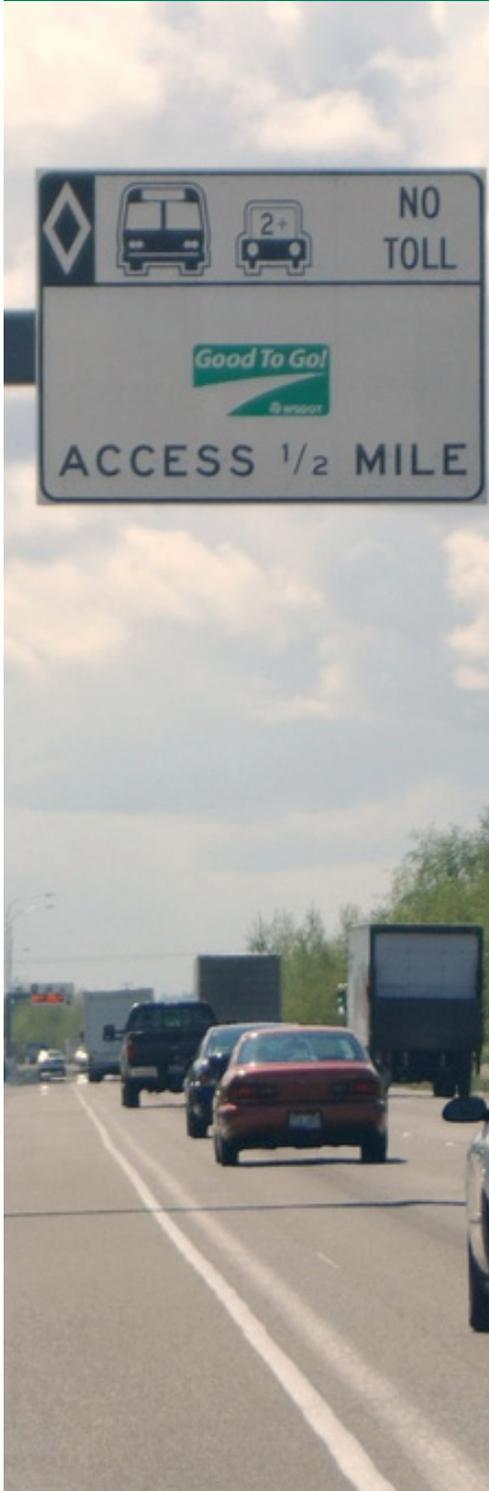




Washington State
Department of Transportation

SR 167 HOT Lane Extension



Application for the FY 2012 TIGER
Discretionary Grants Program

State Route 167

8th St. East Vicinity to South 277th St. Vicinity
Northbound and Southbound HOT Lane Extension

TIGER ID: WSDOT1297

Submitted to:

U.S. Department of Transportation
TIGER Discretionary Grants Program
www.dot.gov/tiger

Submitted by:

Washington State Department of Transportation
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Executive Summary

WSDOT is requesting \$15 million to complete the funding needed to extend the successful nine mile SR 167 High Occupancy Toll (HOT) Lanes to nearly 14 miles in each direction, connecting King and Pierce County communities to vital employment hubs. State funds already allocated to this project are \$82 million and the receipt of a TIGER grant would complete funding needed to construct the entire project and advance the project by two years.

The SR 167/8th Street East Vicinity to South 277th Street Vicinity – Northbound and Southbound HOT Lane Extension project (SR 167 HOT lanes extension project) produces long-term economic and quality of life benefits. When complete, the project will provide sustainable transportation choices for the long-haul including:

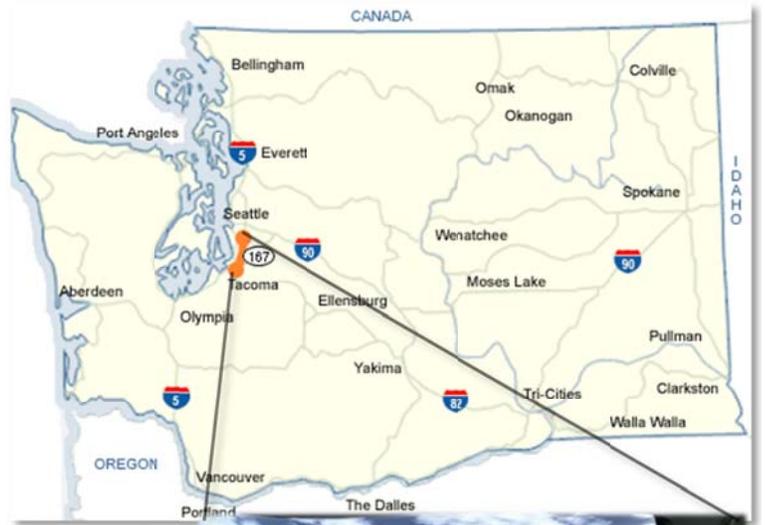
- ✓ Dependable transit operations
- ✓ Reliable HOT lanes
- ✓ Safe bike and pedestrian access

These choices work together to provide a more efficient regional transportation system.

The project is ready for construction – TIGER funds obligated by May 2013

NEPA is complete for the SR 167 HOT lanes extension and preliminary design is underway.

Right-of-way for the project is almost complete and obligation of funds is expected in May 2013.



The SR 167 HOT Lanes are in use today and saving people time and money.

The SR 167 HOT lane extension project will:

- ✓ **Add an additional 9.6 miles** of HOT lanes to an already successful system
- ✓ **Provide congestion relief** and an additional travel option to thousands of residents who depend on SR 167 every day to access major job centers in Puget Sound
- ✓ **Use innovative technology** to manage demand and reduce congestion
- ✓ **Improve the environment** with a reduction in greenhouse gases of over 11,000 tons per year
- ✓ **Provide a benefit-cost ration of 4.53 (3%)**
- ✓ **Create or sustain over 1,000 jobs**
- ✓ **Provide sustainable traffic management well into the future**

I. Project Description

WSDOT is requesting \$15 million to complete the funding needed to extend the successful nine mile SR 167 High Occupancy Toll (HOT) Lanes to nearly 14 miles in each direction, connecting King and Pierce County communities to vital employment hubs. The SR 167 HOT lane extension is an important phase of a planned 40-mile HOT/express toll lane system. State funds already allocated to this project are \$82 million and the receipt of a TIGER grant would mean construction can begin in 2013 rather than 2015 and build the entire project.

The project is part of the I-405/SR 167 Corridor, which stretches nearly 40+ miles from Lakewood to Lynnwood, forming the only north-south alternate route to I-5 in the urbanized region. Currently, the corridor serves 940,000 vehicle trips and an estimated 1.1 million person trips per day. Trips are projected to increase to approximately 1.5 million person trips per day in 2030. Major companies such as Microsoft, Google, Costco, Boeing, and Paccar have strategically located along this corridor, which also serves major regional retail destinations in Auburn, Kent, Tukwila, Renton, Bellevue, and Lynnwood.

The SR 167 corridor area is known as the Green River Valley, which has been transformed from farmland to a mix of busy residential, commercial, retail and industrial activity. Between 1980 and 2000, the Green River Valley population grew by 68 percent. By 2030 it is projected to grow another 39 percent.

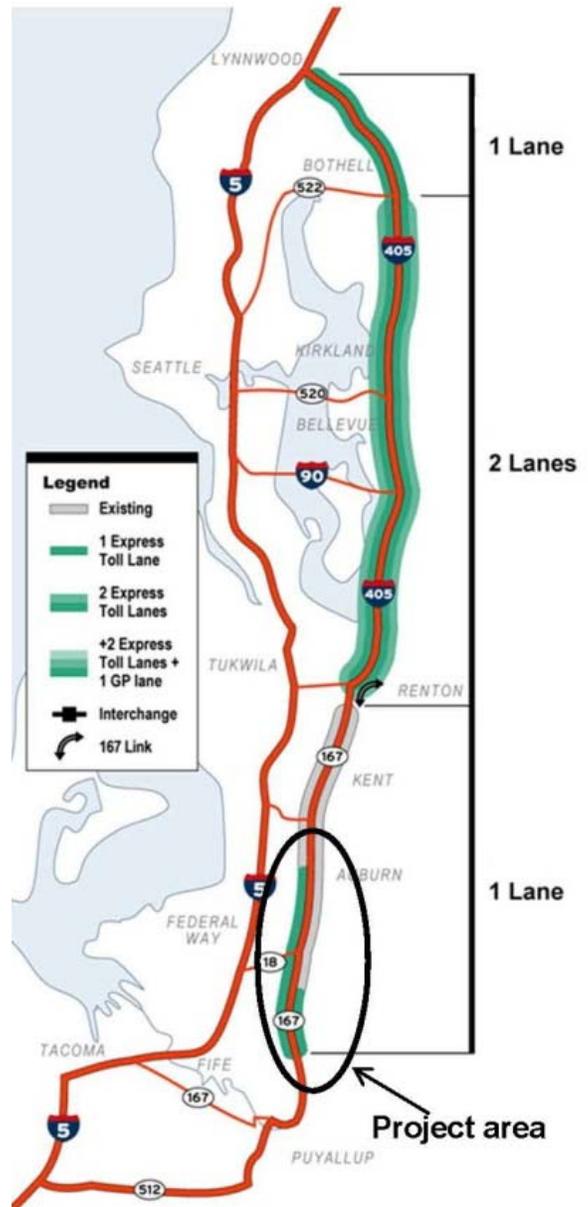
Employment has nearly doubled between 1980 and 2000 with growth projections of another 50 percent, adding 90,000 jobs in the Valley by the year 2030.

This increased development has also brought more traffic congestion and collisions. The SR 167 Corridor used to have an average daily traffic (ADT) of 15,000 vehicles in 1970 which has increased by 800% to 116,000 vehicles on an average weekday. **If current trends continue and no investments are made by 2030, the time to drive the SR 167 corridor could go from an average of 20 minutes to over an hour.**

Washington State leaders recognized this need and solidified a vision for the I-405/SR 167 Corridor in WSDOT's *Moving Washington* congestion management plan, which outlines a balanced approach to manage demand, operate efficiently, and add capacity strategically. Building on the I-405 Corridor Master Plan (2002) and the SR 167 Valley Corridor Plan (2007), *Moving Washington* details transportation solutions for the region's projected population and

Exhibit 1: I-405/SR 167 Corridor

2009 Adopted vision for 40+ miles of express toll lanes



employment growth, connecting I-405 and SR 167 as a seamless corridor (see Exhibit 1). Within this corridor is Washington’s first express toll system, the SR 167 High Occupancy Toll (HOT) Lanes Pilot Project. The long-term vision, adopted by the I-405/SR 167 Executive Advisory Group (a committee made up of corridor mayors and elected officials) during the I-405/SR 167 Corridor Tolling study in 2009, was for the I-405/SR 167 Corridor to expand the HOT lane system to include express toll lanes on I-405 to connect with SR 167 HOT lanes to better manage traffic.



The SR 167 HOT Lanes are in use today and saving people time and money.

Washington State is committed to HOT/express toll lanes on SR 167/I-405. WSDOT now has 17 miles of express toll lanes under construction for the north half of the I-405 Corridor, from Bellevue to Lynnwood. The TIGER grant will allow WSDOT to complete the southernmost end of the corridor on SR 167. Additionally the State Legislature has just allocated funds for preliminary engineering and right-of-way for critical improvements in the middle of the corridor at the I-405/SR 167 interchange. When complete this will be a seamless and continuous 40+ mile system of express toll lanes.

The SR 167/I-405 corridor is the second most heavily traveled corridor in the state with some areas suffering congestion up to 10 hours a day (at the I-405/SR 167 interchange). This congestion slows both commuters and freight connections accessing major commercial, manufacturing and warehouse facilities. It also hampers business development along the corridor, which continues to create jobs that provide an economic benefit to the Puget Sound Region and State.

To help manage congestion, WSDOT introduced the SR 167 HOT Lanes Pilot Project in 2008. Since that time, HOT lane usage has increased by as much as three times. HOT Lanes provide the sustainable, long-term solution to congestion relief that commuters and businesses have come to rely on. By managing the demand for the HOT lane, more vehicles and people can choose to move through the corridor faster and more efficiently – freeing up room in the general purpose lanes for freight.

SR 167 is classified as a “T-1 freight route” meaning it carries over 10 million tons per year (Washington’s highest classification). The extension of the SR 167 HOT lanes would create jobs, leverage user fees for accelerating corridor improvements, and maintain the facility, providing long-term congestion relief.

Why tolling in Washington?

- ✓ **Revenue Generation** helps build projects
- ✓ **Congestion Management** moves more vehicles and people and is sustainable in to the future
- ✓ **Demand Management** moves optional trips out of busiest travel times
- ✓ **Environmental Benefit** of reducing greenhouse gases

Location: The SR 167/8th Street East Vicinity to South 277th Street Vicinity – Northbound and Southbound HOT Lane Extension project is located in the Green River Valley, touching the cities of Auburn, Algona, and Pacific within King and Pierce Counties in Washington, north of the state capitol, Olympia.

Background:

1. Scope. WSDOT will extend the southbound HOT lane from where it currently ends today at 37th Street NW to the vicinity 8th Street East in Pierce County. The northbound HOT lane extension will begin at 8th Street East and end where the existing HOT lane starts at 15th Street SW.

In addition to the HOT lane extension, the project will add:

- Four new ramp meters at 8th Street East and Ellingson Road
- Two new noise walls
- Fish-passage improvements
- Twenty-one ADA accessible curb ramps
- Fifteen lane-miles of pavement overlay

There is a bottleneck and extreme congestion where the southbound HOT lane ends today which impacts the overall efficiency of the HOT lane. The six plus mile southbound HOT lane extension to 8th Street East will take the lane through several critical interchanges, making for a more logical terminus. **This project extends the HOT lanes by an additional 9.6 lane miles, improves the condition of the existing HOT lanes, and generates added revenue to cover lifecycle maintenance and operations costs in the future.**

Part of the State’s Strategic Plan. Over the next 30 years, the population in the Puget Sound Region is expected to increase by about 1.7 million and the number of jobs by about 1.2 million over Year 2000 levels. Washington’s general purpose lanes, and most of the HOV lanes, are already congested during peak periods, and those peak-periods are becoming longer all the time. HOT lanes are a way to operate these highways more efficiently and manage traffic demand with more commute choices. HOT lanes allow transit to operate more efficiently creating a more reliable commute choice for residents along SR 167. Strategies like this are part of Moving Washington, WSDOT’s statewide program to keep people and goods moving through the next decade and beyond.

Exhibit 2: SR 167 HOT lanes extension project area



Moving Washington is our framework for making transparent, cost-effective decisions that keep people and goods moving and support a healthy economy, environment and communities. This

strategy reflects the state’s transportation goals and objectives for planning, operating and investing. State law directs public investments in transportation to support economic vitality, preservation, safety, mobility, the environment and system stewardship.

The proposed SR 167 8th Street East to South 277th Street Northbound and Southbound HOT Lane Extension project aligns with the Moving Washington principles.

2. Budget. The secured state funds are sufficient to complete the design, advertisement, and part of the construction for the project. The requested \$15 million in TIGER Grant Funds completes the construction funding needed for the project to start construction in 2013. Budgets were initially established and verified using WSDOT’s Cost Estimation Validation Process (CEVP) in 2009, a risk-based assessment of project costs to ensure realistic budgets for publicly-financed projects. Budgets highlighted in this application were updated more recently during a Cost Risk Assessment (CRA) completed in July 2011, and reflect the current assessment of project conditions and risks. State fiscal years are July 1st through June 30th.

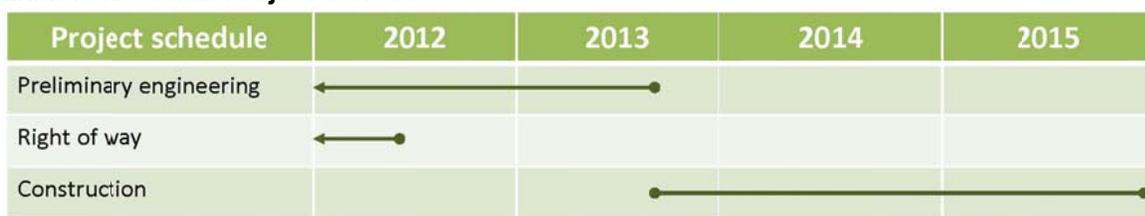
Exhibit 3: Proposed Project Funding by Biennium

Funding source	Prior	2011-13	2013-15	2015-17	Total
Secured state funding	\$6,165,730	\$4,161,781	\$51,925,489	\$19,752,000	\$82,005,000
Other – PEF	\$14,444	\$93,252	\$200,917	\$0	\$308,613
TIGER	\$0	\$0	\$15,000,000	\$0	\$15,000,000
Total	\$6,180,174	\$4,255,033	\$67,126,406	\$19,752,000	\$97,313,613

3. Schedule. This project is currently scheduled for advertisement in November 2014. With the added budget, the project could be ready for design-build advertisement in May 2013, awarded in September 2013 with construction beginning shortly thereafter, and be operationally complete by the end of 2015. The preliminary engineering for this project has been completed up to the 60% level. The environmental documentation is complete. All Federal and State permits are being updated. The updated Federal and State permits and remaining local permits will be acquired by May 2013. The right-of-way process is almost complete with a commitment from the City of Auburn to transfer the remaining parcel.

WSDOT is committed to on time delivery and is experienced in the innovative contracting method of design-build. The project team delivering this potential project has already delivered seven design-build projects under budget and ahead of schedule.

Exhibit 4: Overall Project Schedule



II. Project Parties

WSDOT is the applicant on this TIGER Grant application to fund the SR 167 HOT lane extension project. Corridor plans for SR 167 were developed through decision-making processes that brought together program leads, local partners, and the public. In 2009, WSDOT was directed by the Washington State Legislature to conduct a traffic and revenue study to add express toll lanes to I-405 which included the expansion of the SR 167 HOT lanes. To help facilitate this, WSDOT convened the I-405/SR 167 Executive Advisory Group, which includes elected officials from the 13 cities, two counties, FHWA, and three transit agencies along the I-405/SR 167 Corridor.

Today, the Executive Advisory Group continues to provide vision, policy, and oversight in an advisory capacity for implementing the I-405/SR 167 Corridor projects. Likewise, an Interagency Working Group composed of senior staff from the same corridor cities, environmental resource agencies, Federal and State transportation agencies, transit agencies, and others, originally provided technical review and guidance to the Executive Advisory Group and the Project Management Team.



Members of the Executive Advisory Group provide input during an I-405/SR 167 Corridor Tolling Study meeting in October, 2009.

III. Grant Funds and Sources/Uses of Project Funds

The State allocated \$82.3 million to this project with about \$76.2 million available between 2012 and 2015. To date, \$6.2 million has been spent on preliminary engineering. The requested \$15 million in TIGER funds completes the funding needed to construct the entire north and southbound HOT lane extension project. The following table illustrates the funding allocation. In order to meet the TIGER fund obligation date, WSDOT will need to advance about \$42 million from future biennium budgets. If TIGER IV funds are granted, WSDOT will advance these funds.

Exhibit 5: General Project Funding

Funding source	Funding amount
Secured state funds	\$82,313,613
TIGER	\$15,000,000
Total	\$97,313,613

Exhibit 6: Project Funding by Phase

Project phase	Secured state funding	TIGER request	Total cost
Preliminary engineering	\$11,109,695		\$11,109,695
Right of way	\$4,001,001		\$4,001,001
Construction	\$67,202,917	\$15,000,000	\$82,202,917
Total	\$82,313,613	\$15,000,000	\$97,313,613

IV. Selection Criteria

a. Long-Term Outcomes

In addition to offering SR 167 HOT lane users up to a nine minute travel time savings, the revenue generated from the HOT lanes provides a sustainable source of revenue for long-term maintenance of the project. The proposed project is an extension of an already successful system – improving the efficiency of the entire system. The proposed HOT lane extension project will extend the existing HOT lanes from just under 9 to 14 miles southbound and from nearly 11 to 14 miles northbound.

The benefit cost analysis (BCA) shows that travel time savings and safety benefits result in a benefit cost ratio of at least 2.85 to 1. The BCA was also conducted using a 3% discount rate, which resulted in a benefit cost ratio of 4.53.

i. State of Good Repair

- Toll revenue from the HOT lane helps fund the long-term operation and maintenance of the highway, minimizing lifecycle costs.
- In addition to the 9.6 lane-miles of new lanes, nearly 15 (14.77) lane-miles of existing asphalt pavement will be rehabilitated with an overlay. This rehabilitation will repair existing ruts and potholes, providing a smooth surface and extending the useful life of this section of highway for many years. This overlay is

Exhibit 7: Existing SR 167 Project area with extension



consistent with the State’s preventative maintenance program.

- The project builds environmental enhancements such as
 - Two new noise wall structures
 - Nearly two acres of wetland enhancement
 - Removes two fish barriers by retrofitting culverts to be fish-passable.
- The project will widen the southbound SR 167 mainline bridge over SR 18 to accommodate the added HOT lane and retrofit the bridge to prevent collapse due to liquefaction.
- The Project will seismically retrofit in the form of column jacketing the northbound SR 167 off-ramp bridge to eastbound SR 18.
- The project will install 21 American Disability Act (ADA) accessible curb ramps at the 8th Street East, Ellingson Road, 15th Street SW, and 15th Street NW intersections.
- In addition to the HOT lane benefits, the project will improve system performance by installing four new ramp meters on the on-ramps along the corridor at 8th Street East (northbound and southbound SR 167) and Ellingson Road (northbound and southbound SR 167).

ii. Economic Competitiveness

The Washington Freight and Goods Transportation System has classified SR 167 as a T-1 freight route. There were approximately 50 million tons of freight on SR 167 in 2009, and this number has continued to grow every year. In Washington State, only portions of I-5 carry more freight than SR 167.

The daily truck volumes on SR 167 are approximately 10,000 trucks per day, or approximately 10% of all traffic. Future growth projections for the overall volume of freight trucks entering and leaving the valley are forecasted to potentially reach 24,000 daily truck trips by 2030. In other words, **total truck volume will double by 2030.**

SR 167 Needed for Freight

The ports of Seattle and Tacoma depend on SR 167 for regional and national distribution of their freight. Thirty-three percent of regional truck trips on SR 167 are generated from the ports. Keeping freight moving on SR 167 helps keep freight moving into and out of our Ports which keeps the United States in competition with other international ports.

Extending the HOT lanes will increase capacity in those areas of SR 167 by 50%. This additional capacity will allow for faster freight movement within the corridor. The majority of truck travel in the corridor occurs during the daytime hours to meet the operating schedules of suppliers and customers. Most trucks are small, local delivery trucks or single tractor-trailers. At the same time, trucks on SR 167 are shifting to travel between the morning and evening peak periods to avoid peak congestion. When possible, freight haulers avoid peak periods by scheduling their travel during off-peak times, but many must drive during the peak period to meet customers' needs. As volumes continue to grow, there will be **fewer opportunities for efficient freight movement during non-peak times each day.**

Our bottom line depends on reliability

Rick is a District Manager at a major industrial firm providing products, services and solutions to enhance quality and comfort in homes and buildings through a variety of maintenance services. His customers count on the reliability of fast service, and the SR 167 HOT lanes make sure his technicians can meet their deadlines. "We have contracted with some of our clients to provide 'demand service' with a very short response time. We can't afford to be late."

In addition, there are regional warehouses spread throughout the Green River Valley, which has the largest freight distribution facilities in the Puget Sound Region, and the second largest concentration on the West Coast of the United States. The Green River Valley warehouses serve the Ports of Tacoma and Seattle and the region's day-to-day needs.

In 2005, 40% of the total truck-related distribution areas in the three-county area of the Central Puget Sound region were located in the Green River Valley. The connection between the Ports of Tacoma and Seattle is strong, as an estimated 33% of all regional truck trips generated by the Ports are destined to locations in the Green River Valley.

iii. Livability

Congestion relief – While both northbound and southbound SR 167 experience congestion during the peak hours, southbound SR 167 experiences severe traffic congestion over more of the corridor and for longer periods of time due to the bottleneck where the lane currently ends. Southbound

Support for HOT and Express Toll Lanes

Washington's Prosperity Partnership states that "Businesses will locate where there is a high quality of life, good schools, efficient transportation, affordable housing, and supportive government policies. The region must take steps to remain competitive because if we fail to act, jobs and economic prosperity could pass us by."

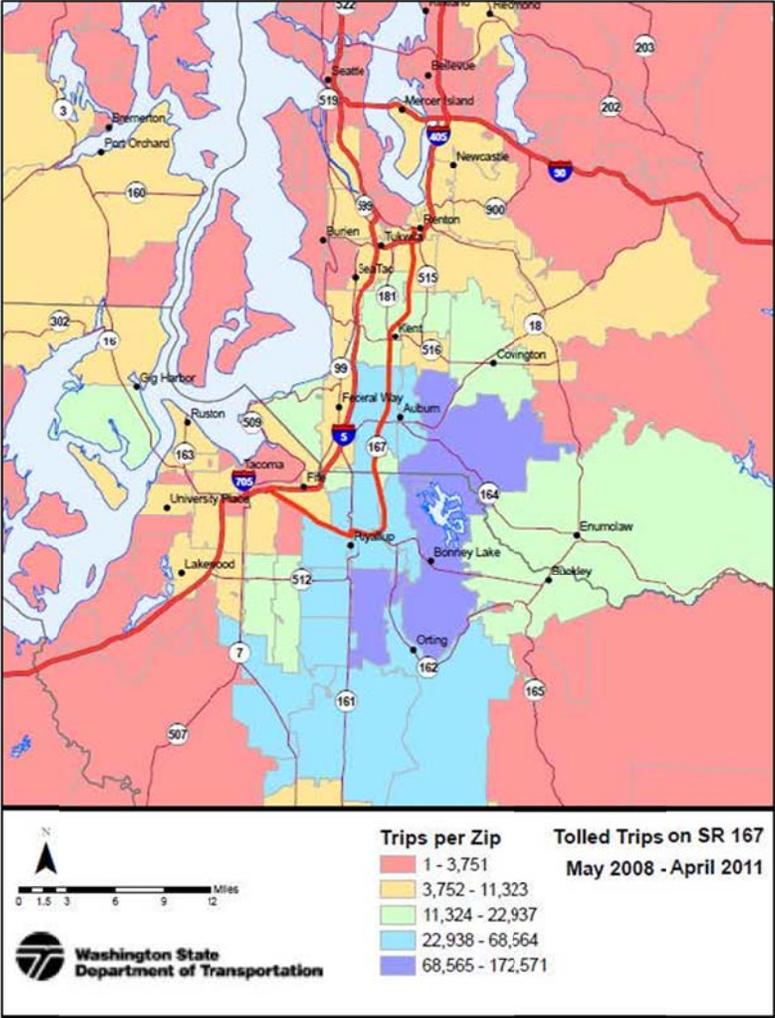
<http://www.prosperitypartnership.org/about/index.htm>.

experiences congestion mostly in the afternoon/evening peak hours; particularly south of the SR 167/SR 18 interchange. **By extending the HOT lanes, drivers will reduce their cost to travel from destination to destination by using a more efficient bus system or more reliable trip in the HOT lane.**

According to WSDOT’s Customer Service Center Database, the majority of tolled existing HOT lane trips are billed to homes in the southern, southeastern and eastern portions of the SR 167 corridor, right where the HOT lane extension is planned (see Exhibit 8). Therefore there will be an even bigger benefit to those who are already using the HOT lanes. The SR 167 HOT lane extension project will also reach more rural areas such as Bonney Lake and Orting.

Bus Service – There are two types of bus service along the corridor -- express bus routes and local bus routes. Express bus service is provided along the SR 167 corridor by both Sound Transit and King County Metro to major employment destinations in Seattle, Bellevue, King and Pierce County, and along the eastside of Lake Washington through 12 separate routes. Seventeen local, fixed routes operate primarily within the SR 167 Corridor. The majority of these routes (15) are operated by King County Metro, with groupings of routes operated in the southern end of the corridor by Pierce Transit. King County Metro, in particular have made cuts to routes and services due to the economy. Improving operations and reliability of the HOT lane will help transit maintain or restore service cuts by increased ridership.

Exhibit 8: Tolled Trips by Zip Code



The SR 167 corridor is home to a significant number of park-and-ride lots – large and small, owned and leased – that anchor bus and rail services to major regional destinations. Park-and-ride facilities in the SR 167 corridor are near their useable capacity.

Businesses – WSDOT did an informal web survey in 2010 of the commercial *Good To Go!* account holders to ask a few simple questions. WSDOT wanted to know if businesses were seeing the value of HOT lanes and if they thought it would be a good idea to extend the HOT lanes for broader service. The results showed that over half were very interested in extending the HOT lanes. The majority of businesses said the HOT lanes were helpful to their business.

What do businesses have to say about SR 167 HOT lanes?

- *“I don’t use the HOT lanes every day, but they save me time when I need to get to a project or meeting on time. If I have a 9 a.m. meeting up north, I use the HOT lanes.” – Vadim, Construction Company Owner*
- *“I like the analogy of congestion insurance – we pay auto insurance, health insurance and life insurance. Why not congestion insurance to make sure I can get where I need to be on time.” – Ron, Personal Trainer*
- *“HOT lanes are a commodity that we should have the choice to purchase for a more reliable trip.” – Todd, Construction Company Owner*
- *When people pay to use the HOT lane they unclutter the general purpose lanes for people who don’t choose to use them – there are benefits for everyone.” – David, Appraiser, self employed*

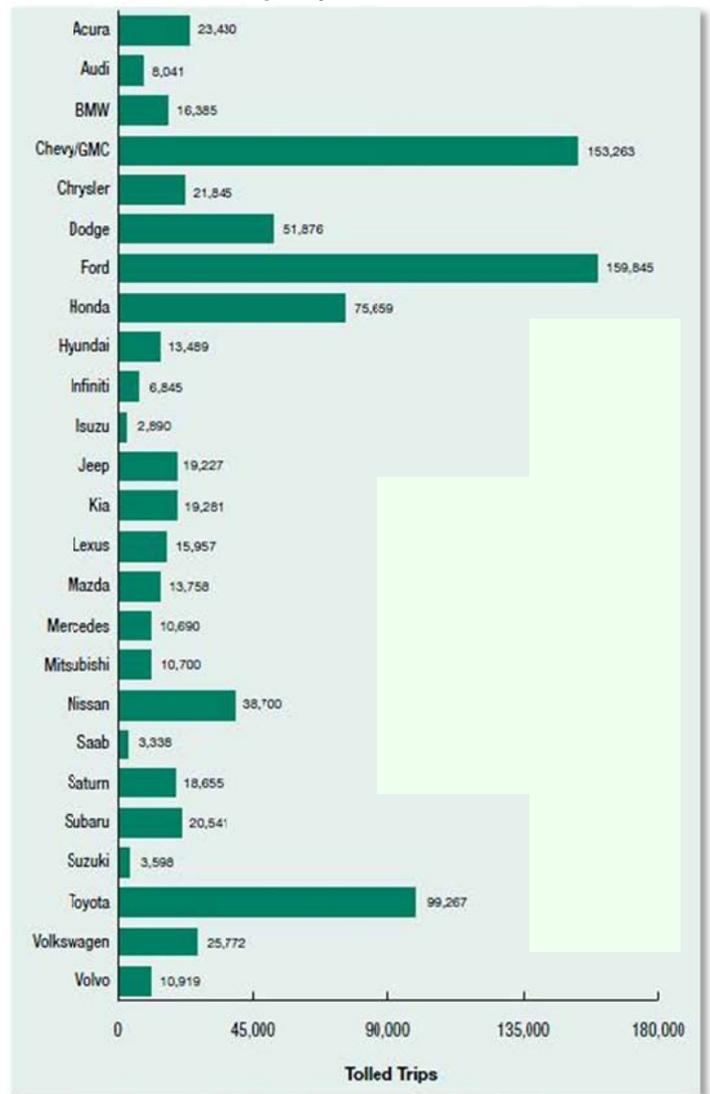
Historically underserved communities – Auburn and the surrounding communities in the Green River Valley have a higher poverty rate than Washington State and the Nation. For example, the City of Auburn’s poverty rate was 14.9% in 2009. The National poverty rate in 2009 was 13.2%. Extending the SR 167 HOT lanes will improve accessibility and transit services for economically disadvantage populations, non-drivers, senior citizens, and persons with disabilities and will make goods, commodities, and services more readily available. The SR 167 Second Annual Report shows that HOT lanes are not “Lexus Lanes.” Results from SR 167 show that less than two percent of trips were made by a Lexus (see Exhibit x). Drivers of Chevys and Fords use the lane more than anyone else.

Pedestrians and bicyclists use two regional trails near the SR 167 Corridor. The first is the Green River Trail, which runs from Auburn Narrows Park along the Green River, crossing under SR 167 near SR 516 and north to Alki Point in Seattle. The second is the Interurban Trail, which runs parallel to the BNSF railway and Union Pacific Railroad rail tracks from south of the city of Pacific to the city of Tukwila, and connects to the Green River Trail.

The SR 167 project will add new ADA compliant sidewalks to both sides of 8th Street East and Ellingson Road, where each street crosses beneath SR 167. This sidewalk will link the east and west sides of SR 167 for pedestrians. Currently pedestrians are expected to use the shoulder to cross SR 167 as there is no sidewalk. All regional bus routes and some local bus routes have equipment to carry bicycles.

Collisions – The third year of HOT lanes operation data indicated that HOT lanes are a safe option. The average number of collisions is down 4 percent when

Exhibit 9: Tolloed trips by vehicle make



compared to the five-year average prior to HOT lanes opening in 2008. See more data on safety in section v. Safety.

iv. Environmental Sustainability

Where feasible, **noise walls, landscape berms, and other features will be improved to limit noise impacts** and reduce noise exposure.

The SR 167 corridor avoidance and minimization strategies include:

- **Reducing the project's overall footprint.** Where fill-widening is required, the design team looks to build retaining walls rather than sloped, fill prisms to reduce the corridor's overall footprint. Retaining walls reduce impacts if the road prism slope extends further than the width of the retaining wall.
- Where highway improvements have a potential negative impact on **habitat connectivity**, WSDOT considered shifting the alignment to avoid wildlife habitat, where ever feasible.

Extending the HOT lanes will reduce stop-and-go traffic, conserve fuel and enable vehicles to reduce emission rates by traveling close to the speed limit. The HOT lanes will also improve bus service efficiency, which may result in higher bus ridership and reduced operating costs. **HOT lanes complete the infrastructure needed for the corridor vision of operating a Bus Rapid Transit (BRT) system offering a reliable transit alternative**, which helps reduce greenhouse gas emissions by reducing the number of cars on the highway. In addition, HOT lanes allow WSDOT to manage lanes more efficiently, making a smaller environmental footprint.

Stormwater retrofits associated with the I-405 and SR 167 projects have resulted in improved water quality in streams, lakes, and wetlands. WSDOT's goal is to bring the entire I-405/SR 167 corridor up to current stormwater standards for water quality treatment and detention. The new stormwater treatment wetlands along the corridor not only help to clean up the water, but they also reduce downstream flooding and provide for **fish-passable flow**. In addition, they also have a side benefit of providing wildlife habitat in this very urbanized corridor.

The project team, with a strong sustainability goal in mind, elected to mitigate wetland impacts on-site. By using an already impacted site, the team is helping to eliminate impacts to an entirely new location, and improving the functionality of the habitat within the project limits.

In addition, there are two culverts within the project area where there is opportunity to improve fish movement through the area. Although these culverts are not required to be modified by this project, the project team has elected to make improvements to them such so that they will more easily pass fish from one side of the highway to the other. The corresponding wetland and floodplain improvements will then be more readily accessible.

New noise walls will be built. As part of this project, two noise walls, one south of 1st Avenue North and one north of 1st Avenue North visually shield residents in the City of Algona as well as protect them from highway noise. The noise wall structures will be on the northbound side of SR 167.



View from SR 167 to the proposed noise wall protected neighborhood.

Air quality and energy consumption will improve with more efficient traffic operations.

The I-405/SR 167 Corridor air quality analysis demonstrates that the projects will not cause air pollution concentrations exceeding air quality standards. In addition, the program is part of the Puget Sound Regional Council's (PSRC's) Metropolitan Transportation Plan and the Transportation Improvement Plan as a program that conforms to the Puget Sound Region's Air Quality Maintenance Plans (see www.pscleanair.org/). Continued investment in congestion-relief improvements will prevent the region from falling back into non-attainment.

Reducing greenhouse gas emissions. The SR 167 HOT Lanes extension project will help prevent over 11,000 tons per year of harmful greenhouse gases from reaching our atmosphere and therefore, contribute to our state's overall goal of reducing its carbon foot print.

Maintain, protect, or enhance the environment. The floodplain storage area in Mill Creek will provide important floodplain connectivity and off-channel habitat, which will improve habitat conditions in Mill Creek, thereby providing a beneficial effect, especially during high flow.

The connection of the floodplain storage area to Mill Creek will provide approximately **six acres of off-channel habitat** and will increase floodplain connectivity in the Mill Creek subbasin and will improve the primary constituent elements (PCEs) in the rearing sites for juvenile Chinook salmon.

To maintain the existing temperature regime for aquatic resources, the floodplain storage area has been designed to avoid removal of existing large trees that provide shade. Additionally, areas adjacent to the floodplain storage area will be planted with native trees and shrubs, to provide additional shade to the site. WSDOT expects that the high groundwater table will provide cool water to the site that will help to moderate water temperatures in the floodplain storage area.

Riparian habitat will be improved in areas where in-water work or other construction activities will occur. These areas will be replanted with native riparian vegetation to improve habitat and provide stream shading where

vegetation will be cleared. The extent of riparian planting will be dictated by the extent of the clearing effects.

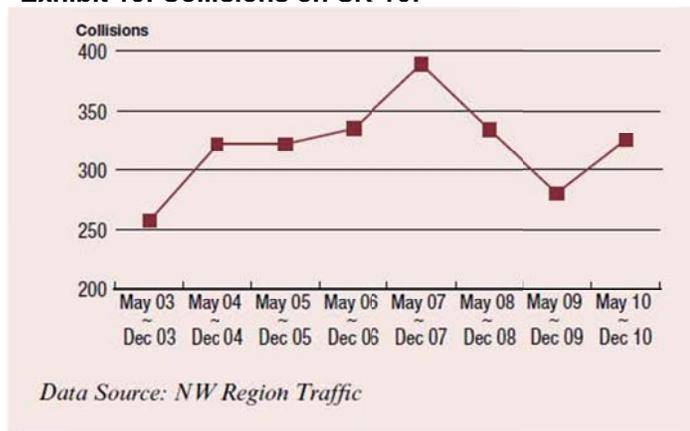
The project will retrofit two existing culverts providing improved fish passage, water quality and treatment, and aquatic habitat in the project area. Water quality and water bodies will be improved through implementation of stormwater best management practices (BMPs) that will protect aquatic life by limiting pollutants entering water bodies.

v. Safety

Over the past three years, in the proposed project area the freeway section one mile on each side of the SR 167/SR 18 interchange and the interchange itself averaged 143 accidents per year. Seventy-six percent of these accidents were congestion related (rear-end or sideswipes). By reducing congestion and providing new capacity through the area, a 25% reduction in crash rates is projected. This crash rate reduction results in a net present value of \$14.6 million in savings based on USDOT Economic Value of a Statistical Life data.

The third year of **HOT lanes operation data indicates that the average number of collisions is down 4 percent when compared to the five-year average prior to HOT lanes opening in 2008.** The collision data timeframe begins in May and ends in December because HOT lanes began in May 2008, and December 2010 is the most recent collision data available (see Exhibit 10).

Exhibit 10: Collisions on SR 167



Multiple factors can affect the safety record such as the double white lines preventing erratic lane changes in and out of the HOT lanes, changing traffic volumes, and increasing WSP enforcement.

Incident response. An important component of HOT lanes operations is the addition of incident response team (IRT) vehicles along SR 167 to assist drivers (e.g. change flat tires, supply emergency gas, etc.) and clear blocking vehicles.

By funding more IRT vehicles along the corridor, the HOT lanes project enabled IRT to respond to incidents more quickly. This reduced the congestion and delay caused by incidents and helps keep all lanes moving.



The incident response team helps keep incidents clear on SR 167.

b. Job Creation & Near-Term Economic Activity

This project will use the design-build process to deliver the project which will expedite project delivery, save money, and move jobs into the private sector more quickly.

WSDOT used multipliers as directed in the Federal Register/Volume 77, No. 20. Per the Executive Office of the President, Council of Economic Advisers (CEA), a job-year is created by every \$76,923 in transportation infrastructure spending (or 13,000 job-years per billion dollars of transportation infrastructure spending). It is also assumed that right-of-way spending does not create jobs.

Exhibit 11: Short Term Job Creation by Project Phase

Project Phase	Spending by Phase	Direct Job – Years**	Indirect Job – Years**	Induced Job – Years***	Total Job - Years
PE	\$4,943,372	16	16	32	64
RW*	\$3,987,151	-	-	-	-
CN	\$82,202,917	267	267	534	1,069
Totals	\$91,133,440	283	283	566	1,133

Based on a project total of \$87,146,289 for PE & CN (RW excluded), the job creation results:

* Assumes no jobs created by right-of-way expenditures

** Assumes 25% of the job-hour benefits are attributed to “direct project” related activities, and another 25% are attributed to “indirect” project related activities, during project PE and CN phases.

*** Induced job-hours represent the remaining 50% of the job-hour creation benefits attributed to jobs created or preserved in the local, regional or nation economy during the project.

Exhibit 12: Short-term Job Creation by Time Period

Period	Spending (\$000) 2012 dollars*	Total Direct, Indirect, and Induced Job –Hours**
2012 - Q2	\$3,005,034	17,377
2012 - Q3	\$312,500	8,451
2012 - Q4	\$312,500	8,451
2013 - Q1	\$312,500	8,451
2013 - Q2	\$312,500	8,451
2013 - Q3	\$2,918,872	67,947
2013 - Q4	\$2,918,872	67,947
2014 - Q1	\$2,918,872	67,947
2014 - Q2	\$2,918,872	67,947
2014 - Q3	\$13,862,729	374,871
2014 - Q4	\$13,862,729	374,871
2015 - Q1	\$13,862,729	374,871
2015 - Q2	\$13,862,729	374,871
2015 - Q3	\$4,938,000	133,532
2015 - Q4	\$4,938,000	133,532
2016 - Q1	\$4,938,000	133,532
2016 - Q2	\$4,938,000	133,532
Total	\$91,133,440	2,356,579

* Assumes right-of-way spending does not result in job creation

**Assumes 25% of the job-hour benefits are attributed to "direct project" related activities, and another 25% are attributed to "indirect" project related activities, during project PE and CN phases.

c. Innovation

This project will utilize all electronic toll collection. When there is extra space available in the HOT lane, non-carpool drivers can choose to pay an electronic toll using a transponder for a faster, more reliable trip. Adding just enough additional vehicles to the HOT lane, to maximize efficiency, will make the carpool lane more efficient and ease congestion across all lanes, including the free general purpose lanes.



Electronic tolls are paid using the Good to Go! transponder.

SR 167 HOT lanes are reducing congestion through variable tolling.

The existing SR 167 HOT lane project, the seventh HOT lane project opened nationally, uses a type of variable tolling where the toll rate adjusts dynamically based on real-time traffic data. The data, collected by sensors embedded in the roadway, measure vehicle speed and traffic volume. When traffic is heavy and demand on the lane is high, the toll price increases, and when it's light, the price decreases – efficiency created by the law of supply and demand. The expanded system will continue using variable tolling and maintain a high speed, high performing lane.

HOT lane volumes have increased by 15 percent since 2008, making more room in the general purpose lanes.

Extending the HOT lanes further south will serve more trips and improve the overall function of the SR 167 HOT lane system.

SR 167 HOT lanes are carrying more traffic than ever. Overall, the average peak-hour, peak-direction traffic volumes decreased by 1 percent in 2010 compared to 2007 levels, which is consistent with volumes on roadways across the region. However, the HOT lane's popularity continues to increase and the volume in those lanes has grown by 15 percent. With HOT lanes carrying more and more traffic, general purpose lane volumes decreased by five percent. Expanding the system and extending it the HOT lanes through the highly congestion SR 18 interchange will greatly enhance the system adding to the overall traffic benefits.



Extending the HOT lanes on SR 167 allows us to work smarter with the roadway we have and the new capacity.

The SR 167 HOT lanes exceed the legislative requirement of maintaining average traffic speeds of 45 mph or more during peak-hours at least 90 percent of the time. In fact, the HOT lanes exceed this requirement over 99 percent of the time. Southbound peak-hour general purpose lanes improved average speeds 10 percent between 2007 and 2011, rising from 42 mph to 46 mph. Speeds in both directions of the HOT lanes operate

slightly below the posted speed limit of 60 mph.

d. Partnership

As mentioned above under project parties, partnerships exist among the jurisdictions and stakeholders in this corridor, starting with the SR 167 Corridor Master Plan completed in 2007. Most recently, when WSDOT convened the Executive Advisory Group (a group made up of Mayors and other elected officials and stakeholders along the SR 167 and I-405 corridor) as part of the I-405/SR 167 Corridor Tolling Study, the Executive Advisory Group supported a robust HOT lane system on I-405 and SR 167 – creating a single continuous 40+ mile corridor. This effort led to a regionally supported interest statement that supported the extension of the SR 167 HOT lanes (See Appendix B). This coalition of partners continues work to shape the long-term improvement needs in the corridor, and seek funding to move this sustainable congestion relief project forward.

(i) Jurisdictional & Stakeholders Collaboration

The following partner agencies were part of the I-405/SR 167 Corridor Executive Advisory Group and signatories on an interest statement to build a system of HOT/Express toll lanes on the SR 167/I-405 Corridor (see Appendix B). Many of these partners have provided letters of support for this project and have been co-leaders in actively developing solutions for the corridor. The cities along the SR 167 corridor are affordable places to live and need a reliable way to commute to job centers in Renton, Bellevue, and Seattle. HOT lanes support the corridor's Master Plan vision for Bus Rapid Transit, which provides low-cost, reliable and frequent transit for distressed communities to reach employment centers.

WSDOT has worked closely with the agencies represented in the table below, carrying out environmental, design, and construction activities for the Eastside Corridor Program's projects. The corridor-wide outreach and collaboration for the I-405 and SR 167 corridor Master Plans has been described previously.

The following stakeholders have written letters of support which can be found in Appendix A:

- ✓ Representative Judy Clibborn, House Transportation Committee Chair
- ✓ Puget Sound Regional Council
- ✓ City of Auburn
- ✓ City of Covington
- ✓ City of Kent
- ✓ City of Renton
- ✓ Renton Chamber of Commerce
- ✓ Auburn Area Chamber of Commerce
- ✓ Southwest King County Chamber of Commerce

Exhibit 13: Agency, Jurisdictional, and Business Support

Agency or Organization	How partnered with the project	Type of Support for Project	Letter of support or Executive Advisory Group member
Federal Transit Administration	Executive Advisory Group Member and Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	X
City of Algona	Executive Advisory Group Member and Environmental process	WSDOT conducted early coordination regarding suitability of the proposed mitigation site C and its consistency with the Mill creek Special Area Management Plan. WSDOT evaluated and complies with city of Algona Critical Areas Ordinances for wetland and stream mitigation work.	X
City of Auburn	Executive Advisory Group Member and Environmental process	WSDOT conducted early coordination regarding suitability of the proposed mitigation site C and its consistency with the Mill creek Special Area Management Plan. WSDOT evaluated and complies with city of Auburn Critical Areas Ordinances for wetland and stream mitigation work.	X
City of Kent	Executive Advisory Group Member and Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	X
City of Pacific	Executive Advisory Group Member and Environmental process	WSDOT conducted early coordination regarding suitability of the proposed mitigation site C and its consistency with the Mill creek Special Area Management Plan. WSDOT evaluated and complies with city of Pacific Critical Areas Ordinances for wetland and stream mitigation work.	X
City of Puyallup	Executive Advisory Group Member and Environmental process	WSDOT conducted early coordination regarding suitability of the proposed mitigation site C and its consistency with the Mill creek Special Area Management Plan.	X
City of Renton	Executive Advisory Group Member and Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	X
City of Sumner	Executive Advisory Group Member and Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	X
King County	Executive Advisory Group Member and Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	X
Pierce County	Executive Advisory Group Member and Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	X
Port of Seattle	Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	
Port of Tacoma	Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	
Puget Sound Clean Air Agency	Environmental process	Received SEPA public notice and Construction General Stormwater	

		Permit public notice	
Puget Sound Regional Council	Executive Advisory Group Member and Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	X
Sound Transit	Executive Advisory Group Member and Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	X
Auburn Chamber of Commerce	Corridor Neighbor	Supportive of the project	X
Renton Chamber of Commerce	Corridor Neighbor	Supportive of the project	X
SW King County Chamber of Commerce	Corridor Neighbor	Supportive of the project	X
Washington State Patrol	Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	
Washington State Department of Fish and Wildlife	Environmental process	WSDOT obtained Hydraulic Project Approval for in water work to extend and upgrade culverts. WSDOT agreed to all of the HPA provisions to protect fish and wildlife	
Muckleshoot Indian Tribe	Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice; In addition WSDOT exchanged detailed letters and met personally with the Muckleshoot Fisheries Division.	
Snoqualmie Nation	Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	
National Oceanic and Atmospheric Administration, National Marine Fisheries Service	Environmental process	Concurred that the project "may affect but not likely to adversely affect" Puget Sound protected species.	
National Park Service	Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	
U.S. Army Corps of Engineers	Environmental process	Issued Nationwide Permit to authorize unavoidable wetland impacts.	
U.S. Fish and Wildlife Service	Environmental process	Concurred that the project "may affect but not likely to adversely affect" Puget Sound protected species.	
Environmental Protection Agency	Environmental process	Received SEPA public notice and Construction General Stormwater Permit public notice	
Department of Archaeology and Historic Preservation	Environmental process	Received concurrence from the Department of Archaeology and Historic Preservation that no historic properties will be affected by the project.	
Washington State Department of Ecology	Environmental process	WSDOT conducted early coordination regarding suitability of the proposed mitigation site C and its consistency with the Mill creek Special Area Management Plan.	

e. Results of Benefit-Cost Analysis

The project benefits far outweigh the costs. A conservative analysis found that the benefit exceeded costs by up a 4.53 to 1 ratio.

Travel time savings - An analysis of the project travel-time saving reductions was conducted based on adopted Metropolitan Planning Organization (MPO) traffic projections and operational analysis over a 20-year lifespan. Using a 3% and 7% discount rate, the benefit to cost ratios were 4.53:1 and 2.85:1 respectively. These high ratios show the exceptional value of the project based on only travel time savings.

The project has benefits in many other areas including emissions reductions, short and long term jobs, safety, and life cycles. While not directly calculated, the cumulative benefits of these other elements would substantially further increase the benefit to cost ratios. Background Benefit-Cost Analysis calculations are included in Appendix C).

Delay reduction - The project significantly reduces vehicle delay on the corridor. At opening year, over 1,600 vehicle hours of delay are reduced every weekday. By year 20 of the project, this increased to 11,300 vehicle hour of delay reduced, or almost 3 million hours annually.

Exhibit 14: Benefit-Cost Analysis Summary

Benefit Cost Summary at 3% and 7% Discount Rates		
	3%	7%
Present Value Costs (PVC)	\$88,030,000	\$88,030,000
Present Value Benefits (PVb)	\$398,757,828	\$251,089,386
Benefit/Cost Ratio	4.53	2.85

V. Project Readiness and NEPA

i. Project Schedule

The following exhibit shows the SR 167, 8th Street East to 277th Street Northbound and Southbound HOT Lane Extension Project schedule for major work items.

Exhibit 15: Detailed Project Schedule



ii. Environmental Approvals

Environmental documentation in accordance with the National Environmental Policy Act (NEPA) was completed in 2008. A Section 404 permit, Section 401 (Ecology) Water Quality Certification, Section 402 NPDES, and a Hydraulic Project Approval (HPA) will be attained prior to October 2012.

iii. Legislative Approvals

The Washington State Legislature funded a portion of this project – the southbound HOT lane extension from South 277th Street to 8th Street East at \$82 million. The Pilot ends in June 2013; action to make the HOT lanes permanent is expected during the 2013 legislative session. The current SR 167 HOT lanes are saving people time and raising revenue for operations and future capital improvements. See letter of support from the Washington State Legislature’s House Transportation Committee Chair; in addition to local jurisdictions, and businesses.

iv. State and Local Planning

SR 167 8th Street East Vicinity to 277th Street Vicinity Northbound and Southbound HOT Lane Extension project is part of the Puget Sound Regional Council transportation Improvement Plan (TIP) and the WSDOT State TIP. See letter of support from the Puget Sound Regional Council in Appendix A.

The guiding policy document for the region, produced by PSRC in 2008, is *Vision 2030*. Some of the policies that support extending the SR 167 HOT lanes are:

- Metropolitan Planning Policy (MPP) T-12 – “Give regional funding priority to transportation improvements that serve regional growth centers and regional manufacturing and industrial centers.” The SR 167 corridor serves a number of designated regional growth centers including Tukwila (Southcenter/Sea-Tac Airport), downtown Renton, Auburn, and Kent.
- MPP-T-17 – “Ensure the freight system meets the needs of: 1) global gateways, 2) producer needs with the state and region, 3) regional and local distribution.” SR 167 is a primary freight corridor in the state.
- MPP-T-28 – “Improve key facilities connecting the region to national and world markets to support the economic vitality of the region. “Thirty-three percent of the freight from the Ports of Seattle and Tacoma travel on SR 167 to Auburn and Kent on their way to the rest of the region and county.
- MPP-T-33 “Promote transportation financing methods, such as user fees, tolls, and pricing, that sustain maintenance, preservation and operations of facilities and reflect the costs imposed by users.”

Transportation 2040, the regional planning document produced in 2010 by PSRC, emphasizes completing regional roadway systems, including the I-405/SR 167 corridor:

- “After [addressing] basic needs, the region’s roadway priorities include projects that are ready to be implemented, complete missing links in the Metropolitan Transportation System, complete a well-connected freight network, **implement major transportation corridor studies**, and support growth and development consistent with adopted Growth Management Plans.”
- “Transportation 2040 identifies investments to support our expected growth and improve the service transportation provides to people and businesses, lays out a financing plan that suggests a long-term shift in how we fund transportation improvements, **with more reliance on users paying for transportation improvements**, and proposes a strategy for reducing transportation’s contribution to climate change and its impact on important regional concerns such as air pollution and the health of Puget Sound.”
- SR 167 is specifically listed as an important part of the Ten-Year Action Strategy to “complete 125 miles of capacity enhancements, corridor improvements and key freeway missing links....”

v. Technical Feasibility

This project is an extension of the existing SR 167 HOT Lanes system, so the technical aspects have been tested and are continually being improved and fine-tuned. WSDOT now has a statewide toll office and have streamlined the operations of the toll system which has reduced the overall operations and maintenance costs of the facility. Revenue on the SR 167 HOT lanes is exceeding its operating costs. In fact, HOT lane revenue increased 35 percent in fiscal year 2011, generating \$750,000; compared to \$560,000 that was generated in fiscal year 2010. Additionally, toll collection costs have decreased.

The preliminary engineering for this project has been completed up to the 60% level and the design has been approved by WSDOT. All reasonable efforts have been made to avoid or minimize impacts to the environment. All deviations to WSDOT design standards have been approved by WSDOT. A full design-build package is being prepared and will be complete by May 2013.

vi. Financial Feasibility

The TIGER funding will close the funding gap to build both the north and southbound HOT Lane extension. TIGER funding will also advance the planned \$76 million in state funding for this project, and allow for construction to begin two years earlier than scheduled.

VI. Federal Wage Rate Certification

(See Appendix D)

VII. Pre-application change

The pre-application will change the total amount of funding requested from the TIGER grant to \$15 million from \$30 million. The last Cost Estimate Validation Process (CEVP) for this project was done in 2009 and the updated Cost Risk Assessment completed in 2011 shows a decrease in needed funding of \$15 million. The reason for the decrease is realized efficiencies by building the northbound lane with the southbound lane and a good bidding climate due to the downturn in the economy.