

# King Countywide 2014 FHWA Grant Program Application

**Important:** Please review the following information before beginning the application.

Definition of a project: For the purposes of this competition, a project must be clearly defined by geographic limits and/or functionality. If a project contains multiple components, the sponsor must clearly indicate how they are logically connected to one another. A project with multiple geographic locations must demonstrate their functional relationship (for example, signal coordination work in various locations tied together through a traffic control center).

Projects that include multiple components or sponsors are allowed to be submitted, but the scope of work, funding amounts and schedules for each individual agency and/or component must be clearly identified at the time of application. If awarded PSRC funds, these projects may be separated into their individual components or lead agency in the regional Transportation Improvement Program. Each individual TIP project will be subject to PSRC's project tracking policies and will be administered according to the scope of work and funding awarded for each. If you have questions please contact Kelly McGourty at (206) 971-3601 or [kmcgourty@psrc.org](mailto:kmcgourty@psrc.org).

Resources: A [resource document](#) has been developed to assist sponsors in completing this online application for the 2014 project selection process. The document summarizes information needed by sponsors to complete applications, as well as provides useful information on various topic areas such as financial constraint and project tracking requirements.

Submitting Applications: The importance of complete and accurate information on every application cannot be overemphasized. The evaluation and scoring of all submitted projects will be based on the answers provided in this application.

All applications must be submitted by **11:59p.m. May 7, 2014.**

## Project Information

**Project Title** SR 516 - Jenkins Creek to 185th Place SE

**Transportation 2040 ID#** 4288

The current list of investments that are required to be on the Transportation 2040 Regional Capacity Project List and have a designated ID # can be accessed at

Appendix N of the 2014 Transportation 2040 Update, [here](#). If your project is exempt from this requirement, please enter "N/A." Helpful information on those exempt investments that are considered programmatic in nature or are on local facilities and therefore not required to be on the Project List can be found [here](#).

For assistance or questions regarding these issues, contact Kimberly Scrivner at 206-971-3281 or [kscrivner@psrc.org](mailto:kscrivner@psrc.org).

**Sponsoring Agency** Covington

**Co-Sponsoring Agency** -

**Does sponsoring agency have "Certification Acceptance" (CA) status from WSDOT?**

**More information on certification acceptance and a listing of current CA agencies can be found [here](#).**

Yes

No

**If not, which agency will serve as your CA sponsor?**  
WSDOT

## Contact Information

**Project Contact Name** Robert Lindskov

**Project Contact Phone** 253-480-2467

**Project Contact Email** [Blindskov@covingtonwa.gov](mailto:Blindskov@covingtonwa.gov)

## Project Description

### Project Scope

**Please describe clearly and concisely the individual components of this project. What will be the specific outcome of this project? What will be built, purchased or provided with this grant request? For example, if this is part of a larger project, please be specific as to what portion on which the grant funds will be used.**

This project widens SR516 (Kent-Kangley) from a two-lane rural standard to a 5-lane arterial standard

from Jenkins Creek to 185th Place SE. The improvements will include center median landscaping, illumination, 5' planter strips and 8' sidewalks throughout the project limits. A drainage conveyance and treatment system will be incorporated to retain, treat, and infiltrate drainage associated with the additional widening. The project will also include widening Jenkins Creek crossing to accommodate the arterial standard and improve the fish habitat with the improved structure as well as handle high water flows during storm events. All above ground utilities will be converted to underground.

### **Project Justification, Need, or Purpose**

**Please explain the intent, need or purpose of this project. For example, what is the goal or desired outcome?**

Part 1. Category A Executive Summary

SR 516 Jenkins Creek to 185th Ave. SE

City of Covington Transportation 2040 ID 4288

The City of Covington is seeking \$8,600,000 in Surface Transportation Program (STP) Grant funding to construct the SR 516 from Jenkins Creek to 185th Avenue SE project, a critical segment of the SR 516 corridor plan. The total project construction cost is \$11,200,000 with remaining funds coming from the City, State and private sources representing a 20% match.

As stated in the City's Economic Development Element of the Comprehensive Plan, "Due to its highway cross-roads location in the middle of a large and growing trade area, Covington continues to have potential for further retail development meeting the shopping and service needs of residents in the city plus adjoining communities." It is recognized that "Potential disadvantages include the need to address traffic implications in the downtown area (especially for SR 516)." Figure 1, in the attached document "City of Covington Surface Transportation Program (STP) Grant Application SR 516 from Jenkins Creek to 185th Ave. SE" shows the congestion due to the current bottleneck at the Jenkins Creek crossing that would be removed as part of this project.

## **Project Location**

### **Project Location**

**For example, please include street, route or trail name, or other identifiable location.**

SR 516 (SE 272nd Street)

**Please identify the crossroad, milepost or landmark nearest the beginning and end of the project below, if applicable.**

**Crossroad/landmark nearest to the beginning of the project:**

Jenkins Creek Crossing

**Crossroad/landmark nearest to the end of the project:**

185th Place SE

**Please identify the center(s), regional and local, the project is located in or supports.**

**Refer to PSRC's [centers page](#) for more information on the regional centers.**

Designated Regional or Local Centers

In addition to serving as a major State Route corridor and functioning as the City of Covington “main street,” the SR 516 corridor is part of a critical local and regional transportation network of corridors within the South County Area Transportation Board’s (SCATBd) list of project priorities. SCATBd is a strong partnership of civic leaders that recognizes the importance of these regional corridors and projects that connect our Local Centers in South King County.

The SR 516 corridor and this project segment serves as a major east/west transportation spine into and out of the City of Covington’s Downtown core. The corridor directly serves over 20 neighborhoods and all Downtown civic, medical and support services. Improvements to the corridor as laid out in the January 2013 WSDOT SR 516 Corridor Plan , City’s Comprehensive Plan and 6-Year Transportation Improvement Plan will benefit and support the development plans and activities of the Center by:

- Reducing delay by 37 to 67% within the project area
- Providing safety improvements to both motorized and non-motorized movements
- Adding continuous sidewalks with landscaped buffers and bike lanes
- Providing a separated undercrossing link to the Jenkins Creek Trail
- Eliminating the bottleneck at Jenkins Creek crossing by adding a full width structure

## Federal Functional Classification

Roadways must be approved on the federally classified roadway system before projects on it may use federal transportation funds (this includes proposed new facilities), unless the project meets certain exceptions. Resources to identify a facility's functional classification or exceptions to this requirement may be found [here](#).

**Please select the appropriate project category (rural or urban) followed by the corresponding functional classification.**

Urban Functional Classification (Population over 5,000)

**Please select the appropriate urban classification.**

16 Minor Arterial

## Plan Consistency

**All projects must be consistent with a comprehensive plan that has been certified by PSRC as being consistent with the Growth Management Act, VISION 2040 and Transportation 2040. Projects must be consistent with the comprehensive plan of each jurisdiction in which the project is located. If a comprehensive plan has not been certified, projects located in that jurisdiction may not be included in the**

**Regional TIP.** For more information, please refer to [PSRC's Plan Review](#) page or contact Yorik Stevens-Wajda at 206-464-6179

**Is the project specifically identified in a local comprehensive plan?**

Yes

No

**If yes, indicate 1) plan name 2) relevant section 3) page number.**

- (1) City of Covington, Certified, 7/2004
- (2) Capital Facilities Element Chapter 10
- (3) Page 12

**If no, describe how the project is consistent with the applicable local comprehensive plan, including specific local policies and provisions the project supports.**

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## Category Specific Questions

**Select one of the following three criteria categories that best fits your project.**  
Regional or Locally Designated Center

## Designated Regional or Local Center

**You have selected Designation Regional or Local Center. If this is not the appropriate classification, please go back and change your selection.** In the sections below, please provide complete but concise responses, addressing as many bullet points as possible. The evaluation and scoring of all submitted projects will be based on the answers provided by the sponsor. Refer to the [2014 King Countywide Project Evaluation Criteria](#) for PSRC's FHWA Funds in the King Countywide Call for Projects for guidance, examples, and details on scoring for additional information.

## A1. Regional or Local Center Development

**Please address the following:**

- Describe how the project will support the existing and planning housing/employment densities in the regional or local center.
- Describe how the project will support the development/redevelopment plans and activities of the center. Please provide a citation of the corresponding policies and/or specific project references in a subarea plan or in the comprehensive plan.

**• Describe how the project will support the establishment of new jobs/businesses or the retention of existing jobs/businesses including those in the industry clusters identified in the adopted Regional Economic Strategy.**

A.1. Regional or Local Center Development

The Community has grown rapidly in the last decade due to its strategic location, high quality of life, and affordable housing. Several new developments, such as the Town Center, Hawk Property Subarea, Multi-Care Hospital Expansion, Cedar Springs and Maple Hills are under varying stages of development (see Figure 6 in the attached document “City of Covington - Surface Transportation Program (STP) Grant Application - SR 516 from Jenkins Creek to 185th Avenue SE”).

Figure 2. Vicinity Map (see attached)

These planned developments require improved capacity, circulation and safety transportation improvements that connect the local and regional transportation system to these new developments. The SR 516 (SE 272nd Street) Corridor is the major east/west corridor serving the City of Covington, City of Kent, City of Maple Valley, and the City of Black Diamond. It reaches beyond to major employment centers such as the City of Seattle and Bellevue in Regional and Local capacities. It is experiencing significant congestion due to its economic vitality and growth. Peak weekday trips teeter near breakdown, while weekend travelers cope with mile and a half queues (see Figure 3 attached).

Figure 3. Current Photo of SR 526 (Queuing), Jenkins Creek to 185th (see attached)

The Town Center development is anticipated to add approximately 4,000 new jobs and approximately 1,500 new residences. The Hawk Property Subarea development is estimated to add 1,000-1,500 new residences and between 680,000 and 800,000 square feet of commercial space. Adding these new developments along with other planned growth, vehicle trips are expected to increase 37 percent on this stretch of SR 516 between Jenkins Creek and 185th Avenue SE.

A.1.1 Development/Redevelopment Plans

Transportation 2040 is the Puget Sound Regional Council (PSRC) 30-year transportation plan that will assist Puget Sound in moving forward. This is done by making transportation decisions and investments that move in directions of sustainability, mobility, and environmental responsibility. This regional plan focuses on the transportation system investments needed to provide integrated, multimodal transportation systems in the Central Puget Sound. The SR 516 Jenkins Creek to 185th Pl. project is consistent with, and included in this regional transportation plan.

The Washington Department of Transportation (WSDOT) prepared a corridor study for the SR 516 corridor in January of 2013. This study recommended widening SR 516 Jenkins Creek to 185th Avenue SE when funding was secured. This near-term project would respond to the rapid planned growth within the SR 516 Corridor.

The Economic Development Element of the City of Covington’s Comprehensive Plan sites specific policies that the Jenkins Creek to 185th Avenue SE project would positively address and add benefit to the Regional and Local Centers:

- EDP 5.1 Strengthen Covington’s position as the center of a regional trade area serving Covington and nearby communities readily accessed from the State Route 18 and State Route 516 highway corridors
- EDP 5.2 Develop downtown, neighborhood, community and regional commercial uses with coordinated provision of 1) adequate transportation, pedestrian and utility infrastructure, 2) development and design standards to encourage other mixed use, commercial and residential developments that complement but do not unduly compete with realization of the downtown vision; and 3) allow for open space and parks.
- EDP 5.4 When non-downtown sites are considered, prioritize locations offering proximity to adequate transportation and utility infrastructure and underserved trade area populations.
- EDP 5.8 Encourage regional commercial and employment uses along major transportation corridors to strengthen Covington’s economic position within the region

The SR 516 corridor and this project segment serves as a major east/west transportation spine into and out of the City of Covington’s Downtown core. The corridor directly serves over 20 neighborhoods and all Downtown civic, medical and support services. Improvements to the corridor as laid out in the January 2013 WSDOT SR 516 Corridor Plan , City’s Comprehensive Plan and 6-Year Transportation Improvement Plan will benefit and support the development plans and activities of the Center by:

- Reducing delay by 37 to 67% within the project area
- Providing safety improvements to both motorized and non-motorized movements
- Adding continuous sidewalks with landscaped buffers and bike lanes
- Providing a separated undercrossing link to the Jenkins Creek Trail
- Eliminating the bottleneck at Jenkins Creek crossing by adding a full width structure

#### A.1.2 New Jobs/Businesses and Retention

How well an area’s transportation system functions has a strong effect on an area’s economic competitiveness. This translates to job growth and retention. Some reasons are obvious: If it becomes too challenging to either ship from or get deliveries to a business location, that business will be disadvantaged compared to peers who are better situated for freight mobility. Less obviously, if travel in a region is too challenging, it may become more difficult to attract employees to that region. Traveling with greater ease and with less commute time (or a less stressful commute) is a recipe for economic success This is important for the City of Kent to the west and the City of Maple Valley and Black Diamond to the East. Goods and services traveling between these cities are heavily dependent on SR 516 and the proposed capacity improvements are imperative to the region’s economic competitiveness

Messaging can also be important in strengthening economic competitiveness. If an area can address problems considered important to key businesses and industries, those businesses and industries are likely to consider that potentiality when evaluating location decisions. By completing the funding for this project, an STP Grant would help maintain the livability and transportation efficiency needed to retain key employers such as MultiCare, Valley Medical/UW, Costco, Home Depot, Wal-Mart, as well as send an attractive economic message to others who may be considering locational development—assuring that the region is prime for business.

Improving SR 516 from Jenkins Creek to 185th Avenue SE will spur economic and residential development in eastern Covington and remove a significant bottleneck for traffic entering downtown Covington (See Figure 4). The project will widen SR 516 to five lanes from Jenkins Creek to 185th Avenue SE, replace an undersized culvert at the Jenkins Creek stream crossing, and improve stream habitat with the removal of a fish passage barrier.

## A2. Project's Benefit to the Regional or Local Center

### Please address the following:

- Describe how the project remedies a current or anticipated problem (e.g. congestion, incomplete sidewalk system, inadequate transit service/facilities, modal conflicts and/or the preservation of essential freight movement)?
- Describe the user groups that will benefit from the project. User groups may include commuters, residents, commercial users, those groups identified in the President's Order for Environmental Justice, seniors, people with disabilities, and/or areas experiencing high levels of unemployment or chronic underemployment.

#### A.2. Benefit to the Regional or Local Center

Downtown Covington is dependent upon and supports a larger regional retail market. While the Town Center development will add capacity to a downtown core that already provides important goods and services for Covington's residents, it also serves a much larger population area, estimated at 184,000 and forecasted to increase to 250,000 by 2025 as stated in the City of Covington Comprehensive Plan, Downtown Element Chapter 4, page 6. This project is instrumental and provides significant benefits to the user of SR 516 which serves this "larger regional retail market".

In addition, this project is a strong example of how the FHWA Partnership for Sustainable Communities can be achieved through strategic implementation of public transportation infrastructure principles that provides direct benefit to the users:

#### A.2.1 Sustainable Communities Principles

Provide more transportation choices

The project widens the roadway from a two-lane rural section to a five-lane urban arterial with buffered sidewalks and widened lanes that includes the Jenkins Creek Loop trail undercrossing providing a direct non-motorized connection to the downtown core and neighborhoods to the north of the project. The project will:

- Promote equitable, affordable housing

The project will improve access to more than 20 neighborhoods and enables developments such as Cedar Springs Multi-family development to complete their plans and for the City to stay within the Growth Management policies.

In addition, these neighborhoods consist of a mix of low and moderate income population such as the Timberlane neighborhood. This project will provide safe and reliable motorized and non-motorized connections to the vital services offered within the downtown core.

- Enhance economic competitiveness

The City of Covington is a vibrant community that is implementing smart growth within and to the edges of the city growth boundaries. There are currently three significant economic competitive initiatives under development:

- o The Northern Gateway that includes the Hawk Subarea Plan
- o The Town Center which includes senior housing
- o Cedar Spring Multi-family development

In order for these new developments to reach their planned densities, improvements to the SR 516 Corridor serving as the transportation spine into and out the City of Covington's downtown core will be required.

## A3. Circulation Within the Regional or Local Center

### Please address the following:

- Describe how the project improves safe & convenient access to major destinations within the center, such as by completing a physical gap or providing an essential link in the transportation network for people and/or goods.
- Describe how the project will improve circulation and enhanced opportunities for active transportation within the center regarding (address each relevant area): walkability, public transit access, public transit speed and reliability, safety & security, bicycle mobility, bicycle facilities, streetscape improvements, traffic calming, etc.
- Describe how the project provides users (e.g. employees, residents, customers) a range of travel modes or provides a "missing" mode.
- If the project has a parking component, describe how it has been designed to be compatible with a

**pedestrian oriented environment, including any innovative parking management tools.**

A.3.Circulation within the Center

The SR 516 Corridor provides access to parks, community services, schools and businesses. SR 516 provides direct access to the downtown core and connects directly with the Covington Esplanade, Timbercrest, Timberlane, and Landcaster Gate neighborhoods. Community services such as the Post Office, City Hall, Valley Medical, MultiCare Medical Center, Vehicle Licensing and the Library all use SR 516 for access. The following schools have direct access from SR 516: Jenkins Creek Elementary, Cedar Valley Elementary, and Cedar Heights Junior High. Major business such as Home Depot, MultiCare, Walmart, and Costco rely on the SR 516 Corridor.

Figure 4. Attractions and Key Route through City of Covington (see attached)

There are significant development opportunities and demand for redevelopment on the eastside of the City. By providing additional infrastructure and increasing the width of SR 516 (SE 272nd) at Jenkins Creek, the City will be better positioned to evaluate traffic concurrency issues that have stalled development in this area for the past decade. Not only will the additional roadway improvements help alleviate traffic delays, they will help to energize real estate sales and potential developments in the area. The majority of the redevelopment consists of a range of high (8 units/ac) to low (4 units/ac) densities; however there are approximately 4 acres of vacant commercial property due to the concurrency and critical link issues along SE 272nd Street. WSDOT has a property in their surplus that cannot be developed until the concurrency issue is resolved.

Not only will the project benefit vehicle movement and development, it will provide a north/south pedestrian link from Town Center between the residential and commercial developments on either side of SR 516. The pedestrian undercrossing connection under the Jenkins Creek Bridge (see Figure 5) will enable a continuous path connecting north and south trail segments and provide a mid-block undercrossing at one of the busiest sections of SR 516 (SE 272nd Street).

Figure 5. Under the Jenkins Creek Bridge (see attached)

Significant investments have been made during the last several years that this project will directly leverage. On the north side of SE 272nd St, south of the Jenkins Creek Crossing is the Covington Esplanade, which provides 181,700 square feet of Commercial/Retail and restaurant space. To the south of SE 272nd Street across from Covington Esplanade is a planned 172-unit multifamily development. Residents of this development would be required to walk approximately 1,330 feet to the nearest signal crossing versus 400 feet to the Jenkins Creek pedestrian underpass to walk to the services across the street. Pedestrians often take the path of the least resistance, even if that may mean crossing a busy highway. The pedestrian underpass will serve as a safer, more reasonable option.

The project results in increased livability in a community which is particularly attentive to livability metrics. Living, working, playing – all key aspects in measuring quality of life, all improved if this project is constructed.

The project corridor experiences over 6% local and regional trucks and at times much higher when other connecting freight routes are experiencing congestion, as SR 516 serves as a significant connection to the local and regional freight network. Freight traffic at the SR 18/SR 516 interchange, 0.8 miles just to the west of this project, experiences as high as 14% trucks (WSDOT 2012 Annual Traffic Report). The truck

percentage on SR 18 goes up 3% as trucks enter from the SR516 interchange going north to I-90.

As improvements are made to the SR 516 corridor, freight connections that provide an effective and efficient connection to the economic engines of the Pacific Northwest, and will become more viable.

This project has support from the Washington Trucking Association (WTA) and in a letter of support from Larry Pursley, Executive Vice President, states: “this former rural area has experienced dramatic growth during the last 10-years and the volume of traffic, including commercial freight delivery trucks, demonstrates a great need for improved capacity. Once completed, the road network supported by the project, will more than double the capacity significantly improving movement of goods to the benefit of this area’s economy”.

### A.3.1 Essential Link

At times smaller essential transportation link projects and programs rarely receive as much public recognition as major expansion projects, yet making these investments are as critical, if not more so, to keeping people and goods safely moving throughout the region.

The SR 516 Jenkins Creek to 185th Avenue SE segment has significant opportunity for improving a critical transportation network link. The City of Covington and WSDOT agree that SR 516 Corridor improvements are critical elements to past and future economic vitality for the City, South King County and beyond. The SR 516 Jenkins Creek to 185th Avenue SE project is identified as providing significant operational improvements for the surrounding transportation systems, including enhancements for local and regional freight mobility, for personal travel, work commutes, and travel by alternate transportation modes including bus, bike, and on foot.

Figure 6. After Project Improvements are Completed (see attached)

The City of Covington takes a proactive approach to pavement management and management of other capital resources. The completed project will be incorporated into Covington’s robust and ongoing assets management efforts. In addition, by reducing demands on other facilities, maintenance of those facilities by the City and, where applicable, by WSDOT, will be more easily managed once this project is completed.

As stated in the Transportation Element (Chapter 5, page 24) of the City’s CIP, the projects shown in Figure 6 (shown below) provide the capacity to resolve existing and forecasted deficiencies. The Jenkins Creek to 185th Avenue SE project is a priority segment and classified as a near-term un-funded critical link (UCL) improvement at the Jenkins Creek bottleneck that would be improved when funding is secured.

Figure 7. Capital Improvement Plan (see attached)

## Manufacturing/Industrial Center

**You have selected Manufacturing/Industrial Center. If this is not the appropriate classification, please go back and change your selection.** In the sections below, please

provide complete but concise responses, addressing as many bullet points as possible. The evaluation and scoring of all submitted projects will be based on the answers provided by the sponsor. Refer to the [2014 King Countywide Project Evaluation Criteria](#) for PSRC's FHWA Funds in the King Countywide Call for Projects for guidance, examples, and details on scoring for additional information.

## **B1. Development and Users Benefit**

**Please address the following:**

- Describe how the project will benefit or support the development plans and activities of the manufacturing/industrial center. Please provide a citation of the corresponding policies and/or specific project references in a subarea plan or in the comprehensive plan.
- Describe how the project will support the establishment of new jobs/businesses or the retention of existing jobs/businesses, including those in the industry clusters identified in the adopted Regional Economic Strategy.
- Describe the user groups that will benefit from the project. User groups may include commuters, residents, commercial users, those groups identified in the President's Order for Environmental Justice, seniors, people with disabilities, and/or areas experiencing high levels of unemployment or chronic underemployment.

## **B2. Mobility and Accessibility Benefit**

**Please address the following:**

- Describe how the project provides and/or enhances opportunities for freight movement.
- Describe how the project completes a physical gap, provides an essential link, or removes a barrier in the Freight & Goods component of the Metropolitan Transportation System.
- Describe how the project improves safety and reduces modal conflicts to help achieve a seamless system.
- Describe how the project improves access for one or more modes to major employment sites, including opportunities for active transportation.
- Describe how the project promotes Commute Trip Reduction (CTR) and other TDM opportunities.

# Corridor Serving Center(s)

**You have selected Corridor Serving Center(s). If this is not the appropriate classification, please go back and change your selection.** In the sections below, please provide complete but concise responses, addressing as many bullet points as possible. The evaluation and scoring of all submitted projects will be based on the answers provided by the sponsor. Refer to the [2014 King Countywide Project Evaluation Criteria](#) for PSRC's FHWA Funds in the King Countywide Call for Projects for guidance, examples, and details on scoring for additional information.

## C1. Benefit to Regional, Local, or Manufacturing/Industrial Center

**Please address the following:**

- Describe how this project will benefit or support the housing and employment development in a regional or local center(s) and/or employment growth in a manufacturing/industrial center(s). Does it support multiple centers? Please provide a citation of the relevant policies and/or specific project references in a subarea plan or in the comprehensive plan.
- Describe how the project provides or benefits a range of travel modes to users traveling to/from centers, or if it provides a missing mode.
- Describe the user groups that will benefit from the project, including commuters, residents, commercial users, those groups identified in the President's Order for Environmental Justice, seniors, people with disabilities and/or areas experiencing high levels of unemployment or chronic underemployment.
- Describe how the project will support the establishment of new jobs/businesses or the retention of existing jobs/businesses including those in the industry clusters identified in the adopted Regional Economic Strategy.

## C2. System Continuity/Long-Term Benefit and Sustainability

**Please address the following:**

- Describe how this project supports a long-term strategy to maximize the efficiency of the corridor, including TDM and TSM opportunities. Describe the

problem and how this project will remedy it.

- Describe how this project provides a “logical segment” that links to a regional, local, or manufacturing/industrial center.
- Describe how the project fills in a missing link or removes barriers to/from a center.
- Describe how this project will relieve pressure or remove a bottleneck on the transportation system and how this will positively impact overall system performance.
- Describe how this project improves safety and/or reduces modal conflict, and provides opportunities for active transportation.

## Air Quality and Climate Change

**You have not selected a category and these questions were skipped. Please go back and make your selection.**

Additional guidance on the evaluation of air quality and climate change benefits is available [here](#), in addition to the information contained in the [2014 King Countywide FHWA Project Evaluation Criteria](#).

**Please describe how your project will reduce emissions. Include a discussion of the population served by the project (who will benefit, where, and over what time period). Specific questions have been prepared to assist you in responding to this criterion depending on the type of project.**

**Please select all of the elements in the list below that are included in the project’s scope of work, and provide the requested information in the text box below.**

- Diesel Particulate Emissions Reduction Projects (e.g. diesel engine retrofits)
- Roadway Capacity (general purpose and high occupancy lanes)
- Transit
- Bicycle/Pedestrian Facilities
- Intelligent Transportation Systems (signalization, etc.)
- Alternative Fuels or Vehicle Technology
- Other

- Diesel Particulate Emissions Reduction Projects: Describe the types of vehicles, vessels, engines, duty cycles, etc. being addressed. Describe the emissions vintage of the existing engines, and the number of vehicles to be

addressed. Describe how often they are used, where they are used, how much fuel is consumed annually and when the benefits from this project will occur.

- Roadway Capacity (general purpose and high occupancy lanes): Describe the roadway and travel conditions before and after the proposed project, including average daily traffic and travel speeds. Describe the potential for multimodal connections, shorter vehicle trips, etc. Describe the transit routes currently using the facility and anticipated in the future. Does this project connect to or expand an existing high occupancy vehicle or business access transit lane system? What is the length of the project and the population served? What source of data indicates the expected conversion of single occupant vehicle trips to transit or carpool?
- Transit (park-and-ride lots, new or expanded transit service, transit amenities, etc.): Describe the current transit ridership in the project area. Describe the current transit routes serving the project area, including average trip length. If a park-and-ride lot, how many stalls are being added? Describe how the amenities (or other components of the project) are expected to encourage new transit ridership and shift travel from single occupant vehicles to multimodal options. Describe the population served that will be expected to use the new/improved service. What source of data indicates the expected conversion of single occupant vehicle trips to transit?
- Bicycle/Pedestrian Facilities: Describe the length of the proposed facility, including connections to other nonmotorized facilities and to the larger nonmotorized system. Describe the expected travel shed (i.e., land use and population surrounding the project). Does the facility connect to transit? What is the expected population served, and what source of data indicates the expected conversion of single occupant vehicle trips to this mode?
- Intelligent Transportation Systems: Describe the existing conditions in the area, including level of service, average daily traffic, average speed, etc. Describe how the project is expected to improve traffic flow through improved speeds, reducing idling, reducing accidents, etc. What is the percentage of heavy trucks using the facility? Does the project improve traffic flow for particular modes ( e.g. HOVs) or types of vehicles ( e.g. transit buses or freight trucks)? What are the transit routes along the corridor, and will this project improve transit reliability on the corridor?
- Alternative Fuels or Vehicle Technology: Describe the change in fuel or vehicle technology. How many vehicles are affected? What are the current conditions?
- Other: Describe how your project has the potential to reduce emissions through technology, improved management or other means, e.g. “no idling” signage & enforcement, auxiliary power units to operate heating, cooling & communications equipment, truck stop electrification, etc.

## Part 2. Criteria for all Projects

### D. Air Quality/Climate Change

An Air Quality Report dated January 2013 was prepared for the project. The following is excerpts from the executive summary:

The proposed project improvements will have an effect on traffic circulation patterns in the project area by improving travel speeds and the level of congestion experienced along SE 272nd Street. These operational changes will have an influence on criteria pollutant emissions, specifically carbon monoxide concentrations near localized intersections. Further, Mobile Source Air Toxics (MSAT) and Greenhouse gas (GHG) emissions are also of concern as VMT increases. As part of the environmental review process under the State Environmental Policy Act (SEPA) and air quality conformity requirements, an evaluation of air quality impacts from the proposed project was performed. The proposed project is located in King County, within the jurisdiction of Puget Sound Regional Council (PSRC) and the Puget Sound Clean Air Agency (PSCAA). This area is designated as a maintenance area for carbon monoxide (CO), which requires the project to meet Transportation Conformity Requirements under the Clean Air Act (CAA) Amendments of 1990 and federal regulation 40 CFR (Code of Federal Regulations) Part 93. The U.S. Environmental Protection Agency (EPA), FHWA, the Washington State Department of Transportation (WSDOT), the Washington State Department of Ecology (Ecology), and the Puget Sound Regional Council (PSRC) have established maximum criteria pollutant concentration levels and methods for assessing air quality impacts from regulated pollutants. These standards, models and guidance documents were utilize to assess CO, MSAT and GHG impacts from the operation and construction of the proposed project.

#### D.1. CO Hot Spot Analysis

During the operations of the proposed project, changes in CO concentrations will occur at intersection of 185th Place SE and SE 272nd Street. A CO hotspot analysis was conducted utilizing the Washington State Intersection Screening Tool (WASIST) model following WSDOT Environmental Procedures Manual. The results of the CO hot spot analysis determined that the project would not cause a CO hot spot. The proposed project would not cause or contribute to any new localized violations of the NAAQS for CO, increase the frequency or severity of any existing violations of the NAAQS, or delay the timely attainment of the NAAQS in the 2040 design year at the affected intersection. Regional conformity requirements were also met as the project is included in the region's Metropolitan Transportation Plan (MTP), Transportation 2040 Plan (PSRC, 2010). This plan has been found to meet the CO conformity tests as identified by federal and state conformity regulations. Therefore, the proposed project has met the requirements of being included in the regional plans, which have been found to conform to the State Implementation Plan (SIP).

#### D.2. MAST Analysis

In accordance with FHWA guidelines, the proposed project was qualitatively assessed on a project-level basis due to the project being classified as a minor widening project that would improve traffic circulation along SE 272nd Street without adding substantial new capacity. MSATs are comprised of a class of hazardous air pollutants of concern for transportation projects and are expected to increase when vehicles travel at a low rate of speed and when idling at intersections. For the proposed project, although the

roadway widening will add additional lanes, VMT for the proposed project is estimated to remain unchanged from No Build to Build conditions. Further, with the implementation of the proposed project it is expected that traffic congestion will ease, vehicles will travel at a higher average speed and less idling will occur at the SE 272nd intersection. MSAT emissions for the proposed project are expected to decrease from Existing to No Build conditions due to advances in technology and the implementation of EPA's national control programs that are projected to reduce annual MSAT emissions by 72 percent between 1999 and 2050. This decrease will reduce the background level of MSATs as well as the MSAT emissions from this project. Consequently, MSATs impacts are not expected to occur as a result of the project.

### D.3. GHG Analysis

Vehicles emit a variety of gases during their operation; some of these are greenhouse gases (GHGs). In WSDOT's work to date, they have found that GHG emissions from a single project action are usually very small, (and often less than the without project). WSDOT believes that transportation GHG emissions are better addressed at the region, state, or transportation system level where multiple projects can be analyzed in aggregate. On a regional level, WSDOT has determined that projects should contain certain features that will improve overall GHG in the region. Therefore, a quantitative analysis was not performed to determine the change in GHG emissions with the implementation of the proposed project. However, the proposed project incorporates several of the inherent features that will assist in reducing GHG emissions such as:

- Reducing stop and go conditions
- Improve roadway speeds to a moderate level
- Improve intersection traffic flow to reduce idling
- Expanding non-motorized options for travelers
- Increasing vegetation density over pre-project conditions to sequester carbon.

Land uses, such as schools, daycare facilities, hospitals, elderly care facilities, and other areas that are occupied by people susceptible to air quality pollutants are considered sensitive air quality receptors. One sensitive receptor, a preschool at the Peace Lutheran Church, was identified east of the proposed project limits between 186th Place SE and 188th Place SE. Jenkins Creek Elementary School located north of SE 272nd Street was also identified, however, it is not located near the widened roadway; therefore, it was not considered to be impacted by the proposed project. Further, outdoor frequent human use areas were identified at surrounding single-family residences. These outdoor use areas can create a potential sensitive air quality receptor if individuals who are susceptible to pollutants visit these outdoor areas. However, the air quality impacts from the proposed project are not expected to cause increase air quality concentrations levels.

In addition to what is reported in the Air Quality report using the EPA findings on CO<sub>2</sub>/Gallons of gas consumed and the forecast that the SR 516 Jenkins Creek to 185th Avenue SE project will result in decreased travel time and congestion for area transportation networks, including peak hour congestions reductions of 20 to nearly 67 percent at key intersections.

The reductions in travel time and vehicle delays suggest substantial reductions in greenhouse gases (GHGs) will be realized through project construction. With a forecast of 20 to nearly 67 percent vehicle delay reductions in congestion in project-proximate SR 516 intersections, and with traffic counts at about 27,000 vehicles per day (45,000 just to the west of project segment) on average and assuming an average 0.8 gallon of gas savings per vehicle-hour of delay reduction; and 8,887 gram CO<sub>2</sub>/gallon of gas consumed (<http://www.epa.gov/otaq/climate/documents/420f11041.pdf>), this results in savings of over

4,600 tons of GHGs over a 20-year horizon.

Figure 8. Peak Congestion and Delay (see attached)

#### D.4. Construction Impacts

Project construction can temporarily affect air quality as a result of fugitive dust from excavation and earth moving activities and emissions from diesel-fueled construction equipment. Fugitive dust (particulate matter) emissions are associated with land clearing, ground excavation, grading and cut-and-fill operations. Further, some construction stages (particularly those involving paving operations using asphalt) would result in short-term odors, which might be detectable by some people near the site, and they would be diluted as the distance from the site increases. A fugitive dust control plan implemented as part of project would require dust control measures during construction. The plan could include employing Best Management Practices recommended by WSDOT and PSCAA such as spraying exposed soil with water, covering truck loads and materials as needed, washing truck wheels before the trucks leave the site, removing particulate matter from roads, routing and scheduling construction trucks to reduce delays, ensuring well-maintained equipment, and implementing other temporary mitigation measures as needed and considered appropriate.

## Financial Plan & Project Readiness

In this section, sponsors will address questions regarding the PSRC funding request, the total estimated project cost and schedule, and the project's readiness to obligate PSRC funds. Sponsors should be aware of the following information before completing this section:

**Funding Request:** Sponsors may request funding for any single project phase, but requests for multiple phases are limited to preliminary engineering plus the subsequent phase necessary. I.e, a sponsor may request funding for both preliminary engineering and right of way phases or preliminary engineering and construction phases, but not both right of way and construction phases.

**Funding Requirements:** A minimum of 13.5% of local matching funds is required for both Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding. The combination of the requested PSRC funds plus all other funding must be adequate to fully fund that phase. Requests that do not result in a phase being fully funded will be considered ineligible for PSRC funding.

**Obligation Requirements:** Per PSRC's project tracking policies, all project phases awarded PSRC funds must obligate by June 1st of the program year selected. For more information, see PSRC's project tracking policies [here](#).

## PSRC Funding Request

Please identify the phase(s) for which PSRC funds are being requested, the funding source, the amount, and expected year of obligation. Confirm the total by pressing the calculate button.

**Funding Source**

- STP
- CMAQ

Phase	Year	Amount Requested
Construction	2015	\$8,600,000

**Total PSRC Funding Request:** \$8,600,000

## Total Estimated Project Cost and Schedule

In the table below, please provide the total estimated cost and schedule for all phases of the project, from start to finish, and indicate when each phase was, or is planned to be, completed. If a phase is not required for the project, indicate with N/A.

Please include all funding amounts and sources (including the requested PSRC funds) and identify whether they are secure, reasonably expected, or unsecure. **PSRC's definitions and guidance for determining secure and reasonably expected funds may be found [here](#).**

NOTE: If you find that you need more rows than provided in the tables below, please fill out the supplemental project cost spreadsheet available [here](#) and upload in the area below.

## Planning Phase

Please note, the planning phase of a capital project is considered to be part of the preliminary engineering phase. Complete this section only if this project is an independent planning study.

Total Planning Phase Cost: \$0

Actual or estimated date of completion (month and year): -

## Preliminary Engineering/Design Phase

<b>Funding Source</b>	<b>Funding Status</b>	<b>Funding Amount</b>
-----------------------	-----------------------	-----------------------

STP (L)	Secured	\$809,602
---------	---------	-----------

Local	Secured	\$664,788
-------	---------	-----------

Total Preliminary Engineering/Design Phase Cost: \$1,474,390

Actual or estimated date of completion (month and year): -

## Right of Way Phase

<b>Funding Source</b>	<b>Funding Status</b>	<b>Funding Amount</b>
-----------------------	-----------------------	-----------------------

STP (L)	Secured	\$800,000
---------	---------	-----------

Local	Secured	\$405,000
-------	---------	-----------

Total Right of Way Phase Cost: \$1,205,000

Actual or estimated date of completion (month and year): -

## Construction Phase

<b>Funding Source</b>	<b>Funding Status</b>	<b>Funding Amount</b>
-----------------------	-----------------------	-----------------------

STP	Unsecured	\$8,600,000
-----	-----------	-------------

TIB	Unsecured	\$2,000,000
-----	-----------	-------------

Local	Reasonably Expected	\$594,000
-------	---------------------	-----------

Total Construction Phase Cost: \$11,194,000

Actual or estimated date of completion (month and year): 12/2016

## Other Phase

Total Other Phase Cost: \$0

Actual or estimated date of completion (month and year): -

## Project Summary

The calculated total project cost below is based on the entries completed above. Please review for accuracy before proceeding to ensure all funding is reflected.

**Total Estimated Project Cost:** \$13,873,390

**Estimated Project Completion Date (month and year):** 12/2016

## Financial Documentation

**Please provide supporting documentation using the upload function below to demonstrate that all additional funds for the phase(s) for which PSRC funds are being requested are secure or reasonably expected.**

**Please describe the secure or reasonably expected funds identified in the supporting documentation. For funds that are reasonably expected, an explanation of procedural steps with milestone dates for completion which will be taken to secure the funds for the project or program should also be included.**

**For more information, refer to PSRC's [financial constraint guidance](#).**

Local funds are reasonably secured through traffic impact fees. These funds would be authorized by Council approval

## Project Readiness

PSRC recognizes that the complexity of some projects can trigger a variety of prerequisites that must be satisfied before federal funding is typically eligible to be obligated. The questions in this section are designed to identify those requirements and assist sponsors to:

- Identify which obligation prerequisites and milestones apply to their specific project.
- Identify which of these have already been satisfied at time of application.
- Provide an explanation and realistic completion date for all obligation prerequisites and milestones not yet completed.

In the following section, sponsors will be asked a series of questions about the

project. Based on these responses, sponsors will be directed to the appropriate set of subsequent questions addressing the project's readiness.

NOTE: Sponsors applying for funds for only planning studies or preliminary engineering/design phases are not required to provide further information for project readiness and will be directed to the next required set of questions.

## Project Readiness

**Are you requesting funds for ONLY a planning study or preliminary engineering?**

Yes

No

**Is preliminary engineering for the project complete?**

Yes

No

**What was the date of completion (month and year)?**

-

**Have preliminary plans been submitted to WSDOT for approval?**

Yes

No

**When are preliminary plans expected to be complete and approved by WSDOT (month and year)?**

12/2014

**Are there any other PE/Design milestones associated with the project? Please identify and provide dates of completion. You may also use this space to explain any dates above.**

Design complete 12/2014

## Project Readiness

**What is the current or anticipated level of environmental documentation under the National Environmental Policy Act (NEPA) for this project?**

Environmental Impact Statement (EIS)

Environmental Assessment (EA)

Documented Categorical Exclusion (DCE)

Categorical Exclusion (CE)

**Has the NEPA documentation been approved?**

Yes

No

**Please provide the date of NEPA approval, or the anticipated date of completion (month and year).**

July 2014

# Project Readiness

**Will right of way be required for the project?**

Yes

No

**How many parcels do you need?**

21

**What is the zoning in the project area?**

Residential and Commercial

**Discuss the extent to which your schedule reflects the possibility of condemnation and the actions needed to pursue this.**

20 foot purchases on 21 parcels expecting mostly administrative offers

**Does your agency have experience in conducting right of way acquisitions of similar size and complexity?**

Yes

No

**If not, when do you expect a consultant to be selected, under contract, and ready to start (month and year)?**

-

**In the box below, please identify all relevant right of way milestones, including the current status and estimated completion date of each. For example, these might include:**

- True cost estimate of right of way
- Right of way plans (stamped)
- Relocation plan
- Right of way certification
- Right of way acquisition
- Certification audit by Washington State Department of Transportation Right of Way Analyst
- Relocation certification, if applicable

ROW Cost Estimate - Complete

Right of way plans (stamped) - August 2014

Right of way Acquisition - December 2014

Right of way certification - January 2015

# Project Readiness

**Are funds being requested for construction?**

Yes

No

### Do you have an engineer's estimate?

Yes

No

**Please upload a copy of your engineer's estimate below.**

[vaPCUDuz Appendix Project Cost Estimate.pdf](#)

**Identify the environmental permits needed for the project and when they are scheduled to be acquired.**

Corp Permit - 12/2014

WDOE Permit - 12/2014

WDF&W Permit - 12/2014

NMFS Permit - 12/2014

### Are Plans, Specifications & Estimates (PS&E) approved?

Yes

No

**Please provide the date of approval, or the date when PS&E is scheduled to be submitted for approval (month and year).**

12/2014

**When is the project scheduled to go to ad (month and year)?**

January 2015

## Other Considerations

**Please describe any additional aspects of your project not previously addressed in the application that could be relevant to the final project recommendation and decision-making process. In addition, please describe any innovative components included in your project: these could include design elements, cost saving measures, or other innovations.**

E.Project Readiness/Financial Plan

The project is approaching 90 percent design completion, environmental approvals and permits are on schedule and the project can be ready for a 2015 construction start with Surface Transportation Program (STP) Grant support.

The high level project schedule is shown in Figure 9. As displayed in the figure the majority of the environmental studies are complete with the NEPA/ SEPA documentation being submitted in June of 2014. Final Design, Right-Of-Way and all environmental approvals are anticipated to be completed at the end of 2014. If funded construction would commence in early 2015 with completion in 2017.

Figure 9. Schedule (see attached)

### E.1.Environmental Approvals

Key Environmental approvals for the project are listed below. The schedules for these approvals are shown in Figure 9. (see attached)

These key approvals are; NEPA (Environmental Classification Summary), SEPA (Checklist), Wetland Mitigation Plan, Biological Opinion, U.S. Army CORPS, USDOE, WDOE, WDF&W, and King Co.

### E.2.Environmental Permitting

Project has all the required permits in progress in varying stages of completion. The project can be AD Construction Ready by January, 2015 (see Figure 9). The U.S. Army Corps of Engineers permit is the permitting processes that will require the longest lead time.

### E.3.Technical Feasibility

WSDOT reviews have included; traffic analysis, signal design, channelization, stormwater, access management plus the roadway bridge, retaining walls and fish passage facilities.

A Green Roads analysis has been performed for the project the project elements where sustainable practices will be incorporated include:

- Stormwater
- Pavements
- Construction materials recycling
- Roadside vegetation
- Freight access
- Regional construction materials
- Access and equity.

### E.4.Financial Feasibility – Detailed Project Cost

The project cost estimate is attached in Appendix 1.2. (see attached in Engineer's Estimate)

This project is to widen and reconstruct a portion of SE 272nd Street between Jenkins Creek and 185th Place SE. This project will include the crossing of Jenkins Creek with a new structure for the stream, widening the street from 2-lanes to 5-lanes including curb and gutter, 8' sidewalks, access control features, landscaping and provisions for U-turns.

As shown on the attached Project Schedule (Fig. 9). The project will be Advertisement Ready by January, 2015.

City has obtained federal funding in 2012 to complete engineering for the roadway improvement. A total of \$1,474,390 has been programmed for design including \$809,602 of STP funding with a local match of \$664,788. This STP Grant request will be applied to the construction phase of the project with the remainder anticipated from a TIB request. Below is the current funding status from the Local Agency Agreement:

Preliminary Engineering:  
Agency Funds - \$664,788  
Federal Funds - \$809,602  
Sub-total = \$1,474,390

Right of Way:  
Federal Funds - \$800,000  
Agency Funds - \$405,000

Construction:  
STP request - \$8,600,000  
TIB request - \$2,000,000  
Local - \$594,000

Total Construction Phase = \$11,194,000

Appendices:  
1.1 Letters of Support  
1.2 Project Cost Estimate  
1.3 WSDOT SR 516 Corridor Study

## File Submission

**Please provide any additional supporting documents, including maps, through the upload functions below.**

[Vj1EKMwg\\_STP-CMAQ\\_application-Wednesdayfinalrev2.pdf](#)

[O21pjtSw\\_7.4\\_Completed\\_516\\_Support\\_Letters.pdf](#)

[Kxq5conC\\_7.1\\_SR516\\_Study.pdf](#)

## Final Review

**Please review all application form questions to ensure you have completed all fields.** An email containing a PDF version of the project application will be sent to the project contact upon submission.

NOTE: Sponsors may update and resubmit information included in the application until the May 7th deadline. After the deadline has passed, the form site will close and sponsors will not have access for revisions.

## King Countywide 2014 FHWA Grant Program Application

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Important: Please review the following information before beginning the application.

Definition of a project: For the purposes of this competition, a project must be clearly defined by geographic limits and/or functionality. If a project contains multiple components, the sponsor must clearly indicate how they are logically connected to one another. A project with multiple geographic locations must demonstrate their functional relationship (for example, signal coordination work in various locations tied together through a traffic control center).

Projects that include multiple components or sponsors are allowed to be submitted, but the scope of work, funding amounts and schedules for each individual agency and/or component must be clearly identified at the time of application. If awarded PSRC funds, these projects may be separated into their individual components or lead agency in the regional Transportation Improvement Program. Each individual TIP project will be subject to PSRC's project tracking policies and will be administered according to the scope of work and funding awarded for each. If you have questions please contact Kelly McGourty at (206) 971-3601 or [kmcgourty@psrc.org](mailto:kmcgourty@psrc.org).

Resources: A resource document has been developed to assist sponsors in completing PSRC's online applications for the 2014 project selection process. The document summarizes information needed by sponsors to complete applications, as well as provides useful information on various topic areas such as financial constraint and project tracking requirements.

Submitting Applications: The importance of complete and accurate information on every application cannot be overemphasized. The evaluation and scoring of all submitted projects will be based on the answers provided in this application.

There is no set page limit for applications submitted to the regional competition. It is important to provide complete, detailed responses, but please be as concise as possible. Additional supporting information such as maps and other diagrams are encouraged, but other attachments such as comprehensive plan materials are unnecessary.

### Project Information

---

Project Title

Transportation 2040 ID#

The current list of investments that are required to be on the Transportation 2040 Regional Capacity Project List and have a designated ID # can be accessed at Appendix N of the 2014 Transportation 2040 Update, [here](#). If your project is exempt from this requirement, please enter "N/A." Helpful information on those exempt investments that are considered programmatic in nature or are on local facilities and therefore not required to be on the Project

List can be found here.

For assistance or questions regarding these issues, contact Kimberly Scrivner at 206-971-3281 or [kscrivner@psrc.org](mailto:kscrivner@psrc.org).

Sponsoring Agency

Co-Sponsoring Agency

CA Status

Yes

No

CA Sponsor (if applicable)

Contact Information

---

Project Contact Name

Project Contact Phone

Project Contact Email

Project Description

---

Project Scope

## Project Purpose

## Project Location

Please identify the crossroad, milepost or landmark nearest the beginning and end of the project below, if applicable. Crossroad/landmark nearest to the beginning of the project:

Crossroad/landmark nearest to the end of the project:

Please identify the center(s)

## Federal Functional Classification

---

Roadways must be approved on the federally classified roadway system before projects on it may use federal transportation funds (this includes proposed new facilities), unless the project meets certain exceptions. Resources to identify a facility's functional classification or exceptions to this requirement may be found [here](#).

### Federal Functional Class

You have selected Rural. If this is not the appropriate classification, please go back and change your selection.

Please select the appropriate rural classification.

You have selected Urban. If this is not the appropriate classification, please go back and change your selection.

Please select the appropriate urban classification.

## Plan Consistency

---

All projects must be consistent with a comprehensive plan that has been certified by PSRC as being consistent with the Growth Management Act, VISION 2040 and Transportation 2040. Projects must be consistent with the comprehensive plan of each jurisdiction in which the project is located. If a comprehensive plan has not been certified, projects located in that jurisdiction may not be included in the Regional TIP.

Is the project specifically identified in a local comprehensive plan?

Yes

No

Is the project specifically identified in a local comprehensive plan?

If no, describe how the project is consistent with the applicable local comprehensive plan, including specific local policies and provisions the project supports.

## Category Specific Questions

---

Select the project category

### Designated Regional Growth Center

---

In the sections below, please provide complete but concise responses, addressing as many bullet points as possible. The evaluation and scoring of all submitted projects will be based on the answers provided by the sponsor. Refer to the 2014 Regional Project Evaluation Criteria for PSRC's FHWA Funds in PSRC's Call for Projects for guidance, examples, and details on scoring for additional information.

#### A1. Regional Growth Center Development

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## A2. Project's Benefit to the Regional Growth Center

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## Manufacturing/Industrial Center

---

### B1. Development and Users Benefit

---

In the sections below, please provide complete but concise responses, addressing as many bullet points as possible. The evaluation and scoring of all submitted projects will be based on the answers provided by the sponsor. Refer to the 2014 Regional Project Evaluation Criteria for PSRC's FHWA Funds in PSRC's Call for Projects for guidance, examples, and details on scoring for additional information.



## Corridor Serving Center(s)

In the sections below, please provide complete but concise responses, addressing as many bullet points as possible. The evaluation and scoring of all submitted projects will be based on the answers provided by the sponsor. Refer to the 2014 Regional Project Evaluation Criteria for PSRC's FHWA Funds in PSRC's Call for Projects for guidance, examples, and details on scoring for additional information.

### C1. Benefit to Regional Growth or Manufacturing/Industrial Center



Please select all of the elements in the list below that are included in the project's scope of work, and provide the requested information in the text box below.

- Diesel Particulate Emissions Reduction Projects (e.g. diesel engine retrofits)
- Roadway Capacity (general purpose and high occupancy lanes)
- Transit
- Bicycle/Pedestrian Facilities
- Intelligent Transportation Systems (signalization, etc.)
- Alternative Fuels or Vehicle Technology
- Other

Please describe how your project will reduce emissions. Include a discussion of the population served by the project (who will benefit, where, and over what time period). Specific questions have been prepared to assist you in responding to this criterion depending on the type of project.

## Financial Plan & Project Readiness

---

In this section, sponsors will address questions regarding the PSRC funding request, the total estimated project cost and schedule, and the project's readiness to obligate PSRC funds. Sponsors should be aware of the following information before completing this section:

**Funding Request:** Sponsors may request funding for any single project phase, but requests for multiple phases are limited to preliminary engineering plus the subsequent phase necessary. I.e, a sponsor may request funding for both preliminary engineering and right of way phases or preliminary engineering and construction phases, but not both right of way and construction phases.

**Funding Requirements:** A minimum of 13.5% of local matching funds is required for both Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding. The combination of the requested PSRC funds plus all other funding must be adequate to fully fund that phase. Requests that do not result in a phase being fully funded will be considered ineligible for PSRC funding.

**Obligation Requirements:** Per PSRC's project tracking policies, all project phases awarded PSRC funds must obligate by June 1st of the program year selected. For more information, see PSRC's project tracking policies [here](#).

PSRC Funding Request

---

Please identify the phase(s) for which PSRC funds are being requested, the funding source, the amount, and expected year of obligation. Confirm the total by pressing the calculate button.

Funding Source

STP

CMAQ

Phase

Obligation Year

Amount Requested

Phase

Obligation Year

Amount Requested

Total PSRC Funding Request

## Total Estimated Project Cost and Schedule

---

In the table below, please provide the total estimated cost and schedule for all phases of the project, from start to finish, and indicate when each phase was, or is planned to be, completed. If a phase is not required for the project, indicate with N/A.

Please include all funding amounts and sources (including the requested PSRC funds) and identify whether they are secure, reasonably expected, or unsecure. PSRC's definitions and guidance for determining secure and reasonably expected funds may be found [here](#).

NOTE: If you find that you need more rows than provided in the tables below, please fill out the supplemental project cost spreadsheet available [here](#) and upload in the area below.

Upload (only if necessary)

## Planning Phase

---

Please note, the planning phase of a capital project is considered to be part of the preliminary engineering phase. Complete this section only if this project is an independent planning study.

Funding Source

Funding Status

Funding Amount

Total Planning Phase Cost

Actual or estimated completion date

## Preliminary Engineering/Design Phase

---

Funding Source

Funding Status

Funding Amount

Total Preliminary Engineering/Design Cost

Actual or estimated completion date

Right of Way Phase

---

Funding Source

Funding Status

Funding Amount

Total Right of Way Phase Cost

Actual or estimated completion date

## Construction Phase

---

Funding Source

Funding Status

Funding Amount

Total Construction Phase Cost

Actual or estimated completion date

Other Phase

---

Funding Source

Funding Status

Funding Amount

Total Other Phase Cost

Actual or estimated completion date

## Project Summary

---

The calculated total project cost below is based on the entries completed above. Please review for accuracy before proceeding to ensure all funding is reflected.

Total Estimated Project Cost

Estimated Project Completion Date

## Financial Documentation

---

Please provide supporting documentation using the upload function below to demonstrate that all additional funds for the phase(s) for which PSRC funds are being requested are secure or reasonably expected.

Upload

Upload

Upload

Please describe the secure or reasonably expected funds identified in the supporting documentation. For funds that are reasonably expected, an explanation of procedural steps with milestone dates for completion which will be taken to secure the funds for the project or program should also be included. For more information, refer to PSRC's financial constraint guidance.

## Project Readiness

---

PSRC recognizes that the complexity of some projects can trigger a variety of prerequisites that must be satisfied before federal funding is typically eligible to be obligated. The questions in this section are designed to identify those requirements and assist sponsors to:

- Identify which obligation prerequisites and milestones apply to their specific project.
- Identify which of these have already been satisfied at time of application.
- Provide an explanation and realistic completion date for all obligation prerequisites and milestones not yet completed.

In the following section, sponsors will be asked a series of questions about the project. Based on these responses, sponsors will be directed to the appropriate set of subsequent questions addressing the project's readiness.

NOTE: Sponsors applying for funds for only planning studies or preliminary engineering/design phases are not required to provide further information for project readiness and will be directed to the next required set of questions.

---

Are you requesting funds for ONLY a planning study or preliminary engineering?

- Yes
- No

Is preliminary engineering for the project complete?

- Yes
- No

What was the date of completion (month and year)?

Have preliminary plans been submitted to WSDOT for approval?

- Yes
- No

When are preliminary plans expected to be complete and approved by WSDOT (month and year)?

Are there any other PE/Design milestones not listed above?

## Project Readiness

---

What is the current level of NEPA documentation?

- Environmental Impact Statement (EIS)
- Environmental Assessment (EA)
- Documented Categorical Exclusion (DCE)
- Categorical Exclusion (CE)

Has the NEPA documentation been approved?

- Yes
- No

Please provide the date of NEPA approval, or the anticipated date of completion (month and year).

## Project Readiness

---

Will right of way be required for the project?

Yes

No

How many parcels do you need?

What is the zoning in the project area?

Discuss the extent to which your schedule reflects the possibility of condemnation and the actions needed to pursue this.

Does your agency have experience in conducting right of way acquisitions of similar size and complexity?

Yes

No

If not, when do you expect a consultant to be selected, under contract, and ready to start (month and year)?

In the box below, please identify all relevant right of way milestones, including the current status and estimated completion date of each. For example, these might include:• True cost estimate of right of way• Right of way plans (stamped)• Relocation plan• Right of way certification• Right of way acquisition• Certification audit by WSDOT • Relocation certification

## Project Readiness

---

Are funds being requested for construction?

Yes

No

Do you have an engineer's estimate?

Yes

No

Identify the environmental permits needed for the project and when they are scheduled to be acquired.

Are Plans, Specifications & Estimates (PS&E) approved?

Yes

No

Please provide the date of approval, or the date when PS&E is scheduled to be submitted for approval (month and year).

When is the project scheduled to go to ad (month and year)?

## Other Considerations

---

Please describe any additional aspects of your project not previously addressed in the application that could be relevant to the final project recommendation and decision-making process. In addition, please describe any innovative components included in your project: these could include design elements, cost saving measures, or other innovations.

## File Submission

---

Please provide any additional supporting documents, including maps, through the upload functions below.

Upload

Upload

## Final Review

---

Please review all application form questions to ensure you have completed all fields. An email containing a PDF version of the project application will be sent to the project contact upon submission.

NOTE: Sponsors may update and resubmit information included in the application until the April 8th deadline. After the deadline has passed, the form site will close and sponsors will not have access for revisions.

Last Update

Start Time

Finish Time

IP

Browser

OS

Referrer

**City of Covington**  
**SE 272nd Street (SR 516) between Jenkins Creek and 185th PI SE**  
**60% Design**  
**Engineer's Estimate**  
**((STP Grant))**

ITEM NO.	SECTION	ITEM DESCRIPTION	TOTAL QUANTITY	UNIT	UNIT PRICE	TOTAL COST
1	1-05	CONTRACTOR PROVIDED SURVEY (3%)	1	LS	\$ 151,159	\$151,159
2	1-09	MOBILIZATION (10%)	1	LS	\$ 503,863	\$503,863
3	1-10	TRAFFIC CONTROL	1	LS	\$ 910,000	\$910,000
4	2-01	CLEARING AND GRUBBING	3.3	AC	\$6,000	\$19,800
5	2-03	ROADWAY EXCAVATION INCL. HAUL	4700	CY	\$12	\$56,400
6	2-03	GRAVEL BORROW INCL. HAUL	20830	TN	\$15	\$312,450
7	2-03	EMBANKMENT COMPACTION	18960	CY	\$4	\$75,840
8	4-04	CRUSHED SURFACING TOP COURSE	3180	TN	\$25	\$79,500
9	5-04	HMA CL 1/2" PG 64-22	6690	TN	\$70	\$468,300
10	6-02	JENKINS CREEK BRIDGE	1	LS	\$1,200,000	\$1,200,000
11	6-02	BRIDGE APPROACH SLAB	500	SY	\$250	\$125,000
12	6-13	STRUCTURAL EARTH WALL	11600	SF	\$45	\$522,000
13	6-13	BACKFILL FOR STRUCTURAL EARTH WALL INCL. HAUL	7700	CY	\$25	\$192,500
14	7-04	SCHEDULE A STORM SEWER PIPE 12 IN DIAM	2003	LF	\$30	\$60,090
15	7-04	TESTING STORM SEWER PIPE	2003	LF	\$3	\$6,009
16	7-04	INFILTRATION GALLERY	1	LS	\$125,000	\$125,000
17	7-05	CATCH BASIN TYPE 1	25	EA	\$1,200	\$30,000
18	7-05	CATCH BASIN TYPE 2 48 IN DIAM	2	EA	\$2,400	\$4,800
19	7-05	CONNECTION TO DRAINAGE STRUCTURE	2	EA	\$750	\$1,500
20	7-05	WATER QUALITY PRE-TREATMENT SYSTEM	2	EA	\$10,000	\$20,000
21	7-05	WATER QUALITY CARTRIDGE FILTER VAULT	2	EA	\$57,500	\$115,000
22	7-05	WATER QUALITY CARTRIDGE FILTER MANHOLE	1	EA	\$35,000	\$35,000
23	7-05	FILTERRA UNIT 4 FT BY 4 FT	4	EA	\$14,500	\$58,000
24	7-05	FILTERRA UNIT 4 FT BY 6 FT	4	EA	\$16,000	\$64,000
25	7-05	FILTERRA UNIT 4 FT BY 8 FT	1	EA	\$17,500	\$17,500
26	7-09	WATER MAIN UPGRADES	1	LS	\$684,320	\$684,320
27	8-02	LANDSCAPING	1	LS	\$100,000	\$100,000
28	8-04	CEMENT CONC TRAFFIC CURB AND GUTTER	7470	LF	\$20	\$149,400
29	8-04	CEMENT CONC TRAFFIC CURB	315	LF	\$20	\$6,300
30	8-06	CEMENT CONC DRIVEWAY ENTRANCE TYPE RESIDENTIAL	265	SY	\$50	\$13,250
31	8-06	CEMENT CONC DRIVEWAY ENTRANCE TYPE COMMERCIAL	100	SY	\$50	\$5,000
32	8-07	PRECAST DUAL FACED SLOPED MOUNTABLE CURB	600	LF	\$20	\$12,000
33	8-09	RAISED PAVEMENT MARKER TYPE 1	5.9	HUND	\$225	\$1,328
34	8-09	RAISED PAVEMENT MARKER TYPE 2	1.6	HUND	\$400	\$640
35	8-12	COATED CHAIN LINK FENCE TYPE 4	1190	LF	\$20	\$23,800
36	8-14	CEMENT CONC SIDEWALK	2440	SY	\$30	\$73,200
37	8-14	CEMENT CONC CURB RAMP TYPE PERPENDICULAR	4	EA	\$1,500	\$6,000
38	8-14	CEMENT CONC CURB RAMP TYPE COMBINATION MODIFIED	15	SY	\$100	\$1,500
39	8-20	ILLUMINATION SYSTEM (SE 272ND ST)	1	LS	\$250,000	\$250,000
40	8-20	TRAFFIC SIGNAL SYSTEM (SE 272ND ST AND 185TH PL SE)	1	LS	\$110,000	\$110,000
41	8-22	PAINT LINE	2320	LF	\$0.50	\$1,160
42	8-22	PLASTIC WIDE LINE	510	LF	\$4	\$2,040
43	8-22	PAINTED WIDE LINE	3870	LF	\$0.50	\$1,935
44	8-22	PLASTIC STOP LINE	105	LF	\$10	\$1,050
45	8-22	PLASTIC CROSSWALK LINE	450	SF	\$6	\$2,700
46	8-22	PLASTIC TRAFFIC ARROW	16	EA	\$120	\$1,920
47	8-22	PAINTED BICYCLE LANE SYMBOL	12	EA	\$200	\$2,400
48	8-26	WETLAND MITIGATION	1	LS	\$2,450,000	\$2,450,000
49	8-27	STREAM RESTORATION	1	LS	\$275,000	\$275,000
		Subtotal - Construction Items				\$9,328,654
		Design Allowance	20%			\$850,862
		Subtotal - Project				\$10,179,516
		Construction Engineering	10%			\$1,017,952
		Construction Contingency	10%			\$1,017,952
		<b>Construction TOTAL</b>				<b>\$12,215,419</b>
		ROW Purchase				\$1,012,500
		<b>Estimated Project TOTAL</b>				<b>\$13,227,919</b>



City of Covington

Surface Transportation Program (STP) Grant Application  
SR 516 from Jenkins Creek to 185th Ave. SE



**Submitted by:** City of Covington

**Date:** May 7, 2014

**Location:** Covington, King County, Washington

**Area:** Urban

**Project Type:** Road

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## Part 1. Category A Executive Summary

SR 516 Jenkins Creek to 185<sup>th</sup> Ave. SE

City of Covington Transportation 2040 ID 4288

The City of Covington is seeking \$8,600,000 in Surface Transportation Program (STP) Grant funding to construct the SR 516 from Jenkins Creek to 185<sup>th</sup> Avenue SE project, a critical segment of the SR 516 corridor plan. The total project construction cost is \$11,194,000 with remaining funds coming from the City, State and private sources representing a 20% match.

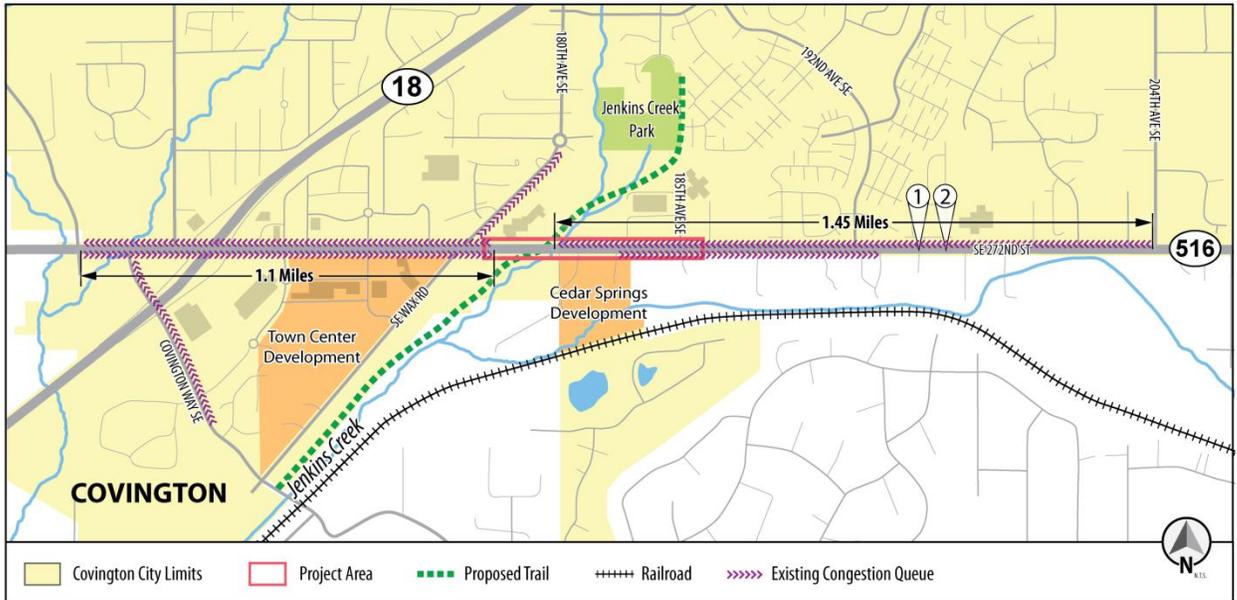
As stated in the City's Economic Development Element of the Comprehensive Plan, "Due to its highway cross-roads location in the **middle of a large and growing trade area**, Covington continues to have potential for further retail development meeting the shopping and service needs of residents in the city plus adjoining communities." It is recognized that "Potential disadvantages include the need to **address traffic implications** in the downtown area (**especially for SR 516**)." Figure 1 shows the congestion due to the current bottleneck at the Jenkins Creek crossing that would be removed as part of this project.



Figure 1. Looking West at Jenkins Creek Bridge



congestion due to its economic vitality and growth. Peak weekday trips teeter near breakdown, while weekend travelers cope with mile and a half queues (see Figure 3).



**Figure 3. Current Photo of SR 526 (Queuing), Jenkins Creek to 185th**

The Town Center development is anticipated to add approximately 4,000 new jobs and approximately 1,500 new residences. The Hawk Property Subarea development is estimated to add 1,000-1,500 new residences and between 680,000 and 800,000 square feet of commercial space. Adding these new developments along with other planned growth, **vehicle trips are expected to increase 37 percent on this stretch of SR 516 between Jenkins Creek and 185th Avenue SE.**

#### A.1.1 Development/Redevelopment Plans

Transportation 2040 is the Puget Sound Regional Council (PSRC) 30-year transportation plan that will assist Puget Sound in moving forward. This is done by making transportation decisions and investments that move in directions of sustainability, mobility, and environmental responsibility. This regional plan focuses on the transportation system investments needed to provide integrated, multimodal transportation systems in the

Central Puget Sound. The SR 516 Jenkins Creek to 185<sup>th</sup> Pl. project is consistent with, and included in this regional transportation plan.

The Washington Department of Transportation (WSDOT) prepared a corridor study for the SR 516 corridor in January of 2013. This study recommended widening SR 516 Jenkins Creek to 185th Avenue SE when funding was secured. This near-term project would respond to the rapid planned growth within the SR 516 Corridor.

The Economic Development Element of the City of Covington's Comprehensive Plan sites specific policies that the Jenkins Creek to 185th Avenue SE project would positively address and add benefit to the Regional and Local Centers:

- EDP 5.1 Strengthen Covington's position as the center of a regional trade area serving Covington and nearby communities readily accessed from the State Route 18 and State Route 516 highway corridors
- EDP 5.2 Develop downtown, neighborhood, community and regional commercial uses with coordinated provision of 1) adequate transportation, pedestrian and utility infrastructure, 2) development and design standards to encourage other mixed use, commercial and residential developments that complement but do not unduly compete with realization of the downtown vision; and 3) allow for open space and parks.
- EDP 5.4 When non-downtown sites are considered, prioritize locations offering proximity to adequate transportation and utility infrastructure and underserved trade area populations.
- EDP 5.8 Encourage regional commercial and employment uses along major transportation corridors to strengthen Covington's economic position within the region

The SR 516 corridor and this project segment serves as a major east/west transportation spine into and out of the City of Covington's Downtown core. The corridor directly serves over 20 neighborhoods and all Downtown civic, medical and support services. Improvements to the corridor as laid out in the January 2013 WSDOT SR 516 Corridor Plan , City's Comprehensive Plan and 6-Year Transportation Improvement Plan will benefit and support the development plans and activities of the Center by:

- Reducing delay by 37 to 67% within the project area
- Providing safety improvements to both motorized and non-motorized movements
- Adding continuous sidewalks with landscaped buffers and bike lanes
- Providing a separated undercrossing link to the Jenkins Creek Trail
- Eliminating the bottleneck at Jenkins Creek crossing by adding a full width structure

#### A.1.2 New Jobs/Businesses and Retention

How well an area's transportation system functions has a strong effect on an area's economic competitiveness. This translates to job growth and retention. Some reasons are obvious: If it becomes too challenging to either ship from or get deliveries to a business location, that business will be disadvantaged compared to peers who are better situated for freight mobility. Less obviously, if travel in a region is too challenging, it may become more difficult to attract employees to that region. Traveling with greater ease and

with less commute time (or a less stressful commute) is a recipe for economic success. This is important for the City of Kent to the west and the City of Maple Valley and Black Diamond to the East. Goods and services travelling between these cities are heavily dependent on SR 516 and the proposed capacity improvements are imperative to the region's economic competitiveness.

Messaging can also be important in strengthening economic competitiveness. If an area can address problems considered important to key businesses and industries, those businesses and industries are likely to consider that potentiality when evaluating location decisions. By completing the funding for this project, an STP Grant would help maintain the livability and transportation efficiency needed to retain key employers such as MultiCare, Valley Medical/UW, Costco, Home Depot, Wal-Mart, as well as send an attractive economic message to others who may be considering locational development—assuring that the region is prime for business.

Improving SR 516 from Jenkins Creek to 185<sup>th</sup> Avenue SE will spur economic and residential development in eastern Covington and remove a significant bottleneck for traffic entering downtown Covington (See Figure 4). The project will widen SR 516 to five lanes from Jenkins Creek to 185<sup>th</sup> Avenue SE, replace an undersized culvert at the Jenkins Creek stream crossing, and improve stream habitat with the removal of a fish passage barrier.

#### A.2. Benefit to the Regional or Local Center

Downtown Covington is dependent upon and supports a larger regional retail market. While the Town Center development will add capacity to a downtown core that already provides important goods and services for Covington's residents, it also serves a much larger population area, estimated at 184,000 and forecasted to increase to 250,000 by 2025 as stated in the City of Covington Comprehensive Plan, Downtown Element Chapter 4, page 6. This project is instrumental and provides significant benefits to the user of SR 516 which serves this "larger regional retail market".

In addition, this project is a strong example of how the FHWA Partnership for Sustainable Communities can be achieved through strategic implementation of public transportation infrastructure principles that provides direct benefit to the users:

##### A.2.1 Sustainable Communities Principles

###### a. Provide more transportation choices

The project widens the roadway from a two-lane rural section to a five-lane urban arterial with buffered sidewalks and widened lanes that includes the Jenkins Creek Loop trail undercrossing providing a direct non-motorized connection to the downtown core and neighborhoods to the north of the project. The project will:

- Promote equitable, affordable housing

The project will improve access to more than 20 neighborhoods and enables developments such as Cedar Springs Multi-family development to complete their plans and for the City to stay within the Growth Management policies.

In addition, these neighborhoods consist of a mix of low and moderate income population such as the Timberlane neighborhood. This project will provide safe and reliable motorized and non-motorized connections to the vital services offered within the downtown core.

- Enhance economic competitiveness

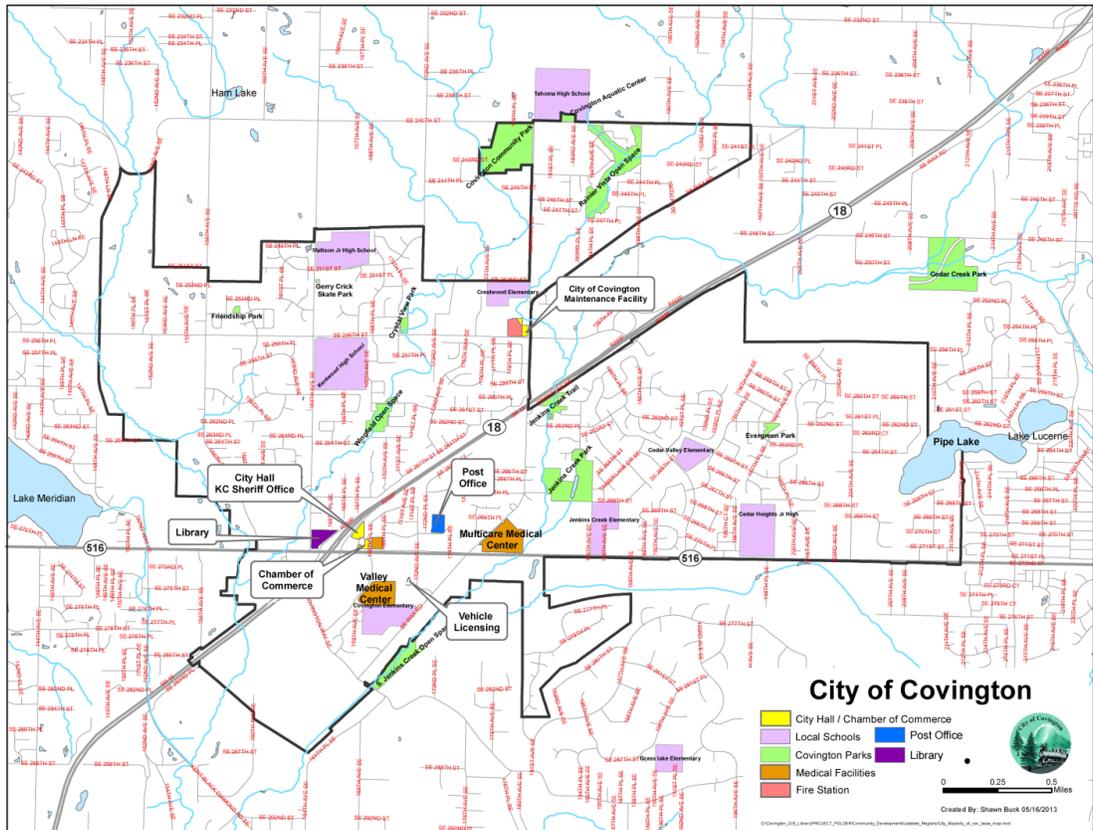
The City of Covington is a vibrant community that is implementing smart growth within and to the edges of the city growth boundaries. There are currently three significant economic competitive initiatives under development:

- The Northern Gateway that includes the Hawk Subarea Plan
- The Town Center which includes senior housing
- Cedar Spring Multi-family development

In order for these new developments to reach their planned densities, improvements to the SR 516 Corridor serving as the transportation spine into and out the City of Covington's downtown core will be required.

### A.3. Circulation within the Center

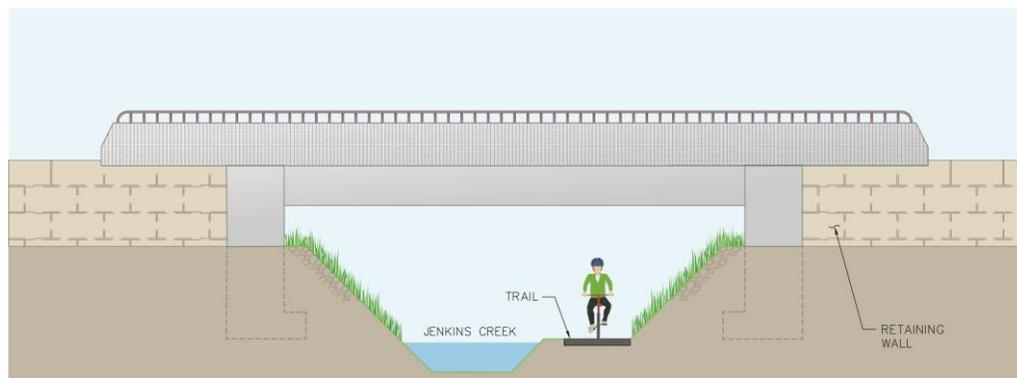
The SR 516 Corridor provides access to parks, community services, schools and businesses. SR 516 provides direct access to the downtown core and connects directly with the Covington Esplanade, Timbercrest, Timberlane, and Landcaster Gate neighborhoods. Community services such as the Post Office, City Hall, Valley Medical, MultiCare Medical Center, Vehicle Licensing and the Library all use SR 516 for access. The following schools have direct access from SR 516: Jenkins Creek Elementary, Cedar Valley Elementary, and Cedar Heights Junior High. Major business such as Home Depot, MultiCare, Walmart, and Costco rely on the SR 516 Corridor.



**Figure 4. Attractions and Key Route through City of Covington**

There are significant development opportunities and demand for redevelopment on the eastside of the City. By providing additional infrastructure and increasing the width of SR 516 (SE 272<sup>nd</sup>) at Jenkins Creek, the City will be better positioned to evaluate traffic concurrency issues that have stalled development in this area for the past decade. Not only will the additional roadway improvements help alleviate traffic delays, they will help to energize real estate sales and potential developments in the area. The majority of the redevelopment consists of a range of high (8 units/ac) to low (4 units/ac) densities; however there are approximately 4 acres of vacant commercial property due to the concurrency and critical link issues along SE 272<sup>nd</sup> Street. WSDOT has a property in their surplus that cannot be developed until the concurrency issue is resolved.

Not only will the project benefit vehicle movement and development, it will provide a north/south pedestrian link from Town Center between the residential and commercial developments on either side of SR 516. The pedestrian undercrossing connection under the Jenkins Creek Bridge (see Figure 5) will enable a continuous path connecting north and south trail segments and provide a mid-block undercrossing at one of the busiest sections of SR 516 (SE 272<sup>nd</sup> Street).



**Figure 5. Under the Jenkins Creek Bridge**

Significant investments have been made during the last several years that this project will directly leverage. On the north side of SE 272<sup>nd</sup> St, south of the Jenkins Creek Crossing is the Covington Esplanade, which provides 181,700 square feet of Commercial/Retail and restaurant space. To the south of SE 272<sup>nd</sup> Street across from Covington Esplanade is a planned 172-unit multifamily development. Residents of this development would be required to walk approximately 1,330 feet to the nearest signal crossing versus 400 feet to the Jenkins Creek pedestrian underpass to walk to the services across the street. Pedestrians often take the path of the least resistance, even if that may mean crossing a busy highway. The pedestrian underpass will serve as a safer, more reasonable option.

The project results in increased livability in a community which is particularly attentive to livability metrics. Living, working, playing – all key aspects in measuring quality of life, all improved if this project is constructed.

The project corridor experiences over 6% local and regional trucks and at times much higher when other connecting freight routes are experiencing congestion, as SR 516 serves as a significant connection to the local and regional freight network. Freight traffic

at the SR 18/SR 516 interchange, 0.8 miles just to the west of this project, experiences as high as 14% trucks (WSDOT 2012 Annual Traffic Report). The truck percentage on SR 18 goes up 3% as trucks enter from the SR516 interchange going north to I-90.

As improvements are made to the SR 516 corridor, freight connections that provide an effective and efficient connection to the economic engines of the Pacific Northwest, and will become more viable.

This project has support from the Washington Trucking Association (WTA) and in a letter of support from Larry Pursley, Executive Vice President, states: “this former rural area has experienced dramatic growth during the last 10-years and the volume of traffic, including commercial freight delivery trucks, demonstrates a great need for improved capacity. Once completed, the road network supported by the project, will more than double the capacity significantly improving movement of goods to the benefit of this area’s economy”.

### A.3.1 Essential Link

At times smaller essential transportation link projects and programs rarely receive as much public recognition as major expansion projects, yet making these investments are as critical, if not more so, to keeping people and goods safely moving throughout the region.

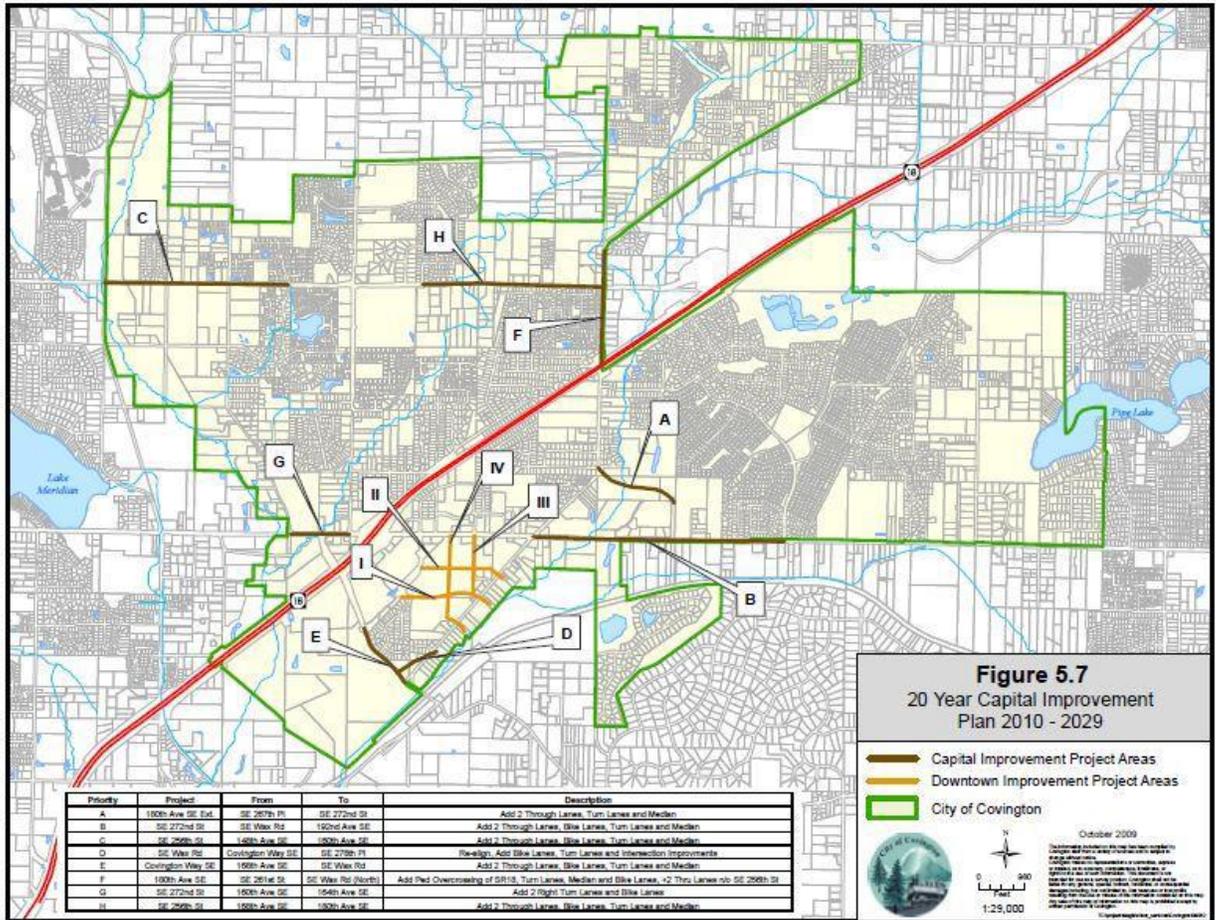
The SR 516 Jenkins Creek to 185th Avenue SE segment has significant opportunity for improving a critical transportation network link. The City of Covington and WSDOT agree that SR 516 Corridor improvements are critical elements to past and future economic vitality for the City, South King County and beyond. The SR 516 Jenkins Creek to 185th Avenue SE project is identified as providing significant operational improvements for the surrounding transportation systems, including enhancements for local and regional freight mobility, for personal travel, work commutes, and travel by alternate transportation modes including bus, bike, and on foot.



**Figure 6. After Project Improvements are Completed**

The City of Covington takes a proactive approach to pavement management and management of other capital resources. The completed project will be incorporated into Covington's robust and ongoing assets management efforts. In addition, by reducing demands on other facilities, maintenance of those facilities by the City and, where applicable, by WSDOT, will be more easily managed once this project is completed.

As stated in the Transportation Element (Chapter 5, page 24) of the City's CIP, the projects shown in Figure 6 (shown below) provide the capacity to resolve existing and forecasted deficiencies. The Jenkins Creek to 185<sup>th</sup> Avenue SE project is a priority segment and classified as a near-term un-funded critical link (UCL) improvement at the Jenkins Creek bottleneck that would be improved when funding is secured



**Figure 7. Capital Improvement Plan**

## Part 2. Criteria for all Projects

### D. Air Quality/Climate Change

An Air Quality Report dated January 2013 was prepared for the project. The following is excerpts from the executive summary:

The proposed project improvements will have an effect on traffic circulation patterns in the project area by improving travel speeds and the level of congestion experienced along SE 272nd Street. These operational changes will have an influence on criteria pollutant emissions, specifically carbon monoxide concentrations near localized intersections. Further, Mobile Source Air Toxics (MSAT) and Greenhouse gas (GHG) emissions are also of concern as VMT increases. As part of the environmental review process under the State Environmental Policy Act (SEPA) and air quality conformity requirements, an evaluation of air quality impacts from the proposed project was performed. The proposed project is located in King County, within the jurisdiction of Puget Sound Regional Council (PSRC) and the Puget Sound Clean Air Agency (PSCAA). This area is designated as a maintenance area for carbon monoxide (CO), which requires the project to meet Transportation Conformity Requirements under the Clean Air Act (CAA) Amendments of 1990 and federal regulation 40 CFR (Code of Federal Regulations) Part 93. The U.S. Environmental Protection Agency (EPA), FHWA, the Washington State Department of Transportation (WSDOT), the Washington State Department of Ecology (Ecology), and the Puget Sound Regional Council (PSRC) have established maximum criteria pollutant concentration levels and methods for assessing air quality impacts from regulated pollutants. These standards, models and guidance documents were utilized to assess CO, MSAT and GHG impacts from the operation and construction of the proposed project.

#### D.1. CO Hot Spot Analysis

During the operations of the proposed project, changes in CO concentrations will occur at intersection of 185th Place SE and SE 272nd Street. A CO hotspot analysis was conducted utilizing the Washington State Intersection Screening Tool (WASIST) model following WSDOT Environmental Procedures Manual. **The results of the CO hot spot analysis determined that the project would not cause a CO hot spot.** The proposed project would not cause or contribute to any new localized violations of the NAAQS for CO, increase the frequency or severity of any existing violations of the NAAQS, or delay the timely attainment of the NAAQS in the 2040 design year at the affected intersection. **Regional conformity requirements were also met as the project is included in the region's Metropolitan Transportation Plan (MTP), Transportation 2040 Plan (PSRC, 2010).** This plan has been found to meet the CO conformity tests as identified by federal and state conformity regulations. Therefore, the proposed project has met the requirements of being included in the regional plans, which have been found to conform to the State Implementation Plan (SIP).

#### D.2. MAST Analysis

In accordance with FHWA guidelines, the proposed project was qualitatively assessed on a project-level basis due to the project being classified as a minor widening project that would improve traffic circulation along SE 272nd Street without adding substantial new capacity. MSATs are comprised of a class of hazardous air pollutants of concern for transportation projects and are expected to increase when vehicles travel at a low rate of speed and when idling at intersections. For the proposed project, although the roadway widening will add additional lanes, VMT for the proposed project is estimated to remain

unchanged from No Build to Build conditions. Further, with the implementation of the proposed project it is expected that traffic congestion will ease, vehicles will travel at a higher average speed and less idling will occur at the SE 272nd intersection. **MSAT emissions for the proposed project are expected to decrease from Existing to No Build conditions** due to advances in technology and the implementation of EPA's national control programs that are projected to reduce annual MSAT emissions by 72 percent between 1999 and 2050. This decrease will reduce the background level of MSATs as well as the MSAT emissions from this project. Consequently, MSATs impacts are not expected to occur as a result of the project.

### D.3. GHG Analysis

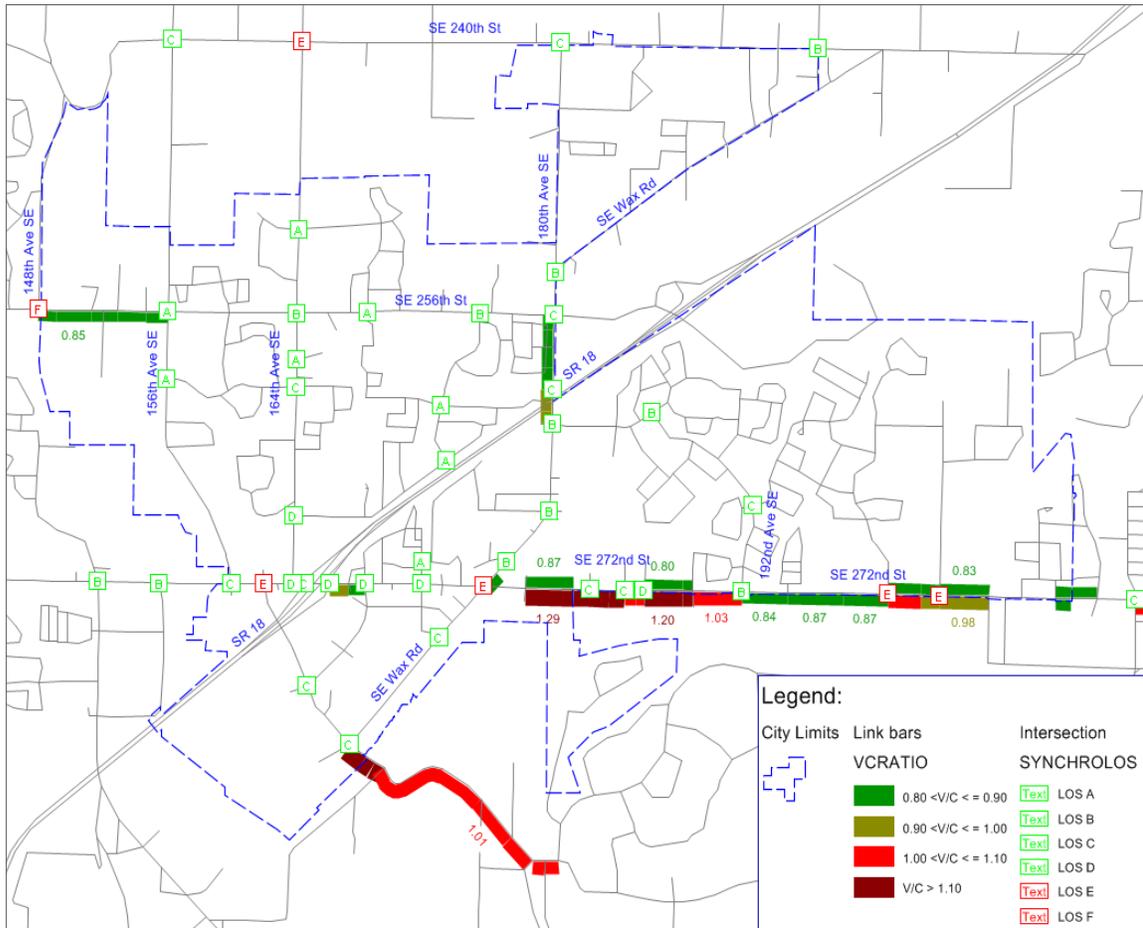
Vehicles emit a variety of gases during their operation; some of these are greenhouse gases (GHGs). In WSDOT's work to date, they have found that GHG emissions from a single project action are usually very small, (and often less than the without project). WSDOT believes that transportation GHG emissions are better addressed at the region, state, or transportation system level where multiple projects can be analyzed in aggregate. On a regional level, WSDOT has determined that projects should contain certain features that will improve overall GHG in the region. Therefore, a quantitative analysis was not performed to determine the change in GHG emissions with the implementation of the proposed project. However, the proposed project incorporates several of the inherent features that **will assist in reducing GHG emissions such as:**

- Reducing stop and go conditions
- Improve roadway speeds to a moderate level
- Improve intersection traffic flow to reduce idling
- Expanding non-motorized options for travelers
- Increasing vegetation density over pre-project conditions to sequester carbon.

Land uses, such as schools, daycare facilities, hospitals, elderly care facilities, and other areas that are occupied by people susceptible to air quality pollutants are considered sensitive air quality receptors. One sensitive receptor, a preschool at the Peace Lutheran Church, was identified east of the proposed project limits between 186th Place SE and 188th Place SE. Jenkins Creek Elementary School located north of SE 272nd Street was also identified, however, it is not located near the widened roadway; therefore, it was not considered to be impacted by the proposed project. Further, outdoor frequent human use areas were identified at surrounding single-family residences. These outdoor use areas can create a potential sensitive air quality receptor if individuals who are susceptible to pollutants visit these outdoor areas. **However, the air quality impacts from the proposed project are not expected to cause increase air quality concentrations levels..**

In addition to what is reported in the Air Quality report using the EPA findings on CO<sub>2</sub>/Gallons of gas consumed and the forecast that the **SR 516 Jenkins Creek to 185th Avenue SE project will result in decreased travel time and congestion for area transportation networks, including peak hour congestions reductions of 20 to nearly 67 percent at key intersections.**

The reductions in travel time and vehicle delays suggest substantial reductions in greenhouse gases (GHGs) will be realized through project construction. With a forecast of 20 to nearly 67 percent vehicle delay reductions in congestion in project-proximate SR 516 intersections, and with traffic counts at about 27,000 vehicles per day (45,000 just to the west of project segment) on average and assuming an average 0.8 gallon of gas savings per vehicle-hour of delay reduction; and 8,887 gram CO<sub>2</sub>/gallon of gas consumed (<http://www.epa.gov/otaq/climate/documents/420f11041.pdf>), **this results in savings of over 4,600 tons of GHGs over a 20-year horizon.**



**Figure 8. Peak Congestion and Delay**

#### D.4. Construction Impacts

Project construction can temporarily affect air quality as a result of fugitive dust from excavation and earth moving activities and emissions from diesel-fueled construction equipment. Fugitive dust (particulate matter) emissions are associated with land clearing, ground excavation, grading and cut-and-fill operations. Further, some construction stages (particularly those involving paving operations using asphalt) would result in short-term odors, which might be detectable by some people near the site, and they would be diluted as the distance from the site increases. A fugitive dust control plan implemented as part of project would require dust control measures during construction. The plan could include employing Best Management Practices recommended by WSDOT and PSCAA such as

spraying exposed soil with water, covering truck loads and materials as needed, washing truck wheels before the trucks leave the site, removing particulate matter from roads, routing and scheduling construction trucks to reduce delays, ensuring well-maintained equipment, and implementing other temporary mitigation measures as needed and considered appropriate.

E. Project Readiness/Financial Plan

The project is approaching **90 percent design completion**, environmental approvals and permits are on schedule and the project can be ready for a 2015 construction start with Surface Transportation Program (STP) Grant support

The high level project schedule is shown in Figure 9. As displayed in the figure the majority of the environmental studies are complete with the NEPA/ SEPA documentation being submitted in June of 2014. Final Design, Right-Of-Way and all environmental approvals are anticipated to be completed at the end of 2014. If funded construction would commence in early 2015 with completion in 2017.

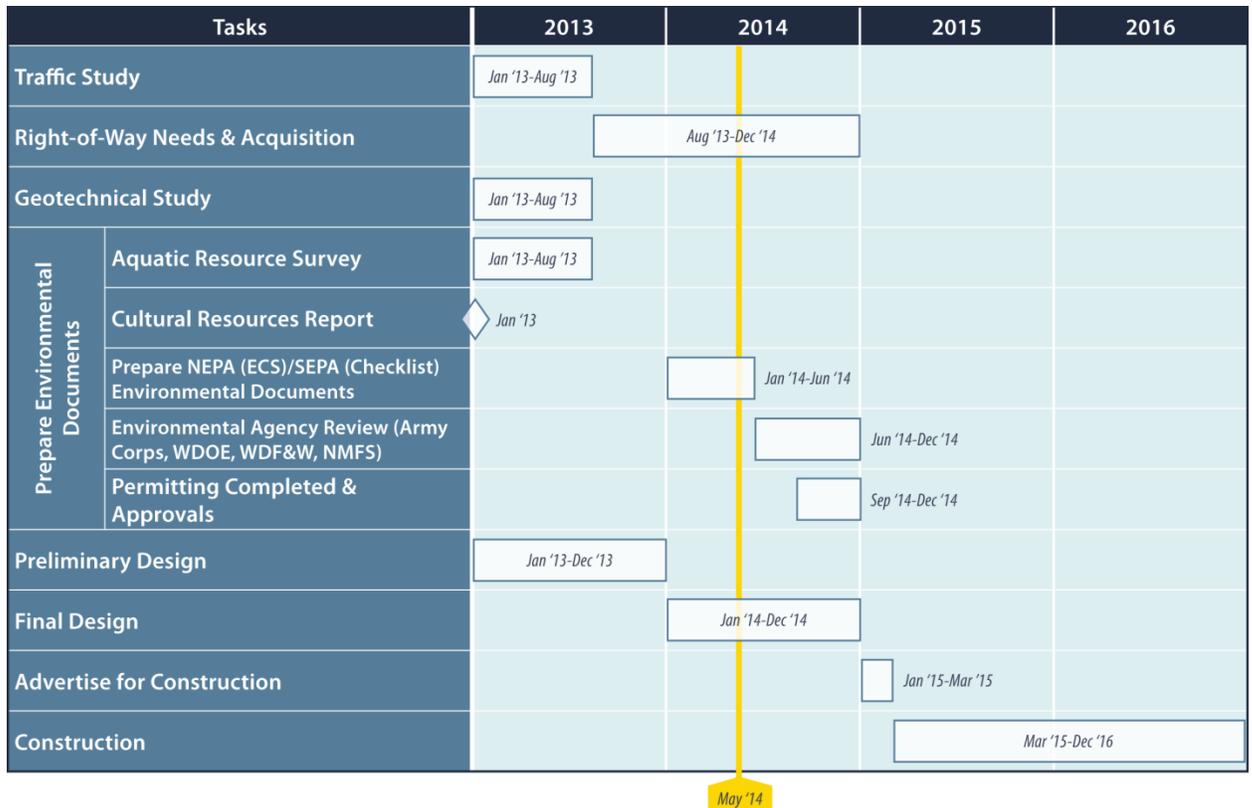


Figure 9. Schedule

E.1. Environmental Approvals

Key Environmental approvals for the project are listed below. The schedules for these approvals are shown in Figure 9.

These key approvals are; NEPA (Environmental Classification Summary), SEPA (Checklist), Wetland Mitigation Plan, Biological Opinion, U.S. Army CORPS, USDOE, WDOE, WDF&W, and King Co.

## E.2. Environmental Permitting

Project has all the required permits in progress in varying stages of completion. The project can be AD Construction Ready by January, 2015 (see Figure 9). The U.S. Army Corps of Engineers permit is the permitting processes that will require the longest lead time.

## E.3. Technical Feasibility

WSDOT reviews have included; traffic analysis, signal design, channelization, stormwater, access management plus the roadway bridge, retaining walls and fish passage facilities.

A Green Roads analysis has been performed for the project the project elements where sustainable practices will be incorporated include:

- Stormwater
- Pavements
- Construction materials recycling
- Roadside vegetation
- Freight access
- Regional construction materials
- Access and equity.

## E.4. Financial Feasibility – Detailed Project Cost

The project cost estimate is attached in Appendix 1.2.

This project is to widen and reconstruct a portion of SE 272nd Street between Jenkins Creek and 185th Place SE. This project will include the crossing of Jenkins Creek with a new structure for the stream, widening the street from 2-lanes to 5-lanes including curb and gutter, 8' sidewalks, access control features, landscaping and provisions for U-turns.

As shown on the Project Schedule (Fig. 9). The project will be Advertisement Ready by January, 2015.

City has obtained federal funding in 2012 to complete engineering for the roadway improvement. A total of \$1,474,390 has been programmed for design including \$809,602 of STP funding with a local match of \$664,788. This STP Grant request will be applied to the construction phase of the project with the remainder anticipated from a TIB request.

Below is the current funding status from the Local Agency Agreement:

### Preliminary Engineering:

Agency Funds - \$664,788

Federal Funds - \$809,602

Sub-total = \$1,474,390

### Right of Way:

Federal Funds - \$800,000

Agency Funds - \$405,000

Construction:

STP request - \$8,600,000

TIB request - \$2,000,000

Local - \$594,000

Total Construction Phase = \$11,194,000

**Appendices:**

1.1 Letters of Support

1.2 Project Cost Estimate

1.3 WSDOT SR 516 Corridor Study



**Washington State  
Department of Transportation**

Lynn Peterson  
Secretary of Transportation

Transportation Building  
310 Maple Park Avenue S.E.  
P.O. Box 47300  
Olympia, WA 98504-7300  
360-705-7000  
TTY: 1-800-833-6388  
[www.wsdot.wa.gov](http://www.wsdot.wa.gov)

April 21, 2014

The Honorable Anthony Foxx  
Secretary, U.S. Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

Dear Secretary Foxx:

The Washington State Department of Transportation is pleased to support the City of Covington's 2014 TIGER grant application for the SR 516 - Jenkins Creek to 185th Place SE project.

This project would widen SR 516 from a two-lane rural standard to a five-lane arterial standard from Jenkins Creek to 185th Place SE. A drainage conveyance and treatment system will be incorporated to retain, treat, and infiltrate drainage associated with the additional widening. The project will also include widening Jenkins Creek crossing to accommodate the arterial standard and improve the fish habitat with the improved structure as well as handle high water flows during storm events.

I hope you will give this project serious consideration.

Sincerely,

A handwritten signature in blue ink that reads "Lynn Peterson".

Lynn Peterson  
Secretary of Transportation

COMMISSIONERS:  
Vern Allemann  
Jeff Clark  
David R. Knight  
David B. Roselle  
Tal Weberg  
GENERAL MANAGER:  
Gwenn Maxfield



*Serving  
the  
Community  
Since 1960*

April 22, 2014

The Honorable Ray LaHood  
Secretary, U.S. Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

Dear Secretary LaHood:

The Covington Water District is pleased to support the City of Covington's 2014 TIGER VI grant application for the SR 516 - Jenkins Creek to 185th Place SE project. We anticipate entering into an Interlocal Agreement to improve District facilities during the proposed road improvement work.

This project widens SR516 (Kent-Kangley) from a two-lane rural standard to a 5-lane arterial standard from Jenkins Creek to 185th Place SE. The improvements will include center median landscaping, illumination, 5' planter strips and 8' sidewalks throughout the project limits. A drainage conveyance and treatment system will be incorporated to retain, treat, and infiltrate drainage associated with the additional widening. The project will also include widening Jenkins Creek crossing to accommodate the arterial standard and improve the fish habitat with the improved structure as well as handle high water flows during storm events. All above ground utilities will be converted to underground.

I hope you will give serious consideration to this project.

Sincerely,

Gwenn Maxfield  
General Manager

cc: **City of Covington Public Works**  
CWD Engineering

VISION OF TOMORROW | ACTION TODAY

18631 SE 300<sup>th</sup> Place, Covington, WA 98042 (253) 631-0565



# Inland Group

Comprehensive Multifamily Construction & Development Services

April 22, 2014

The Honorable Anthony Foxx  
Secretary, U.S. Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

Re: Letter of Support  
City of Covington's 2014 TIGER VI Grant Application

Dear Secretary Foxx:

The Inland Group is writing to express our support the City of Covington's 2014 TIGER VI grant application for the SR 516 - Jenkins Creek to 185th Place SE project.

The Inland group is currently developing mixed-use housing in the City's Town Center with the intent to develop a total of 356 residential units, supporting office space, amenity spaces and street level retail/commercial in accordance with the City's Town Center Design Guidelines. The development will include both moderate-income rental housing for families and a separate age-restricted apartment community for seniors. The development is scheduled to begin construction this fall and be complete in early 2016.

The City's SR 516 – Jenkins Creek to 185<sup>th</sup> Place SE project widens SR516 (Kent-Kangley) from a two-lane rural standard to a 5-lane arterial standard from Jenkins Creek to 185th Place SE. The improvements will include center median landscaping, illumination, 5' planter strips and 8' sidewalks throughout the project limits. A drainage conveyance and treatment system will be incorporated to retain, treat, and infiltrate drainage associated with the additional widening. The project will also include widening Jenkins Creek crossing to accommodate the arterial standard and improve the fish habitat with the improved structure as well as handle high water flows during storm events. All above ground utilities will be converted to underground.

This sort of significant infrastructure improvement is excellent for the City of Covington and improves the eastern gateway into the City, which in turn improves the gateway to the planned Town Center. Accordingly, we respectfully request your sincere consideration of the project.

Should you have any questions, please call me at (509) 607-2233. Thank you.

Sincerely,

Keith A. James  
INLAND GROUP



April 14, 2014

The Honorable Ray LaHood  
Secretary, U.S. Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

Re: 2014 TIGER VI grant application - SR 516 - Jenkins Creek to 185th Place SE project,  
City of Covington, Washington

Dear Secretary LaHood:

This letter is written to strongly endorse the approval of the referenced 2014 TIGER VI grant application.

Although I am certain that you are well aware of the various beneficial aspects of this proposed project (including safety, aesthetic and environmental improvements), the public need and subsequent benefit from this improvement cannot be overstated. To my knowledge, there is not a stretch of road in the state exhibiting a greater need of improvement than this project area. Moreover, the benefiting user population for this proposal is extraordinary and continuing to expand.

We appreciate your help in seeing this project to fruition and thereby resolving this ongoing traffic dilemma for our community/region.

Sincerely,

Landmark Development Group, LLC

A handwritten signature in blue ink, appearing to read "Brett M. Jacobsen", is written over the printed name. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Brett M. Jacobsen

April 22, 2014

The Honorable Anthony Foxx  
Secretary, U.S. Department of Transportation  
1200 New Jersey Ave S.E.  
Washington, DC 20590

Re: 2014 TIGER VI Grant Application – SR 516 – Jenkins Creek to 185<sup>th</sup> Place SE Project,  
City of Covington, Washington

Dear Secretary Foxx:

MultiCare Health System resolutely endorses the City of Covington's 2014 TIGER grant application for the SR516-Jenkins Creek to 185<sup>th</sup> Place SE project. The general area has experienced dramatic growth in the past decade and the volume of traffic along this stretch of road has outstripped its capacity.

Due to the tremendous growth in this area, MultiCare has built a free-standing emergency department and scheduled to break ground on a long planned hospital on our campus. The community depends on our facility for their healthcare needs. However, traffic is preventing residents from accessing needed emergency care in a timely manner. The current two lane road is grossly inadequate and will throttle the growth of our medical center and affect the community's access to critical healthcare services in a timely manner.

We strongly encourage you to give this project the attention it demands and will approve the grant application submitted by the City of Covington. If I can provide any more information, please feel free to contact me. Thank you for your thoughtful consideration.

Sincerely,



Hugh Kodama, Vice President  
South King Region  
MultiCare Health System



April 23, 2014

The Honorable Anthony Foxx  
Secretary, U.S. Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

Dear Secretary Foxx:

Oakpointe Holdings is the premiere real estate development company operating in South King County, Washington. We are currently managing multiple projects totaling over 8,500 residential units and over 2 million square feet of commercial property. We have a long history of development projects in and around the City of Covington. A significant roadway deficiency in the City of Covington associated with State Route 516 over Jenkins Creek easterly to 185<sup>th</sup> Place SE has been apparent for the past decade. This deficiency is both limiting development of urban zoned land and causing impediments to the regional transportation corridor accessing the Covington commercial district. The congestion caused by the restricted roadway section discourages otherwise shopping trips from entering the City of Covington.

We strongly support the City of Covington's 2014 TIGER grant application for the State Route 516 Jenkins Creek to 185<sup>th</sup> Place SE project. We are confident this project will rejuvenate Covington's commercial corridor as well as provide opportunities for property owners to develop properties that otherwise have been restricted based on traffic congestion.

Sincerely,

Oakpointe Holdings

A handwritten signature in blue ink, appearing to read "Brian Ross".

Brian Ross  
Chief Executive Officer

10220 NE POINTS DRIVE  
SUITE 310  
KIRKLAND, WA 98033

[WWW.OAKPOINTE.COM](http://WWW.OAKPOINTE.COM)



# ***SOOS CREEK WATER & SEWER DISTRICT***

---

14616 S.E. 192nd St. • P.O. Box 58039 • Renton, WA 98058-1039 • Phone (253) 630-9900 • Fax (253) 630-5289

April 24, 2014

The Honorable Ray LaHood  
Secretary, U.S. Department of Transportation  
1200 New Jersey Ave SE  
Washington, DC 20590

Dear Secretary LaHood:

Soos Creek Water and Sewer District is pleased to support the City of Covington's 2014 TIGER VI grant application for the SR 516 - Jenkins Creek to 185th Place SE project. We anticipate entering into an Interlocal Agreement to improve District facilities during the proposed road improvement work.

This project widens SR516 (Kent-Kanglely) from a two-lane rural standard to a 5-lane arterial standard from Jenkins Creek to 185th Place SE. The improvements will include center median landscaping, illumination, 5' planter strips and 8' sidewalks throughout the project limits. A drainage conveyance and treatment system will be incorporated to retain, treat, and infiltrate drainage associated with the additional widening. The project will also include widening Jenkins Creek crossing to accommodate the arterial standard and improve the fish habitat with the improved structure as well as handle high water flows during storm events. All above-ground utilities will be converted to underground.

On April 24, 2014, the Board of Commissioners of the District considered this issue, and adopted Resolution No. 3431-S, formally supporting the City's application, and authorizing this letter. A copy of the Resolution is enclosed.

We hope you will give serious consideration to this project.

Sincerely,



Ron Speer  
General Manager

cc: Fred French, City of Covington  
Darci Mattioda, SCWSD DE  
Ken VanDenBergh, SCWSD  
Mike Hanis, Attorney, HIP Law



**SOOS CREEK WATER AND SEWER DISTRICT**

**KING COUNTY, WASHINGTON**

**RESOLUTION NO. 3431-S**

**A RESOLUTION** of the Board of Commissioners of Soos Creek Water and Sewer District, King County, Washington, supporting the City of Covington's 2014 TIGER VI grant application for the SR 516 185<sup>th</sup> project.

**WHEREAS**, Soos Creek Water and Sewer District is a municipal corporation providing sanitary sewer services within the City of Covington; and

**WHEREAS**, the District and the City are partners at meeting the infrastructure and service needs of the community, and responding to the very substantial growth occurring within the City and the vicinity; and

**WHEREAS**, there is a great need for widening of the Kent-Kangley Road (SR 516) in the area of Jenkins Creek and 185<sup>th</sup> Place SE, where this otherwise five lane arterial is impeded by a two lane bottleneck; and

**WHEREAS**, the road carries much of the traffic from this area of King County, and will experience much more as major developments in the cities of Maple Valley and Black Diamond come online; and

**WHEREAS**, alleviating the bottleneck is necessary for safe, economical and environmentally sensitive traffic conveyance within this major area of the County; and

**WHEREAS**, the District works closely with the City and has been apprised of the City's application for a 2014 TIGER VI Grant for a project that will widen the road to five lane arterial standards including center median, landscaping, illumination, 5' planter strips and 8' sidewalks, improvement of fish habitat, capacity for high water flows in the Jenkins Creek, and

**RESOLUTION NO. 3431-S**

**SUBJECT:** Supporting Covington 2014 TIGER VI  
Grant Application; SR 516/185<sup>th</sup> Place Project

undergrounding of all utilities, all of which are necessary, and which will make the road more efficient, safer, more attractive, and more environmentally sensitive.

**NOW, THEREFORE, BE IT RESOLVED** by the Board of Commissioners of Soos Creek Water and Sewer District, King County, Washington, as follows:

**SECTION 1:** That Soos Creek Water and Sewer District hereby declares its strong support for the City of Covington's 2014 TIGER VI grant application for the SR 516 – Jenkins Creek to 185<sup>th</sup> Place SE project; and authorizes the District's General Manager to prepare and send a letter of support in accordance herewith.

**SECTION 2:** That the District commits to working with the City in any manner it reasonably can to accomplish this important project.

**ADOPTED** by the Board of Commissioners of Soos Creek Water and Sewer District, King County, Washington, at a regular open public meeting thereof on the 23<sup>rd</sup> day of April, 2014.

*-excused-*  
\_\_\_\_\_  
GARY CLINE, President

*Steve Pfaff*  
\_\_\_\_\_  
STEVE PFAFF, Secretary

*Darold Stroud*  
\_\_\_\_\_  
DAROLD STROUD, Commissioner

*Alice Marshall*  
\_\_\_\_\_  
ALICE MARSHALL, Commissioner

*Larry West*  
\_\_\_\_\_  
LARRY WEST, Commissioner

**RESOLUTION NO. 3431-S**

**SUBJECT:** Supporting Covington 2014 TIGER VI  
Grant Application; SR 516/185<sup>th</sup> Place Project



# WASHINGTON TRUCKING ASSOCIATIONS

**EXECUTIVE VICE PRESIDENT**  
Larry Pursley

**PRESIDENT**  
Jeffrey D. Bosma

April 25, 2014

The Honorable Anthony Foxx  
Secretary, U.S. Department of Transportation  
1200 New Jersey Avenue SE  
Washington , DC 20590

Dear Secretary Foxx:

The Washington Trucking Associations strongly supports the City of Covington's 2014 TIGER grant application for the SR 516-Jenkins Creek to 185th Place SE project. This former rural area has experienced dramatic growth during the last 10-years and the volume of traffic, including commercial freight delivery trucks, demonstrates a great need for improved capacity.

Once completed, this road network supported by the project will more than double the capacity significantly improving the movement of goods to the benefit of this area's economy.

We urgently request you give this project your full consideration and support and approve the grant application of submitted by by the City of Covington.

Thank you for thoughtful consideration.

Sincerely,

Larry A. Pursley  
Executive Vice President

# SR 516 CORRIDOR STUDY

SR 167 IN KENT TO SR 169 IN MAPLE VALLEY



## Prepared with the assistance of:

City of Black Diamond  
City of Covington  
City of Maple Valley  
City of Kent  
King County METRO  
Puget Sound Regional Council

January 2013



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WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

Urban Planning Office

Seattle, Washington

## **SR 516 CORRIDOR STUDY**

### **Project Limits:**

SR 516 / SR 167 Interchange to the

SR 516 /SR 169 Intersection

SR Mile Post 4.65 to 16.22

January 2013

Lorena Eng, P.E.

Northwest Region Administrator

Stacy Trussler, P.E.

Urban Planning Office Director

---

### **Americans with Disabilities Act (ADA) Information**

Materials can be provided in alternative formats: large print, Braille, cassette tape, or on computer disk for people with disabilities by calling the ADA/504 Compliance Manager, Shawn Murinko at (360) 705-7097. Persons who are deaf or hard of hearing may contact OEO through the Washington Relay Service at 7-1-1.

### **Title VI Notice to Public**

It is the Washington State Department of Transportation's (WSDOT) policy to assure that no person shall, on the grounds of race, color, national origin or sex, as provided by Title VI of the Civil Rights Act of 1964, be excluded from participation in, be denied the benefits of, or be otherwise discriminated against under any of its federally funded programs and activities. Any person who believes his/her Title VI protection has been violated, may file a complaint with WSDOT's Office of Equal Opportunity (OEO). For Title VI complaint forms and advice, please contact OEO's Title VI Coordinator, George Laue at (509) 324-6018.

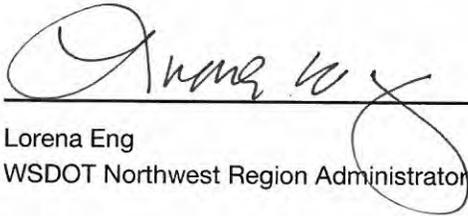
Washington State Department of Transportation  
Urban Planning Office

**SR 516 CORRIDOR STUDY**

**Study Limits**

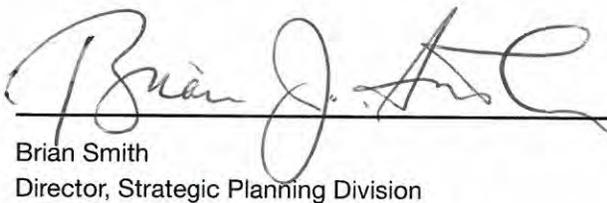
**SR 167 to SR 169 (SRMP 4.65 to SRMP 16.22)**

**Approved by:**

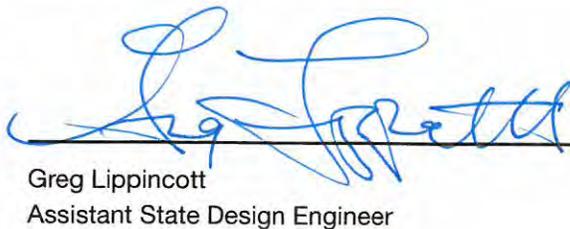
  
\_\_\_\_\_  
Lorena Eng  
WSDOT Northwest Region Administrator

1/17/13  
\_\_\_\_\_  
Date

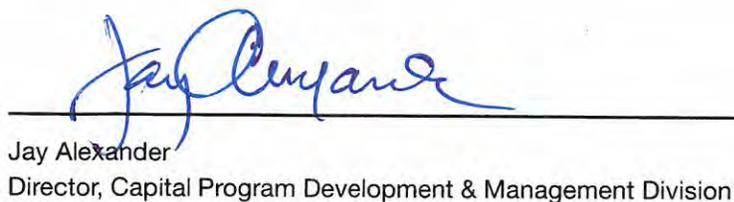
**Concurrence:**

  
\_\_\_\_\_  
Brian Smith  
Director, Strategic Planning Division

2/5/13  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Greg Lippincott  
Assistant State Design Engineer

2/1/2013  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Jay Alexander  
Director, Capital Program Development & Management Division

2.7.13  
\_\_\_\_\_  
Date

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## Participating Agencies and Individuals

The following individuals participated in the creation of the SR 516 Corridor Planning Study as Corridor Working Group members (stakeholder representatives of their jurisdictions) and project staff.

### **City of Black Diamond**

Seth Boettcher, Public Works Director

### **City of Covington**

Derek Matheson, City Manager

Glen Akramoff, Public Works Director

Don Vondran, City Engineer

### **City of Kent**

Tim LaPorte, Public Works Director

Chad Bieren, Deputy Public Works Director

Doug Levy, Outcomes by Levy

### **City of Maple Valley**

David Johnson, City Manager

Steve Clark, Public Works Director

### **King County Metro**

Doug Johnson, Operations

### **Puget Sound Regional Council**

Sean Ardussi, Planner

### **Washington State Dept. of Transportation**

#### **Urban Planning Office**

Stacy Trussler, P.E. Director

Shuming Yan, Assistant Director

Richard Warren, Corridor Planning Manager

Tom Washington, Project Manager

#### **Support Staff**

Annie Johnson

Brian Smith

Brian Walsh

Cliff Hall

Delwar Murshed

Faris Al-Memar

Jessie Lin

John Klockenteger

Judy Lorenzo

Kumiko Izawa

Laura Thompson

Mani Goudarzi

Matt Neeley

Natarajan Janarthanan

Paul McCorkill

Rick Roberts

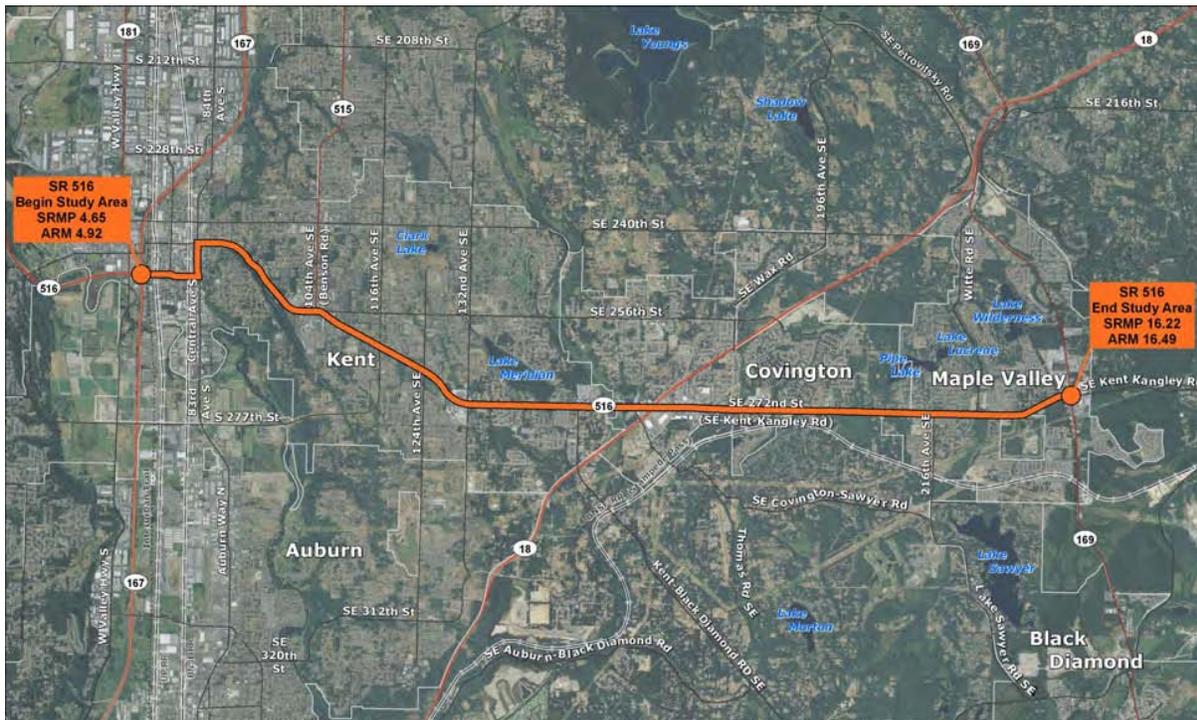
Shirley Weisgerber

Stan Suchan

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## EXECUTIVE SUMMARY

The recommendations in this study will need to compete for funding with other proposed improvements around the state based on performance outcome. Due to limited state funding, local jurisdictions are encouraged to seek funding from non-state sources such as developer contributions, creating a local improvement district, or federal grants to implement the recommendations.



### What is the SR 516, SR 167 to SR 169, Corridor Study?

The SR 516 Corridor Study is a planning level analysis that assesses current and future conditions along the corridor and then develops improvement recommendations to address those conditions. Conditions studied include mobility, growth, maintenance, operations, safety, and the environment. The study process included developing a corridor vision, gathering input from local officials and the public regarding traffic conditions they see affecting the corridor; reviewing existing regional and local comprehensive plans for planned population and employment growth and funded transportation improvements;

## EXECUTIVE SUMMARY

collecting and analyzing traffic data such as traffic volumes and safety conditions along the corridor; projecting future travel demand; and developing improvement recommendations. This corridor plan provides WSDOT with a strategy, when funding is available, for improving the corridor through the year 2030. The end result is a list of near-, mid-, and long-term improvement recommendations. These recommendations are specific to the corridor, and funding has not been allocated to any of the improvement recommendations. The improvement recommendations listed in this corridor study will need to compete and prioritize against other statewide transportation needs for funding opportunities.

The SR 516 Corridor Planning Study area begins in the city of Kent, at the interchange area of SR 516, SR 181, and SR 167 (SR Mile Post 4.65 ) The study corridor extends easterly almost 12 miles through the cities of Kent and Covington and terminates at the SR 516 and SR 169 intersection in the city of Maple Valley (SR Mile Post 16.22). SR 516 is located in King County, Washington. The full length of the route is from Des Moines to Maple Valley.

The study corridor was divided into six segments to model for speed comparisons and capacity. Traveling eastward, the segments are as follows:

**Segment 1**, SR 167 I/C to Jason Avenue, is an urban section in Kent.

**Segment 2**, Jason Avenue to 101st Avenue, is slightly less urban in character than Segment 1.

**Segment 3**, 101st Avenue to 160th Avenue SE, is more suburban in character.

**Segment 4**, 160th Avenue SE to slightly west of 188th Avenue SE, is the urban core of Covington.

**Segment 5**, slightly west of 188th Avenue SE to 216th Ave SE transitions to a more suburban character

**Segment 6**, 216th Ave SE to SR 169, is the most rural segment but is still suburban with urban development at SR 169.

All six segments are located within the urban growth area and within the Kent, Covington, and Maple Valley incorporated city limits. There are 34 signalized intersections along the study route and two, signalized, gate controlled, at grade railroad crossings.

### **Why did WSDOT study this segment of SR 516?**

The 2010 Washington State Legislature passed ESSB 6381. The bill language stated “\$150,000 of the motor vehicle account--state appropriation is provided solely for a corridor study of state route number 516 from the eastern border of Maple Valley to state route number 167 to determine whether improvements are needed and the costs of any needed improvements.”

## EXECUTIVE SUMMARY

This route provides an east-west connection to multiple cities and eastern King County residents for both local trips and to transportation corridors to and from the urban cores of the Puget Sound area to the west. The area continues to see population growth. Between the period of 2009 and 2030, PM peak hour demand grows 1.8% annually in the eastbound direction of SR 516 in Kent. Covington and Maple Valley segments in the eastbound direction show a 1.7% annual growth rate. In the westbound direction, the growth is forecasted at 2% annually for the segment in Covington and Maple Valley. Additional growth could occur if several large developments within Maple Valley and Black Diamond move forward.

### **Who was involved in the study?**

The study was led by the WSDOT Urban Planning Office with assistance from a stakeholders group, formed by WSDOT, to provide input and insight into the transportation concerns of their respective agencies. The stakeholders group also acted as a sounding board for the development of the recommendations.

The stakeholders group was composed of representatives from the city of Black Diamond, the city of Covington, the city of Kent, the city of Maple Valley, King County Metro Transit, Puget Sound Regional Council, plus staff from WSDOT's NW Region, Strategic Planning, and Capital Programming and Development.

### **The Corridor Plan Vision**

In September 2010, a Corridor Working Group (CWG) consisting of transportation stakeholders representing various jurisdictions, a regional planning agency, and transit convened to commence the SR 516 Corridor study. One of the first acts of the CWG was to adopt a vision for the study recommendations. The adopted vision states:

#### **SR 516 Corridor Plan Vision**

*A set of consensus-based, multimodal, and sustainable recommendations for SR 516 between SR 167 and SR 169 that are based on improved safety, improved throughput of people and goods, managed access, and preparation for future population and employment growth.*

This vision provided a focus for the CWG while conducting the study of the SR 516 corridor. The CWG met three times over the life of the study. The vision was maintained through direct involvement of the Corridor Working Group in the development and acceptance of the alternatives evaluation criteria and, ultimately, the corridor plan

## EXECUTIVE SUMMARY

recommendations. The evaluation criteria included safety, local interest, congestion/mobility, feasibility/constructability, and environmental impact.

The CWG's efforts were supported by information and technical data gathered and prepared by Washington State Department of Transportation (WSDOT) staff.

### Moving Washington

Moving Washington is the WSDOT's framework for making decisions for transportation investments that focus on keeping people and goods moving and supporting a healthy economy, environment, and communities.

Moving Washington is anchored by the department's highest priority: maintaining and preserving the safe and long-lasting performance of existing infrastructure, facilities and services. This is the heart of Moving Washington and the target of the department's investments.



Moving Washington combines three essential transportation strategies to achieve and align the objectives of WSDOT and its partners: operate efficiently, manage demand, and add capacity strategically. It is through the application of these strategies that the department is able to ensure that investments are integrated and solutions are cost-effective.

**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. Strategies include using traffic technologies such as ramp meters and other control strategies to improve traffic flow and reduce collisions, deploying Incident Response to quickly clear collisions, optimizing traffic signal timing to reduce delay, and implementing low-cost/high-value enhancements to address immediate needs.

**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. Strategies include using variable-rate tolling in ways that reduce traffic during the most congested times and balance capacity between express and regular lanes, improving the viability of alternate modes, and providing traveler information to allow users to move efficiently through the system.

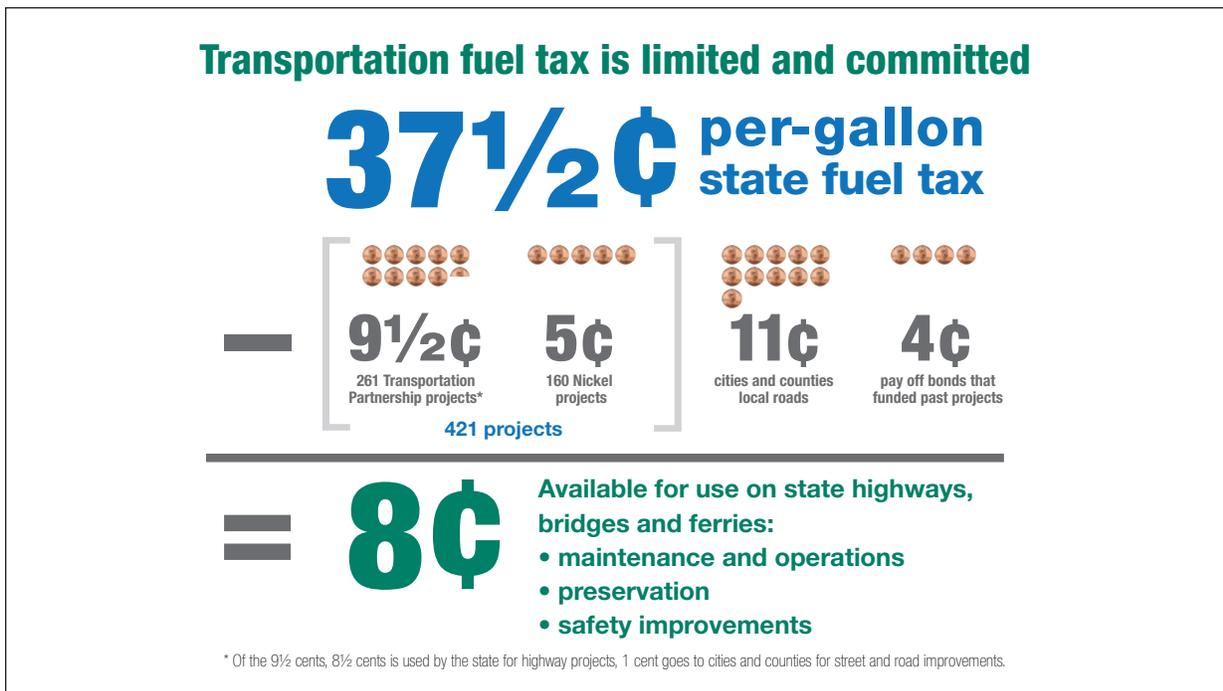
## EXECUTIVE SUMMARY

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. Upgrading a failing on-ramp merge or hard-shoulder running during peak periods can free up the flow of traffic through a busy corridor. From improving rail crossings and ferry service to working with transit agencies to connect communities, from building direct access ramps for carpools and transit to including paths for pedestrians and bicycles, capacity improvements require strong partnerships with a shared vision for the corridor.

For more information on Moving Washington, visit:  
[www.wsdot.wa.gov/movingwashington/](http://www.wsdot.wa.gov/movingwashington/)

### Why do Moving Washington?

At its basic level Moving Washington is a budgeting and investment strategy that is more important now than ever, given declining transportation revenue and growing demands on our state's highways, ferries and rails. The state is not in a position to build everything everyone wants so the state must have a way to prioritize its transportation needs and find the most efficient solutions that support and enhance Washington's economic vitality. As the exhibit demonstrates, only 8 cents (21%) of the 37.5 cents gas tax collected on each gallon of fuel is available to operate, maintain, and improve the transportation system. Given this challenging financial situation it is necessary for the WSDOT, and its partners to think of, and approach, transportation investments in a strategic manner.



### Recommendations and Planning Level Cost Estimates

In addition to levels of service and speed performance of the system the evaluation criteria also considered how a proposed improvement affected “Economy, Transportation, and Community” or “ETC.” The intent of looking at ETC was to get a fuller picture of how a recommended improvement would benefit the community as a whole, not just the study corridor itself. For example, would a proposed recommendation enhance freight movement or improve access to Transit Oriented Development, promote energy conservation, or improve safety? Further discussion of the evaluation criteria can be found in Chapter 5: “Improvement Recommendations.”

The recommendations identified for the SR 516 corridor between SR 167 and SR 169 were developed recognizing the current financial situation and adhering to the Moving Washington policy goals of safety, maintenance & preservation, efficiency, demand management, and strategic capacity improvements.

**Maintenance** – The current pavement management system program and maintenance needs identification using the maintenance work log for the facility should continue.

**Safety** – There are currently no collision analysis locations, collision analysis corridors, or intersection analysis locations on the study segment of SR 516. Recommend monitoring the results of the grant improvements, once completed. Continue enforcement of traffic laws and monitoring collision data along the corridor to determine if any segment or location exhibits a need for additional analysis. To make the corridor safer, WSDOT encourages jurisdictions to manage access, consider roundabouts where applicable, and consider the elimination of two way left turn lanes for roadway segments over 25,000 average daily traffic volumes. The city of Kent has received a safety grant to look at and improve a portion of the corridor for bicyclists and pedestrians near the Kent-Meridian HS. Completion date for the grant work is estimated to be July of 2013.

**Efficiency** – This report again recommends a continued focus on access management for the full length of the study corridor. Signal operations should be optimized, with both WSDOT operated and city operated signals being coordinated throughout the study corridor. Only after the efficiency of the existing facility had been maximized, were any strategic capacity improvements additionally recommended.

**Demand Management DM** – Demand management options should be considered and incorporated whenever possible with new development or as adopted policy within local ordinances. Recommendations to expand DM for this corridor include expanded bus service, vanpool promotion, employer engagement, vanpool relocation with coaching, and

## EXECUTIVE SUMMARY

outreach and incentives for commuters. A continued focus on completing the walk and bike routes along the corridor will also help in reducing vehicular demand.

**Strategic Capacity addition** – Capacity recommendations were sequenced by short, mid, and long term. Recommendations were based on performance standards not being met. Timing of recommendations looks at the projected mobility needs, establishes the timeframe that the needs will exist within the corridor, and offers a logical sequence for future improvement implementation. These time periods are not associated with actual funding and those recommendations with a relative low benefit to cost ratio (B/C) will not prioritize well for funding from the state transportation budget. This plan identifies one near term, two mid term, and eight long term recommendations for strategic capacity additions. Cost estimates for the near and mid term recommendations range between \$3.5M to \$19.5M and are in 2011 dollars. All cost estimates are based on less than one percent design. Prior to implementation, these recommendations will require more analysis and design to determine the most cost effective solutions. As the economy recovers or traffic conditions change, the data should be updated or reevaluated if future conditions along the corridor evolve differently than anticipated in this study.

### **Strategic Capacity Recommendations for SR 516**

The proposed improvement recommendations in this study will need to compete with other proposed improvements around the state for funding based on performance outcome. Partner agencies can use the list of proposed improvement recommendations along the study corridor to solicit funding from local, and federal sources; and from the private sector for project design, environmental review, right-of-way acquisition, and construction.

## EXECUTIVE SUMMARY

<b>Improvement</b>	<b>Location</b>	<b>Cost Estimate (2011 dollars)*</b>	<b>B/C estimate***</b>	<b>Other benefits</b>
<b>Near Term –</b> Widening to five lanes, with bike lanes and sidewalks	West of Jenkins Creek to 185th Ave SE	\$10.6M to \$15.2M	0.9 to 0.6  (Ratio does not include past or current investments in this area. Ratio will improve if these are considered.)	Fish barrier removal, improved safety (motorized and non motorized), increased non-motorized access and usage of the corridor (sidewalks and bike lanes), transit reliability, safe routes to school, support local economic development.
<b>Mid Term –</b> Intersection Improvements	SR 515/ 104th Ave SE	\$3.5M** to \$19.5M	7.5** to 5.7	Improved safety (motorized and non motorized), and transit reliability.
<b>Mid Term –</b> Widening to five lanes, with bike lanes and sidewalks	185th Ave SE to 192nd Ave SE	\$10.2M to \$13.6M	0.7 to 0.6  (Travel time savings extend beyond this segment, but are not included in the ratio shown)	Improved safety (motorized and non motorized), increased non-motorized access and usage of the corridor (sidewalks and bike lanes), transit reliability, safe routes to school, and support local economic development.

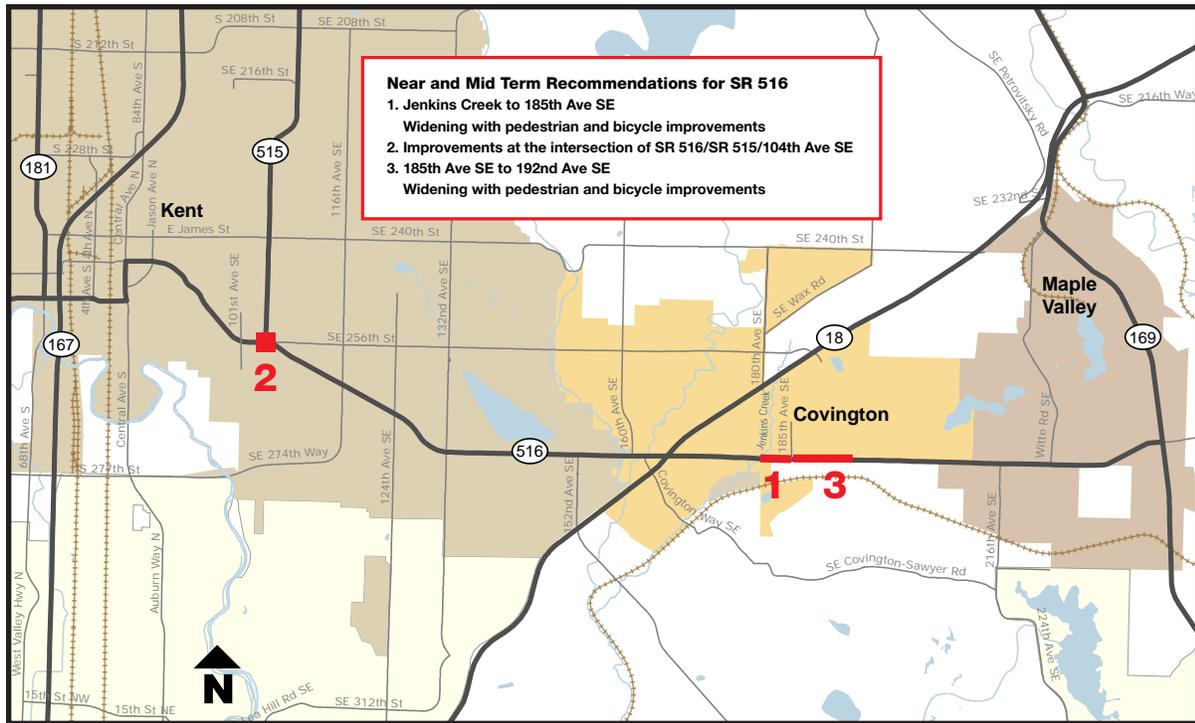
\* Due to other, existing, state transportation needs and limited budget, local funding may be needed for implementation.

\*\* Lower cost improvements with higher B/C are more likely to be considered for state funding.

\*\*\* Only travel time savings within the segment recommended for improvement are included in the benefit to cost ratio (B/C) calculation. B/C is only one of several factors considered in making the recommendations. Other benefits exist that may be less tangible from a purely economic standpoint, but important to society as a whole.

# EXECUTIVE SUMMARY

## Near and Mid Term Recommendation Locations



### Long term Recommendations \*

- Intersection improvements at SR 516/Central Avenue N
- Intersection improvements at SR 516/SE 256th St
- Intersection improvements at SR 516/108th Avenue SE
- Intersection improvements at SR 516/132nd Ave SE
- Intersection improvements at SR 516/152nd Avenue SE
- Intersection improvements at SR 516/172nd Avenue SE
- Intersection improvements at SR 516/SE Wax Road
- Capacity improvements from 192nd Ave SE to 216th Ave SE

\* Long term needs are identified, but specific improvements strategies are not supplied due to a high level of uncertainty associated with those needs. This approach allows greater flexibility in addressing future needs when they occur, and allows the use of future technology to improve traffic operations and provide better transportation mobility.

## EXECUTIVE SUMMARY

### **Railroad Crossing Analysis**

One of the objectives of this study was to analyze the interchange area of SR 516, SR 181, SR 167 and the traffic interactions with the at grade crossings at the Union Pacific and BNSF rail lines within the vicinity of these interchanges. The principal focus was on the UP line due to its proximity to the interchange area. This study did not find justification for making a recommendation for grade separated crossings at those locations. The study and analysis for this area did not model for any improvements on SR 167, nor increases in rail traffic. Should improvements move forward on SR 167, or railway traffic increase in the future, further study by the responsible agency should be conducted to determine impacts on traffic flow and emergency vehicle access in regards to railroad crossing operations.

At the conclusion of this study a proposal surfaced to increase coal shipments on the BNSF line from the Montana and Wyoming areas to a terminal in Bellingham. This proposal should be closely monitored. If it moves forward, the RR/roadway analysis will need to be updated to determine the effects increased rail activity could have on traffic operations of the SR 516 corridor.

### **Next Steps**

While this study does not guarantee funding for the proposed recommendations, it does allow future consideration for funding requests to be focused on near term improvement recommendations subject to competition with other similar projects around the state based on performance outcome.

The recommendations will be considered for incorporation into the State Highway System Plan (HSP) the PSRC's metropolitan transportation plan (Transportation 2040) and respective county and city comprehensive plans.

# **CHAPTER 1**

## **Introduction and Background**

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### 1.3 Who Was Involved in the SR 516 Corridor Study?

The study was led by WSDOT's Urban Planning Office with assistance from a study-area specific stakeholders group to provide input and insight into the transportation concerns of their respective cities and agencies. The stakeholders group also acted as a sounding board for the development of the recommendations. The stakeholders group was composed of a mix of transportation planners, engineers, managers, and policy makers from the cities of Black Diamond, Covington, Kent, and Maple Valley; along with regional planning and transit agencies.

The Stakeholders included:

- City of Black Diamond
- City of Covington
- City of Kent
- City of Maple Valley
- King County Metro Transit
- Puget Sound Regional Council
- WSDOT

### 1.4 The Corridor Plan Vision and Study Goals

At the beginning of the corridor study, the Stakeholders adopted a vision for the corridor plan that would help guide the development of recommendations for the corridor that would allow it to continue to operate over the coming decades. This corridor vision is in alignment with the Governor's Connecting Washington Task Force's ten year strategy to promote principle based investments critical to Washington's economic future. The vision is also in agreement with WSDOT's Moving Washington principles and strategies.

**The SR 516 corridor plan vision is:**

*A set of consensus-based, multimodal, and sustainable recommendations for SR 516 between SR 167 and SR 169 that are based on improved safety, improved throughput of people and goods, managed access, and preparation for future population and employment growth.*

The following goals support the vision and helped guide the study process and influenced development of the recommendations.

Develop improvement recommendations that:

- comply with ESHB 1175
- implement Moving Washington by developing improvement recommendations that are sustainable and focus on maintenance, preservation, safety, efficient operations, demand management, and adding capacity strategically
- leverage funding from public and private resources
- promote economic development and job creation
- advance the Connecting Washington investment principles
- are in alignment with the legislature's six investment guidelines found in RCW 47.04.280. Those guidelines are: economic vitality, preservation, safety, mobility, environment, and stewardship.

### **1.5 What are the Key Topics Reviewed by the Corridor Study?**

- Future population growth along the corridor
- Existing choke point at Jenkins Creek in Covington
- Two, at grade, railroad crossings in Kent, especially the Union Pacific line and its close proximity to the SR 167 ramps
- Existing environmental conditions

### **1.6 What was the Planning Process for the SR 516 Corridor Study?**

The study process engaged local jurisdictions and agencies to help identify transportation-related needs and develop, evaluate, and select recommendations. To identify transportation needs the following areas of interest were considered:

- population and employment growth
- where future development is planned to occur
- environmental issues and constraints

- future travel demand and projected deficiencies
- public and local agency input.

The typical planning process is shown in Figure 1-1 and includes the following steps:

**Establish a Stakeholders or Corridor Working Group** composed of staff from local and regional agencies. The stakeholders provide input on the transportation safety and mobility needs and potential projects for the SR 516 Corridor Planning Study area.

**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.

**Identify needs and potential projects** to improve safety and address preservation and mobility needs within the limits of the SR 516 study area.

**Evaluate potential projects** using criteria based on RCWs, planning policies, and guidelines in the corridor planning study.

**Formulate draft recommendations** based upon results of evaluation of potential projects.

**Stakeholders review the proposed recommendations** for the SR 516 Corridor Planning Study.

**Issue draft corridor planning study** documenting the study process, findings, and proposed recommendations.

**WSDOT publishes the SR 516 Corridor Planning Study final report.**

Figure 1-1: Typical Corridor Planning Study Process



## 1.7 State Policies

The study recommendations are consistent with the six investment guidelines set forth in RCW 47.04.280 which states that public investments in transportation should support achievement of the following six policy goals:

1. **Economic Vitality:** To promote and develop transportation systems that stimulate, support, and enhance the movement of people and goods to ensure a prosperous economy
2. **Preservation:** To maintain, preserve, and extend the life and utility of prior investments in transportation systems and services
3. **Safety:** To provide for and improve the safety and security of transportation customers and the transportation system
4. **Mobility:** To improve the predictable movement of goods and people throughout Washington State
5. **Environment:** To ensure Washington’s quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment
6. **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 that WSDOT first assess strategies to enhance operational efficiency of the existing system before expanding the system. Strategies to improve operational efficiencies include transportation systems management in the form of signal timing optimization. Transportation demand management strategies are also included.

### ***Moving Washington:***

Moving Washington is WSDOT’s framework for making decisions for transportation investments that focus on keeping people and goods moving and supporting a healthy economy, environment, and communities. This framework is anchored by the Department’s highest priority: maintaining and preserving the safe and long-lasting performance of existing infrastructure, facilities and services. This is the heart of Moving Washington and the primary target of the Department’s investments.



Moving Washington combines three strategies to achieve and align the objectives of WSDOT and its partners: manage demand, operate efficiently, and add capacity strategically. It is through the application of these strategies that the Department is able to ensure that investments are integrated and solutions are cost-effective.

Following is a brief description of the Moving Washington strategies.

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

Visit the following website for more information on Moving Washington:

<http://www.wsdot.wa.gov/movingwashington>

### **Washington Transportation Plan**

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

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

### **WSDOT Highway System Plan**

The Washington State Highway System Plan (HSP) is the state highway component of the Washington State Multimodal Transportation Plan (SMTP). The SMTP is the state’s overall transportation plan that includes facilities the state owns and operates 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, the two-year biennial budget request to the state legislature, and the ten-year Capital Improvement and Preservation Program. The HSP update is

## CHAPTER ONE | INTRODUCTION AND BACKGROUND

accomplished through the coordination and integration of specific components from many corridor plans state wide. The HSP is also aligned to the Washington Transportation Plan (WTP), which outlines the policies adopted by the Washington State Transportation Commission. The SR 516 Corridor Plan advances and refines recommendations within the WSDOT HSP by providing a more in-depth analysis of current and future needs along this specific corridor.

WSDOT's goal is to create a long-range plan that provides decision-makers with the most cost-effective strategies to maintain the state wide transportation system's integrity, safety, and user mobility. This is accomplished through a continual system-wide performance measuring and monitoring program, where WSDOT collects and analyzes data to determine current and future performance of the highway system. Assets that do not meet established performance threshold criteria are identified as needs. WSDOT develops cost-effective strategies, based on analysis of performance outcomes and best management practices (both national and international), to provide high benefit solutions for identified needs. WSDOT's policy, Moving Washington, aims first to keep the transportation system safe, maintain and preserve the system, and improve the operating efficiency of the existing highway system before considering strategically adding capacity.

The funding process at WSDOT includes four major programs: Maintenance, Operations, Preservation, and Improvement. Operational, maintenance and preservation schedules were evaluated for the study segment prior to looking into improvement scenarios. The current programs were reviewed, and recent and future work under those categories was considered. Any programmed improvements for the corridor are included within the future traffic analysis for this corridor study. The Operations, Maintenance and Preservation program develops projects that are prioritized by WSDOT using analytic processes that maximize benefit for the funding available. The Improvement funding program at WSDOT has five subprograms: Highway Mobility (I-1), Highway Safety (I-2), Economic Initiatives (I-3), Environmental Retrofit (I-4), and Public/Private Partnerships. Projects requiring funding within the programs are identified and included in the HSP. Apart from highway funding programs, some other important aspects of the corridor transportation system such as demand management, transit, and local roads are funded through other programs like regional mobility grants, vanpool investment program grants, safe route to schools, and others.

There are no SR 516 projects listed in the 2007-2026 HSP.

### **WSDOT Programming and Prioritization Process**

The Washington State Department of Transportation has a process for prioritizing projects to ensure that taxpayers get the most value for the dollars spent. This prioritization process is spelled out in the Revised Code of Washington (RCW 47.05). A simplified explanation of this process includes the following steps:

1. Identify a problem or deficiency
2. Explore possible solutions
3. Develop a scope for the project, which takes into consideration possible environmental impacts, roadway design issues, and stakeholder concerns
4. Based on the project scope, develop a cost estimate or estimated range
5. Determine the benefit the project will provide
6. Compare the costs and benefits of this project with other projects of its type to determine its order of rank and priority.

## **1.8 Consistency with Other Plans**

The planning of a state owned transportation facility must include coordination with all the affected users and participants. As such, the SR 516 CPS has reviewed and considered local and regional plans in the process of creating this planning document.

### **Regional Plans**

#### **Vision 2040**

Vision 2040 is the Puget Sound Regional Council's (PSRC) framework for long-range transportation planning in King, Pierce, Kitsap and Snohomish counties by integrating freight, ferries, highways, local roads, transit, bicycling, and walking. The regional perspective for transportation recognizes the critical link between transportation, land use planning, economic development, and the environment. The study recommendations support the three transportation goals of VISION 2040 listed below.

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

## Transportation 2040

Transportation 2040 is the region’s 30-year transportation plan that 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 is the current transportation plan adopted by PSRC. This regional plan focuses on the transportation system investments needed to provide an integrated, multimodal transportation system in the Central Puget Sound. For transportation projects to receive federal funding, they must be consistent with and included in this regional transportation plan. The regional plan incorporates several options for managing congestion and sustaining mobility into the future. These options are in general agreement with Moving Washington and include; land use planning, managing system demand, transportation system management and operations, and finally, strategic capacity expansion. Specific capacity improvements within the plan include the following listed projects, sponsor, estimated cost, current status, and a brief description of the project:

### **KENT**

Willis St grade (RR) separations – SR 167 to Central Ave. / Kent sponsored / \$81,000,000 estimated cost

Description – Provides a critical, grade-separated link through the commercial/industrial/central area of Kent. Links the valley warehouse/industrial center to SR 167 and I-5.

(Note – Willis Street is the local name for SR 516. This project includes both Union Pacific & BNSF railroad line grade separations. The status of this project is “candidate” which means it is included within PSRC’s constrained plan, but not yet approved for right of way or construction funding.)

### **COVINGTON**

SR 516 – Jenkins Creek to 185th Pl. / Covington sponsored / \$13,000,000 estimated cost

Description – This project is to widen and reconstruct a portion of SR 516 (SE 272nd St) between Jenkins Creek and 185th Place SE. This project will include the crossing of Jenkins Creek with a new structure for the stream, widening the street from 2-lanes to 5-lanes including curb and gutter, 8’ sidewalks, access control features, landscaping and provisions for u-turns.

(Note – The city of Covington has received some funding for, and is currently working on portions of the design for this project. They are actively seeking additional funding for its completion. The status of this project is “candidate” which means it is included within PSRC’s constrained plan, but not yet approved for right of way or construction funding.)

**MAPLE VALLEY**

SR 516 – 213th Pl SE to SR 169 / Maple Valley sponsored / \$4,000,000 estimated cost

Description – Widening from 2 to 4 lanes, center turn lane/ left turn pockets, bike lanes and sidewalks (from 213th SE to SR 169).

(Note – This project may be modified to match the updated version of Maple Valley’s comprehensive plan seen below. The status of this project is “unprogrammed” which means it is not yet admitted to PSRC’s constrained plan, and only eligible for study funding.)

Visit the following websites for more information on Vision 2040 and Transportation 2040:

- <http://psrc.org/growth/vision2040>
- <http://psrc.org/transportation/t2040>

In general, the HSP and T-2040 are consistent. Differences occur primarily due to the time span being considered (20 years for the HSP versus 30 years for the T-2040). The updated edition of the HSP will contain all projects on state facilities listed in T-2040, with those not within the 20 year timeframe of the HSP listed as unprogrammed (unfunded) regional plans and projects.

**Local Comprehensive and Transportation Plans**

Local planning serves to emphasize the anticipated needs of the population located closest to the study area. Local plans include the Transportation Element within the Comprehensive Plan as well as a Transportation Improvement Plan (TIP). Each jurisdiction’s planning documents serve as a tool that helps guide their growth, as well as a reference to adjoining jurisdictions and service providers (such as WSDOT) of what the different city’s goals are.

The city of Covington’s transportation element includes the following projects within their 20 year horizon (December 2009 Comprehensive Plan).

**Table 1-1: Covington Transportation Plan List of SR 516 Projects (Unfunded)**

Street	Limits	Description
SE 272nd St (SR 516)	SE Wax Rd. to 192nd Avenue SE	Add 2 Through Lanes, Turn lanes, Sidewalks and median
SE 272nd St (SR 516)	160th Ave SE to 164th Ave SE	Add 2 Right Turn Lanes, Bike Lanes, Sidewalks

## CHAPTER ONE | INTRODUCTION AND BACKGROUND

In October of 2011, the city of Maple Valley updated the transportation element of its comprehensive plan. The following is a copy of the city’s current plan related to projects involving SR 516:

**Table 1-2: Maple Valley Transportation Plan List of SR 516 Projects (Unfunded)**

<b>SR 516 Improvements (SE Kent-Kangley Road)</b>		
<b>Location</b>	<b>Description</b>	<b>Estimate in \$1,000</b>
SR 516 (213th Ave SE to 218th Ave SE) Phase A	Widen to 3 lanes. Add EBR turn lane at 216th Ave SE intersection. Install new curb, gutter, bike lane, and sidewalk on the north side for the entire length and the south side west of 216th Ave SE.	\$4,600
SR 516 207th Ave SE to 216th Ave SE) Phase B	Construct second EB lane on SR 516 from west city limit to 216th Ave SE. Construct second WB lane on SR 516 from 1,000 ft east of 216th Ave SE to west city limit. Include curb, gutter, bike lanes, and sidewalks. Provide center left turn lane/ pockets where warranted. Improve 216th Ave SE intersection.	\$4,320
SR 516 (218th Ave SE to 228th Ave SE) Phase C	Widen to 3 lanes. Install new curb, gutter, bike lane, and sidewalk on the south side for the entire length and the north side west of Witte Road. Construct center left turn lane/pockets, where warranted. Construct NB right-turn lane. Left-turn signal pockets and signal phasing provided at each approach.	\$4,860
SR 516 (228th Ave SE to 236th Ave SE) Phase D	Widen to 3 lanes. Install new curb, gutter, bike lane, and sidewalk on both sides. Construct center left-turn lane/ pockets, where warranted.	\$3,870

## 1.9 History of SR 516

In 1937, the Secondary State Highway (SSH) 5A was added to the state highway system of Washington. This route began at a junction with the Maple Valley branch of Public State Highway (PSH) 5 (now SR 169) at Summit, (now the Four Corners area in Maple Valley), and headed west via Kent to a junction with PSH 1 (now SR 99) at Midway. Another segment, SSH 1K, was a highway between Des Moines and I-5. In 1964, SSH 1K and SSH 5A combined and became SR 516.

Current day SR 516 starts at SR509 at the intersection of Marine View Dr and Kent-Des Moines Rd in Downtown Des Moines. SR 516 heads east, crossing SR 99/Pacific Hwy S and I-5 at Midway. Since April 1, 1992, SR 509 has shared the same roadway with SR 516 from Downtown Des Moines to SR 99. This section of highway is only posted as SR 516, however. Continuing east, SR 516 descends into the Green River Valley and goes through Kent, connecting to SR 181 and SR 167. Originally, SR 516 passed through Downtown Kent. The highway was upgraded to a 4 lane divided expressway from I-5 to W Meeker St and a new expressway was built from W Meeker to SR 167 in the 1980s. This allowed SR 516 to skirt the south and east sides of downtown Kent. Continuing easterly from downtown Kent, SR 516 climbs back out of the Green River Valley. At the top of the hill, SR 516 intersects with SR 515. SR 516 continues easterly along the Kent-Kangley Rd., intersects with SR 18 at Covington, and ends at SR 169 in Maple Valley. The Kent-Kangley Rd continues to the east as a city street/county road to Kangley. Today, SR 516 is 16.49 miles long.

# **CHAPTER 2**

## **The Study Process and Methodology**

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## CHAPTER 2: THE STUDY PROCESS AND METHODOLOGY

The study process consisted of collecting data about the study corridor. The general corridor vicinity data included current and future land uses, anticipated population growth, local traffic systems, long range local plans, and transit service. Specific highway data collected included maintenance, preservation, safety, environmental, and mobility conditions associated with the facility. In keeping with Moving Washington, WSDOT's principles for making reliable, responsible and sustainable decisions; maintenance, safety, and preservation practices and procedures were examined first. Then the corridor is studied to determine if there are operational changes that will make the existing corridor operate more efficiently. Next, strategies are looked at to determine if demand for the available capacity can be managed better. Finally, travel demand modeling is then applied to determine if any capacity improvements may be justified. The current conditions are entered into a model which forecasts a future conditions scenario utilizing local and regional long range plans as well as any recommendations and expected benefits derived from the earlier work. The model helps to determine if mobility needs will exist and when they may be expected. If justified, strategic capacity modifications to the transportation network are then considered and recommended. In making any recommendation, environmental issues, costs, local interest, risks, and other factors are considered as an integral part of the identification of needs process.

The public participation process used in developing the SR 516 Corridor Plan consisted of a Corridor Working Group (CWG) comprised of interested stakeholder jurisdictions along the study corridor. The CWG members represented their community's and elected officials perspectives and interests on issues facing the study corridor. A project website [[www.wsdot.wa.gov/planning/Studies/SR516Corridor](http://www.wsdot.wa.gov/planning/Studies/SR516Corridor)] was developed to inform the public of the study's progress. Communication with the public was accomplished using the website and distribution to the stakeholder jurisdictions of an information sheet with website and contact information. The Muckleshoot and Yakama tribes were invited to participate in the study, as well as local, county, state, and federal elected officials representing the affected jurisdictions.

### 2.1 Stakeholder Involvement

Early in the corridor planning process, the Washington State Department of Transportation (WSDOT) staff met with or contacted various parties to inform them of the up-coming study and obtain their input about transportation issues along the corridor. The parties

contacted by WSDOT were: the cities of Black Diamond, Covington, Kent, and Maple Valley; King County Metro, Puget Sound Regional Council, Sound Transit, Yakama Tribe, Muckleshoot Tribe, Cascade Bicycle Club, Middle Green River Coalition, and elected representatives.

These outreach efforts were made to publicize the study and engage individuals with a strong interest in transportation issues to represent their jurisdictions or agencies on the Corridor Working Group (CWG) committee. The CWG acted as both a focus and advisory group that helped build the vision for the corridor, generate solutions for corridor improvements, consider community opinion, and support the recommendations to be included in the final plan.

The CWG members' understanding and appreciation of the transportation issues regarding their particular areas of interest were an important component in informing WSDOT staff of local transportation issues and developing recommendations inclusive of their diverse interests.

### **2.1.1 Corridor Working Group Membership and Meetings**

The CWG represented the communities along and near the corridor. The consistent attendance and commitment on the part of the CWG members was a crucial factor in the success of the study. The committee met three times between September 2010 and November 2011. The corridor working group consisted of the following members:

- City of Black Diamond
- City of Covington
- City of Kent
- City of Maple Valley
- King County Metro
- Puget Sound Regional Council
- WSDOT

Formal CWG meetings were held on September 27, 2010; June 16, 2011; and November 16, 2011 at Covington City Hall. There were a number of more informal meetings with individual members as well as multiple phone and e-mail communications.

## 2.2 Study Methodologies

The study methodologies set the parameters that were used to analyze the performance of the corridor and determine if safety, maintenance, preservation, environmental, and/or operational issues existed along the corridor. The results helped guide the creation of a plan that includes a list of near (first six years), middle (second six years), and long-term (eight years more) needs and possible recommendations addressing existing and future issues along this route, consistent with the plan vision and Moving Washington. In cases of longer term needs, specific recommendations as to the best way to address those needs are not given. The purpose of this strategy is to provide flexibility in determining a solution and allow future technologies and approaches to be considered and utilized if appropriate.

The study area for the traffic analysis includes SR 516 from SR 167 (State Route Mile Post SRMP 4.65) east to the SR 169 intersection in Maple Valley, (SRMP 16.22) for a total of 11.57 miles. The study corridor is within the cities of Kent, Covington and Maple Valley; but the travel demand forecasts were done for a larger area covering the cities of Kent, Covington, Maple Valley and Black Diamond. Figure 2-1 presents the SR 516 corridor section that was analyzed for the study.

A total of 26 intersections were analyzed on this corridor. These intersections were identified by the CWG as being the most critical to the corridor's operation. All of the intersections analyzed were signalized. Figure 2-2 shows the study intersection locations. Intersections were chosen based on demand, consultations with various WSDOT traffic and engineering divisions, and with the Corridor Working Group.

The analysis years were 2009 for current conditions (due to availability of data); 2016, 2022, and 2030 for future conditions. Both AM and PM peaks (rush hours) were modeled for the analysis.

Figure 2-1: Corridor Study Limits

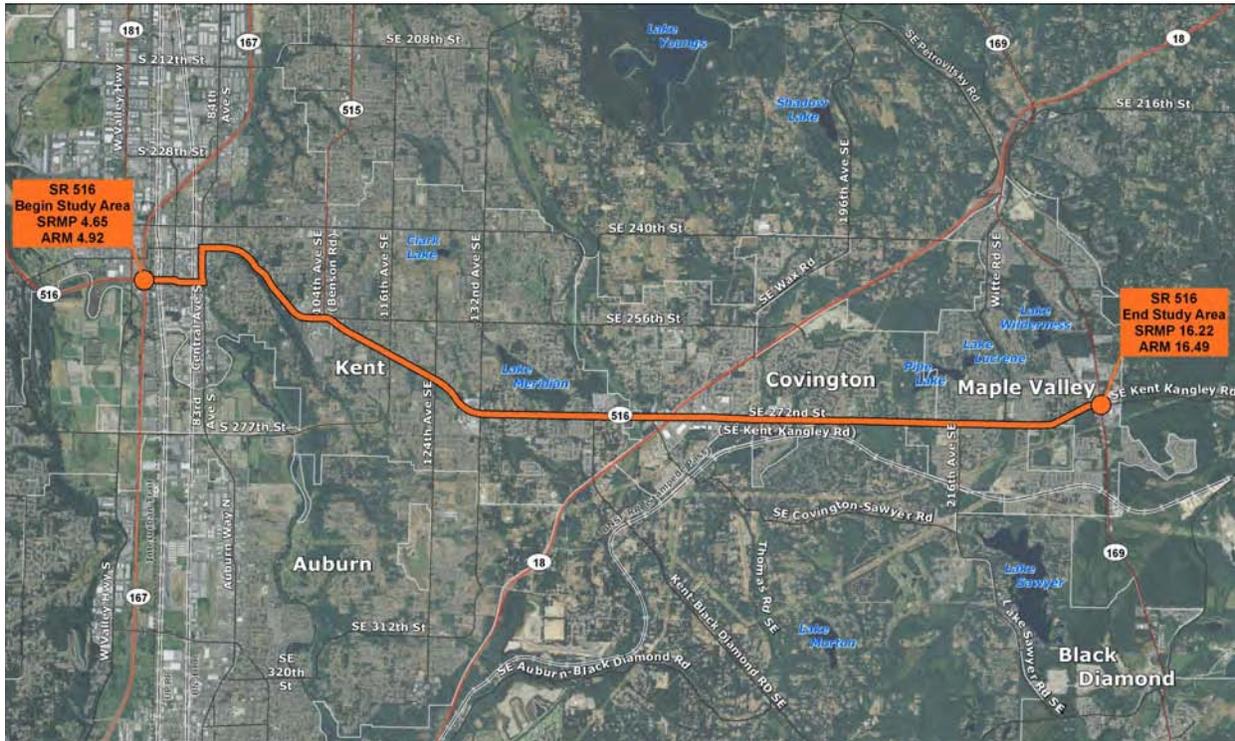


Figure 2-2: Intersections Analyzed



**Table 2-1: Intersection Locations**

Int. #	SR 516 Corridor Study Intersections	
	MP	LOCATION
1	4.52	SR 181
2	4.66	SR 167 SB RAMPS
3	4.72	SR 167 NB RAMPS
4	4.98	S 4th Ave
5	5.30	Central Ave N
6	5.68	Central Ave/E Smith
7	7.34	104th Ave
8	7.40	SE 256th St.
9	7.62	108th Ave
10	8.18	116th Ave SE
11	8.73	124th Ave SE
12	9.38	132nd Ave SE
13	10.61	152nd Ave SE
14	11.26	SE Covington - Sawyer Road
15	11.37	164th Ave SE
16	11.42	SR 18 WB RAMPS
17	11.51	SR 18 EB RAMPS
18	11.65	168th Place SE
19	11.87	172nd Ave SE
20	12.10	Wax Road
21	12.66	185th Ave SE
22	13.11	192nd Ave SE
23	14.63	216th Ave SE
24	15.10	Witte Road
25	15.38	228th Ave SE
26	16.22	SR 169

### 2.2.1 Travel Demand Forecast

The travel demand forecasts from the Puget Sound Regional Council's (PSRC) regional travel demand model were used, incorporating data from the Kent and Maple Valley traffic models. The zone structure in the PSRC model is larger than the Kent and Maple Valley models. That is, it looks at the trends of growth and land use from a more regional perspective. The land use used in the city models as input was compared with the PSRC land use model for reasonability for the years modeled. The Kent and Maple Valley models have a finer zone system and better land use distribution information around the more immediate corridor. Using PSRC's model, in conjunction with the Kent and Maple Valley models, provides both a look at the AM and PM conditions, and the most realistic projections for the corridor's future condition.

The combination of the city traffic models' datasets and PSRC's traffic demand model were used to forecast growth factors for the intersections and individual segments on this corridor. The 2016, 2022, and 2030 baseline roadway networks were assumed and modeled to have existing facilities plus road improvement projects that were actually funded. The comprehensive land use plans and transportation improvement programs (TIPs) for the cities of Kent, Covington, and Maple Valley, as well as for King County and WSDOT were used to identify funded projects. As agreed to with the CWG, unfunded projects were considered but not factored into the traffic model analysis. Kent and Maple Valley models forecast demand for the PM peak hour only. The PSRC model was used to estimate AM growth factors. The roadway segments in the study corridor were analyzed using SYNCHRO and SIMTRAFFIC simulation modeling software packages and HCM methodologies. The methods and assumptions are included in Appendix D, Traffic Analysis.

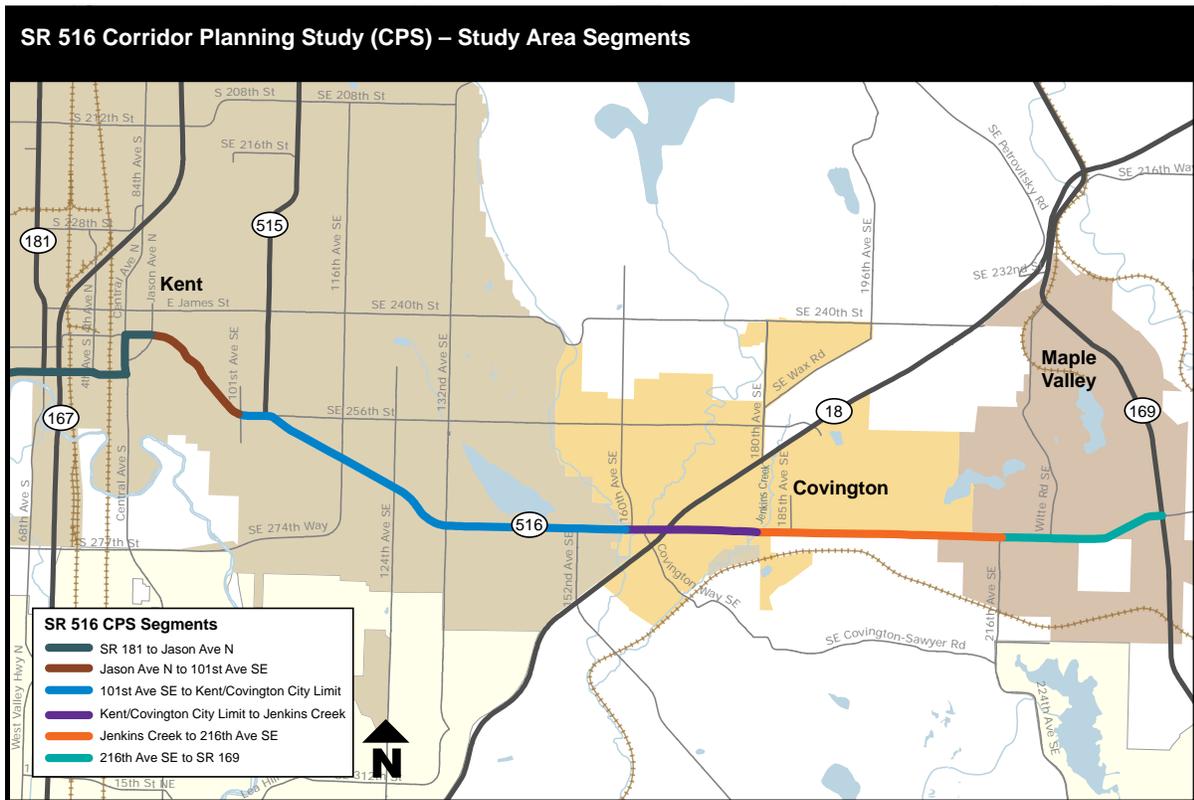
### 2.2.2 Identification of Potential Operational Issues

Mobility performance measures were established to set a benchmark for establishing potential operational issues along the corridor. Various performance measures to evaluate the corridor are shown below:

- Level of Service at intersections
- Operating speed on segments in future with and without correction measures
- Delay by approach (and movement where necessary) for each intersection
- HCM Corridor LOS by segment
- Vehicle Miles Traveled (VMT) by segment
- Maximum throughput for each segment – before and after comparison
- Travel time on various segments of the corridor

Thresholds for mobility needs identification were established by WSDOT using Moving Washington policies instead of design manual standards. The intersection Level of Service (LOS) was evaluated using an LOS below E as the threshold for evaluating an intersection’s performance. In addition, delay in seconds by approach and movement was evaluated for reasonableness. SimTraffic, commercial software for simulation models was used to find the travel time for each segment by direction and was used to measure future segment delay with and without proposed improvements. This information was used to calculate future operating speeds on the corridor by segment with and without proposed correction measures. Segment performance was determined by looking at the operating speeds on the corridor and comparing that to a standard of 70% of posted speed. Segments operating below 70% of posted speed during peak conditions were considered a need and became a prospective candidate for further study. The analyzed segments can be seen in Figure 2-3.

Figure 2-3: Study Segments Used for Analysis



While the thresholds were important to establish a baseline for operational issues and subsequent project consideration, they were not the only parameter used to establish a list of needs. Some mobility needs were offset by other factors such as a low return in increased mobility relative to the cost, environmental concerns, lack of local support, and if a recommendation was not deemed as being feasible.

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# **CHAPTER 3**

## **Existing Route Characteristics & Conditions**

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## CHAPTER 3: EXISTING ROUTE CHARACTERISTICS AND CONDITIONS

This chapter contains information about the existing conditions and characteristics of SR 516 from SR 167 in Kent to SR 169 in Maple Valley from mile post [SRMP] 4.52 to SRMP 16.22 (see “Study Corridor” map in Figure 3-1.) Traveling east along the study corridor, local names for SR 516 include S Kent Des Moines Road, Willis Street, Central Avenue, E Smith Street, Canyon Drive, SE 256th Street, SE Kent Kangley Road, and SE 272nd Street. The information in this chapter includes the physical and functional characteristics of the corridor, existing roadside and environmental issues, surrounding land use, and traffic operations based on current traffic volumes.

Figure 3-1: Study Corridor Map



### 3.1 SR 516 and the Transportation Network

SR 516, located in King County, is an east-west arterial that begins at the intersection of SR 509 in Des Moines and ends at SR 169 in Maple Valley, a total of 14.66 miles. The immediate area served by the study corridor (as defined by the legislation –ESSB 6381- that approved funding for the study) is bounded to the west by SR 167 in Kent (immediately to the east of SR 181) and to the east by SR 169 in the city of Maple Valley. The study corridor is used by commuter, local, commercial, recreational, freight, and non-motorized traffic.

There are a number of state highway connections with the study corridor. The westernmost portion of the study corridor (SRMP 4.52) has connections to SR 181 and SR 167. These two connections provide access to I-405 to Renton to the north. The connection to SR 167 provides access to Pierce County to the south, or to SR 18 and I-5. At MP 7.35, SR 516 connects with SR 515 (104th Avenue SE) providing access north to Renton. At the eastern end of the study corridor SR 516 (SRMP 16.22) connects to SR 169, providing access north to Renton and I-405 and south to Enumclaw and Pierce County. SR 516 also passes below SR 18 in Covington at SRMP 11.46 with ramp connections. SR 18 provides southwesterly connections to SR 167 and I-5 in Auburn and northeasterly connections up to and including I-90 in North Bend.

The only parallel local arterial serving east west travel needs for a portion of the length of the study corridor is SE 240th, located about two miles to the north of SR 516. Multiple local arterials feed into and out of the SR 516 study corridor. They include Central Avenue, S 277th St, 132nd Ave SE in Kent, Covington Way, SE Wax Rd in Covington, and 216th Ave SE and Witte Rd SE in Maple Valley.

The Puget Sound Regional Council's (PSRC) Land Use model and census data from 2010 were utilized to provide a snapshot of the corridor's principal uses as well as who is using the corridor. At the western portion, in the Kent area, the corridor serves commercial traffic as well as providing a commuting link to transit and non-transit users located to the east. As one travels east, the corridor is more commuter and local use oriented. The majority of travelers use only a portion of the study corridor to make another connection at an intersecting street or highway so it does not typically serve as a regional throughway, but rather a local use connector.

Census data indicates the area is populated with 28% under 18 years of age, and 9% 65 or older. The population within the study area census tracts is approximately 69% white, 7% African American, 11% Asian, and 10% Hispanic or other. Approximately 9% of the study area population falls below the poverty level. The majority of ethnic minorities, lower

income, and non-English speaking peoples reside in the Kent portion of the study area. PSRC's Coordinated Transit-Human Services Transportation Plan outlines how transit agencies, social service agencies, school districts, and other transportation providers can most efficiently and effectively work together to improve regional mobility for individuals with special transportation needs throughout King, Kitsap, Pierce, and Snohomish counties. The 2011-2014 Coordinated Transit Human Services Plan was adopted by PSRC's General Assembly on May 20, 2010. The plan can be accessed at: [www.psrc.org/transportation/special-needs](http://www.psrc.org/transportation/special-needs).

### **Freight**

The western terminus of the study area is utilized by a large volume of freight traffic. The rail lines operated by Union Pacific and BNSF carry large quantities of commercial goods, much of which is transferred to trucks for distribution throughout the valley area and other destinations. SR 167 is a primary freight route for the state. The eastern end of the study corridor, while carrying less total tonnage than the western end, does support resource based truck traffic. The 2011 WSDOT Freight and Goods Transportation System lists the entire 14.66 mile long SR 516 study corridor as T-2, with an annual tonnage amount of 4,650,000, and an average daily truck volume of 1,600 vehicles. The study corridor has at grade crossings with two rail lines, Union Pacific and BNSF. Both crossings are located at the western end of the study corridor.

### **Bike Facilities**

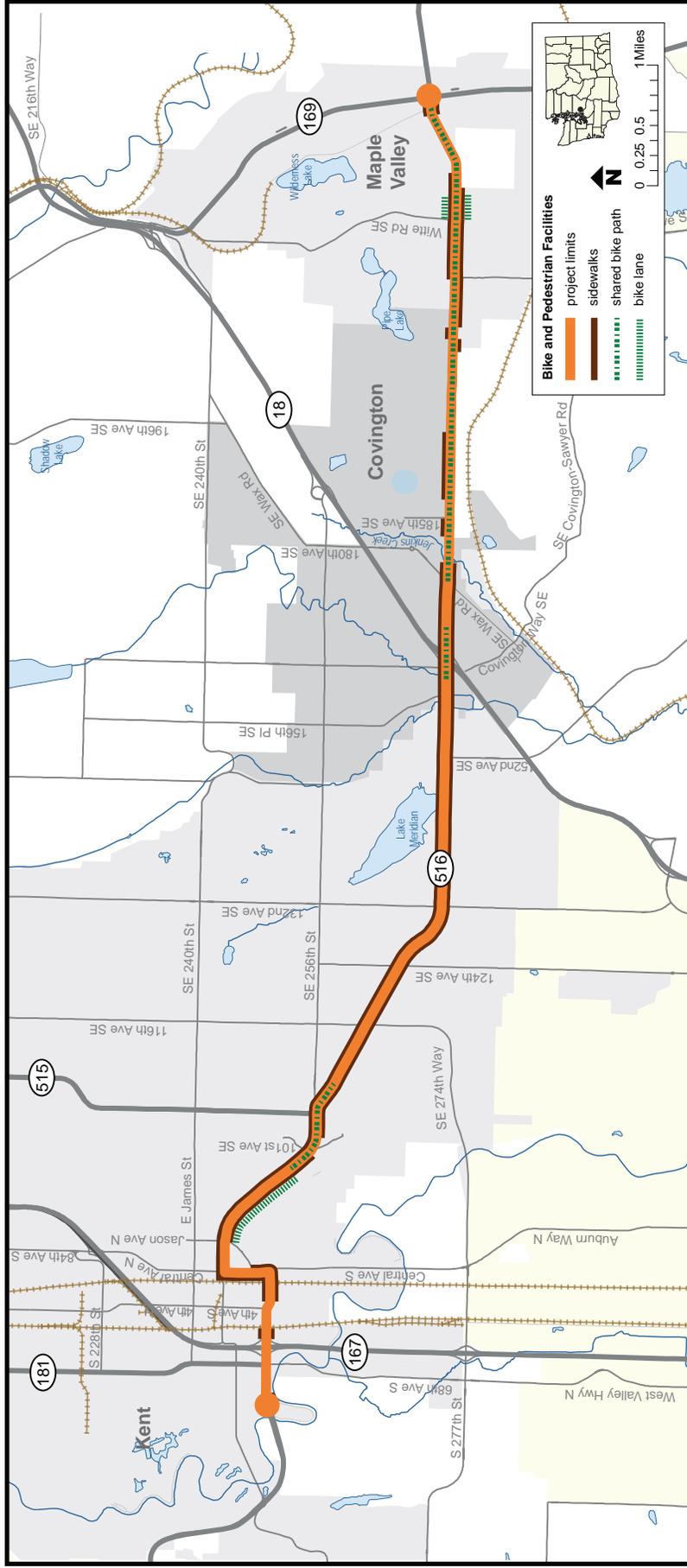
There are few designated bike lanes located along the study corridor. The city of Covington's Parks, Recreation & Open Space Plan shows the segment of SR 516 as a shared roadway from SE Wax Rd to SR 169. In Kent, between Jason Avenue and 252nd street (SRMP 5.95 to 6.72), there is a designated five foot bike lane on the south side of the highway intended for easterly (uphill) bike traffic. Between Witte Road and 228th Ave SE in Maple Valley (SRMP 15.10 to 15.38), there is a designated five foot bike lane on both sides of the roadway. The King County bicycle guide map shows a shared roadway designation between SE 256th and 108th SE, Covington Way SE to 164th Ave SE, and SE Wax Rd to SR 169.

### **Pedestrian Facilities-Sidewalks**

#### **South side**

Starting at SR 167 in Kent and traveling east, sidewalks are present on the south side of the roadway from the NBND SR 167 off-ramp to the RR crossing (SRMP 4.72 to 4.78), S 4th Avenue to Jason Ave/Titus St (SRMP 4.93 to 5.95), about 150 feet east of Jason Ave/Titus St to 97th Pl S (SRMP 5.98 to 6.91), 101st Avenue SE to Jenkins Creek in Covington

Figure 3-2: Sidewalk and Bicycle Facility Locations



(SRMP 7.13 to 12.24), 207th Ave SE to 208th Ave SE (SRMP 14.10 to 14.11), 211th Ave SE to 216th Ave SE (SRMP 14.34 to 14.63), about 450 feet to the west of 228th SE to about 10 feet east of 228th SE (SRMP 15.30 to 15.39), and the last 850 feet of the highway to SR 169 (SRMP 16.05 to 16.22).

**North side**

Sidewalk locations are from the NBND SR 167 on ramp to the UPRR crossing (SRMP 4.72 to 4.80), S 4th Ave to the west bank of Jenkins Creek (SRMP 4.97 to 12.29), about 370 feet west of the shopping center entrance to 185th Ave SE (SRMP 12.45 to 12.67), 186th Ave SE to Cedar Heights JHS (SRMP 12.75 to 13.37) about 130 feet at a bus pullout (SRMP 14.16 to 14.18), Witte Rd to about 700 feet east of 228th Ave SE, (SRMP 15.09 to 15.52) and the last 850 feet of the highway to SR 169 in Maple Valley (SRMP 16.05 to 16.22). See figure 3-2 for actual locations of bicycle and sidewalk facilities.

## **3.2 Functional Characteristics of the Highway**

Highway functions and operations are categorized by classifications. The information under the subheadings below provides an overview of the functional characteristics of the Study Corridor. Appendix A, Highway Classifications, contains general information about these classification systems and their relationship to funding and operations.

### **3.2.1 SR 516 Classifications**

Highway classifications determine the design standards required for route improvements, and affect the funding mechanisms controlling the improvements that can take place on the highway. Table 3-1 summarizes the classification status of the highway.

**Table 3-1: SR 516 Classifications**

<b>Classification System</b>	<b>Current Classification of SR 516 SRMP 4.52 to SRMP 16.22</b>
Federal Functional Class	U12 - Urban other freeway/expressway MP 4.52 to MP 4.99  U14 - Urban principal arterial MP 4.99 to MP 11.45  U16 - Urban minor arterial MP 11.45 to MP 16.22
State Functional Class	U1 Urban principal arterial MP 4.55 to MP 11.45  U2 Urban minor arterial MP 11.45 to MP 16.22
Highways of Statewide Significance (HSS)	Not HSS
National Highway System (NHS)	Not HSS
*Freight and Goods Trans. System (FGTS) Status	T2 – 4,000 to 10,000 tons annually MP 4.52 to MP 16.22
Scenic/Recreational	Not a Scenic Byway
Terrain	Level MP 4.52 to MP 5.68  Rolling MP 5.68 to MP 16.22

\* 2011 WSDOT Freight & Goods Transportation System (FGTS) Update

### 3.2.2 Access Classification

Access management is used to maintain the capacity and safety of a state highway. The objective is to control the disruptions to through traffic caused by vehicles entering and exiting the highway. National studies have shown that roadways with fewer driveways or access points are safer and capable of moving more cars per hour than roadways with numerous driveways and connecting streets. Managing the access along a highway can help maximize efficiency, reduce “strip” type development, increase safety, and reduce congestion.

There are two types of state highway access control, Limited Access and Managed Access. Limited Access Highways are highways in which the abutting property owner’s right of access to the state highway has been purchased by the state, with the result being that the

abutting property owner may or may not have access to the state highway. Limited Access Highways are further defined as Full, Partial, or Modified limited access control.

Managed Access Highways are all of the remaining state highways that are not already limited access highways. Managed Access Highways are highways in which access is regulated by the governmental entity having jurisdiction over the facility. Managed Access Highways are further classified from Class 1, the most restrictive, to Class 5, the least restrictive.

Access is governed by state law, specifically Chapter 47.50 of the Revised Code of Washington (RCW). The Washington State Department of Transportation (WSDOT) has developed Washington Administrative Code (WAC) 468-51 and 468-52 to implement this law. WAC 468-52 establishes five classification categories for non-limited-access highways. The five categories are based on surrounding land uses and highway function. Access spacing objectives are also specified in each highway classification, although these are subject to internal review and adjustment on a case-by-case basis. Driveways that were in place prior to 1991 were grandfathered when the Access Management Law (RCW 47.50) was enacted. Driveways constructed after 1991 or driveway connections to parcels being redeveloped would be subject to regulation. Those parcels where the new construction increases the volume of traffic or changes the type of traffic are required to comply with the access spacing, size and location standards through a permitting process. WSDOT works with the county and the city to ensure that developers comply with the access requirements during the project's SEPA review. WSDOT does not control access within city limits on managed access facilities. Cities are the permitting authority and have the sole responsibility for access approval. WSDOT is the permitting authority in the unincorporated areas. WSDOT access management classification categories are described below in Table 3-2.

Table 3-2: WSDOT Access Classifications

Class	Speed	Volume	Spacing for Approach	Spacing for Intersection	Multilane Median	Notes
1	High	High	1320 ft	1 mile	Median is required	Longer trips - serves regional function.
2	Medium to High	Medium to High	660 ft	0.5 mile	TWLTL* may be substituted if ADT < 20,000	Longer trips. Direct access allowed only if no other alternative.
3	Medium	Medium	330 ft	0.5 mile	TWLTL* may be substituted if ADT < 25,000	Shorter trips. Two-way left turn lane allowed if warranted.
4	Medium	Medium	250 ft	0.5 mile	Median not required	Short trips. Two-way left turn lane is typical here.
5	Low to Medium	Medium to High	125 ft	0.25 mile	Median not required	Short trips. Property access is emphasized.
Partial Control	At-grade intersections are allowed for selected public roads, and approaches for existing private driveways. No commercial approaches allowed. No direct access if alternate public road access is available					
Full Control	Access only through interchanges at selected public roads, rest areas, viewpoints, or weigh stations. All at-grade crossings and private approaches prohibited					
Modified Control	At-grade intersections are allowed for selected public roads, and approaches for existing private driveways. Commercial approaches may be allowed. No direct access if alternate public road access is available					

\* Two-way left turn lane

SR 516 is designated as both a limited access and managed access highway. WAC 468-52-070 provides for review and modification of access classifications. This study is not recommending any changes to the access classification.

Table 3-3 depicts access classifications for the SR 516 study area by segments.

**Table 3-3: SR 516 Access Classifications**

Segment mileposts	Description of Study Segment	Existing Access Classification *
4.55-4.98	SR 167 vicinity to S 4th Ave (Kent)	Full
4.98-11.35	S 4th Ave (Kent) to 164th Ave SE (Covington)	M3 (Modified planned**)
11.35-11.56	164th Ave SE to 167th PI SE (Covington)	Full
11.56-16.22	167th PI SE (Covington) to SR 169 (Maple Valley)	M3

\* Except for full access control, the city is the permitting authority within incorporated limits.

\*\* Modified access is planned for sometime in the future. No access hearing for this section has been held.

### 3.2.3 Terrain and Roadside Classifications

The WSDOT’s State Highway Log Planning Report (2010) was reviewed to determine the terrain classification for the Study Route. The terrain designation in this report is used in the design process.

The terrain surrounding the study corridor routes are classified as level from SR 167 interchange area to Meeker/Central (SRMP 4.55 to SRMP 5.68) and rolling from Meeker/Central to SR 169 (SRMP 5.68 to SRMP 16.22).

Rolling terrain is usually found in areas where hills and foothills are present and where the slopes rise and fall gently. Occasional steep slopes might cause restriction to horizontal and vertical alignments. This designation refers to the contour of the roadway as it relates to the frequency and steepness of hills and the effect these elements have on truck speed. A rolling designation indicates that trucks slow down frequently.

WSDOT’s Unstable Slope Management System collects information about unstable slopes that present potential hazards to the state highway system. There are no listed unstable slopes along the study corridor.

Roadside character, defined in the WSDOT Roadside Classification Log, 2011, 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. The designations are dynamic, as it changes with permitted development over time. The current roadside designations for the study corridor are as follows:

**Table 3-4: Roadside Designations**

Segments	SRMP	Classification
SR167 to 74th Ave S	4.53 to 5.03	SEMIURBAN-Kent
74th Ave S to Titus/Jason	5.03 to 5.93	URBAN-Kent
Titus/Jason to 101st Ave SE	5.93 to 7.13	SEMIURBAN-Kent
101st Ave SE to 108th Ave SE	7.13 to 7.63	URBAN-Kent
108th Ave SE to Wax Rd vic.	7.63 to 12.23	SEMIURBAN-Kent, Covington
Wax Rd vic to SR 169	12.23 to 16.23	RURAL

It is WSDOT’s policy to protect and restore the roadside character as designated in the Roadside Classification Plan, and to incorporate the plan into regional and route specific planning. All improvement and safety projects that result in disturbance to the roadside require complete restoration to the requirements specified by the roadside classification within the project limits. The roadside restoration of proposed safety and improvement projects fall under Treatment Level 2, which is the basic level of treatment to restore the operational, environmental and visual functions of the roadside. The plan promotes aesthetic harmony and continuity, and advocates the use of native species.

Areas of work falling within wetlands or wetland buffer areas may require additional re-vegetation or habitat management plans as required by the critical areas ordinance of the local jurisdiction in which the work occurs. As specific impacts are calculated during the design phase of individual projects recommended by this study, the local agencies will be consulted regarding the degree and character of re-vegetation required in these areas.

### 3.3 Land Use Characteristics

The SR 516 study corridor is located within the Urban Growth Areas of Kent, Covington, and Maple Valley. Land uses range from highly commercialized areas in all three city core areas to more suburban residential/rural residential outside the core areas. As stated earlier, the land uses are dynamic and the future development of the surrounding lands can have a major effect on the performance of the transportation system.

The Washington State Growth Management Act (RCW 36.60A) is in effect in King County. It stipulates 14 goals that serve as the guiding principles for land use planning. The comprehensive plan is a tool used to help communities resolve how to balance the

competing interests represented by these goals. King County is part of the Puget Sound Regional Council, and is guided by both its comprehensive plan and the regional growth plan, Vision 2040.

As you travel to the east along the corridor, some of the current land use and development conditions that exist include:

- Largely low-density residential uses
- Small-scale, disbursed commercial areas
- A lack of continuous trails and other bicycle/pedestrian amenities
- Large, low-density residential developments on and near the corridor planned for the future

### 3.4 Physical Characteristics

The physical characteristics of a corridor provide insights into the types of transportation problems experienced on the route and can be useful for developing the best solutions to those problems. These characteristics relate not only to the roadway itself – geometry, roadway section, horizontal and vertical alignments – but also to the surrounding area considering such elements as right of way and environmental resources.

#### 3.4.1 Geometric Elements

Roadway corridor's alignment, profile and section need to be considered when determining how a route functions and how it might be improved. For this purpose, the latest information from the WSDOT Transportation Data Office (TDO) has been reviewed as part of this study. The most current information about roadway geometry can be obtained from the WSDOT's State Highway Log Planning Report (2010), as well as other TDO data sources. The highway log pertaining to the study section can be found in Appendix B. Other WSDOT records and resources, such as as-built highway plans, are also reviewed for use within this analysis.

#### Existing Roadway Section

The roadway section refers to the widths of the lanes and shoulders that make up the roadway. In general, the lanes and shoulders that make up the Study Corridor routes meet current WSDOT standards for these elements based on roadway classification and current traffic volumes. Details about SR 516 roadway sections, including types of materials used in the construction of the roadways and shoulders, and existing channelization can be found in Appendix B.

### **Existing Vertical/Horizontal Alignment**

Roadway grades on the Study Corridor routes range between 0% and 7.8% (in Kent). Additional information can be found in Appendix B.

### **3.4.2 Pavement**

WSDOT recently completed the 2011 Pavement Tour which did not identify repaving needs on the study corridor. The SR 516 pavement will be re-evaluated during the 2013 North West Region (NWR) Pavement Tour, (and subsequent pavement tours) and a determination will be made whether the SR 516 pavement conditions warrant being scoped for a future project. It should be noted that NWR has a fairly long list of “past due” pavement projects and that if SR 516 warrants a paving project, it will need to compete and prioritize against the other paving needs for available funding.

The city of Maple Valley has concerns about the condition of the existing pavement between 228th Ave SE and SR 169 (MP 15.4 to MP 16.3). Additional field investigation by WSDOT was requested to better determine the condition of this segment and possible remediation. Subsequently, NWR Maintenance has included SR 516 MP 7.30 to MP 16.20 in the 2011-2013 region crack seal program (excluding MP 11.09 to MP 12.31 which was paved in 2010) and will receive crack seal treatment. Additionally, in coordination with the city, some sections in the westbound lane have been ground out and replaced in 2012. The area will continue to be monitored.

### **3.4.3 Bridges and Structures**

There are two bridges on the SR 516 portion of the study corridor. One bridge is immediately south of Lake Meridian’s southern shore. It is actually a half bridge, on the southern side of the road, spanning a storm water detention pond/wetland (SRMP 10.20 to 10.30, bridge #516/014). The second is a full width bridge, spanning Soos Creek (SRMP 11.07 to 11.09, bridge #516/016). An additional four structures span over SR 516 in the study area. They are northbound and southbound SR 167 at SRMP 4.64 and SRMP 4.66 and eastbound and westbound SR 18 at SRMP 11.45).

See Table 3-5 and Figure 3.3 for bridge locations. Both structures on SR 516 mainline have sidewalks on both sides. The bridge inspection schedule is every two years. The following bridge information is based on WSDOT’s Highway Road Log and the WSDOT Bridge Office.

None of the bridges within the study corridor is listed as needing repair or replacement.

**Table 3-5: Intersection Inventory and Traffic Channelization**

State Route	SR 516 Milepost	Stream/Feature Name	Nearest Cross Street	Sufficiency Rating*
516	10.20 to 10.30	Storm water detention pond / wetland (half bridge - Eastbound lane)	Between SE 270th PI and 148th Ave SE	76.52
516	11.07 to 11.09	Soos Creek (Bridge)	160th Ave SE	92.11
167	4.64	Southbound lanes Overcrossing	SR 167- SR516	91.24
167	4.66	Northbound lanes Overcrossing	SR 167- SR516	89.12
18	11.45	Westbound lanes Overcrossing	SR 18- SR516	94.80
18	11.45	Eastbound lanes Overcrossing	SR 18- SR516	96.83

\* If the value in this column is < 50, the structure needs repair or replacement.

### 3.4.4 Intersection Inventory and Traffic Channelization

There are currently 34 traffic signal controlled roadway intersections along the study corridor route. Locations of traffic signals and channelization/refuge areas are in Appendix B, Physical Characteristics.

There are also two rail lines crossing the study corridor. The BNSF Railway crossing is approximately ½ mile east of SR 167 interchange (I/C) area. The Union Pacific crossing is east and adjacent to the SR 167/SR 516 I/C. Both railroad crossings are signalized with automatic gates.

Rail freight schedules can vary by time of day, day of the week, or time of year. Shippers’ demands, overall freight traffic levels, ship traffic at the ports, and maintenance work are all factors in scheduling. Typically, the UP will see up to 15 freight trains per day operating on their mainline between Tukwila (Black River Jct.) and Tacoma. The BNSF line is a busier rail line with up to 40 daily freight trains and an additional 28 daily Amtrak & Sounder passenger trains between Seattle and Tacoma operating through Kent.

### 3.4.5 Right of Way

Existing right of way widths vary from 60 feet to 100 feet along the study corridor route. The right of way width is an important consideration when contemplating improvements that require additional space. Right of way purchase can be a significant cost item, especially in a highly developed area. More details about right of way widths and specific locations are given in Appendix B, Physical Characteristics.

### 3.4.6 Utilities

Over 200 unique franchise agreements have been identified along the Study Corridor, involving 83 separate companies, 20 individuals and 23 municipalities/departments. A table of franchises is found in Appendix C, Utility Locations. Current listings are maintained at the WSDOT Northwest Region Utilities Office.

## 3.5 Environmental Overview

Environmental elements described in this corridor plan consist of information collected to identify and document potential environmental issues as part of the transportation study process. The study research identifies known areas of concern, both in the existing right of way (ROW), and adjacent to the ROW. Areas of concern will influence decisions about whether improvements should be considered, what type of improvement would be the most sustainable, and help to give designers of any improvements insight into the conditions they may be working in. Areas of concern outside of the ROW are important to identify and consider when contemplating improvements that require additional space. The environmental information collection helps WSDOT to make informed decisions that are reliable, sustainable, responsible, and sensitive to the areas potentially affected. Specific impacts to environmental elements would be determined, and associated permits obtained, when a project has been funded for design and construction.

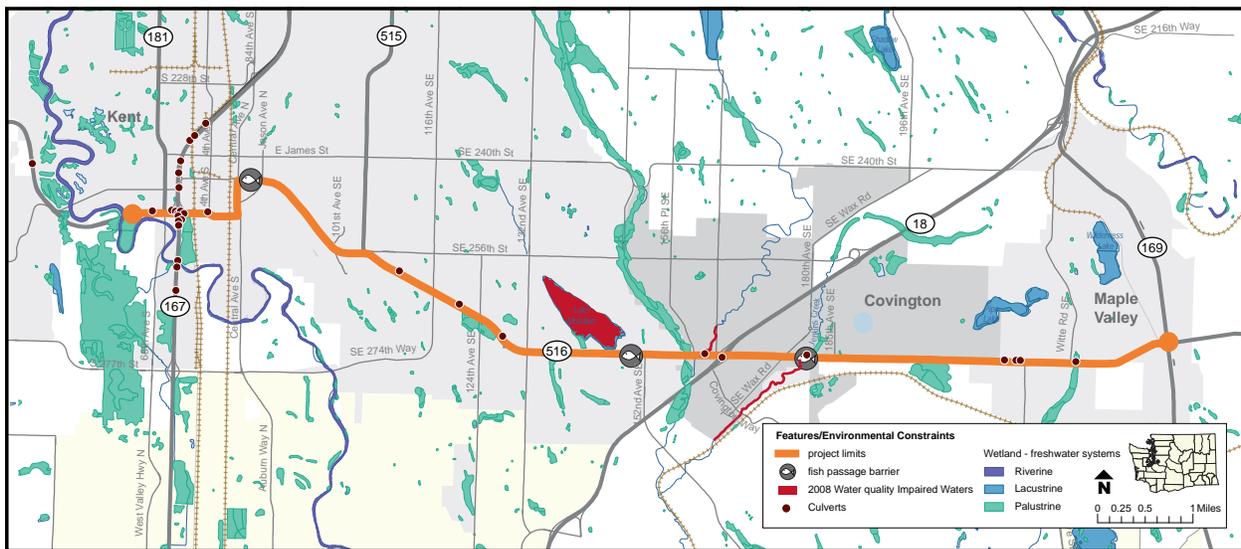
### Wetlands

The Department of Natural Resources (DNR) and National Wetlands Inventory (NWI) were used to determine if and where wetlands exist along the study corridor. (Figure 3-3) This determination was used as a preliminary check for selecting possible recommendations and the potential consequences to the wetlands in the area.

If individual projects are chosen and developed from the study recommendations, an in-depth wetland delineation should be completed to determine the full extent of recorded wetlands and potential impacts and mitigations. The area should also be examined to identify other wetlands that may not have been included on the maps. Wetlands should

be avoided if possible when designing roadway improvements. If construction impacts are unavoidable, they should be minimized to the degree practicable, and any unavoidable impacts mitigated according to WSDOT’s “no net loss” policy regarding wetland functions and values. Wetland filling along the study segment is regulated by King County, the US Army Corps of Engineers, and the Washington State Department of Ecology through Section 401 of the Clean Water Act.

Figure 3-3: Wetland, Water Quality, and Fish Barrier Locations



### Fish Passage Barriers

WSDOT is required to install and maintain all culverts, fishways, and bridges to provide unrestricted fish passage as per Washington law, RCW 77.57.030. Design of fish barrier correction will be based on the latest version of the Washington Department of Fish and Wildlife’s (WDFW) Fish Passage Design at Road Culverts manual or its successor. Through use of this design guidance and in coordination with WDFW, it is expected that new highway construction at stream crossings will not result in additional barriers to fish passage.

In 1991, the Washington State Legislature, working with WSDOT and WDFW, organized and implemented a fish passage inventory on Washington State Highways. The purpose of the inventory is to document fish passage problems located at state highway stream crossings to prioritize the correction of these fish passage barriers. The need for repair is based on the potential to gain fish habitat. In general, a barrier requires repair if there is a minimum of 200 meters of functional fish habitat both upstream and downstream.

WSDOT has a goal of evaluating and correcting state highway fish barriers based on a twenty-year system plan. It designates dedicated funding to correct the highest priority fish passage barriers within the Environmental Retrofit Program’s Six-Year Plan. Also, as road projects are constructed, additional fish passage barriers are removed whenever Hydraulic Project Approval (HPA) from WDFW is required.

Locations are identified as fish passage barriers by the Salmonid Screening, Habitat Enhancement and Restoration Division of Washington Department of Fish and Wildlife (WDFW). Refer to Table 3-6 for the three fish barrier locations within the study area. Jenkins Creek is the highest ranking fish barrier retrofit of the three locations in the study area, but none of the three have been programmed in the six year state plan for environmental retrofitting.

**Table 3-6: Fish Barrier Locations**

<b>Existing Fish Passage Barriers</b>	
MP 5.82 Mill Creek	Site ID is 997651 – Partially blocks access to 4,561 square meters (1.13 acres) of upstream habitat
MP 10.58 Big Soos Creek	Site ID is 997670 – Partially blocks access to 3,514 square meters (0.87 acre) of upstream habitat
MP 12.33 Jenkins Creek	Site ID is 990210 – Box culvert that partially blocks access to 18,561 square meters (4.59 acres) of upstream habitat

WSDOT is looking into the concept of coordinating fish barrier replacement on a more watershed-wide basis. That is, coordinating efforts among multiple jurisdictions to remove multiple barriers on a potentially high value fish rearing area. To date, the concept is in its infancy, with a possible pilot program being considered in the Olympic Region of WSDOT.

### **Wellhead / Aquifer / Watercourse protection**

The corridor study segment is located on several wellhead protection zones. The roadway lies within a ten year wellhead protection zone from Alford in Kent to SR 169 in Maple Valley. One year wellhead protection zone areas are located on the corridor between 116th and 119th, 122nd to 133rd, 148th to 158th, 175th to 196th, and from Witte Rd to SR 169. The distinction of the different time periods is an indication of the time it takes for surface water to migrate to the well supply.

The corridor study area is not located over a Sole Source Aquifer or an area identified as an Aquifer Recharge Area of Concern. Between approximately 181st Ave SE and 207th Ave SE in Covington, to the south of the roadway, is a category one Critical Aquifer Recharge Area

(CARA). The GMA defines CARAs as “areas with a critical recharging effect on aquifers used for potable water.”

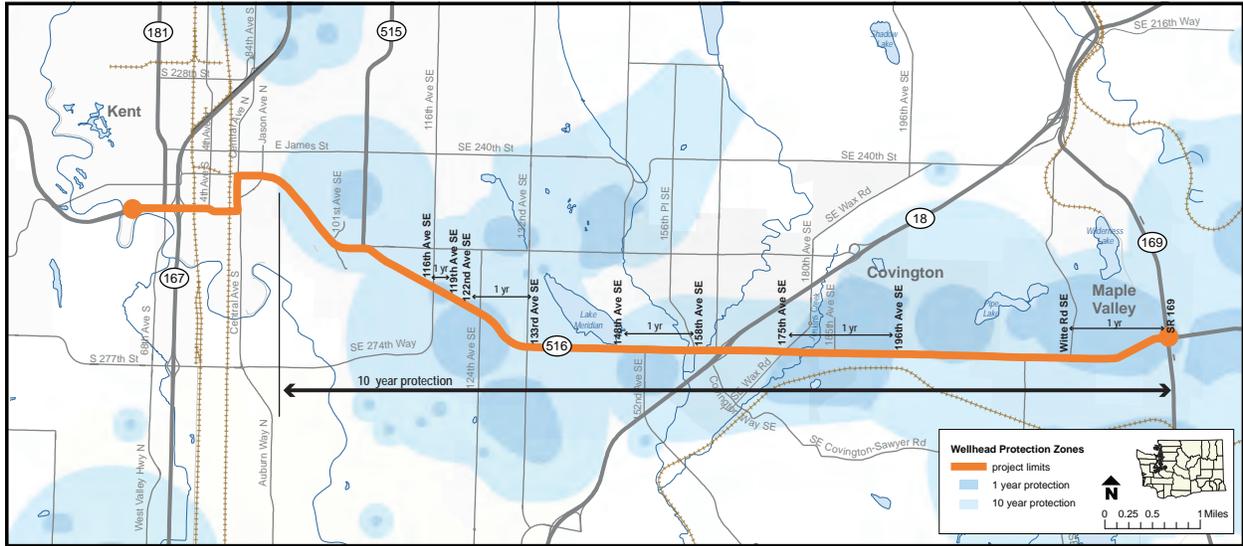
There are three impaired and threatened watercourses near SR 516 which are on the 2008 Water Quality Impaired Waters (303d) list. The first is Little Soos Creek located approximately at 160th Ave SE, another is Lake Meridian, near SE 270th Place, and the third is Jenkins Creek, located near SE Wax Road. See Figure 3-3 above.

Current WSDOT water quality/water quantity treatment practices, as described within WSDOT’s Highway Runoff Manual, should be adequate to protect the groundwater supply. Figures 3-4 and 3-5 shows the approximate locations of aquifer recharge areas and wellhead protection zones relative to the study area corridor. Any proposed improvements will need to address the current classifications and requirements during the design phase to improve current conditions or avoid impacting any additional areas.

Figure 3-4: Aquifer Recharge Areas



Figure 3-5: Wellhead Protection Areas



### Environmental Mitigation

Locating suitable mitigation sites is a high priority for projects that will displace existing wetlands or increase the impervious area represented by the highway. It is generally undesirable to construct mitigation for wetland impacts within highway right of way. Many highway activities, such as guardrail installation, slope flattening, excavation or fill that alters the water table or flow to a wetland, and noise and air impacts on wetland wildlife, could adversely affect an adjacent mitigation site. There is an existing mitigation site located at MP 10.25 which is listed as a storm water detention pond and wetland.

If no other reasonable alternative is available in a particular area, during the design phase of a project, engineering staff should work closely with the staff of the Northwest Region Environmental Services office to determine the extent of unavoidable wetland impacts and to locate an appropriate mitigation site.

Mitigation for increased storm water runoff resulting from the addition of impervious surfacing, such as swales and ponds, can often take place within highway right of way if sufficient area exists. The appropriate level of storm water treatment can be determined using the WSDOT Highway Runoff Manual.

The cost of the construction of wetland mitigation sites and storm water treatment facilities can be considerable, and should be considered when estimating overall project construction costs.

## Historical and Cultural Resources

The Washington Heritage Register and the National Register of Historic Places were researched to identify historical properties along the Study Corridor.

During the design phase of any projects recommended by this plan, a cultural resources survey should be conducted in the area of potential effect.

A cultural resources survey may include a literature search to determine if previously documented sites or resources exist in the vicinity, as well as a ground survey to determine the potential for encountering artifacts of an historic or archaeological nature during construction. Results of the survey, and the determination of effects of the construction projects, should be presented for the State Historic Preservation Officer's concurrence.

Two archeological sites have been recorded near the study area. One is in the vicinity of N 1st & 2nd Avenues and W Smith & Temperance Streets. The second is in the vicinity of the southwest quadrant of the SR 516 and SR 169 intersection. The Carnation Milk Factory/Kent Hardware Co at 203 Meeker Street is a property that has been recognized as historically significant. The Department of Archaeology and Historic Preservation staff suggested that they would not expect to find any significant issues or major archeological sites that would impact any proposed solutions on the route. Historic-era resources may be affected throughout the corridor, but the likelihood of delays due to unforeseen cultural resources compliance is not great. Staff further stated that if projects do develop from the plan and federal money is used, a Section 106 review would be required. Also, if state funds are used, a 0505 Executive Order level review would be required.

The Muckleshoot and Yakama Tribes were sent letters in June of 2011, describing the study, outlining the limits of the study area, and asking if they would like to be involved in the corridor study and if they had concerns about any cultural or natural resources being potentially affected by this study. While the tribes had not indicated having a concern at that time, or after a subsequent phone call follow up in April 2012, should any project move forward toward development, further outreach to the tribes should be implemented at the very earliest stages.

## Environmental Justice

Environmental justice refers to the inequitable adverse effect of transportation projects on social, economic and health status of minority and low-income populations in a community. One of the goals of WSDOT is to avoid, minimize or mitigate any disproportionate impact to these populations resulting from WSDOT activities in the area. To accomplish this,

information about potential environmental justice communities was gathered using 2010 Census data through the PSRC and the Office of Superintendent of Public Instruction's Washington State Report Card. All census tracts abutting the SR 516 roadway study vicinity were used to compile the following information.

The census data indicated that the study area census tract population is 83,300 with 28% under 18 years of age and 9% are 65 years old or older. Approximately 69% of the proximity population is White, 7% African American, 1% Native American, 11% Asian, 1% Native Hawaiian or Other Pacific Islander, and 11% Hispanic or Latino. Within the city of Kent, several areas of non-English speaking populations exist. The first area along the study corridor, between SR 167 and 94th Ave S, census data indicates there are 5% or more of the population whose primary language is Spanish or Spanish Creole. Between 94th Ave S and 132nd Ave SE there are populations of 5% or more whose primary language is Spanish, Spanish Creole, Slavic, or Russian Slavic.

The Kent and Tahoma school districts reported that 47% and 15% (respectively) of their student body qualified for the federal free or reduced price meals program. As mentioned earlier in this report, PSRC's Coordinated Transit-Human Services Transportation Plan outlines how transit agencies, social service agencies, school districts, and other transportation providers can most efficiently and effectively work together to improve regional mobility for individuals with special transportation needs. The plan can be accessed at: [www.psrc.org/transportation/special-needs](http://www.psrc.org/transportation/special-needs).

### **Noise**

Transportation projects that construct a highway at a new location, or significantly change the horizontal or vertical alignment of an existing highway or increase the number of through traffic lanes, require evaluation as to whether it is reasonable and feasible to provide mitigation for noise impacts.

During the design phase, any project should be evaluated for potential noise impacts and modeled to predict traffic noise levels if necessary. Although the federal government participates in the majority of costs associated with noise barriers along interstate highways, those that are constructed along smaller state routes like SR 516 are typically funded solely by the state. WSDOT has a cost-benefit criterion, which is applied to determine if a noise barrier is reasonable and feasible.

### **Air Quality**

WSDOT's GIS layer for air quality, information provided by Washington Department of Ecology, was consulted to determine if there are air quality issues in the vicinity of the study corridor. The study corridor is within a former carbon monoxide and one-hour ozone maintenance area, but currently is in attainment for all criteria pollutants. Currently the air quality meets state and federal standards.

### **Climate Change & Transportation Emissions**

Executive Order 07-02, Governor Christine Gregoire's Washington Climate Change Challenge, established the state's commitment to address climate change by reducing greenhouse gas emissions through strategies that reduce the amount of driving and vehicle miles traveled. The recommendations in this corridor planning study address climate change by reinforcing CTR Programs, analysis of bicyclist and pedestrian needs to encourage nonmotorized travel, and inter-agency coordination with transit to encourage access to and use of transit. In 2009, Governor Gregoire issued Executive Order 09-05, Washington's Leadership on Climate Change, which directs WSDOT to consult and collaborate with the Departments of Ecology and Commerce, local governments and other stakeholders in estimating current and future statewide levels of vehicle miles traveled (VMT); in evaluating potential changes to the VMT benchmarks established in RCW 47.01.440; and in developing additional strategies to reduce greenhouse gas (GHG) emissions from the transportation sector. The Governor's Executive Order (EO) also directs the department to work cooperatively with the four largest metropolitan planning organizations to develop and adopt regional transportation plans that will provide people with additional transportation alternatives, reduce GHGs, and achieve the annual per capita VMT statutory benchmarks. climate change is addressed at the following WSDOT website:  
[www.wsdot.wa.gov/SustainableTransportation/](http://www.wsdot.wa.gov/SustainableTransportation/)

#### **Climate Change and Greenhouse Gas Emissions (GHG)**

Global climate change refers to changes in average temperatures, wind patterns, precipitation, and storms. Gases that trap heat in the atmosphere are often called Greenhouse Gases (GHGs). GHGs are emitted by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the Earth's temperature. Emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of GHGs in the atmosphere, leading to higher ambient temperatures and global climate change. Carbon dioxide makes up the larger share of greenhouse gases. In Washington State, the largest single source of carbon emissions is motorized transportation, accounting for an estimated 47 percent of carbon dioxide equivalent emissions statewide. The average passenger vehicle emits about 423 grams of CO<sub>2</sub> per mile, or 423 grams per Vehicle Miles Travelled (VMT).

### **GHG and VMT**

WSDOT calculates the statewide VMT based on roadway miles and traffic count data from WSDOT, counties, and cities. VMT is reported on a calendar year basis. Differences from one year to the next are not clear indicators of changes in driving behavior. Five-year periods are the minimum time period over which trends can be identified. At the state level, VMT is a good indicator of the actual miles traveled. This accuracy holds down to the county level. Below the county level, it is very difficult to accurately assess VMT. Because VMT reflects activity across the roadway network, it is not a useful measure at the project level. Reductions in greenhouse gases might be expected when project designs include significant investment in promoting and supporting the three basic ways to reduce VMT: Shift modes from the private car to transit, walking, or biking; Increase vehicle occupancy in private cars and vanpools; and, Travel less through telecommuting, combining trips, reducing the number of discretionary vehicle trips, and employing tools such as a compressed work week, pricing, and more compact land development that enhances transit, biking, and walking.

Executive Order 07-02, Governor Christine Gregoire's Washington Climate Change Challenge, established the state's commitment to address climate change by reducing greenhouse gas emissions through strategies that reduce the amount of driving and vehicle miles traveled. The recommendations in this corridor planning study address climate change by reinforcing CTR Programs, analysis of bicyclist and pedestrian needs to encourage non-motorized travel, and inter-agency coordination with transit to encourage access to and use of transit. In 2009, Governor Gregoire issued Executive Order 09-05, Washington's Leadership on Climate Change, which directs WSDOT to consult and collaborate with the Departments of Ecology and Commerce, local governments and other stakeholders in estimating current and future statewide levels of vehicle miles traveled (VMT); in evaluating potential changes to the VMT benchmarks established in RCW 47.01.440; and in developing additional strategies to reduce greenhouse gas (GHG) emissions from the transportation sector. The Governor's Executive Order (EO) also directs the department to work cooperatively with the four largest metropolitan planning organizations to develop and adopt regional transportation plans that will provide people with additional transportation alternatives, reduce GHGs, and achieve the annual per capita VMT statutory benchmarks. climate change is addressed at the following WSDOT website:

[www.wsdot.wa.gov/SustainableTransportation/](http://www.wsdot.wa.gov/SustainableTransportation/)

### **Climate Change**

Pacific NW climate projections available from the Climate Impacts Group at the University of Washington show that over the next 50 years Washington State is likely to experience:

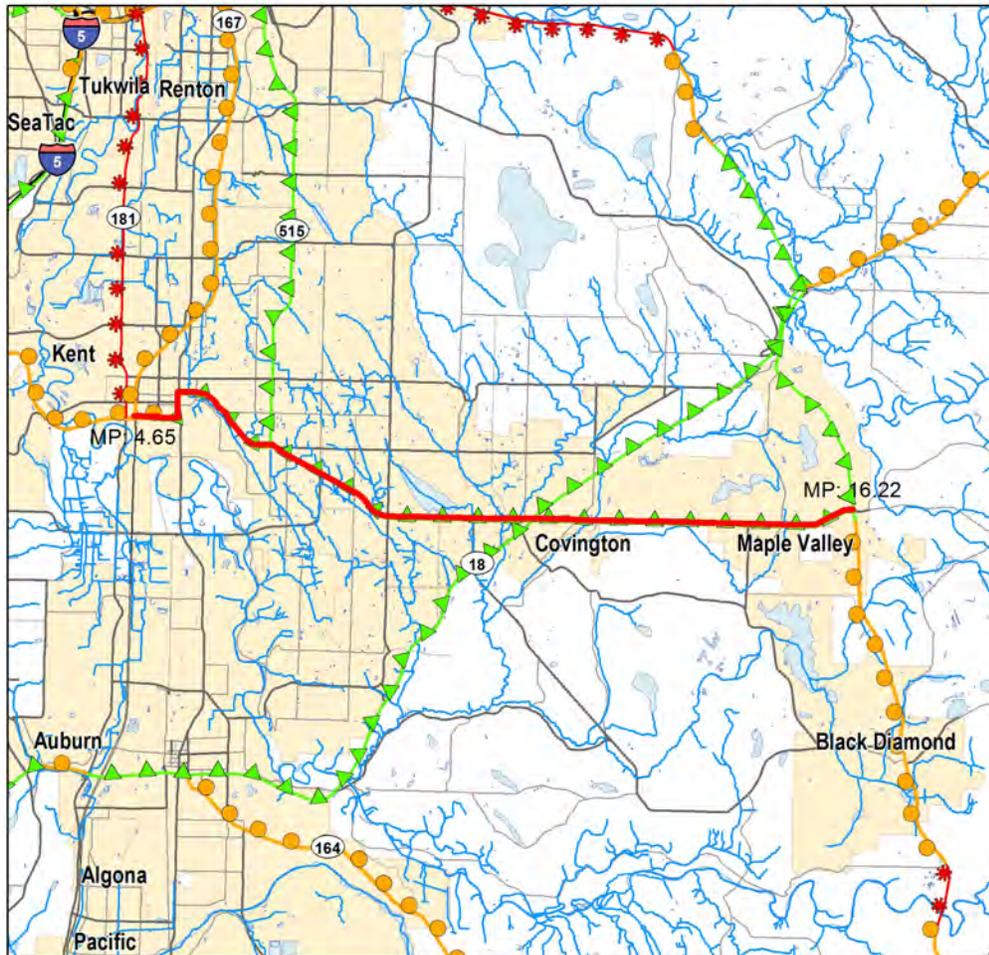
- increased temperature (extreme heat events, changes in air quality, glacial melting)
- changes in volume and timing of precipitation (reduced snow pack, increased erosion, flooding)
- ecological effects of a changing climate (spread of disease, altered plant and animal habitats, negative impacts on human health and well-being)
- sea-level rise, coastal erosion, salt water intrusion

### **Climate Change Vulnerability Assessment**

In 2011, WSDOT examined climate risks to state transportation assets using data from the University of Washington Climate Impacts Group. WSDOT convened 14 workshops across the state to inventory and assess the possible impact of extreme weather on WSDOT owned and operated facilities. The result was the Climate Impacts Vulnerability Assessment Report, published November, 2011. The planning team incorporated information from the 2011 Climate Change Vulnerability Assessment Report into this corridor planning study. Any improvements should be designed to last far into the future. As a result of our understanding of current weather extremes and future climate conditions, and their possible impact on the transportation system, any plan should incorporate features that will provide greater resilience and function in the event of a projected impact from severe weather conditions brought on by climate change. The segment within the SR 167/SR 516 interchange area and RR crossings has been assessed as having a moderate probability of experiencing climatic weather impacts. The remaining segment of the SR 516 study has been assessed as having a low probability of experiencing climatic weather impacts. No additional features are recommended in this report. If improvements to this corridor move forward, additional study during the design phase should be considered. A graphic showing the potential vulnerabilities is shown on Figure 3-6 below.

Figure 3-6: Climate Vulnerability

### SR 516 Climate Vulnerability Assessment Map



#### Legend

#### Climate Impact Risk Assessments

#### Impact Score

-  High
-  Moderate
-  Low

## Hazardous Materials

The Hazardous Sites List, toxics cleanup program, and the Leaking Underground Storage Tank databases maintained by Washington Department of Ecology were used to determine if there is known potential for encountering hazardous materials during the construction of any proposed improvements to the Study Route. The website can be reviewed at: <http://apps.ecy.wa.gov/website/facsite/viewer.htm>.

The Leaking Underground Storage Tank database lists several properties on the Study Corridor route. They are; 7-11 by Bridges, Mr. Sudsy Car Wash by Titus St., Chevron Station by 100th Pl SE, East Kent Chevron by 141st Ave SE, Circle K Store by 164th Ave SE, Harris Enterprises by 172nd Ave SE, Junior High 6 by 196th Ave SE, and Maple Valley BP station by SR 169. Before any maintenance work or corridor improvements in these areas, these databases should be reviewed for updated information, and site assessments performed, if warranted.

## 3.6 Transit

The study corridor area is served by King County Metro transit. The principal route that serves the study corridor is the 168, operating between Kent Station and SR 169. Other routes, such as the 150, 157, and 161 operate along shorter segments, with typical service frequency of about 30 minutes. Routes 157, 158, and 159 are primarily commuter runs travelling from the Lake Meridian P&R to Kent and Seattle in the AM peak and in the reverse direction during the PM peak. Routes 914 and 916 provide Dial-A-Ride Transit (DART) service within the study corridor area. Transit routes provide travel options to employment centers, provide feeder service to Kent Sounder Station and other transit centers, and lifeline service to shopping and service providers.

In the fall of 2009, Route 168 operated hourly on weekdays, along the current routing between Kent and Maple Valley/4 Corners, with weekend service operating hourly as far east as SE 272nd/192nd Ave SE in Covington. Since then, with support from a WSDOT Regional Mobility Grant, route 168 has been significantly upgraded to supply 30 minute service on weekdays, until about 7PM, then hourly until the end of service around midnight and also extend the weekend hourly trips out to 4 Corners for a consistent service pattern. These improvements were implemented in September 2010. Since that time, service on route 168 has been increased approximately forty per cent. Ridership on the route has also increased although by a smaller percentage (14%), going from 434,100 annual rides prior to the change to around 495,100 annual rides at the time of this report. With the size of the service increase, the growth in ridership was better than anticipated. Going forward, ridership on the route is likely to continue to grow. The current grant funding expires in

## CHAPTER THREE | EXISTING ROUTE CHARACTERISTICS & CONDITIONS

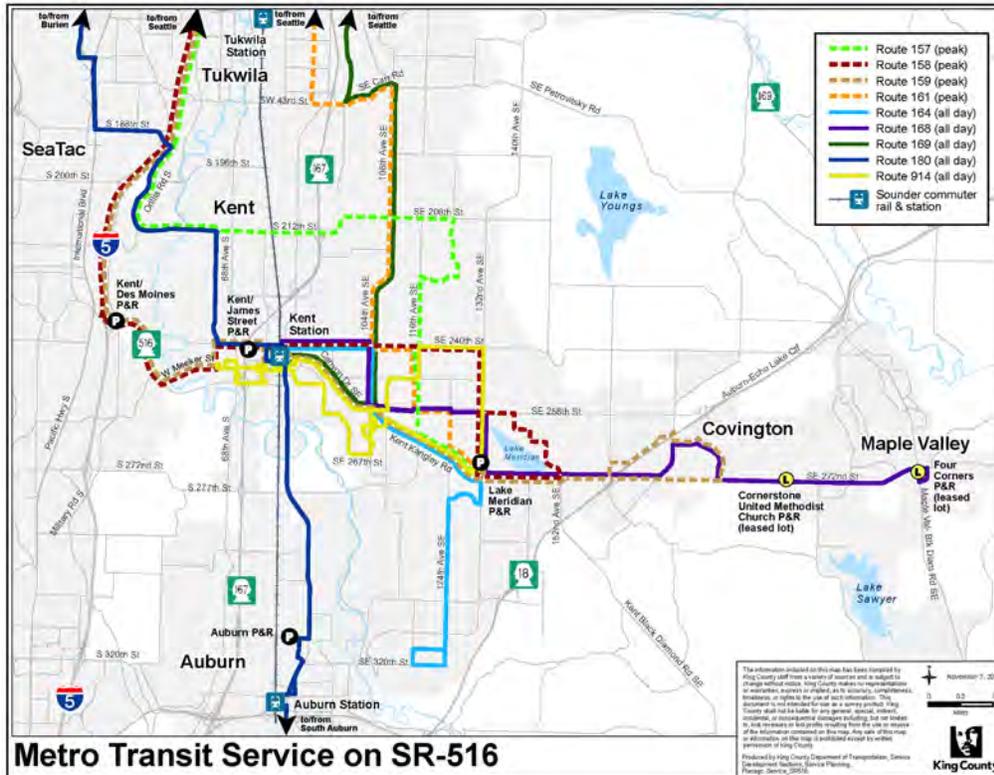
June 2013, but Metro has expressed a desire to continue the current service levels if funding can be secured.

Park and Ride lots can serve the travelling public by making transit travel more convenient, with side benefits of less vehicle miles travelled, less congestion, and less pollution. Below is a list of the four Park & Ride lots in the vicinity of the study corridor with occupancy rates from Spring of 2011:

- Four Corners Shopping Center (leased lot) - 26920 Maple Valley Hwy  
Capacity-24 / Average Daily Utilization-22 MT Routes: 143, 907, 168
- Cornerstone United Methodist Church (leased lot) - 20730 SE 272nd St.  
Capacity-20 / Average Daily Utilization-15 MT Route: 168
- Lake Meridian P&R (Metro) - 26805 132nd Ave SE  
Capacity-172 / Average Daily Utilization-45 MT Routes: 157, 158, 159, 161, 168, 914
- Kent Station/garage & surface lots (Sound Transit) - 301 Railroad Ave N  
Capacity-996 / Average Daily Utilization-954 MT Routes: 150, 153, 158, 159, 164, 166, 168, 169, 180, 183, 566, 913, 914, 916, 952, ST Routes 566 & Sounder

Figure 3-7 shows the existing transit service routes and P&R locations within the study corridor.

Figure 3-7: Transit Service Map



**Southeast King County DMU Commuter Rail Feasibility Study**

In 2010, WSDOT completed the Southeast King County Diesel Multiple Unit (DMU) Commuter Rail Feasibility Study. As part of this study, a transit based Enhanced Bus Scenario was developed to compare the DMU rail option to transit. (It should be emphasized that the service improvements assumed in this analysis are not in the King County Metro budget and have not been proposed or presented for public or County Council review.) In this analysis, enhanced transit service is implemented with improvements to two existing Metro routes, #149 (SR 169 corridor) and route #168 (SR 516 corridor), along with a new peak-period express route operating from Maple Valley and Covington to the Auburn Sounder Station via SR 18. These routes would roughly parallel the DMU Commuter Rail service on the BNSF Railway’s Stampede Pass line.

The complete study can be reviewed at:  
[www.wsdot.wa.gov/planning/Studies/SEKingCommuterRailStudy/](http://www.wsdot.wa.gov/planning/Studies/SEKingCommuterRailStudy/).

It should be noted the WSDOT Regional Mobility Grant mentioned earlier and the resulting recent increase in service for route # 168 actually slightly exceeds the enhanced service scenario for route #168 looked at for the DMU study.

### 3.7 Highway Segments and Intersections

The study area for the traffic analysis includes SR 516 from SR 181 / SR 167 (SRMP 4.52) on the west end to just east of the SR 169 intersection in Maple Valley (SRMP 16.22). Appendix D shows all traffic analyses and the results in detail. A total of 26 signalized intersections on this corridor were identified by the stakeholder group and analyzed. Figure 2.2 shows the locations of intersections on the corridor and Table 2.2 provides the names of the intersections along with mile-post. The corridor in the study area goes through the cities of Kent, Covington and Maple Valley, but the travel demand forecasts were done for a larger area covering the cities of Kent, Covington, Maple Valley and Black Diamond as well as parts of King County associated with the study area. The study corridor was broken into six segments to analyze both volumes and average speeds of vehicular traffic. The segments are listed below and can be seen on Figure 2-3.

1. SR 181 to Jason/Titus Avenues
2. Jason/Titus Avenues to 101st Ave SE
3. 101st Ave SE to Kent/Covington city limit
4. Kent/Covington city limit to 185th Ave SE
5. 185th Ave SE to 216th Ave SE
6. 216th Ave SE to SR 169

#### Existing - Intersection LOS

All the intersections operate at an acceptable level of service during the AM peak hour of operation. Other than the Union Pacific Rail Road (UPRR) crossing impacts on the intersections near the SR 167 interchange, all the intersections on SR 516 between SR 181 and Central Avenue N operate at LOS D or better in existing conditions. All but four of the intersections operate at or above LOS D during the PM peak hour in existing conditions. The four intersections operating below LOS D are:

- SR 516 and 104th Avenue SE (LOS E)
- SR 516 and 172nd Avenue SE (LOS E)
- SR 516 and SR 169 (LOS E)
- SR 516 and SE Wax Rd (LOS F)

The intersection level of service for AM and PM peak hour are shown in Table 3-7.

**CHAPTER THREE | EXISTING ROUTE CHARACTERISTICS & CONDITIONS**

**Table 3-7: Existing LOS**

Int. #	LOCATION	Existing – LOS	
		AM	PM
1	SR 516 & SR 181	C	D
2	SR 516 & SR 167 SB RAMPS	B	D
3	SR 516 & SR 167 NB RAMPS	C	C
4	SR 516 & S 4th Ave	C	C
5	SR 516 & Central Ave N	C	C
6	SR 516 (E Smith) & Central Ave	C	D
7	SR 516 & 104th Ave	C	E
8	SR 516 & SE 256th St.	B	C
9	SR 516 & 108th Ave	A	D
10	SR 516 & 116th Ave SE	B	C
11	SR 516 & 124th Ave SE	C	C
12	SR 516 & 132nd Ave SE	C	D
13	SR 516 & 152nd Ave SE	D	D
14	SR 516 & SE Covington - Sawyer Road	B	C
15	SR 516 & 164th Ave SE	C	C
16	SR 516 & SR 18 WB RAMPS	B	C
17	SR 516 & SR 18 EB RAMPS	B	B
18	SR 516 & 168th Place SE	B	D
19	SR 516 & 172nd Ave SE	B	E
20	SR 516 & Wax Road	D	F
21	SR 516 & 185th Ave SE	A	B
22	SR 516 & 192nd Ave SE	A	A
23	SR 516 & 216th Ave SE	B	B
24	SR 516 & Witte Road	C	C
25	SR 516 & 228th Ave SE	B	C
26	SR 516 & SR 169	C	D

### **Existing - Segment Travel Speed**

A threshold target of 70% for the ratio of operating speed to the posted speed was used in order to identify roadway segments that may need more analysis and/or improvements. The inputs for this analysis include roadway classification; geometric information of segments including number of lanes, segment length and left turn channelization; free flow speed; annual average daily traffic (AADT); directional distribution; saturation flow rate; peak hour factor; and other information.

During the AM peak hour operation in the existing condition, three segments fall below the 70% speed threshold. These segments are SR 181 to Jason Avenue N, 101st Avenue SE to Kent/Covington City Limit, and Kent/Covington City Limit to Jenkins Creek. During PM peak hour operation in the existing condition, the same three segments fall below the 70% speed threshold.

The ratio of operating speed to posted speed for AM and PM peak hours for all the segments are shown in Figure 4.3.

### **Existing - Railroad Crossing Analysis**

Because of its close proximity to the interchange area at SR 516 and SR 167, the Union Pacific (UP) railroad track was the principle focus of this analysis. Field observation is one of the best methods of assessing railroad crossing roadway impacts since it also includes any additional influence of BNSF rail traffic to the east of the UP line. In addition to nine days of observation, the study included information from camera operations in the Northwest Region traffic division as well as data and input from the city of Kent.

The number of trains crossing SR 516 was based on data received from the city of Kent for May 2010. The data reveals that on average, one UP train crosses SR 516 during the AM peak hour. Trains are of various lengths and run at different speeds. To capture impacts of trains with various lengths and speeds, the project team assumed a railroad gate closure for 2, 3, 4, and 5 minutes. For each of these closure durations, the project team developed a model to estimate traffic queue length and average vehicle delay. During existing AM peak hour, the average eastbound travel time from SR 181 to Central Avenue S was 1.3 minutes per vehicle for the worst case scenario with five minutes closure time. Westbound traffic experiences little more than one minute of delay per vehicle average for the five minutes closure. The same data reveals crossing of one UP train during a two-hour PM peak period on an average. A gate closure of 2, 3, 4, and 5 minutes was again used for analysis. During existing PM peak hour, the average eastbound travel time from SR 181 to Central Avenue S is 0.7 minutes per vehicle during the worst case scenario with five minutes closure duration. For the same closure duration, westbound traffic experiences a delay of about 0.2 minutes per vehicle average. Sounder train trips on the BNSF line, running approximately every half hour, have a short gate closure time due to their short length.

## 3.8 Safety and Collision History

The Washington State Department of Transportation has adopted a Target Zero© goal of reducing the fatal and serious injury collisions statewide to zero by 2030. More detailed information connected to the development and application of TargetZero can be found at [targetzero.com]. This corridor safety analysis was developed with the intent to identify locations where improvements may be considered for eliminating or reducing the severity of fatal and serious injury collisions.

The safety analysis was performed for the SR 516 corridor from Mile Post (MP) 4.85 to MP 16.22 and for the five year period 2005-2009. The safety analysis focused on strategies to eliminate or decrease the severity of fatal and serious injury collisions. WSDOT's official Collision Analysis Location (CAL), Collision Analysis Corridor (CAC), and Intersection Analysis Location (IAL) lists were reviewed and countermeasures considered when needed following the process outlined in the WSDOT Highway Safety website to make sure any identified locations had been addressed. Cities with a population equal to or greater than 25,000 are responsible for safety conditions and remedies within their boundaries. There were no CAC or CAL sites identified within the study corridor. CACs are five mile corridors with a five year history of at least 11 fatal or serious collisions outside of cities of greater than 25,000 in population. CALs are less than one mile sections with a five year history of four fatal or serious collisions or more than six evident injury collisions outside of cities with a population of 25,000 or greater. The city of Kent has a population above 25,000 and is responsible for safety remedies within their boundaries. The cities of Covington and Maple Valley are currently below the 25,000 population threshold, but may reach the 25,000 population during the 20 year study time span.

IALs are intersections that exhibit a collision rate exceeding certain criteria. This list rates intersections statewide using average societal cost of collisions per each target intersection, depending on the type of collision, speed, and severity for the last five years. Each year, as the latest collision data becomes available, the list should be updated to reflect the most recent five years of data. According the currently adopted list there are no IALs along the study corridor.

To conduct the safety analysis a computer program called SafetyAnalyst was utilized to assess the number of collisions at a defined location and develop recommendations for reducing the severity or frequency of collisions at that location.

The safety analysis showed there were 24 serious safety incidents over a five year span between 2005 and 2009, of which 20 of the incidents resulted in serious injury, and four resulted in a fatality. Seven of the 24 collisions, with three of the fatalities, involved alcohol.

Other causal factors included speeding and not granting the right of way to oncoming traffic. The general trend is a decrease in serious collisions with each passing year. Collisions were spread out between the three cities along the study corridor, occurred at all times of day and night and did not reflect any seasonal trend. By times of day fatalities occurred in early to mid-morning and mid to late afternoon.

What this data shows is that the collisions and fatalities appear to be random in nature and are mainly the result of driver behavior. Given the collision history and the contributing circumstances behind the collisions, SafetyAnalyst was not able to generate specific counter-measures for mitigating these types of collisions.

In review of the collisions that occurred within the limits of this corridor it was noted that there were four collisions involving pedestrians between MP 7.06 and MP 9.5. In looking at what the potential generators are for the collisions, there is a high school on the north side of the highway (Kent Meridian) with housing and a METRO bus stop on the south side of the corridor. These features create an attraction for both bicycle and pedestrian traffic. There is a continuous sidewalk on the north side of SR 516, and a partial sidewalk to the south. These factors may contribute to pedestrian crossings at non-delineated locations. The city of Kent received a grant in October of 2010 to improve pedestrian safety in the general area (MP 7.06 to MP 8.75). June 2013 is the anticipated completion date. Opportunities for pedestrians to safely travel along and across SR 516 should be re-evaluated after the grant improvements are in place.

Although no immediate safety improvement locations were identified, based on the results generated from SafetyAnalyst and the anticipated growth surrounding the SR 516 corridor, consideration may be given for general improvements to help decrease the total number of collisions. Although the safety analysis does not show this corridor to be a high priority safety location, if a decision is made by a city to proceed with safety improvements on this corridor, at least two potential actions should be considered. They are:

- Increased emphasis on the implementation of access management for the corridor.
- Elimination of two way left turn lanes at locations exceeding 25,000 ADT.

# **CHAPTER 4**

## **Future Baseline Conditions**

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## CHAPTER 4: FUTURE BASELINE CONDITIONS

Future baseline conditions refer to the corridor's performance at several time points in the future, using forecasted population and employment growth. This future performance is modeled based on several assumptions. These include:

- Including only currently programmed (financed) transportation improvements in the corridor area for determining the corridor's future capacity and developing a more realistic determination of what the demands on the corridor will be.
- Puget Sound Regional Council's (PSRC) regional travel demand model (EMME software) and VISUM model data from the cities of Kent and Maple Valley for forecasting travel demand.
- Modeling for AM and PM peak hours of the existing condition and three future time point conditions of 2016, 2022 and 2030.
- 26 signalized intersections were analyzed within the study corridor. The intersections were selected based on WSDOT analysis and local jurisdiction's input. Below LOS E is used as the determination of need for intersections.
- The study corridor is broken into six segments for speed analysis purposes. The segments are used to determine the average future speed and compare it to the posted speed. Segments operating below 70% of the posted speed or operating over capacity are considered as needing additional study or improvements.
- Existing signals are assumed to be optimized in the future years for the greatest efficiency. This operational efficiency is a recommendation of this report
- All maintenance and preservation work required to keep the facility in working condition is assumed for all years.

### 4.1 Traffic Volume Estimates

The travel demand forecasts from Puget Sound Regional Council's (PSRC) regional travel demand model (Version 1.0bb) in EMME software were used along with the cities of Kent and Maple Valley models (in VISUM software). These models were used to forecast growth factors for the intersections on this corridor. The 2020 and 2030 baseline roadway networks included only funded projects. Unfunded, planned projects were not factored into the modeling analysis. The cities of Kent and Maple Valley model's results forecast demand for PM peak hour only. The PSRC model was used as a supplement to both estimate AM growth factors as well as provide a more regional application of traffic generation and

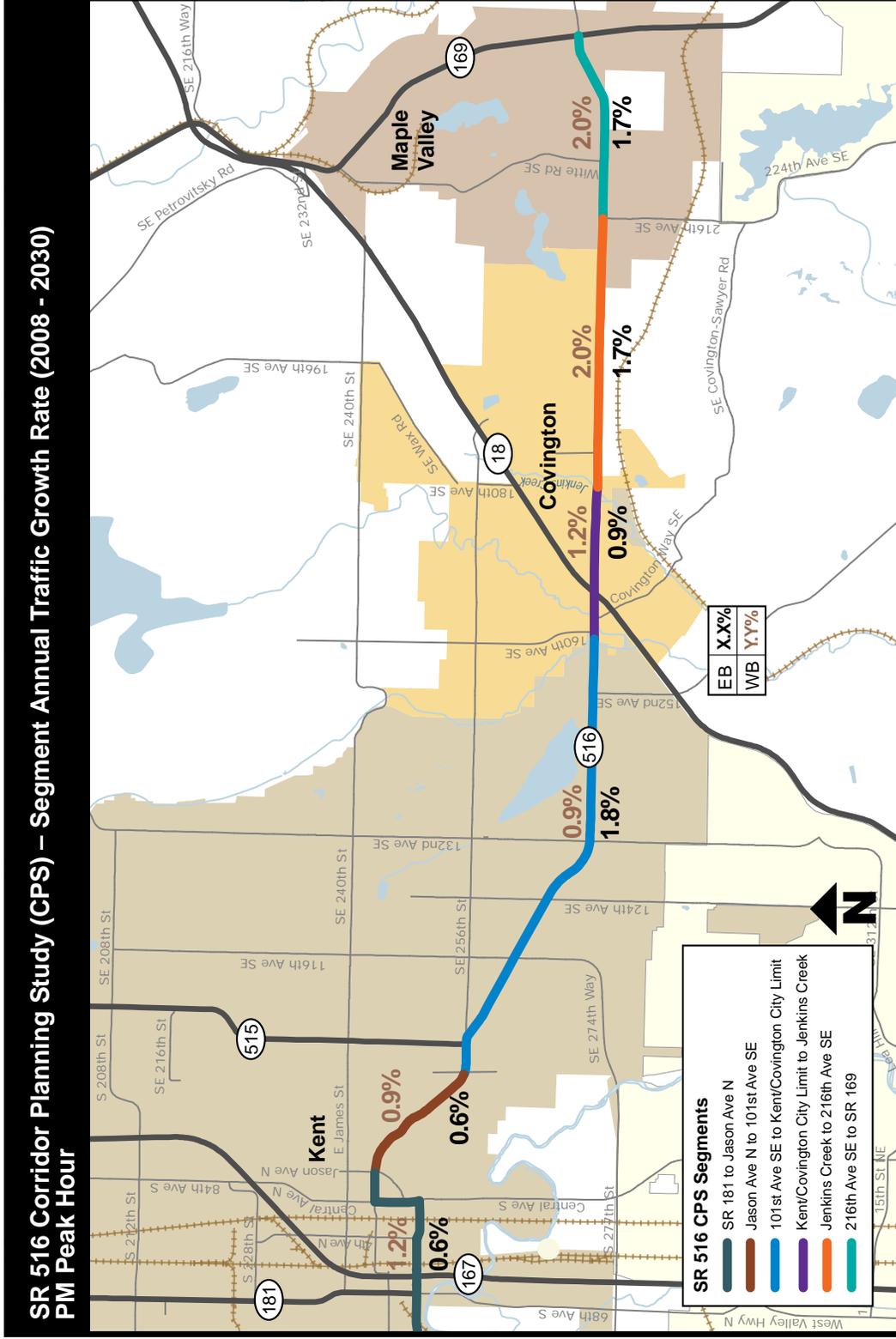
## CHAPTER FOUR | FUTURE BASELINE CONDITIONS

destination projections. The roadway segments in the study corridor were analyzed using SYNCHRO and SIMTRAFFIC simulation modeling software packages and Highway Capacity Manual methodologies. All analyses focused on the AM and PM peak hours of existing condition (2009) and three future year conditions (2016, 2022 and 2030).

Between the period of 2009 and 2030, PM peak hour demand grows 1.8% annually in the eastbound direction of SR 516 in Kent. Covington and Maple Valley segments in the eastbound direction show a 1.7% annual growth rate. In the westbound direction, the growth is forecasted at 2% annually for the segment in Covington and Maple Valley.

The growth rate by direction for the six segments is shown in Figure 4-1.

Figure 4-1: Traffic Growth Rate along the Corridor (2008-2030 PM Peak Hour)



## 4.2 Future Traffic Conditions

Future year analyses were conducted for three different years - 2016, 2022 and 2030. The analyses focused on AM and PM peak demand periods. Future year growth rates for each of the 26 intersections were applied by approach and by movement. Growth rates were applied to the traffic counts to develop future traffic demand for analyzing both segment and intersection performance. Like existing condition analyses, future condition analyses focused on evaluation of intersection LOS, segment travel speed and railroad crossing delays. All signalized intersections in the future years analyses were assumed to have optimized timing for peak efficiency before establishing if a need will exist. Figure 4-2 shows the locations of all signalized intersections, and identifies the 26 intersections analyzed.

Figure 4-2: Study Corridor Signalized Intersections



## 4.3 Highway Segments – 70% Speed Comparison

For the segment travel speed and speed ratio calculation, the same methodologies and tools were used as the existing condition analysis. The six segments were analyzed for the year 2030 to determine which segments may warrant further study and analysis. Speed comparison is used as a better measure of efficiency and allowing greater throughput. The WSDOT Highway System Plan uses 70% of the posted speed as an indicator of congestion. In other words, congestion exists if peak hour travel is less than 70% of the posted speed. This posted speed threshold is used to determine if a potential need exists along the study corridor and if an improvement recommendation is justified to address that need. Another condition for determining if a need exists is the density of signalized intersections typically

found in more urbanized areas. Higher densities of signalized intersections slow through traffic, allowing safer cross traffic movement and access to the mainline corridor. All segments, including those containing a large number of signalized intersections in close proximity, were modeled for speed comparisons. All of the segments with high density traffic signalization are slower than 70% of posted speed, but were not listed as being deficient since signal operations will have a deleterious effect on mainline traffic speeds, but have the benefit of safely allowing cross traffic movements and access to the corridor.

### **AM Peak Hour**

During the AM peak hour operation in 2030 conditions, four segments are projected to fall below the 70% speed threshold target in both the eastbound and westbound directions. These segments are:

- SR 181 to Jason Avenue N \*
- 101st Avenue SE to Kent/Covington City Limit \*
- Kent/Covington City Limit to Jenkins Creek \*
- Jenkins Creek to 216th Ave SE

*\* These three segments have a large number of signalized intersections in close proximity to one another*

Figure 4-3 shows the AM peak hour ratios of projected speeds compared to posted speeds.

### **PM Peak Hour**

During PM peak hour operations in 2030 conditions, the same four segments noted above fall below the 70% threshold. Figure 4-4 shows the PM peak hour ratios of projected speeds compared to posted speeds.

Two segments, Jenkins Creek to 216th Ave SE and 216th Ave SE to SR 169, were analyzed for the 2016 and 2022 mid-term conditions. Of those two segments, only Jenkins Creek to 216th Ave SE segment is projected to operate below the 70% speed threshold during the 20 year study time span. The Jenkins Creek to 216th Ave SE segment was broken down into smaller segments to determine a more precise look at the timing and locations of future needs. The three partial segments within Jenkins Creek to 216th Ave SE were:

- Jenkins Creek to 185th Ave SE
- 185th Ave SE to 192nd Ave SE
- 192nd Ave SE to 216th Ave SE

Figure 4-3: Ratio of Operating Speed to Posted Speed (AM Peak Hour)

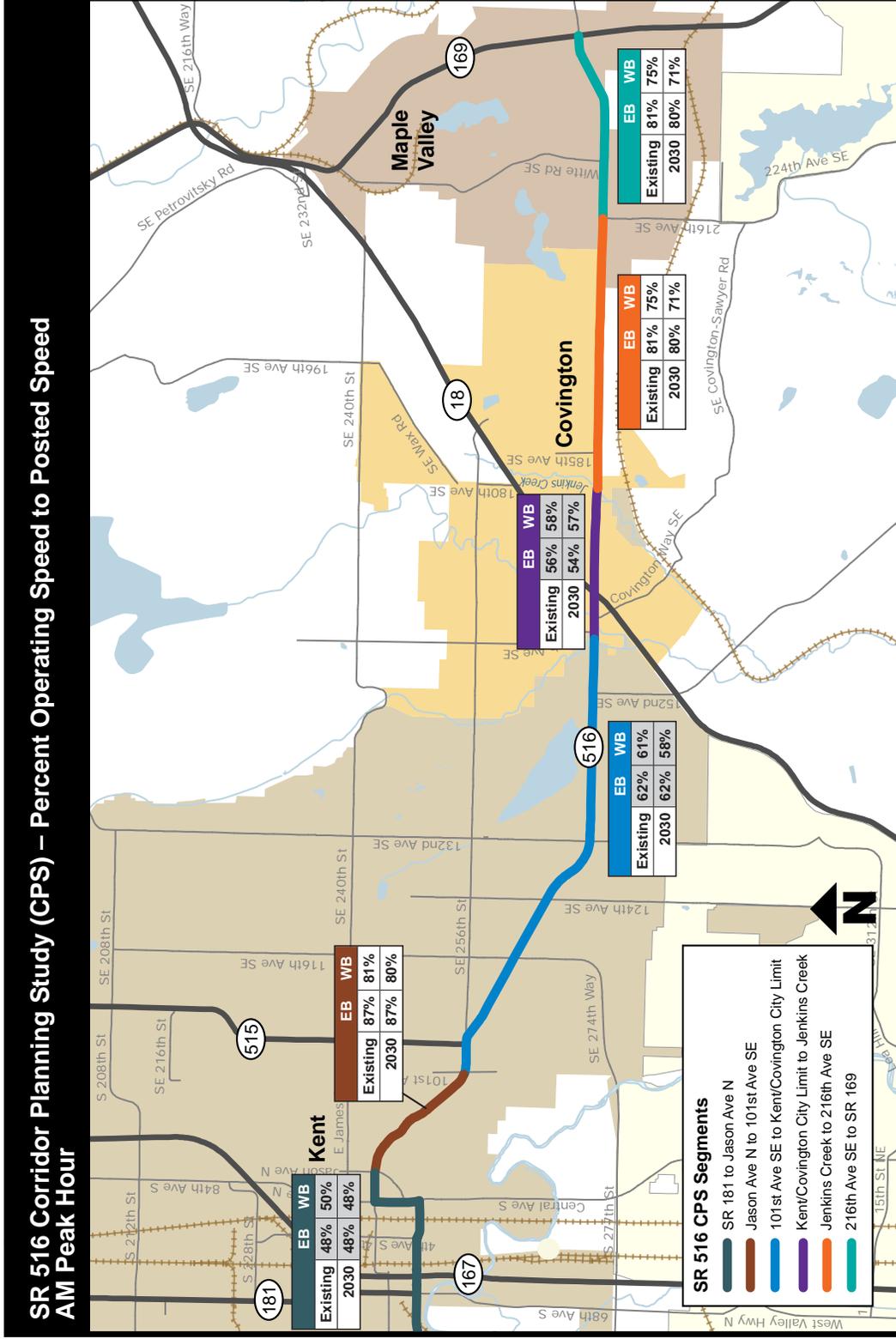
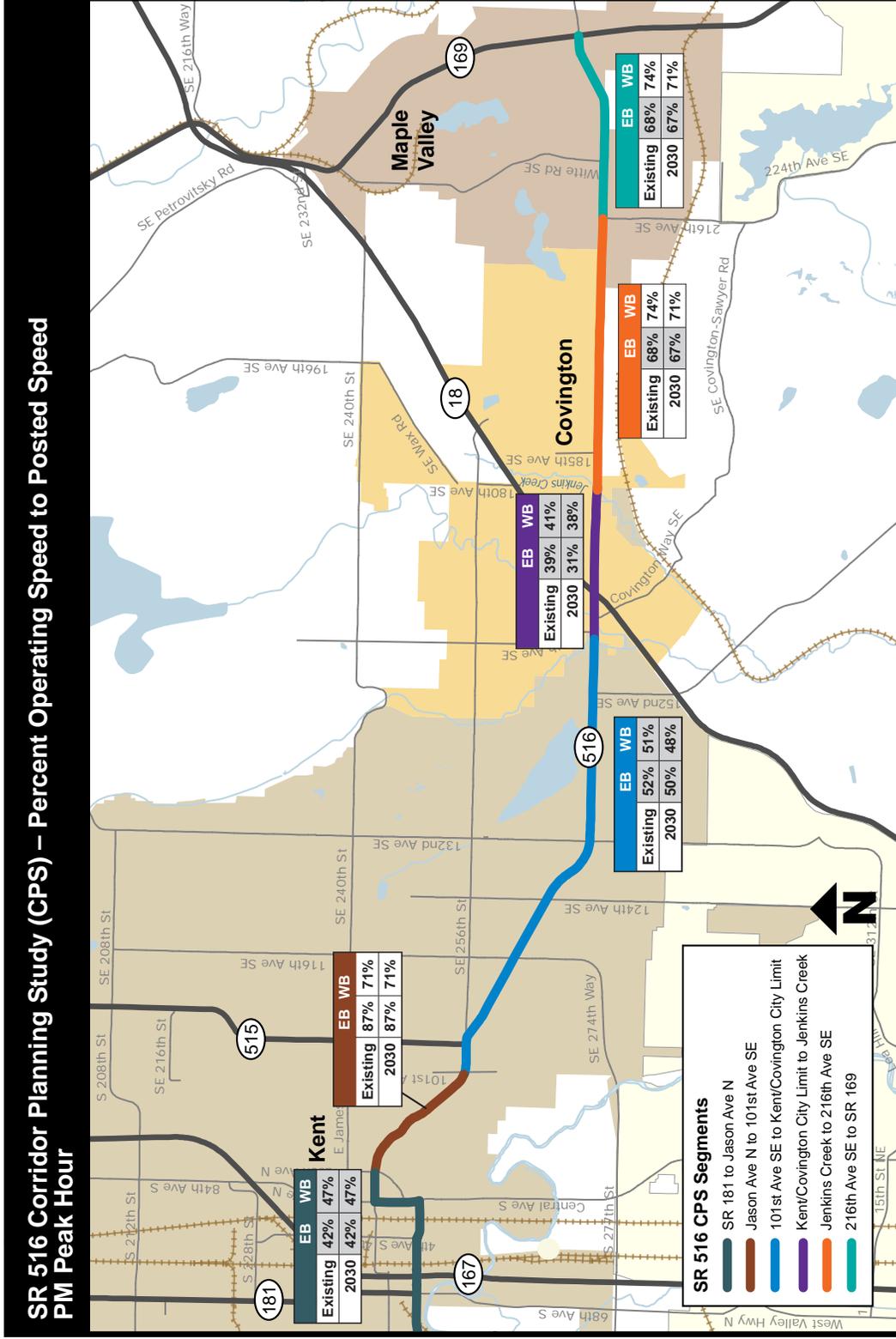


Figure 4-4: Ratio of Operating Speed to Posted Speed (PM Peak Hour)



## 4.4 Intersection LOS with Programmed Improvements

### Intersections

Based upon analysis, with only currently funded improvements and optimized signal operations considered as being in place, of 26 signalized intersections studied, nine would operate below LOS E in 2030. AM peak periods did not indicate any intersections in the study corridor would fail. The following intersections are modeled as operating below LOS E in the study timeframe.

#### **Far Term (2030) conditions – PM peak below LOS E (w/o ptimized signal operation)**

- SR 516 and Central Avenue N/E Smith St
- SR 516 and 104th Avenue SE
- SR 516 and SE 256th St
- SR 516 and 108th Avenue SE
- SR 516 and 132nd Avenue SE
- SR 516 and 152nd Avenue SE
- SR 516 and 164th Avenue SE
- SR 516 and 172nd Avenue SE
- SR 516 and SE Wax Road

## 4.5 Railroad Crossing Analysis (Future)

The railroad crossing analysis for 2030 future year conditions used the same methodology as explained in the existing railroad crossing analysis in chapter three. The vehicular volumes were adjusted according to the growth rates, but no modifications were made to the Union Pacific train trip frequencies or lengths for modeling the future case scenario.

During 2030 AM peak hour, under the worst case scenario of five minutes closure time, the average travel time from SR 181 to Central Avenue S could increase from 1.3 minutes up to 2.2 minutes in the eastbound direction and from a little over one minute to 2.4 minutes in the westbound direction, respectively. During 2030 PM peak hour, under the worst case scenario of five minutes closure time, the average travel time from SR 181 to Central Avenue S could increase from 0.7 minutes up to 1.9 minutes in the eastbound direction and from 0.2 minutes to 3.2 minutes in the westbound direction, respectively.

In this worst case scenario, eastbound traffic queues could extend far enough to negatively affect four signalized intersections including the SR 167 ramp junctions. The westbound traffic queue could extend as far as Central Avenue.

At the conclusion of this study a proposal surfaced to increase coal shipments on the BNSF line from the Montana and Wyoming areas to a terminal in Bellingham. Due to the late timing of this proposal and because the SR 516 Corridor Study focused on how UP operations could affect SR 167/SR 516 operations, this corridor study would note that further analysis will be needed to determine the effects increased rail activity could have on traffic operations of the SR 516 corridor.

A safety issue associated with railroad usage and closure times is emergency access across the tracks during train travel events. This is not limited to the highway wait times but includes all local access, at-grade, roadways across the tracks. If a train is restricting access to an emergency on the other side, other units may have to be called in to respond, increasing the time it takes for emergency crews to arrive at the incident.

### **4.6 Non Motorized Issues**

The corridor has developed over time in much the same way as other highways. The original purpose was to move vehicular traffic. As shown on earlier on Figure 3.2, there are breaks in sidewalk continuity, especially in the more rural sections. Bicycle facilities are infrequent and not interconnected at this time. Within the Comprehensive plan for Covington for example, the portion of SR 516 west of Wax Road is not recommended as a bike route, due to high volumes of through and turning vehicular traffic. (The city has made efforts to provide more bike-friendly connections to the north and south of SR 516.) The city of Maple Valley recommends sidewalks along SR 516 as part of its non-motorized plan. The cities have made efforts to include pedestrian and bicycle amenities as a requirement for permitting new development as it occurs along the corridor. These efforts are sporadic and dependant on where the new development may occur. Without dedicated funding for these amenities, apart from new development, this piecemeal approach will likely continue. Coordination between WSDOT and local jurisdictions should continue in an effort to make the corridor more pedestrian and bicycle friendly.

### **4.7 City Identified Transportation Improvement Needs**

The following transportation improvement needs are identified by the cities of Kent, Covington, and Maple Valley. The improvement needs were derived both from the cities' Transportation Improvement Program (TIP) lists and from conversations with the CWG.

## CHAPTER FOUR | FUTURE BASELINE CONDITIONS

The city of Kent has identified the need for SR 516 intersection improvements at Willis St. and Central Ave., Smith St. and Central Ave., 132nd Ave SE, SE 256th St/104th Ave SE and 108th Ave SE (this is tied to an extension of 108th Ave SE to 256th Ave SE). They also indicated a need for grade separation of the two, at-grade, RR crossings in the vicinity of SR 167. The city's TIP and Comprehensive plan can both be found at:

[www.kentwa.gov/transportation](http://www.kentwa.gov/transportation)

The city of Covington has identified a need for widening SR 516 to five lanes from Jenkins Creek to 192nd Ave SE as well as from 160th Ave SE to 164th Ave SE with intersection improvements. The city's TIP can be found at:

[www.covingtonwa.gov/city\\_departments/publicworks/engineering/engineering.html](http://www.covingtonwa.gov/city_departments/publicworks/engineering/engineering.html)

The Comprehensive plan can be found at: [www.covingtonwa.gov/city\\_departments/communitydevelopment/strategiclongrangeplanning/compplaninfoandforms.html#revize\\_document\\_center\\_rz67](http://www.covingtonwa.gov/city_departments/communitydevelopment/strategiclongrangeplanning/compplaninfoandforms.html#revize_document_center_rz67)

The city of Maple Valley has identified the need for widening SR 516 to five lanes from the western city limits to 218th Ave SE, and then widening to three lanes from 218th Ave SE to SR 169. Sidewalks and bike facilities should be included in the widening, as well as intersection improvements at 216th Ave SE, 218th Ave SE, Witte Rd, and SR 169. The city has additionally identified a need for pavement restoration between 228th Ave SE and SR 169. The city's TIP can be found at: [www.maplevalleywa.gov/index.aspx?page=356](http://www.maplevalleywa.gov/index.aspx?page=356)

The Comprehensive plan can be found at: [www.maplevalleywa.gov/index.aspx?page=93](http://www.maplevalleywa.gov/index.aspx?page=93)

# **CHAPTER 5**

## **Recommendations**

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## CHAPTER 5: RECOMMENDATIONS

The recommendations in this study will need to compete for funding with other proposed improvements around the state based on performance outcome. Due to limited state funding, local jurisdictions are encouraged to seek funding from non-state sources such as developer contributions, creating a local improvement district, or federal grants to implement the recommendations.

### 5.1 Moving Washington Investment Principles

Moving Washington is the department’s framework for making decisions for transportation investments that focus on keeping people and goods moving and supporting a healthy economy, environment, and communities.

Moving Washington is anchored by the department’s highest priority: maintaining and preserving the safe and long-lasting performance of existing infrastructure, facilities and services. This is the heart of Moving Washington and the target of our investments.

Moving Washington combines three essential transportation strategies to achieve and align our objectives and those of our partners: operate efficiently, manage demand, and add capacity strategically. It is through the application of these strategies that the department is able to ensure that investments are integrated and solutions are cost-effective.

At its basic level, Moving Washington is a budgeting and investment strategy, which is more important now than ever, given declining transportation revenue and growing demands on our state’s highways, ferries and rails. The state is not in a position to build everything everyone wants. We must have a way to prioritize the needs and find the most efficient solutions that support and enhance Washington’s economic vitality.

**Maintain and Keep Safe** – The highest priority is maintaining and preserving the safe and long-lasting performance of existing infrastructure, facilities and services. This is the heart of Moving Washington and the principal target of the state’s investments in its transportation system.



After maintenance and safety needs are addressed, Moving Washington combines 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. Strategies include utilizing traffic technologies such as ramp meters and other control strategies to improve traffic flow and reduce collisions, deploying Incident Response to quickly clear collisions, optimizing traffic signal timing to reduce delay, and implementing low-cost/high-value enhancements to address immediate needs. Intelligent Transportation Systems (ITS) are the application of computers, communications and sensor technology to surface transportation. ITS technologies, such as electronic tolling, Traffic Management Centers (TMCs), traffic cameras and other surveillance devices, Variable Message Signs (VMS), Highway Advisory Radios, (HAR), and ramp meters can be employed as both efficiency and demand management strategies when practical.

**Manage Demand** – Demand management is an umbrella term for strategies that reduce vehicle trips or shift use of the roadway to off-peak periods. Demand management is one of WSDOT’s strategies to ensure sustainability and fight congestion. Options include several low-cost strategies that create the least amount of environmental impacts. Whether shifting travel times away from peak periods, using public transportation, or reducing the need to travel altogether, managing demand on overburdened routes allows our entire system to function better. Overall strategies include using variable-rate tolling in ways that reduce traffic during the most congested times and balance capacity between express and regular lanes, improving the viability of alternate modes, and providing traveler information via ITS to allow users to move efficiently through the system.

**Add Capacity Strategically** – Only after maintenance, safety, efficient operations, and demand management options are considered, strategic capacity improvements, under a three tiered system, are considered. Tier 1 projects are typically low cost high return projects, such as turn lanes, and intersection improvements. Tier 2 are moderate to higher cost projects that further reduces congestion on both highways and local roads, examples are auxiliary lanes and parallel corridors. Tier 3 projects are the highest cost and longest range projects such as adding general purpose lanes and improving interchanges.

## 5.2 Evaluation Criteria and Performance Measures

Moving Washington principles were applied in the creation and application of the following criteria used to determine corridor needs.

- Safety analysis included identifying any current sites listed as Collision Analysis Corridors (CACs), Collision Analysis Locations (CALs), or being on the Intersection Analysis Location List (IALL). Following that, a program called Safety Analyst was used to determine if potential future safety issues could be identified and addressed.
- Maintenance and preservation issues were investigated to determine if there are current or anticipated unmet needs for the study corridor.
- Efficiencies were looked for in the current and future operations of the corridor.
- Demand management techniques were investigated to determine their possible employment in the study corridor.
- Strategic capacity was then considered if other techniques failed to adequately address future mobility issues.

There were other issues investigated in this study. One of the highest priorities for the city of Kent was an analysis of the interactions of two, at grade, railroad crossings in the vicinity of the interchange area at SR 181, SR 167, and SR 516. Of particular concern is the Union Pacific track, located about 500 feet to the east of the SR 167 northbound off/on ramp intersection. The interactions of rail and vehicular traffic were analyzed using a SYNCHRO model and comparing time delays at RR crossings to standard intersections as well as looking into possible safety issues with traffic queuing resulting from train traffic during vehicular peak times.

The study corridor was analyzed for needs using Level of Service measurements at 26 signalized intersections and speed and capacity analysis on six separate segments within the study corridor. The speed analysis was used in ascertaining whether speeds were already, or expected to drop, below 70% of the posted speed. Simple capacity calculations of the facility, local desire to improve, existing local financial commitments, and constructability of improvements, were also involved in reaching consensus on whether a need existed and if an improvement would be considered for inclusion into this study's recommendations.

In addition to looking at needs to be considered for this corridor, timing of addressing those needs is also considered. A 20 year span of time is used to analyze the performance of the corridor and arrive at a set of options to be considered for the entire 20 year period. The entire set of options is ranked and then assigned to the first six years, the second six years, or the final eight years. The first subset is populated with those options that would satisfy a

current need within the first six-years of the base year used for modeling. The second subset is populated with those options that would satisfy a future need arising within the second six-year period (12 years after the base year) and finally the last subset is populated with those needs that would arise within the last eight years (20 years after the base year). The 6-6-8 timing application is intended to focus on “biggest needs first”, but does not actually indicate completion of a solution in this time frame. Solutions in this study and other corridor studies will be included in the HSP database and will compete with other state transportation projects based on performance outcomes.

In addition to levels of service and speed performance of the system the evaluation criteria also considered how a proposed improvement affected “Economy, Transportation, and Community” or “ETC.” The intent of looking at ETC was to get a fuller picture of how a recommended improvement would benefit the community as a whole, not just the study corridor itself. For example, would a proposed recommendation enhance freight movement or improve access to Transit Oriented Development, promote energy conservation, or improve safety? Often one recommendation may meet one criterion, but not address others. ETC is a more holistic approach to potential costs and benefits.

While potential improvements and timing were looked at for the corridor, those needs arising further into the future (20 years) were not assigned a specific improvement. Rather than potentially restrict future actions based on remedies developed in the past, it is preferable to allow flexibility in addressing those needs when they arise. Newer technologies could exist to assess the needs and determine how best to address them. A better understanding of the current conditions will be available at that point in time and will help lawmakers to make better decisions as to where to invest in improvements along the corridor. For these reasons, recommendations for addressing the far-term needs will not be specific, nor will they include an estimate of costs. The needs, as identified in this report will be stated, but the potential solutions will be evaluated closer to the time of actual need.

### **5.3 Recommendations**

As noted earlier in this chapter, recommendations in this study will need to compete for funding with other proposed improvements around the state based on performance outcome. Due to limited state funding available, local jurisdictions will need to seek funding from other sources such as developer contributions, creating a local improvement district, or federal grants to implement the recommendations.

The draft recommendations were presented to the Corridor Working Group at the November 16, 2011 meeting. The Corridor Working Group requested additional analysis to the east of Jenkins Creek with a refinement in the length of the segment being analyzed. Upon further consideration of Moving Washington priorities, stakeholder comments, and additional technical analysis, the list was refined and produced the following recommendations.

### **5.3.1 Preservation and Maintenance Recommendations**

The Highway Activity Tracking System (HATS) is designed to support WSDOT staff to document their maintenance activities. In 2011, WSDOT spent over \$32,000 in maintenance funds (M2) for this portion of SR 516. The overall pavement condition is good; crack sealing the portion between milepost 5.71 to 9.09 (Titus St. to about 127th Ave SE) is needed to extend the pavement life. WSDOT should continue with the Washington State Pavement Management System pavement monitoring and repair program. The next inspection is scheduled for 2013 and pavement needs will be reassessed at that time.

In spring 2012 the city Maple Valley identified the portion of SR 516 between 228th Ave SE and SR 169 as needing pavement repair due to rutting and cracking. WSDOT maintenance staff did a field inspection of that segment and agreed the current condition warranted repair. The repairs have been made and WSDOT will continue to address pavement issues as they arise, including crack sealing repairs on this stretch of the corridor.

Other roadside maintenance issues identified by WSDOT as ongoing needs include vegetation control (oversize tree removal), signage upgrading, and drainage improvements needed to prevent flooding as a condition for permitting any additional development. Both the state and local municipalities should continue on-going facilities maintenance and repair, including drainage, signage, illumination, guardrail, and striping. Local jurisdictions should consult with WSDOT Maintenance and Operations prior to permitting new development along the corridor.

### **5.3.2 Safety Recommendations**

Access management should be continued by the cities within their jurisdictional boundaries. Better access management reduces both the frequency and severity of collisions on any corridor. As collision data is collected in the future, if any segment or intersection becomes a Collision Analysis Corridor (CAC), Collision Analysis Location (CAL), or Intersection Analysis Location (IAL), and prioritizes against other statewide safety needs, a remedy should be scoped and considered for implementation.

Kent has recently been awarded a pedestrian safety grant to focus on SR 516 between 104th Ave SE to 124th Ave SE. Completion is scheduled for July 2013. The resulting effect should be monitored as the pedestrian safety grant improvements are implemented by Kent.

Both the state and the cities should continue to monitor collisions on the study corridor and, if warranted, determine if a specific physical fix would be effective. Enhanced education of the public on topics such as impaired driving, excessive speed, and awareness of non-motorized modes of travel should be offered to improve safety on the corridor. Continued enforcement is also recommended. As general considerations for safety enhancement on any roadway, speed limit review, physical separation of opposing lanes, and/or removal of two way left turn lanes should also be considered whenever appropriate.

### **5.3.3 Efficient Operation Strategies**

In addition to its safety benefits, access management will also help the flow of traffic and maximize throughput, making the system more efficient at a comparatively low cost. Maximizing flow characteristics and throughput by optimizing signal timing whenever and wherever possible is also recommended in this report. Northwest Region Traffic Operations has recommended the corridor, and the signal operations along the corridor, should continue to be reviewed at a minimum of every three years to ensure that it is operating at the best possible efficiency, minimizing vehicle delay while, to the best extent practicable, maximizing traffic flow. Kent, which is the signal operating agency within their city limits, should coordinate signal operations with WSDOT.

### **5.3.4 Demand Management Strategies**

Demand management strategies reduce vehicle trips or shift use of the roadway to off peak periods. These strategies are implemented in partnership with local governments, transit agencies, employers, and others, so the development of strategies will depend on the capacity and interests of local partners. Other considerations will include the objectives for the corridor, existing land uses and services, analysis of travel patterns and travel behavior, and financial resources.

Based upon traffic modeling and analysis, a 5 percent reduction in peak hour trips in 2030 would remove 450 daily commute trips from the highway and could result in an approximate \$8 to \$10 million in roadway capacity construction savings. This target is assumed to be achieved within those twenty years as a result of the demand management measures. Some of the key characteristics of the study corridor affecting demand management are:

## CHAPTER FIVE | RECOMMENDATIONS

- Largely low-density residential uses
- Small-scale, disbursed commercial areas
- Peak hour traffic includes commuters traveling relatively long distances to employment centers (Tukwila, Bellevue, Seattle, Tacoma, etc.) and local trips that start and end within the corridor (errands, shopping, local schools)
- A lack of continuous trails and other bicycle/pedestrian amenities
- Park and ride(s) closest to the Kent Sounder Station are oversubscribed; others on the corridor are underutilized.
- Bus transit service on the corridor operates on 30 minute peak hour headways; increased frequencies are not included in local transit plans
- Large, low-density residential developments on and near the corridor planned for the future

The following table lists demand management strategies that are recommended for this corridor. Accompanied with the strategy is a suggested timeline, approximate cost, estimate of trips removed, and basis for the assumptions.

**Table 5-1: Demand Management Recommendations**

Recommended Strategy	Timing	Cost	Trips removed
<p>Vanpool promotion - Market vanpools and offer subsidies and incentives for new vanpools (Based on incentives for vanpooling, I-90, 2009)</p>	<p>2020-2030</p>	<p>\$14,000 per year</p>	<p>100 daily commute trips</p>
<p>Engage employers - Supplement existing commute trip reduction (CTR), growth &amp; transportation efficiency centers (GTEC), transportation management activities (TMA), and transit efforts with targeted investments at businesses that employ corridor residents. Support for employers who will improve commute efficiency by offering telework/ compressed work week technical assistance; transit, carpool and vanpool subsidies; priority parking for carpools and vanpools; increasing SOV parking fees at worksites; etc. (Based upon: CTR, GTECs, outreach to Bellevue employers 2008)</p>	<p>2020-2030</p>	<p>\$60,000 to \$80,000 per year</p>	<p>200 daily commute trips</p>
<p>Relocate Vanpools - Target outreach and incentives to existing vanpools to encourage them to move from over utilized park and rides to underutilized park and rides for new transit users. Vanpools that move to underutilized park and rides stay in these locations because they are often located closer to their homes and are hassle-free (Based on: I-405 vanpool relocation project, Renton Transit Center and South Renton Park and Ride, 2007/2008)</p>	<p>2020, 2022, 2024, 2026, 2028</p>	<p>\$20,000 per year, conduct biannually</p>	<p>100 (relocate ten vanpools to redeem 100 parking spaces at park and ride with high levels of transit service)</p>
<p>Multimodal commute coaching, outreach and incentives – Employ community-based outreach and marketing programs (e.g. Curb the Congestion, In Motion) that provide individualized commute coaching and incentives to move people from SOV commutes to other modes. (Based on: Curb the Congestion on 164th in Snohomish County)</p>	<p>2024-2030</p>	<p>\$80,000 – \$120,000 per year</p>	<p>100 daily commute trips</p>

There are a number of other demand management strategies that may be considered in addition to the strategies listed above. They are:

- Ridesharing – promote vanpools and carpools, provide ride matching assistance through Rideshareonline.com, develop and maintain ride share meet-up locations
- Transit improvements – add service where appropriate to support connections to rail and transit routes
- School trip management – work with schools to support increased walking, bicycling, and school bus use, parent ride-sharing
- Bike to transit stations – promote and support safe bicycling routes to rail/transit stations to create broader access to main commuter routes
- Employer/commute trip reduction programs – work with employers to promote commute options to employees through outreach, assistance, and incentives; identify key employers on the destination end to work with to affect trips originating in the suburban community
- Residential-based trip reduction programs – use individualized and social marketing programs to educate and support households to make more efficient trip choices
- Personal travel assistance – establish a public outreach presence to assist travelers in making choices and using alternatives
- Incentives – provide incentives for travelers that use alternative modes being promoted in the corridor
- Improve non-motorized infrastructure – make investments in bicycle and pedestrian infrastructure to improve access and safety for bikers and walkers
- Human service improvements – improve/expand human services transportation
- Land use policies – work with local governments to make land use policies, plans and regulations more transportation-efficient, may include requirements for new development (such as limited parking, transit passes to residents, etc.)

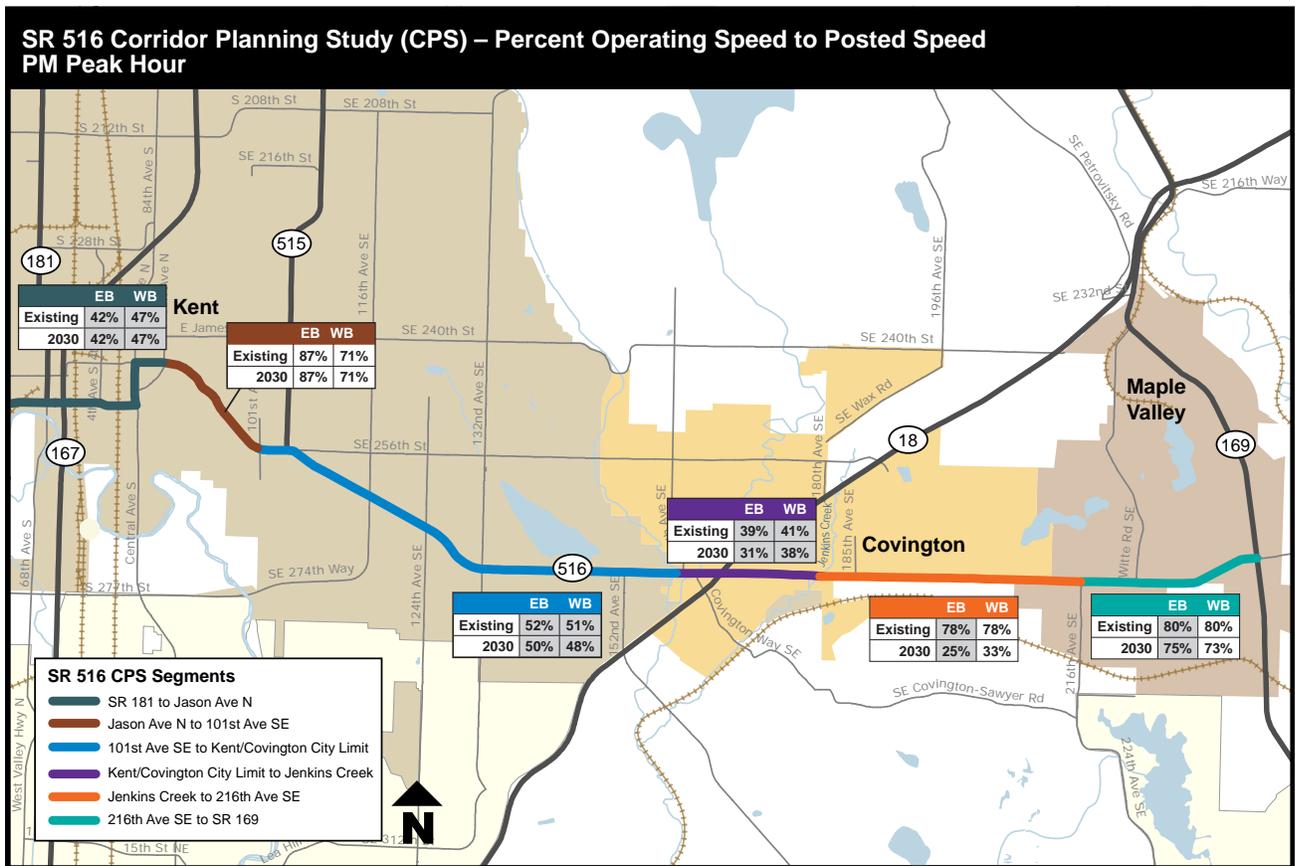
### **5.3.5 Strategic Capacity Addition Strategies**

Capacity improvements are broken down into three subsets, Tier 1, Tier 2, and Tier 3 projects. TIER 1 recommendations focus on low-cost projects that may deliver a high return on capital investment and have short delivery schedules. These include ramp modifications, turn lanes and intersection improvements. TIER 2 recommendations focuses on moderate to higher cost improvements that reduce congestion on both highways and local roads. These include improvements to parallel corridors (including local roads), adding auxiliary lanes, and direct access ramps. TIER 3 recommendations focuses on the highest-cost projects that can deliver corridor-wide benefits. These include adding general purpose lanes.

In addition to creating a list of recommendations based on performance criteria and timing of need, additional analysis was employed to look at potential solution locations and the existing landscape to help ascertain the potential impediments that may be faced when attempting to construct the improvements. Planning level cost estimates for the potential improvements, including the impediments were developed for the study. A benefit/cost (b/c) analysis was conducted using the estimated costs of the improvements and comparing those to the benefits, based on collision reduction and annual 24-hour user travel time savings for 20 years after implementing the project. The b/c estimates are based solely on time savings for motorized traffic and apply only to the 2016 and 2022 recommendations. A more detailed look at the analyses can be found in Appendix E.

The following section summarizes the results of key traffic analyses conducted for this study and how they support the capacity strategies using WSDOT standards. Figure 5-1 presents the ratio of operating speed to posted speed for the PM peak hour.

Figure 5-1: Ratio of Operating Speed to Posted Speed (PM Peak Hour)



Based on traffic analysis, the study team worked with the stakeholders and identified short-term (2016), mid-term (2022) and long-term (2030 and beyond) capacity improvement needs of this corridor. Looking at Figure 5.1 one can see that the ratio of operating speed to posted speed on several segments is below WSDOT's threshold. However, existing and forecasted operating speeds falling below the threshold does not automatically trigger capacity improvement consideration if widening is not deemed a viable option. Examples of such segments include from SR 181 to Jason Avenue N, from 101st Avenue SE to Kent/Covington City limit.

One of the critical needs identified by the stakeholders in this corridor is at Jenkins Creek, where the roadway narrows from 4/5 lanes to 2/3 lanes. This bottleneck creates traffic delays and merge problems. The old culvert presents a barrier for fish passage and it needs to be re-constructed. There are also two schools in the near vicinity of Jenkins Creek. The first is Jenkins Creek Elementary, located at 26915 186th Ave SE and the second is Covington Elementary, located at 17070 SE Wax Rd. Both of these schools are serving a young student population and this segment of SR 516 should be considered to be in alignment with the Safe Routes to School Program ([www.wsdot.wa.gov/LocalPrograms/SafeRoutes/default.htm](http://www.wsdot.wa.gov/LocalPrograms/SafeRoutes/default.htm)), and consider improvements that reduce potential pedestrian and bicycle conflicts with motor vehicle traffic; and/or establish safer and fully accessible crossings, walkways, trails or bikeways.

The following are capacity recommendations for the study corridor. It should be remembered that this is not a project list and state funding for these recommendations is subject to them prioritizing above other state wide transportation needs. The recommendations are further broken down into a sequence that reflects a logical approach to considering implementation. The time frames do not imply a schedule depicting actual implementation timing. Longer term recommendations do not include specifics as to how the needs should be met. This approach allows for greater flexibility for decision making in the future.

### **Near Term Needs, Recommendation, and Cost Estimate**

Widening from Jenkins Creek to 185th Ave SE\*

TIER 3

- Widen and reconstruct SR 516 between Jenkins Creek and 185th Place SE. This project will include the crossing of Jenkins Creek with a new structure for the stream, widening the street from 2-lanes to 5-lanes including curb and gutter, 8' sidewalks, access control features, landscaping and provisions for u-turns. A five foot bike lane is planned from east of the bridge to 185th Ave SE. This recommendation is consistent with the city of Covington's Transportation Improvement Plan.
- Estimated cost range (2011 dollars) \$10.6M to \$15.2M

## CHAPTER FIVE | RECOMMENDATIONS

- Considerations for construction include possible impacts to wetlands, residential properties, and access and egress points to and from SR 516. Additional costs have been included in the estimate for the remediation of the existing fish barrier location at Jenkins Creek.
- The benefit cost ratio was determined to be 0.9 to 0.6.

*\* Only travel time savings within the segment recommended for improvement are included in the benefit to cost ratio (B/C) calculation. B/C is only one of several factors considered in making the recommendations. Other benefits exist that may be less tangible from a purely economic standpoint, but important to society as a whole.*

### Mid Term Needs, Recommendations, and Cost Estimates

#### Intersection improvements at SR 516/104th Avenue SE (SR 515) TIER 1

- Improvements could range from local street improvements helping to relieve pressure on this intersection, and/or access removal of SE 256th St to SR 516, and/or a roundabout and/or improving the current intersection design with additional turning lanes, storage lanes and other related improvements.
- Estimated cost range (2011 dollars) \$3.5M to \$19.5M
- Considerations for construction include possible impacts to adjacent parking lots and businesses.
- The benefit cost ratio was determined to be 7.6 to 5.7.

#### Widening from 185th Ave SE to 192nd Ave SE\* TIER 3

- Widen and reconstruct SR 516 between 185th Place SE and 192nd Avenue SE. This project will widen the street from 2-lanes to 5-lanes including curb and gutter, 8' sidewalks, access control features, landscaping and provisions for u-turns. A five foot bike lane is also planned. This recommendation is consistent with the city of Covington's Transportation Improvement Plan.
- Estimated cost range (2011 dollars) \$10.2M to \$13.6M
- Considerations for construction include possible impacts to residential properties, and access and egress points to and from SR 516.
- The benefit cost ratio was determined to be 0.7 to 0.6.

*\* Only travel time savings within the segment recommended for improvement are included in the benefit to cost ratio (B/C) calculation. B/C is only one of several factors considered in making the recommendations. Other benefits exist that may be less tangible from a purely economic standpoint, but important to society as a whole.*

**Long Term 2030 Needs and Recommendations**

Intersection improvements at SR 516/Central Avenue N	TIER 1
Intersection improvements at SR 516/SE 256th St	TIER 1
Intersection improvements at SR 516/108th Avenue SE	TIER 1
Intersection improvements at SR 516/132nd Ave SE	TIER 1
Intersection improvements at SR 516/152nd Avenue SE	TIER 1
Intersection improvements at SR 516/172nd Avenue SE	TIER 1
Intersection improvements at SR 516/SE Wax Road	TIER 1
Capacity improvements from 192nd Ave SE to 216th Ave SE	TIER 3

**5.4 Environmental Considerations**

As discussed in Chapter 3, Environmental Overview, there are a number of environmental considerations to be addressed before any physical alteration of the existing corridor is undertaken. In connection with suggested improvements as part of this study, the primary area of interest is Jenkins Creek in Covington. Before any improvements are made to the corridor facilities, wetland, wellhead, and fish barrier issues must be addressed. Covington has already been working on a preliminary design for roadway widening and culvert replacement. Covington has been working on this design in cooperation with King County and the Department of Fish and Wildlife. The improvement to the roadway at Jenkins Creek will result in the removal of an existing fish passage barrier with better access to approximately 18,500 square meters of upstream habitat.

WSDOT is in the preliminary stages of looking at stream sheds and the fish barrier issue in a more holistic manner, with the thought of coordinating efforts between different participants. WSDOT Olympic Region is considering a pilot study on the Olympic Peninsula. The general idea is that many jurisdictions may have single project fish passage needs and limited funds to accomplish the work. If each jurisdiction moved ahead on its own individual timeline, just a “piece” of a stream is opened up to fish passage. But if jurisdictions got together and pooled their monies and identified the best way to prioritize projects in the area, i.e. focus on the “right” barriers, there is a likelihood of maximizing the stream’s fish rearing potential. The hoped for results could include maps to show existing problems and potential combinations of fixes. All investigations into this concept will be coordinated with the Environmental Services Office. While the effort to coordinate fish barrier removals on a stream shed basis is in its infancy, when any of the three existing fish barriers along the study corridor is being considered for replacement, the project managers should investigate the progress of the coordination effort, and utilize the findings if available.

## CHAPTER FIVE | RECOMMENDATIONS

Any other work performed on the intersections or associated with development along the roadway must address the environmental issues associated with the area and ensure that these actions do not impact the environment unnecessarily or create a future environmental issue that may impact the state facility's functions.

# **CHAPTER 6**

## **Next Steps**

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## CHAPTER 6: NEXT STEPS

This chapter presents an overview of the next steps towards integration with other plans, obtaining project funding, and initiating implementation of the SR 516 recommendations. The SR 516 Corridor Planning Study identifies corridor needs that are based on Washington State Department of Transportation (WSDOT) Moving Washington guidelines and proposes actions to address those needs. While this alone does not guarantee implementation 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.

The SR 516 Corridor Plan has identified preservation activities, safety considerations, operational efficiencies, demand management strategies, and capacity improvements that are recommended to meet the corridor needs. With prevailing economic conditions, the available revenue needed to implement these recommendations is very limited and WSDOT cannot fund the recommendations in the near term. In the future, actual conditions and available technology may present opportunities to address corridor needs in more sustainable and less capital intensive ways. These should be taken into consideration in determining the best approach to achieve the desired outcome. Given the higher priority of maintenance, safety, efficient operations, and demand management, these strategies are to be considered and utilized prior to capacity improvements being implemented. Should state funding become available for new capacity improvements, any recommendations made here would be subject to the prioritization process against other statewide transportation needs.

Specific actions that should be taken to position the corridor plan proposed improvements for future implementation include:

- Incorporate the SR 516 Corridor Plan recommended improvements in the State's Highway System Plan (HSP) and the Puget Sound Regional Council transportation plan, as appropriate.
- Incorporate the SR 516 Corridor Plan recommended improvements, as appropriate, in city comprehensive plans.

### 6.1 What Funding Sources are Available?

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

**Local Agency Funding** - To be eligible for and competitive in most grant programs, local matching dollars are required – in fact, the more local participants are involved in and support a project financially, the more competitive a grant application can become. In addition to local matching dollars for grants, some communities have formed transportation benefit districts to raise funds for transportation projects. These districts, formed by the local government(s) through legislative action or a vote of the people, levy a tax for a specific transportation project within that jurisdiction(s). State law regarding benefit transportation districts (RCW 36.73) should be consulted before such a district is established by the jurisdiction(s).

Some other options include regional mobility grants, transit program funding for enhanced service, vanpool investment program, park & ride opportunities, special use needs, etc.

**Development Impact Fees** - The use of development impact fees to fund public facilities that are necessary to provide services for new developments and maintain acceptable level-of-service has been widely used in Washington and across the U.S. Development impact fees are one-time charges applied to new developments. Their goal is to raise revenue for the construction or expansion of capital facilities located outside the development to maintain an acceptable level-of-service for all users. Impact fees are assessed and dedicated principally for the provision of additional water and sewer systems, roads, schools, libraries, parks, and recreation facilities made necessary by the presence of new residents in the area. As new developments are approved, consideration should be given to their impact on the operation of local, county, and state highways within the proximity of the new development. New development along the corridor should be tasked with providing facilities that may be missing in the area involved. Examples can be sidewalks, bike facilities, safe vehicular access, landscaping, transit stops, etc. Other improvements may include requiring appropriate transportation demand management measures as a condition of development. These facilities benefit the business as well as the travelling public. Developers can also participate in improvements to mitigate impacts on a pro-rata share basis (rough proportion based upon new traffic added)

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

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

Another means of funding and implementing corridor plan recommendations is through legislative funding. Delegates can choose to introduce as a line-item a project that provides safety, congestion, economic, or other benefits that meet community needs. Study findings and recommendations in support of projects help to demonstrate the need. Moreover, since the plan is developed through a public process, stakeholder support is behind the recommendations.

**Federal Funds** - On July 6, 2012, President Obama signed into law P.L. 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21). Funding surface transportation programs at over \$105 billion for fiscal years (FY) 2013 and 2014, MAP-21 is the first long-term highway authorization enacted since 2005. MAP-21 represents a milestone for the U.S. economy – it provides needed funds and, more importantly, it transforms the policy and programmatic framework for investments to guide the growth and development of the country's vital transportation infrastructure.

MAP-21 creates a streamlined, performance-based, and multimodal program to address the many challenges facing the U.S. transportation system. These challenges include improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery.

MAP-21 builds on and refines many of the highway, transit, bike, and pedestrian programs and policies established in 1991. This summary reviews the policies and programs administered by the Federal Highway Administration. The Department will continue to make progress on transportation options, which it has focused on in the past three years, working closely with stakeholders to ensure that local communities are able to build multimodal, sustainable projects ranging from passenger rail and transit to bicycle and pedestrian paths.

Setting the course for transportation investment in highways, MAP-21:

### **Strengthens America's highways**

MAP-21 expands the National Highway System (NHS) to incorporate principal arterials not previously included. Investment targets the enhanced NHS, with more than half of highway funding going to the new program devoted to preserving and improving the most important highways – the National Highway Performance Program.

### **Establishes a performance-based program**

Under MAP-21, performance management will transform Federal highway programs and provide a means to more efficient investment of Federal transportation funds by focusing on national transportation goals, increasing the accountability and transparency of the Federal highway programs, and improving transportation investment decision making through performance-based planning and programming.

### **Creates jobs and supports economic growth**

MAP-21 authorizes \$82 billion in Federal funding for FYs 2013 and 2014 for road, bridge, bicycling, and walking improvements. In addition, MAP-21 enhances innovative financing and encourages private sector investment through a substantial increase in funding for the TIFIA program. It also includes a number of provisions designed to improve freight movement in support of national goals.

### **Supports the Department of Transportation's (DOT) aggressive safety agenda**

MAP-21 continues the successful Highway Safety Improvement Program, doubling funding for infrastructure safety, strengthening the linkage among modal safety programs, and creating a positive agenda to make significant progress in reducing highway fatalities. It also continues to build on other aggressive safety efforts, including the Department's fight against distracted driving and its push to improve transit and motor carrier safety.

### **Streamlines Federal highway transportation programs**

The complex array of existing programs is simplified, substantially consolidating the program structure into a smaller number of broader core programs. Many smaller programs are eliminated, including most discretionary programs, with the eligibilities generally continuing under core programs.

### **Accelerates project delivery and promotes innovation**

MAP-21 incorporates a host of changes aimed at ensuring the timely delivery of transportation projects. Changes will improve innovation and efficiency in the development of projects, through the planning and environmental review process, to project delivery.

## CHAPTER SIX | NEXT STEPS

MAP-21 restructures core highway formula programs. Activities carried out under some existing formula programs – the National Highway System Program, the Interstate Maintenance Program, the Highway Bridge Program, and the Appalachian Development Highway System Program – are incorporated into the following new core formula program structure:

- National Highway Performance Program (NHPP)
- Surface Transportation Program (STP)
- Congestion Mitigation and Air Quality Improvement Program (CMAQ)
- Highway Safety Improvement Program (HSIP)
- Railway-Highway Crossings (set-aside from HSIP)
- Metropolitan Planning

It creates two new formula programs:

- Construction of Ferry Boats and Ferry Terminal Facilities – replaces a similarly purposed discretionary program.
- Transportation Alternatives (TA) – a new program, with funding derived from the NHPP, STP, HSIP, CMAQ and Metropolitan Planning programs, encompassing most activities funded under the Transportation Enhancements, Recreational Trails, and Safe Routes to School programs under SAFETEA-LU.

MAP-21 creates a new discretionary program – Tribal High Priority Projects (THPP) – and continues the following current discretionary programs:

- Projects of National and Regional Significance (PNRS)
- On-the-Job Training Supportive Services
- Disadvantaged Business Enterprise (DBE) Supportive Services
- Highway Use Tax Evasion (Intergovernmental enforcement projects)
- Work Zone Safety Grants

It also eliminates most current discretionary programs, but many of the eligibilities are covered in other programs:

- Delta Region Transportation Development
- Ferry Boats Discretionary
- Highways for LIFE Demonstration Program

## CHAPTER SIX | NEXT STEPS

- Innovative Bridge Research and Deployment
- Interstate Maintenance Discretionary
- National Historic Covered Bridge Preservation
- National Scenic Byways
- Public Lands Highway Discretionary
- Railway-Highway Crossing Hazard Elimination in High Speed Rail Corridors
- Transportation, Community, and System Preservation
- Truck Parking Pilot Program
- Value Pricing Pilot Program (no additional funding, but authority remains)

MAP-21 extends current law (SAFETEA-LU) for the remainder of FY 2012, with new provisions for FY 2013 and beyond taking effect on October 1, 2012. Funding levels are maintained at FY 2012 levels, plus minor adjustments for inflation – \$40.4 billion from the Highway Trust Fund (HTF) for FY 2013, and \$41.0 billion for FY 2014.

Additional information can be found at [www.dot.gov/map21](http://www.dot.gov/map21).

## Appendix A – Route Classifications

Table 3.1 in this report lists various classification schemes used by the Washington State Department of Transportation (WSDOT) and others in managing the state’s transportation system. Program funding, operations and maintenance are among the WSDOT functions affected by these classification programs. The following is a brief description of each classification program and its function.

### **Functional Class (Federal and State)**

Federal Functional Classification is one of the determining factors of eligibility for Federal Transportation Funding. The classification should reflect the residential, commercial and industrial uses served by the route, municipal boundaries, and the urbanized area designations of the U.S. Bureau of the Census.

State functional classifications seek to group highways, roads and streets by the character of service they provide. The system was developed for transportation planning purposes. It recognizes the various roles that individual routes play in the transportation network. Functional classification at this level is used to identify how to direct travel through the transportation network in the most logical and efficient manner. State functional classifications in Washington are divided in two major divisions, Rural and Urban. For this division the Federal Aid Highway Urban (or Urbanized) Area Boundary is used to divide the route classifications. See “Functional Classification System Concepts, Criteria, and Procedures, FHWA 1989” for more information.

### **Highway of Statewide Significance (HSS)**

The designation of Highways of Statewide Significance (HSS) was mandated by the 1998 Washington State Legislature. Highways of Statewide Significance include, at a minimum, interstate highways and other principal arterials that are needed to connect major communities in the state. The designation helps assist with the allocation and direction of highway funding. HSS highways are considered a higher priority for correcting identified deficiencies.

In some cases, the local Metropolitan Planning Organization or Regional Transportation Planning Organization, in coordination with WSDOT, sets the level of service standard for state highways within their jurisdiction. The 1998 legislation directed the Washington State Department of Transportation to set the level of service standards for HSS routes in consultation with local governments. However, WSDOT retains the authority to make final decisions regarding level of service standards for HSS routes.