

Chapter 2

Description of the Existing Facility

Chapter 2 describes the area surrounding SR 164 and various roadway features including the number of lanes and locations of bridges and signalized intersections.

1 Where is SR 164 located?

SR 164 is a 15-mile roadway corridor beginning in the City of Auburn at the SR 164 / State Route 18 interchange. From its western terminus SR 164 travels southeast through the City of Auburn. The highway leaves the city and travels in and out of the Muckleshoot Tribal Reservation and unincorporated King County before reaching its eastern end in the City of Enumclaw at its junction with State Route 410. The base map in Exhibit 2.1 displays the entire SR 164 corridor and the adjacent land use. This map delineates the beginning and ending points of the corridor. SR 164 is used by commuters, tourists, residents, freight haulers, and people destined to recreational, industrial, and commercial activities located in the area.

2 What are the current land uses along the corridor?

Land uses along SR 164 vary from urban to rural. Urban areas contain uses such as residential, small scale office and retail buildings, strip-commercial, light industrial, and institutional. Most of the corridor between the Auburn downtown core and downtown Enumclaw is predominantly rural.

Exhibit 2.1
SR 164 Base Map



3 What are the environmental conditions along the SR 164 corridor?

An inventory was conducted of existing environmental conditions along the study area. Maps, reports, and additional environmental-specific data were assembled from local and state government agencies. Members of the study team conducted a drive-by in the corridor to verify the information. The environmental conditions that were inventoried and then analyzed to quantify potential impacts of a corridor planning study recommended improvement included: wetlands, water bodies, soils, steep slopes and landslide areas, and seismic hazard areas. Appendix B: Environmental Inventory includes detailed information on these environmental conditions in the study area, including maps and information on the screening of potential impacts to the study area.

Development of the CPS's recommended improvements took potential impacts to environmental conditions and archeological, historical, and cultural resources into consideration to avoid or minimize impacts. Improvements recommended by the SR 164 Corridor Planning Study could potentially impact a variety of environmental conditions including floodplains, streams and fish habitat, wetlands, steep slopes and landslide areas, and liquefiable soils. The recommended improvements would not impact the built environment.

Appendix B also identifies endangered species and sensitive habitats, built environmental characteristics (a review of nearby buildings, properties, and hazardous waste databases), parks, agricultural lands, and noise. The environmental inventory includes information on archeological, historical, and cultural resources as well as environmental justice considerations.

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The roadside classification for SR 164 within the study area is rural as designated in WSDOT's Roadside Classification Log. The rural designation is characterized by a mix of built and natural elements, with built elements beginning to encroach on the natural environment, and human manipulations of the land are evident. Roadside character is a description of the landscape from the roadway user's perspective, and encompasses the area between the pavement edge and the right-of-way boundaries. It is WSDOT's policy to protect and restore the roadside character as designated in the Roadside Classification Log, and to incorporate the plan into regional and route specific planning, design, construction, and maintenance programs.

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

Executive Order 07-02, 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 strategies recommended by this CPS to help address climate change, as outlined in Executive Order 07-02, include reinforcing CTR Programs, further analysis of bicyclist and pedestrian needs to encourage non-motorized travel, and inter-agency coordination with Metro to encourage access to and use of transit.

4 What will future land use and zoning look like along SR 164?

The cities of Auburn and Enumclaw are projected to have significant population and employment growth during the next 14 years. The Puget Sound Regional Council (PSRC) has adopted Year 2022 growth targets for all jurisdictions in the region as required by GMA. Growth targets, based on the state's official growth projections, reflect the minimum number of residents or jobs that a jurisdiction must accommodate and will strive to absorb by a future year. Counties and cities update their comprehensive plans based on these growth targets. State law, however, allows for jurisdictions to develop their own processes, methodologies, and to some extent, their desired outcomes. Therefore, some jurisdictions may actually project a higher employment and population forecast over the PSRC targets.

In 2000, Auburn had 16,108 households. The PSRC has allocated 6,003 additional households (for a total of 22,111) within Auburn by 2022, representing a 1.5 percent annual increase. In addition, Auburn had a total employment of 38,393 jobs in 2000. The PSRC has targeted a total of 44,472 jobs by 2022, or a 0.7 percent annual growth rate.

Auburn has proposed to manage growth by promoting different land uses based on the functional relationship to the community. This would be achieved by physically separating the employment and regionally-oriented centers from areas that are residential or local in character. The city also proposes to add multi-family residential in the urban center. In the semi-urban area the city proposes to protect the residential character of the existing single family neighborhoods while establishing a mix of housing types for both lower and higher incomes.

The PSRC has also allocated significant growth in population and employment for Enumclaw by 2022. In 2000, Enumclaw had 4,667 households. The PSRC estimates an additional 1,927

households within Enumclaw by 2022, representing a 1.6 percent annual increase. Enumclaw had a total employment of 4,420 jobs in 2000 and the PSRC has allotted a total of 1,125 new jobs by 2022 (for a total of 5,545), or a one percent annual growth rate.

Enumclaw's 2004 Comprehensive Plan has a preferred land use scenario that strengthens the downtown core, as well as developing mixed use residential areas and nodes. The city has proposed to transform the downtown business district to a Mixed-Use Overlay District. Mixed-Use overlay applies to land most suitable for development as a combination of commercial and residential uses. Allowable uses would include neighborhood, service, commercial, and multi-family residential uses.

The area along SR 164 (Griffin Avenue) between Highpoint Street and Garfield Street is designated as a mixed use corridor that would include commercial and residential uses. In addition, the area along the south side of SR 164 west of 241st Place SE is proposed as a Planned Unit Development (PUD). This designation allows for the development of large housing projects (single or multiple parcels totaling more than 10 acres) under a single development proposal. This will allow for a neighborhood with diverse housing styles and pedestrian connections to service, commercial, and institutional land uses.

The PSRC did not develop household and employment targets for the Muckleshoot Tribal Reservation, since it is exempt from the GMA. The Muckleshoot Tribal Reservation is planning to develop the land in the northwestern part of their territory (near Riverwalk Drive east to Noble Court SE) for commercial use. This is in consideration of the already established regional attraction of the Muckleshoot Casino; significant contiguous acreage available for development; and access to a developed street network. The Muckleshoot Tribe proposes to keep the land designated conservancy as "fixed," thereby protecting sensitive areas as open space.

Concurrency Requirements (Growth Management Act)

The Growth Management Act (GMA) concurrency standard requires each city to monitor the amount of traffic growth caused by new development. The concurrency standard requires that each agency create a method to ensure that new developments do not lower the quality of the roadway (level of service threshold) below the locally adopted minimum standard. This is achieved by requiring transportation improvement(s) ‘concurrent’ with the proposed development to improve the overall service of the roadway network (The GMA defines ‘concurrent’ as any development (building or transportation) that is completed at the time of or within six years of each other. This policy is intended to coincide with the six year time frame of most capital facilities plans)¹.

In 2003, Level of Service (LOS) standards for Regionally Significant State Highways in the Central Puget Sound region were adopted by the Puget Sound Regional Council. For urban areas, the adopted LOS standard ranges from LOS E/mitigated (pm peak hour LOS is below the traditional LOS E) to the traditional LOS D.

The city of Auburn has developed a set of concurrency standards that will be used for all new developments in their jurisdiction. These policies include:

- Roadway improvements that serve new developments will be constructed as part of the development process.
- All costs will be borne by the developer.
- In some instances, the City may choose to participate in construction where improvements serve more than adjacent developments.
- The City will encourage the use of Local Improvement Districts (LIDs), where appropriate and financially feasible, and to facilitate the development.
- The City will also consider developing a traffic impact fee system.

¹ For an overview on Transportation Concurrency go to the following web page: <http://www.psrc.org/projects/growth/concur/concurrency.htm>

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- Improvements that are considered to benefit abutting property should be funded by the abutting property owner.
- Revenues for street improvements should provide for the development of the general development of traffic flow in compliance with the six-year street plan. The basic criteria for the funding should be to evaluate how the project improves the general traffic flow and not the benefit that might accrue to properties.

The Muckleshoot Tribal Reservation does not have any concurrency standards, since GMA does not apply to tribal governments. Tribes create and adhere to their own land use and transportation plans, and can elect to follow GMA regulations voluntarily. While the Muckleshoot Tribe does not currently have a concurrency standard, it may consider the possibility of developing one as development needs increase in the future.

The City of Enumclaw has set a LOS D standard for signalized intersections and LOS F standard at unsignalized intersections. This means that any new development cannot generate new trips such that they will cause the level of service to decline to a point of unacceptable congestion.

King County uses two sets of measures to determine whether a proposed development meets LOS standards. They include an averaging of traffic congestion on roadways in the area and a measure of traffic congestion in an individual corridor. Area-wide averaging is used to judge the performance of the road system as measured against the adopted LOS standards. An individual corridor measure is used to judge performance of monitored corridors as measured against the LOS standards. The LOS standard for the Urban Area and Rural Towns is LOS E. For rural areas outside of towns, the standard is LOS B. In both cases, minor commercial and public facilities allow a standard of LOS F. The King County Transportation

Concurrency Management program does not apply to transportation facilities designated by WSDOT as “highways of statewide significance (HSS)”²; however, since SR 164 is a non-HSS facility, the program does apply.²

The Washington State Legislature passed HB 1230 in 2008. This bill designated State Route number 164 as a highway of statewide significance. The designation of SR 164 as an HSS indicates that the highway is now exempt from local transportation traffic-flow concurrency requirements. The HSS designation begins at the junction of SR 18 in Auburn and ends at the junction of SR 410 in Enumclaw.

Chapter 3 further discusses Level of Service standards and how they were applied to intersections and segments of the SR 164 corridor.

5 What are the SR 164 Corridor Segments?

For the purpose of this analysis, the corridor has been divided into five distinct segments shown in Exhibit 2.3 on the next page. Each segment’s unique characteristics were considered while developing improvement recommendations appropriate to specific locations along the highway. Each roadway segment is described in the text that follows.

Auburn Segment (Milepost 0.31 to 2.79)

The Auburn segment extends from the SR 18 / SR 164 interchange to Noble Court SE. The segment passes through the city of Auburn and parts of the Muckleshoot Tribal Reservation. The land uses vary from commercial, entertainment, and light industrial in the Auburn downtown area, including the Muckleshoot Casino, to single family and multi-family residential uses.

Academy Segment (Milepost 2.79 to 5.00)

The Academy segment extends from east of Noble Court SE to just east of SE 368th Place. The land uses are primarily single family residences and rural land. There is also a religious, educational facility along the corridor which is a notable trip generator.

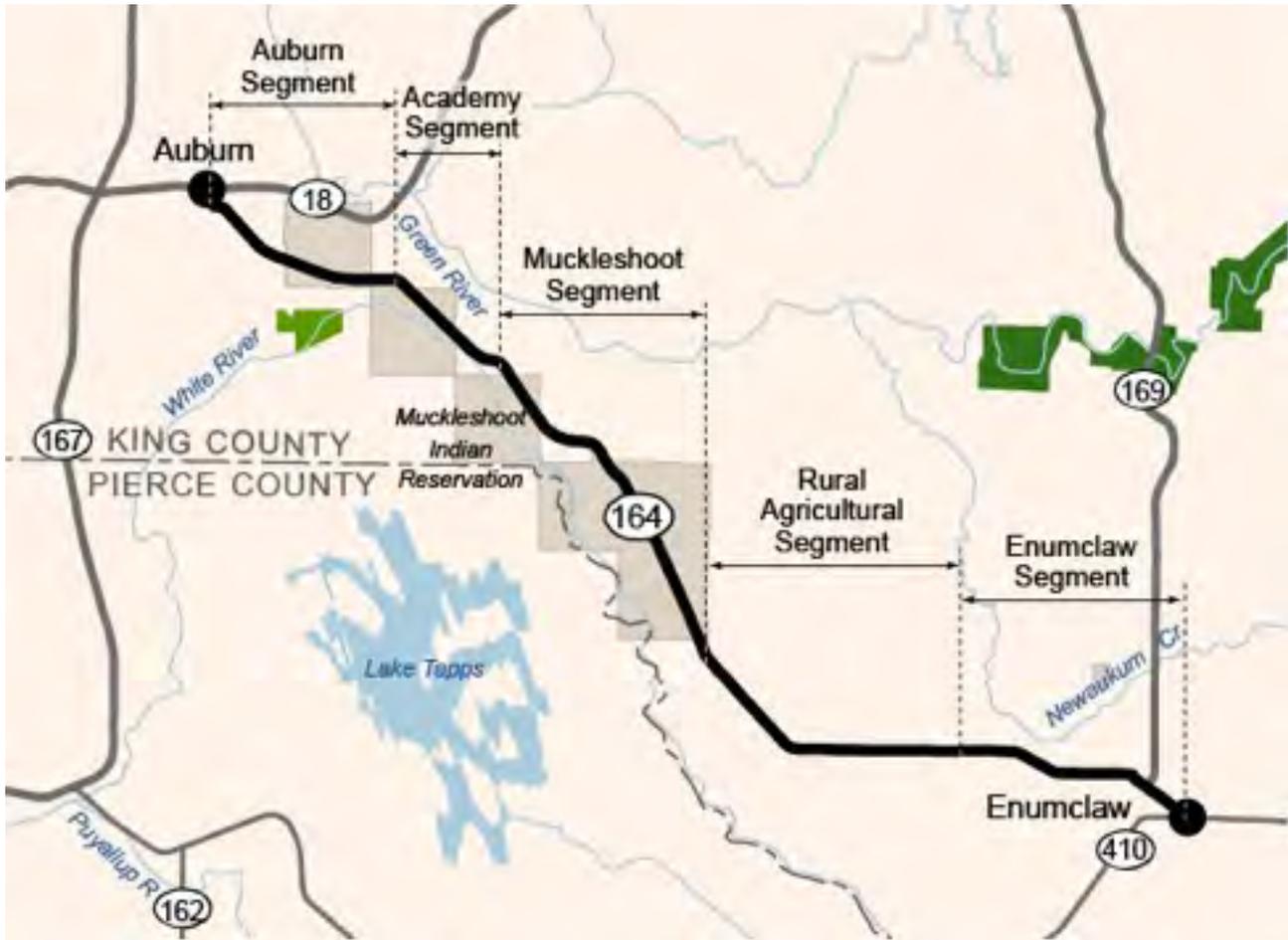
Appendix B

contains information describing existing environmental conditions along SR 164 for natural resources and built environment resources (such as historic buildings).

² King County Comprehensive Plan, September 2004.

Exhibit 2.3

SR 164 Corridor Segments



Muckleshoot Segment (Milepost 5.00 to 8.78)

The Muckleshoot segment extends from east of SE 368th Place to 180th Avenue SE. This segment is located within the Muckleshoot Tribal Reservation. The land use is generally rural, with the exception of the Muckleshoot Tribal Headquarters, medical facility, and tribal college, all of which are located just off SR 164. Another recreational use is the White River Amphitheater located in the southeastern part of the segment.

Rural / Agricultural Segment (Milepost 8.78 to 12.24)

The Rural / Agricultural segment is located between 180th Avenue SE and 228th Avenue SE. This predominately rural and agricultural area where wetlands can also be found is within King County's jurisdiction and sits outside the county's urban growth boundary. A portion of the agricultural properties located in this segment of SR 164 are located within King County's Agriculture Production District (APD)³ and / or the county's Farmland Preservation Program.⁴

Enumclaw Segment (Mileposts 12.24 to 15.13)

The Enumclaw segment extends from 228th Avenue SE to the SR 169 / SR 410 junction. This segment includes a mix of land uses ranging from rural / agricultural to residential and urban. West of the city are agricultural lands and some residences spaced farther apart. The downtown portion of this segment contains commercial and municipal facilities with low-to-medium density residential uses.

³ In 1985, King County established Agricultural Production Districts (APDs). An APD is farmland with large lot zoning requirements and a preference to be used for commercial agricultural purposes. The Growth Management Act (GMA) requires cities and counties to designate, where appropriate, agricultural lands that are not characterized by urban growth and that have long-term significance for the commercial production of food or other agricultural products. Lands within APDs should remain in parcels large enough for commercial agriculture. New development shall not disrupt agriculture operations and shall have a scale compatible with an active farming district. Removal of the land from the APD may only occur if it is mitigated through the addition of agricultural land abutting the same APD of equal acreage and of equal or greater soils and agriculture value.

⁴ In 1979, voters approved a \$50 million ballot measure to protect farmland threatened by development. The Farmland Preservation Program (FPP) became the first voter-approved measure in the nation to protect farmland in a metropolitan area. By purchasing the development rights, the FPP keeps farmland open and available through covenants that restrict development and limit the properties uses exclusively for agriculture and open space. The covenants run with the land in perpetuity so the land is protected regardless of ownership. Under the FPP, the county owns the development rights; however, the lands remain in the private ownership of over 200 property owners. The county cannot sell or remove its interest in FPP lands with the exception of conveying public road or utility easements.



The White River Amphitheater is a major destination along SR 164



Along some portions of SR 164 the primary land uses are agricultural



SR 164 serves the downtown commercial district of Enumclaw

6 When did SR 164 become a State Route?

Records suggest that what is now the Auburn to Enumclaw State Route (SR) 164 was originally added to the state highway system in 1913. From 1923 to 1937, the highway had been a branch of State Route No. 5 - National Park Highway.⁵

From 1937 to 1970, SR 164 has been a branch of Primary State Highway (PSH) 5. The State Route numbers were approved by the 1963 legislature and first posted in January 1964 and until 1970 the PSH numbers remained as the official numbers in the state law. When first posted as a state route in 1964, the highway from Auburn to Enumclaw was designated as part of SR 167. In 1969, SR 167 was renumbered to head south from Auburn to Sumner. The Auburn to Enumclaw section of that highway was re-designated as SR 164.

State Route 164 is numbered to keep it in accordance with the state route numbering system.⁶ Although there are parts of this corridor that travel in a northerly to southerly direction, the highway's starting and terminus points lie in an east/west opposite direction.

⁵ See <http://www.angelfire.com/wa2/hwysofwastate/strd005.html>, <http://www.angelfire.com/wa2/hwysofwastate/psh005.html>, and <http://www.angelfire.com/wa2/hwysofwastate/sr164.html>

⁶ All state routes with the starting point North or South of the ending point are numbered with an odd ending numeral. All state routes with the starting point West or East of the ending point are numbered with an even ending numeral. Since SR 164 starts with milepost 0.31 in Auburn and travels to milepost 15.13 in Enumclaw it travels in a predominantly west to east direction and thus ends in an even ending numeral.

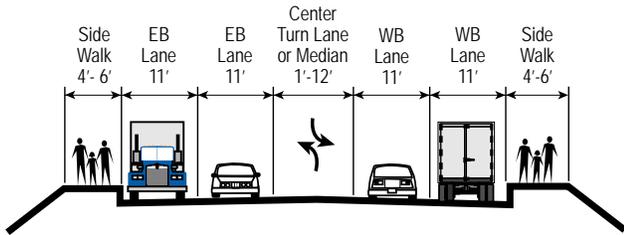
7 How many lanes are on SR 164?

The number of lanes on SR 164 ranges from two in the rural areas to five in the urbanized areas. Exhibit 2.4 on the following page contains diagrams of the typical cross sections on SR 164. Exhibit 2.5 on page 2-15 shows the locations of those cross sections along the corridor.

For more visual details see SR 164 on WSDOT's SR View web page (<http://srview.wsdot.wa.gov/>) and on WSDOT's Highway Log (<http://www.wsdot.wa.gov/mapsdata/tdo/statehighwaylog.htm>). Exhibit 2.6 on page 2-16 lists most of the deviations from the typical SR 164 cross-sections.

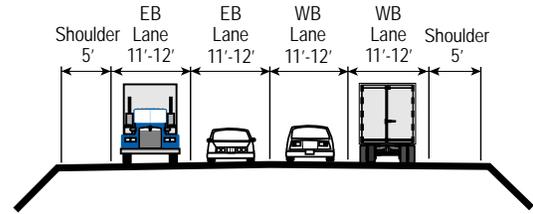
Exhibit 2.4

SR 164 Typical Cross-Sections

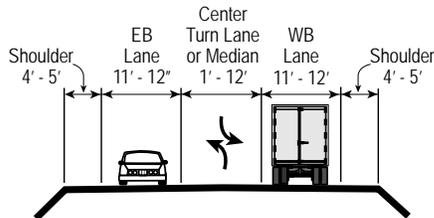


1 SR 18 to East of M Street
Milepost 0.31 to Milepost 1.34

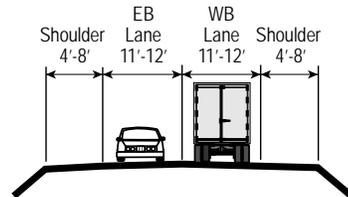
West of Riverwalk Drive to Fir Street
Milepost 1.66 to Milepost 2.41



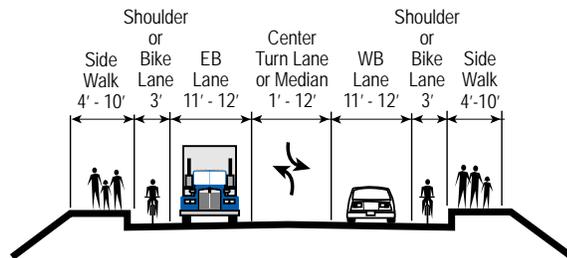
2 East of M Street to West of Riverwalk Drive
Milepost 1.34 to Milepost 1.66



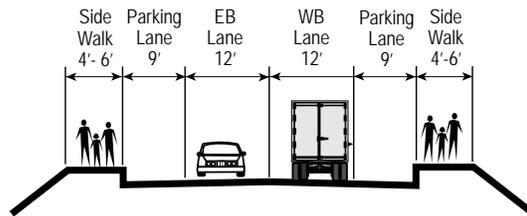
3 Fir Street to East of Poplar Street
Milepost 2.41 to Milepost 3.01



4 East of Poplar Street to Highpoint Street
Milepost 3.01 to Milepost 13.57

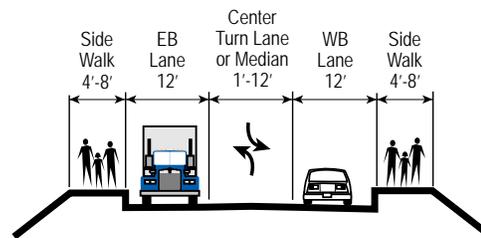


5 Highpoint Street to Wells Street
Milepost 13.57 to Milepost 14.11



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 2.5

SR 164 Cross-Section Locations

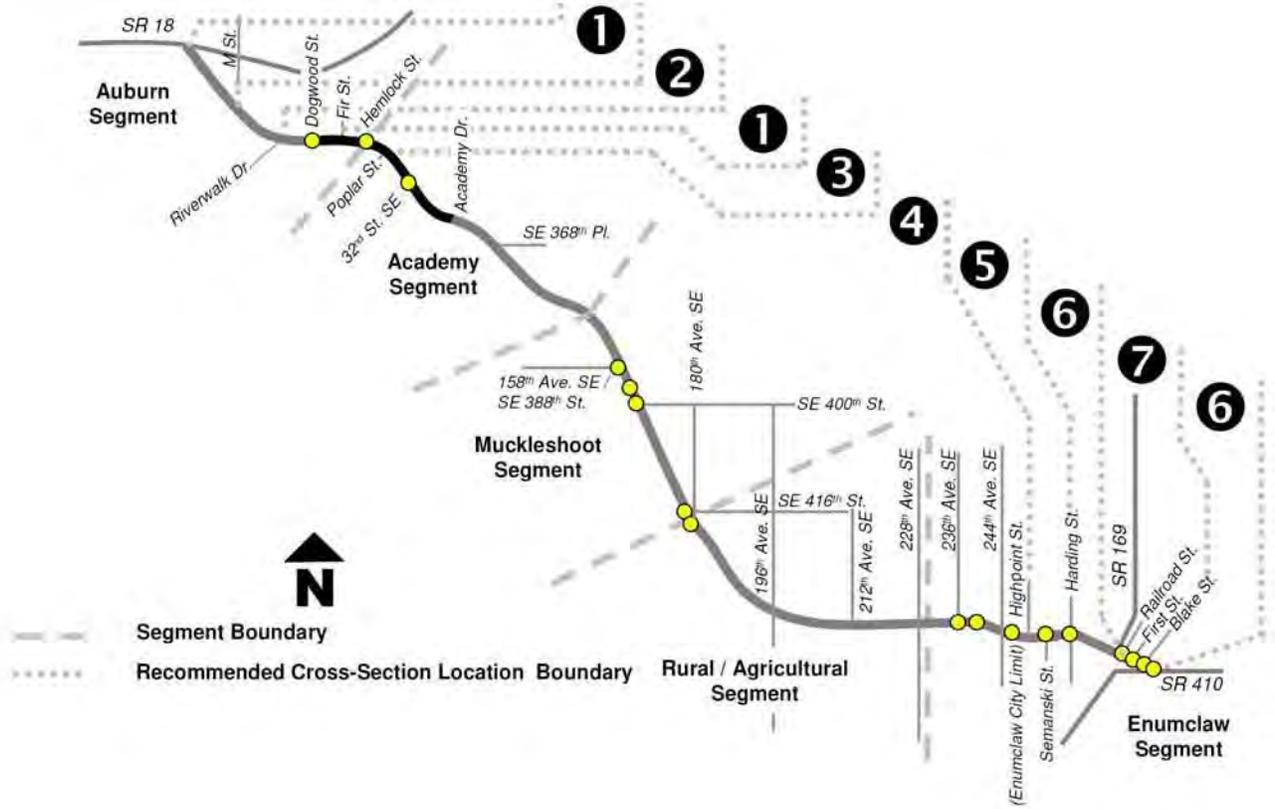


Exhibit 2.6

Exceptions to SR 164 Typical Cross-Sections

Location	Start Milepost	End Milepost	Cross-section Description
SR 18 Overpass	MP 0.31	MP 0.31	2-WB Lanes, 2-EB Lanes, 2-EB Right turn Lanes
6th Street SE	MP 0.38	MP 0.54	2-WB Lanes, 3-EB Lanes, Center Turn Lane and/or median, 1-EB Left Turn Lane, 1-WB Left Turn Lane
Bridge Incline	MP 1.49	MP 1.66	2-WB Lanes, 2-EB Lanes, No Center Lane, Sidewalks
32nd Street SE	MP 3.82		Intersection: EB Left Turn Lane
Academy Drive SE	MP 4.37		Intersection: WB Right Turn Lane, Center Turn Lane, WB Left Turn Lane, EB Left Turn Lane, SB Left Turn Lane, SB Right Turn Lane
SE 380th Place	MP 6.06		Intersection: EB Left Turn Lane
158th Avenue SE	MP 6.65		Intersection: WB Left Turn Lane
SE 392nd Street	MP 6.92		Intersection: EB & WB Left Turn Lanes, EB & WB Right Turn Lanes
SE 400th Street	MP 7.51		Intersection: EB Left Turn Lane
White River Amphitheater Entrance	MP 7.70	MP 7.80	2-EB Right Turn Lanes, 1-WB and 2-EB Left Turn Lanes
SE 408th Street	MP 8.07		Intersection: WB Left Turn Lane
228th Avenue SE	MP 12.24		Intersection: EB Left Turn Lane
244th Avenue SE	MP 13.30		Intersection: EB, WB, NB, & SB Left Turn Lanes
Porter Street (SR 169)	MP 14.52		Intersection: EB, WB, NB, & SB Left Turn Lanes

8 Where are the intersections and turning lanes on SR 164?

There are 69 intersections along the SR 164 corridor, as shown in Exhibit 2.7 on pages 2-17 through 2-24. Seventeen of these intersections were identified for analysis by the SR 164 CPS study team (from 15 signalized and 54 unsignalized intersections). All but three of the signalized intersections are located in the urban areas of Auburn or Enumclaw. Exhibit 2.7 lists each intersection on the following pages.⁷ The exhibit provides information on each intersection’s milepost location, cross street, intersection type, existing channelization, auxiliary lanes, and traffic control.



Most of the signalized intersections are located in the Auburn and Enumclaw segments; M Street pictured above.

⁷ 69 intersections on SR 164

Exhibit 2.7

SR 164 Intersection Characteristics

MP	SR 164 Intersection	Intersection Type	Channelization/ Auxiliary Lanes	Traffic Control (See Key)	Analyzed in this CPS?
AUBURN SEGMENT					
0.31	SR 18 WB Ramps	4-Leg	<ul style="list-style-type: none"> - EB SR 164 to WB SR 18 On-Ramp - Right Turn Lane - WB SR 164 to WB SR 18 On-Ramp - Right WYE Connection - EB SR 18 Off-Ramp to WB SR 164 - Right Turn Lane 	Signal	Yes
0.38	6th Street SE	4-Leg	<ul style="list-style-type: none"> - EB SR 164 to EB SR 18 On-Ramp - Left Lane - WB SR 164 to EB SR 18 On-Ramp - Right WYE Connection - WB SR 164 to WB 6th Street SE - Left Turn Lane - EB SR 18 Off-Ramp to WB SR 164 - Right WYE Connection - EB 6th Street SE to WB SR 164 - Left Turn Lane 	Signal	Yes
0.44	7th Street SE	3-Leg	<ul style="list-style-type: none"> - EB 7th Street SE to EB SR 164 - Right Turn Lane 	1-Way	
0.49	8th Street SE	3-Leg	<ul style="list-style-type: none"> - EB 8th Street SE to EB SR 164 - Right Turn Lane 	1-Way	
0.54	D Street SE	4-Leg	<ul style="list-style-type: none"> - EB D Street to EB SR 164 - Right WYE Connection - WB D Street to WB SR 164 - Right Turn Lane - WB D Street to EB SR 164 - Left Turn Lane 	1-Way	
0.58	E Street SE	3-Leg	<ul style="list-style-type: none"> - EB E Street to EB SR 164 - Right Turn Lane 	1-Way	
0.66	F Street SE	3-Leg	<ul style="list-style-type: none"> - EB SR 164 to EB F Street SE - Left Turn Lane - WB F Street SE to EB SR 164 - Left Turn Lane 	Signal	Yes

Exhibit 2.7 (continued)

SR 164 Intersection Characteristics

MP	SR 164 Intersection	Intersection Type	Channelization/ Auxiliary Lanes	Traffic Control (See Key)	Analyzed in this CPS?
AUBURN SEGMENT (continued)					
0.75	Mid-Block	2-Leg	- Pedestrian Crossing	Ped Signal	
0.91	12th Street SE	4-Leg	- WB SR 164 to WB 12th Street SE - Left Turn Lane - EB SR 164 to EB 12th Street SE - Left Turn Lane - EB SR 164 to WB 12th Street SE - Right WYE Connection	Signal	Yes
0.98	J Street SE	3-Leg	- Two-Way Left Turn Lane	1-Way	
1.20	M Street SE	4-Leg	- EB SR 164 to NB M Street SE - Left Turn Lane - WB SR 164 to SB M Street SE - Left Turn Lane - NB M Street SE to WB SR 164 - Left Turn Lane - SB M Street SE to WB SR 164 - Right WYE Connection - SB M Street SE to EB SR 164 - Left Turn Lane	Signal	Yes
1.23	17th Street SE	4-Leg	- WB SR 164 to EB 17th Street SE - Right WYE Connection - EB 17th Street SE to EB SR 164 - Right Turn Only - WB 17th Street SE to WB SR 164 - Right Turn Only	1-Way	
1.25	Howard Road / R Street SE	2-Leg	- EB Right Turn Island to Howard Road		
1.28	17th Street SE	2-Leg	- WB SR 164 to EB 17th Street SE - Right WYE Connection	Signal	
1.85	Muckleshoot Plaza	4-Leg	- EB SR 164 to SB Muckleshoot Plaza - Right Turn Lane - EB SR 164 to NB Muckleshoot Plaza - Left Turn Lane - WB SR 164 to SB Muckleshoot Plaza - Left Turn Lane - NB Muckleshoot Plaza to WB SR 164 - Left Turn Lane - SB Muckleshoot Plaza to EB SR 164 - Left Turn Lane	Signal	

Exhibit 2.7 (continued)

SR 164 Intersection Characteristics

MP	SR 164 Intersection	Intersection Type	Channelization/ Auxiliary Lanes	Traffic Control (See Key)	Analyzed in this CPS?
AUBURN SEGMENT (continued)					
2.07	Riverwalk Drive SE	4-Leg	- EB SR 164 to NB Riverwalk Drive SE - Left Turn Lane - WB SR 164 to SB Riverwalk Drive SE - Left Turn Lane - NB Riverwalk Drive SE to WB SR 164 - Left Turn Lane - SB Riverwalk Drive SE to EB SR 164 - Left Turn Lane - SB Riverwalk Drive SE to WB SR 164 - Right Turn Lane	Signal	Yes
2.28	Dogwood Street SE	4-Leg	- EB SR 164 to NB Dogwood Street SE - Left Turn Lane - EB SR 164 to SB Dogwood Street SE - Right Turn Lane - WB SR 164 to SB Dogwood Street SE - Left Turn Lane - NB Dogwood Street SE to WB SR 164 - Left Turn Lane - SB Dogwood Street SE to EB SR 164 - Left Turn Lane	Signal	Yes
2.35	Elm Street SE	3-Leg	- Two-Way Left Turn Lane	1-Way	
2.41	Fir Street SE	3-Leg	- SB Fir Street to WB SR 164 Right Turn Lane - SB Fir Street to EB SR 164 Left Turn Lane	1-Way	
2.54	Hemlock Street SE	4-Leg	- Two-Way Left Turn Lane	2-Way	Yes
ACADEMY SEGMENT					
2.86	Noble Court SE	3-Leg	- Two-Way Left Turn Lane	1-Way	
2.97	Poplar Street SE	3-Leg	- Two-Way Left Turn Lane	1-Way	
3.82	32nd Street SE	3-Leg	- EB SR 164 to EB 32nd Street SE - Left Turn Lane	1-Way	Yes

Exhibit 2.7 (continued)

SR 164 Intersection Characteristics

MP	SR 164 Intersection	Intersection Type	Channelization/ Auxiliary Lanes	Traffic Control (See Key)	Analyzed in this CPS?
ACADEMY SEGMENT (continued)					
4.37	Academy Drive SE	4-Leg	- EB SR 164 to NB Academy Drive SE - Left Turn Lane - WB SR 164 to NB Academy Drive SE - Right Turn Lane - WB SR 164 to Private SB Drive - Left Turn Lane - SB Academy Drive SE to EB SR 164 - Left Turn Lane - SB Academy Drive SE to WB SR 164 - Right Turn Lane	Signal	Yes
4.72	SE 368th Place	3-Leg	- Auxiliary Lanes	1-Way	
MUCKLESHOOT SEGMENT					
5.84	Mid-Block	-	- Flashing Ped Xing	-	
6.06	SE 380th Place / Coopers Corner	3-Leg	- EB SR 164 to EB SE 380th Place - Left Turn Lane	1-Way	
6.65	SE 388th Street / 158th Avenue SE	3-Leg	- WB SR 164 to WB 158th Avenue SE - Left Turn Lane	1-Way	Yes
6.92	SE 392nd Street	3-Leg	- EB SR 164 to WB SE 392nd Street - Right Turn Lane - EB SR 164 to EB SE 392nd Street - Left Turn Lane - WB SR 164 to WB SE 392nd Street - Left Turn Lane - WB SR 164 to EB SE 392nd Street - Right Turn Lane	Signal	
7.51	SE 400th Street	3-Leg	- EB SR 164 to EB SE 400th Street - Left Turn Lane	1-Way	Yes
7.80	SE 404th Street (White River Amphitheatre)	4-Leg	- EB SR 164 to WB SE 404th Street - Right Turn Lane - EB SR 164 to EB SE 404th Street - Left Turn Lane - WB SR 164 to WB SE 404th Street - Left Turn Lane - EB SE 404th Street to WB SR 164 - Left Turn Lane - EB SE 404th Street to EB SR 164 - Right Turn Lane	1-Way	

Exhibit 2.7 (continued)

SR 164 Intersection Characteristics

MP	SR 164 Intersection	Intersection Type	Channelization/ Auxiliary Lanes	Traffic Control (See Key)	Analyzed in this CPS?
MUCKLESHOOT SEGMENT (continued)					
8.07	SE 408th Street	4-Leg	- WB SR 164 to WB SE 408th Street - Left Turn Lane	1-Way	
8.62	SE 416th Street	3-Leg	- No Auxiliary Lanes	1-Way	
8.73	180th Avenue SE	4-Leg	- No Auxiliary Lanes	1-Way	
RURAL / AGRICULTURAL SEGMENT					
9.51	188th Street SE	4-Leg	- No Auxiliary Lanes	1-Way	
10.23	196th Avenue SE	4-Leg	- EB Right Turn Lane	2-Way	Yes
10.98	208th Street SE	4-Leg	- No Auxiliary Lanes	2-Way	
11.23	212th Street SE	3-Leg	- No Auxiliary Lanes	1-Way	
11.49	216th Street SE	3-Leg	- No Auxiliary Lanes	1-Way	
11.62	218th Street SE	3-Leg	- No Auxiliary Lanes	1-Way	
12.24	228th Avenue SE	4-Leg	- EB SR 164 to NB 228th Avenue SE - Left Turn Lane	1-Way	
12.75	236th Avenue SE	4-Leg	- No Auxiliary Lanes	1-Way	

Exhibit 2.7 (continued)

SR 164 Intersection Characteristics

MP	SR 164 Intersection	Intersection Type	Channelization/ Auxiliary Lanes	Traffic Control (See Key)	Analyzed in this CPS?
ENUMCLAW SEGMENT					
12.86	SE 436th Street	3-Leg	- No Auxiliary Lanes	1-Way	
13.11	241st Place SE	3-Leg	- No Auxiliary Lanes	1-Way	
13.30	244th Avenue SE	4-Leg	- EB SR 164 to NB 244th Avenue SE - Left Turn Lane - WB SR 164 to SB 244th Avenue SE - Left Turn Lane - NB 244th Avenue SE to WB SR 164 - Left Turn Lane - SB 244th Avenue SE to EB SR 164 - Left Turn Lane	Signal	Yes
13.57	Highpoint Street	3-Leg	- No Auxiliary Lanes	1-Way	
13.69	Farrelly Street	4-Leg	- Two-Way Left Turn Lane	1-Way	
13.71	Gossard Street	3-Leg	- Two-Way Left Turn Lane	1-Way	
13.81	Semanski Street / Clovercrest Street	4-Leg	- Two-Way Left Turn Lane	1-Way	Yes
13.93	Florence Street	4-Leg	- Two-Way Left Turn Lane	1-Way	
14.00	Loraine Street	3-Leg	- Two-Way Left Turn Lane	1-Way	

Exhibit 2.7 (continued)

SR 164 Intersection Characteristics

MP	SR 164 Intersection	Intersection Type	Channelization/ Auxiliary Lanes	Traffic Control (See Key)	Analyzed in this CPS?
ENUMCLAW SEGMENT (continued)					
14.04	Garfield Street	4-Leg	- Two-Way Left Turn Lane	1-Way	
14.11	Harding Street	4-Leg	- EB SR 164 to NB Harding Street - Two-Way Left Turn Lane - WB SR 164 to SB Harding Street - Left Turn Lane	1-Way	
14.18	Pioneer Street	4-Leg	- No Auxiliary Lanes	1-Way	
14.25	Lafrombroise Street	4-Leg	- No Auxiliary Lanes	1-Way	
14.34	Montgomery Avenue	3-Leg	- No Auxiliary Lanes	1-Way	
14.37	Fell Street	3-Leg	- No Auxiliary Lanes	1-Way	
14.42	Franklin Street	4-Leg	- No Auxiliary Lanes	1-Way	
14.47	Marion Street	4-Leg	- No Auxiliary Lanes	1-Way	
14.52	Porter Street (SR 169)	4-Leg	- EB SR 164 to NB Porter Street (SR 169) - Left Turn Lane - WB SR 164 to SB Porter Street (SR 169) - Left Turn Lane - NB Porter Street (SR 169) to WB SR 164 - Left Turn Lane - SB Porter Street (SR 169) to EB SR 164 - Left Turn Lane	Signal	Yes
14.57	Wells Street	4-Leg	- No Auxiliary Lanes	1-Way	

Exhibit 2.7 (continued)

SR 164 Intersection Characteristics

MP	SR 164 Intersection	Intersection Type	Channelization/ Auxiliary Lanes	Traffic Control (See Key)	Analyzed in this CPS?
ENUMCLAW SEGMENT (continued)					
14.63	Cole Street	4-Leg	- No Auxiliary Lanes	Signal	
14.68	Railroad Street	4-Leg	- No Auxiliary Lanes	1-Way	
14.75	1st Street	4-Leg	- Two-Way Left Turn Lane	1-Way	
14.83	Garrett Street	4-Leg	- EB SR 164 to NB Garrett Street - Left Turn Lane - WB SR 164 to SB Garrett Street - Left Turn Lane - NB Garrett Street to WB SR 164 - Left Turn Lane - SB Garrett Street to EB SR 164 - Left Turn Lane	Signal	
14.88	3rd Street	4-Leg	- Two-Way Left Turn Lane	1-Way	
14.94	Blake Street / Rainier Avenue	4-Leg	- No Auxiliary Lanes	1-Way	
15.10	Cedar Street	3-Leg	- No Auxiliary Lanes	1-Way	
15.13	SR 410	4-Leg	- WB SR 410 to WB SR 164 - Right Turn Lane - WB SR 410 to retail center - Left Turn Lane	Signal	Yes

Source: WSDOT 2006 State Highway Log

Key: NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound

1-Way = stop at minor approach

2-Way = stop at all approaches

3-Leg = usually streets meeting at a "T" configuration. One dead-ending into another

4-Leg = two streets meeting and crossing each other.

9 How is SR 164 designated and classified?

The SR 164 corridor has a number of different roadway designations and classifications that are described below:

Federal, State, and Local Functional Classifications

Functional classification is the division of highways, roads, and streets into groups having similar characteristics of providing mobility and/or access to property. A functional classification defines the major role that a road or street serves within the existing or future roadway network.

The Federal Functional Classification is one of the determining factors of eligibility for federal transportation funding. The classification reflects 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.

Highways in Washington State are given a functional classification according to the type of traffic each highway is intended to carry and its physical setting. The classification is used to determine what design guidelines are most appropriate for the roadway. State functional classifications in Washington are divided into 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. The functional classification process involves the Federal Highway Administration (FHWA), WSDOT, Metropolitan Planning Organizations (MPO), Regional Transportation Planning Organizations (RTPO), and local agencies. As a result, a highway may have different functional classifications.

The National Highway System (NHS) is an interconnected system of principal arterial routes that serve interstate and interregional travel. These routes also meet national defense requirements. SR 164 is not a NHS route.

Although the FHWA has not formally classified SR 164 it has granted WSDOT the primary responsibility to develop and update statewide functional classifications.⁶ As a result, WSDOT classifies each highway according to total traffic volumes and adjoining land uses. Each local agency along the corridor may classify roadways within their jurisdiction according to the present or planned future travel demands of their roadway. The state and local functional classifications for SR 164 are shown in Exhibit 2.8

Why are highways classified?

Highway classifications are used to determine what design guidelines are most appropriate for the highway.

While WSDOT and local classifications may vary, the classifications usually represent the same functional travel demands. A WSDOT minor arterial may not have much daily traffic volume when compared to an interstate highway, but that same minor arterial may actually be classified as a local jurisdiction’s principal arterial because it is a main access route for the jurisdiction.

Exhibit 2.8

State and Local Roadway Classifications for SR 164

Segment	Milepost and (Intersections)	WSDOT Functional Classification ¹	Local Jurisdiction Classification
Auburn	0.31 to 2.79 (SR 164 / SR 18 interchange to West of Chinook Elementary School)	Urban Minor Arterial	Principal Arterial ²
Academy	2.79 to 4.71 (West of Chinook Elementary School to West of SE 368th Place – Auburn City Limit)	Urban Minor Arterial	Principal Arterial ^{2 and 3}
Academy and Muckleshoot	4.71 to 5.00 (West of SE 368th Place – Auburn City Limit to West of Pedestrian Crossing Signal)	Urban Minor Arterial	Major or Minor Arterial ³
Muckleshoot	5.00 to 6.00 (West of Pedestrian Crossing Signal to West of SE 380th Place)	Rural Minor Arterial	Major or Minor Arterial ³
Muckleshoot	6.00 to 8.78 (West of SE 380th Place to East of 180th Avenue SE)	Rural Minor Arterial	Major or Minor Arterial ³
Rural / Agricultural	8.78 to 12.24 (East of 180th Avenue SE to 228th Avenue SE)	Urban Minor Arterial	Principal Arterial ⁴
Enumclaw	12.24 to 13.30 (228th Avenue SE to 244th Avenue SE)	Urban Minor Arterial	Principal Arterial ⁵
Enumclaw	13.30 to 15.13 (244th Avenue SE to SR 164/SR 410 junction)	Urban Minor Arterial	Principal Arterial ⁵

¹ Source: WSDOT State Highway Log (2006)

² Source: City of Auburn Comprehensive Transportation Plan (2005)

³ Source: Muckleshoot Tribe Transportation Plan (2005)

⁴ Sources: King County Comprehensive Plan (2005) and Arterial Functional Classification Map for Unincorporated King County (2006)

⁵ Source: Winds of Tomorrow: Comprehensive Plan for the City of Enumclaw: 2005 to 2022 (2005)

Statewide and Regional Highway Classification

Another set of Washington State designations are Highways of Statewide Significance (HSS). WSDOT and the local Metropolitan Planning Organization, the Puget Sound Regional Council (PSRC) have the ability to identify a highway of statewide or regional significance. Highways of Statewide Significance include interstate highways and other principal arterials that are needed to connect communities across the state and support the state's economy. The HSS was mandated by the 1998 legislature through enactment of Substitute House Bill (SHB) 1487 (also known as the "Level of Service" bill) and codified into RCW 47.06.140. The legislature requires the State Transportation Commission to review and update the HSS as needed, or at least every five years, and the last update was in 2004.

All local agencies must include transportation facilities of statewide significance (including statewide ferry service) in their comprehensive plans. These larger classifications provide a basis for prioritizing improvement projects within the region and the state. The classifications are also used to determine the roadway level-of-service (LOS) standards and methods for enforcing transportation concurrency, per the Washington State Growth Management Act (GMA)⁸.

⁸ Level of Service (LOS) is a measure which corresponds to the roadway and associated features. LOS examines operations and amount of delay users experience.

The Growth Management Act was adopted in 1990 by the legislature (Chapter 36.70A RCW). The Growth Management Act is also discussed on the bottom of page 2-14. For more information on the GMA go to the following web page: <http://www.gmhb.wa.gov/gma/index.html>

For an overview on Transportation Concurrency go to the following web page:
<http://www.psrc.org/projects/growth/concur/concurrency.htm>

State highways that are not classified as a highway of statewide significance (Non-HSS) may be classified as a Regionally Significant State (RSS) highway. For regionally significant state highways, the LOS is set through a collaborative process with the Regional Transportation Planning Organization (RTPO) and the local governments. SR 164 has been classified by PSRC as a regionally significant state highway.

Access Control Classification

In 1991, the Washington State Legislature enacted statutes establishing rules in Chapter 47.50 of the Revised Code of Washington (RCW) to protect the safety and capacity of the state highway system through access management. Access control manages traffic movement onto and off of state highways to improve system performance, minimize traffic conflicts, and increase traffic control.

Access control classifications are established to preserve traffic safety and efficiency of the road network, and to protect the public's existing and future investment in state routes. Most of SR 164 is a managed access facility, which means that access to the highway by way of driveways or intersecting roadways can be permitted. This is different than an interstate highway (such as I-405) where access is limited through interchanges at selected locations.

Why are access control classifications established on highways?

Access control classifications are established to preserve traffic safety and efficiency of the road network.

Managed Access Classifications

WSDOT has established five classes of access on managed access facilities with Class 1 access being the most restrictive and Class 5 being the least restrictive. The classifications can differ depending on the following criteria:

- speed limit
- spacing between driveways
- spacing between intersections
- spacing between signals
- median treatment
(i.e. restrictive median, two-way left turn lane, etc.)

One primary distinction between the different access classifications is the minimum spacing allowed between access connections. For example, access points on a Class 5 roadway must be spaced at least 125 feet apart; whereas access points on a Class 1 roadway must be spaced at least 1,320 feet apart. Typically, more access is allowed in urban sections of highways than in rural sections. Exhibit 2.9 on pages 2-30 and 2-31 summarizes the WSDOT Highway Access Control Classifications.

Exhibit 2.9

WSDOT Highway Access Control Classifications

Access Control Classification	Definition
Managed Access Classifications	
Governed by RCW 47.50, WAC 468-51 and WAC 468-52	
Class 1	<p>Mobility is the primary function of this roadway. This class of highway serves longer trips, usually of a regional nature.</p> <ul style="list-style-type: none"> - speed limit ranges from 50 to 65 mph; - 1,320 foot minimum spacing between accesses; - no direct access to the corridor if an alternative public street or road is available; and - a restrictive median is required along multi-lane sections. <p><i>Example: SR 99 (Aurora Ave.) north of Battery Street (none on SR 164)</i></p>
Class 2	<p>This class of highway is designed for providing mobility rather than access. This class of highway also serves longer trips, but usually more local trips.</p> <ul style="list-style-type: none"> - speed limit ranges from 45 to 55 mph in rural areas; - 660 feet minimum spacing between accesses; - no direct access if alternative public streets or road access is available; and - a restrictive median along multi-lane is required. <p><i>Example: SR 164 between Auburn City Limit (MP 4.71) and 244th Avenue SE (MP 13.30)</i></p>
Class 3	<p>There is a balance between mobility and access in areas that are not built out.</p> <ul style="list-style-type: none"> - speed limit ranges from 45 to 55 mph in rural areas; - 330 feet minimum spacing between accesses; - a restrictive median along multi-lane sections is warranted; and - two-way-left-turn-lane may be allowed as conditions warrant. <p><i>Example: SR 164 between Poplar Street SE (MP 2.97) and Auburn City Limit (MP 4.71)</i></p>
Class 4	<p>There is a balance between mobility and access in areas that are almost built out.</p> <ul style="list-style-type: none"> - speed limit ranges from 35 to 45 mph in rural areas; - 250 feet minimum spacing between accesses; and - non-restrictive medians are allowed. <p><i>Example: SR 164 between R Street SE (MP 1.51) and Poplar Street SE (MP 2.97)</i></p>
Class 5	<p>Access needs generally have priority over mobility needs.</p> <ul style="list-style-type: none"> - speed limit ranges from 25 to 35 mph; - 125 feet minimum spacing between accesses; and - non-restrictive medians are allowed. <p><i>Example: SR 164 between SR 164 / SR 18 interchange (MP 0.33) and R Street SE (MP 1.51)</i></p>

Exhibit 2.9 (continued)

WSDOT Highway Access Control Classifications

Access Control Classification	Definition
Limited Access Classifications	
Governed by RCW 47.52, WAC 468-58 and WAC 468-54	
Full Control	<ul style="list-style-type: none"> - access is permitted only at interchanges with selected public streets, roads, rest areas, viewpoints, or weigh stations; and - all at-grade crossings and private approaches are prohibited. <p><i>Example: SR 164 near the SR 164 / SR 18 interchange</i></p>
Partial Control	<ul style="list-style-type: none"> - 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. <p><i>Example: SR 169 between SR 18 interchange (MP 14.11) to Maple Valley Park-and-Ride vicinity (MP 14.23)</i></p>
Modified Control	<ul style="list-style-type: none"> - at-grade intersections are allowed for selected public roads, and approaches for existing private driveways; - commercial approaches may be allowed; - no direct access if alternative public road access is available. <p><i>Example: SR 516 between SR 516 / SR 18 interchange (MP 11.35) to SR 516 / SR 18 interchange (MP 11.41)</i></p>

Source: WSDOT; RCW 47.50, RCW 47.52, WAC 468-51, WAC 468-52, WAC 468-54, and WAC 468-58

Limited Access Classifications

There is one SR 164 section designated as a limited access site. This limited access classification is more restrictive than the managed access sections of the highway.

This access section is located at the beginning of SR 164 at the SR 164 / SR 18 interchange (from MP 0.31 to MP 0.33) and classified as “Limited Access Full Control”.

The full control designation means that all additional at-grade crossings⁹ and private driveways are prohibited. In the case of the full access control location in Auburn near the SR 18 interchange, the classification protects SR 164 traffic flow by prohibiting vehicular access from developments adjacent to the highway.

⁹ At-grade crossing = An intersection at the same level as the highway. No overpass or underpass.

Exhibit 2.10 summarizes the access classifications along SR 164 by segment.

Exhibit 2.10**WSDOT Access Control Classifications for SR 164**

Segment	Milepost	Access Control Classification¹
Auburn	MP 0.31 to MP 0.33 (SR 164 near the SR 164 / SR 18 interchange)	Limited Access Full Control
Auburn	MP 0.33 to MP 1.51 (SR 164 / SR 18 interchange to R Street SE)	Class 5
Auburn	MP 1.51 to MP 2.79 (R Street SE to west of Chinook Elementary School)	Class 4
Academy	MP 2.79 to MP 2.97 (West of Chinook Elementary School to Poplar Street SE)	Class 4
Academy	MP 2.97 to MP 4.71 (Poplar Street SE to west of 368th Place - Auburn City Limit)	Class 3
Academy and Muckleshoot	MP 4.71 to MP 5.00 (West of 368th Place - Auburn City Limit to west of Pedestrian Crossing Signal)	Class 2
Muckleshoot	MP 5.00 to MP 8.78 (West of Pedestrian Crossing Signal to east of 180th Avenue SE)	Class 2
Rural / Agricultural	MP 8.78 to MP 12.24 (East of 180th Avenue SE to 228th Avenue SE)	Class 2
Enumclaw	MP 12.24 to MP 13.30 (228th Avenue SE to 244th Avenue SE)	Class 2
Enumclaw	MP 13.30 to MP 15.13 (244th Avenue SE to SR 164 / SR 410 junction)	Class 5

Sources: WSDOT Access Management program
(<http://www.wsdot.wa.gov/eesc/design/access/>), viewed December 2007.
WSDOT State Highway Log (2006)

Freight and Goods on SR 164

The Washington State Freight and Goods Transportation System (FGTS) is used to classify state highways, county roads, and city streets according to the average gross truck tonnage they carry.

The system is affected by changes in the economy, trade, and the transportation industry, such as changes in truck travel patterns, cargoes, and tonnages. The FGTS classifies roadways using five freight tonnage classifications, T-1 through T-5, as follows:

- T-1: More than 10 million tons per year
- T-2: 4 million to 10 million tons per year
- T-3: 300,000 to 4 million tons per year
- T-4: 100,000 to 300,000 tons per year
- T-5: 20,000 tons in 60 days

Washington Strategic Freight Corridors are those routes that carry 4 million or more gross tons of freight annually (T-1 and T-2). Tonnage values are derived from truck count data that is converted into average weight by truck type. SR 164 has a T-2 classification from the SR 164 / SR 18 interchange to Academy Drive in the city of Auburn. The SR 164 FGTS listing is shown in Exhibit 2.11 below:

Exhibit 2.11

SR 164 FGTS Roadway Classifications¹⁰

Milepost (MP)	Description	Length	2005 FGTS Classification	2005 Estimated Annual Tonnage	2007 FGTS Classification	2007 Estimated Annual Tonnage
0.31 to 4.37	SR 164 / SR 18 interchange to Academy Drive SE	4.06 miles	T-2	6.2 million tons	T-2	4.2 million tons

¹⁰ WSDOT Freight and Goods Transportation System 2005 Update and 2007 Update.

10 How wide is the roadway right-of-way along SR 164?

Exhibit 2.12 below provides a summary of the existing Right-of-Way (ROW) along the SR 164 corridor. The table lists the minimum and maximum ROW along each identified segment according to King County Assessor property records. The dimensions shown in the exhibit have not been verified by as-built drawings, and field surveys are required prior to any project design on the corridor.

Exhibit 2.12

Summary of SR 164 Existing Right-of-Way Widths

Segment	Milepost	WSDOT ROW Guideline ¹ (feet)	Existing Average ROW (feet)	Minimum Existing ROW (feet)	Maximum Existing ROW (feet)
Auburn 5-Lane Section	0.31 to 0.91 (SR 164 / SR 18 interchange to 12th Street SE)	varies ²	70	70	115
Auburn 5-Lane Section	0.91 to 2.54 (12th Street SE to Hemlock Street)	varies ²	110	70	395
Auburn & Academy 2-Lane Section	2.54 to 4.71 (Hemlock Street to west of SE 368th Place)	80	70	60	160
Academy & Muckleshoot	4.71 to 6.00 (West of SE 368th Place to west of SE 380th Place - Auburn City Limit)	80	60	60	170
Muckleshoot	6.00 to 8.78 (West of SE 380th Place - Auburn City Limit to East of 180th Avenue SE)	120	60	60	100
Rural / Agricultural	8.78 to 12.24 (East of 180th Avenue SE to 228th Avenue SE)	120	100	100	270
Enumclaw	12.24 to 13.30 (228th Avenue SE to 244th Avenue SE)	120	60	55	120
Enumclaw	13.30 to 15.13 (244th Avenue SE to SR 164 / SR 410 junction)	80	60	55	100

¹ WSDOT guideline based on highway functional classification (WSDOT Design Manual, 2005)

² Source: Standard is "Make right-of-way widths not less than those required for necessary cross section elements." (WSDOT Design Manual, 2005)

11 What is the terrain like along the SR 164 Corridor?

WSDOT classifies the terrain of each state highway in the State Highway Log. Terrain classification is based on the contour of the roadway as it relates to the frequency and steepness of hills and the effect on truck speed. The three classifications of terrain include level, rolling, and mountainous. Terrain classifications help provide a basis to describe the topography of the physical setting of the roadway. Knowledge of the terrain is often helpful when determining the roadway's frequency and steepness of hills and the effect they have on truck speed. The terrain classifications for SR 164 in the study area as noted in the WSDOT Highway Log are level and rolling. Level terrain means the roadway is flat enough that trucks are typically able to maintain posted speeds. Rolling terrain has hills and foothills, with slopes that rise and fall gently with occasional steep slopes that might cause some restriction to horizontal and vertical alignment. Trucks may slow down frequently in areas of rolling terrain due to the roadway alignment and surrounding topography.

The Washington State Highway Log (2005) lists the roadway between MP 0.31 to MP 1.29 (from the SR 164/ SR 18 interchange to east of the Howard Road wye connector) as level terrain. The remaining sections of SR 164 are classified as rolling. Exhibit 2.13 below highlights the five most substantial grades along SR 164.

Exhibit 2.13

SR 164 Roadway Grades

Segment	Milepost Limits (MP)	Description	Length (miles)	Percent Grade	Posted Truck Climbing Section
Auburn	1.49 to 1.52	Bridge over R Street SE	0.03	4% to 8%	None
Auburn	2.40 to 2.50	In the vicinity of the FAA Control Center (between Fir Street SE and Hemlock Street)	0.10	8%	None
Muckleshoot	8.00 to 8.07	Between SE 404th Street and SE 408th Street	0.07	8%	None
Enumclaw	12.86 to 13.30	Between SE 436th Street and 244th Avenue SE	0.44	3% to 4%	None
Enumclaw	14.52 to 14.63	Between Porter Street (SR 169) and Cole Street	0.11	4% to 5%	None

12 What are the posted speeds along SR 164?

Exhibit 2.14 below shows the posted speeds along the SR 164 corridor. Posted speeds vary from 25 mph to 55 mph. A significant portion of the highway (7.5 miles) has a posted speed limit of 55 mph.

Exhibit 2.14

Posted Speeds on SR 164

Segment	Milepost & Intersections	Speed Limit (mph)
Auburn	MP 0.31 to MP 1.23 (SR 164 / SR 18 interchange to 17th Street SE)	35
Auburn	MP 1.23 to MP 2.22 (17th Street SE to West of Dogwood Street SE)	45
Auburn and Academy	MP 2.22 to MP 3.14 (West of Dogwood Street SE to East of Poplar Street SE)	35
Academy	MP 3.14 to MP 4.71 (East of Poplar Street SE to West of SE 368th Place - Auburn City Limit)	45
Academy and Muckleshoot	MP 4.71 to MP 5.00 (West of 368th Place - Auburn City Limit to West of Pedestrian Crossing Signal)	55
Muckleshoot	MP 5.00 to MP 8.78 (West of Pedestrian Crossing Signal to East of 180th Avenue SE)	55
Rural / Agricultural	MP 8.78 to MP 12.24 (East of 180th Avenue SE to 228th Avenue SE)	55
Enumclaw	MP 12.24 to MP 13.57 (228th Avenue SE to Highpoint Street)	45
Enumclaw	MP 13.57 to MP 14.18 (Highpoint Street to Pioneer Street)	35
Enumclaw	MP 14.18 to MP 15.13 (Pioneer Street to SR 164 / SR 410 junction)	25

The total distance for each of the SR 164 posted speed limits and their percentage of total highway miles is displayed in Exhibit 2.15 below.

Exhibit 2.15

SR 164 Posted Speed Limits - Percent of Total Highway Miles

Miles per Hour	Miles at Mph	Percent of Total Highway Miles
25 mph	0.95	6.41%
35 mph	2.51	16.94%
45 mph	3.83	25.84%
55 mph	7.53	50.81%

13 Where are the No Passing Zones on the SR 164 Corridor?

Passing zones along sections of SR 164 are infrequent. In the two-lane sections the lack of passing zones is due to sight-distance limitations that result from numerous horizontal and vertical curves. Exhibit 2.16 below summarizes the percentage of the SR 164 highway segment where there are No Passing Zones.

Exhibit 2.16

Percentage of SR 164 with No Passing Zones

Segment	Milepost and Description	Percent of Roadway with No Passing Zones	
		Eastbound	Westbound
Auburn	MP 0.31 to MP 2.79 (SR 164 / SR 18 interchange to West of Chinook Elementary School)	17%	15%
Academy and Muckleshoot	MP 2.79 to MP 5.00 (West of Chinook Elementary School to West of Pedestrian Crossing Signal)	87%	86%
Muckleshoot	MP 5.00 to MP 8.78 (West of Pedestrian Crossing Signal to East of 180th Avenue SE)	91%	88%
Rural / Agricultural	MP 8.78 to MP 12.24 (East of 180th Avenue SE to 228th Avenue SE)	32%	44%
Enumclaw	MP 12.24 to MP 13.57 (228th Avenue SE to Highpoint Street)	57%	41%

Source: WSDOT SRView: <http://www.wsdot.wa.gov/mapsdata/tdo/srview.htm>

14 Where are bridges located on SR 164?

There are two bridges located along the SR 164 corridor as listed in Exhibit 2.17 below.

Exhibit 2.17

Bridges on SR 164

Number	Segment	Milepost & Description	Built Year	Length (feet)	Width (feet)
18/010	Auburn	MP 0.31 (SR 164 / SR 18 interchange)	1959	82	87
164/015	Auburn	MP 1.49 to MP 1.52 (Bridge over R Street SE)	1970	200	48

Source: WSDOT Bridge List (2002) and WSDOT State Highway Log (2006)

The WSDOT bridge inventory recognizes two bridges on SR 164. The SR 18 Bridge is located in the city of Auburn at the beginning of SR 164 at MP 0.31. The bridge was built in 1959 and is used as the SR 18 eastbound off-ramp to SR 164. The second bridge, the R Street Bridge, is also located within the city of Auburn. This bridge (built in 1970) allows SR 164 to traverse the 200 feet from the city of Auburn up to the Enumclaw Plateau and the first portion of the Muckleshoot Tribal Reservation.

15 Where are overpasses and interchanges located on SR 164?

The only overpass and interchange located on SR 164 is the SR 164 / SR 18 interchange and SR 18 Bridge at the beginning of SR 164 at milepost 0.31.

The SR 164 / SR 18 interchange includes the following:

- eastbound SR 18 off-ramp to a signal at SR 164 and 6th Street (MP 0.38)
- eastbound SR 18 on-ramp from a signal at SR 164 and 6th Street (MP 0.38)
- westbound SR 18 off-ramp to a signal at SR 164 (west of SR 18 Bridge)
- westbound SR 18 on-ramp from a signal at SR 164 (west of SR 18 Bridge)

16 What transit services and facilities are provided on SR 164?

Transit facilities along the SR 164 corridor are operated by King County Metro Transit (Metro) and include bus transit and vanpools. The regional transit agency, Sound Transit, does not serve the corridor but does provide commuter train service to Seattle from the Auburn Transit Center Station located between A Street SW and C Street SW in Auburn approximately 0.5 miles north of the SR 164 / SR 18 interchange. Metro Route 919 connects the Auburn Transit Center Station to the nearby Auburn Park-and-Ride lot.

More information on these services and facilities can be found on Metro Transit’s website (www.transit.metrokc.gov).

Bus Routes

There are two transit routes that provide weekday service along the SR 164 corridor: Route 915 and Route 919. Route 915 provides service from Enumclaw to Auburn and the Auburn Transit Center Station. Route 919 provides service from the SR 164 / Fir Street SE intersection vicinity to the Auburn Park-and-Ride lot.¹¹



Regional transit service is provided at the Auburn Station in downtown Auburn.

¹¹ Other Metro and Sound Transit routes (besides Metro 915 and 919) that service the Auburn Transit Center Station and Auburn Park-and-Ride lot are:

Auburn Transit Center Station:	Metro Routes: 152, 154, 180, 181, 917
	Sound Transit Routes: 564, 565
Auburn Park-and-Ride Lot:	Metro Routes: 152, 154, 180, 952

Both routes operate weekdays during business hours starting at approximately 5:00 a.m. with service ending at 7:00 p.m. Route 519 operates a Saturday schedule from approximately 8:30 am until 5:00 pm. Exhibit 2.18 and the following paragraphs summarize the transit service for both routes. Exhibits 2.19 and 2.20 display these routes on pages 2-41 and 2-43.

Exhibit 2.18

Transit Routes Serving SR 164

Route No.	Scheduled Daily Trips	Service Span	Headway (Approximate)
915	(Weekday) EB: 15 WB: 15	(Weekday) EB: 4:58 a.m. to 7:05 p.m. WB: 4:52 a.m. to 7:27 p.m.	(Weekday) EB: 30 - 36 minutes WB: 32 minutes
	(Weekday) EB: 8 WB: 9	(Weekday) EB: 8:20 a.m. to 3:45 p.m. WB: 7:50 a.m. to 4:06 p.m.	(Weekday) EB: 25 minutes WB: 16 minutes
919	(Saturday) EB: 9 WB: 9	(Saturday) EB: 8:50 a.m. to 4:50 p.m. WB: 8:20 a.m. to 4:35 p.m.	(Saturday) EB: 25 minutes WB: 15 minutes

Source: King County Metro Transit, Sept. 22, 2007 through Feb. 8, 2008.

Route 915

Route 915 provides transit service from the downtown Auburn Transit Center to downtown Enumclaw. The route continues east on SR 164 (Auburn Way South) and terminates near City Hall in downtown Enumclaw. This route offers 15 transit service trips every weekday between approximately 5:00 a.m. and 7:30 p.m.

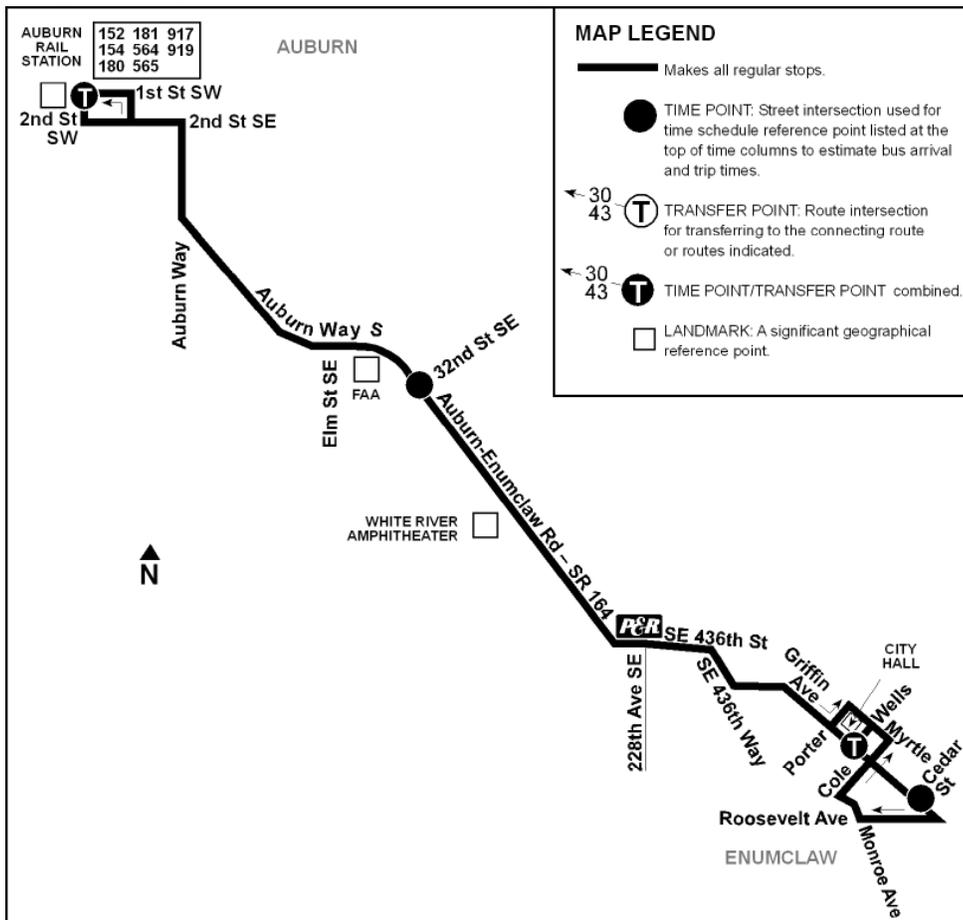
For additional King County Metro Route 915 information go to the web page:

map: http://transit.metrokc.gov/cftemplates/show_map.cfm?BUS_ROUTE=915&DAY_NAV=W

schedule: http://transit.metrokc.gov/tops/bus/schedules/s915_0_.html

Exhibit 2.19

King County Metro - Route 915 Map



Route 919

Route 919 offers transit service Monday through Saturday through the city of Auburn. This route operates as a DART service¹² and begins in North Auburn and starts regular service at Auburn Station and travels southeast on Auburn Way South. Buses turn north on Dogwood Street SE and loop around back toward Auburn Way South, going in a northwest direction back to Auburn Station. This route offers 8 eastbound and 9 westbound transit service trips every weekday between approximately 7:50 a.m. and 4:06 p.m. On Saturdays there are 9 trips in each direction between 8:20 am and 5:15 pm.

For more King County Metro Route 919 information go to the web page:

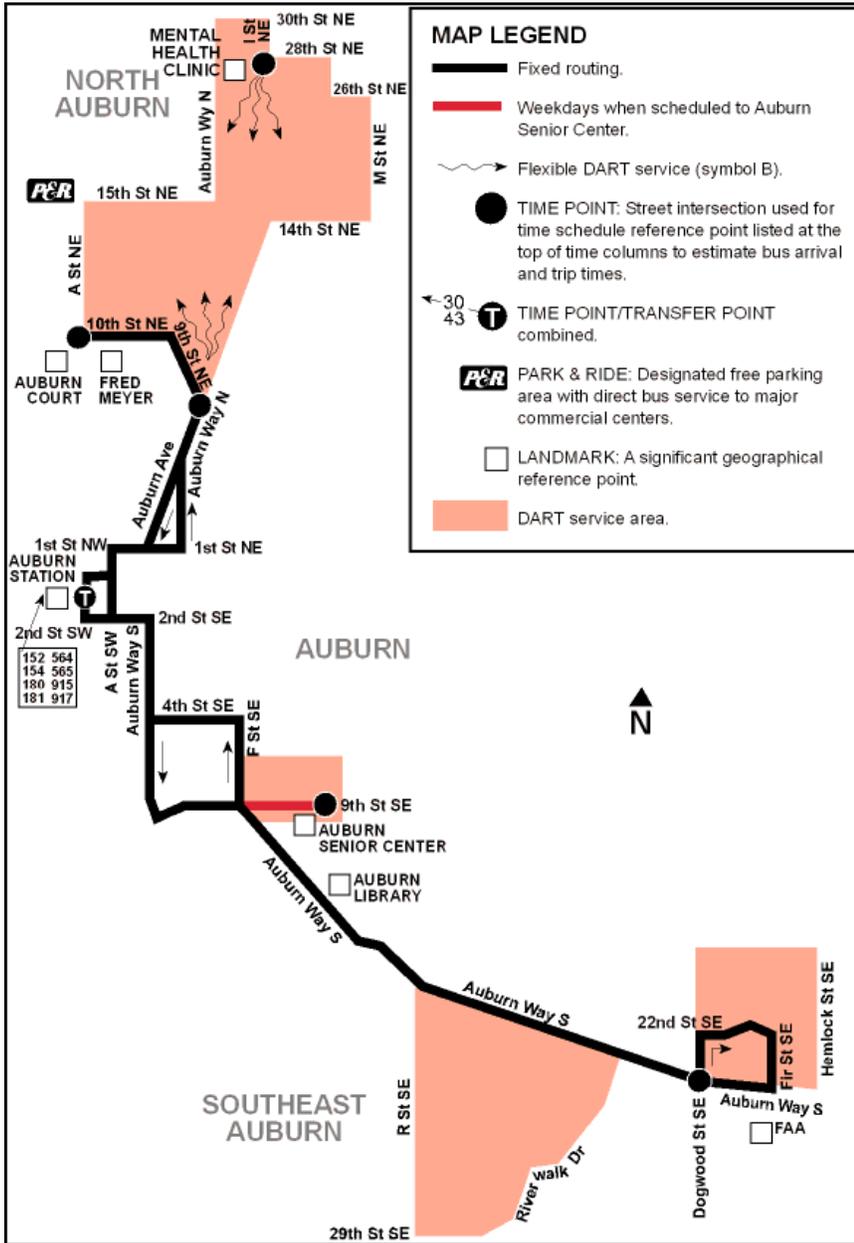
map: http://transit.metrokc.gov/cftemplates/show_map.cfm?BUS_ROUTE=919&DAY_NAV=W

schedule: http://transit.metrokc.gov/tops/bus/schedules/s919_0_.html

¹² King County Metro's Dial-a-Ride Transit (DART) offers variable routing in some areas within King County. By using vans that can go off regular routes to pick up and drop off passengers within a defined service area, DART service may allow for transit service closer to a location. DART does not go door-to-door. It operates on a fixed schedule, but one that has more flexibility than regular King County Metro buses.

Exhibit 2.20

King County Metro - Route 919 Map



Bus Stops and Pullouts

Bus stops are located throughout the SR 164 Corridor. In the Auburn, Academy, and Enumclaw segments transit stops are more frequent and bus pullouts are usually not provided. In rural areas bus stops are less frequent, and bus pullouts are often located in the shoulder area of highways. Exhibit 2.21 below shows bus pullout locations in the eastbound and westbound direction along the SR 164 Corridor.

Exhibit 2.21

Location of Transit Stops and Bus Pullouts along SR 164

Segment Designation	Location	Milepost	Bus Stop or Pullout
EASTBOUND			
Auburn	West of D Street SE	0.54	Bus Stop
Academy	West of M Street SE	1.18	Bus Stop
Rural / Agricultural	East of Riverwalk Drive SE	2.10	Bus Stop
Auburn	East of Dogwood Street SE	2.29	Bus Stop
Auburn	East of Fir Street SE	2.45	Bus Stop
Auburn	East of Hemlock Street	2.58	Bus Stop
Auburn	West of Chinook Elementary School	2.82	Bus Stop
Academy	Poplar Street SE	2.97	Bus Stop
Academy	West of 32nd Street SE	3.18	Bus Stop
Academy	East of 32nd Street SE	3.85	Bus Stop
Academy	Academy Drive SE	4.37	Bus Stop
Academy	East of SE 368th Place	4.73	Pullout
Muckleshoot	West of Pedestrian Crossing Signal	5.46	Pullout
Muckleshoot	West of 380th Place	5.87	Pullout
Muckleshoot	West of 380th Place	5.91	Bus Stop
Muckleshoot	East of 158th Avenue SE	6.66	Pullout
Muckleshoot	East of 158th Avenue SE	6.69	Bus Stop
Muckleshoot	East of SE 392nd Street	6.94	Pullout
Muckleshoot	East of SE 392nd Street	6.97	Bus Stop
Muckleshoot	East of SE 400th Street	7.54	Pullout
Muckleshoot	East of SE 400th Street	7.55	Bus Stop

Exhibit 2.21 (continued)

Location of Transit Stops and Bus Pullouts along SR 164

Segment Designation	Location	Milepost	Bus Stop or Pullout
EASTBOUND (continued)			
Muckleshoot	West of SE 408th Street	8.03	Pullout
Muckleshoot	West of SE 408th Street	8.05	Bus Stop
Muckleshoot	East of SE 416th Street	8.64	Pullout
Muckleshoot	East of SE 416th Street	8.66	Bus Stop
Rural / Agricultural	East of 188th Avenue SE	9.54	Pullout
Rural / Agricultural	East of 188th Avenue SE	9.56	Bus Stop
Rural / Agricultural	West of 196th Avenue SE	10.22	Pullout
Rural / Agricultural	West of 196th Avenue SE	10.24	Bus Stop
Rural / Agricultural	West of 228th Avenue SE	12.20	Pullout
Rural / Agricultural	West of 228th Avenue SE	12.22	Bus Stop
Enumclaw	East of 236th Avenue SE	12.76	Pullout
Enumclaw	East of 236th Avenue SE	12.77	Bus Stop
Enumclaw	West of Farrelly Street	13.67	Bus Stop
Enumclaw	East of Florence Street	13.97	Bus Stop
Enumclaw	East of Garfield Street	14.09	Bus Stop
Enumclaw	West of Pioneer Street	14.18	Bus Stop
Enumclaw	West of Montgomery Avenue	14.34	Bus Stop
Enumclaw	East of First Street	17.76	Bus Stop
Enumclaw	West of Cedar Street	15.06	Bus Stop

Exhibit 2.21 (continued)

Location of Transit Stops and Bus Pullouts along SR 164

Segment Designation	Location	Milepost	Bus Stop or Pullout
WESTBOUND			
Enumclaw	East of Montgomery Avenue	14.35	Bus Stop
Enumclaw	West of Pioneer Street	14.17	Bus Stop
Enumclaw	West of Garfield Street	14.04	Bus Stop
Enumclaw	West of Florence Street	13.91	Bus Stop
Enumclaw	West of Farrelly Street	13.67	Bus Stop
Enumclaw	West of 236th Avenue SE	12.76	Pullout
Enumclaw	West of 236th Avenue SE	12.72	Bus Stop
Rural / Agricultural	West of 228th Avenue SE	12.22	Bus Stop
Rural / Agricultural	West of 196th Avenue SE	10.04	Pullout
Rural / Agricultural	West of 196th Avenue SE	10.02	Bus Stop
Rural / Agricultural	West of 188th Avenue SE	9.49	Pullout
Muckleshoot	West of SE 416th Street	8.62	Pullout
Muckleshoot	West of SE 416th Street	8.61	Bus Stop
Muckleshoot	West of SE 408th Street	8.06	Pullout
Muckleshoot	West of SE 408th Street	8.05	Bus Stop
Muckleshoot	East of SE 400th Street	7.57	Pullout
Muckleshoot	East of SE 400th Street	7.55	Bus Stop
Muckleshoot	West of SE 392nd Street	6.92	Pullout
Muckleshoot	West of SE 392nd Street	6.90	Bus Stop
Muckleshoot	East of 158th Avenue SE	6.67	Pullout
Muckleshoot	158th Avenue SE	6.65	Bus Stop
Muckleshoot	West of SE 380th Place	6.04	Bus Stop
Muckleshoot	West of Pedestrian Crossing Signal	5.50	Pullout
Muckleshoot	West of Pedestrian Crossing Signal	5.48	Bus Stop

Exhibit 2.21 (continued)

Location of Transit Stops and Bus Pullouts along SR 164

Segment Designation	Location	Milepost	Bus Stop or Pullout
WESTBOUND (continued)			
Academy	East of SE 368th Place	4.72	Bus Stop
Academy	West of Academy Drive SE	4.34	Bus Stop
Academy	West of 32nd Street SE	3.79	Bus Stop
Academy	West of 32nd Street SE	3.16	Bus Stop
Academy	West of Poplar Street SE	2.95	Bus Stop
Academy	West of Chinook Elementary School	2.81	Bus Stop
Auburn	West of Fir Street SE	2.39	Bus Stop
Auburn	West of Dogwood Street SE	2.24	Bus Stop
Auburn	West of Riverwalk Drive SE	2.04	Bus Stop
Auburn	West of M Street SE	1.16	Bus Stop
Auburn	West of 12th Street SE	0.84	Bus Stop
Auburn	East of F Street SE	0.69	Bus Stop
Auburn	West of 7th Street SE	0.44	Bus Stop

Source: WSDOT's SR Web webpage: <http://www.srview.wsdot.wa.gov/home.htm>

Park-and-Ride Lots

Metro Transit maintains two park-and-ride lots along the SR 164 corridor. Both of the lots are located in or near Enumclaw:

1. The Sacred Heart Church Park-and-Ride lot located at 1614 Farrelly Street (near the Farrelly Street and Griffin Avenue intersection) - 25 parking stalls.
Served by Metro Route 915.

2. The Farmers Park Park-and-Ride lot located (near the SR 164 and 228th Avenue SE intersection) - 25 parking stalls.
Served by Metro Route 915.

Three other park-and-ride lots are located in the City of Auburn north of the SR 164 corridor.

1. The Auburn Park-and-Ride lot located at 101 15th Street NE (near the “A” Street NE and 15th Street NE intersection) - 358 parking stalls.
Served by Metro Routes: 152, 154, 180, 919 DART, and 952.

2. The Auburn Station surface lot located near the A Street SW and 1st Street SW intersection) - 114 parking stalls.
Served by Metro Routes: 152, 154, 180, 181, 915, 917 DART, and 919 DART.
Served by Sound Transit Routes: 564 and 565.
Served by Sound Transit Sounder Commuter Rail.

3. The Auburn Station garage located near the A Street SW and 1st Street SW intersection) - 500 parking stalls.
Served by Metro Routes: 152, 154, 180, 181, 915, 917 DART, and 919 DART.
Served by Sound Transit Routes: 564 and 565.
Served by Sound Transit Sounder Commuter Rail.



Park & Ride lot located at 228th Avenue SE

17 What other methods are typically used to improve highway operations?

Transportation System Management

Transportation System Management (TSM) refers to techniques used to improve the operating efficiency of the existing transportation system through better utilization of current highway capacity. Types of TSM measures include, but are not limited to:

- transit queue jump lanes
- signal timing and coordination
- intelligent transportation system (ITS) programs (in-pavement loop speed detectors, traffic cameras)
- access consolidation
- incident management

Transportation Demand Management

Transportation Demand Management (TDM) describes measures that reduce travel demand by providing alternatives to single occupant vehicle travel. Examples of TDM measures include commute trip reduction programs, telecommuting, and non-motorized facilities and Metro's programs to provide transit service, ridesharing, vanpooling, and park-and-ride lots.

The jurisdictions along the SR 164 corridor support the enhancement of transit services and additional non-motorized transportation facilities through their comprehensive plan policies to help reduce dependency on single occupancy vehicles.

18 What other types of transportation facilities are located on or near SR 164?

Freight Rail

The Burlington Northern Santa Fe (BNSF) railroad line is located just north of the corridor and crosses Auburn Way South immediately north of the western end of SR 164 where SR 164 becomes Auburn Way North.

This railroad line is referred to as the Stampede Pass route and is a mainline used to ship materials to and from eastern Washington and beyond. BNSF reactivated the line in 1996 to address projected growth at the ports. The train frequency of the BNSF line fluctuates with business conditions and can be as high as 5 to 6 trains each way per day. There are no regularly scheduled passenger trains on the Stampede Pass mainline.

19 What types of non-motorized transportation facilities are provided on the SR 164 Corridor?

Pedestrian and Bicycle Facilities

Sidewalks are provided for pedestrians in the urban areas of Auburn and Enumclaw. There are very few extended sections with existing sidewalks in the rural areas.

There are no designated bicycle lanes on SR 164, but the King County Bicycling Guide Map (2004)¹³ identifies SR 164 locations where bicyclists can travel while sharing the highway with low, moderate, or heavy traffic. In some of these segments the county bike map recommends using caution while biking along the highway.

Exhibit 2.22 and Exhibit 2.23 list the pedestrian and bicycle facilities located along SR 164.

¹³ <http://www.metrokc.gov/kcdot/roads/bike/map.cfm> (grids 15, 16, 19, and 20).

Exhibit 2.22

Summary of Pedestrian Facilities on SR 164

Milepost	Location	Pedestrian Facility
EASTBOUND		
0.31 to 1.23	SR 164 / SR 18 Interchange to 17th Street SE	Concrete sidewalk provided
1.23 to 1.49	17th Street SE to Begin R Street Bridge	Asphalt shoulder
1.49 to 1.52	Begin R Street Bridge to End R Street Bridge	Concrete sidewalk provided
1.52 to 1.66	End R Street Bridge to East of R Street Bridge	Asphalt shoulder
1.66 to 2.46	East of R Street Bridge to FAA Site	Concrete sidewalk provided
2.46 to 4.25	FAA Site to West of Academy Drive SE	Asphalt shoulder
4.25 to 4.43	West of Academy Drive SE to East of Academy Drive SE	Intermittent concrete curb
4.43 to 6.93	East of Academy Drive SE to SE 392nd Street	Asphalt shoulder
6.93 to 6.97	SE 392nd Street to East of SE 392nd Street	Concrete sidewalk provided
6.97 to 7.53	East of SE 392nd Street to East of SE 400th Street	Asphalt shoulder
7.53 to 7.56	East of SE 400th Street to East of SE 400th Street	Concrete sidewalk provided
7.56 to 8.04	East of SE 400th Street to West of SE 408th Street	Asphalt shoulder
8.04 to 8.09	West of SE 408th Street to East of SE 408th Street	Concrete sidewalk provided
8.09 to 13.28	East of SE 408th Street to West of 241st Place SE	Asphalt shoulder
13.28 to 13.32	West of 241st Place SE to East of 241st Place SE	Concrete sidewalk provided
13.32 to 13.56	East of 241st Place SE to East of 244th Avenue SE	Asphalt shoulder
13.56 to 15.13	East of 244th Avenue SE to SR 164 / SR 410 intersection	Concrete sidewalk provided

Exhibit 2.22 (continued)

Summary of Pedestrian Facilities on SR 164

Milepost	Location	Pedestrian Facility
WESTBOUND		
15.13 to 13.50	SR 164 / SR 410 intersection to East of Highpoint Street	Concrete sidewalk provided
13.50 to 13.31	East of Highpoint Street to East of 244th Avenue SE	Asphalt shoulder
13.31 to 13.27	East of 244th Avenue SE to West of 244th Avenue SE	Concrete sidewalk provided
13.27 to 8.08	West of 244th Avenue SE to East of SE 408th Street	Asphalt shoulder
8.08 to 8.04	East of SE 408th Street to West of SE 408th Street	Concrete sidewalk provided
8.04 to 7.56	West of SE 408th Street to East of SE 400th Street	Asphalt shoulder
7.56 to 7.55	East of SE 400th Street to East of SE 400th Street	Concrete sidewalk for bus stop and bus pullout
7.55 to 6.95	East of SE 400th Street to East of SE 392nd Street	Asphalt shoulder
6.95 to 6.90	East of SE 392nd Street to West of SE 392nd Street	Concrete sidewalk provided
6.90 to 4.46	West of SE 392nd Street to East of Academy Drive SE	Asphalt shoulder
4.46 to 4.35	East of Academy Drive SE to West of Academy Drive SE	Intermittent concrete curb provided
4.35 to 3.03	West of Academy Drive SE to West of Poplar Street SE	Asphalt shoulder
3.03 to 2.83	West of Poplar Street SE to Chinook Elementary School	Intermittent concrete curb and sidewalk provided
2.83 to 2.40	Chinook Elementary School to West of Fir Street SE	Asphalt shoulder
2.40 to 1.64	West of Fir Street SE to West of Muckleshoot Plaza	Concrete sidewalk provided
1.64 to 1.51	West of Muckleshoot Plaza to East of R Street Bridge	Asphalt shoulder
1.51 to 1.49	East of R Street Bridge to West end of R Street Bridge	Concrete sidewalk provided
1.49 to 1.34	West end of R Street Bridge to East of 17th Street SE	Asphalt shoulder
1.34 to 0.31	East of 17th Street SE to SR 164 / SR 18 interchange	Concrete shoulder provided

Source: WSDOT's SR Web webpage: <http://www.srview.wsdot.wa.gov/home.htm>

Exhibit 2.23

Summary of Bicycle Facilities on SR 164

Milepost	Location	Bike Facility Travel Conditions
0.31 to 0.58	SR 164 / SR 18 Interchange to E Street SE	No information
0.58 to 1.20	E Street SE to M Street SE	Heavy traffic street without wide curb lane or shoulder
1.20 to 4.37	M Street SE to Academy Drive SE	Moderate to heavy traffic with wide curb lane or paved shoulder. Bicyclists are urged to use route with caution.
4.37 to 8.62	Academy Drive SE to SE 416th Street	Moderate to heavy traffic with wide curb lane or paved shoulder.
8.62 to 10.23	SE 416th Street to 196th Avenue SE	Moderate traffic without wide curb lane or shoulder
10.23 to 14.52	196th Avenue SE to Porter Street (SR 169 intersection)	Heavy traffic street without wide curb lane or shoulder

Crosswalks

Non-motorized crossings are located throughout the corridor at both signalized and unsignalized intersections. Most of the crosswalk locations are located within the urban segments of Auburn and Enumclaw. There are no grade-separated crossings on SR 164. There is one signalized mid-block pedestrian crossing located between F Street SE and 12th Street SE (Milepost 0.77). The crosswalks on SR 164 are listed in Exhibit 2.24 below.

Exhibit 2.24

Crosswalks on SR 164

Segment	Milepost	Location	Traffic Control
Auburn	0.38	6th Street SE / SR 18 on-ramp	Signal
	0.75	F Street SE	Signal
	0.77	Mid-block between F Street SE and 12th Street SE	Signal
	0.91	12th Street SE	Signal
	1.20	M Street SE	Signal
	1.85	Muckleshoot Plaza	Signal
	2.07	Riverwalk Drive SE	Signal
	2.28	Dogwood Street SE	Signal
Academy	4.37	Academy Drive SE	Signal
Muckleshoot	5.84	Mid-block between 156th Avenue SE and SE 380th Place	Pedestrian signal
	6.92	SE 392nd Street	Signal
Enumclaw	13.30	244th Avenue SE	Signal
	14.52	Porter Street (SR 169)	Crosswalks with signal control
	14.57	Wells Street	No signal
	14.68	Railroad Street	No signal
	14.83	Garrett Street	Signal
	15.13	SR 164 / SR 410 intersection	Signal

Source: Field Inventory; WSDOT SR View

20 What utilities are located along the SR 164 Corridor?

Exhibit 2.25 below lists utility providers that have utility permits or franchises for occupation within the SR 164 right-of-way. The list of providers was obtained from WSDOT’s Northwest Region Utility Section.

Exhibit 2.25

Utility Providers with Permits in the SR 164 Right-of-Way

Milepost	Utility Provider
0.00 to 15.13	City of Auburn
	Muckleshoot Tribe
	Qwest
	Bonneville Power Administration
	Puget Sound Energy
	Comcast
	City of Enumclaw
	Enumclaw Eastside Sewer Company
General Permits	
4.32	30.0” gas main crossing
4.72	01.5” waterline crossing
6.83	02.0” water crossing
10.18	03.0” buried effluent system
14.95	gas main crossing

Source: WSDOT, Northwest Region Utility Section

21 How does the existing roadway on SR 164 compare to WSDOT's design guidelines?

The WSDOT Design Manual directs the engineering analyses applied to state highway projects. It provides uniform procedures for documenting and implementing design decisions. The Design Manual contains design guidelines that are broken into three categories and include “basic design level”, “modified design level”, and “full design level”:

Basic Design Level

Basic design level preserves pavement structures, extends pavement service life, and maintains safe operations of the highway.

Modified Design Level

Modified design level preserves and improves existing roadway geometrics, safety, and operational elements.

Full Design Level

The full design level is the highest level of design and is used on new and reconstructed highways. These projects are designed to provide optimum mobility, safety, and efficiency of traffic movement.

Many of the existing design elements of SR 164, including lane widths and shoulder widths, do not meet the current full design level requirements, as shown in Exhibit 2.26. WSDOT's full design level guidelines may not apply in all areas of the SR 164 corridor (in some sections modified or basic design levels may be appropriate).

Exhibit 2.26

Comparison of WSDOT Design Guidelines and Existing Conditions on SR 164

Segment	Milepost	Roadway Type	Existing No. of Lanes	Existing Shoulder Width	Full Design Standard Shoulder Width	Existing Lane Width	Full Design Standard Lane Width
Auburn	0.31 - 1.21	Undivided Multi-lane	5	8'	4' w/ curb	11'	12'
Auburn	1.21 - 2.79	Undivided Multi-lane	3 - 5	4' - 13'	4' w/ curb	11' - 12'	12'
Academy	2.79 - 4.71	Undivided Multi-lane	3	4' - 13'	8'	11' - 12'	12'
Academy	4.71 - 5.00	Two-Lane	2	4' - 8'	8'	11' - 12'	12'
Muckleshoot	5.00 - 6.00	Two-Lane	2	4' - 8'	8'	11' - 12'	12'
Muckleshoot	6.00 - 8.78	Two-Lane	2	2' - 8'	8'	11' - 12'	12'
Rural / Agricultural	8.78 - 12.24	Two-Lane	2	2' - 8'	8'	11' - 12'	12'
Enumclaw	12.24 - 13.31	Two-Lane	2	8'	8'	11' - 12'	12'
Enumclaw	13.31 - 13.51	Two-Lane	2	8'	8'	11' - 12'	12'
Enumclaw	13.51 - 14.51	Two-Lane	2 - 3	8'	4' w/ curb	12'	12'
Enumclaw	14.51 - 15.13	Two-Lane	2	8'	8'	12'	12'

Source: WSDOT Design Manual, January 2005, WSDOT State Highway Log

WSDOT requires that roadway characteristics, such as lane, median and shoulder widths, that do not meet design guidelines be upgraded to meet guidelines when new projects are completed along a roadway. In some cases, this may not be possible due to do environmental constraints. When upgrades are not possible, a design deviation approved by WSDOT headquarters will be required.

22 What SR 164 roadway improvements have been constructed or are funded?

There are a number of projects that have recently been completed or are currently programmed for design and construction utilizing federal, state, and local funding sources.

Muckleshoot Tribal Headquarters, medical facility, and tribal college are located just off SR 164. Another recreational use is the White River Amphitheatre located in the southeastern part of the segment.

The 20,000 seat White River Amphitheatre hosts a number of traffic-generating events and recreational activities that impact the SR 164 Corridor. The City of Auburn has an automated Intelligent Transportation System (ITS) traffic signal management program to assist in moving event traffic along SR 164 through the city's jurisdictional boundaries. This system helps at the amphitheatre and increases overall safety for officers on the streets and also for drivers traveling to and from the event center. The system is monitored via video cameras at controlled intersections within the city limits, allowing management of signal timing by computer.

The \$3.2 million ITS is funded cooperatively by the City of Auburn, King County, WSDOT, and the Muckleshoot Tribe. The Intelligent Transportation System works with signals at Auburn Way South intersections at Second Street SE, Fourth Street SE, and, with WSDOT cooperation, the eastbound and westbound on and off ramps for SR 18. The system continues south to the new F Street SE signal, part of the city's Auburn Way South Safety Improvements Project, to intersections at 12th Street SE, M Street SE, Riverwalk Drive, Dogwood Street SE, and Academy Drive.

Phase II of the ITS project will include interconnecting signals that are maintained and operated by the City of Kent, King County, WSDOT, and the City of Auburn. This project will connect Phase I ITS signals to Auburn's future system and will provide a direct link to both the state's system and King County's system and also the 277th Street corridor project.

SR 167 is a limited access facility that runs north and south within the Auburn city limits and the western side of Auburn and is parallel to Interstate 5. SR 167 carries more than 100,000 vehicles per day, of which a significant amount is regional traffic. Currently, WSDOT’s ITS extends as far south as the 15th Street NW exit. The state has a completed design to continue their system as far south as as the 15th Street SW exit. This distance is approximately two miles and includes the SR 167/SR 18 interchange.

SR 18 is also a limited access facility that runs east and west through central Auburn. WSDOT is planning a design that will extend their ITS easterly. When in place, Auburn will be able to view traffic on these routes during events such as concerts at the amphitheatre and will assist in making system adjustments to accommodate additional traffic using Auburn’s street system.

Exhibit 2.27 provides a summary of projects recently constructed or planned and funded along SR 164.

Exhibit 2.27

SR 164 List of Funded Projects

Segment	Milepost	Location	Improvement	Status
Auburn	0.31 to 2.28	SR 164 / SR 18 interchange vicinity to Dogwood Street SE	Repave the roadway	Completed
Auburn	0.38 to 1.20	6th Street SE to M Street SE	<ul style="list-style-type: none"> - construct medians from SR 18 eastbound on-ramp (6th Street SE) to south of F Street SE intersection - intersection improvements at D Street SE - install signal at F Street SE - add northbound lane from D Street SE to 6th Street SE 	Completed
Auburn	1.85	Muckleshoot Plaza	- install traffic signal at new intersection	Completed
Auburn	2.28	Dogwood Street SE	- improve traffic signal timing by connecting intersection to the Auburn ITS system	Completed
Auburn	2.28	Dogwood Street SE	- add left turn protected only phasing for eastbound and westbound directions	Completed

Exhibit 2.27 (continued)

SR 164 List of Funded Projects

Segment	Milepost	Location	Improvement	Status	
Muckleshoot	6.65	158th Avenue SE (along this portion of the highway SE 388th Street turns into 158th Avenue SE)	- intersection improvements including: - bus pullouts - removal of line-of-sight obstructions to address higher than average collision history at 158th Avenue SE - install new lighting - construct eastbound right turn lane	Completed	
Muckleshoot	6.92	SE 392nd Street	- Intersection improvements to increase capacity and enhance safety in the area from 32nd Street SE to east of SE 408th Street.	Completed	
Rural / Agricultural	10.23	196th Avenue SE (This section of SR 164 is also signed as 436th Street SE)	- close access to SE 436th Street from SR 164 - install street lighting - remove obstructions and vegetation to improve driver visibility and increase safety - realign north leg and intersection - install new, larger culvert underneath SR 164 at 196th Avenue SE to improve the potential for fish passage and reduce the likelihood of flooding.	Completed	
Rural / Agricultural and Enumclaw	10.23 to 13.57	from west of Highpoint Street vicinity	- address an area that has experienced a higher than average collision history west of 216th Avenue SE to east of Lafromboise Street by: - repave and stripe roadway - install guardrails - move some telephone poles away from roadway.	Completed	

Exhibit 2.27 (continued)

SR 164 List of Funded Projects

Segment	Milepost	Location	Improvement	Status	
Rural / Agricultural	11.23	212th Avenue SE	<ul style="list-style-type: none"> - address an area that has experienced a higher than average collision history from 216th Avenue SE to east of Lafromboise Street by providing safety improvements such as: <ul style="list-style-type: none"> - improving radius - filling ditches and removing obstructions and vegetation on side of road to improve visibility. 	Completed	
Enumclaw	12.24 to 12.65	228th Avenue SE vicinity	<ul style="list-style-type: none"> - address area that has experienced a higher than average collision history from 216th Avenue SE to east of Lafromboise Street by providing safety improvements such as: <ul style="list-style-type: none"> - restripe the roadway to create left and right turn lanes - install street lighting - add bus pullouts - flatten out the highway to remove blind spot - move the intersection south to accommodate changes to the turn lane - remove obstructions and vegetation to improve driver visibility. 	Completed	
Enumclaw	13.30	244th Avenue SE and SE 440th Street	<ul style="list-style-type: none"> - improve traffic signal at 244th Street - flatten the roadway on the north side of the intersection to improve visibility - repave roadway - restripe street to add left turn lane 	Completed	
Enumclaw	13.57 to 15.13	SR 164 within the City of Enumclaw	<ul style="list-style-type: none"> - synchronize traffic signals within the City of Enumclaw to improve traffic flow. 	Completed	