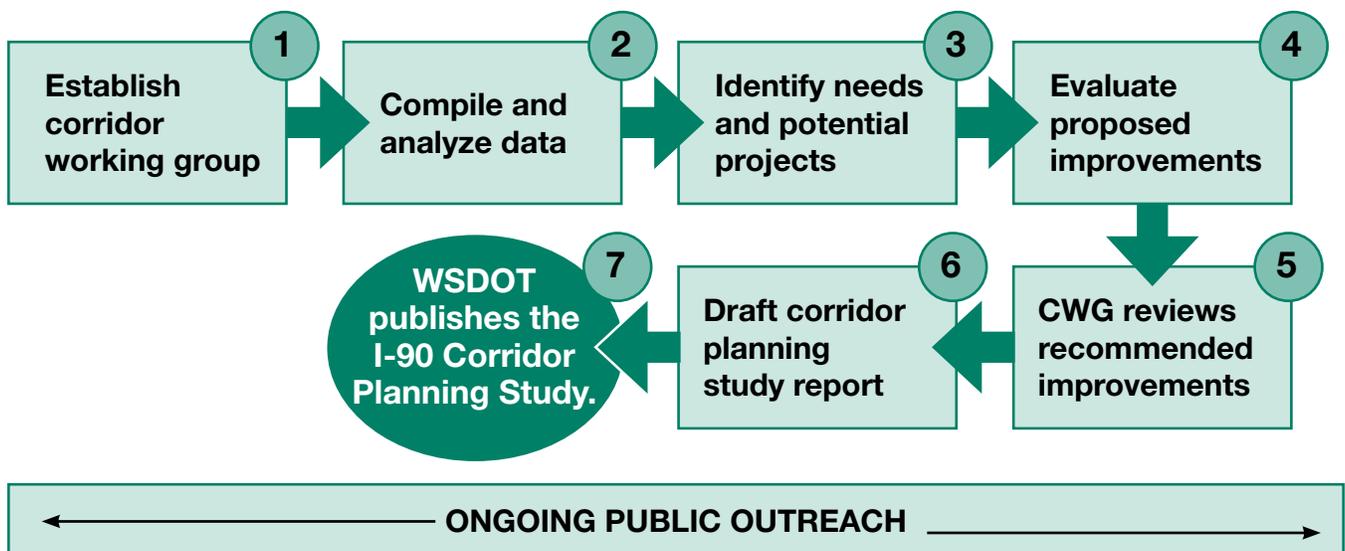


Exhibit 1.2: I-90 Corridor Planning Study Process

Agency and Public Involvement, Input, and Issues

The Snoqualmie and Yakama Tribes and local agencies along the corridor were invited to participate in the development of the corridor plan as members of the Corridor Working Group. We regularly briefed agency staff and elected officials during the development of the study and offered the opportunity for briefings to community groups and organizations.

The Corridor Working Group members helped guide the development of the study from analysis of needs and development of the proposed improvements. In addition, they were asked to keep their executives and elected officials informed on the status of the study and help with outreach in their respective communities.

WSDOT staff attended seven public fairs and festivals early in the planning process to provide background information and gather input and feedback from community members throughout the study area. We also conducted one-on-one interviews with local jurisdictions and agencies as well as with the Snoqualmie and Muckleshoot Tribes to get their input on transportation needs and environmental related concerns in the study area. The major issues that emerged from our outreach efforts are described below.

Tribal lands and I-90

In 1999, the Bureau of Indian Affairs re-recognized the Snoqualmie Tribe and designated reservation land for the Tribe located near North Bend at Exit 27. The Muckleshoot Tribe and Yakama Nation also have Usual and Accustomed rights in the study area.

Who are the I-90 Corridor Working Group members?

The purpose of the Corridor Working Group was to develop consensus-based recommendations for safety and mobility improvements along the corridor. The CWG advised the project team throughout the project. In addition, they served an important role by keeping the project team apprised of respective local elected officials and citizens' concerns. Corridor Working Group members included:

- WSDOT
- FHWA
- City of Bellevue
- City of Issaquah
- City of North Bend
- City of Sammamish
- City of Snoqualmie
- King County
- King County Metro
- Sound Transit
- Puget Sound Regional Council

What are the key issues expressed by jurisdictions and the public?

Delay at Major Interchanges

We heard from many drivers about the long delays at major interchanges within the study area, especially the Eastgate and Lakemont interchanges in Bellevue and the SR 900 and Front Street interchanges in Issaquah. Drivers expressed frustration at the increasing delays they are experiencing on a regular basis.

Reduce Freeway Noise

Citizens from Bellevue and Issaquah expressed a desire to reduce freeway noise with noise walls.. (WSDOT constructs most of its noise walls as part of large construction projects that add new lanes or as part of a noise wall retrofit program. The legislature funds between 2 and 4 retrofit noise walls per biennium, statewide).

Freight Needs: Truck Parking and Weigh Station Location

Truck Parking

A number of North Bend citizens expressed their concern about semi trucks parking on local streets and using local roads.

Under current federal regulations, truck drivers are required to take a 10-hour rest period after 11 hours of driving in a 14-hour period. Truck drivers need a place to park during the rest period while having access to a variety of amenities, including food and restroom facilities. Because of the limited availability of long-term parking for large trucks, truckers often park on I-90 ramps creating safety and legal issues.

Noise Issues

Traffic noise studies will be performed for new projects that have the potential to increase traffic noise levels nearby. Traffic noise studies are based on state and federal criteria, and consider many factors, including: topography, population density, cost, and the amount of noise reduction provided by the proposed abatement.

Where abatement is warranted, the following types of abatement may be considered:

- Noise walls
- Traffic management measures (traffic control devices for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, and modified speed limits)
- Change of roadway alignment either vertical or horizontal
- Acquisition of property for noise barrier construction or buffer zones

I-90/SR 18 Weigh Station Location

Truckers and representatives of the city of North Bend commented that the location of the I-90/SR 18 Weigh Station is not ideal. The weigh station is located in the northwest quadrant of the I-90/SR 18 interchange as shown in Exhibit 1.3. Trucks weighing more than 16,000 pounds are required to stop at the weigh station when it is open so that the Washington State Patrol can ensure that trucks met the axle and gross vehicle weight standards. In order to stop at the weigh station, westbound truckers must bypass the SR 18 exit a short distance and then make an out-of-direction movement to access SR 18, which is time consuming and inefficient.



Exhibit 1.3: I-90/SR 18 Weigh Station

Connecting Missing Links along the Mountains to Sound Greenway

The Mountains to Sound Greenway stretches more than 100 miles along I-90 from Puget Sound in Seattle, over Snoqualmie Pass and into Central Washington. The Greenway encompasses non-motorized trails, protected and working forests, farms, historic sites, lakes, campgrounds, rivers, wildlife habitat, and vibrant communities.

During WSDOT's public outreach effort, people expressed strong support of the Mountains to Sound Greenway Trust's mission to preserve the greenbelt along I-90 and to fill in the gaps in the trail network.

Wildlife Crossings

Representatives from the city of North Bend identified the need for additional wildlife crossings to improve safety for both motorists and animals.

The foothills surrounding the city of North Bend are home to a large herd of resident elk, which have natural migration routes that require crossing I-90. A large herd of elk seasonally cross I-90 creating a safety hazard for both the elk and motorists. See Exhibit 1.4 for locations of Carcass Removal and Collisions.

Representatives of the Muckleshoot Tribe feel that the road presents a barrier to the herd's natural migration patterns and possibly limits the herd's gene pool and grazing areas.

City of Bellevue Issues

Access at Factoria Interchange

Citizens expressed a desire to have an additional on-ramp at the Factoria Boulevard/Richards Road interchange that ties into northbound and southbound I-405 and eastbound I-90.

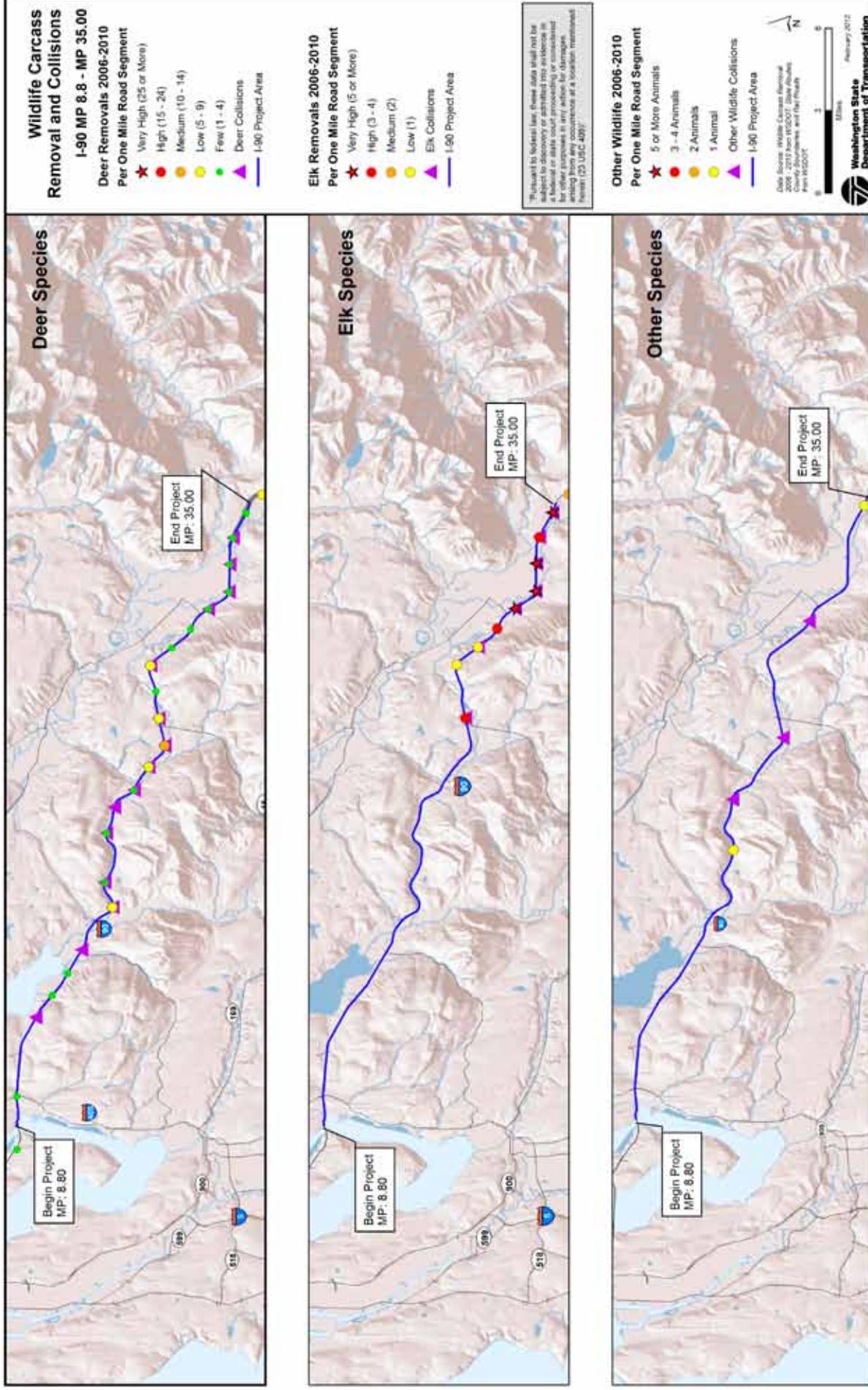
Landscaping in Eastgate Interchange Right-of-Way

The city of Bellevue has expressed interest in pursuing an interlocal agreement with WSDOT to provide and maintain landscaping in the Eastgate Interchange right-of-way and to address public comments about adding vegetation in the area.

Stakeholders who are concerned about the damage caused by the elk herd, including collisions with vehicle traffic, have formed a group called the Upper Snoqualmie Valley Elk Management Group. The group's objective is to develop a management plan to address the human/elk issues involving public safety, property damage, and wildlife health.

The Upper Snoqualmie Valley Elk Management Group is working with WSDOT to collect data on the number of elk and other wildlife that are injured or killed on I-90 (see exhibit 1.3). The data will be used to help identify where dollars may be spent on collision-prevention projects.

Exhibit 1.4: Wildlife Carcass Removal and Collisions



City of Issaquah Issues

Central Issaquah Plan

In 2007, the city of Issaquah initiated the Central Issaquah Plan, which is a planning effort to guide the redevelopment of the 915-acre commercial area, known as the Central Issaquah Area, from suburban strip malls to a cohesive town center (see Exhibit 1.5). The area includes nearly 89 percent of the commercially-zoned land in Issaquah, nine of Issaquah's top ten employers, and 70 percent of Issaquah's jobs. The sub-area encompasses I-90 and the I-90/SR 900 Interchange in Issaquah.

The Central Issaquah Plan will identify the desired density and location of future housing and employment in the planning area. The recommendations from this plan are currently being reviewed by the community, Mayor's Office, Planning Policy Commission, and the City Council. The subarea plan has not been finalized.

One of the recommendations from the Central Issaquah Plan is to construct a fourth crossing of I-90 at approximately 12th Avenue. This crossing would connect two significant development projects on either side of I-90, Hyla Crossing and Rowley Center. It should be noted that WSDOT owns and manages interchanges but has a policy that if a highway crossing connects two city streets, then the city will own and maintain the crossing.

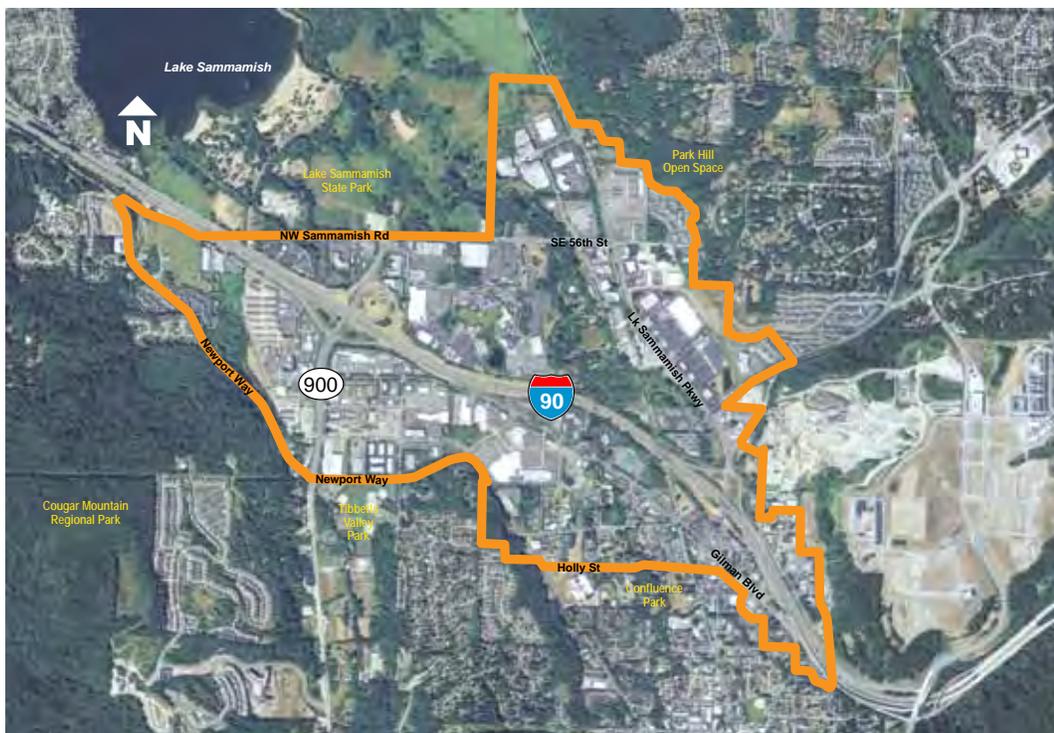


Exhibit 1.5: Central Issaquah Plan Study Area

The Hyla Crossing and the Rowley Center projects (located in the southwest and southeast quadrants of the I-90/SR900 interchange) propose to transform the area from suburban-style strip malls and office complexes, into a pedestrian oriented mixed development. The proposal assumes up to 5.5 million square feet of commercial (office, retail, restaurant and entertainment) and residential development over a 20 year time period. The Rowley Center is projected to be 60% commercial-light industrial and 40% residential.

Future High Capacity Transit to Issaquah

Representatives of the city of Issaquah said the corridor plan should assume that light rail transit (LRT) will eventually extend to Issaquah and any future plans should accommodate the potential light rail alignment and stations in the I-90 right-of-way.

Sound Transit light rail requires 28 to 32 feet of right-of-way for rail tracks; however, this does not include right-of-way needed for stations. Right-of-way should be preserved for possible future use by Sound Transit. Sound Transit has \$2 million set aside to conduct a High Capacity Study starting in 2015.

Westbound HOV Lane in Issaquah

Representatives of the city of Issaquah and some members of the public expressed their concern about the congestion that occurs at the east end of the westbound HOV lane in Issaquah. The I-90 HOV lane was created by converting a general purpose lane into an HOV lane. The change in designation results in some drivers changing lanes and creating traffic back-ups.

Chapter 2:

Existing Roadway Classifications and Inventory

This section reviews: the history of I-90, the average daily traffic volumes, existing roadway conditions and functional classifications, corridor analysis, and existing transportation facilities.

What is the history of the I-90 Corridor?

At nearly 3,100 miles, I-90 is the longest interstate highway in the United States, crossing west and east between Seattle and Boston. I-90 was originally known as US 10, the first wagon road completed across the Washington Cascade Mountain Range in 1867. The road served as a passageway for Oregon Trail pioneers and those seeking gold during gold rushes in Alaska and Washington.

In Washington state, I-90 is the only interstate freeway that crosses the Cascade Mountain Range and is a critical link for interstate, regional, and local trips. The safe and efficient operation of I-90 is essential to the economic vitality of the state and plays a crucial role in linking major economic and agricultural markets, the freight traffic to and from the ports of Seattle and Tacoma, and other essential freight facilities. I-90 serves a large local spectrum of travel including commute, freight, transit, residential, and recreational trips.

As a result of Washington state's first gasoline tax in 1921, the newly established Highway Department planned and built 27 new bridges across Snoqualmie Pass. By 1952 the Highway Department had completed a four-lane route west of the Cascades to Seattle.



Automobile on west side of Snoqualmie Pass in 1917

Federal-Aid Highway Program

The Federal-Aid Highway Program (FAHP) is an umbrella term, which refers to most of the federal programs providing highway funds to the states. FAHP refers to highway programs financed by the the Highway Trust Fund (HTF), and any other supplemental funds.

In 1959, President Eisenhower signed the National System of Interstate and Defense Highway Act into law. The Act approved federal funding to cover 90 percent of the cost to develop a nationwide network of limited-access interstate roads. As a result, US 10 was re-designated as I-90 and co-managed by the Federal Highway Administration and WSDOT.

Washington Federal-Aid Highway Program Stewardship and Oversight Agreement

The FHWA and each state department of transportation have formal agreements on their respective roles and responsibilities in administering the Federal-Aid Highway Program. Roles and responsibilities vary depending on the classification of each route.

Under the 2008 Washington Federal-Aid Program Stewardship and Oversight Agreement, FHWA has design approval for new and/or reconstruction projects on the Interstate regardless of the funding source. For example, modifications to interchanges or adding a lane would need FHWA approval. WSDOT has been granted approval authority by FHWA for projects on the Interstate that are not considered new or reconstruction, such as Intelligent Transportation Systems (ITS) projects.

FHWA is responsible for oversight of project location and design, right-of-way, and construction for the I-90 corridor.

What are functional classifications and how do they relate to I-90?

Highways and streets are grouped into classes, or systems, according to the type of service they provide. These groupings, or “functional classifications,” play an important role in determining the appropriate level of design standards, operations, maintenance, program funding, and improvements that can take place on a roadway. The classifications for the I-90 study area are outlined below; they provide guidelines for future improvements. Each classification is further defined in this section.

Classification System	I-90 Classification
Federal Functional Class	Major Principal Arterial (Interstate)
State Functional Class	U5 – Urban Interstate
National Highway System (NHS)	Included
Highway of Statewide Significance (HSS)	Included
Freight and Goods Transportation System (FGTS) Status	T1 Primary Freight Route (More than 20.5 million tons of freight transported per year)
Terrain Classification	Level (between Bellevue and Issaquah) Rolling (between Issaquah and North Bend)
Access Classification	Full Limited Access
Roadside Classification	Built Urban (between Bellevue and Issaquah) Natural Forest/Hilly (between Issaquah and North Bend)
National Scenic Byways	Mountains to Sound Greenway Trust

Federal Functional Class

I-90 must meet Interstate Highway standards as defined by the American Association of State Highway and Transportation Officials or obtain a waiver from the FHWA. The categories of standards include:

- Controlled Access
- Minimum Design Speed
- Maximum Grade
- Minimum Number of Lanes
- Minimum Lane Width
- Shoulder Width
- Pavement Sloping
- Median Width
- Recovery Areas
- Vertical Clearance
- Bridge Strength

Any new or modified interchange that results in a change in access on a limited access freeway and highway in Washington state requires an Interchange Justification Report (IJR) to be completed and approved by WSDOT and FHWA. The scale and complexity of the IJR varies depending on the scope of the proposed access point revision.

State Functional Class

Highways in Washington state are given a functional classification according to the type of traffic each highway is intended to serve and the characteristics of the area surrounding the highway. For instance, a highway may receive a different classification based on whether it is situated in a rural or urban area. The classification is used to determine design guidelines, day-to-day decisions, and long-range planning. Maintaining the ability to move vehicles and people safely at a reasonably high speed are priorities for interstate facilities.

National Highway System

The National Highway System (NHS) is an interconnected system of approximately 160,000 miles (256,000 kilometers) of roadway important to the nation's economy, defense, and mobility. I-90 is included as a part of the NHS.

An IJR is a document that WSDOT and FHWA require when there's a proposal to break or modify access on Interstate facilities. An IJR identifies segments of the local and regional network that are experiencing congestion and/or safety deficiencies, or where planned land use changes prompt the need to evaluate the demands on the capacity of the transportation system. The study area includes the affected existing and proposed interchanges/intersections upstream and downstream from the proposed change.

Highway of Statewide Significance

Highways of Statewide Significance (HSS) include interstate and state highways and other principal arterials that connect communities across the state. I-90 is classified as an HSS facility.

Freight and Goods Transportation System

The WTP Freight Strategy, which is part of the Washington Transportation Plan Update Freight Movement (December 2010), identifies 12 highly productive investments Washington state can make to generate overall economic prosperity and wealth to citizens in the state. One of these investments is to complete the major north-south freight corridor system by adding links from Highway 167 to I-5, from Highway 509 to I-5, and by completing improvements on Highway 18 to I-90. Exhibit 2.2 shows the intersection of I-90 and SR 18.

The study area on I-90 is classified as a T-1 Primary Freight Route and a Washington Strategic Freight Corridor. Interstate 90 is the main highway route for east-west commerce in Washington and is equally important for container trade. Manufacturers, agricultural growers and processors, and distributors have no practical alternative to Washington's major highway system; they use I-5 and I-90 as primary freight routes.

Trucks traveling along I-90 carried more than 30 million tons of freight in 2010. The route connects to the Port of Seattle, the Interstate 405 (I-405) corridor, and eastern Washington, Idaho, and Montana.

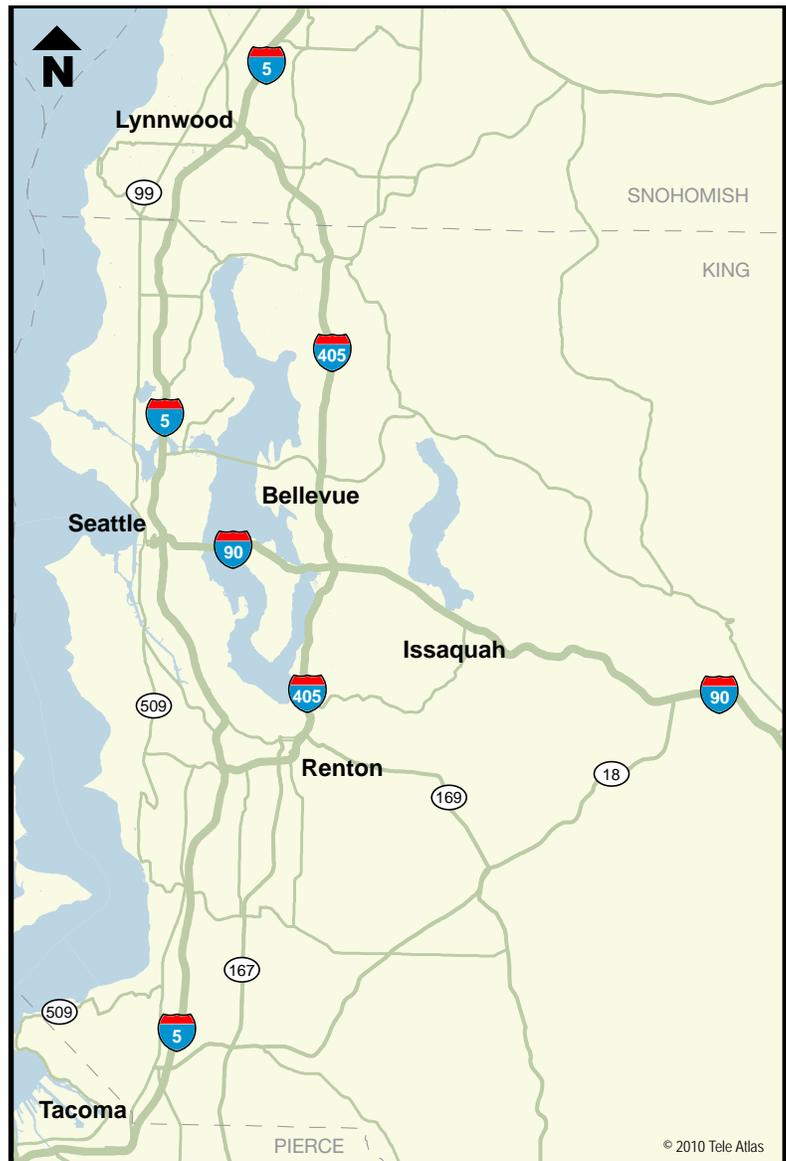


Exhibit 2.2: Map showing intersection of I-90 and SR 18

I-90 provides a critical link to SR 18 that connects to the SR 167 corridor distribution centers and to the Port of Tacoma and south Puget Sound via I-5. In 2010, trucks traveling along SR 18 carried more than 17 million tons of freight, classifying it as a T-1 Primary Freight Route and a Washington Strategic Freight Corridor.

The I-90/SR18 connection is critical to the safety and efficient movement of people, goods and services. Over the last several decades, WSDOT has made phased improvements to SR 18. The last segment of widening the 21 miles of SR 18 (from two to four lanes) is SR 18 - Issaquah Hobart Road to I-90. When this project is complete, drivers will travel on an expanded I-90/SR 18 interchange and a four-lane divided highway with truck climbing lanes between Issaquah Hobart Road and I-90.

This project will reduce the likelihood of head-on collisions by building a 51-foot median to divide opposing directions of traffic. Capacity of the highway will be increased by adding one lane in each direction. Truck climbing lanes will speed travel over the Tiger Mountain summit by providing a separate lane for slow-moving traffic. An improved I-90/SR 18 interchange will enhance traffic flow in this rapidly growing area.

The Nickel Funding Package passed by the 2003 Legislature provided \$6 million to design improvements to the I-90/SR 18 interchange and to work on environmental documentation for the proposed interchange. This project is currently unfunded.

The average truck percentage of total vehicle traffic on I-90 within the study area varies between 6 and 21 percent. In Washington, truck traffic on all state highways combined typically averages between 5 and 10 percent of annual average daily traffic. In 2010, the overall estimated annual average daily traffic for the study area varied from a high of 149,245 east of the I-405 Interchange to a low of 29,079 inside the 468th Avenue Interchange in North Bend in 2010. The percentage of truck traffic varies throughout the day with lower percentages during congested peak periods and higher percentages during off-peak hours and at night.

Data from WSDOT's Statewide Travel and Collision Data Office for Average Annual Daily Truck Traffic (AADTT) in 2010 can be found in Appendix A.

Terrain Classification

Terrain classification is based on the frequency and steepness of hills on a roadway and its effect on truck speed. The three terrain classifications include level, rolling, and mountainous. According to WSDOT's State Highway Log, the terrain is level between Bellevue and Issaquah and rolling between Issaquah and North Bend as shown previously in this chapter.

Access Classification

Interstate 90 within the study area is classified as a Class 1 major principal arterial with full limited access. Limited Access Highways are highways in which the abutting property owner's right of access to the state highway has been purchased, with the result being that the abutting property owner may not, but in some small cases may, have access to the state highway. Limited access highways are further defined as Full, Partial, or Modified Limited Access Control. Full Limited Access Control Highways, the most restrictive, allow no direct private property access. The Interstate system that includes I-90 allows access only at interchanges.

Roadside Classification

Roadside classifications fall into two categories: natural and built. Natural character refers to a landscape in which vegetation and land forms are predominant and include forest and open roadside character classifications. Built character indicates a landscape in which human elements and structures are notable or predominant in the overall context and include rural, semi-urban, and urban roadside character classifications.

The roadside classification for I-90 within the study area is classified as Built from urban mileposts 10 to 20 and classified as Natural from forest/hilly mileposts 20 to 35. These designations are taken from WSDOT's Roadside Classification Log. Roadside character is a description of the landscape from the roadway user's perspective, and encompasses the area between the pavement edge and the right-of-way boundaries.

Scenic and Recreational Highway

Washington state was one of the first states in the country to establish a system of scenic byways, and the state has twenty-two routes presently in its scenic system. Scenic byways pass through the varied terrain of Washington reflecting the depth of its scenic, cultural, and historic landscapes.

The study area is included in the Mountains to Sound Greenway, which is designated as a National Scenic Byway. The Mountains to Sound Greenway Trust was formed in the early 1990s to preserve forest and wildlife habitat along the I-90 corridor. The Greenway stretches more than 100 miles along I-90 as shown in Exhibit 2.3. It includes a regional trail system with an accessible non-motorized route from Seattle urban areas, through the study area, over Snoqualmie Pass, and into Central Washington.

This National Scenic Byway includes 125,000 acres held by local, state, and federal agencies in trust for the public good. The Mountains to Sound Greenway encompasses protected and working forests, farms, historic towns, lakes, campgrounds, rivers, trails, and wildlife habitat just outside the Seattle metropolitan area.

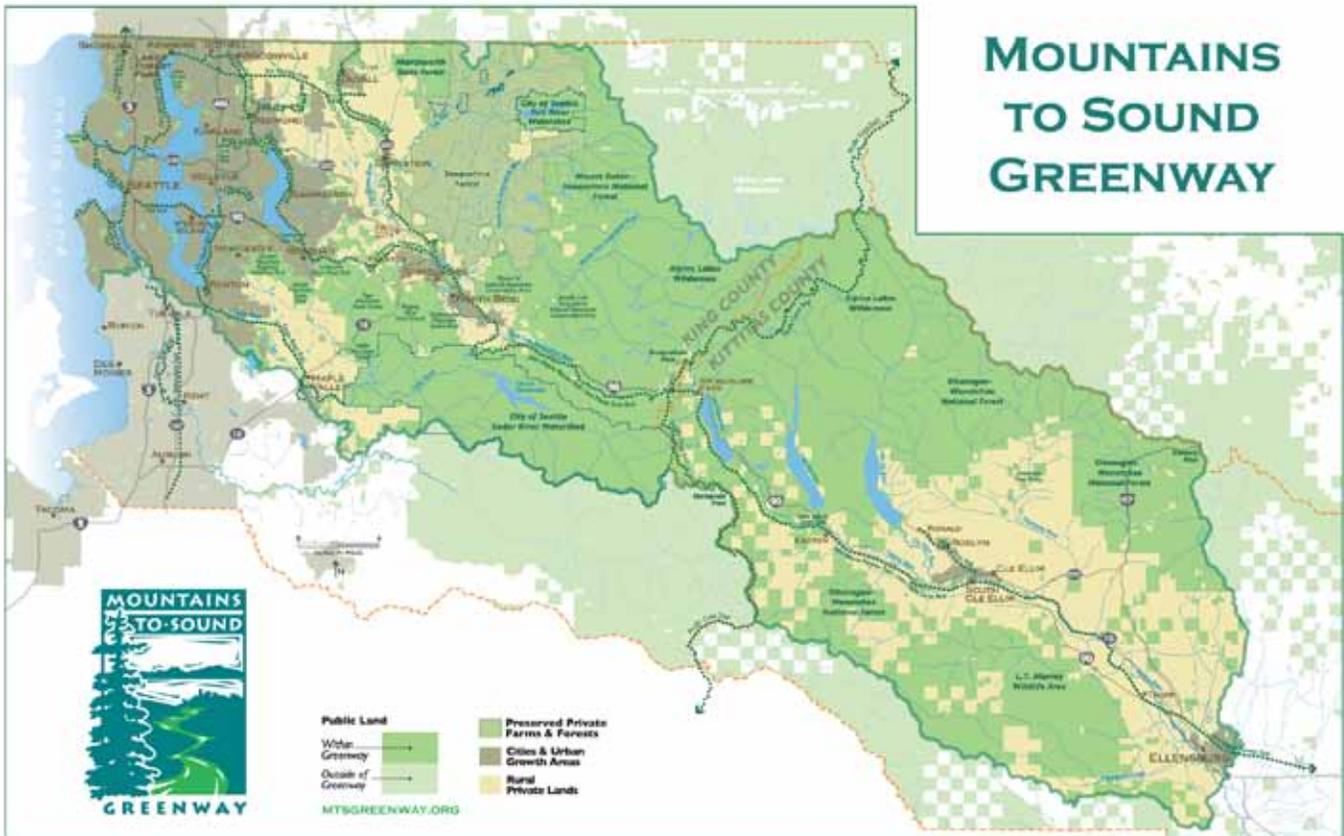


Exhibit 2.3: Mountains to Sound Greenway Map



Stage 1 of the new connector trail starts near the westbound I-90 exit to SE High Point Way (Exit 20), shown to the left.

WSDOT's Role

WSDOT works with Mountains to Sound Greenway Trust by providing assistance with scenic byway signs. To create and preserve a greenbelt along I-90 and mitigate visual impacts of WSDOT projects, WSDOT traded properties near the Sunset Interchange in Issaquah and the Snoqualmie Casino in North Bend. WSDOT has an additional agreement with Mountains to Sound to keep a portion of the right-of-way at the Sunset Interchange in Issaquah as green space in perpetuity.

Secretary of Transportation, Paula Hammond, is on the Trust's Board of Directors and WSDOT's South Central and Northwest Region Administrators serve on the Advisory Board.

Missing Trail Links

There are a number of missing links along the Mountains to Sound Greenway's non-motorized trail network in the study area and plans are in the works to fully connect this trail system:

- **Factoria:** Bellevue City Council approved a 10-year lease agreement with WSDOT in November 2010 to begin construction of a 10-foot-wide paved multi-purpose trail in Factoria. A 10-foot-wide pedestrian/bicycle path connection will be installed between 124th Avenue SE in the vicinity of SE 38th Street and the Mountains to Sound Greenway trail at the I-90 off-ramp near Factoria Boulevard SE. The lease allows access to state-owned right-of-way by the city of Bellevue to construct and maintain the connection to the I-90 trail and to add a trailhead/kiosk near Factoria Boulevard. An option to extend the lease for two additional 10-year periods is included within the agreement. Goals of the trail are to improve safety and to provide a more efficient walking and biking connection by avoiding heavy vehicle traffic on Factoria Boulevard. The council accepted two grants to pay for the trail: a state grant for \$605,000 to promote pedestrian and bike safety and a federal grant for \$354,400 to address air pollution and congestion. Construction of the trail started in summer 2011.
- **Eastgate:** The I-90 trail currently ends at Eastgate. The city of Bellevue is working on a plan to establish a connecting trail to West Lake Sammamish Parkway.
- **Issaquah:** There is a missing link between West Lake Sammamish Parkway and East Lake Sammamish Parkway and the new Sunset Interchange.
- **High Point to Preston:** WSDOT awarded the contract in summer 2009 for this new 1.2-mile connector trail that will be built in two stages between Issaquah and Preston. Construction was completed on Stage 1 in 2010. The trail will connect the east end of the Issaquah-High Point Trail to the west end of the Preston-Snoqualmie Trail where bicyclists and pedestrians currently share narrow local streets with cars and trucks or use the shoulder along westbound I-90. This connector trail fills a gap in the Mountains to Sound Greenway and is largely funded by a grant from Washington State Parks. Construction on Stage 2 will begin when funding becomes available.
- **Snoqualmie Falls:** From the end of the Preston-Snoqualmie Trail overlooking Snoqualmie Falls, a shared right-of-way is being explored with the Puget Sound Historic Railroad to complete the connection to the falls.
- **Tolt Pipeline Trail:** There is a short section of the bike trail near Duvall and the Snoqualmie River that is currently on a stretch of busy road.

Roadway Inventory

Highway Lanes, Median Width, and Speed Limit

There are generally three to four 12-foot general purpose lanes throughout the study area and auxiliary lanes between some major interchanges. In addition, the study area includes an eastbound and westbound HOV lane from Bellevue to near SR 900 in Issaquah.

The number of lanes vary due to operational needs along different areas of the highway, as well as the location of HOV lanes and the merge or exit lanes.

Within the study area, I-90 has shoulder widths that vary from six to 18 feet. The median between the Eastgate Interchange in Bellevue and the Sunset Interchange in Issaquah varies from 48 to 90 feet. East of Issaquah, the median varies between 48 feet and 250 feet. Between some bridges within the study area, the median varies between 150 and 440 feet.

The speed limit between Bellevue and Issaquah is 60 mph but increases to 70 mph at milepost 17, east of the on-ramp at East Sunset Way.

Interchanges

There are 13 interchanges in the study area. The table below provides the milepost and name of each interchange and indicates if ramp meters and HOV Bypass ramps are provided.

MP	Interchange Name	Meter		HOV Bypass	
		WB	EB	WB	EB
11	Eastgate	Yes	Yes	Yes	No
13	West Lake Sammamish ¹	Yes	NA	Yes	NA
	Lakemont ²	NA	No	NA	No
15	SR 900	Yes	No	Yes	Yes ³
17	Front Street	Yes	No	Yes	No
18	Sunset	Yes	No	Yes	No
20	High Point	No	No	No	No
22	Preston Fall City	No	No	No	No
25	SR 18	No	No	No	No
27	SE North Bend	No	No	No	No
31	SR 202	No	No	No	No
32	436th Avenue SE	No	No	No	No
34	468th Avenue SE	No	No	No	No

¹ The westbound on- and off-ramps on the north side of I-90 are called West Lake Sammamish Parkway

² The eastbound on- and off-ramps on the south side of I-90 are called Lakemont Boulevard

³ Transit only by-pass ramp that serves Issaquah Transit Center

Between Bellevue and Issaquah, the on-ramps are typically metered, with bypass lanes for HOV traffic. In general, the interchanges (freeway-to-local road interchanges) are complex, particularly between I-405 and 150th Avenue SE. There is a westbound and eastbound HOV lane between Bellevue and Issaquah. In the eastern segment without a HOV lane, carpool and transit share lanes with general-purpose traffic.

Bridge Locations and Ratings

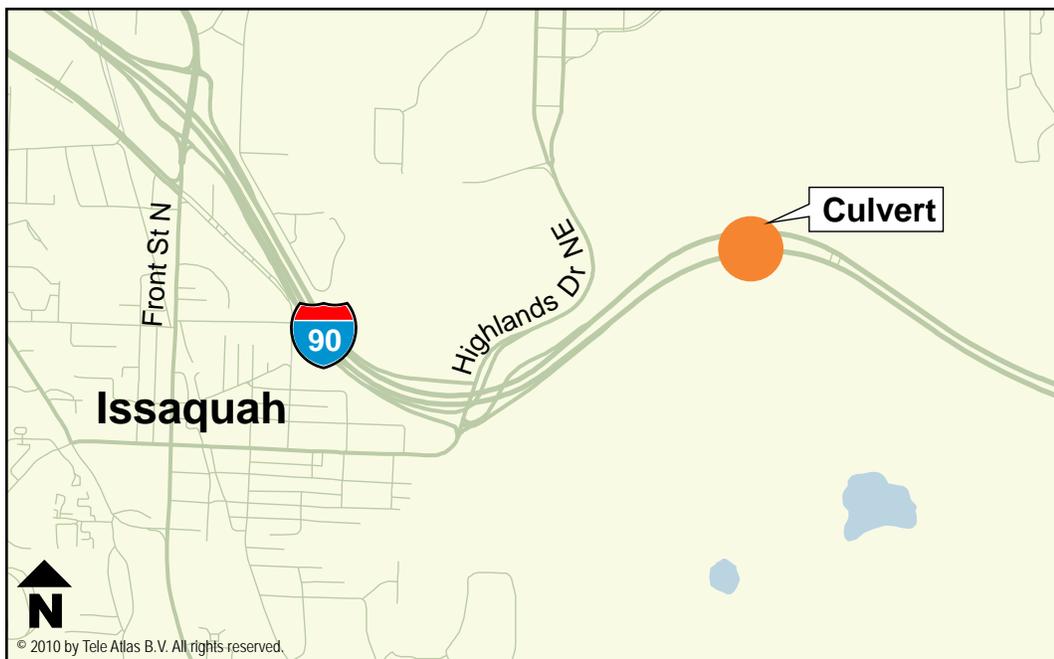
There are 15 bridges within the study area. In 2010, all bridges within the study area had a sufficiency rating higher than 80.

The sufficiency rating is required by FHWA to determine which bridges may need repair or replacement. A bridge sufficiency rating affects its eligibility for federal funding for maintenance, rehabilitation, or replacement. In order to be eligible for federal funding, a bridge must have a rating of 50 or less.

For a complete list of bridges in the study area, see Appendix B.

Culverts

WSDOT began partnering with WDFW in 1991 to inventory culverts and prioritize fish barriers for correction state wide. In 2002, WSDOT established a Memorandum of Agreement with the WDFW to move away from the repetitive repair of WSDOT roads and to concentrate on long-term solutions that will optimize the improvements for fish and fish habitat, while also addressing transportation needs. There are 71 total culverts in the corridor planning study area (see Appendix C), of which 32 have been identified as barriers to fish passage (WSDOT Fish Passage Barrier Inventory Progress Performance Report, June 2011). The culvert at milepost 18.70 near the Issaquah Highlands (see map below) was identified as the priority fish passage barrier in the corridor, and is scheduled for correction in 2012.



Noise Wall Retrofit List

Where they are feasible, noise walls are included as part of large construction projects that add new lanes, where reasonable and warranted. However, WSDOT builds some noise walls outside of a highway project in high-noise neighborhoods. These are referred to as “retrofit” walls.

Within the I-90 corridor study area, there is one noise wall on the retrofit list, located between 169th Avenue SE to 171st Avenue SE in Bellevue (MP 12 to MP 13). Retrofit noise walls are ranked and constructed according to a priority list based on state and federal criteria. Federal criteria requires that retrofit noise walls must be reasonable and feasible and benefit homes that were built before May 1976. This location was #49 statewide during the most recent list. This noise wall project is considered a Tier II, or “low-priority,” Type 2 retrofit project. Type 2 noise walls are funded by direction of the legislature. Based on recent legislative funding of Type 2 noise walls, the project is not expected to be constructed within the next 20 years. On average, one retrofit wall is built every two years because funds for retrofit walls are limited.

Weigh Station

There is one weigh station in the study area that is located in the northwest quadrant of the I-90/SR 18 Interchange. The Washington State Patrol staffs weigh stations to ensure that trucks over 16,000 gross vehicle pounds meet safety requirements.

Unstable Slopes

There are no unstable slopes in the study area according to the 2010 WSDOT Unstable Slope database.

Pedestrian and Bicycle Overcrossings

There are four existing pedestrian and bicycle crossings along I-90 within the study area: located directly west of 148th, at Newport Way/SE 42nd in Bellevue, SR 900 in Issaquah and at the Sunset Interchange.

SR 900/I-90 Pedestrian/Bike Overcrossing Project

The city of Issaquah, in cooperation with WSDOT, worked to improve pedestrian and bicyclist connectivity along State Route 900 (SR 900) near I-90 with the I-90 Pedestrian/Bike Overcrossing project. This project constructed a non-motorized trail along the west side of SR 900 from 12th Avenue NW to the I-90 eastbound off-ramp. The project modified the existing crosswalk at the off-ramp from eastbound I-90, enhanced the current bridge over the highway, and added a pedestrian and bicycle crossing over the westbound I-90 on-ramp.

The construction cost for the regional trail project was \$6.2 million. The project was funded through federal grants and a partnership with Sound Transit. The project completed a trail approximately 1,600-feet-long between the end of the SR 900 boardwalk at the eastbound I-90 off-ramp on the south side of I-90 and the Sammamish Trail on the north. The aerial below shows the connection across I-90.

Construction on the project began in July 2010 and was completed in June 2011. The primary goal of the SR 900 overcrossing project was to connect the existing trails. The connector links the Cedar River, High Point, Lake Sammamish, Mountains to Sound Greenway, and Pickering trails. Support to provide a missing link in the regional trail system received enthusiastic support from the Issaquah Alps Trails Club and the Mountains to Sound Greenway Trust.



Aerial view of the SR 900 regional trail improvements

Wildlife Crossings

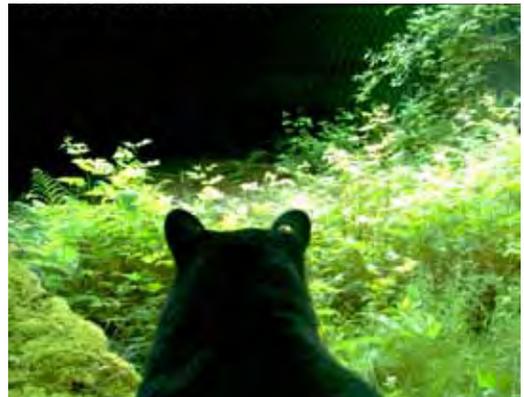
Currently, there are two designated animal crossings in the study area, which are located just west of North Bend at mileposts 26.98 and 28.86. WSDOT biologists recently installed motion-activated cameras to help document the type of species that use the crossings. Black bear, deer, and toads have been photographed. (See the photos on this page).

In addition, wildlife uses vehicular bridges over the East Fork/Issaquah Creek and the Raging River to cross I-90. Barriers (mostly fencing) should be considered to keep animals off the interstate and to facilitate their use of the existing wildlife crossing structures.

In 2007, the Protections and Connections For High Quality Nature Habitats Executive Order (1031.00) was issued by WSDOT's Secretary of Transportation to address the ever-increasing fragmentation of natural habitat partially caused by roads and highways. The Executive Order mandates consideration of habitat values and wildlife movement needs in all transportation activities.

West of the existing wildlife crossings, between MP 18 and MP 25, the Washington Department of Natural Resources manages a large block of forestland on the north and south sides of I-90. The area overlaps habitat networks identified by the Washington Habitat Connectivity Working Group in their Washington Connected Landscapes Project. More detailed evaluations are needed to determine where new crossings might be beneficial and what species would likely be served. Factors to take into consideration include:

- Habitat Connectivity
- Proximity and Distribution of Public Land
- Traffic Volumes
- Vehicle/Wildlife Collision Rates
- Existing Structures.



Corridor Safety Analysis

Target Zero (<http://targetzero.com>) is the Statewide Strategic Plan for Highway Safety. It was signed by Governor Gregoire in 2007 and updated in 2010. It directs WSDOT and other transportation partners to focus on fatal and serious injury collisions in order to attain the goal of zero fatalities and serious injuries by year 2030. *Target Zero* was written to comply with a new SAFETEA-LU federal requirement, and follows the AASHTO *Strategic Highway Safety Plan*. Strategies were developed using national-level research, existing pilot programs, and input from many statewide stakeholders. These strategies focus on the Four “E’s,” as follows:

- **Education.** Give drivers the information to make good choices, such as not driving while impaired, wearing a seatbelt, and avoiding distractions while in their vehicles.
- **Enforcement.** Use data-driven analysis to help law enforcement officers pinpoint locations with a high number of fatal and serious-injury collisions related to driver behaviors, such as speeding and impairment.
- **Engineering.** Design roads and roadsides using best practices to reduce collisions, or reduce the severity of collisions if they do occur.
- **Emergency Medical Services.** Provide high quality and rapid medical and emergency response to injury collisions.

Target Zero directs WSDOT and other transportation safety partners to focus on fatal and serious injury collisions. To accomplish this goal, WSDOT re-evaluated all of its safety related project selection and prioritization criteria. The revised WSDOT procedure starts with the setting of a performance improvement target. Needs are identified via a statewide screening for locations which show the highest possibility for reduction of collision frequency and severity. These locations are entered into safety priority array lists for intersections and corridors.

SAFETEA-LU

On August 10, 2005, the President signed into law the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*. SAFETEA-LU addresses safety, traffic congestion, freight movement, intermodal connectivity, the environment, and future challenges.

www.fhwa.dot.gov/SafeteaLU

AASHTO

The American Association of State Highway & Transportation Officials represents transportation departments in all 50 states, the District of Columbia, and Puerto Rico. The primary goal is development, operation, and maintenance of an integrated national transportation system including air, highways, public transportation, rail, and water.

www.transportation.org

Any locations on these lists which fall into a study corridor are then analyzed in more detail by looking at five years of collision data, identifying sites with potential for improvement, and analyzing them for potential cost effective Four-E solutions. This analysis is coordinated with the State Patrol and the Washington State Traffic Commission.

This chapter is divided into the following six subsections:

1. Review of collision data for the past five years.
2. Identification of programmed safety projects.
3. Identification of study area locations on safety priority array lists.
4. Identification of behavior-related factors that are contributing to collisions.
5. Identification of low cost improvements with the potential to reduce fatal and serious injury collisions.
6. Identification of higher cost improvements with the proven potential to reduce fatal and serious injury collisions.

WSDOT practice is to be proactive in programming improvements that reduce fatal and serious injury collisions. For more information on the WSDOT safety program, please see the WSDOT safety website at www.wsdot.wa.gov/safety.

Please note that for general liability and disclosure reasons, none of the collision or safety data presented in this report may be used in discovery or as evidence at trial in any action for damages against State, Tribal, or Local Governments.¹

¹ *US Code 23, Section 409: Highways - Discovery and admission as evidence of certain reports and surveys.*
www.fhwa.dot.gov/legisregs/title23.pdf

1. Collision Data Review

Collision history was reviewed for the most recent five years of data available at the time of analysis. The review was performed on collisions along the I-90 mainline, ramps, and over/under passes between mileposts 8.8 and 35.0, encompassing the corridor from Bellevue Way in Bellevue (Exit 9) to 468th Avenue SE in North Bend (Exit 34). Collision data were examined for the period of January 2006 through December 2010. In keeping with *Target Zero* directives, analysis was limited to serious injury and fatal collisions.

A total of 14 fatal and 20 serious injury collisions occurred in the study corridor during the five year analysis period. The location of fatal and serious injury collisions is shown in Exhibit 2.4. Exhibit 2.5 shows fatal and serious injury collisions by type and contributing circumstance.

Injury Class

When the Washington State Patrol responds to a collision on a state highway, the responding officer will classify the severity of the injury as one of the following:

No Injury: Applies when 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.

Dead at Scene: Pronounced dead at the collision scene.

Dead on Arrival: Pronounced dead upon arrival at hospital or medical facility.

Died at Hospital: Died in hospital after arrival.

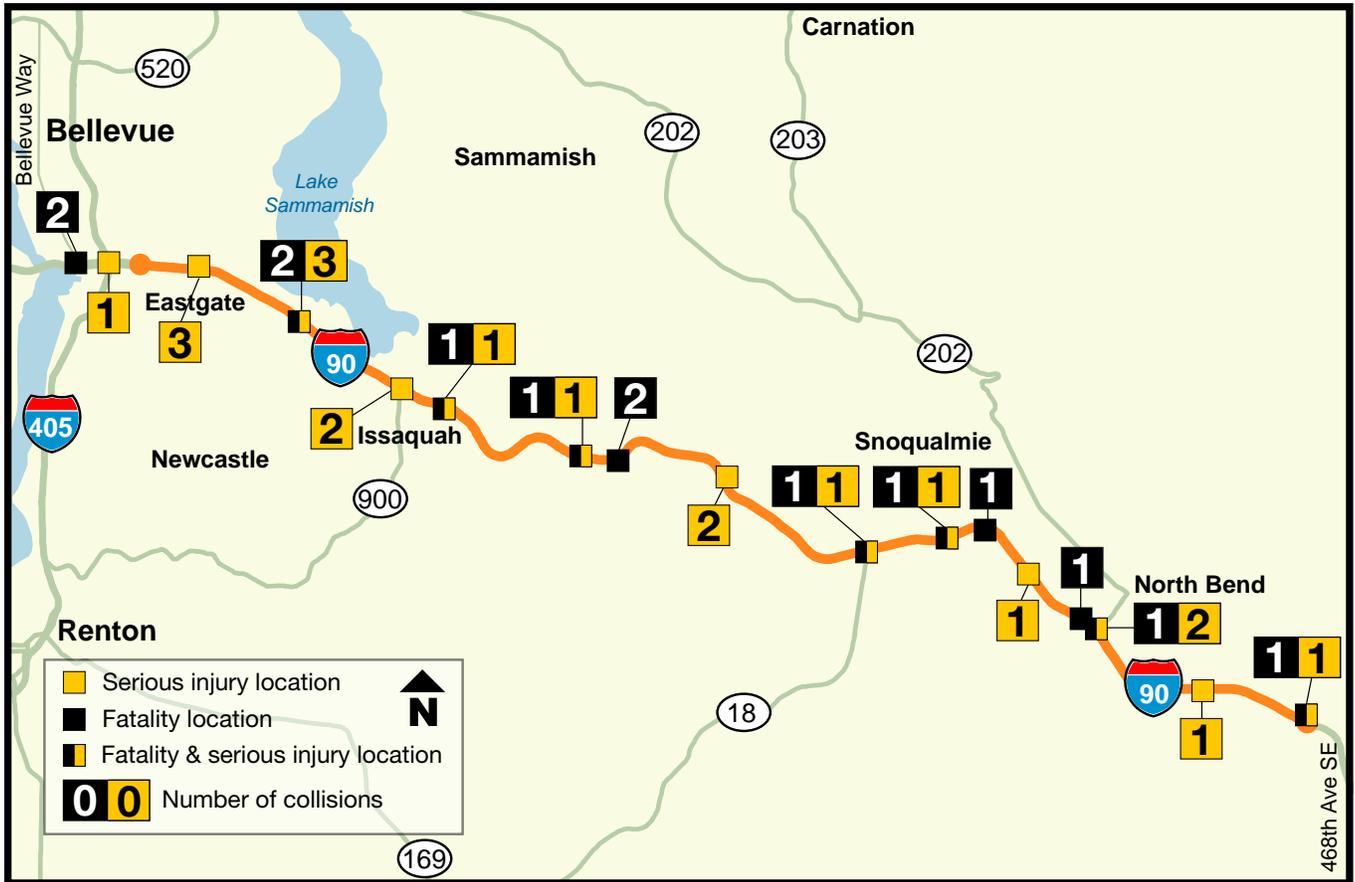
Serious injury: Any injury that prevents the injured person from walking, driving, or continuing normal activities at the time of the collision. Includes: severe lacerations, broken or distorted limbs, skull or chest injuries, abdominal injuries, etc. Excludes: momentary unconsciousness, etc.

Evident injury: Any injury other than fatal or serious at the scene. Includes: broken fingers or toes, abrasions, etc. Excludes: limping, complaint of pain, nausea, momentary unconsciousness, etc.

Possible injury: Any injury reported to the officer or claimed by the individual such as momentary unconsciousness, claim of injuries not evident, limping, complaint of pain, nausea, hysteria, etc.

See Police Traffic Collision Report (PTCR) Instruction Manual at www.wsp.wa.gov/publications/collision.htm

Exhibit 2.4: I-90 Fatal and Serious Injury Collision Locations between 2006 – 2010



Source: WSDOT Statewide Travel & Collision Data Office, July 2012.
 Under U.S. Code 23 Section 409, this data cannot be used in discovery or as evidence at trial in any action for damages against State, Tribal, or Local Government that involves the locations mentioned in this data.

Exhibit 2.5: I-90 Fatal and Serious Injury Collisions by Type & Contributing Circumstance between 2006 – 2010

Exit Number/ Major Intersection Area (within 0.50 mile)	Severity		Collision Type									Contributing Circumstance					Grand Total
	Fatal Collisions	Serious Injury Collisions	Fixed Object	Overturn	Rear-End	Ped/ Cyclist	Head-On	Hit Other Object	Left- Turn	Side- Swipe	Other	Impaired	Speeding	Driver Inattention	Tailgating	Other/ None	
09 – Bellevue Way																	
Mainline - Exp Lanes	1		1									1					1
Ramp - Exp Lanes	1		1										1				1
10 - I-405/Richards Rd/Factoria																	
Mainline		1			1								1				1
11 - 148th/150th/Eastgate																	
Mainline		2		1	1							1		1			2
Ramp		1	1										1				1
13 - WLSP/Lakemont																	
Mainline	1	2	1				1	1				1		2			3
Underpass	1	1		1					1				1				2
15 - SR 900/Sammamish Rd																	
Mainline		1			1												1
Ramp		1								1					1		1
17 - ELSP/Front St																	
Mainline	1	1			1						1				1	1	2
18 - Highlands/Sunset Way																	
NONE																	
Between Exits 18 and 20																	
Mainline	1	1	1			1										2	2
20 - High Point Way/270th																	
Mainline	2					2											2
22 - Preston-Fall City Rd/SE 82nd																	
Mainline		2		1							1	1				1	2
25 - SR 18/Echo Glen Rd																	
Mainline	1	1	1							1		1				1	2
27 - N Bend Way/Winery Rd																	
Mainline		1	1									1					1
Underpass	1										1		1				1
Between Exits 27 and 31																	
Mainline	2	1	2				1					2	1				3
31 - SR 202/Ribary Way																	
Mainline		2	1	1								1					2
Underpass	1								1							1	1
32 - 436th/Cedar Falls Rd																	
Overpass		1									1	1					1
35 - 468th Avenue SE																	
Mainline	1		1											1			1
Ramp		1						1					1				1
Grand Total	14 41%	20 59%	11 32%	4 12%	4 12%	3 9%	2 6%	2 6%	2 6%	2 6%	4 12%	10 29%	7 21%	4 12%	2 6%	11 32%	34 100%

Source: WSDOT Statewide Travel & Collision Data Office, July 2012.

Under U.S. Code 23 Section 409, this data cannot be used in discovery or as evidence at trial in any action for damages against State, Tribal, or Local Government that involves the locations mentioned in this data.

Fatal or serious injury collisions occurred at all of the interchange areas in the study area except for the Highlands/Sunset Way interchange (Exit 18). Seventy-four percent of the combined fatal and serious injury collisions happened on the mainline; 52% in the eastbound direction and 48% in the westbound. Twelve percent of the combined collisions occurred on underpasses; 3% on overpasses, and 12% on ramps.

Five fatal and serious injury collisions occurred in-between intersection areas, and were grouped into two locations:

- Between the Highlands/Sunset Way and Highpoint Way/270th interchanges (Exits 18 and 20). There was a fatal and a serious injury collision, both on the westbound mainline, which occurred within approximately 1/3 mile of each other.
- Between the North Bend Way/Winery Road and SR 202/Ribary Way interchanges (Exits 27 and 31). There was a fatal and a serious injury collision, both on the eastbound mainline, which occurred less than a mile from each other. There was also a fatal collision on the westbound mainline, to the east of where the eastbound collisions occurred.

Hitting fixed objects, over-turns, and rear-ends accounted for over half of the combined fatal and serious injury collisions. Circumstances contributing to fatal and serious injury collisions on the I-90 study corridor align closely with county-wide data which show alcohol/drug-impaired driving and speeding as the two leading causes of fatal collisions in King County.² Impaired driving and speeding constituted 36% of the fatal, and 71% of the serious injury collisions.

The fatal and serious injury collisions are discussed in more detail below.

Fatal Collisions

A total of 14 fatal collisions occurred during the five year analysis period. Eleven of the fatal collisions occurred at or within half a mile of an interchange.

All but four of the fatal collisions (71%) occurred on the mainline; three occurred on underpasses and one on an Express Lanes ramp. Directionally, 33% of the mainline fatal collisions occurred in the eastbound direction, and 67% in the westbound direction.

² *Washington State: Comparison of Factors Involved in Traffic Fatalities, Washington Traffic Safety Commission, Traffic Research and Data Center, June 2010, p18.*
www.targetzero.com/PDF/CountyData.pdf

Forty-three percent of the fatal collisions involved hitting fixed objects. The fixed objects included bridge rails and guardrails; none of these collisions occurred in close proximity to one other. The rest of the fatal collisions were composed of 14% of each of the following collision types: head-on, left-turn, pedestrian/cyclist, and merging with traffic from an onramp.

Contributing circumstances of the fatal collisions involved 21% of driving impaired, 14% each driver inattention and speeding, and 7% each not granting right-of-way and improper turning. There were also two pedestrian collisions. One involved a bus or motor stage hitting a pedestrian on the westbound mainline in lane 2 (the center lane) at night in an unlit area, and the second involved a pedestrian who was laying on the eastbound mainline in lane 3 (the inside left-most lane) at dawn. Both of these pedestrian collisions occurred at the High Point Way/270th interchange (Exit 20). The remaining two fatal collisions both had unknown contributing circumstances.

Serious Injury Collisions

A total of 20 serious injury collisions occurred during the five year analysis period. All but two of the serious injury collisions occurred at or within half a mile of an interchange.

Fifteen of the twenty serious injury collisions occurred on the mainline; one occurred on an underpass, one on an overpass, and one on a ramp. Directionally, 60% of the mainline serious injury collisions occurred in the eastbound direction, and 40% in the westbound direction.

Twenty-five percent of the serious injury collisions involved hitting fixed objects. The fixed objects included one instance of hitting a tree or stump, and four instances where the hit object was not reported by the responding officer. Twenty percent of the serious injury collisions involved over-turns and rear-ends each; ten percent involved sideswipes and hitting unspecified non-fixed objects each, and there was one incidence each of entering at an angle, hitting a cyclist, and an unknown collision type. The cyclist collision occurred on the westbound mainline shoulder between Exits 18 and 20, in the early morning when it was dark in an unlit area.

Contributing circumstances of the serious injury collisions involved 35% of driving impaired, 25% speeding, 12% each of tailgating and driver inattention, and 6% operating defective equipment. There were three serious injury collisions with unknown contributing circumstances.

Locations for Fatal and Serious Injury Collisions

The following locations along the corridor had multiple fatal collisions or three or more combined fatal and serious injury collisions:

- **Bellevue Way SE (Exit 9).** Two fatal collisions occurred at or within one-half mile of this interchange; one on the Express Lanes mainline and the other on the Express Lanes ramp going to I-405.
- **148th/150th Avenue SE (Exit 11).** Three serious injury collisions occurred at or within one-half mile of this interchange; one on each direction of the mainline and one on the westbound onramp.
- **West Lake Sammamish Parkway SE/Lakemont Boulevard (Exit 13).** Two fatal and three serious injury collisions occurred at or within one-half mile of this interchange; three on the eastbound mainline and two on the underpass. The mainline collisions occurred within 1.4 miles of each other (mileposts 12.90 – 14.27), and the underpass collisions within approximately 1/4 mile of each other (mileposts 0.08 and 0.36).
- **SE Highpoint Way/270th Avenue SE (Exit 20).** Two fatal collisions occurred on the mainline at or within one-half mile of this interchange, one in each direction.
- **Between the North Bend Way/Winery Road and SR 202/Ribary Way interchanges (Exits 27 and 31).** One fatal collision occurred on the westbound and one on the eastbound mainline in this area; a serious injury collision also occurred on the eastbound mainline. The two eastbound collisions occurred within 0.8 mile of each other and both involved hitting fixed objects; one a guardrail and one unspecified. The westbound collision occurred approximately one mile further east (mileposts 27.80 to 29.62).
- **SR 202/Ribary Way (Exit 31).** One fatal and two serious injury collisions occurred at or within one-half mile of this interchange; two on the eastbound mainline and one on the underpass at the SR 202 intersection with Mt. Si Boulevard. The two eastbound mainline collisions occurred within 0.14 mile of each other, at mileposts 29.95 and 30.09.

2. Existing and Programmed Safety Projects

Another step of WSDOT corridor safety analysis is the identification of programmed safety projects. A “programmed” safety project means the project has been put on an agency list or into an agency plan to be considered for future funding by the state legislature.

A list was compiled of recently completed and current safety projects along with programmed projects which are included in regional transportation plans.

Recently Completed Projects

Safety Projects

Recently completed safety projects in the study area include:

- **I-90 - Bellevue Way Interchange Ramps – Paving (Exit 9).** This project involved the repaving of ramps and upgrade of guardrail to current standards. The new pavement eliminated cracks and ruts that can lead to collisions. The project was completed in July 2010.
- **Eastgate Interchange Area (Exit 11).** The following low-cost improvements were completed in 2011:
 - Upgrade of westbound directional signage to make it easier to understand.
 - Access restrictions and management installed at the Eastgate Mall and surrounding businesses.
 - Installation of guardrail on the westbound onramp.
- **I-90 - Sunset Way Interchange Modifications (Exit 18).** This project represents the final stage of the I-90 Sunset Way Interchange project in Issaquah. The project included widening of East Sunset Way from 6th Avenue NE to I-90 and replacement of a temporary retaining wall with a permanent concrete wall to support the wider roadway. It also included construction of a sidewalk and other safety and environmental improvements in the area. This project was completed in November 2010.
- **I-90 - Highpoint to Preston - New Trail (Exits 20-22).** This project involved the construction of a new shared-use, gravel trail near I-90 in Issaquah. The new trail connects the east end of the Issaquah-High Point Trail to the west end of the Preston-Snoqualmie Trail, filling a gap in the Mountains to Sound Greenway regional trail system. It separates trail users from I-90 and local streets which improves safety for drivers, pedestrians, and bicyclists. The project was completed in December 2010.

-
- **I-90 - East Fork Issaquah Creek Bridge to Raging River Bridge – Safety (Exit 22).** I-90 had a high frequency of “crossover” collisions in the interchange area of Preston-Fall City Road prior to this project. “Crossover” collisions involve a vehicle crossing over the dividing line or median between directions. Cable barrier and guardrail were installed in the median in this area. Construction was completed in March 2010.
 - **I-90 - Eastbound Ramps to SR 18 (Exit 25).** Improvements from this project included:
 - Eastbound offramp to SR 18: Installation of a new right turn lane, a second left turn lane, and a new signal.
 - SR 18 under I-90: Construction of a new northbound lane to Snoqualmie Parkway, extending about 1000 feet to the north of I-90.

This project was completed in 2007. Collision data from November 2002 through May 2010 show the number of evident and possible injury collisions has decreased on the eastbound I-90 mainline from 3.0 to 1.8 per year, on the eastbound offramp to SR 18 from 1.4 to 1.2 per year, and on the SR 18 underpass from 1.4 to 0.8 per year since completion of this project. In addition, the yearly rate of all collisions on northbound SR 18 approaching I-90 has improved significantly, dropping from 4.4 per year to 0.8 per year. Please note that this before-and-after comparison includes a full five years of data before the improvement, but only approximately 2 1/2 years since the improvement. It is therefore not an apples-to-apples comparison, but does show a promising trend.

- **I-90 - Eastbound Ramp to SR 202 (Exit 31).** This project involved construction of a two-lane roundabout at the intersection of the I-90 eastbound ramps and SR 202 in North Bend. The project was completed in 2007. The new roundabout has removed the problem of vehicles on the eastbound offramp backing up onto the I-90 mainline. Initial citizen feedback indicated confusion with the approach and entry into and through the roundabout. Further improvements to the roundabout approach, signage, curbs, and striping were completed in February 2010 to make the intersection less confusing to users.

Collision data from October 2002 through May 2010 for the eastbound I-90 approach to this interchange show a decrease in both severity and frequency of collisions since completion of the initial project in October 2007. There have been no fatal, serious, or evident injury collisions on the eastbound roadway since that date, and possible and no-injury collisions have changed from a rate of 2.8 to 2.4 per year. Collisions on the eastbound offramp have decreased in both severity and frequency. Evident and possible injury collisions have gone from 0.8 per year to zero, and the number of all collisions has gone from 1.6 to 1.2 per year.

The collision data for the SR 202 undercrossing show no difference in the rate of evident injury collisions per year, an increase from 0.6 to 1.6 in the rate of “possible” injury collisions per year, and a decrease of no-injury collisions from 1.8 to 1.2 per year. Collision data on SR 202 approaching I-90, however, show a sharp decline in both frequency and severity of all types of collisions. Evident and possible injury collisions have gone from 4.2 to 2.4 per year, and the number of all collisions has gone from 16.8 to 10.4 per year.

Please note that this before-and-after comparison includes a full five years of data before the improvement, but only approximately 2 1/2 years since the improvement. It is therefore not an apples-to-apples comparison, but does show a promising trend.

Emergency Preparation/Economic Recovery Projects

Another project recently completed in the study area was the I-90 - Eastside Bridges Seismic Retrofit project. Thirteen bridges between the Eastgate Park-and-Ride (Exit 11) and Front Street (Exit 17) in Issaquah were upgraded, including widened cross beams, girder supports, steel column jackets, and reinforcing walls. Bringing these bridges to current earthquake standards reduces the chance of failure during a significant earthquake. The project was completed in March 2010.

Seismic retrofitting does not reduce collision numbers or risks associated with driving. Seismic retrofitting is a strategy to reduce the risk of serious injury during a major seismic event. These thirteen bridges form part of the state’s critical highway network required to move emergency supplies and people during an evacuation, as well as equipment to aid in the recovery effort afterwards.

Current Projects

There are no current projects in this corridor which would affect safety.

Proposed Projects

Capital Improvement and Preservation Program

WSDOT addresses identified safety needs on an on-going basis as part of the Capital Improvement and Preservation Program (CIPP) and biennial program development process. The CIPP constitutes WSDOT's annual request to the Governor for funding of transportation projects. It includes all preservation and improvement projects, and is composed of four subprograms: mobility, safety, economic initiatives, and environmental retrofit.

The following projects are currently identified in the CIPP:

- I-90/West Lake Sammamish Parkway - Intersection Modification (Exit 13). This project would install a roundabout at the westbound ramp termini. Construction is scheduled for 2013.

Regional & State Plans

Mobility projects which may also reduce the frequency and/or severity of collisions are listed in two long-range transportation planning documents: The state Highway System Plan (HSP) (www.wsdot.wa.gov/planning/HSP) and Transportation 2040 (www.psrc.org/transportation/t2040/), the regional transportation plan (RTP). Although these documents do not list safety projects per se, many of the mobility projects may have safety benefits. Inclusion in these two planning documents is the first step toward funding allocation.

The HSP is the state’s overall transportation plan for highways. It includes an analysis of facilities the state owns and those in which the state has an interest. The HSP is updated every two years and serves as the basis for the six-year highway program and the two-year biennial budget request to the State Legislature. The HSP lists mobility recommendations that are categorized into three tiers, as follows:

- **Tier I: System Operation.** These projects consist of lower cost projects, shorter delivery schedules, and system-wide implementation applications. Examples include “intelligent transportation systems” (ITS), access management projects, ramp modifications, turn lanes and intersection improvements.
- **Tier II: System Efficiency.** These projects build upon Tier I improvements and promote optimization of traffic operation systems. They include operational improvements such as ramp metering, turn lanes, adjusting the timing of signals, adding auxiliary lanes, improving a parallel corridor, or ITS.
- **Tier III: System Expansion.** These projects build upon the previous two tiers and tend to be higher cost projects with corridor-wide benefits. They may include adding general purpose or high occupancy vehicle (HOV) lanes, passenger rail, transit, multi-modal facilities, or major interchange modifications. Such projects are considered after all lower cost alternatives have been exhausted.

Tier I projects are typically smaller and involve limited construction activities. The quick implementation and lower cost increase their likelihood of being funded. Tier III projects are categorized as such primarily due to their anticipated higher cost, degree of construction difficulty, and time required to design and build. These projects require state or federal highway funding because their expense is above what local jurisdictions and agencies can afford. The legislature is the funding authority for all Tier III projects.

Intelligent Transportation Systems

ITS includes improvements such as radio, microwave, and fiber optics for communications; closed-circuit television to help detect congestion and accidents and be aware of traffic and road conditions; variable message signs used to provide motorists with important information; highway advisory radio to provide alerts and general information regarding traffic and travel; road/ weather information systems to provide weather and road surface conditions; ramp meters to control the flow of vehicles entering the freeway mainline; traffic detectors to monitor operations and provide traffic conditions to the Web and the WSDOT 511 traffic information hotline; and regional Traffic Management Centers, which are the nerve centers for WSDOT’s operations activities.

www.wsdot.wa.gov/operations/its

The RTP is the transportation plan for the central Puget Sound region over the next 30 years. It outlines how this region should invest in transportation through implementation of Vision 2040 (www.psrc.org/growth/vision2040), the long range environmental, growth management, economic development, and transportation strategy for the central Puget Sound region. The RTP responds to Washington's Growth Management Act and conforms to federal transportation planning requirements. RTP projects are categorized as either constrained or unprogrammed. Constrained projects are part of the overall work program and were coordinated with a specific anticipated funding level. They therefore have a higher potential to be funded by the legislature than unprogrammed projects. Unprogrammed projects lack a specific funding strategy and are considered more illustrative or aspirational in nature. Unprogrammed projects are nevertheless sometimes funded because funding authority rests with the state legislature.

The HSP was last updated in 2007 and is currently being revised. The RTP was adopted in May 2010 by the Puget Sound Regional Council. Findings in the *I-90 Corridor Study* are more recent and in some cases reflect changes to study area projects listed in these two planning documents; discrepancies between these documents and the findings of this corridor plan are noted below. The decision as to which improvements are made will be determined at the time of implementation.

Projects in the I-90 study area corridor that are listed in the HSP and/or the RTP include the following items:

- **I-90 mainline, I-5 to I-405:** Active Traffic Management. HSP Tier I.
- **I-90/I-405 interchange:** Westbound to northbound HOV direct connection. HSP Tier III; RTP constrained, year 2030.
- **I-90 mainline, Eastgate to West Lake Sammamish Parkway:** Eastbound Peak Use Shoulder Lane. HSP Tier II; RTP constrained, year 2040.

Washington's Growth Management Act

The Washington Legislature enacted the Growth Management Act in 1990 to guide planning for growth and development in the state. One of the key features of the act is for regional transportation planning organizations (RTPOs) to develop a regional transportation plan. The RTPO for King, Kitsap, Pierce, and Snohomish counties is the Puget Sound Regional Council.

[Growth Management Act](#)

Puget Sound Regional Council

The Puget Sound Regional Council (PSRC) is the regional and metropolitan and transportation planning organization for Snohomish, King, Pierce, and Kitsap counties.

www.psrc.org

- **I-90/West Lake Sammamish Parkway interchange:** Convert the existing single lane roundabout to a dual lane roundabout. HSP Tier II; RTP constrained, year 2040. (Note that the *I-90 Corridor Planning Study* recommends implementation of this item by 2030).
- **I-90 mainline, West Lake Sammamish Parkway to SR 900:** add one Westbound Peak Use Shoulder Lane. HSP Tier III; RTP constrained, year 2040. (Note that the *I-90 Corridor Planning Study* recommends implementation of this item by 2030).
- **I-90/SR 900 interchange:** HOV direct access ramps. RTP unprogrammed.
- **I-90/Front Street interchange:** Reconstruct the Front Street interchange. HSP Tier III; RTP constrained, year 2040. (Note that the *I-90 Corridor Planning Study* recommends implementation of this item by 2030).
- **I-90/Preston-Fall City Road interchange:** Install signal and widen existing bridge. HSP, Tier II.
- **I-90/SR 18 interchange:** Construct freeway to freeway interchange at SR 18, widen to four lanes in each direction, maintain truck lanes, and reconstruct interchange ramps. HSP Tier III, RTP constrained, year 2040.
- **I-90/SR 18 interchange:** Westbound off-ramp to SR 18, add right turn lane channelization. HSP Tier II. (Note that based on current analysis discussed in the *I-90 Corridor Planning Study*, ATM may be implemented in place of the right turn lane).
- **I-90/North Bend Way (Winery Rd):** Rebuild ramp to standards. HSP Tier III. (Note that although this project is listed in the HSP and RTP, it has been removed from the *I-90 Corridor Planning Study* based on high costs and relatively low benefit resulting from a steep grade at this location).
- **I-90/436th Ave SE Interchange:** Add two roundabouts at ramp terminals. HSP Tier II. (Note that although this project is listed in the HSP and RTP, it has been removed from the *I-90 Corridor Planning Study* based on high costs from a required bridge widening. Signals are being recommended instead).

Active Traffic Management

ATM, or “smarter highways,” is technology that allows dynamic control of traffic based on real-time roadway conditions. Everyday and incident-related congestion can be managed to improve roadway safety and traffic flow through applications such as electronic traffic information messages, variable speed limits, electronic re-direction of traffic, use of shoulders during peak periods, and estimated travel time displays.

www.wsdot.wa.gov/congestion/technology

www.wsdot.wa.gov/smarterhighways

Direct Access Ramps

Direct access ramps allow buses, carpools, vanpools, and motorcycles to directly access the high occupancy vehicle (HOV) lanes in the center of the freeway. They come down from above the mainline, or up from below, and merge into the HOV lane from inside the median.

www.wsdot.wa.gov/hov/DirectAccessRamps

3. Safety Priority Array Lists

WSDOT maintains three safety priority array lists. These three lists provide candidate locations for inclusion in the safety program each biennium. The safety priority array lists are composed of collision analysis locations (CALs), collision analysis corridors (CACs), and intersection analysis locations (IALs). These three lists were reviewed in order to identify any locations in the study area.

Collision Analysis Locations

Collision analysis locations are spots on state routes with a five-year history of four fatal or serious injury collisions and six evident injury collisions. These collisions must also be locations without programmed safety projects. Note that this analysis does not include city streets or state highways in cities with a population over 25,000.

This restriction is based on the Revised Code of Washington (RCW) 47.24.020.

Study area locations on the current CAL safety priority array list are:

- West half of the I-90 Bellevue Way interchange (Exit 9), milepost 8.90 – 9.26.
- West half of the I-90 West Lake Sammamish Parkway interchange (Exit 13), milepost 12.90 – 13.70.

Collision Analysis Corridors

Collision analysis corridors are state routes with a five-year history of 11 fatal or serious injury collisions within five miles of each other. Note that this analysis does not include city streets or state highways in cities with a population over 25,000, per RCW cited above.

- There are no study area locations on the current CAC safety priority array list.

RCW 47.24.020

This Revised Code of Washington states that cities and towns with a population over 25,000 have total jurisdiction over traffic movement on state highways that pass within their jurisdiction and are therefore responsible for improving the safety of these facilities. The only exception to this is state routes with “full access control,” i.e., highways with limited locations to get on or off the facility, such as freeways.

Intersection Analysis Locations

The intersection analysis locations are composed of intersections which have experienced eight collisions between 2005 and 2009 from an at-angle, left-turn opposite direction, or rear-end collision. The eight collisions must also total to an estimated “total societal cost” of \$900,000. Note that this analysis does not include city streets or state highways in cities with a population over 25,000, per RCW cited above.

Study area locations on the current IAL safety priority array list are:

- 148th/150th Ave SE overpass (Exit 11), at the intersection with eastbound ramps and SE 36th Street.

4. Behavior-Related Causes of Collisions

A review of the collision data was also performed to identify behavior-related causes of fatal and serious injury collisions which may lend themselves to enforcement solutions. With few exceptions, the majority of collisions that were analyzed in this corridor were a result of driver behavior.

The two largest contributing factors to fatal and serious injury collisions were impaired driving (alcohol and/or drug use) and speeding. The other two contributing factors were driver inattention and tailgating. All four of these causes can be considered behavioral and might benefit from targeted enforcement. Locations with the highest concentrations of fatal and combined fatal/injury locations were discussed in the *1. Collision Data Review* section of this chapter.

Many of the fatal/serious injury collisions involved drivers which were either at the young or senior end of the age scale, and 71% of the drivers were male. Sex and age of drivers involved in fatal and serious injury collisions are shown in Exhibit 2.6.

Exhibit 2.6: Driver Sex and Age of I-90 Fatal and Serious Injury Collisions between 2006 – 2010

Exit Number/ Major Intersection Area (within 0.50 mile)	Severity		Sex			Age					Grand Total
	Fatal Collisions	Serious Injury Collisions	Male	Female	Unknown	18-29	30-39	50-59	60+	Unknown	
09 – Bellevue Way	2		2			1		1			2
10 - I-405/Richards Rd/ Factoria		1	1			1					1
11 - 148th/150th/Eastgate		3	2	1		3					3
13 - WLSL/Lakemont	2	3	4	1		1	1		3		5
15 - SR 900/Sammamish Rd		2	1	1			1		1		2
17 - ELSP/Front St	1	1	2			1	1				2
18 - Highlands/Sunset Way											0
Between Exits 18 and 20	1	1	1		1			1		1	2
20 - High Point Way/270th	2		1		1			1		1	2
22 - Preston-Fall City Rd/SE 82nd		2		2				1	1		2
25 - SR 18/Echo Glen Rd	1	1	2			1		1			2
27 - N Bend Way/Winery Rd	1	1	1	1		2					2
Between Exits 27 and 31	2	2	3			2	1				3
31 - SR 202/Ribary Way	1	2	2	1		2			1		3
32 - 436th/Cedar Falls Rd		1		1		1					1
34 - 468th Avenue SE	1	1	2			1		1			2
Grand Total	14	20	24	8	2	16	4	6	6	2	34
	41%	59%	71%	24%	6%	47%	12%	18%	18%	6%	100%

Source: WSDOT Statewide Travel & Collision Data Office, July 2012.

Under U.S. Code 23 Section 409, this data cannot be used in discovery or as evidence at trial in any action for damages against State, Tribal, or Local Government that involves the locations mentioned in this data.

These demographics can help steer educational efforts to areas where they might be the most helpful, for example high schools, Bellevue Community College and other community colleges and universities, trade schools, senior centers, or the American Association of Retired People.

Target Zero and community task force involvement may also be helpful. *Target Zero* community task forces bring local police, health department, and transportation departments into alignment with the goal of zero fatal and serious injury collisions by the year 2030. The task forces work together with the state Traffic Safety Commission to identify the highest need areas, and then target those areas for education and enforcement.

Does enforcement make a difference?

The Washington State Patrol saw an increase in speed-related fatalities in 2005 in King, Pierce and Snohomish Counties. Chief John Batiste ordered troopers to emphasize speed enforcement in appropriate areas. Deaths have dropped each year since.

www.wsp.wa.gov/targetzero

5. Applicable Low Cost Improvements

Low cost improvements can often be cost-effectively used to lower fatal and serious injury collisions. WSDOT traffic offices in each area compile a list of proven low cost strategies which have had success, when applied appropriately, in reducing the frequency and severity of such collisions. Some examples of low cost enhancements are signage, restriping to create turning or passing lanes, limited guard and bridge rail modification and installation, rumble strips, or cable barriers.

Low cost improvement suggestions for the study area are as follows:

- **Corridor-Wide**
 - Replace multiple guardrail end-pieces throughout the corridor.
- **I-405/Richards Road (Exit 10)**
 - Improve signage for westbound drop lane approaching I-405.
- **West Lake Sammamish Parkway SE/Lakemont Boulevard (Exit 13)**
 - Installation of a sidewalk landing in the northeast corner of the signalized intersection of Newport Way and Lakemont Boulevard to improve safety for pedestrians and cyclists.
- **SR 900/NW Sammamish Road (Exit 15)**
 - Improve signage for eastbound drop lanes approaching SR 900.
- **East Sunset Way/Highlands Drive (Exit 18)**
 - Possible signalization, if warranted, of all movements at the westbound offramp intersection with East Sunset Way. This intersection is currently signalized for left turns only. Signalization of all movements may improve safety for Rainier Trail users by helping to minimize conflict with right-turning vehicles.

-
- **Mainline between Exits 18 and 20.**
 - Westbound near milepost 19: Install guardrail to reduce traffic exposure of eastern end of concrete wall.
 - Eastbound near milepost 19: Replace earth-berm at eastern end of guardrail with standard end-piece.
 - **Preston-Fall City Road Interchange (Exit 22)**
 - Installation of guardrail in the median.
 - Installation of guardrail on the westbound mainline and onramp.
 - **SR 18 Interchange (Exit 25)**
 - Extend cost-effective ITS solutions as costs allow.
 - Install a traffic camera at Echo Lake and Tanner. Cameras would provide a view of westbound traffic and weather conditions approaching the SR 18 interchange, and allow the posting of advisory messages.
 - New/improved signage for eastbound and westbound drop lanes approaching SR 18.

6. Higher Cost Improvements

The final step of WSDOT corridor safety analysis is to identify higher cost solutions that have potential for improvements for sites that have not been addressed by the previous reviews discussed. It is anticipated that the low cost improvements, increased education and enforcement, and *Target Zero* task force activities suggested above, along with the current and programmed study area projects listed in this chapter, will help to address the circumstances contributing to fatal and serious injury collisions along this corridor.

Non-WSDOT Transportation Facilities and Services in the Corridor

Transit

Since the late 1980s the region has made significant investments in transit infrastructure along I-90 to support a strong rideshare market. Investments include the downtown Seattle Transit Tunnel, the center roadway on the I-90 floating bridge across Lake Washington for HOV/transit and Mercer Island traffic, HOV lanes to Issaquah, direct access ramps at the Eastgate Park-and-Ride in Bellevue, and construction of the Issaquah Transit Center. These facilities provide a less congested and more reliable pathway for transit and HOVs.

Bus service in the study area is provided by Sound Transit and King County Metro. During the peak period, buses arrive every 10 to 15 minutes, with off-peak bus service available every 30 to 60 minutes. Exhibit 2.6 describes these transit routes, their numbers, daily trips, and average weekday ridership in 2008 and 2011.

Snoqualmie Valley Transportation (SVT) is a non-profit transit service provided by the Mt. Si Senior Center and Snoqualmie Tribal Nation. SVT provides transportation for anyone over 13 years old within the Snoqualmie Valley. The service area includes North Bend, Snoqualmie, Preston, Fall City, Carnation, Duvall, and Monroe.

Microsoft's Connector service offers peak service to their employees from Snoqualmie Ridge and South Sammamish Park-and-Ride to Overlake.

Exhibit 2.7: I-90 Transit Routes

Sound Transit Regional Express Routes					
Number	Description	Number of Daily Trips		Average Weekday Ridership	
		Spring 2008	Spring 2011	Spring 2008	Spring 2011
554	Issaquah – Highlands	78	95	2,230	2,434
555	Issaquah – Northgate	12	13	380	402
556	Issaquah – UW – Northgate	14	16	530	594
King County Metro Routes					
209	North Bend – Issaquah (van)	21	31	190	383*
210	Issaquah – Seattle	10	9	180	177
212	Overlake – Eastgate – Seattle	40	39	1,800	1,372
214	North Bend – Seattle	10	21	340	645
215	North Bend – Issaquah – Seattle	10	10	NA	461*
216	Sammamish – Seattle	12	12	540	537
217	Issaquah – Seattle	6	6	220	202
218	Issaquah Highlands – Seattle	27	29	1,560	1,532*
225	Overlake – Eastgate – Seattle	6	6	250	208
229	Overlake – Eastgate – Seattle	8	8	450	353
271	Bellevue – Issaquah	59	129	2,980	4,664

Note: Data shows total ridership on routes which operate along the I-90 Corridor. Many of the riders may not actually use the service while it is within the corridor. Route 271 is an example of where many riders are not riding in the I-90 Corridor. The data come from limited sampling of each trip. The spring 2011 data collection is incomplete and was compiled on 05/07/11.

* Indicates that some trips were not sampled so the data makes assumptions for those trips based on previous observations for the same or similar trip.

Park-and-Ride Lots

The Puget Sound Regional Council analyzed the capacity and occupancy trends of permanent park-and-ride lots in the central Puget Sound region from 2007 to 2010, which was published in Puget Sound Trends of June 2011. During a three-year period from 2007 to 2010, the region saw an expansion in the supply of permanent park-and-ride lots and stalls. The east King County subarea had an increase of 16% growth in stalls during this time period with the opening of the Issaquah Transit Center and Highlands Park & Ride.

The regional park-and-ride occupancy rate peaked in 2008 with 80% of the stalls in the region occupied. The occupancy rate sharply decreased in 2009 with a 10% regional decline in use. The park-and-ride overall occupancy rate in East King County decreased 3% from 78% in 2007 to 75% in 2010. While the occupancy rate of the park-and-ride system decreased significantly from 2008 to 2009 due to the economic recession experienced throughout the region and nation, newer data indicates that this trend has leveled off and commuters are utilizing park-and-ride lots in increasing numbers according to PSRC.

The city of North Bend constructed the North Bend Park-and-Ride on both sides of W North Bend Way during 2010 and 2011. The project created 80 spaces in north and south parking lots. The park-and-ride opened in 2011. A smaller park-and-ride lot in Preston has 53 parking spaces.

Utilization and occupancy for seven of the Park-and-Ride Lots on the study corridor are shown for the last three quarters in Exhibit 2.8.

Exhibit 2.8: Utilization and Occupancy for Park-and-Ride Lots along the I-90 Study Corridor

Park-and-Ride Lot	Capacity	Utilization (Occupancy)		
		3rd Quarter 2010	4th Quarter 2010	1st Quarter 2011
Eastgate	1,614	1,196 (74%)	1,277 (79%)	1,352 (84%)
Issaquah TC	819	647 (79%)	720 (88%)	737 (90%)
Issaquah Highlands	1,010	752 (75%)	795 (79%)	848 (84%)
Tibbetts	170	18 (11%)	16 (9%)	18 (11%)
S Sammamish	285	74 (26%)	87 (31%)	107 (38%)
Preston	53	37 (70%)	33 (62%)	23 (43%)
North Bend	80	N/A	N/A	4 (5%)

Counts are taken monthly at each lot midday, usually midweek, and are averaged for the quarter.

The Park-and-Ride Lots that are adjacent to the I-90 Corridor Study from Bellevue to North Bend are shown in the two tables below, which are current for spring 2012. Exhibit 2.9 includes the lots and transit routes near Bellevue, which were included in Metro’s East Side Park-and-Ride Lots. Exhibit 2.10 includes the lots and transit routes near Issaquah, North Bend, Preston, Sammamish, and Snoqualmie, which were included in Metro’s East King County Area Park-and-Ride Lots.

Exhibit 2.9: East Side Park & Ride Lots

Park & Ride Lots – East Side Effective June 9, 2012 through September 28, 2012		
Location	Amenities	Bus Routes
Bellevue		
Eastgate Congregational Church 15318 SE Newport Way	20 spaces	Metro routes: 207, 208, 210, 246, 271
Eastgate P&R 14200 SE Eastgate Way	1,614 spaces 3 electric vehicle charging stations 14 bike lockers bike racks	Metro routes: 211, 212, 217, 221, 226, 240, 241, 245, 246, 271, 888, 890, 981, 989 Sound Transit: 555
St Andrew’s Lutheran Church 2650 1248th Ave SE	20 spaces	Metro routes: 221, 245, 271

Exhibit 2.10: East King County Area Park & Ride Lots

Park & Ride Lots – East King County		
Effective June 9, 2012 through September 28, 2012		
Location	Amenities	Bus Routes
Issaquah		
Issaquah Highlands P&R 1755 Highlands Dr NE	1000 spaces 14 electric vehicle charging stations 4 bike lockers bike racks	Metro routes: 211, 218, 269 Sound Transit: 554, 555, 556
Issaquah Transit Center 1050 17th Ave NW	800 parking spaces 4 Bike Lockers bike racks	Metro routes: 200, 209, 210, 214, 215, 269, 271, 927 DART Sound Transit: 554, 555, 556
Klahanie #1 P&R SE Klahanie Blvd & 244th PI SE	30 spaces	Metro routes: 927 DART
Klahanie #3 P&R Klahanie Dr. SE & SE 40th St	30 spaces	Metro routes: 927 DART
Tibbetts Valley Park P&R 965 12th Ave NW	27 spaces	Metro routes: 200, 209, 210, 214, 215, 269, 271, 927 DART Sound Transit: 554, 555, 556
Tibbetts Lot 1675 Newport Way NW	170 spaces	Metro routes: 200, 209, 210, 214, 215, 269, 271, 927 DART Sound Transit: 554, 555, 556
North Bend		
North Bend P&R W North Bend Way & Sydney Ave	80 spaces in two lots	Metro routes: 209, 215
Preston		
Preston P&R 30303 SE High Point Way	53 spaces	Metro routes: 209
Sammamish		
Sammamish Hills Lutheran 22818 SE 8th St	54 spaces	Metro routes: 216, 269, 927 DART
South Sammamish P&R 3015 228th Ave SE	65 spaces 4 Bike Lockers	Metro routes: 216, 269, 927 DART Sound Transit: 554
Snoqualmie		
Snoqualmie Community Park 35016 SE Ridge St	20 spaces	Metro routes: 215

Park-and-Ride Lot Study

In order to understand where users of the major park-and-ride lots adjacent to I-90 reside, WSDOT conducted a license plate survey at the Eastgate Park-and-Ride and the Issaquah Transit Center. License plate data was collected from each of these locations on February 5 and February 10, 2009.

Exhibits 2.11 and 2.12 show where the vehicles parked at the Eastgate Park-and-Ride Lot and Issaquah Transit Center are registered. Vehicle registration does not necessarily match where the driver's morning trip started, but provides a reasonable estimate of their trip origin.

During the two-day period, WSDOT read 936 license plates at the Eastgate Park-and-Ride Lot in Bellevue. The data shows that well over half of the vehicles are registered in Bellevue.

Approximately 670 license plates were read during the two-day period at the Issaquah Transit Center. The data indicates that more than 50 percent of the vehicles were registered to Issaquah and Sammamish addresses.

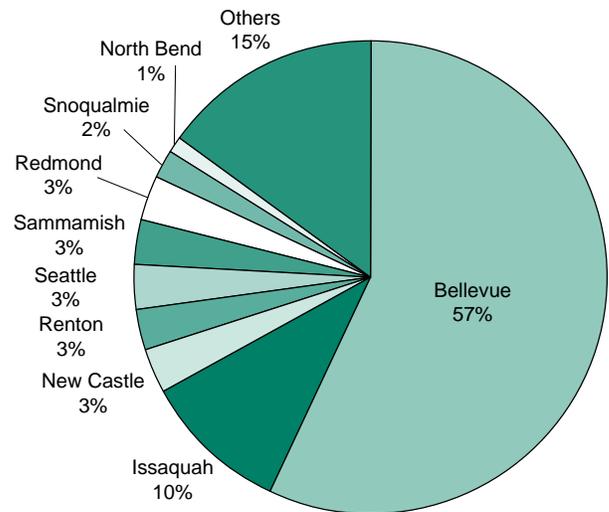


Exhibit 2.11: Vehicle Registrations at the Eastgate Park and Ride

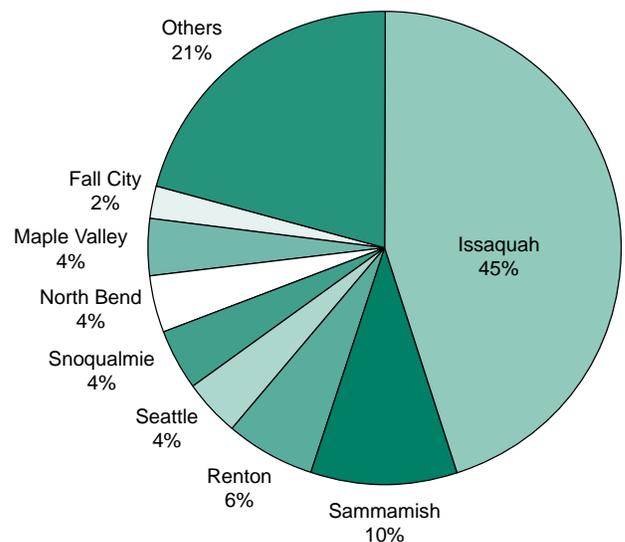


Exhibit 2.12: Vehicle Registrations at the Issaquah Park and Ride

Microsoft Connector Transportation Service

The Connector is a free bus and shuttle service provided by Microsoft for their full-time employees located in Redmond's Overlake Technology Center. Forty seven coaches that carry up to 1,000 riders a day on 19 routes throughout the region. Two of the five Connector routes operate in the study area, including the Issaquah/ South Sammamish and Snoqualmie/Issaquah routes.

The service includes bike racks, Wi-Fi connectivity, and AC power ports. Pick-up times in the morning are between 6:20 and 9:30 AM and departure times from Redmond are in the evening between 4:30 and 7:30 PM.

Burlington Northern Santa Fe (BNSF) Corridor Future Passenger Rail Service

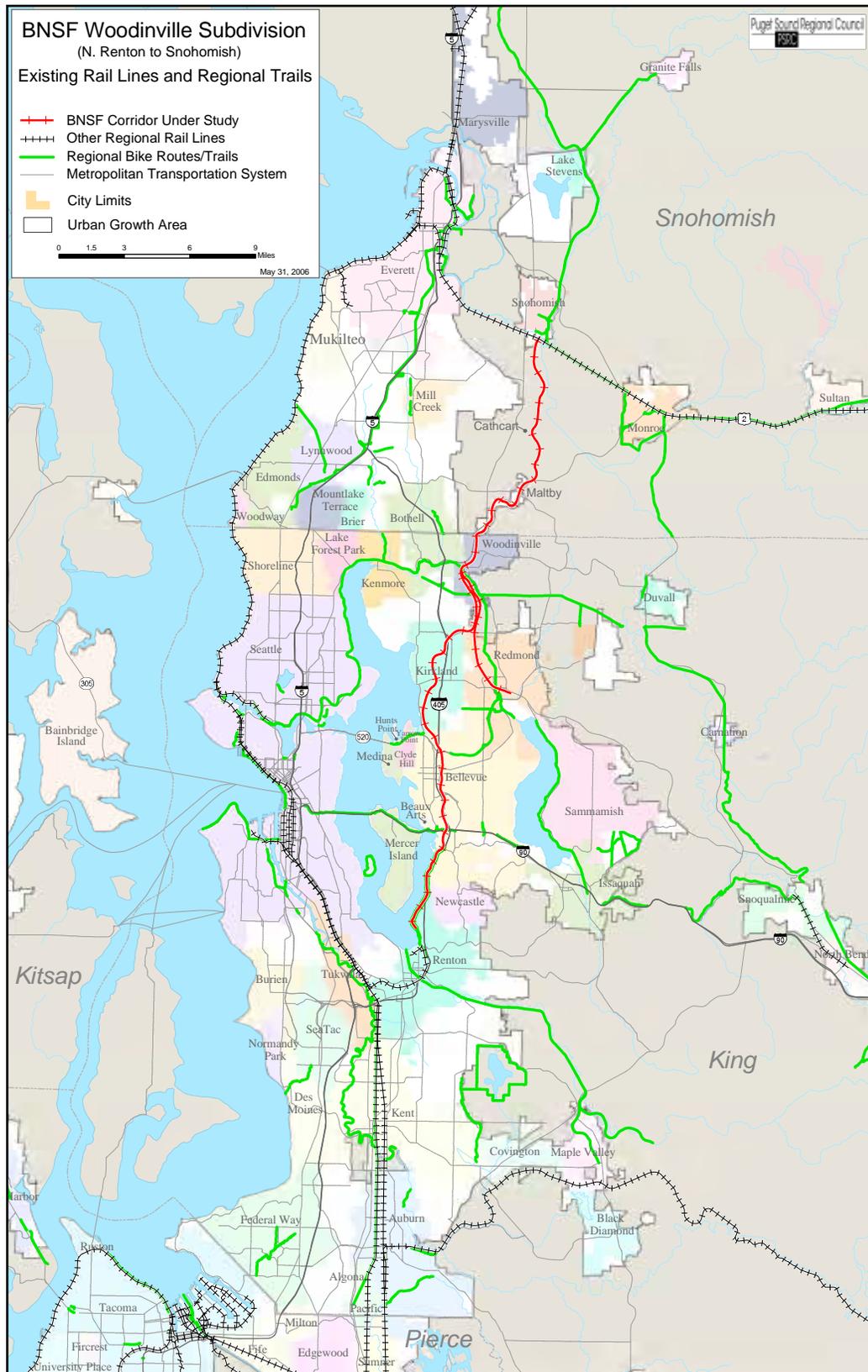
The Eastside BNSF corridor extends 34 miles from north Renton, through Bellevue and Woodinville, and on to Snohomish. The corridor also includes a 7-mile spur from Woodinville to Redmond. It is extensively single-tracked, with mostly 100-foot wide right-of-way and includes: 24 bridge crossings, 97 curves and 107 at-grade crossings. Potential future uses of the corridor, or certain segments of it, may include commuter/passenger rail, excursion trains, short haul freight service, and a regional bicycle and pedestrian trail.

A feasibility analysis of passenger rail service on the Eastside BNSF was completed by Sound Transit and the PSRC, as directed by the state legislature in December 2008. The analysis informed decision makers about possible passenger rail service on the Eastside BNSF as a meaningful component of the region's future transportation system.

The Port of Seattle finalized acquisition of the Eastside Rail Corridor from BNSF Railway in December 2009, after nearly two years of negotiations. Final cost for the northern section of the 42-mile corridor between Woodinville and Snohomish was approximately \$81 million. BNSF donated the southern portion of the corridor between Woodinville and Renton and the Redmond Spur that goes through the City of Redmond.

The Port will be joined by several local agencies in maximizing the corridor's benefit for the entire region. King County, Sound Transit, the City of Redmond, Puget Sound Energy, and the Cascade Water Alliance will partner with the port, with each agency acquiring an interest in the rail line corridor.

Exhibit 2.13: Existing Rail Lines and Regional Trails



Freight service will be maintained between Snohomish and Woodinville through an agreement between the Port of Seattle and a third-party operator. King County and Sound Transit will acquire rights in the southern section between Woodinville and Renton, and in the Redmond Spur. The southern and Redmond Spur portions of the track will be preserved for both transportation and recreation uses under the federal rail banking program.

King County intends to develop a regional trail along portions of the corridor. Sound Transit will own a section of track adjacent to downtown Bellevue for use in building the East Link light rail line and will have easements for potential future public transit service on the southern and Redmond Spur sections of the corridor. The map below is taken from the BNSF Eastside Corridor Commuter Rail Feasibility Study, Phase II Technical Memorandum: Feasibility Study. The map locates the corridor in relation to other rail lines and trails in the region. The Feasibility Study was prepared for Sound Transit and PSRC by Parsons Brinckerhoff.

Sound Transit will invest a maximum contribution of \$50 million dollars in the BNSF Corridor project. Funds may be used in connection with rail passenger development and associated work undertaken by other local governments and public agencies for future commuter rail service on the existing BNSF line.

What other projects will influence I-90 operations?

There are three regionally significant projects located outside the study area that will effect the operations of I-90 within the study area: the South Bellevue Widening Project on I-405, Sound Transit East Link Light Rail to Bellevue/Redmond, and the WSDOT/Sound Transit I-90 Two-Way Transit and HOV Operations project. In addition, the tolling of SR 520 might influence the operations of I-90. In the short term, it is anticipated that some drivers will avoid SR 520 tolls and divert to I-90. It is unclear how SR 520 tolling will impact I-90 over the long term.

I-405 South Bellevue Widening Project

The I-405 South Bellevue Widening Project between 112th Avenue SE and SE 8th Street Project added a new northbound lane from 112th Avenue SE to I-90 and widened the existing northbound bridge over Coal Creek Parkway. The project also added a new lane in each direction from I-90 to SE Eighth Street and removed the Wilburton Tunnel. The existing southbound bridge over I-90 was converted to carry the northbound HOV lane and a new, three-lane, southbound bridge over I-90 was built.

Previously, there was considerable queuing on I-90 at the I-405 northbound and southbound off-ramp. Since the I-405 interchange improvement was completed in November 2009, most of the interchange area operates at speeds higher than 55 mph, with only about an hour of congestion between 40 and 55 mph near the 142nd Place SE direct access ramps.



I-405/I-90 Interchange (2008)



I-405/I-90 Interchange project before completion in 2009

Sound Transit 2

In 2008, central Puget Sound region voters approved the Sound Transit 2 ballot measure, which provided funding to add express bus, commuter rail service, and construct 36 additional miles of light-rail, including light rail across the I-90 floating bridge serving Mercer Island, Bellevue, and Redmond by 2023.

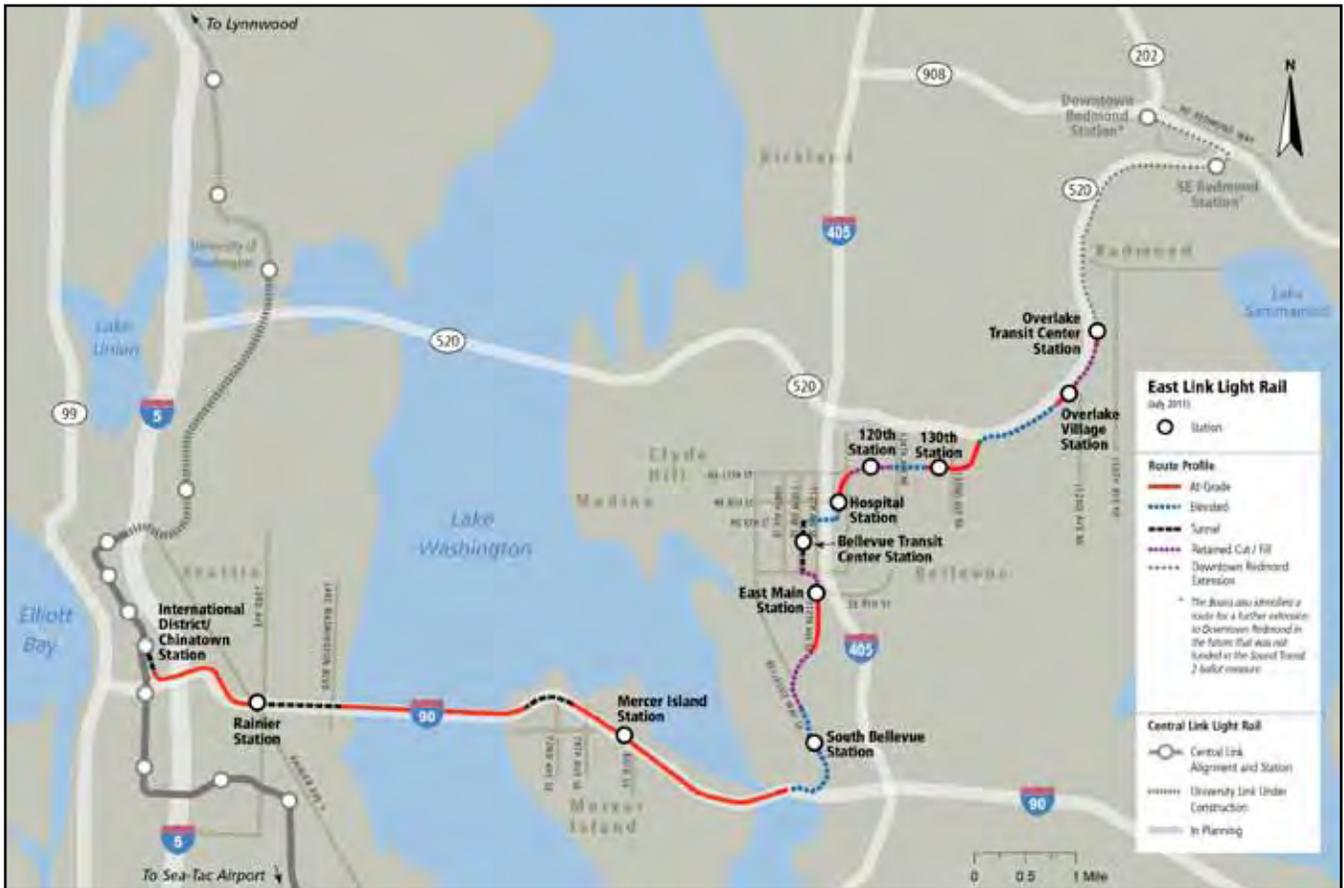
Exhibit 2.14 shows the planned East Link Light Rail route. The map was included in Sound Transit's East Link Project update of July 2011 and can be found at <http://projects.soundtransit.org/Projects-Home/East-Link-Project>.

According to Sound Transit's and King County Metro's East Link Service Integration Plan, Bus Rapid Transit service will be provided between Issaquah and downtown Seattle until light rail service is operational between Bellevue and Seattle in 2020. Once light rail service is completed to Bellevue, Sound Transit will provide Bus Rapid Transit service all day between Issaquah and the Mercer Island light rail station. The Mercer Island station will serve as a transfer point between BRT and light rail for Sound Transit riders. Metro will continue to provide peak period service from Issaquah into downtown Seattle.

Sound Transit 2 also provides \$3 Million to conduct a planning study to identify possible alignments, station locations and technology for high capacity transit between Mercer Island and Issaquah. The High Capacity Transit study is scheduled to be initiated in 2015.

WSDOT and Sound Transit have an understanding that WSDOT right-of-way can be used for High Capacity Transit improvements as long as the improvements do not preclude future WSDOT improvements such as widening.

Exhibit 2.14: Sound Transit East Link and Central Link Light Rail Routes



Bus Rapid Transit

Bus rapid transit, or BRT, is similar to light rail transit except that it uses rubber-tired buses. BRT has several characteristics that are different than regular bus service, such as:

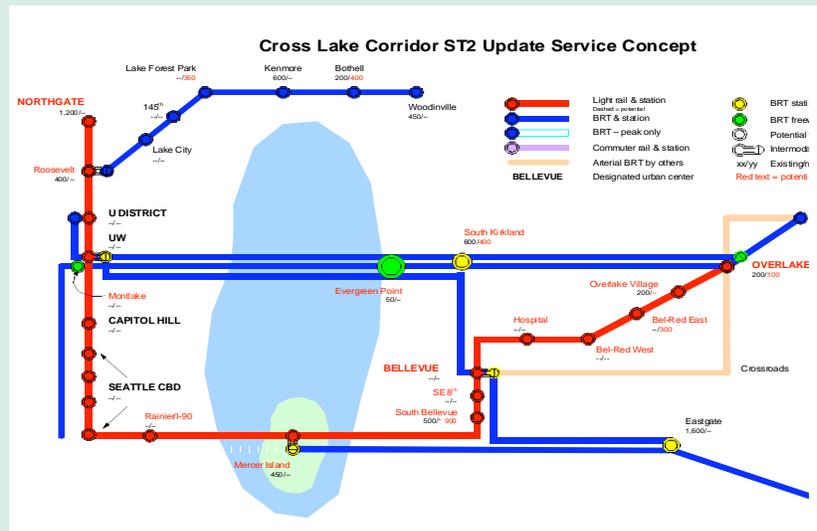
Fewer stops and generally higher speeds.

Off-vehicle fare collection. Users buy tickets or use passes at stations, rather than on the bus.

Distinctive-looking, low-floor buses similar to light rail vehicles.

The flexibility of BRT allows it to use dedicated busways, HOV lanes, or mix with general traffic.

When used on arterial streets, BRT often makes use of a signal-priority system to allow the buses a “head start” at green lights.



I-90 Two-Way Transit and HOV Operations

WSDOT and Sound Transit are adding HOV lanes to the I-90 outer roadway between Seattle and Bellevue to provide 24/7 HOV lanes across the I-90 floating bridge. This project will improve travel times for reverse transit and HOV's trips.

Currently I-90 has a two-lane reversible center roadway between Seattle and Bellevue for buses, carpools, and vanpools and single occupancy vehicles destined to/from Mercer Island. Single occupancy vehicles going to and from Mercer Island can also use the center roadway. The center roadway operates westbound in the mornings and eastbound in the evenings on the center roadway. Buses, carpools, and vanpools that are traveling in the opposite direction of the center roadway use general-purpose lanes. This makes reverse-commute buses and other high-occupancy vehicles traveling between Seattle and Bellevue run increasingly slower during rush hours and special events, which reduces the speed and reliability of transit and carpools.

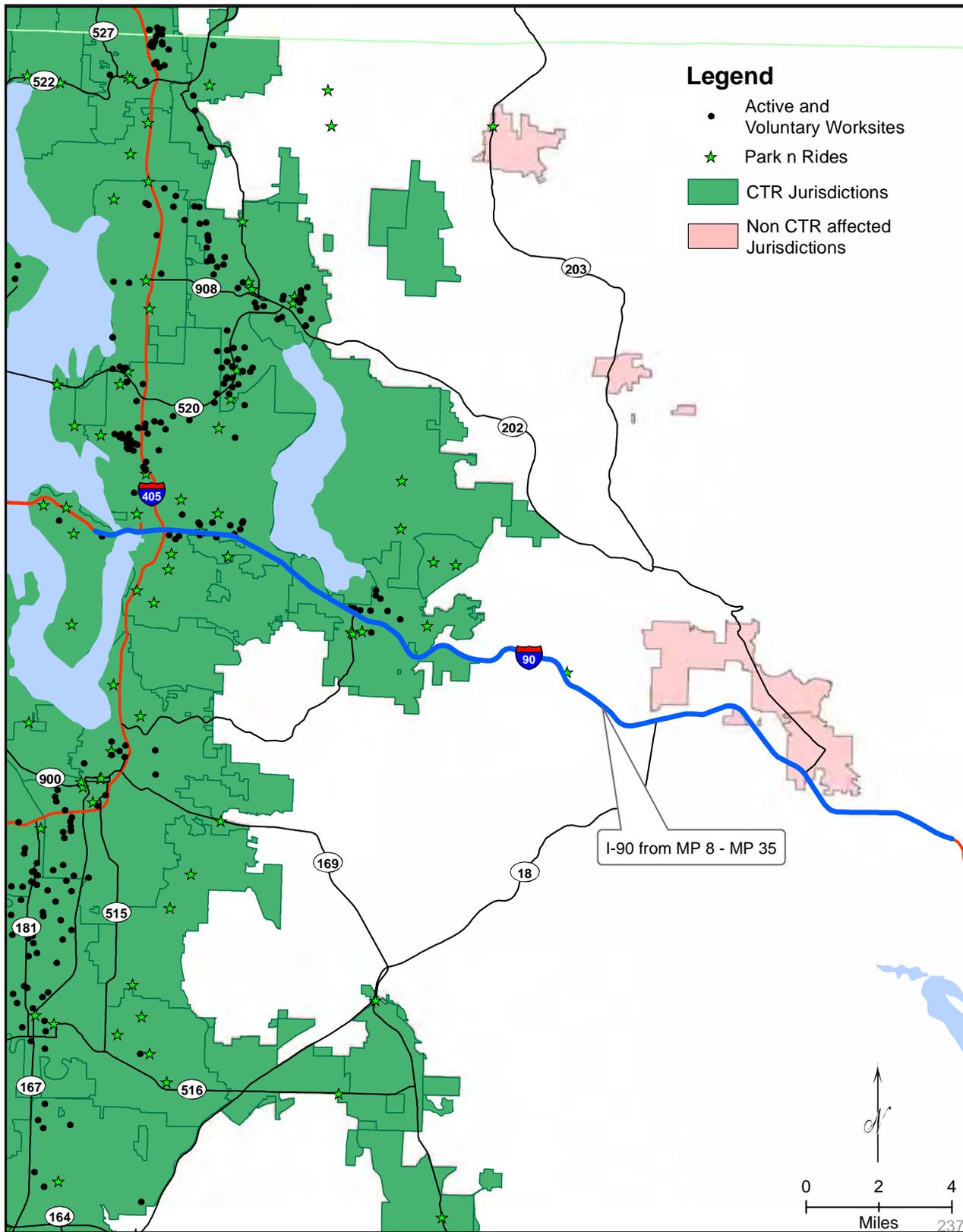
Policy Regulations and Programs

Commute Trip Reduction Law Program

The Washington State Legislature passed the Commute Trip Reduction (CTR) Law in 1991. The goals of the program are to reduce traffic congestion, air pollution, and petroleum consumption through employer-based programs that decrease the number of commute trips made by people driving alone.

The state's nine most populated counties, and the cities within those counties, are required to adopt CTR ordinances and support local employers in implementing CTR. Employers with 100 or more full-time employees at a single worksite who begin their workday between 6 and 9 AM are required to develop a commuter program designed to achieve reductions in vehicle trips by offering benefits such as subsidies for transit fares, flexible work schedules, and telecommute options. The cities of Bellevue and Issaquah are covered by the CTR law. See also Exhibit 2.15 on the following page.

Exhibit 2.15: CTR Affected Worksites and Jurisdictions



Growth and Transportation Efficiency Centers

In 2007, the Washington State Legislature provided one-time funding for a program called Growth and Transportation Efficiency Centers (GTEC) as part of the CTR law. The GTEC program is designed to customize trip reduction programs for employers with fewer than 100 employees within designated areas with a large employment base.

WSDOT and the city of Bellevue worked with downtown Bellevue employers to develop a GTEC plan to provide a customized trip reduction program that is tailored to Bellevue's employment and residential base. According to the Downtown Bellevue Growth and Transportation Efficiency Center Plan in October 2007, approximately 98 percent of the downtown Bellevue employers have fewer than 100 employees, representing 81 percent of all downtown employees. The GTEC plan focuses on the rapidly growing number of downtown Bellevue residents. In 2007, approximately 5,000 people lived downtown, which is predicted to increase to 14,000 residents by 2020.

Growth and Transportation Efficiency Centers (What is a GTEC?)

Efficient transportation is the bottom line for WSDOT's successful collaboration with local governments, transit agencies and businesses. The Growth and Transportation Efficiency Center (GTEC) program, part of the state's Commute Trip Reduction (CTR) law, is a unique and effective approach to economic development and efficient transportation in congested areas.

A GTEC is a dense mixed development with major employers, small businesses, and residential units within an established urban growth area. The goal of the GTEC program is to provide greater access to employment and residential centers while decreasing the proportion of commuters driving alone during peak periods on the state highway system. GTECs tailor CTR to communities with unique characteristics by helping them develop programs for smaller employers, workers and residents to encourage people to ride transit, vanpool, carpool, walk, bike or work from home to ease traffic and reduce greenhouse gas emissions. WSDOT works with GTECs and employers to set trip-reduction incentive programs, educate workers about commute choices and help enhance local policy.

Washington's GHG And VMT Laws

RCW70.235.020, adopted as state law in 2008, sets ambitious targets to reduce greenhouse gas (GHG) emissions, and RCW 47.01.440, also adopted in 2008, sets benchmarks to achieve per capita vehicle miles traveled (VMT) reductions over the next 40 years. The VMT benchmarks are per capita reductions of 18 percent by the year 2020, 30 percent by the year 2035, and 50 percent by the year 2050; these are based on an estimated VMT baseline of 75 billion miles in the year 2020.

The law sets no targets for any specific group of individuals, businesses, or geographic areas and exempts vehicles weighing over 10,000 pounds, which includes most freight and commercial vehicles. It establishes a statewide measure for VMT reduction statewide: the total vehicle miles divided by population. While the reduction targets of 18 percent, 30 percent, and 50 percent by mid-century are the same for GHG and VMT, the starting point or baseline measurement for each is different. The baseline for GHG reduction is 1990 emissions levels. The baseline for VMT reduction is a 2008 projection of 75 billion VMT in Washington State for the year 2020.

Chapter 3:

Current and Future Operations without Improvements

Currently, I-90 between the Eastgate Interchange in Bellevue and the Front Street Interchange in Issaquah operates 70% below the posted speed limit of 60 m.p.h during peak hours.

Average Daily Traffic Volumes

WSDOT collects traffic data volumes statewide, and uses these measures as an indicator of existing demand. See Exhibit 3.1 for Average Daily Traffic Volumes and truck volumes along the corridor. The highest volume of traffic is between Bellevue and Issaquah. The 2010 Average Daily Truck volumes range from approximately 4,000 (~6% of the traffic) to 11,500 a day (~20% of the traffic) depending on the location. The number and percentage of truck traffic is highest east of the I-90/SR18 interchange because SR 18 provides connections to the Green River Valley Freight Distribution Centers. (For specific truck data, see Appendix A).

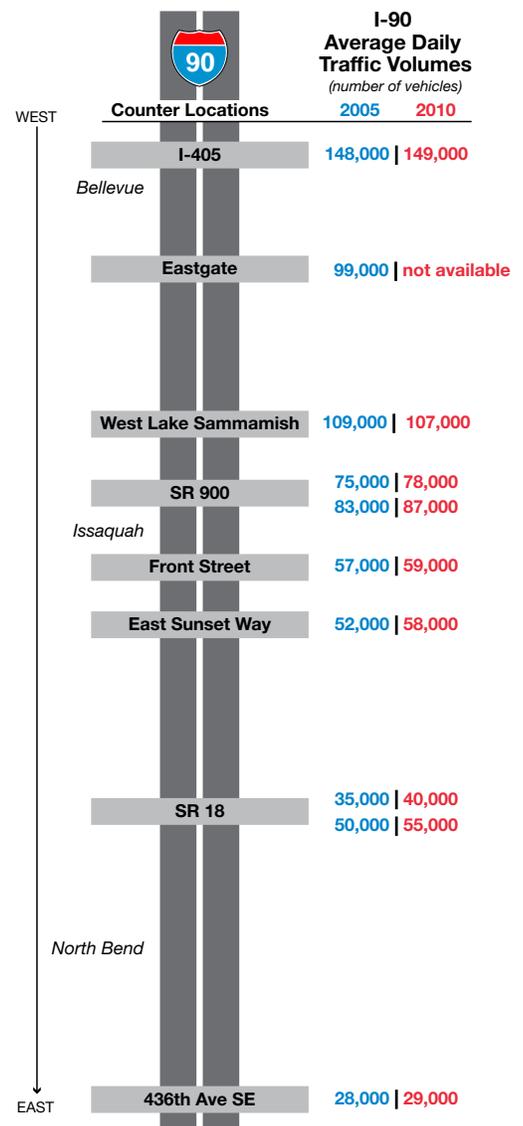


Exhibit 3.1: I-90 Average Daily Traffic Volumes

How will I-90 operate in the future if there are no improvements made in the corridor?

Note: Exhibits on the following two pages reflect the operations of the general purpose lanes on I-90 but do not show the impacts of congestion (i.e. I-405, Eastgate or SR 18). The data in Exhibits 3.2, 3.3, 3.4, and 3.5 show:

- Current traffic patterns will continue into the future, with the peak direction westbound in the morning and eastbound in the evening.
- Traffic volumes and demand will increase throughout the entire study corridor. The highest demand increases near the Eastgate, Lakemont, and SR 900 interchanges in the morning and evening peak direction.
- Most of the peak hour traffic growth will occur within the urban growth area in Bellevue and Issaquah.
- Between Issaquah and North Bend, there is sufficient capacity on the mainline to accommodate traffic volumes today and in 2030.
- Peak hour demand in 2030 exceeds freeway capacity at the Lakemont Interchange near Bellevue for both the westbound AM and eastbound PM directions.

On the following pages in Exhibits 3.2, 3.3, 3.4, and 3.5, the black line represents the approximate capacity of the general purpose lanes on I-90 assuming 2,000 vehicles per lane per hour. (Freeway capacity appears to roller coaster along the corridor in the graphs showing peak hour demand by year. This variation in capacity is attributed to the number of lanes that vary throughout the corridor). The orange line represents actual 2005 volumes and the red and green lines represent forecasted demand for the years 2015 and 2030, respectively.

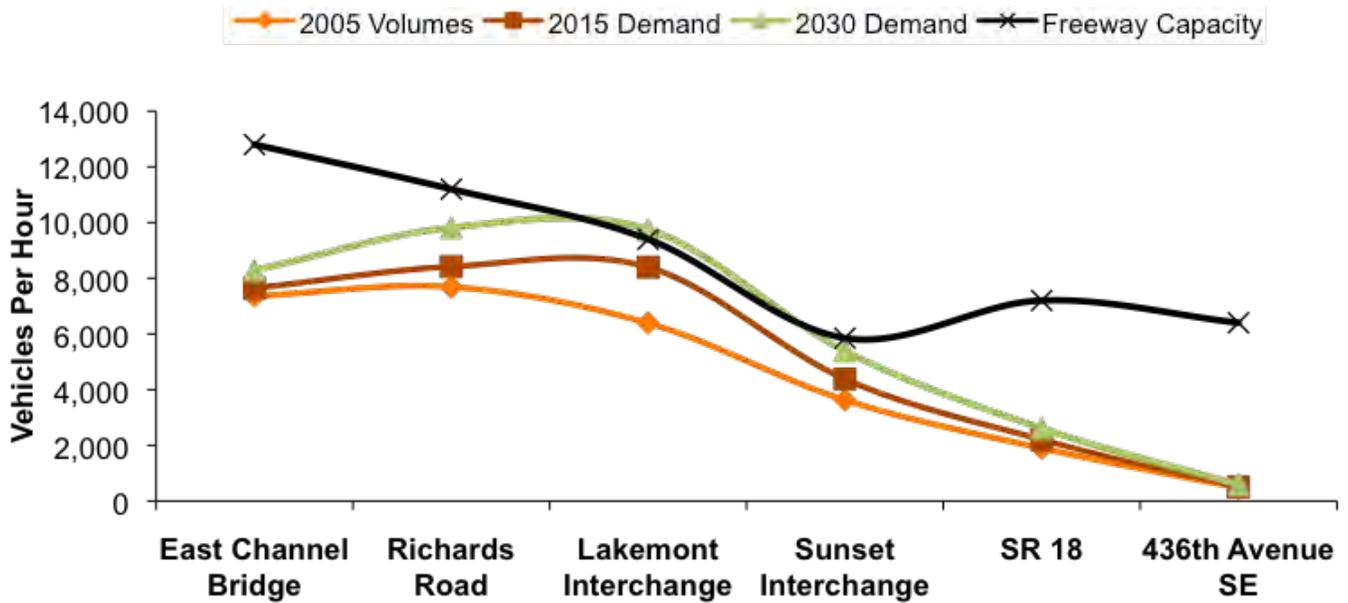


Exhibit 3.2: Westbound AM Peak Hour Demand by Year

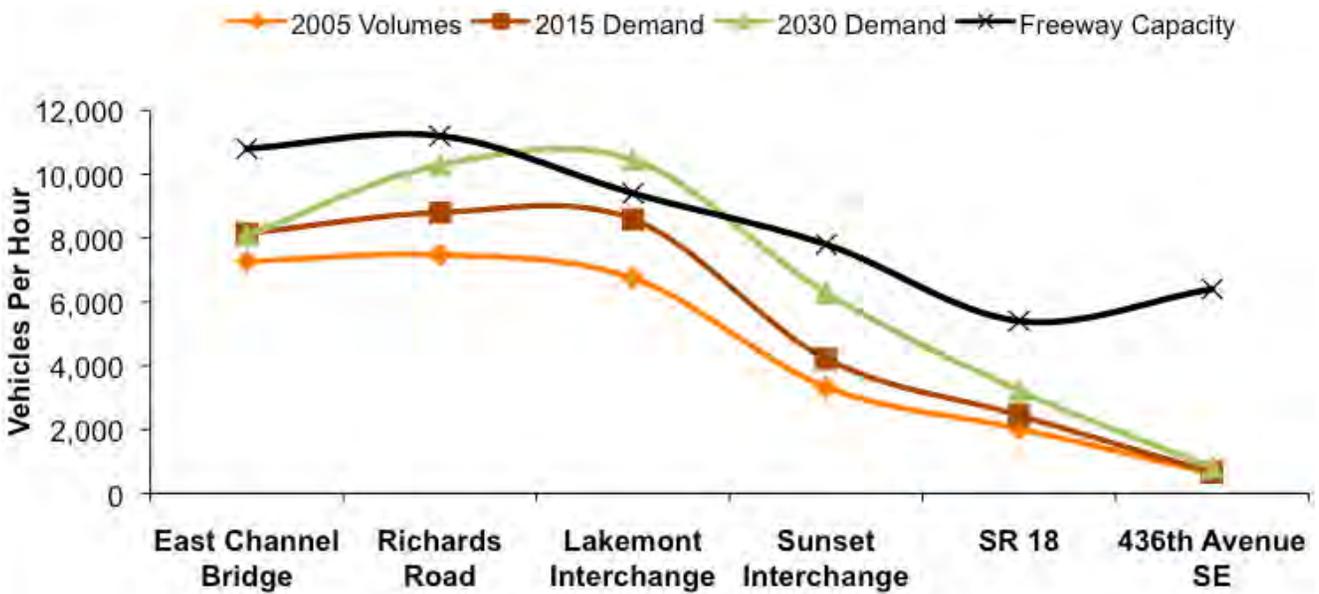


Exhibit 3.3: Eastbound PM Peak Hour Demand by Year

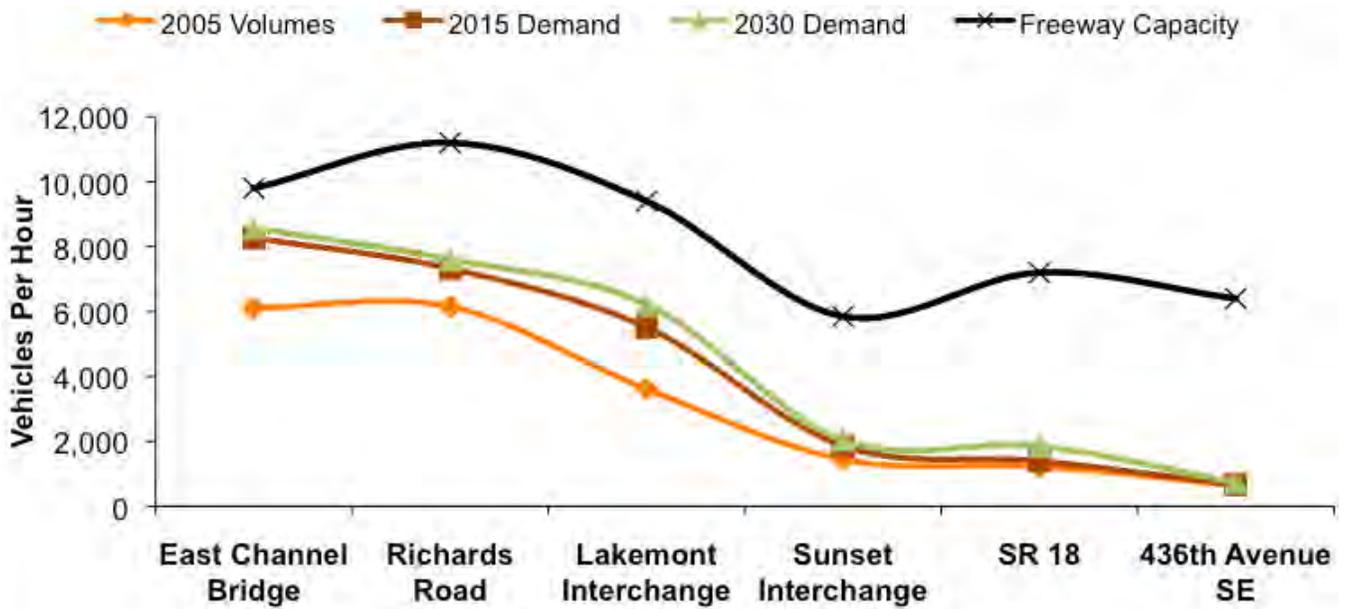


Exhibit 3.4: Westbound PM Peak Hour Demand by Year

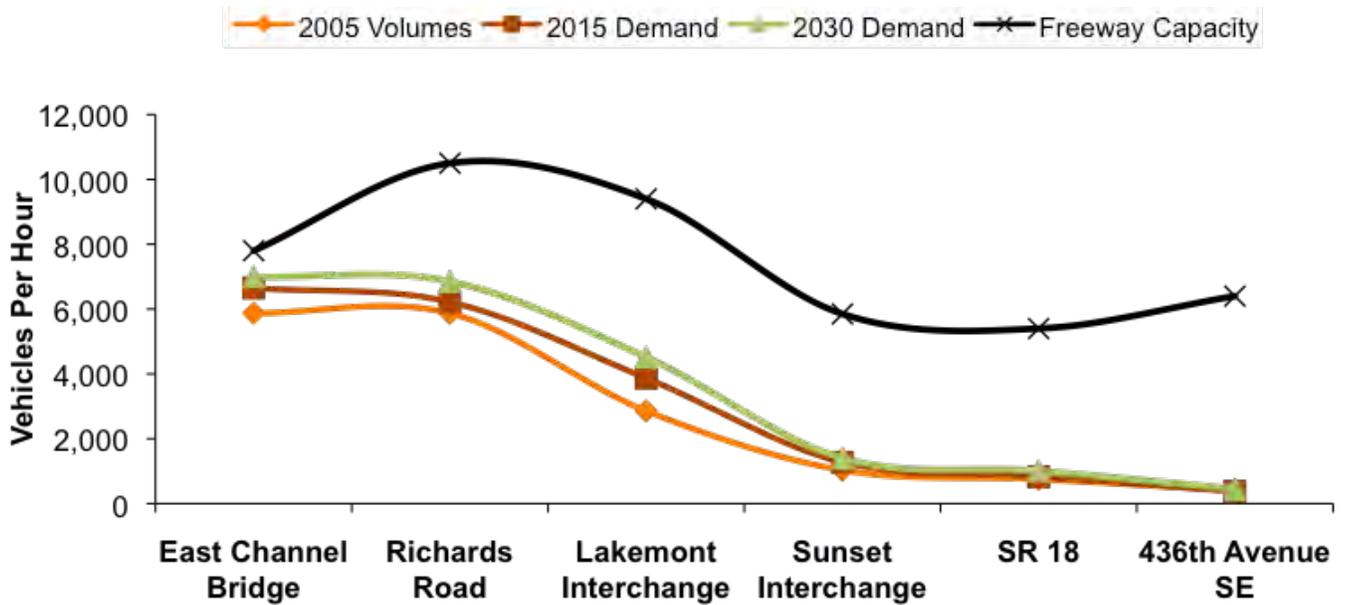


Exhibit 3.5: Eastbound AM Peak Hour Demand by Year

Speed Profiles (Bellevue to Issaquah)

Using a traffic simulation model called VISSIM, speed profiles were developed to display projected speeds and duration of peak periods on freeway lanes between Bellevue and Issaquah for the years 2005, 2015, and 2030 assuming no improvements are made along the corridor. They take into account the flow of vehicles moving on and off the freeway but do not reflect the ramp terminals at intersections.

Given the directional characteristics of I-90 within the study area, the data provided are focused on the westbound direction in the morning peak and the eastbound direction in the evening peak.

Overall, the analysis shows that by 2030, speeds decline, congestion lasts longer, and congestion extends over more of the corridor. This observation is shown by the increase in yellow, red, and black areas in Exhibits 3.6 and 3.7. Much of the growing volumes and delay occur at major interchanges such as I-405, Eastgate, and SR 900.

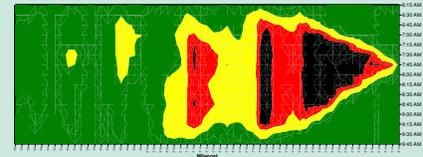
Westbound Morning Peak Findings

Although no improvements were assumed to be in place on I-90 by 2015, the I-405 at I-90 interchange improvement project (I-405/112th Avenue SE to SE 8th Street Project) was built and assumed in the operational analysis and forecasting model. The modeling results indicate that the I-405 project improves operations on I-90 in the morning peak hour.

The speed profiles for the westbound morning peak period shown in Exhibit 3.6 indicate that in 2005 most of the westbound congestion occurred in Bellevue as shown in black, yellow, and red. By 2015 and 2030, most of the westbound congestion in the corridor shifts toward Issaquah for periods of up to three hours in the morning as shown by the larger area in black.

This shift in congestion is attributed to the benefits of the I-405/112th Avenue SE to SE 8th Street Project and the significant growth assumed in Issaquah and areas outside the study area that use I-90. In 2005, there was queuing onto I-90 at the I-405 northbound and southbound off-ramps. The analysis shows that with the I-405 improvement the queue onto I-90 in this vicinity is virtually eliminated by 2015, although volumes on I-90 are forecasted to increase by approximately 10 percent.

The posted speed limit for I-90 in the Bellevue area is 60 mph. Exhibit 3.6 illustrates that in 2005 speeds frequently averaged between 40 and 55 mph (yellow area). During the morning peak in the westbound direction, there is approximately an hour and a half when speeds are below 40 mph near the Eastgate direct access ramps. With the I-405 interchange improvement, most of the interchange area operates at speeds higher than 55 mph, with just an hour of congestion near the Eastgate direct access ramps.



Measuring traffic conditions

To illustrate future conditions on I-90 and show how proposed projects may improve traffic conditions, WSDOT developed this Doppler graphic.

Red and black areas indicate traffic slowing below 40 mph. Locations are listed beneath the Doppler graphic and time-of-day is listed to the right of the graphic. The colors reflect travel speeds. Areas in green are vehicles traveling at higher than 55 mph; yellow areas at 40 to 55 mph; red areas at 30 to 40 mph; and black areas are vehicles traveling at 30 mph or less.

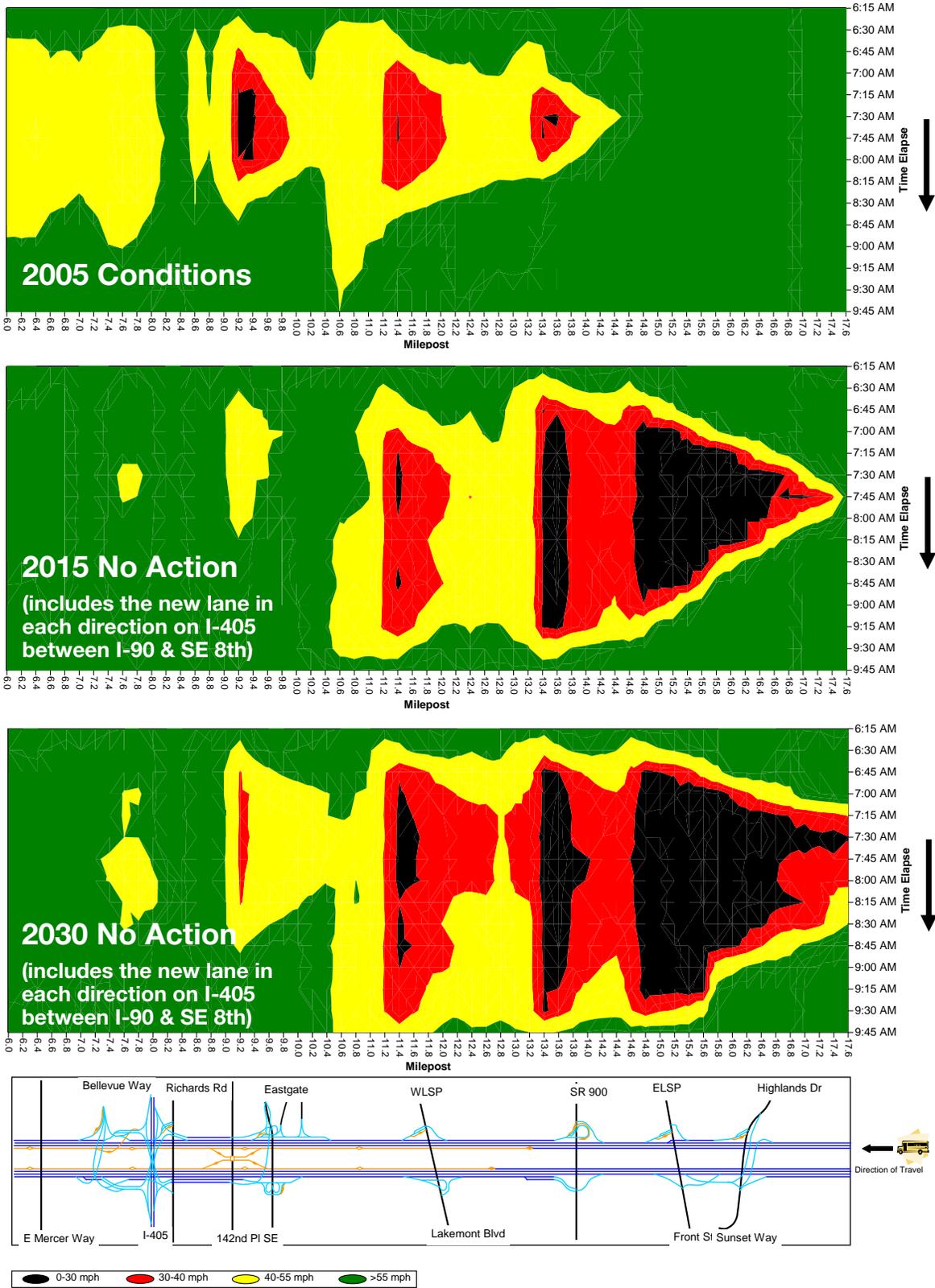


Exhibit 3.6: Speed Profile, Westbound I-90, AM Peak Period, No Action 2005, 2015, and 2030

Eastbound Evening Peak Findings

Congestion continues to increase near the Eastgate Interchange in Bellevue in the evening peak period as illustrated in Exhibit 3.7. In 2005, speed dipped below the posted speed limit of 60 mph for a half-mile segment near 148th/150th Avenues SE for approximately a two-hour period. By 2030, speeds will dip significantly below the posted speed limit, for up to 5 miles and 3 hours.

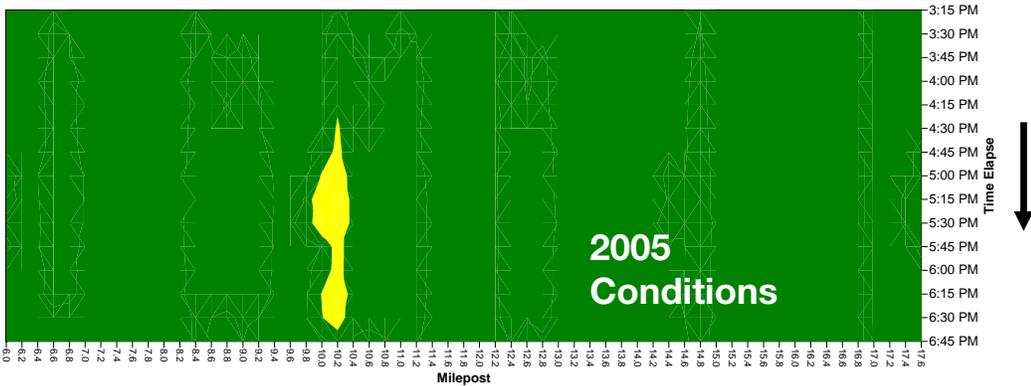
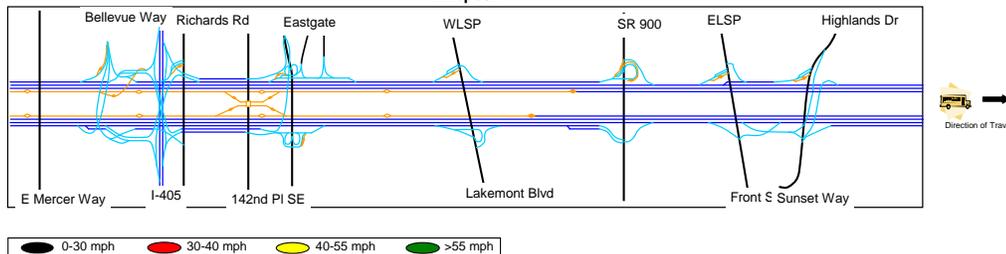
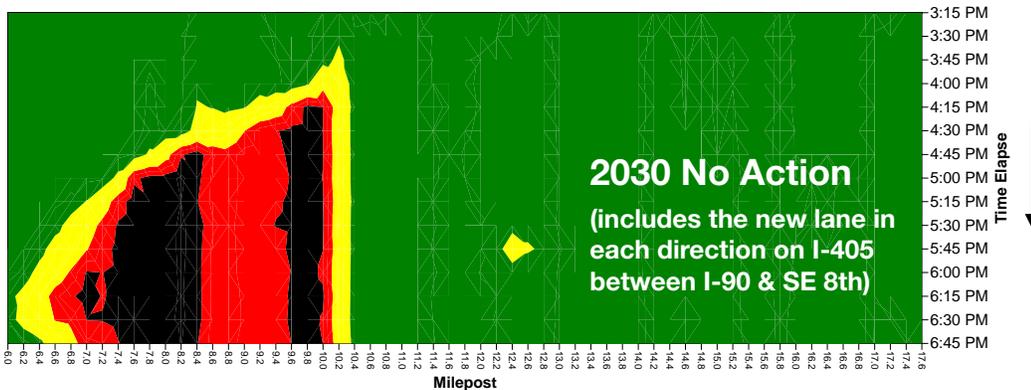
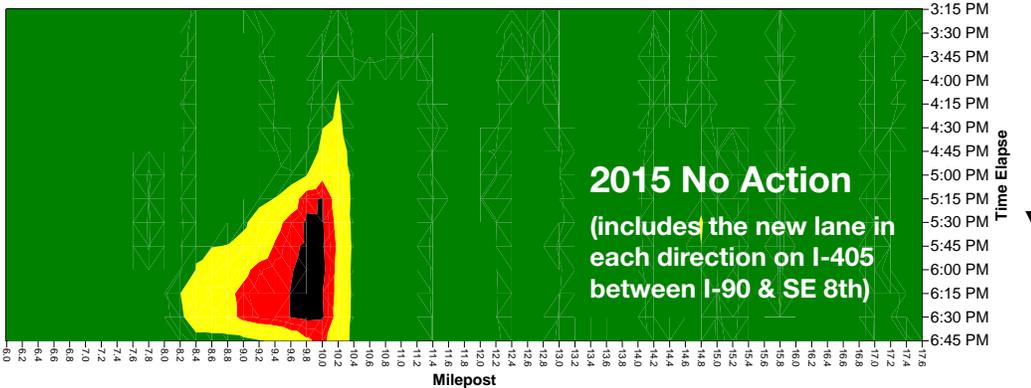


Exhibit 3.7:
Temporal
Speed Profile,
Eastbound I-90,
PM Peak
Period, No
Action 2005,
2015, and 2030



Travel Times

Another measure of congestion for freeways is travel time, which is directly related to the speed.

Travel times were estimated for a vehicle traveling from the Sunset Interchange to East Mercer Way in the morning peak hour and in the reverse direction in the evening peak hour. Travel times for existing conditions in 2005 and estimated for 2015 and 2030 are summarized in Exhibits 3.8 and 3.9.

The charts below indicate that users can expect longer travel times than in 2005 if no improvements are made.

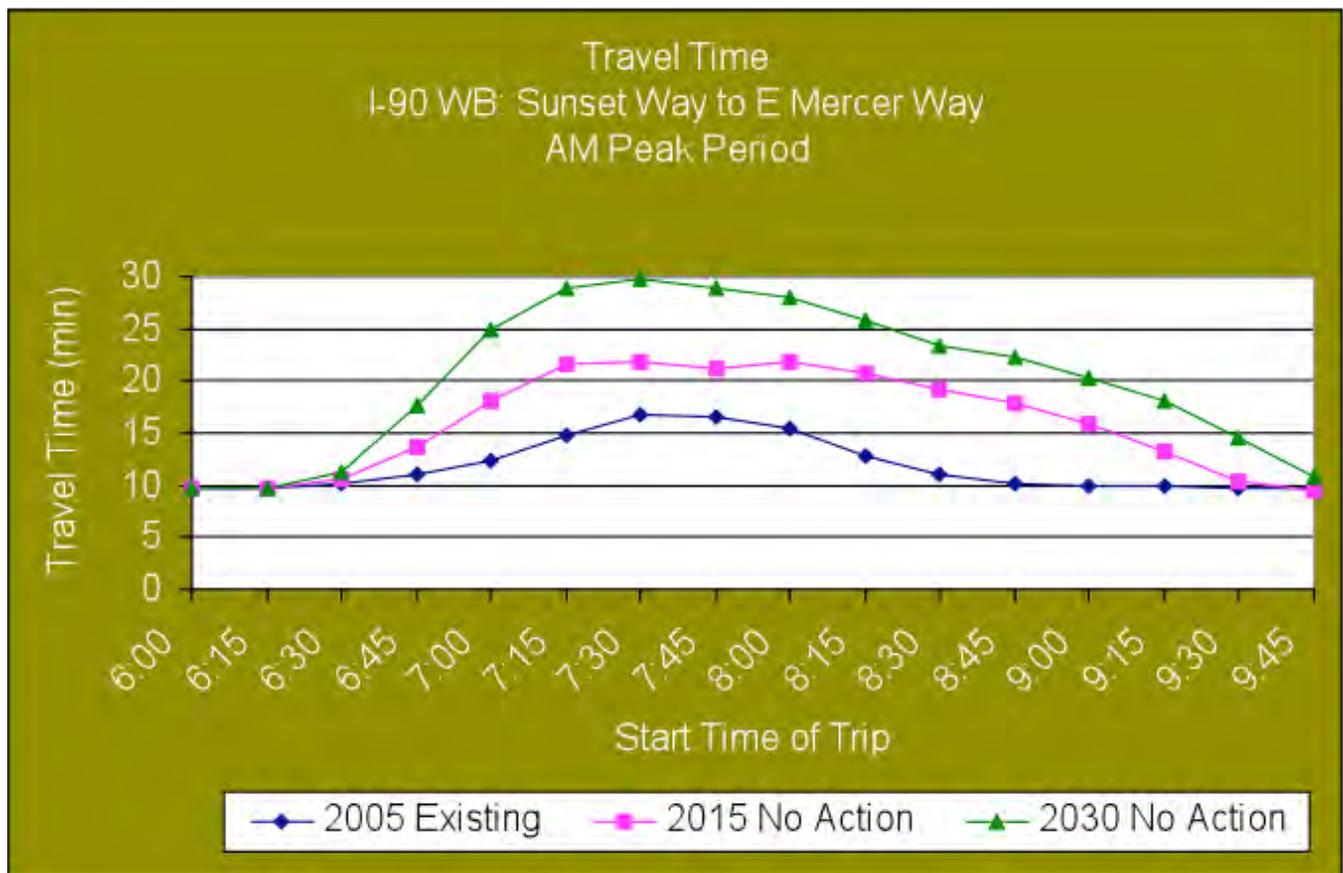


Exhibit 3.8: Travel Time Summary, Westbound I-90, AM Peak Hour, No Action 2005, 2015, and 2030

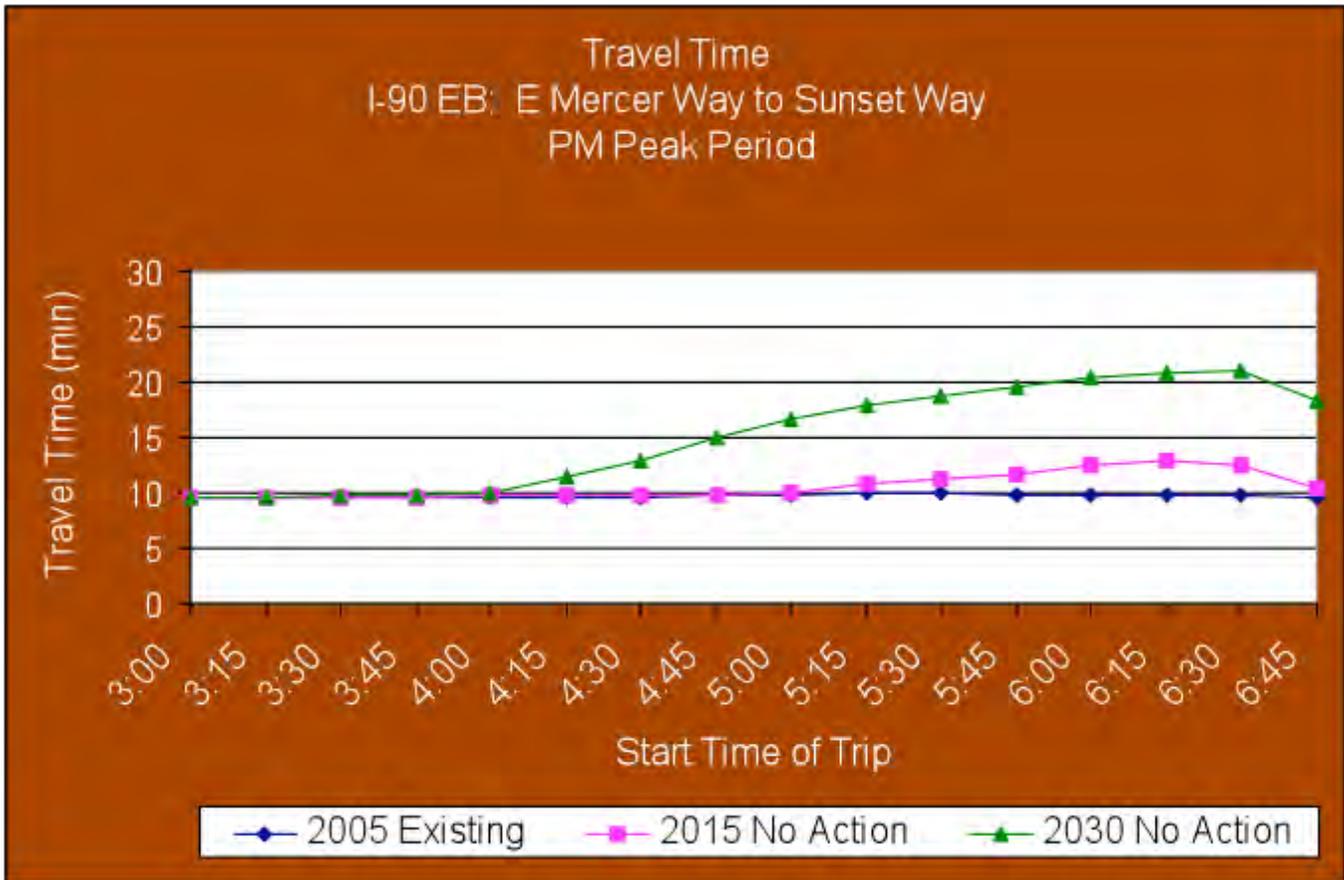


Exhibit 3.9: Travel Time Summary, Eastbound I-90, AM Peak Hour, No Action 2005, 2015, and 2030

Level-of-Service Results

Depending on the time that a vehicle enters the freeway in the morning peak hour, users can expect that their trip from the Sunset Interchange to East Mercer Way will take 5 more minutes by 2015. And by 2030, up to 13 more minutes (a 76 percent increase over 2005) in travel time. During the 2015 evening peak hour, drivers can expect a 30 percent increase (3 more minutes) in travel time. And by 2030, drivers can expect a 110 percent increase (11 more minutes over 2005) in travel time.

For the rural section, in the less complex segment of the corridor, we used Level-of-Service to describe 2005, 2015, and 2030 traffic operations on the mainline and ramps assuming no improvements. Level-of-Service is another way to describe operations on freeways, which refers to the number of passenger vehicles in each lane. Level-of-Service (LOS) thresholds or “grades” range from A to F.

What is Level-of-Service?

Level-of-Service ratings, which range from A to F, indicate how well traffic functions on a given roadway or intersection.

- A: Free flow, low traffic volumes, no delays.
- B: Stable traffic flow, restricted speeds, minor delays.
- C: Stable traffic flow, speeds and maneuverability limited by higher volumes of traffic.
- D: Unstable traffic flow, low speeds, noticeable delay, traffic volumes near capacity.
- E: Unstable traffic flow, low speeds with “stop and go” traffic, considerable delay, traffic volumes at capacity.
- F: Forced traffic flow, very low speeds, traffic volumes exceed capacity, long delays.

Exhibits 3.10 and 3.11 summarize the freeway segments that approach LOS E or F in the morning and evening peak hours respectively by 2015 and 2030.

By 2015:

- 17 of the 69 freeway segments analyzed between Issaquah and Bellevue will be near capacity or over capacity in the morning peak hour with LOS of E or F
- 9 segments will either be LOS E or F in the evening peak hour.

By 2030:

- 21 segments will be operating at LOS E or F in the evening peak hour.

Exhibit 3.10: Summary of Freeway Segments Operating at LOS E or F, AM Peak Hour, No Action Alternative

Segment Location	Segment Type	Direction	Peak Period	2015 LOS	2030 LOS
Belleuve Way Opff-Ramp & I-405 On-Ramp	Basic	WB	AM	E	E
150th/156th/161st CD On-Ramp	Merge	WB	AM	E	F
142nd Place Off-Ramp to 150th Ave SE CD On-Ramp	Basic	WB	AM	D	F
Eastgate CD Off-Ramp to 142nd PI SE Off-Ramp	Basic	WB	AM	D	F
Eastgate Off-Ramp	Diverge	WB	AM	E	F
W Lk Sammamish Pkwy On-Ramp to Eastgate Off-Ramp	Basic	WB	AM	E	E
W Lk Sammamish Pkwy On-Ramp	Merge	WB	AM	F	F
Between W Lk Sammamish Pkwy Ramps	Basic	WB	AM	F	F
W Lk Sammamish Pkwy Off-Ramp	Diverge	WB	AM	F	F
SR 900 Off-Ramp to W Lk Sammamish Pkwy Off-Ramp	Basic	WB	AM	F	F
Between SR 900 Ramps	Basic	WB	AM	F	F
SR 900 Off-Ramp	Diverge	WB	AM	F	F
Front Street On-Ramp to SR 900 Off-Ramp	Basic	WB	AM	F	F
Front Street On-Ramp	Merge	WB	AM	F	F
Between Front Street Ramps	Basic	WB	AM	F	F
Sunset Way On-Ramp to Front Street Off-Ramp	Weave	WB	AM	F	F
Between Sunset Way Ramps	Basic	WB	AM	F	F
Sunset Way Off-Ramp	Diverge	WB	AM	F	F
Highpoint Way On-amp to Sunset Way Off-Ramp	Basic	WB	AM	F	F
Between High Point Way Ramps	Basic	WB	AM	N/A	E
Highpoint Way On-Ramp	Diverge	WB	AM	N/A	E
Preston Fall City Rd On-Ramp to High Point Way Off-Ramp	Basic	WB	AM	N/A	E
Preston Fall City Rd Off-Ramp	Diverge	WB	AM	N/A	E

Exhibit 3.11: Summary of Freeway Segments Operating at LOS E or F, PM Peak Hour, No Action Alternative

Segment Location	Segment Type	Direction	Peak Period	2015 LOS	2030 LOS
Bellevue Way Off-Ramp	Diverge	EB	PM	C	F
Bellevue Way Off-Ramp to I-405 Off-Ramp	Basic	EB	PM	C	F
I-405 Off-Ramp to Bellevue Way On-Ramp	Basic	EB	PM	C	F
Bellevue Way On-Ramp to Richards Road Off-Ramp	Weave	EB	PM	C	F
Richards Road Off-Ramp to I-405 On-Ramp	Basic	EB	PM	C	E
I-405 On-Ramp to 142nd PI SE Off-Ramp	Basic	EB	PM	C	E
142nd PI SE Off-Ramp to 150th Ave SE CD Off-Ramp	Basic	EB	PM	C	F
150th Ave SE CD Off-Ramp to 148th Ave Flyover Off-Ramp	Basic	EB	PM	F	F
150th Ave CD Off-Ramp to 142nd PI SE On-Ramp	Basic	EB	PM	F	F
142nd PI SE On-Ramp to Eastgate CD On-Ramp	Basic	EB	PM	F	F
Between 148th & 150th Ave Loop Ramps (CD)	Weave	EB	PM	B	F
Eastgate CD On-Ramp	Merge	EB	PM	F	F
Eastgate Off-Ramp to W Lk Sammamish Pkwy On-Ramp	Basic	EB	PM	E	E
W Lake Sammamish Pkwy Off-Ramp	Diverge	EB	PM	E	E
W Lake Sammamish Pkwy On-Ramp	Merge	EB	PM	E	E
W Lake Sammamish Pkwy On-Ramp to SR 900 Off-Ramp	Basic	EB	PM	E	E
SR 900 On-Ramp	Merge	EB	PM	D	E
Front Street Off-Ramp	Diverge	EB	PM	E	E
Preston Fall City Road Off-Ramp	Diverge	EB	PM	N/A	E
Bellevue Way On-Ramp	Merge	WB	PM	C	E
Bellevue Way On-Ramp to East Channel Bridge	Basic	WB	PM	D	E

Chapter 4:

Population, Employment, and Land Use Assumptions

This section provides a description of the population, employment, and major land use assumptions used to analyze and evaluate corridor improvement options. The data reflects growth projections assumed in PSRC's regional travel demand model that we used for our analyses in this study. The model assumes that there is relatively little population, employment, or traffic growth at either end of the I-90 corridor within the study area, but there is substantial population, employment, and traffic growth in the center of the corridor near Issaquah.

Population, employment, and land use data assumptions

Washington's GMA (36.70A RCW) requires that cities and counties produce long-range comprehensive plans that are reviewed and, if necessary, updated every seven years. Population and employment growth targets, based on the state's official growth projections allocated at the county level, determine the number of residents and jobs that a jurisdiction is expected to accommodate in the future. Growth targets are generally accommodated within designated Urban Growth Areas (UGA).

These growth targets and land use assumptions are incorporated into the PSRC's regional travel demand model to forecast future mobility and traffic trends. PSRC's travel forecast model is based on Office of Financial Management (OFM) population and employment projections. For the purposes of this study, the I-90 Corridor Study team refined the PSRC model with more detailed population, employment, and land use information taken from approved comprehensive plans provided by the communities within the study area to better understand how people will travel along the I-90 corridor. The results will help to determine the best improvement options to address future travel needs in this corridor area.

What are the population, employment, and land use growth assumptions of the study area?

The communities and areas along the I-90 corridor study area are summarized below.

Snoqualmie Indian Tribe

The Snoqualmie Tribe is a group of Coast Salish Native American peoples who historically resided in the Snoqualmie Valley and Snohomish County in areas that now contain the communities of Monroe, Carnation, Fall City, Snoqualmie, North Bend, Mercer Island, and Issaquah. In 1855 they were one of the largest tribes in the Puget Sound region numbering around 4,000 members. Although Tribal representatives were signatories of the Point Elliott Treaty, a lands settlement treaty between the U.S. government and Native American tribes in the greater Puget Sound region, they lost federal recognition in 1953 because federal recognition was granted only to Tribes having reservations.

In 1999, the Snoqualmie Tribe, currently with 650 members, was re-recognized by the Bureau of Indian Affairs and gained federal recognition in 2001. This recognition provided the Tribe with the ability to purchase land for a reservation and build a casino to help fund tribal administrative costs. Snoqualmie reservation land and proposed developments on their land are shown in Exhibit 4.1.

After formal designation of their reservation, the tribe built a 170,000-square-foot resort casino on a 56-acre parcel of land near exit 27 on I-90 and the city of Snoqualmie. The casino opened in November 2008 as an economic development project to help support tribal members with profits from the casino. The casino is open 24 hours a day, seven days a week and has five restaurants and two entertainment venues. The Casino Snoqualmie Events Center has a seating capacity of 1,000 people and the Lounge/Night Club offers seating for 200 people. Snoqualmie Casino provides 2,000 parking spaces and employs 850 people. The Tribe had planned to build a hotel near the casino within three to five years after the casino opened, but the economic downturn in the Puget Sound decreased attendance at the casino and postponed this project.



Exhibit 4.1: Snoqualmie Tribal Land



Snoqualmie Casino near I-90

Bellevue

The city of Bellevue was once a “bedroom” community of Seattle. Since the late 1980s, Bellevue has transformed into a major regional employment center and is now the second largest employment center in the Puget Sound Region. Downtown Bellevue was designated an Urban Center by PSRC and is a designated GTEC under the Commute Trip Reduction Act. The forecasted growth in Bellevue’s future population and employment is shown in Exhibits 4.2 and 4.3.

The Factoria and Eastgate areas are situated at the interchange of I-405 and I-90 and are included in the regional employment center. Land use in Eastgate and Factoria includes offices, hotels, and retail centers in this area of the I-90 corridor. Recent land use changes provide additional retail and multi-family housing units in the area of Factoria and many high tech jobs are located in the office complexes along the I-90 corridor.

www.bellevuewa.gov/fats.htm



Facing north towards Downtown Bellevue over I-405

Based on growth assumptions provided by the city of Bellevue, it is anticipated that the population will grow nearly 20 percent by 2030.

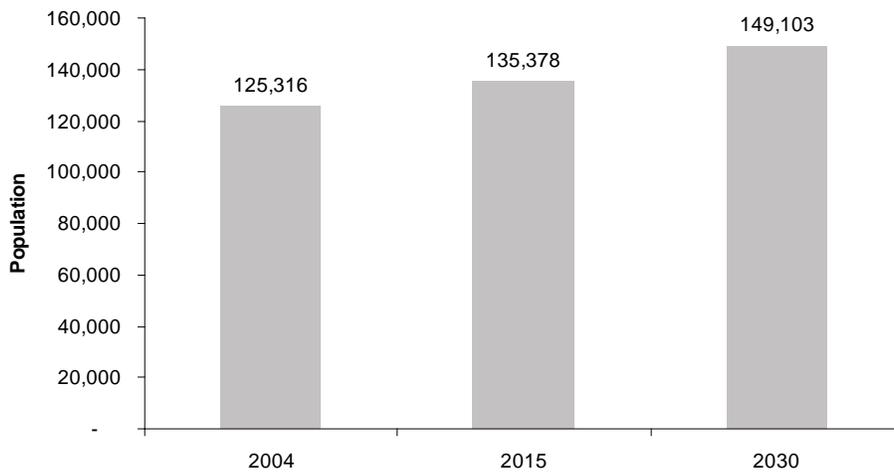


Exhibit 4.2: Bellevue Population Growth 2004-2030

Employment is expected to increase by 45 percent for a total of 205,000 jobs. Most of the new employment is expected to be located in downtown Bellevue and in the Bel-Red Road subarea.

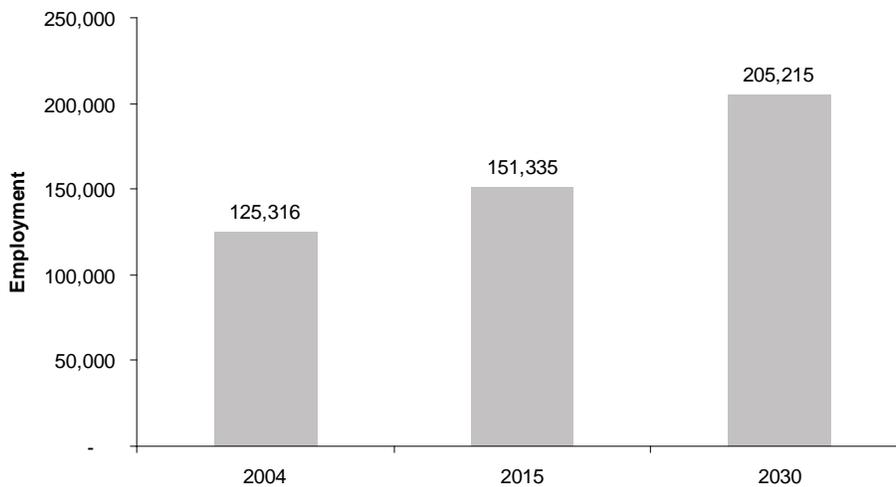


Exhibit 4.3: Bellevue Employment Growth 2004-2030

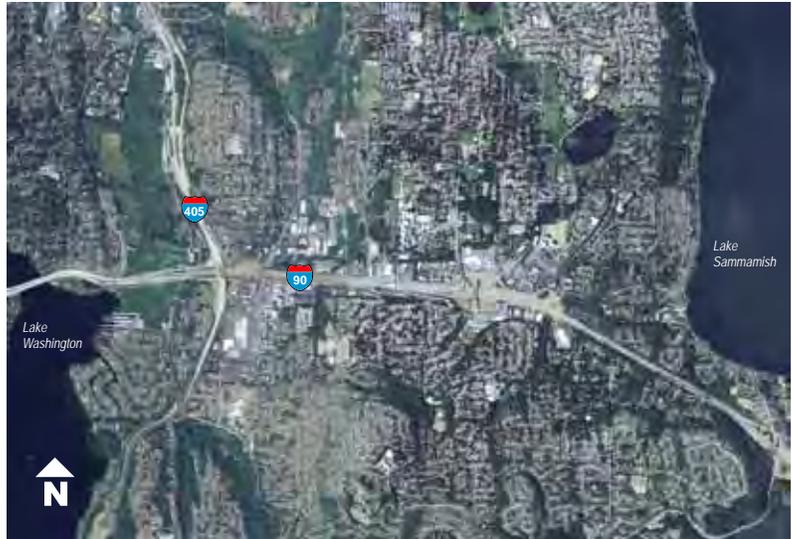
Eastgate/Factoria (Bellevue)

Eastgate is a subarea of Bellevue located off I-90 near the intersection with I-405. The predominant land use near I-90 is a suburban office park surrounded by surface parking.

As one of the region's primary business centers, Eastgate employs approximately 25,000 people with approximately 60 million square feet of office space. Large corporations including T-Mobile, Boeing, Microsoft, and Verizon occupy nearly 40 percent of the office space at Eastgate. These four companies are worldwide leaders in the three major industries that have driven the Eastside economy: software, aeronautics, and wireless service.

According to a market analysis report prepared for Bellevue in June 2010, during the next 20 years market demand is expected to reach 1.5 million square feet of office space, up to 200 new hotel rooms, and 1,800 residential units in the Eastgate subarea. The PSRC projects that Eastgate will attract approximately six percent of the future job growth on the Eastside, which may absorb from 1.0 million to 1.5 million square feet of office space during the next 20 years. www.bellevuewa.gov/eastgate-corridor.htm

Bellevue College, the third largest institution of higher education in the state, is located west of 148th Avenue, in the north-central part of the Eastgate subarea. In 2009, Bellevue Community College changed its name to Bellevue College when the college began offering several four-year bachelor's degrees. There is potential for both residential and retail development on the college campus, which sits at the heart of a lightly-developed area between neighborhoods to the north and the I-90 freeway corridor to the south.



Looking west over I-90 with Eastgate shown to the north on the right side of photo

Issaquah

Historically, Issaquah was a small town on the outskirts of Seattle and Bellevue (17 miles and 11.5 miles to the east, respectively). However, Issaquah has experienced rapid population growth since 1995 partially because of annexations and the initial stages of the Issaquah Highlands and Talus master planned developments. The property for Issaquah Highlands was annexed in 1996 and the first residents arrived in 1998. When complete, this development situated several miles northeast of downtown Issaquah could contain 3,250 residential units.



Issaquah Highlands

The Talus master planned development is located west of SR 900, within Issaquah's city limits. The agreement to allow the development of Talus was approved in 1999 and the first residents arrived between 2001 and 2002. The Talus project could contain 1,735 to 1,985 residential units when it is completed.

In accordance with the 1990 Growth Management Act, Issaquah is expected to accommodate increased population and employment growth, which more than doubles between 2004 and 2030. By 2030, Issaquah is expected to have a 124 percent population increase from 2004 levels for a total of 35,400 residents as shown in Exhibit 4.4.

Employment is expected to grow at a higher rate of 164 percent for a total of 46,000 additional jobs as shown in Exhibit 4.5. It should be noted that a large portion of these new jobs are assumed to be in the Issaquah Highlands development.

It should be noted that the city of Issaquah undertook a planning process for the future development of more than 900 acres located in the valley floor in the center of Issaquah during the I-90 Corridor planning process. Since the subarea planning was not adopted it was not included in the assumptions. The purpose of the Central Issaquah Plan is to guide the redevelopment of this area from a collection of suburban strip malls to a cohesive town center by increasing the mix and density of housing and employment, providing an additional crossing(s) of I-90 and a green gateway to the city. The Hyla Crossing and the Rowley Center projects (located in the southwest and southeast quadrants of the I-90/SR900 interchange) propose to transform the area from suburban-style strip malls and office complexes, into a pedestrian oriented mixed development. The proposal assumes up to 5.5 million square feet of commercial (office, retail, restaurant and entertainment) and residential development over a 20 year time period.

The Central Issaquah Plan is related to policies added to the Issaquah Comprehensive Plan, especially those policies resulting from the

Transportation Element update and the concept of establishing Pedestrian Emphasis Districts (PEDs).

www.ci.issaquah.wa.us/page.asp?navid=1597

The vision of the Central Issaquah Plan includes a downtown park complex and greenbelt through the urban core with pedestrian corridors and trails, an efficient inner-city transit system, and urban residences among commercial districts. The Central Issaquah Plan Advisory Task Force vision was formulated into recommendations for draft review in 2011 by the community, Mayor’s Office, Planning Policy Commission, and the City Council. The subarea plan assumptions are not assumed in this study because the sub-area plan had not been adopted when the modeling for the I-90 study was conducted.

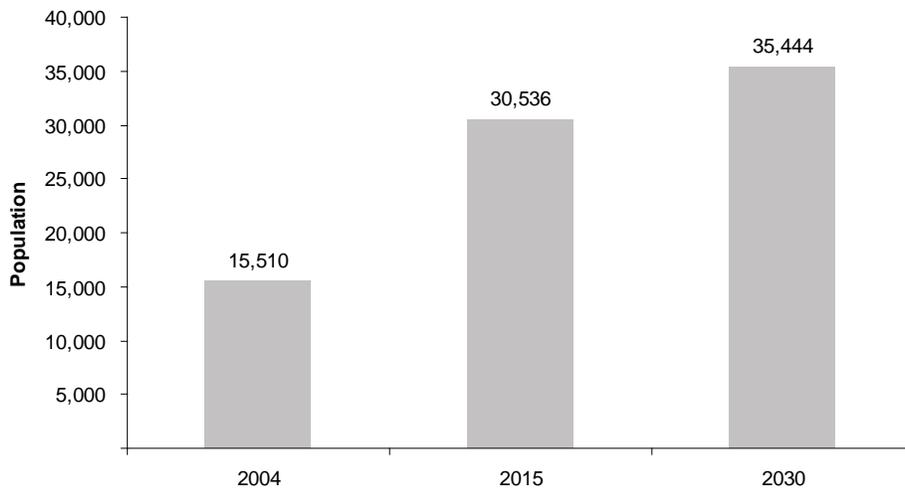


Exhibit 4.4: Issaquah Population Growth 2004-2030

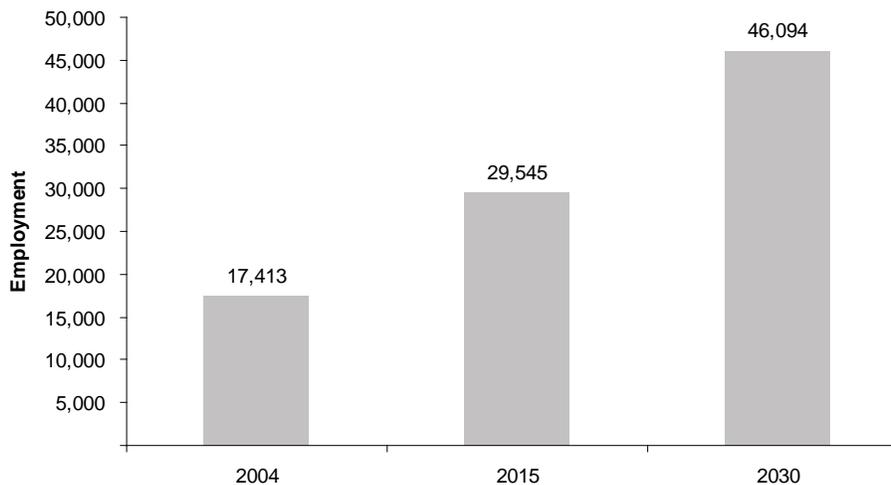


Exhibit 4.5: Issaquah Employment Growth 2004-2030

Sammamish

The city of Sammamish is located on the eastern shore of Lake Sammamish, with Redmond to the north and Issaquah to the south. Employment is predicted to nearly triple between 2004 and 2030 (see Exhibit 4.6).

Sammamish is a young city, which was incorporated in 1999 with an estimated population of 29,400. In 2000, the population of Sammamish grew to 34,104 residents, ranking it as the 15th largest city in the state. The population increased 17 percent to 40,000 in 2007 and is expected to reach 55,800 by 2030 as shown in Exhibit 4.7.



Sammamish Neighborhood

The Sammamish City Council adopted its Town Center Plan in 2008 to create a development framework around 240 acres in the geographical center of the city. Anchored at the south end by City Hall, the new library and Sammamish Commons, the Town Center vision calls for a mixture of retail, residential, recreational, commercial and public spaces, all bound and fed by a network of pedestrian friendly, non-motorized pathways. The city council finalized development standards and adopted them in July 2010.

www.ci.sammamish.wa.us/departments/communitydevelopment/TownCenter.aspx#

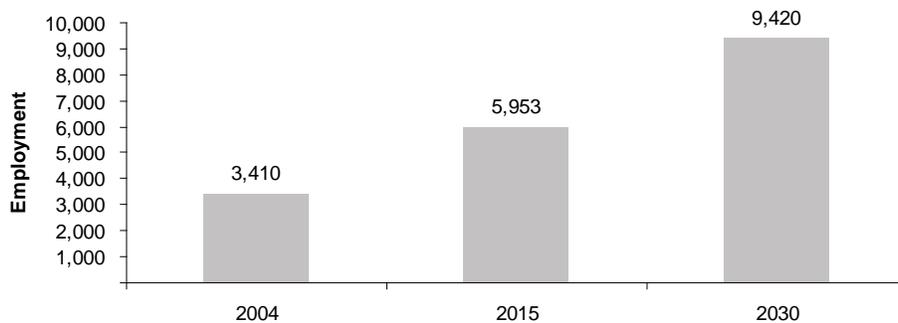


Exhibit 4.6: Sammamish Employment Growth 2004-2030

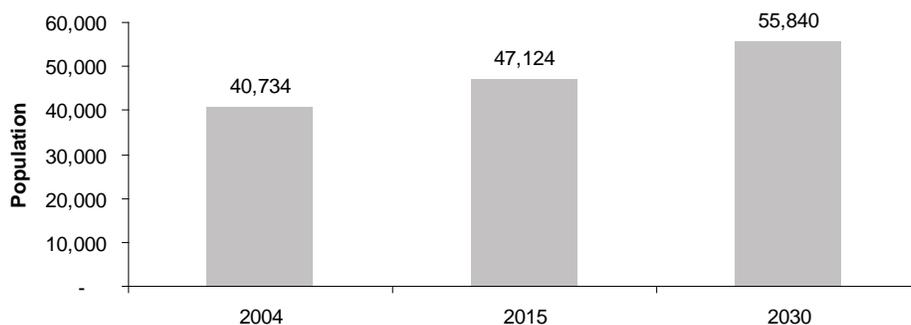


Exhibit 4.7: Sammamish Population Growth 2004-2030

Preston

Preston is an unincorporated community and an old mill town that is located 22 miles east of Seattle. It is increasingly becoming a bedroom community, although some logging remains in the area. Planning policies for the community of Preston are included with those of Fall City within the Snoqualmie Valley Community Plan.

Currently, there is a small business park located adjacent to I-90. No population statistics are available for the town of Preston, as it remains unincorporated. The population has increased in Carnation and Duvall, which are two small cities near Preston in east King County. The population for these two cities in 2010 was 1,900 for Carnation and 6,000 for Duvall.

www.prestonwa.org/



Preston Industrial Park

Snoqualmie/Snoqualmie Ridge

Historically, Snoqualmie was a logging community located approximately 28 miles east of Seattle. Growth was limited because it was located in a floodplain and regulations limited the amount of new construction. In 1990, under the Growth Management Act, the city of Snoqualmie annexed approximately 1,300 acres of undeveloped land outside of the floodplain, which allowed for construction of the Snoqualmie Ridge Development, a master planned community.



Snoqualmie Ridge Development

Snoqualmie has grown from approximately 1,500 residents in 1990 to nearly 10,000 in 2010 with a majority of the population growth in the mixed-use community of Snoqualmie Ridge. The city has projected its population to be approximately 16,000 by the year 2030 – a 213 percent increase above the 2004 population (see Exhibit 4.8). Employment is projected to triple in the city of Snoqualmie from 2004 to 2030 as shown in Exhibit 4.9. www.ci.snoqualmie.wa.us/

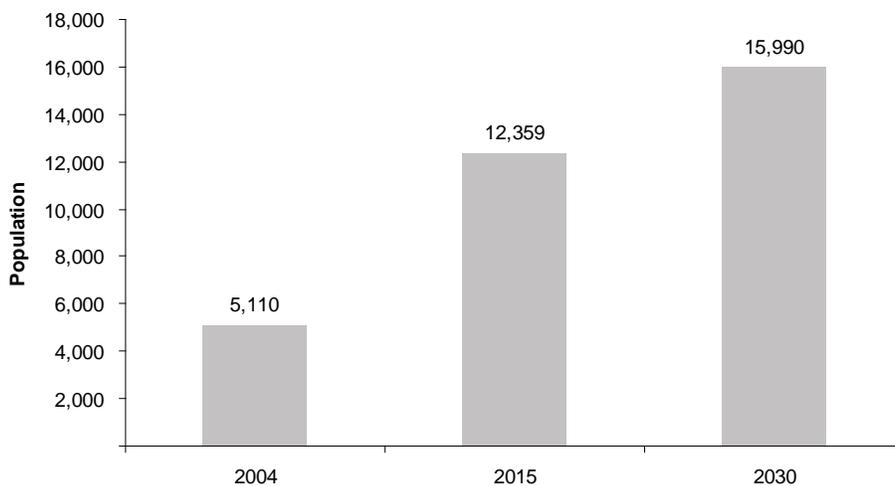


Exhibit 4.8: Snoqualmie Population Growth 2004-2030

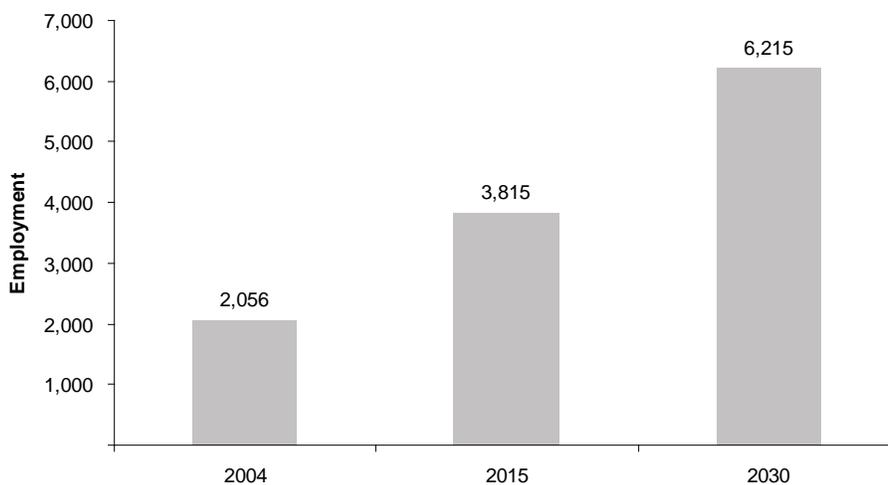


Exhibit 4.9: Snoqualmie Employment Growth 2004-2030

North Bend

The city of North Bend is located approximately 30 miles east of Seattle with a current population of 5,000. The population of North Bend has grown in the last few years due to recent annexations by the city. North Bend is situated in a rural setting, surrounded by pasture lands and open spaces in the foothills of the Cascade Mountains. Until recently, population and employment growth have remained relatively constant for many years because of a water moratorium that has restricted development.

In 2009, the city of North Bend secured water rights for the next 50 years and repealed a ten-year-old moratorium on development within the city. The city then began accepting permits for additional development. North Bend completed an annexation of the Tanner area in 2009, which increased the size of the city by one-third. Their population is expected to grow more than 50 percent by 2030 (as shown in Exhibit 4.10). The forecasted growth in employment for North Bend is shown in Exhibit 4.11.

The city will update their Comprehensive Plan from 2010 to 2014. Work began with the draft of Municipal Code Amendments considering issues particular to the east North Bend moratorium area. This work will be followed by an evaluation of the land use, transportation, stormwater, and housing issues for the newly annexed areas as well as for the rest of the city.

<http://ci.north-bend.wa.us/>



City of North Bend Town Center

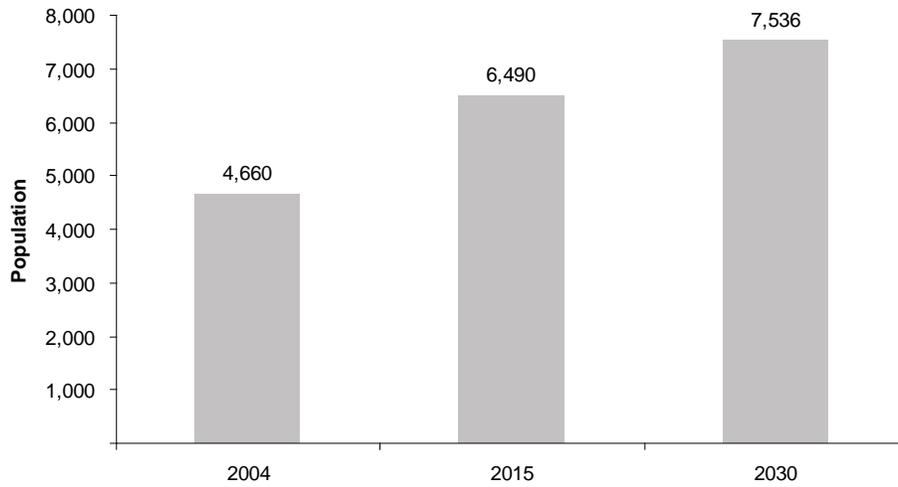


Exhibit 4.10: North Bend Population Growth 2004-2030

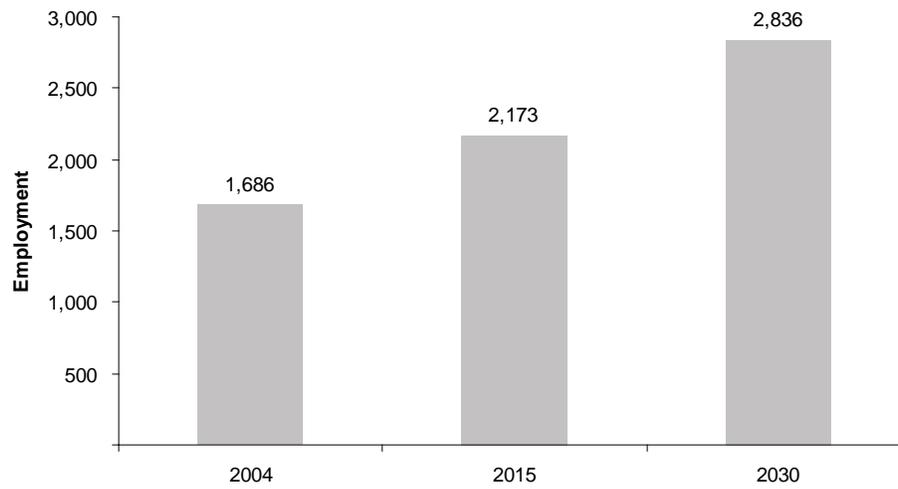


Exhibit 4.11: North Bend Employment Growth 2004-2030