

**Strategic Planning and Programming Division
Urban Planning Office**

STATE ROUTE 164 CORRIDOR PLANNING STUDY

Auburn
(Milepost 0.31)
interchange with State Route 18

to

Enumclaw
(Milepost 15.13)
junction with State Route 410



September 2009



**Washington State
Department of Transportation**

Washington State Department of Transportation
Strategic Planning and Programming Division
Urban Planning Office
401 Second Avenue South, Suite 300
Seattle, WA 98104-2887

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Lorena Eng
Regional Administrator

Prepared by

WSDOT

In Association With:

Parsons Transportation Group

Envirolssues

Herrera Environmental Consultants, Inc.

Landau Associates, Inc.

The Transpo Group, Inc.

Parametrix, Inc.



**Washington State
Department of Transportation**

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Green River Valley Coalition:	Judy Taylor

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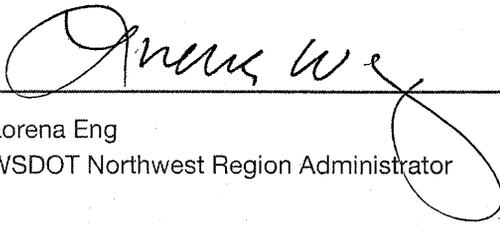
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Approved by:



Lorena Eng
WSDOT Northwest Region Administrator

2/8/2010

Date

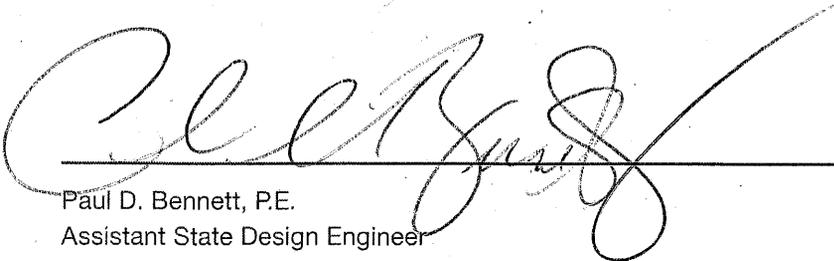
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Department of Transportation



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Chapter 1

Executive Summary

1 What is the purpose of this Corridor Planning Study?

The purpose of the State Route 164 (SR 164) Corridor Planning Study (CPS) is to provide recommendations that address identified existing and emerging safety, mobility, and preservation needs on a fifteen-mile stretch of SR 164 from Auburn to Enumclaw. This corridor functions primarily as a commuter, recreational, and freight corridor due to development in this area.

This study was not identified in the Highway System Plan (HSP) but was directed by the legislature. In 2004, the Washington State Legislature provided funding to evaluate transportation problems and potential improvements for SR 164 and recommend projects for implementation. With help from a stakeholders group comprised of representatives from jurisdictions along the corridor, a list of potential improvements for the SR 164 corridor was developed. This list of improvements included adding a bypass between SR 164 and SR 18 in Auburn. In 2006, the Legislature provided \$500,000 to further analyze this option, which was completed in 2009.

The need for the SR 164 bypass roadway was discussed with the CWG, including the possibility that a No-Action alternative could be the most viable path forward. A new bypass roadway, if built, would not be a new state route, but a local road.

What is a Corridor Planning Study?

A Corridor Planning Study (CPS) is a planning study that identifies existing and emerging transportation related needs along a specific state highway and provides recommendations to address those needs.

Corridor Planning Studies are the first steps towards obtaining funding for highway improvement projects. The projects may be implemented during the next 20 years as funding becomes available.

Need for the bypass is related to reducing congestion on SR 164 (Auburn Way South), the lack of redundant access to the plateau, and delay of emergency vehicle response due to congestion on SR 164. A bypass route would provide a much-needed alternative and could reduce delays at the SR 164/SR 18 interchange. The cost for the bypass was not included in the total cost estimate in this CPS.

This CPS evaluates existing and future roadway and traffic operating conditions related to the State Route (SR) 164 corridor. Specifically, this CPS evaluates:

- Existing roadway conditions such as number of lanes, roadway classifications, signalized intersections, transit service, and facilities for bicyclists and pedestrians
- Existing and future traffic conditions such as traffic volumes and operating conditions
- Roadway safety.

In addition to identifying existing and future roadway conditions, this CPS evaluates potential transportation improvements for SR 164 and, based on that evaluation, proposes improvements that should be considered for funding during the next 20 years. A CPS is often the first step in identifying needed improvements and obtaining funding for transportation projects. Funding for these projects can come from various local, regional, state, or federal sources. The responsibility for implementing the CPS identified improvements could fall to WSDOT, or the local or regional governments, and in some instances, private developers. One benefit of a CPS is that it shows the State Legislature, citizens, and potential developers that there is an agreed-upon blueprint and vision for improvements to a particular corridor.

2 Where is SR 164 located?

SR 164 is in southeast King County and is the main travel route for parts of unincorporated King County, the cities of Auburn and Enumclaw, and the Muckleshoot Tribal Reservation. The 15-mile corridor serves as a commuter, recreational, and community connection. The route begins at the SR 164/SR 18 interchange in Auburn, passes through the Muckleshoot Tribal Reservation and serves the White River Amphitheatre. The highway goes through unincorporated King County before ending in downtown Enumclaw at the junction with State Route 410.

Freight movement along SR 164 has an estimated annual tonnage of 4 to 6 million tons (see Chapter 2). Sand and gravel companies, which are a major industry in the area, use this corridor. Therefore, gravel truck traffic along this corridor can be frequent. Exhibit 1.1, to the right, presents the vicinity of the SR 164 corridor. A regional reference map, which is more detailed is shown in Exhibit 1.2 on page 1-5.

Exhibit 1.1

SR 164 Vicinity Map



3 Who developed this Corridor Planning Study and what are the goals for the corridor?

In 2004, the State Legislature recognized the important role SR 164 plays in moving people and goods. As such, it provided \$650,000 to WSDOT to develop this CPS.

A project vision and project goals for the corridor were developed by the SR 164 Corridor Working Group as part of their charter for the SR 164 Corridor Study. The charter was signed by each of the corridor partners on October 14, 2004. The study partners represented the following jurisdictions: City of Auburn, City of Enumclaw, King County, Muckleshoot Tribe, Puget Sound Regional Council, and WSDOT. The CWG's charter, goals and objectives, and evaluation criteria are included in Appendix E. The group's vision and goals are listed below:

Project Vision

A set of consensus-based recommendations for areas directly served by SR 164 that will increase safety and reliability, reduce person and vehicle delay, manage access, and respond to growth in the years to come. A Corridor Working Group (CWG) has been formed to help guide this effort.

Project Goals

Develop context-sensitive recommendations, including operational and potential link road options that can be implemented and agreed to by CWG partners. These projects will be politically acceptable, suitable for funding, environmentally sound, and responsive to the vision above. The recommendations will include:

- Immediate-term project opportunities that can be funded and/or implemented in the next 6-18 months.
- Short-term recommendations on an action strategy to construct and operate mobility and safety improvements in the next 6 years.
- Long-term recommendations for mobility and safety for the next 20-25 years.



SR 164 is one of the primary routes to Mt. Rainier National Park

Appendix A

Appendix A contains information regarding public and stakeholder outreach throughout the development of this CPS.

How are traffic volumes expected to change between now and 2030?

Traffic volumes are projected to increase along SR 164 between now and 2030. Specifically, segment volumes are estimated to increase by:

- 18–44% in the Auburn Segment1
 - 52–53% in the Academy Segment
 - 64–72% in the Muckleshoot Segment
 - 96–103% in the Rural / Agricultural Segment
 - 27–52% in the Enumclaw Segment
-

4 How has the public been involved in developing this Corridor Planning Study?

Community leaders, stakeholders, and the general public were encouraged to participate in the development of this CPS. Many of the recommendations in the CPS are a result of public input received through targeted meetings, stakeholder interviews, public open houses, and the project website at <http://www.wsdot.wa.gov/Projects/SR164/RDP/>.

5 Why is this Corridor Planning Study needed and what transportation issues does it address?

Deteriorating Travel Reliability

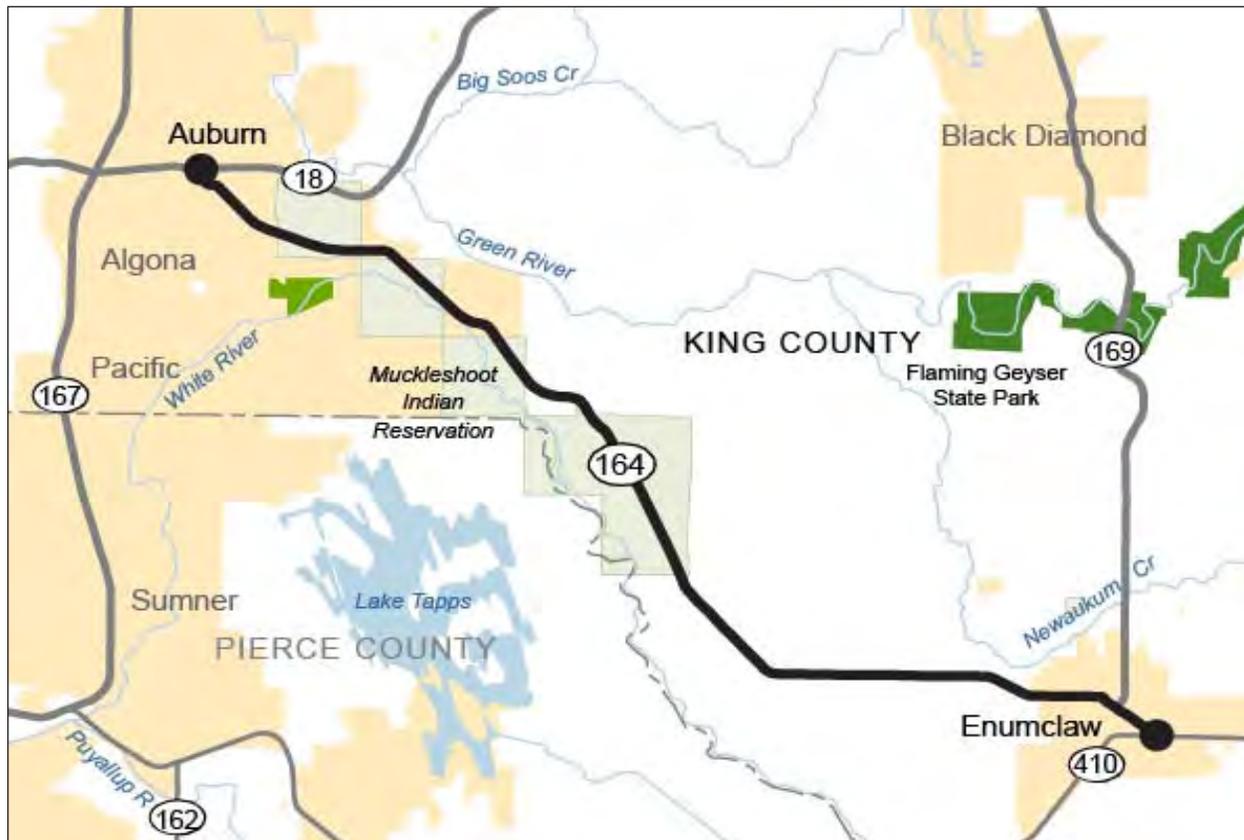
Land use along SR 164 has changed in recent years from predominantly rural and agricultural uses to a mix of rural, agricultural, and suburban uses as a result of increased residential and commercial development. This development has led to population increases in the communities located along SR 164 and an increase in traffic volumes on SR 164. Development along the highway has led to increase in recreational related traffic. Many new residents are also choosing to live in the communities served by SR 164 and commute to employment hubs elsewhere in King and Pierce counties. Traffic forecasts indicate that travel reliability along SR 164 will continue to deteriorate between now and 2030 as traffic volumes continue to grow along the corridor. By 2030, traffic volumes are expected to increase between 18 percent and 103 percent along the corridor, depending upon the location.

Safety

Current traffic volumes are just one factor contributing to safety problems along SR 164. Collision data from the 2002 to 2004 collection period points to many probable contributing causes for collisions such as alcohol use, excessive speeds, driver inattention, poor visibility, no guardrail, narrow shoulders, and extreme weather conditions. Often more than one factor was involved.

Exhibit 1.2

SR 164 Regional Reference Map



According to the collision data, there are eight sections on SR 164 that have been identified as being locations with higher than average collision experience.¹ In addition, there were two locations within the Auburn segment of the corridor that had higher than average pedestrian collision experience. The first location is near the SR 169 / 8th Street SE intersection and the second location is about a mile and a half east in the SR 169 / Riverwalk Drive intersection vicinity, near the Muckleshoot Casino. These locations are shown in Exhibit 3-51 on page 3-57.²

¹ Federal law 23 United States Code Section 409 governs use of the data contained above. Under this law data maintained for purposes of evaluating potential highway safety enhancements: “. . . Shall not be subject to discovery or admitted into evidence in a federal or state court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.” If anyone attempts to use this data in an action for damages against WSDOT, the State of Washington, or any other jurisdiction involved in the locations mentioned in the data, these entities expressly reserve the right, under Section 409, to object to the use of the data, including any opinions drawn from the data.

See Chapter 3, Section 3-14, page 3-48 for a discussion of SR 164 collision history and Section 3-15, page 3-56 for a discussion on SR 164 sections with higher than average collision locations.

² Ibid.

6 Recommended improvements

This CPS evaluates two different packages of improvements along the SR 164 corridor. Both packages include transportation projects that would address the following study goals:

- Improve safety for drivers, pedestrians, and bicyclists by making targeted improvements throughout the corridor that address key locations with a higher number of collisions;
- Improve shoulder widths and add sidewalks to increase safer walking in the corridor;
- Consolidate and improve the safety of Auburn School District bus stops and pullouts on the corridor to address the congestion that results from buses that currently stop in the traffic stream and provide safe walking routes to bus stops;
- Improve operating conditions at specific intersections by installing intersection controls (appropriate potential improvements might be one or more of the following: traffic signals, turning lanes, stop signs, or roundabouts);
- Improve transit facilities;
- Increase roadway capacity in strategic locations; and
- Improve operating conditions by employing access management strategies. These may include: regulating driveway spacing, combining driveways, and restricting left turns by installing restrictive medians at appropriate access points. Another technique would be to encourage the development of parallel arterial networks or grids of alternative streets for local traffic.

The recommended improvement option for the SR 164 Corridor Planning Study was developed by WSDOT with its team partners and the CWG. Improvement Option # 1 and Improvement Option # 2 were analyzed through the evaluation process. Both options added improvements along the corridor. The projects in Improvement Option # 2 build upon those in Improvement Option # 1 and provide additional needed capacity and benefits to safety and travel reliability.

The Corridor Working Group recommends Improvement Option # 2 as the locally preferred option for the State Route 164 Corridor Planning Study. Improvement Option # 2 calls for the widening of SR 164 from its current configuration of one lane in each direction (from Dogwood Street – milepost 2.28 to Academy Drive – milepost 4.37). This proposed project improvement would create a four-lane highway section of the corridor with two lanes in each direction. Also recommended is the addition of a center median with turning lanes, where appropriate, to control left turns and access to and from the highway.

The 2006 Washington State Legislature designated \$500,000 for a SR 164 Bypass Feasibility Study. In preparation for that study, the CWG recommended two Bypass Options for further analysis. The recommended options were Bypass Option # 1 and Bypass Option # 3. Either bypass option is intended to be implemented along with the operational, safety, and capacity improvements in Improvement Option # 2.

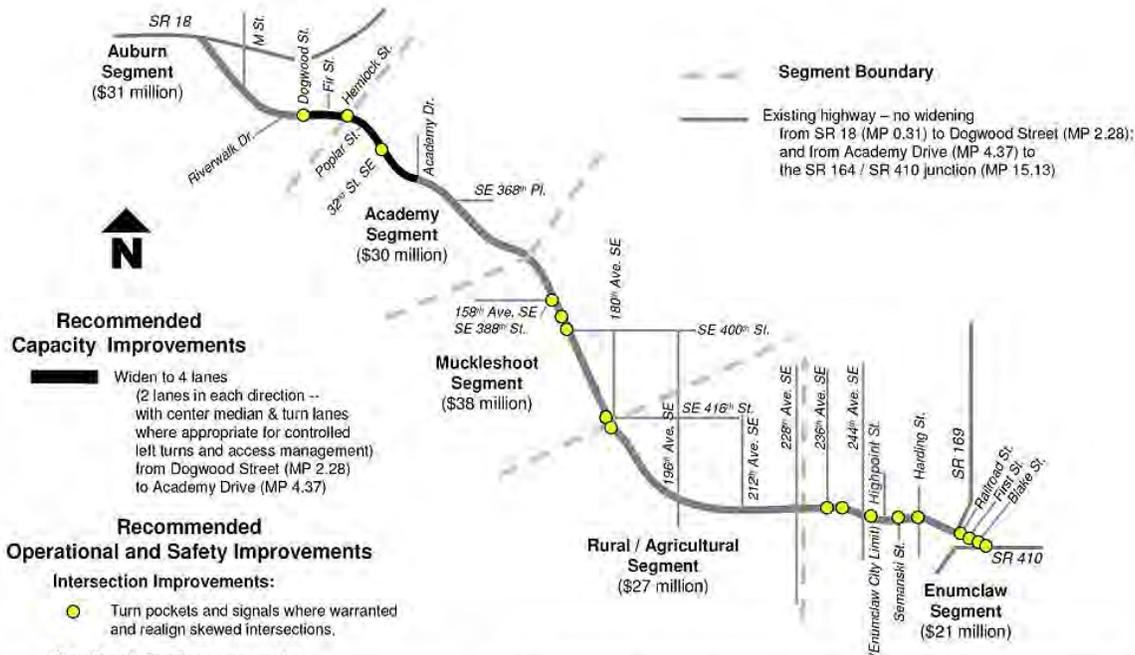
Bypass Option # 1 is the R Street Bypass, which connects SR 164 to SR 18 via a new grade-separated R Street/SR 18 interchange and a new R Street/SR 164 interchange via R Street. This bypass travels north on R Street to the new R Street interchange.

Bypass Option # 3 is the Noble Court to R Street Bypass, which connects SR 164 to SR 18 via the Noble Court vicinity and a new R Street interchange. This bypass leaves SR 164 in the Noble Court vicinity traveling northwest to a new R Street/SR 18 interchange.

7 How much will the proposed improvements cost?

The preliminary project costs for proposed improvements are shown in Exhibit 1.3 on the following page and total \$148 million. These costs were developed for planning purposes only and should be viewed as a starting point when determining a final cost estimate for a proposed project. The preliminary project costs were created to help the corridor study process for the SR 164 Corridor Planning Study. The preliminary project costs are in 2005 dollars, are planning level estimates, and are not based on engineering analysis. The estimates provided a generalized total for each segment based upon WSDOT experience with other projects of similar size and type. They do not account for potential environmental mitigation (including right-of-way needed for wetland reestablishment or other reasons related to environmental mitigation), rising material costs, or other unforeseen expenditures that may occur during design or construction. These factors may increase the final costs of individual projects.

Exhibit 1.3
SR 164 Recommended Improvements and Preliminary Project Costs*



* The preliminary project costs were developed for planning purposes only and should be viewed as a starting point when determining a final cost estimate for a proposed project. The preliminary project costs were created to help the corridor study process for the SR 164 Route Development Plan. The preliminary project costs are in 2005 dollars, are planning level and not based on engineering analysis. The estimates provided a generalized total for each segment based upon WSDOT experience with other projects of similar size and type. They do not account for potential environmental mitigation (including right of way), rising material costs or other unforeseen expenditures that may occur during design or construction. These factors may increase the final costs of individual projects. Bypass Option costs are not included in these project costs.

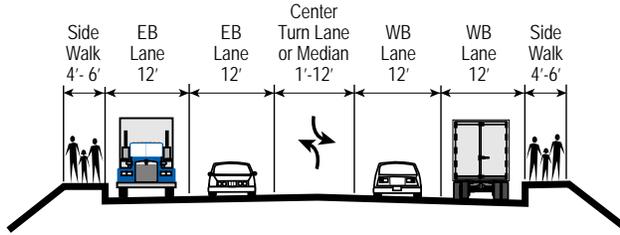
8 How many lanes are proposed for SR 164?

The number of lanes currently on SR 164 range from two lanes in the rural sections to five lanes in the urbanized area of Auburn. The proposed improvements would increase the highway capacity to four lanes (2 lanes in each direction) in the Auburn section of the corridor. A center restrictive median, center turn lane, or other access control management strategies would be installed where appropriate along the corridor.

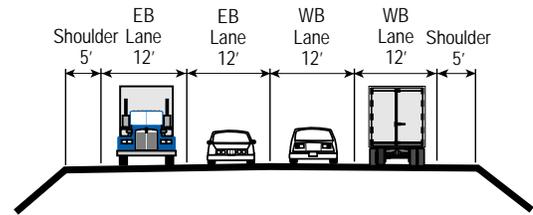
The recommended potential cross-sections and cross-section locations can be seen in Exhibit 1.4 and Exhibit 1.5 on the following pages.

Exhibit 1.4

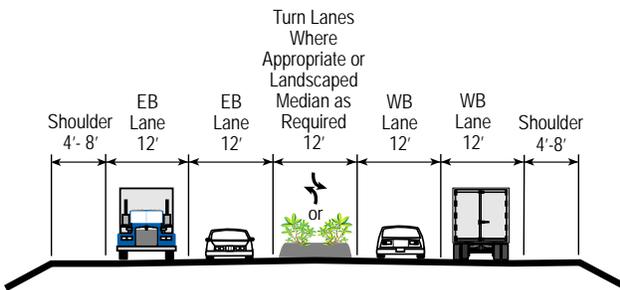
SR 164 Recommended Cross-Sections



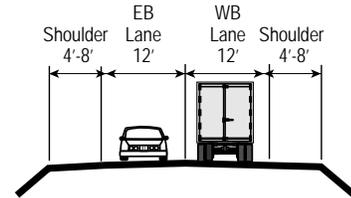
1 SR 18 to East of M Street
Milepost 0.31 to Milepost 1.34
West of Riverwalk Drive to Dogwood Street
Milepost 1.66 to Milepost 2.28



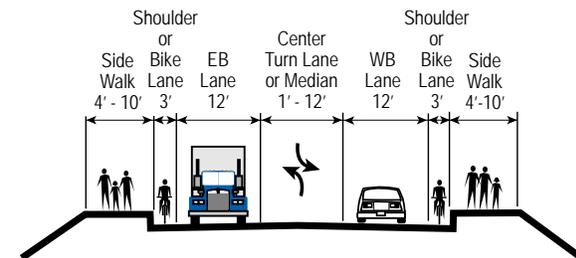
2 East of M Street to West of Riverwalk Drive
Milepost 1.34 to Milepost 1.66



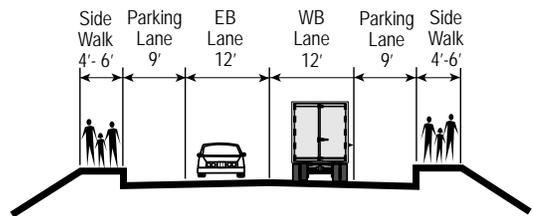
3 Dogwood Street to Academy Drive
Milepost 2.28 to Milepost 4.37



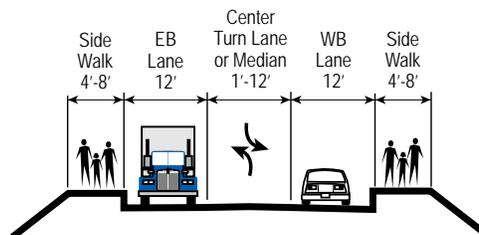
4 Academy Drive to Highpoint Street
Milepost 4.37 to Milepost 13.57



5 Highpoint Street to Wells Street
Milepost 13.57 to Milepost 14.11



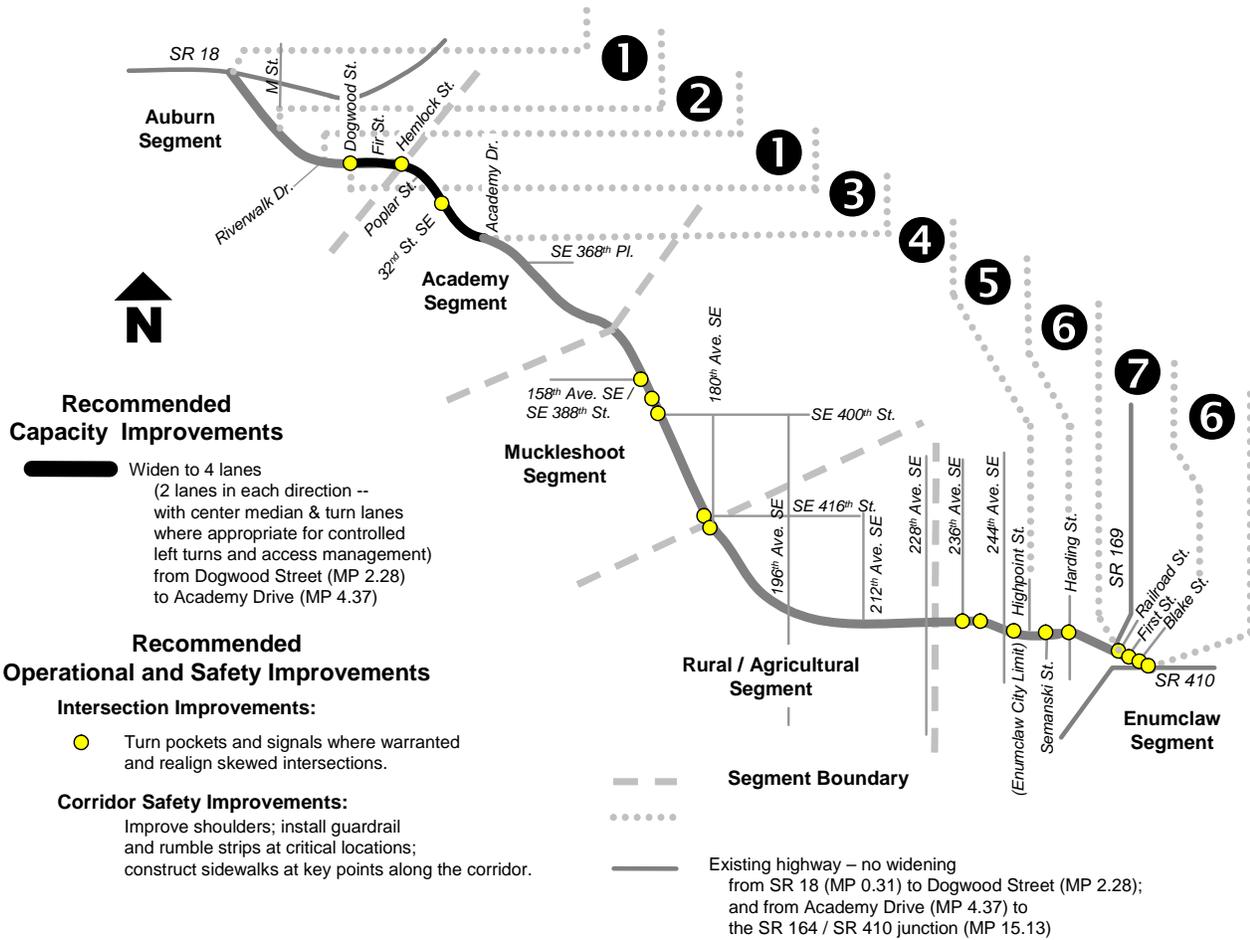
6 Wells Street to Railroad Street
Milepost 14.11 to Milepost 14.68
Blake Street to SR 410
Milepost 14.94 to Milepost 15.13



7 Railroad Street to Roosevelt Avenue (SR 410)
Milepost 14.68 to Milepost 14.94

Exhibit 1.5

SR 164 Recommended Cross-Section Locations



9 What information is contained in this Corridor Planning Study?

This SR 164 CPS presents the analysis of transportation conditions and needs within the corridor.

- Chapter 2 identifies existing roadway conditions and features.
- Chapter 3 describes existing and future traffic conditions.
- Chapter 4 evaluates two different packages of roadway improvements to address needs on SR 164.
- Chapter 5 presents recommended corridor transportation improvement projects.
- Chapter 6 discusses the next steps and possible funding opportunities.

This document also contains technical appendices which include the detailed analyses and inventories used to develop this CPS and the feasibility study which followed it.

- Appendix A: Public Outreach
- Appendix B: Environmental Inventory
- Appendix C: Original Projects List
- Appendix D: SAFETEA-LU Federal Funding Sources
- Appendix E: Corridor Working Group
- Appendix F: Traffic Data
- Appendix G: Project Cost Data
- Appendix H: SR 164 Bypass Feasibility Study

10 What are the next steps?

This planning study has included involvement of the public and CWG partners in the development of recommendations. The next steps of this corridor planning study include endorsement of the final corridor study and its recommendations by the CWG partners. The CWG partners will then work together to obtain funding for the study's recommendations along with a phasing plan for implementation.

Federal, state, and local governments have a variety of funding sources available for transportation projects. Partner agencies can use the CPS project list to solicit funding from local, state, and federal lawmakers and the private sector for implementation of the projects including project design, right-of-way acquisition, environmental review, and construction.

Most of the projects in this corridor study are not funded. The SR 164 Corridor Planning Study should be viewed as an important first step toward obtaining funding for improvement projects. Given the existing demands for funding for other transportation projects in Washington State, it was important for the local communities to agree on the safety, mobility, and preservation projects for SR 164 that should be implemented as funding becomes available.

The SR 164 CPS recommended improvements are now eligible to be incorporated into regional and state transportation plans. This will allow jurisdictions to seek funding from federal, state, and local sources for each of the projects. The recommendations can also provide direction and consistency for privately-funded improvements. Some projects will move forward as WSDOT projects, others will be implemented collaboratively with partner agencies, some will be done entirely by local agencies, and still others will be funded by private developers.

When a project acquires funding it enters into a detailed phase of project development. Project development starts with preliminary project engineering, continues through environmental analysis, right-of-way purchase (if needed), and construction. Public outreach and involvement takes place throughout the process.

Three potential options were reviewed for the SR 164 Bypass Feasibility Study (Appendix H): a No-Bypass Option that would target improvements at the existing Auburn Way interchange, and two bypass options that would incorporate a new bypass roadway connecting State Route 18 with State Route 164. The No-Bypass Option was removed from further consideration early in the study process as a result of previous traffic analysis work related to possible widening and reconfiguration improvements for the existing Auburn Way interchange as part of this SR 164 Corridor Planning Study, as well as follow-up analysis by the project team that identified significant challenges associated with future improvements at the existing interchange.

Planning-level analysis results for the 2030 No-Bypass alternative showed high levels of traffic congestion, especially at the SR 164/SR 18 interchange and at the M Street intersection during peak commute hours. This was due to increased traffic demands along the corridor and the physical constraints and right-of-way issues that prohibit further widening of the current interchange.

Elements of the remaining two bypass options were developed incrementally by the project team, and feedback was solicited from and provided by the CWG. Design decisions relating to specific alignment paths, interchange location(s), and general design features were discussed in depth. The resulting outcomes of these discussions, in terms of the bypass elements, were incorporated into the two options. Ultimately the decisions made by the larger group resulted in project definitions for two bypass options that were deemed reasonable for further analysis, design, and comparison.

The two bypass options analyzed for this feasibility study included the Dogwood Option and the Grid Option. The primary difference between the options lies in where they would connect to SR 164 and how they would address peak-period traffic congestion and localized access and circulation. Neither option would fully capture the entire travel market along SR 164 since access to communities and neighborhoods varies depending on the alignment and associated intersection connections.

The Dogwood Option would include a new interchange at SR 18 approximately 1 mile east of the existing Auburn Way (SR 164) interchange. It also would include a bypass that connects the interchange to Dogwood Street at approximately 15th Street SE. From that point, this option would rely on Dogwood Street (improved) to connect the bypass with SR 164.

The Grid Option would include the same interchange at SR 18 (and in the same location) that would be provided in the Grid Option. This option would include a new two-lane bypass roadway connecting this interchange to SR 164 at Muckleshoot Plaza and roadway extensions on R Street and 12th Street SE to provide a more complete grid network in the study area.