

# Appendix: Table of Contents

---

<b>Appendix A: Public Outreach .....</b>	<b>A-1</b>
1. What were the goals of the public outreach strategy? .....	A-1
2. What public outreach and communication activities were conducted as part of the study? .....	A-2
3. What public outreach tools were used as a part of the study? .....	A-9
4. What key concerns were identified by the community? .....	A-10
<b>Appendix B: Environmental Inventory .....</b>	<b>B-1</b>
1. What natural environmental characteristics are located near the SR 164 Corridor? .....	B-1
2. What endangered species and sensitive habitats are near the SR 164 Corridor? .....	B-13
3. What Built Environmental Characteristics are located near the SR 164 Corridor? .....	B-18
4. Will the improvement projects be sensitive to the SR 164 Corridor’s archeological, historical, and cultural resources? .....	B-27
<b>Appendix C: Original Projects List.....</b>	<b>C-1</b>
<b>Appendix D: SAFETEA-LU Federal Funding Sources .....</b>	<b>D-1</b>

**Appendix E: Corridor Planning Study Development Files ..... E-1**

1. SR 164 Corridor Study Charter for Corridor Working Group
2. SR 164 Corridor Study Goals and Objectives
3. SR 164 Corridor Study Evaluation Criteria Technical Memorandum

**Appendix F: Traffic Data ..... F-1**

1. Final Screening of Potential Transportation Projects
2. SR 164 Turning Movement Volumes
3. SR 164 Collision Data 2002 to 2004
4. Collision Summary for Years 2005 through 2007

**Appendix G: Project Cost Data ..... G-1**

1. SR 164 Intersection Projects October 2008

**Appendix H: SR 164 Bypass Feasibility Study ..... H-1**

# Appendix A: Public Outreach

---

*This appendix describes the public outreach process employed by WSDOT for the SR 164 Corridor Planning Study (CPS). Public outreach was a critical component of the study used to identify the transportation problems along the corridor and to help develop the study's recommendations.*

## **1 What were the goals of the public outreach strategy?**

The goals of the project's public outreach efforts were to:

- Provide opportunities for stakeholders and the public to provide input to the project team about community concerns regarding transportation
- Inform the public throughout the project on the study's progress
- Provide outreach opportunities for the public to comment
- Document major public issues and concerns related to the study effort
- Identify and address potential risks or obstacles that could hinder the successful completion of the study effort, and
- Identify procedures for encouraging public participation in the study by low income and minority (Title VI) populations along the corridor.

The public involvement methods were intended to be diverse in nature in order to offer multiple opportunities and ways for the public to interact with and advise the state and study partners on necessary improvements along SR 164. The target audiences for public involvement included residents, workers and business owners, local jurisdictions along the SR 164 corridor and direct users of the corridor, including groups such as motorists, pedestrians, bicyclists, transit users, farmers, equestrians, and businesses that rely on the corridor for the movement of goods and provision of services.

A preliminary assessment of the population along SR 164, using U.S. Census Bureau Data, was conducted to identify and increase the project team's awareness of minority populations or populations whose income is at or below poverty thresholds. This information was used to assess whether or not translated project materials were necessary for the corridor study and to ensure that such populations had the opportunity to provide input on the corridor study throughout the process. The results of the assessment found that translated materials were not necessary.

---

The public outreach methods offered multiple opportunities for residents, employees, and project partners to provide input towards the plan.

---

## **2 What public outreach and communication activities were conducted as part of the study?**

The project team employed a number of strategies to involve as many interested parties as possible during the SR 164 CPS process. The following activities were completed:

- Conducted stakeholder interviews
- Hosted a partner Chartering Session
- Coordinated Corridor Working Group meetings
- Conducted community briefings
- Organized two rounds of open houses
- Advertised public outreach events through postcards, posters, e-mails and mailings
- Drafted and prepared a project folio
- Maintained a project distribution list
- Updated project website with current information
- Informed local media sources about the project and opportunities for public participation.

**Initial Stakeholder Interviews**

Eight initial stakeholder interviews were conducted to further identify concerns related to the SR 164 study effort and to document major public issues. Stakeholders received an overview of the CPS process, schedule, and the project's progress to date. These initial stakeholder interviews took place before the project Chartering Session on October 14th, 2004 with the goal to have an understanding of each participating agency's expectations, interests, and concerns related to the SR 164 corridor study. The project team met with representatives from the following groups:

- City of Auburn
- Citizens for Safety and the Environment
- Clear Channel Communications
- City of Enumclaw
- Federal Aviation Administration (FAA)
- King County
- Muckleshoot Tribe
- Puget Sound Regional Council (PSRC)

**Partner Chartering Session**

On October 14th, 2004, WSDOT held an initial one-day Chartering Session with Corridor Working Group (CWG) partners. The CWG is comprised of public agencies and jurisdictions along SR 164 responsible for funding and/or implementing corridor improvements. The CWG partners were:

- City of Auburn
- City of Enumclaw
- King County
- Muckleshoot Tribe
- Puget Sound Regional Council
- WSDOT

The Chartering Session brought all partners to the table in an effort to reach general agreement on a vision, goals, outcomes, recommendations, and operating ground rules for the study. The session accomplished the following:

- Identified agency/partner concerns regarding SR 164
- Shared the study's scope and schedule with the Chartering Partners
- Established a basis for agency coordination throughout the SR 164 study
- Outlined how the partners, local officials, stakeholders, and the public will be involved throughout the study
- Ensured that WSDOT use the appropriate decision-making and communication methods with the partners to maximize project progress and build consensus around a list of short-term and long-term project packages.

### **Corridor Working Group Meetings**

The CWG met seven times during the SR 164 corridor study. The WSDOT SR 164 project web page announced all of the meeting dates and locations and the option for public attendance at these meetings. The project team also notified interested parties about upcoming meeting times and locations via email. At these working sessions, the project team informed the CWG partners on the project's progress to date, presented the latest technical analysis results, and provided the group with information to take back to their respective jurisdictions and organizations. These briefings also provided a forum to make consensus-based decisions regarding initial project development, evaluation criteria, and final project packages.

## **Stakeholder Outreach**

The project team solicited input from other stakeholders throughout the public involvement process. The stakeholders listed below were kept apprised of current project information. The project team solicited their input through interviews, telephone calls, and invitations to upcoming outreach events or nearby community briefings.

- Auburn Adventist Academy
- Auburn Chamber of Commerce
- City of Auburn Fire Department, Police Department, and School District
- Buena Vista Elementary School
- Citizens for Safety and the Environment
- Clear Channel Communications
- Glacier Northwest
- Green River Valley Coalition
- King County Fire Department
- King County Metro Transit Division
- King County Sheriff's Office
- Muckleshoot Casino
- Muckleshoot Tribe Police Department and School District
- Washington State Patrol

### **Targeted Community Briefings**

Sixteen community briefings were held throughout the study effort to reach community groups, including neighborhood organizations, elected officials and business members through less formal, more personalized means of communication. WSDOT worked with the CWG partners to identify and communicate with community, neighborhood, and interest groups who are potentially impacted by study outcomes. The project team briefed the following elected officials and groups, some more than once:

- Auburn City Council
- Auburn Public Works Commission
- Enumclaw City Council
- King County Councilmember David Irons
- King County Councilmember Steve Hammond
- King County Transportation Committee
- South County Area Transportation Board (SCATBd),  
Technical Advisory Committee
- Auburn City Council
- King County Agricultural Commission
- King County Agriculture Staff
- Jantzen's Addition Residential Community
- Pierce/King County Farm Bureau
- Muckleshoot Planning Commission

At these briefings, members of the project team informed the community groups or leaders of the project's status, upcoming milestones, and future opportunities to provide input. The project team received feedback on specific problem locations and incorporated these comments into their studies. For example, the Jantzen's Addition community residents shared their concerns about an Auburn Bypass and specific intersections that felt unsafe for drivers and pedestrians.

## Open Houses

WSDOT hosted two rounds of open houses in coordination with key project milestones (i.e., initial project screening, final project screening). The open houses informed the public on the project's status and provided an opportunity for public input on the corridor study process, development of improvement projects, and final corridor recommendations. Media kits, including fact sheets and other informational materials, were prepared and distributed at the events. The open houses were advertised in a variety of ways, as listed below, to maximize the number of affected parties in attendance:

- Display advertisements in regional and local newspapers
- Announcements in local publications
- E-mail invitations sent to the project email list
- Postcards sent to the project mailing list and distributed throughout the community at public gathering places, e.g. libraries, community centers, and other public buildings
- Posters hung throughout the corridor in store-fronts and on public bulletin boards
- Announcements posted on the WSDOT project website (<http://www.wsdot.wa.gov/projects/sr164/RDP/>)

Informational materials available at the open houses were also posted on the SR 164 project website, in order to allow those that were not able to attend the events to view the information and contact the project manager with further comments.

### Winter Open Houses, March 2005

The first round of open houses introduced the SR 164 corridor study, provided information on existing conditions, and presented a preliminary list of transportation improvement projects. Participants of the open house reviewed and commented on problem locations along the corridor and the initial improvement projects presented. Approximately 76 people attended the SR 164 open houses.

Open Houses were held on:

- March 3rd, 2005, from 4:30 PM to 8:30 PM in the commons of Enumclaw High School
- March 8th, 2005, from 4:30 PM to 8:30 PM at the Philip Starr Center on the Muckleshoot Reservation
- March 10th, 2005, from 4:30 PM to 8:30 PM at Chinook Elementary School in Auburn.

The March 3rd open house was held in conjunction with the *SR 169 Corridor Study* open house.

#### **Fall Open Houses, October 2005**

The purpose of the second round of open houses was to update the public on the project's progress, present the proposed short-term and long-term transportation improvement packages, and receive comments on the priority of these proposed projects. During the meetings, the public had an opportunity to view project information, speak to the project team and offer their comments in various ways. Participants were asked for specific feedback on the priority levels of the various problem locations or proposed improvement projects. Approximately 87 people attended the SR 164 open houses.

Open houses were held on:

- October 4th, 2005, from 6:00 PM to 8:00 PM at the Chinook Elementary School in Auburn
- October 6th, 2005, from 6:00 PM to 8:00 PM at the Philip Starr Center on the Muckleshoot Reservation
- October 11th, 2005, from 6:00 PM to 8:00 PM at Thunder Mountain Middle School in Enumclaw.

The October 11th open house was held in conjunction with the SR 169 Corridor Study open house and the October 4th open house was held in conjunction with the SR 167 Corridor Study and SR 167 HOT Lanes Pilot Project open house.

### **3 What Public Outreach Tools were used as part of the Study?**

The project team used a variety of tools to communicate messages and solicit participation and feedback from the public. The project team produced progress postcards, project display boards, and a project web page hosted on the WSDOT website. These tools helped keep a wide range of interested citizens, jurisdictions, and groups apprised of project updates and opportunities for public input.

#### **Progress Postcards and Posters**

Progress postcards were prepared, mailed, and distributed two weeks in advance of the public open houses to notify the public about upcoming opportunities to participate in the study. The postcards were mailed to the project mailing list and distributed along the corridor to public gathering places, e.g. libraries, community centers, and other public buildings. Posters, also announcing the open houses, were hung in storefronts and public bulletin boards. Copies of the postcards and posters were also given to the CWG partners to distribute in their jurisdictions.

#### **Project Folio**

A project folio was prepared following the first round of open houses to provide the public with an update on major project milestones, share the results of the open houses, and identify the next steps for the corridor study. The folio presented the corridor in segments and highlighted the problems, potential solutions, and public comments received for each segment.

#### **Display Boards**

Display boards were prepared for use at public open houses and briefings. The first series of displays communicated the purpose and need for the corridor study, the projected project schedule, and preliminary projects under evaluation by WSDOT and the CWG. Large full color aerials were used to pinpoint potential improvement projects at specific locations along the corridor. The second series of display boards presented improvement projects that underwent a detailed screening process and will most likely be carried forward in the final CPS. These projects were presented by segment and packaged into short- and long-term improvements.

### **Distribution List**

Through various public outreach tools and events, the project team received a number of requests from citizens to stay updated on the project. Approximately 171 contacts were logged into a distribution list during the public involvement process. Members on this list were updated on the project and notified of public outreach events.

### **Project Web site**

A project website, hosted by WSDOT, was periodically updated to provide the CWG and the public with the most recent information regarding the SR 164 study. The website provided a forum to post project facts, meeting dates and locations, meeting summaries, and general information about the project's progress.

## **4 What Key Concerns were identified by the community?**

The public involvement process applied the outreach strategies mentioned above to identify and address key community concerns. Members of the public and stakeholders provided input on safety and traffic issues along the corridor and offered ideas to address these problem locations. Exhibit A-1 summarizes public comments received by segment and is not meant to be all-inclusive.

## Exhibit A-1

## Summary of Public Comments by Segment

Public Comments	Suggested Transportation Improvements
<b>Auburn Segment</b>	
<ul style="list-style-type: none"> <li>• Relieve traffic congestion in the SR 164 and SR 18 interchange vicinity</li> <li>• Manage the flow of traffic in the SR 164 and Dogwood St SE vicinity</li> <li>• Reduce collisions by adding a center turn lane to Academy Drive</li> </ul>	<ul style="list-style-type: none"> <li>• Build a new link road from SR 164 to SR 18</li> <li>• Improve the intersection at Dogwood Street SE and provide a mid-block pedestrian crossing</li> <li>• Widen the roadway from Muckleshoot Casino / Riverwalk Drive to Hemlock Street SE.</li> </ul>
<b>Academy Segment</b>	
<ul style="list-style-type: none"> <li>• Address the safety issues at 32nd Street SE by installing a second traffic signal</li> <li>• Synchronize flashing signal near Noble Court SE when school is in session</li> <li>• Provide a center turn lane to Academy Drive</li> </ul>	<ul style="list-style-type: none"> <li>• Improve the intersection at 32nd Street SE to enhance traffic flow and address a high accident location</li> <li>• Relocate the flashing “School Ahead” sign so it is more visible to drivers</li> <li>• Address the high accident corridor from 32nd Street SE to east of SE 408th Street by managing access to SR 164 and removing obstructions and vegetation to improve driver visibility.</li> </ul>
<b>Muckleshoot Segment</b>	
<ul style="list-style-type: none"> <li>• Pedestrian safety is a major issue along this segment. Suggestions include creating a pedestrian trail, building a bridge over the highway, or installing streetlights along the road</li> <li>• Lower the speed limit to prevent vehicles from speeding through segment</li> <li>• Make improvements along the corridor to handle Amphitheater event traffic</li> </ul>	<ul style="list-style-type: none"> <li>• Increase signage to warn drivers of pedestrian crossings at 158th Avenue SE</li> <li>• Build a trail for non-motorized users that is parallel to SR 164 from Skoptobsh Village to Muckleshoot Tribal Headquarters</li> <li>• Provide a transit park-and-ride lot</li> <li>• Build bus pullouts at 158th Avenue SE to improve traffic flow and address this high accident location.</li> </ul>
<b>Rural / Agricultural Segment</b>	
<ul style="list-style-type: none"> <li>• Improve driver visibility along the corridor</li> <li>• Create two-way left turn lanes along the corridor</li> </ul>	<ul style="list-style-type: none"> <li>• Remove obstructions and vegetation along the corridor to improve driver visibility and increase safety</li> <li>• Provide safety improvements such as restriping the roadway to create left and right turn lanes in the 228th Avenue SE vicinity.</li> </ul>
<b>Enumclaw Segment</b>	
<ul style="list-style-type: none"> <li>• Improve driver visibility along the corridor</li> <li>• Create two-way left turn lanes along the corridor</li> <li>• Slow traffic through Enumclaw by installing speed bumps, roundabouts, or other traffic calming methods</li> </ul>	<ul style="list-style-type: none"> <li>• Several intersection improvements are recommended throughout the Enumclaw segment to improve pedestrian access and safety</li> <li>• Synchronize the traffic signals within the city limits to improve traffic flow.</li> </ul>



# Appendix B: Environmental Inventory

---

## **1 What natural environmental characteristics are located near the SR 164 corridor?**

To identify environmental considerations in the SR 164 corridor, an environmental inventory was conducted. Maps, reports, and other information were collected from various state and local government agencies. In addition, members of the study team conducted a drive-by in the corridor to verify the information. A summary of the key features of the natural and built environment in the SR 164 study area is presented below. Exhibits B-1 through B-3 show the locations for all of the built and natural environmental constraints within the study area.

### **Wetlands**

Based on the data contained in the King County Wetlands Map and the National Wetlands Inventory, wetlands in the study area are numerous, variable in size, and reflect a variety of soil types due to glacial activity. Wetlands tend to be more extensive to the north of SR 164, and also along the rivers, such as near the White River. Concentrations of wildlife, such as waterfowl, are associated with the more northeastern wetlands. Exhibits B-1 through B-3 show the locations of wetlands throughout the study area. Exhibit B-4 provides a list of identified and potential wetlands along the corridor with their potential issues.

Exhibit B-1

**Environmental Constraints (Auburn and Academy Segments)**

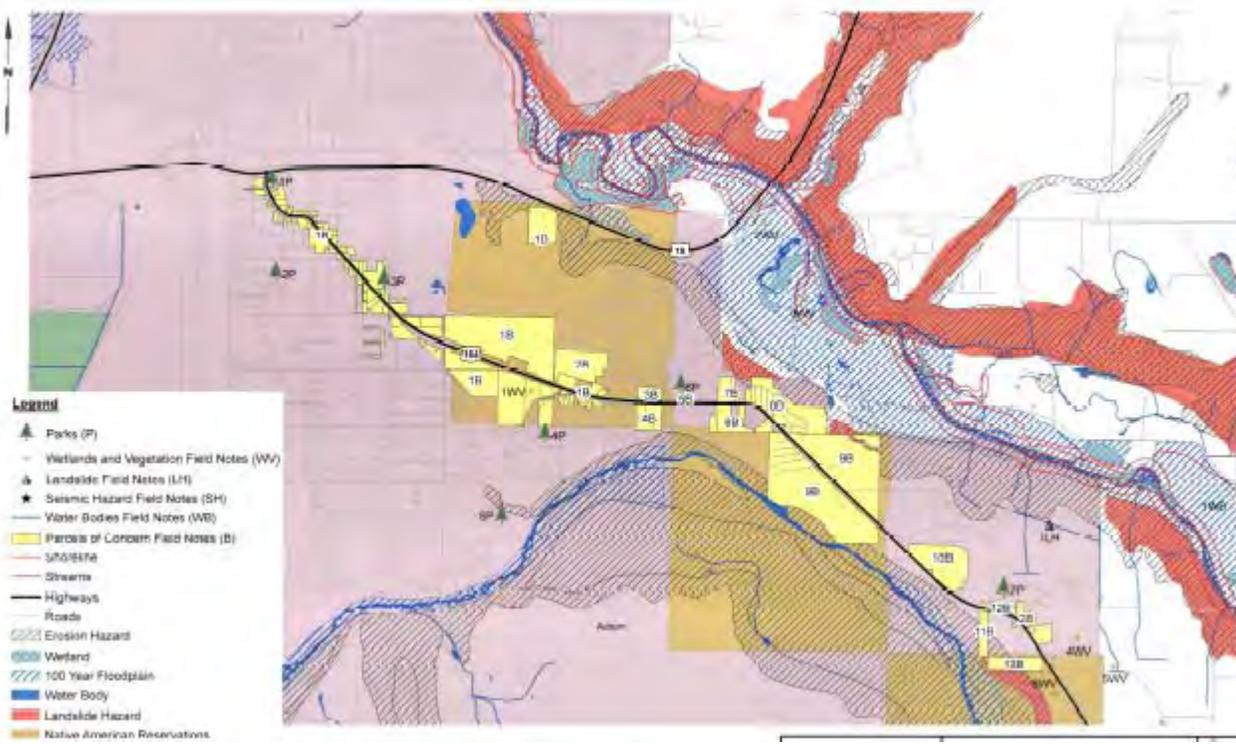


Exhibit B-2  
Environmental Constraints (Muckleshoot Segment)

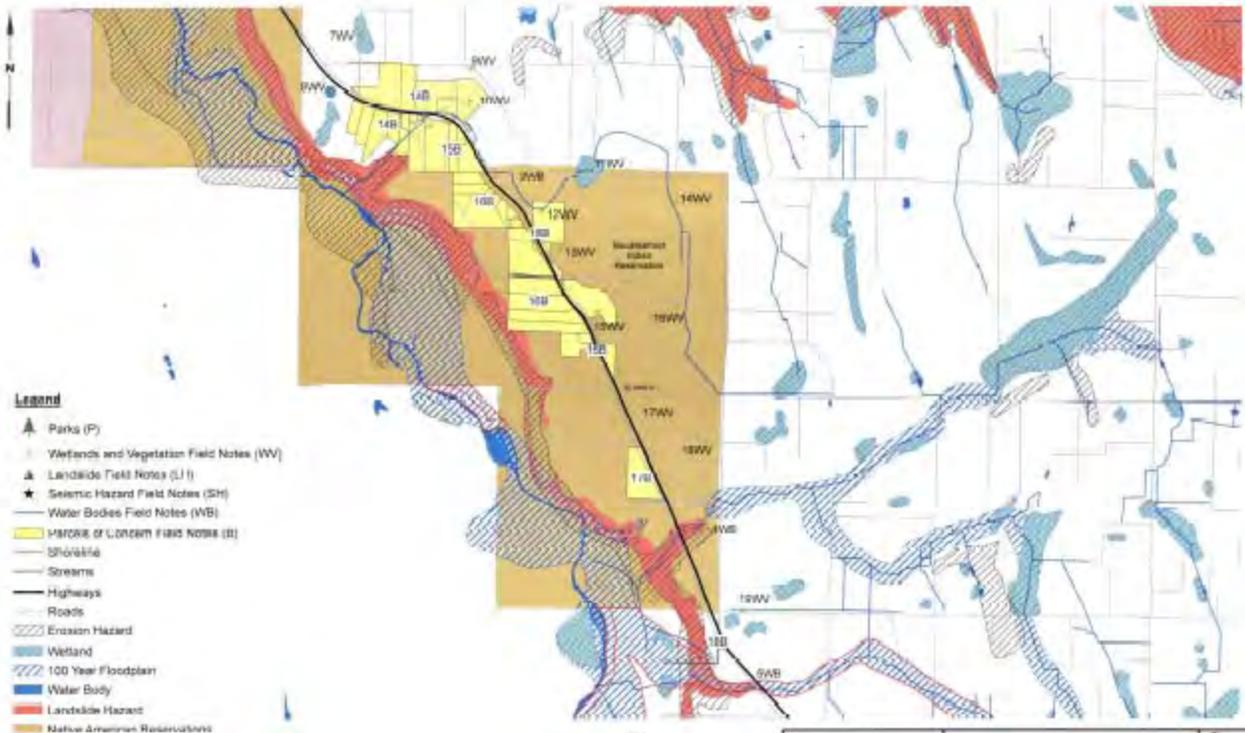
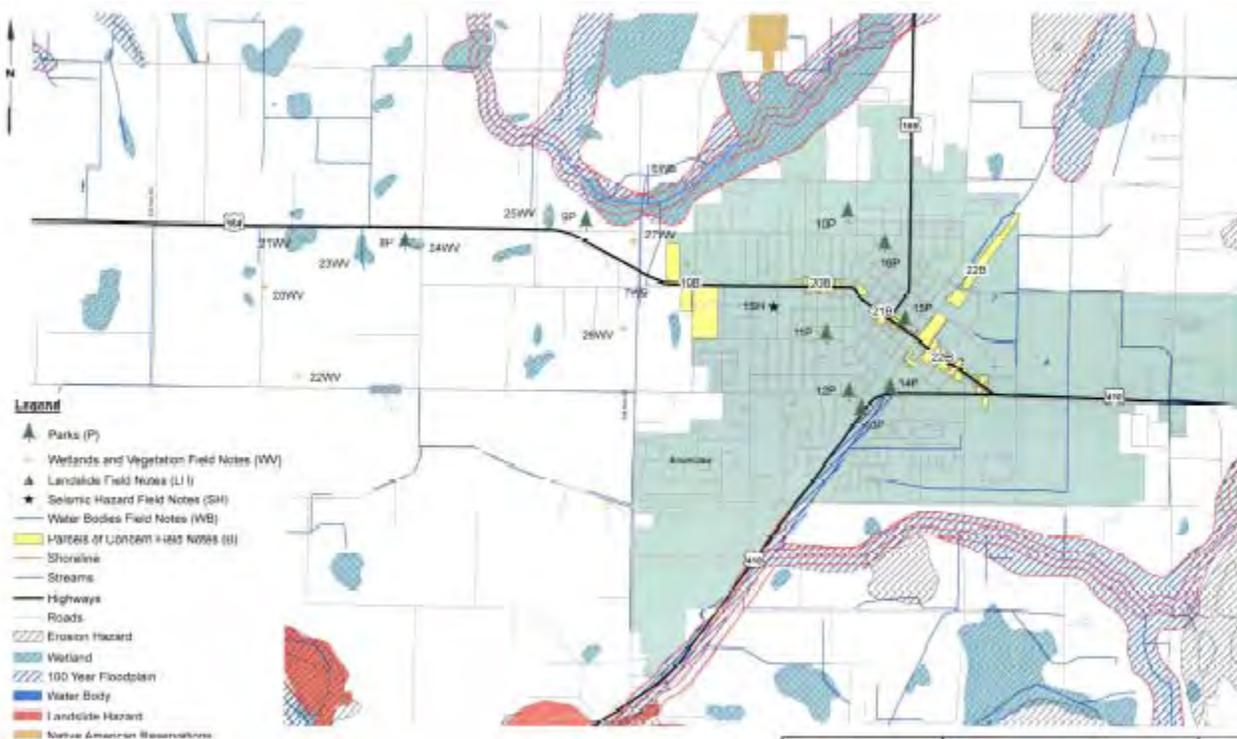


Exhibit B-3

Environmental Constraints (Enumclaw Segment)



## Exhibit B-4

## Potential Wetlands along SR 164 Corridor

Label	Milepost	Wetland Classification	Wetland Identified	Comments
1WV	2.00	Emergent	X	Low drainage area with observed wetland vegetation. Appears to receive water from adjacent slope to the south and runoff from SR 164. North end of drainage area contains two large piles of fill material.
2WV	North of 2.86			Area between SR 18 and Green Valley Road is primarily used for pasture and limited crop production. Emergent vegetation observed in open pasture areas and standing water common throughout. Numerous "pocket" wetlands suspected to occur within the low lying floodplain area of the Green River.
3WV	North of 2.97	Emergent	X	King County mapped wetlands confirmed during windshield survey. This wetland is within the floodplain of the Green River.
4WV	East of 4.72	Emergent	X	Emergent wetland contained within pasture. Observed vegetation of few alders, reed canary grass dominating.
5WV	East of 5.00	Emergent	X	Emergent wetland contained within pasture. Observed vegetation of few alders, reed canary grass dominating.
6WV	West of 5.00	Possible Mixed Forested / Emergent		Forested corridor adjacent to SR 164 could support wetland communities not previously identified. Moderate habitat resources for wildlife.
7WV	5.46	Emergent		Wetland and associated drainage channel could not be confirmed during windshield survey.
8WV	5.46	Shrub/scrub	X	Stream/drainage network appears to feed this low wetland area.
9WV	North of 6.06	Emergent	X	Wetland area northeast of 376th has been converted to mowed pasture land. Remaining wetland provides low quality emergent habitat within pasture setting.
10WV	North of 6.06	Emergent	X	Small drainage stream runs through various properties, wetland vegetation observed along stream corridor.
11WV	East of 6.30	Shrub/scrub, Emergent	X	Observed wetland turns to pasture land north of 384th.
12WV	East of 6.60	Possible Mixed Forested / Emergent		Forested area along east side of SR 164 could support wetland communities not previously identified. One shrub/scrub wetland previously identified on WA Ecology site could not be identified from the roadway.
13WV	East of 6.65	Possible Mixed Forested / Emergent		Forested area along east side of SR 164 could support small wetland communities not previously identified.
14WV	East of 6.60	Shrub/scrub, Forested / Emergent		Forested corridor adjacent to 384th. Could support multiple wetland communities not previously identified. One wetland identified as shrub/scrub and emergent on WA Ecology site could not be identified during field visit.

Exhibit B-4 (continued)

**Potential Wetlands along SR 164 Corridor**

Label	Milepost	Wetland Classification	Wetland Identified	Comments
15WV	East of 7.00	Emergent	X	Forested corridor bisects SR 164. Could support multiple wetland communities not previously identified. One wetland identified on WA Ecology site. Wetland vegetation and drainage observed in the area flanking either side of SR 164. Appears as small “pocket” wetland with low quality habitat.
16WV	East of 7.00	Emergent / Forested	X	Wetland identified on WA Ecology site. Wetland may extend north from SE 400th Street.
17WV	East of 7.51	Emergent		Wetland identified on WA Ecology site. Could not locate and confirm probable low quality pasture area where wetland is indiscernible from upland pasture.
18WV	East of 7.75	Emergent		Emergent wetland identified on WA Ecology site, could not confirm. Possible wetland communities could exist within observed forested alder stands.
19WV	East of 8.62	Emergent, Shrub/ scrub	X	Large partially forested area may contain multiple wetland communities in “pocket” low spots. Few wetlands mapped by King County exist as unused pasture land dominated by reed canary grass and juncus species.
20WV	South of 11.49	Emergent / Forested	X	Dense alder stands exist and surround King County mapped wetlands. Additional “pocket” wetlands may also occur within low lying areas.
21WV	11.55	Shrub/scrub, Forested / Emergent, Aquatic Bed	X	King County mapped wetland appears as semi-cleared pasture area dominated by juncus and pasture grasses.
22WV	South of 11.55	Forested	X	Forested community large enough to provide some habitat value for small mammals and avian species.
23WV	12.00	Emergent	X	King County mapped emergent wetland. Low quality wetland of indistinguishable size during visit.
24WV	12.24	Forested	X	King County mapped forested wetland occurs within park area. Marginal habitat quality due to lack of plant diversity, size, and location.
25WV	12.75	Emergent, Shrub / scrub	X	King County mapped wetland appears as low quality pasture area.
26WV	South of 13.29	Mixed Forested, Shrub/scrub	X	Possible wetland communities exist within observed forested area. Dominant vegetation of alder, spirea, and blackberry.
27WV	North of 13.29	Emergent / Forested	X	King County mapped wetland appears to extend across a private road.

Based on observations while driving the corridor, wetlands within the project area were found to be of low quality and disturbed by agriculture and farming practices. Most of the mapped wetlands contained on the King County wetlands map, and others included on Ecology and National Wetland Inventory (NWI) maps were of indeterminate size and location within grazed or mowed pasture land. Some of the mapped wetlands in the areas were not visible from the roadway or neighboring streets because they were located within forested communities or set back from the roadway.

Many areas observed during the field visit possibly contain wetlands not previously identified. The SR 164 corridor cuts through or is adjacent to several forested areas, many of which are suspected to contain low points that may support “pocket” wetlands. These forested areas most likely have moderate wildlife habitat, suitable for small mammals and birds. Additionally, portions of the study area between Green Valley Road and SR 18 are located within the floodplain, where saturated soils and emergent wetland vegetation are common during the winter months.

Permits from local, state, and federal agencies would be required for roadway improvements that impact any wetland area. Wetland areas that may be impacted by roadway improvements would need to be delineated. During design, impacts to wetland areas would need to be quantified and mitigation (compensation) for impacted wetlands would be required as part of the permit conditions. Long-term monitoring (up to five years) of the mitigation areas may also be required. A United States Army Corps of Engineers (Corps) Section 404 permit would be required for wetland fill. Other environmental documents as required by local (critical or sensitive areas studies), state (SEPA checklist or Environmental Impact Statement [EIS]), and federal environmental documents (NEPA Environmental Assessment [EA] or EIS) would need to be prepared.

### Water Bodies

SR 164 is situated between the White and Green Rivers and there are numerous streams in the study area. SR 164 crosses at least two unnamed streams, both tributaries to the White River. Various other tributaries to the White and Green Rivers are also located within the project area. In addition, there is a lake, a regional aquifer and numerous smaller aquifers within the study area. Exhibits B-1 through B-3 show their locations, and Exhibit B-5 provides a list of the potential fish species present.

White Lake is located in the northwest part of the study area, just north of the Muckleshoot Casino area. It is the only lake in the study area.

A regional aquifer is located below the Enumclaw Plateau, and several smaller aquifers are located near the western part of the study area. One of these aquifers supplies water for the City of Auburn, the City of Covington, and the Muckleshoot Reservation. The groundwater table is located approximately 50 feet below the surface.



*The White River is located near SR 164 in the Auburn and Academy segments.*

## Exhibit B-5

**Rivers, Streams, and Tributaries near the SR 164 Corridor**

Label	Mile-Post	River, Stream, or Creek Name	Fish Species Present	Stream Description/Comments
1WB	NE of 4.37	Green River	According to the Washington Stream Classification Manual, this river could contain chinook, coho, chum, and pink salmon; bull trout, Pacific lamprey, and steelhead.	This river parallels SR 164 for approximately 5 miles, south of the City of Auburn. At upstream areas, the Green River heads east.
2WB	South of SR 164	White River	According to the Washington Stream Classification Manual, this river could contain chinook, coho, and pink salmon; bull trout, and steelhead.	The White River parallels SR 164 just south of the City of Auburn, through the Muckleshoot Reservation, and passes to the south of the City of Enumclaw.
3WB	6.3	Unnamed stream numbered 0046	Unknown	This stream is a tributary to the White River. The stream runs south to north along the east side of SR 164 before it flows under SR 164 and toward the White River.
4WB	8.07	Pussyfoot Creek (0048)	This stream is a tributary of the White River; coho salmon may be present in the reach.	This stream is a tributary to the White River that runs under SR 164, just north of 416th Avenue SE.
5WB	9.1	Unnamed stream numbered 0050	This stream is a tributary of the White River; coho salmon may occur in the reach.	This stream is a tributary to the White River that runs under SR 164, just south of 416th Avenue SE.
6WB	North of 13.29	Newaukum Creek	Chinook and chum salmon may be present in this creek.	This stream is a major tributary to the Green River located near the City of Enumclaw; it crosses under 244th Avenue SE in the vicinity of SR 164.
7WB	South of 13.29	Unnamed	Unknown	This stream runs beneath SR 164 and could be a tributary to Newaukum Creek, just south of 244th Avenue SE. The stream may occur intermittently or may function as a drainage channel.

Source: Field visit and Washington Department of Fish and Wildlife

Permits from local, state, and federal agencies would be required to cross any stream or river and special studies would be required to describe fish habitat that might be impacted by corridor improvements. During design, impacts to aquatic areas would need to be quantified and mitigation (stream restoration) for impacted areas would be required as part of the permit conditions. Long-term monitoring (up to five years) of the mitigation areas may also be required. A Corps Section 404 permit would be required for any impacts to streams or rivers.

## Soils

Information on soils in the study area was obtained from the Natural Resources Conservation Service (NRCS) and from the United States Department of Agriculture's Soil Survey - King County Area (1973). The following soil classifications are present in the study area: Alderwood gravelly sandy loam, Everett gravelly sandy loam, Indianola loamy fine sand, Pilchuck loamy fine sand, Buckley silt loam, Newburg silt loam, Nooksack silt loam, Oridia silt loam, Riverwash, and Shalcar muck.

Soils are not a major problem within the SR 164 corridor study area for transportation improvements except for those soils associated most closely with the rivers and in depressions. During construction, soils are a problem when they are susceptible to erosion, mass wasting, and poor drainage or are associated with higher water tables. Though problem soils appear to be very limited in extent, there is no one general area to avoid because most of the problem soils occur in limited portions of more stable areas. Detailed geotechnical studies would be needed to examine the impacts of developing a project and to identify the appropriate design standards to be applied, given the specific soil characteristics of the improvement location.

## Slide Prone Slopes

The topography and geologic formation in the SR 164 corridor study area are heavily influenced by glacial and volcanic activity. Glaciers covered the Enumclaw Plateau 10,000 years ago, leaving a densely compacted glacial till. The Osceola Mudflow that descended from Mount Rainer and flowed down the White River Valley 5,000 - 7,000 years ago overlays this glacial till. Soils formed from the mudflow often have perched water tables because they are located on a compacted glacial till that inhibits drainage.

Two major river systems cut through the Plateau, the White River and the Green River. The valley sides (slopes and bluffs) between the Plateau and the river valley bottoms are steep and slide prone. There is evidence of recent slides along the southern slopes of the Green River Valley and on the northern slopes of the White River valley. These areas are considered to be landslide prone and are identified in the King County Sensitive Areas maps as hazard areas. Areas along Academy Drive on the south side of the Green River Valley have been affected by a

slide or slump. In fact, Academy Drive was closed during a site visit in November 2004 due to a landslide that occurred near the top of the slope. Alphanumeric code 1LH in Exhibit B-1 shows where this landslide hazard area is located.

Newaukum Creek north of SE 400th Street and its confluence with the Green River are also prone to landslides.

The King County Sensitive Area Ordinance defines landslide risk areas as landforms with:

- Slopes greater than 15%, impermeable soils and groundwater
- Slopes with evidence of mass movements or soil wasting
- Slopes resulting from rapid stream incision
- Undercut banks or wave actions
- Slopes that experience snow avalanches
- Alluvial fans

Exhibits B-1 through B-3 show the location of these sites.

Within the corridor study area, landslides along the valley walls of the Green and White Rivers will be a concern. Detailed geotechnical studies will be needed to examine the impacts of developing a project along a steep slope. Mitigation measures may be necessary to address stabilizing the adjacent slope, reducing erosion, and diverting increased stormwater runoff.

It would be possible to construct roadway improvement projects within the landslide hazard areas; however, the improvements would need to be designed and constructed to preclude failure during potential future slope movement. As a result, the steep landslide-prone slopes of the Green River Valley could present significant design challenges. Constructing a bypass or link road through this area could require the use of bridge(s), buttresses, retaining walls, and/or other slope stabilization methods. These mitigation measures could significantly increase the cost to design and construct the alternative alignments that traverse the southern slope of the Green River Valley.

In order to determine if an alternative route traversing a landslide hazard may be feasible, the alternative route would need to be evaluated, individual slopes would need to be analyzed, geotechnical borings would need to be advanced to characterize the slope, slope stability analysis would need to be performed for each slope, lateral earth pressures would need to be developed, and preliminary slope stabilization recommendations provided to estimate the construction costs. During design of an alternative, analysis of different slope stabilization options would also have to be performed to select the most cost-effective option. These studies would be completed during design of specific projects.

### Seismic Hazard Areas

The Puget Sound is a seismically-active area and is classified as a Seismic Zone 3 by the Uniform Building Code. The potential magnitude of a seismic earthquake in this designation is 8.5 once every 400 to 500 years. Known seismically sensitive areas are shown in Exhibits B-1 through B-3. Earthquakes in the area have been sub-crustal, i.e., 30 - 50 miles below the surface (Draft Muckleshoot Amphitheater EIS).

The City of Enumclaw's 1995 Comprehensive Plan reported that there is a seismic hazard area located between Farrelly Street and SR 410. The Enumclaw Comprehensive Plan identified extensive areas within the Enumclaw city limits as seismic hazard areas.

While there is a general concern about seismic activity in the region, no additional seismic concerns for the study were identified.

The primary risk associated with the identified seismic hazard areas is the possibility for soil liquefaction during a strong motion earthquake. If the potentially liquefiable soils are not removed from beneath proposed roadway improvements, these improvements could be subject to the adverse impacts of liquefaction. A possible adverse impact includes differential ground surface settlement and failure of built improvements. The adverse effects of liquefaction could be mitigated by removing and replacing the potentially liquefiable soils, utilizing ground improvement techniques (e.g., stone columns, compaction grouting, deep soil mixing, etc.) to densify the liquefiable soils, or by providing a pile foundation system bearing in denser material not expected to be subject to liquefaction. The identified seismic

---

The primary risk associated with seismic hazard areas is the possibility for soil liquefaction during a strong motion earthquake.

---

hazard area is not considered a “fatal flaw” because the hazard could either be mitigated using the methods described above or it could be determined that the additional cost to mitigate the hazard is not warranted.

## 2 What endangered species and sensitive habitats are near the SR 164 corridor?

### Vegetation

The SR 164 corridor study area extends across the Enumclaw Plateau and the Muckleshoot Prairie. Vegetation on the Enumclaw Plateau was primarily Douglas fir and western hemlock associations before European settlement. Much of this forest and prairie land has been cleared for farmland and residential use. There are limited second-growth forests in the study area primarily along the valley sideslopes. Because of the extensive clearing and farming, it is unlikely that there are any endangered plant species in the study area. As part of the State Route 164 Corridor Study conducted in 2000, the Natural Heritage Program (NHP) was contacted for information on endangered plant species. The NHP database did not indicate any known endangered species plants in the study area.



*There are limited second growth forests in the study area, primarily along the valley sideslopes.*

### Fish and Associated Sensitive River Habitats

The Enumclaw Plateau has numerous fish-bearing streams flowing into either the Green or the White Rivers.

The White River supports Chinook salmon and bull trout, both threatened species under the Endangered Species Act (ESA). In addition, it supports Coho salmon and steelhead. The side channels of the White River are important spawning areas for Chinook salmon. The areas below the location of the White River Amphitheater (between River Mile 14.5 and 15.5) has 62 redds or spawning sites. The extent of bull trout habitat is less well known. There has been one confirmed sighting of bull trout at the confluence of the White and Puyallup Rivers outside the study area.



*Threatened fish species in the study area include Chinook salmon and bull trout.*

Pussyfoot Creek is located south of the White River Amphitheater and flows into the White River. This creek has habitat which supports Coho salmon above and below SR 164. Below SR 164, Pussyfoot Creek supports chum salmon and steelhead. A 1997 survey of the first 1,000 feet of Pussyfoot

Creek identified 20 salmon redds. Year-round juvenile salmon habitat in Pussyfoot Creek occurs west of 180th Avenue SE (a few hundred feet north or upstream of SR 164). There have been no known occurrences of bull trout in Pussyfoot Creek but some sources note the possibility of bull trout. Pacific lamprey may also spawn and rear in the Pussyfoot Creek lower reach near the mouth.

The Green River supports fall Chinook and chum salmon up to River Mile 10.0. Coho salmon ascend up the Newaukum Creek to about River Mile 11.5. A tributary flows into Newaukum Creek northwest of Wabash and West Whitney and east of Cemetery Road. Spring Creek flows into the Newaukum near Cemetery Road south of Swartz-Pederson Road. Watercress Creek flows into the Newaukum between River Mile 9 and 10 near the railroad lines northeast of Enumclaw. These creeks support Coho. Research completed as part of the SR 164 Corridor Study (2000), concluded that it should be assumed until proven otherwise that there are salmon fry in all the major ditches along SR 164. Many of the ditches are channeled streams that connect to major anadromous fish-bearing streams.

To protect fish, the Washington Department of Fish and Wildlife (WDFW) has defined in the Washington Administrative Code (WAC 220-110) when construction work in streams is allowed. For the Green River and tributaries, instream work is limited to between August 1 and August 31. Instream work in the White River drainage basin is limited to between July 15 and August 31.

Additionally, alternatives impacting endangered fish species or their habitats will require a Section 7 consultation and the preparation of a Biological Assessment (BA) and the issuance of a Biological Opinion (BO). Section 7 of the Endangered Species Act (ESA) requires federal agencies to consult with the National Oceanic and Atmospheric Administration Fisheries and the U.S. Fish and Wildlife Service on projects that may affect threatened and endangered species or their habitat. This consultation process would consider alternatives that would avoid such impacts and it is likely that another alternative would be selected, even if more costly.

In August 2005, a Salmon Habitat Plan was completed by the King County Department of Natural Resources and Parks for the Green/Duwamish and Central Puget Sound Watershed. The plan recommends actions to be taken over the next 10 years to protect and restore salmon habitat, using an ecosystem approach with a focus on the needs of Chinook salmon. Many of its recommendations will also benefit bull trout and other non-listed species such as Coho salmon and steelhead trout. Among the recommendations are ground restoration projects, habitat protection projects, public education, and improved government practices such as improved stormwater management. The plan can be found at the department's website at: <http://dnr.metrokc.gov>.

### **Birds**

While there are no endangered bird species within the study area, there are some threatened species or species of concern including the olive-sided flycatcher, the bald eagle, the green-backed heron, and the Vaux's Swift. Threatened species are species that are likely to become endangered in the foreseeable future. Species of concern are those species that the U.S. Fish and Wildlife Service is reviewing for consideration as candidates for listing under the Endangered Species Act. Additional information is needed to propose them as threatened or endangered.

Bald eagles appear to be using the Enumclaw Plateau in greater numbers. During the SR 164 Corridor Study (2000), an active nest was confirmed southeast of 228th Avenue and 416th SE behind the Eldorado Horse Farm, in a large tree next to Newaukum Creek. The United States Fish and Wildlife Service has indicated that there are wintering bald eagles on the Enumclaw Plateau that could affect construction schedules between October 31 and March 31. Nesting activity that occurs between January 1 and August 15 can also limit construction activity.

Heron rookeries and nests have been sited near the Adventist Academy and on the slope below Academy Drive. Field inspections have been unable to confirm the locations of the nests. The Washington Department of Fish and Wildlife database indicates that most known heron sites are in areas classified as Urban Open Space along the rivers.

There may also be some occurrences of bird species, such as the blue bird, not noted in the Washington Department of Fish and Wildlife database that are of concern to local bird watching groups and ornithologists. Locally, the area around the Adventist Academy is considered to be a prime bird watching area.

### **Mammals**

The only mammals that may be of concern within the study area are two different bat species. The long-eared myotis is a bat species that grows to approximately 3 to 4 inches. They inhabit the western half of the U.S. and Canada, and are found usually in forested mountainous areas. Roosts are typically in tree hollows and under bark in crevices and buildings, and they hibernate in caves and mine tunnels. The bat is listed on both the federal and state listing for species of concern. While not uncommon or endangered, threats to the destruction of their habitat are of concern. They are extremely vulnerable to mine closures and the effects of disturbance from recreation at these sites. Pesticides and other environmental contaminants destroy their prey base. Bats are also known for loading of pesticides in their fat reserves.

The long-legged myotis is found throughout much of western North America. It occurs across most elevations, but is most common at areas of 6,500 to 10,000 feet. This species is also on the federal and state listing of species of concern. The long-legged myotis is generally a coniferous forest bat also found in riparian and arid habitats in some areas. They may also shift habitats seasonally and have been found to roost in a variety of places including abandoned buildings, cracks on the ground, crevices, and spaces beneath tree bark. They hibernate in caves and mine tunnels.

## Reptiles

There are two reptile species that are currently on the federal and state listing of species of concern. The Tailed Frog is found primarily in the Pacific Northwest and inhabits cold streams in humid forests. They prefer small channels without fish and with shading plants and trees, and streams with large stones, cobbles, and stable boulders which they can use for shelter from the rapid current. Some quieter side pools are also needed, so that eggs and hatchlings won't be washed away. The streams must contain water year round since Tailed Frog tadpoles need to stay in the water for a long growth period. Tailed Frogs are vulnerable to human activities such as forestry and road building. These activities can damage breeding streams by removing cover vegetation, disturbing streambeds, and contributing to siltation. Streams may become too warm for tadpoles if the shading trees are removed.

The Western Toad is found west of the Rocky Mountains. It has a stocky body with short legs and tends to walk rather than hop. Its skin ranges in color from pale green to grey, dark brown, and red. The toads prefer to breed in permanent or temporary water bodies with shallow sandy bottoms. After breeding, they disperse into terrestrial habitats such as forests, but generally prefer damp conditions. They are also found in small mammal burrows, beneath logs, and within rock crevices. The population of Western Toads has suffered significant losses and is now a candidate for endangered species listing. Their decline is due to habitat destruction from development near wetlands. Other factors include pollution, introduction of aquatic predators, and changing temperatures due to global warming.

## Insects

The Valley silverspot is a rare butterfly whose caterpillar form needs host plant viola species (violets) to survive. The species is currently on the federal and state list of species of concern.

### **3 What Built Environmental Characteristics are located near the SR 164 Corridor?**

The areas around the cities of Auburn and Enumclaw have been developed in close proximity to the road with commercial, residential, and public uses. Setbacks vary considerably. Exhibits B-1 through B-3 and Exhibit B-6 show the properties of concern, identified from the secondary source research (King County GIS iMAP website), and during the field investigation. Properties of concern are those that could potentially be impacted from roadway widening or other improvements. Parcels adjacent to the SR 164 corridor were reviewed and structures within approximately 40 feet of the existing roadway were noted.

#### **Buildings and other properties**

The built environment poses a challenge for roadway improvements along the SR 164 corridor. Many features of the built environment have been identified that could affect some of the potential improvements along the roadway. This initial “fatal flaw” analysis includes identification of large-scale utilities, such as difficult-to-relocate high-voltage transmission lines, businesses, or historic landmarks. These features could be considered built environmental “fatal flaws” because of the high probability of significant, unavoidable impacts; however, none of these constraints were identified.

## Exhibit B-6

## Properties of Concern near SR 164

Numeric Label	Mile-post	Property Name	King County PIN	Type	Concern 1	Concern 2
1B	1.50 to 2.00	Miscellaneous Residential / Commercial Buildings	Several Parcels	Commercial	Property Acquisition	Hazardous Materials
2B	2.00	Muckleshoot Casino	2021059044			
3B	2.50	Miscellaneous Residential / Commercial Buildings	Several Parcels		Property Acquisition	
4B	2.50	FAA Building	2021059030	Government	Property Acquisition	
5B	2.60	Mazatlan Mexican Restaurant	2121059043	Commercial	Environmental Justice	
6B	2.86	Winchester Heights	2121059099	Multifamily (MF) Residential	Loss of Housing	
	2.86	NW Family Church	2121059108	Church	Environmental Justice	Property Acquisition
	2.86	Auburn Crystal Townhouse Apartments	2121059035	MF Residential	Loss of Housing	
7B	2.86	Chinook Elementary School	2121059038	School	Loss of Undeveloped Land	
	2.86	Noble Court Estates	1565650020	MF Residential	Loss of Housing	
8B	3.00	Residential Impacts	2121059019?	MF Residential	Loss of Housing	Environmental Justice
	3.00	Clearwater Ridge	2121059067	MF Residential	Loss of Housing	
	3.00	Mobile Homes	2121059019	Mobile Home Park	Loss of Housing	Environmental Justice
	3.00	Multifamily Residences	2121059059	MF Residential	Loss of Housing	
	3.00	Wildwood Mobile Estates	2121059028	Mobile Home Park	Loss of Housing	Environmental Justice
9B	3.50	Forest Villa Manor	2821059001	Mobile Home Park	Loss of Housing	Environmental Justice
10B	4.00	Utility Corridor	2721059117	Utility	Relocate Utilities	
	4.00	Auburn Adventist Academy	27210591175	Church / School	No Impact / Loss of RV Hookups	
11B	4.50	Single Family (SF) House	2721059020	SF Residential		
12B	4.50	Muckleshoot Tribal College	2721059141	Tribal	Env. Justice	Property Acquisition
	4.50	Union 76 Gas Station	2721059097	Commercial	Hazardous Materials	
	4.50	MF Residences	2721059126	MF Residential	Loss of housing/ steep slopes	
	4.50	SF Residences	2721059174	SF Residential	Steep Slopes	

Exhibit B-6 (continued)

**Properties of Concern near SR 164**

<b>Numeric Label</b>	<b>Mile-post</b>	<b>Property Name</b>	<b>King County PIN</b>	<b>Type</b>	<b>Concern 1</b>	<b>Concern 2</b>
13B	4.50	Panorama Apartments	3421059022	MF Residential	Loss of housing/ steep slopes	
14B	5.80	Above ground Utility Lines, i.e., Electricity and Telephone	Several Parcels	Utility	Potentially Need to Relocate	
15B	6.00	Natural Gas Line	Several Parcels	Utility	Potentially Need to Relocate	
	6.00	Cooper's Corner	3521059031	Commercial	No Impact - Vacant Structure	
16B	6.5-7.0	Natural Food Storage / House	120059039	Commercial	Property Acquisition	
16B	6.5 - 7.0	Misc. Residential Impacts	Several Parcels	SF Residential	Loss of Housing	Potential Loss of Mobile Home
	6.5 - 7.0	Pentecostal Church / House	120059043	Church	No Impact	
17B	8.00	White River Amphitheater	1220059037	Tribal	No Impact	
18B	8.60	Cell phone tower	1820069044	Commercial	Property Acquisition	
	8.60	Puget Sound Energy Electric Substation	1320059011	Government / Commercial	Hazardous Materials	Property Acquisition
19B	13.50	Trinity Lutheran Preschool	2320069188	Church	Environmental Justice	Property Acquisition
	13.50	Enumclaw Adventist School	2320069015	Church	Environmental Justice	Property Acquisition
	13.50	Sacred Heart Church	2320069181	Church	Environmental Justice	Property Acquisition
	13.50	High Point Village	8078050210?	MF Residential	Environmental Justice	
20B	14.00	Circle K Gas Station	8661000006	Commercial	Hazardous Materials	
	14.00	Miscellaneous SF Residences	Several Parcels	SF Residential	Property acquisition	
	14.00	Big Blue House	8029200005	SF Residential	Property Acquisition	Historic Preservation
21B	14.50	Cottage Hair and Nail	2420069042	Commercial	Property Acquisition	
	14.50	Kibler / J.J. Smith Elementary School	2420069039	Government	Property Acquisition	
	14.50	Photography Shop		Commercial	Hazardous Materials	Property Acquisition

## Exhibit B-6 (continued)

## Properties of Concern near SR 164

<b>Numeric Label</b>	<b>Mile-post</b>	<b>Property Name</b>	<b>King County PIN</b>	<b>Type</b>	<b>Concern 1</b>	<b>Concern 2</b>
	14.50	MacRae's Indian Books	2361800130	Commercial	Environmental Justice	Property Acquisition
	14.50	Main Street Enumclaw / Olsen House	Several Parcels	Commercial / Residential	Potential Commercial Impacts	Historic Preservation
22B	14.6 - 15.0	Miscellaneous Commercial Properties	Several Parcels	Commercial	Potential Commercial Impacts	
	14.6 - 15.0	Miscellaneous SF Residences	2420069551	SF Residential	Potential Residential Impacts	
	14.6 - 15.0	Commercial Fuel (CFN)	2420069136	Commercial	Hazardous Materials	
	14.6 - 15.0	James Oil / Car Wash	2420069075	Commercial	Hazardous Materials	
	14.6 - 15.0	Les Schwab Tire	7127300320	Commercial	Hazardous Materials	
	14.6 - 15.0	SF Residences	188250085	SF Residential	Environmental Justice	
	14.6 - 15.0	Asia Garden Restaurant / Motel	1882500095	Commercial	Environmental Justice	
	14.6 - 15.0	Chevron Gas Station	2420069095	Commercial	Hazardous Materials	
	14.6 - 15.0	Crystal Dry Cleaners	2420069149	Commercial	Hazardous Materials	
	14.6 - 15.0	WSDOT Maintenance Facility	2420069274	Government	Hazardous Materials	
	14.6 - 15.0	Ranchito Mexican Restaurant	2420069098	Commercial	Environmental Justice	
	14.6 - 15.0	Jack in the Box	2420069099	Commercial		
	14.6 - 15.0	Cutter's Supply	2420069098	Commercial	Hazardous Materials	Difficult to Relocate
22B	14.6 - 15.0	Subway	2420069098	Commercial		
	14.6 - 15.0	Ernie's 76	2420069341	Commercial	Hazardous Materials	
	14.6 - 15.0	ARCO AM/PM	2520069134	Commercial	Hazardous Materials	

Potential corridor improvements could also require extensive acquisition of commercial property and relocation of businesses. A large number of residential properties, including mobile homes, may need to be purchased and residents relocated. The number of properties to be acquired would not be known until final design.

### **Hazardous Waste**

As part of previous studies of the corridor, searches of hazardous waste databases were performed including the federal Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology). No large superfund “listed” hazardous waste sites were located in the study area as a result of these queries. Superfund sites are those sites designated by the EPA for cleanup because the wastes on the site are a threat to the surrounding soils and groundwater.

The Washington State Department of Ecology Hazardous Waste Generators and Facility Site Detail databases were queried for the corridor. There are numerous small sites such as service stations that contain underground storage tanks within the SR 164 corridor study area. Exhibit B-7 shows facilities of interest along the corridor that have been identified by the Washington State Department of Ecology.

## Exhibit B-7

## Facilities of Interest to the Department of Ecology near SR 164

Segment	Site	Ecology		Status	Description
		Identifier	Address		
Auburn	7-Eleven	56122859	813 Auburn Way S.	Active	Underground storage tank
Auburn	7-Eleven	56122859	813 Auburn Way S.	Inactive	Emergency / Haz Chem Rpt TIER2
Auburn	Arco		2790 Auburn Way S.	Active	Hazardous waste generator
Auburn	Abandoned Fire Station	2240	700 Auburn Way S.	Active	Underground storage tank / LUST facility <sup>1</sup>
Auburn	Adventist Academy	7377889	5000 Auburn Way S.	Active	Underground storage tank
Academy	Adventist Academy	7377889	5000 Auburn Way S.	Inactive	LUST Facility
Enumclaw	Associated Petroleum Pro Enumclaw	2432	680 Griffin Ave.	Active	Emergency / Haz Chem Rpt TIER2
Enumclaw	Asia Gardens	5136299	448 / 546 Griffin Ave.	Inactive	Underground storage tank / LUST facility
Enumclaw	AT&T Enumclaw	58322526	Griffin Ave. at Franklin	Inactive	Hazardous waste generator
Auburn	Auburn Muffler & Brake Inc.	4396551	1301 Auburn Way S.	Active	Hazardous waste generator
Auburn	Auburn City Maint. Fac.	91188982	S. Auburn Way at SR 18	Inactive	State cleanup site
Muckleshoot	Auburn (City of)	46875377	5002 Auburn Way S.	Inactive	Hazardous waste generator
Auburn	Auburn Valley Chevron	5722273	1156 Auburn Way S.	Active	Underground storage tank
Auburn	Auburn Valley Chevron	5722273	1156 Auburn Way S.		Hazardous waste generator / LUST facility
Muckleshoot	Auburn Fire Station (abandoned)	2240	700 Auburn Way S.	Active	Underground storage tank / LUST facility
Muckleshoot	Binford Metals	10909	38104 Auburn Enumclaw	Inactive	State cleanup site
Enumclaw	Blakes Farm Supply	77993785	22005 SE 436th St.	Inactive	Underground storage tank
Muckleshoot	Browns Corner Short Stop	8268446	5550 Auburn Way S.	Active	Underground storage tank
Muckleshoot	Browns Corner Short Stop	8268446	5550 Auburn Way S.	Inactive	Emergency / Haz Chem Rpt TIER2
Auburn	Brown Bear Car Wash	1289197	814 Auburn Way S.	Inactive	Underground storage tank / LUST facility
Enumclaw	Chevron	15926321	1019 Griffin Ave.	Inactive	Underground storage tank
Auburn	Circle K	24847836	2802 Auburn Way S.	Active	Hazardous waste management
Auburn	Circle K	24847836	2802 Auburn Way S.	Inactive	Hazardous waste generator / Emergency / Haz Chem Rpt TIER2
Enumclaw	Circle K	14644972	2415 Griffin Ave.	Active	Underground storage tank / LUST facility / Hazardous waste generator
Enumclaw	Circle K	14644972	2415 Griffin Ave.	Inactive	Emergency / Haz Chem Rpt TIER2
Enumclaw	Crystal Cleaners Enumclaw	29544148	420 Griffin Ave.	Active	Hazardous waste generator

Exhibit B-7 (continued)

**Facilities of Interest to the Department of Ecology near SR 164**

<b>Segment</b>	<b>Site</b>	<b>Ecology Identifier</b>	<b>Address</b>	<b>Status</b>	<b>Description</b>
Enumclaw	Dell's Farm Supply	6387591	911 Griffin Ave.	Active	Emergency / Haz Chem Rpt TIER2
Enumclaw	Ernie's Fuel Stop	2332756	320 Griffin Ave.	Active	Underground storage tank / LUST Facility
Enumclaw	Ernie's Fuel Stop	2332756	320 Griffin Ave.	Inactive	Emergency / Haz Chem Rpt TIER2
Enumclaw	Ernie's Former Bulk Plant	22631511	Griffin Ave. at Blake St.		LUST Facility / Underground storage tank
Auburn	Forest Villa Cleaners	55912273	2908 Auburn Way S.	Inactive	Hazardous waste generator
Enumclaw	Fred's Union Service Station	55814845	604 Griffin Ave.	Inactive	Hazardous waste generator
Enumclaw	Fred's Union Service Station	55814845	604 Griffin Ave.	Active	Underground storage tank / LUST facility / State cleanup site / Emergency / Haz Chem Rpt TIER2
Enumclaw	Fred's Union Service Station	55814845	604 Griffin Ave.	Inactive	Hazardous waste generator
Enumclaw	Jerry's Chevron Svc	18379829	435 Griffin Ave.	Active	Underground storage tank / Hazardous waste mgmt.
Enumclaw	Jerry's Chevron Svc	18379829	435 Griffin Ave.	Inactive	LUST Facility / Hazardous waste generator
Enumclaw	John Kochevar & Sons Inc.	27676943	1724 2nd St.	Active	Underground storage tank
Enumclaw	John Kochevar & Sons Inc.	27676943	1724 2nd St.	Inactive	LUST Facility
Enumclaw	Josie Dairy	8154430	22324 SE 436th St.	Active	Dairy / Minor Industrial
Rural / Agricultural	Juergens Property	28559438	20613 SE 436th St.	Inactive	State cleanup site

## Exhibit B-7 (continued)

## Facilities of Interest to the Department of Ecology near SR 164

Segment	Site	Ecology Identifier	Address	Status	Description
Enumclaw	Mobile Station	46843829	1401 Griffin Ave.	Inactive	Underground storage tank
Enumclaw	Mutual of Enumclaw	1477284	1304 Griffin Ave.	Inactive	Hazardous waste generator
Auburn	Rite Aid	6438351	1509 Auburn Way S.	Active	Hazardous waste generator
Enumclaw	Ritter Dairy	6475340	19916 SE 436th St.	Active	Dairy
Auburn	Rogers Furniture	22372684	1407 Auburn Way S.	Inactive	Underground storage tank
Enumclaw	Smith Rufus	7266726	1535 Myrtle	Inactive	Underground storage tank
Auburn	U-Haul	41255524	917 Auburn Way S.	Active	Hazardous waste management
Auburn	U-Haul	41255524	917 Auburn Way S.	Inactive	Underground storage tank / hazardous waste generator
Auburn	US FAA	2394196	3101 Auburn Way S.	Active	Emergency / Haz Chem Rpt TIER2 / Haz Waste Management Activity
Auburn	US FAA	2394196	3101 Auburn Way S.	Inactive	Hazardous Waste Generator
Enumclaw	Wallin Dairy	7164350	21207 SE 436th St.	Active	Dairy
Enumclaw	Washington Mutual	24623527	1600 Griffin Ave.	Inactive	Hazardous waste generator
Enumclaw	Weldco Beales Inc. Plant 2	9872319	1751 2nd St.	Active	Hazardous waste mgmt. / LUST Facility / Underground storage tank
Enumclaw	Weldco Beales Inc. Plant 2	9872319	1751 2nd St.	Inactive	Hazardous waste generator
Enumclaw	WSDOT Area 4 Maint. Fac.	55721649	333 Griffin Ave.	Active	Underground storage tank
Enumclaw	WSDOT Area 4 Maint. Fac.	55721649	333 Griffin Ave.	Inactive	Hazardous waste generator / LUST facility

Source: Washington State Department of Ecology, Facility/Site Identification System, Oct. 2005

<sup>1</sup> LUST refers to Leaking Underground Storage Tank

## **Parks**

Numerous parks were found within 0.50 mile of the SR 164 corridor. The parks, initially identified from neighborhood street maps, were verified during the field visit. Identified parks are shown in Exhibits B-1 through B-3, and listed in Exhibit B-8, park property to be impacted by a project. WSDOT would need to work with the appropriate agency that owns the park to minimize these impacts and provide mitigation. This analysis would be completed during development of the environmental documentation for a specific roadway improvement project.

## **Agricultural Lands**

Portions of the SR 164 corridor study area are within the Enumclaw Agricultural Production District. This designation is made by the Natural Resources Conservation Service and encompasses farmlands that are over soils designated as prime farmland. Federal Law requires that an alternative analysis be completed to determine the alternative which affects prime farmland the least.

In addition, King County has a farmland preservation program. The development rights for specific farms have been purchased to prevent conversion to non-farm uses. Because this program was established by initiative, only a vote by the public or formal condemnation proceedings can override the agricultural zoning in these areas. King County will release the land for road construction projects only after a case is made and the threat of condemnation is likely to succeed in court (based on advice from their legal staff). The King County Council must decide that the request is reasonable, is not excessive, and that there is proper mitigation for wetlands.

## **Noise**

Traffic noise abatement is normally considered for sites where outdoor activities occur. Within the study corridor, the White River Amphitheater, Mahler Park, Farmers Park, Cameron Park, and the urban open space natural areas near the Green River will be outdoor facilities that could be impacted by increased traffic noise due to roadway improvement projects. The Federal Highway Administration (FHWA) requires a noise analysis be conducted on projects receiving federal funds. State policy also requires a noise analysis if the project involves

the construction of a new highway, changes the horizontal or vertical alignment, or increases the number of through lanes on an existing highway. An increase of 10 decibels above existing ambient noise for one hour during peak traffic time is considered a substantial change and is defined as a noise impact.

#### Exhibit B-8

#### Parks located near the SR 164 Corridor

No.	Segment	Milepost	Park Name	Notes
1P	Auburn	0.00	Bicentennial Park	Located adjacent to SR 164 at EB SR 18 on-ramp
2P	Auburn	S of 0.70	Terminal Park	0.28 miles south of SR 164
3P	Auburn	0.85	Les Gove Museum Park	Located adjacent to SR 164 near 12th St. SE
4P	Auburn	S of 2.25	Rotary Park	0.22 miles south of SR 164
5P	Auburn	S of 2.00	Game Farm Park	0.64 miles south of SR 164
6P	Auburn	2.54	Shaughnessy Park	Located adjacent to SR 164 at Hemlock
7P	Academy	4.37	Camron Park	0.11 miles from SR 164 off Academy Drive
8P	Rural / Ag	12.24	Farmers Park	Located adjacent to SR 164 at 228th Ave. SE
9P	Enumclaw	13.29	Mahler Park	0.08 miles from SR 164. No obvious park-like features
10P	Enumclaw	N of 14.11	Martin Johnson Park	0.34 miles north of SR 164 on Harding St.
11P	Enumclaw	S of 14.11	Montgomery Park	0.23 miles south of SR 164 on Harding St.
12P	Enumclaw	S of 14.63	Scott Park	0.38 miles south of SR 164 on Cole St.
13P	Enumclaw	S of 14.68	Veterans Triangle Park	0.42 miles south of SR 164 on Railroad St.
14P	Enumclaw	S of 14.68	Market Square Park	0.26 miles south of SR 164 on Railroad St.
15P	Enumclaw	14.75	Goodwill / Town Ctr. Park	Located adjacent to SR 164
16P	Enumclaw	N of 14.37	Garrett Park	0.25 miles north of SR 164 off Fell St.

#### 4 Will the improvement projects be sensitive to the SR 164 Corridor's archeological, historical, and cultural resources?

The King County Office of Cultural Resources maintains an inventory of historical, archaeological, and cultural sites and these are shown in Exhibits B-1 through B-3. Exhibit B-7 (Properties of Concern near SR 164) lists several properties that may have historic significance. The list identifies other historic places that currently have no official status but have been nominated. If future alternatives pass near or affect any one of these sites, a formal review by the King County Office of Cultural Resources will occur to determine eligibility for listing on the national and state registers.

During the SR 164 Corridor Study Environmental Report (2000) preparation, the Muckleshoot Tribe's Office of Cultural Resources provided cultural and historic information with respect to the SR 164 study corridor, indicating that the project should be considered a "Level 1: Your project is affecting cultural resources within the Tribe's area of concern."

The discussion of Cultural Sites in the White River Amphitheater EIS indicates that there is a high probability of archaeological and cultural resources along the SR 164 corridor. The area had significant pre-European presence. The Muckleshoot Prairie was one of three prairies created by fire and managed by pre-European Native groups for a diversity of food sources. Between 1972 and 1991, 17 cultural sites have been reported in the literature on the Enumclaw Plateau and seven of these were within three miles of the amphitheater site (SUDI & WSDOT, 1999). Although the amphitheater site had been surveyed prior to clearing, a new site was uncovered after vegetation was removed. This site, the George Nelson Allotment Site #45K1450 was excavated and the Burke Museum at the University of Washington is the temporary repository of the materials.

The long presence of Native American communities along the White and the Green Rivers suggests that any new road construction will have a high probability of uncovering previously unknown cultural sites. Field reconnaissance prior to clearing work and an on-call archeologist will be necessary to ensure that cultural resources in the area will be protected.

King County's Office of Cultural Resources and the Washington State Department of Archaeology and Historic Preservation (DAHP) databases were examined. Numerous archaeological sites are present in the study area, but exact locations are not designated in King County's inventory to protect them from vandalism. State law and DAHP require that information about the location of archaeological sites not be released to the public to protect the sites from vandalism. A confidential memorandum was prepared and transmitted to WSDOT with this information.

A review of the Washington State Department of Archaeology and Historic Preservation (DAHP) National Register of Historic Places found one listed historic building immediately adjacent to the SR 164 corridor. The Louis and Ellen Olsen House in downtown Enumclaw (1513 Griffin Avenue) is listed as a locally significant historic building. Exhibit B-3, label 21B shows the location of this property. The house is unlikely to be directly affected by road improvements because it has a large front yard and is set back from the road right-of-way; however, depending on specific improvement proposals, there could be a Section 4(f) issue even if the house itself is not directly affected.



*The Olsen House is located on SR 164 in downtown Enumclaw.*

In addition to this site, a second historical structure, the Neely Mansion, was identified north of the corridor, at the SR 18 / Auburn-Black Diamond interchange (12303 Southeast Auburn Black Diamond Road). This site is listed on the National Register of Historic Places, the Washington State Register, and is listed as a King County Historic Landmark. The house is in the area under review for potential “link road” alignments proposed between SR 164 and the SR 18 / Auburn-Black Diamond interchange. In the event the house would be affected by a specific alignment, WSDOT should make every possible effort to avoid or minimize adverse impacts to the property. WSDOT will also confer with the Washington State Department of Archaeology and Historic Preservation to minimize project impacts and to mitigate any impacts that might occur.

Cultural resources in the area are highly likely and have some importance. Field inspections will be required for any route or project activity because of the high probability of finding other archaeological resources in the area.

## Environmental Justice

Environmental Justice (Executive Order 12898) requires that fair treatment and meaningful involvement be given to all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The Environmental Protection Agency (EPA) has this goal for all communities and persons across the U.S. Environmental justice will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

Acquiring some low-income residential properties for the roadway improvements could result in environmental justice impacts. A large number of residential properties, including mobile homes, may need to be purchased and residents relocated; the number of properties to be acquired would not be known until final design. There are a number of mobile homes adjacent to the SR 164 corridor, as shown in Exhibits B-1 through B-2. These are primarily located within the Muckleshoot segment. Exhibit B-7 (Properties of Concern near SR 164) shows the properties identified from the secondary source research (King County GIS iMAP website), and during the field investigation. Parcels adjacent to the SR 164 corridor were reviewed for potential acquisition and structures within approximately 40 feet of the existing roadway were noted as possible acquisitions. For the purposes of this screening report, residences on the Muckleshoot Reservation and all mobile homes were considered as potential triggers for environmental justice impacts.

An analysis of census data (year 2000) was conducted to determine both the poverty level and percentage of residents classified as a minority along the corridor. Exhibit B-9 shows that the areas with the highest percentage of residents living in poverty are located in the Auburn segment, followed by the Muckleshoot segment. The percentage of persons within King County living below the poverty level in 2000 was 8.4 percent.

---

There are a number of mobile homes located along the corridor that, if affected by roadway improvements, could result in environmental justice impacts.

---



*A number of mobile homes are located along SR 164 in the Muckleshoot area.*

The Muckleshoot Reservation conducted a demographic survey in 2004 for the tribal membership, as part of the 2004 Muckleshoot Comprehensive Plan. The survey contacted 582 households representing approximately 62 percent of the tribe’s members. The survey results showed that 47 percent (275 households) had an annual income less than 50 percent of the Health and Human Services (HHS) poverty guidelines. An additional 17 percent (100 households) had an annual income between 50 percent and 100 percent of HHS guidelines.

**Exhibit B-9  
Percent of Population below Poverty Level\***

Segment	Percent Population below poverty level
Auburn	16%
Academy	8%
Muckleshoot	13%
Rural / Agricultural	4%
Enumclaw	6%

\* Countywide average is 8.4%

**Exhibit B-10  
Percent Minority Population\***

Segment	Percent Minority
Auburn	17%
Academy	21%
Muckleshoot	22%
Rural / Agricultural	7%
Enumclaw	6%

\* Minority includes Black, Native, Asian, Hawaiian/Pacific Islander, Other, and Two or more races

Exhibit B-10 above shows the minority populations by segment.

The western portion of the corridor has higher levels of minority population. The Muckleshoot segment has the highest percentage of minority residents, at 22 percent, followed by the Academy segment, at 21%. This is below the overall percentage of minority residents within King County, which is 27 percent. Exhibits B-11 through B-12 show where the concentrations of lower income residents live.

Exhibit B-11

Percent of People living in poverty along SR 164 (Auburn, Academy, and Muckleshoot Segments)

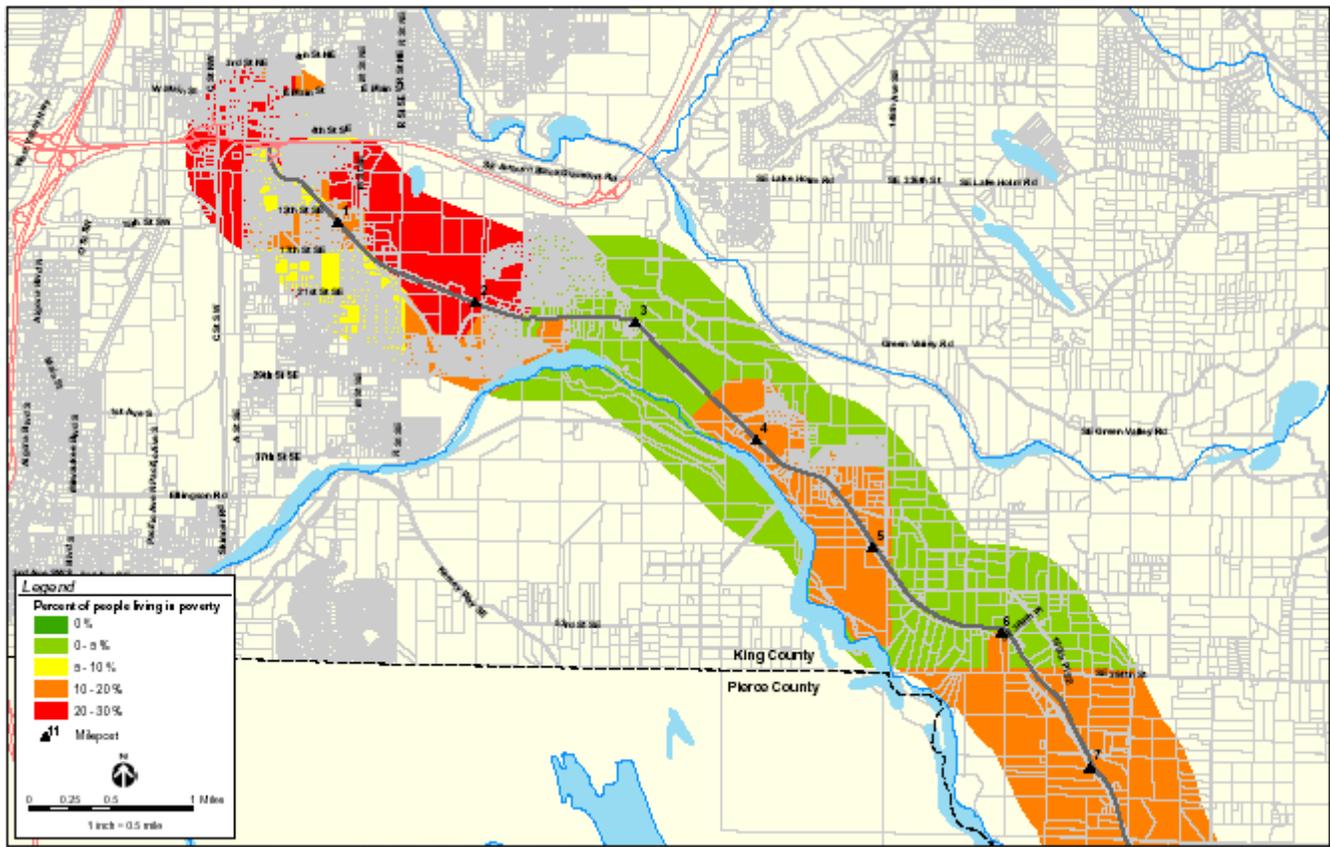
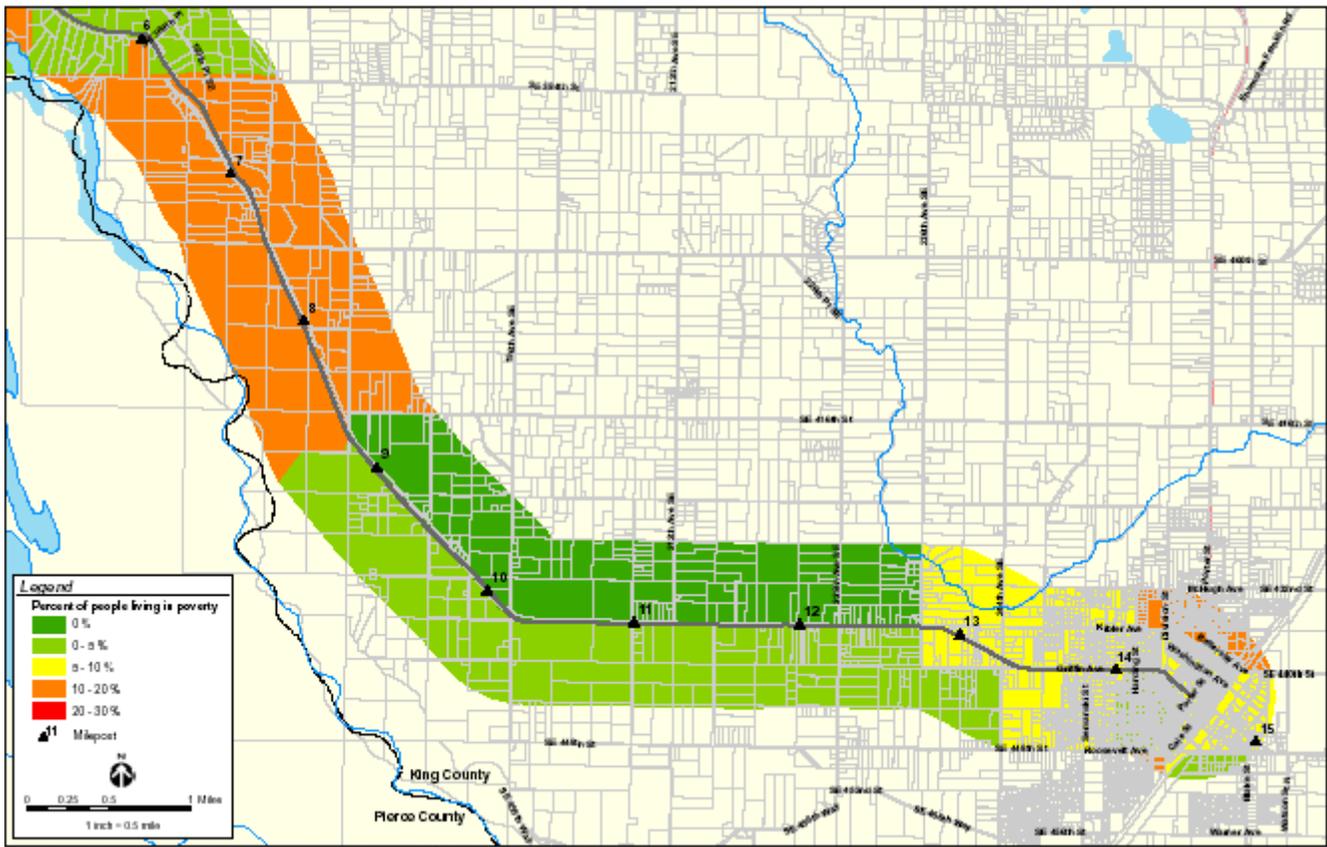


Exhibit B-12

Percent of People living in poverty along SR 164 (Muckleshoot, Rural, and Enumclaw Segments)





# Appendix C: Original Projects List

Exhibit C-1

## Original Projects List

Number	Project Description	Milepost		Segment
		Begin MP	End MP	
1a	Link road from SR 164 to new SR 18 / R Street interchange	1.25	-	Auburn
1b	Link road from Riverwalk Drive to new SR 18 / R Street interchange	2.07	-	Auburn
1c	Link road from Noble Court to New R Street interchange	2.86	-	Auburn
1d	Link road from Noble Court to Academy Black Diamond interchange	2.86	-	Auburn
1e	Link road from Noble Court to New R Street Interchange and Academy Black Diamond interchange	2.86	-	Auburn
1f	Link road from Academy Drive to Academy Black Diamond interchange	4.37	-	Auburn
1g	Link road from Academy Drive to New R Street interchange	4.37	-	Auburn
1h	Link road from Academy Airfield to SR 18 Academy Black Diamond Interchange	4.60	-	Auburn
2	SR 164 from SR 18 to F Street	0.31	0.66	Auburn
3	SR 164 from SR 18 to east of F Street	0.32	0.72	Auburn
4	SR 164 from SR 18 vicinity to Dogwood Street SE	0.32	2.28	Auburn
4a	Phase 1 - SR 164 from 6th Street SE to east of D Street SE	0.38	0.54	Auburn
4b	Phase 2 - SR 164 from D Street to east of the mid-block Pedestrian Crossing located between D Street and E Street	0.54	0.75	Auburn
4c	Phase 3 - M Street SE	1.20	-	Auburn
5	SR 164 from 6th Street SE to east of D Street SE	0.38	0.55	Auburn
6	SR 164 @ F Street SE	0.66	-	Auburn
7	SR 164 @ M Street SE	1.18	-	Auburn

**Exhibit C-1 (continued)**  
**Original Projects List**

Number	Project Description	Milepost		Segment
		Begin MP	End MP	
8	SR 164 @ Dogwood Street SE	2.28	-	Auburn
9	SR 164 in the Muckleshoot Casino / Riverwalk Drive vicinity	1.90	2.14	Auburn
10a	SR 164 from Muckleshoot Casino / Riverwalk Drive to Hemlock Street SE	2.19	2.54	Auburn
10b	SR 164 from Muckleshoot Casino / Riverwalk Drive to Academy Drive	2.19	4.37	Auburn
11	SR 164 @ Dogwood Street SE	2.28	-	Auburn
12	SR 164 from Dogwood Street SE to Academy Drive	2.28	4.37	Auburn
13	SR 164 from Dogwood Street SE to Poplar Street SE vicinity	2.28	2.97	Auburn
14	SR 164 @ Hemlock Street SE	2.54	-	Auburn
15	SR 164 @ Hemlock Street SE	2.54	-	Auburn
16	SR 164 @ Noble Court SE	2.86	-	Academy
17	SR 164 in the Noble Court SE vicinity	2.87	2.98	Academy
18	SR 164 from Poplar Street to 32nd Street SE	2.97	3.82	Academy
19	SR 164 from Poplar Street to east of SE 408th Street	2.97	8.07	Academy, Muckleshoot, Rural / Agricultural
20	SR 164 from Poplar Street to SE 440th Street	2.97	12.65	Academy, Muckleshoot, Rural / Agricultural
21	SR 164 @ 32nd Street SE	3.82	-	Academy
22	SR 164 from 32nd Street SE and Academy Drive SE	3.82	4.50	Academy
23	SR 164 east of Academy Drive SE	4.50	-	Academy
24	SR 164 @ SE 368th Street	4.72	-	Academy
25	SR 164 @ SE 368th Street	4.72	-	Auburn
26	SR 164 @ SE 380th Place	6.06	-	Muckleshoot
27	SR 164 @ SE 388th Street (158th Avenue SE turns into SE 388th Street)	6.65	-	Muckleshoot
28	SR 164 @ SE 392nd Street	6.92	-	Muckleshoot
29	SR 164 @ SE 398th Street	~7.00	-	Muckleshoot
30	SR 164 @ SE 400th Street	7.51	-	Muckleshoot
31	SR 164 @ SE 416th Street	8.62	-	Muckleshoot
32	SR 164 @ 180th Avenue SE	8.73	-	Muckleshoot

**Exhibit C-1 (continued)**  
**Original Projects List**

Number	Project Description	Milepost		Segment
		Begin MP	End MP	
33	SR 164 @ 180th Avenue SE	8.73	-	Muckleshoot
34	SR 164 from Skoptobsh Village to Muckleshoot Tribal Headquarters	6.06	-	Muckleshoot
35	School near White River Farms	-	-	Muckleshoot
36	SR 164 @ 188th Avenue SE	9.51	-	Rural / Agricultural
37	SR 164 @ 436th Street SE / 196th Street (In this section SR 164 is referred to as 436th Street SE)	10.23	-	Rural / Agricultural
38	SR 164 @ 196th Avenue SE / SE 436th Street	10.23	10.31	Rural / Agricultural
39	SR 164 from 196th Avenue SE vicinity to 244th Avenue SE	10.32	13.29	Rural / Agricultural
40	SR 164 from SE 436th Street vicinity to High Point vicinity	10.31	13.57	Rural / Agricultural
41	SR 164 @ 212th Avenue SE	11.23	-	Rural / Agricultural
42	SR 164 @ 228th Avenue SE	12.24	-	Rural / Agricultural
43	SR 164 @ 228th Avenue SE vicinity	12.24	12.65	Rural / Agricultural
44	SR 164 @ 236th Avenue	12.75	-	Enumclaw
45	SR 164 @ SE 436th Way and 244th Avenue SE (SE 436th Way and SR 164 overlap)	12.86	-	Enumclaw
46	SR 164 @ 244th Avenue SE and SE 440th Street	13.30	-	Enumclaw
47*	SR 164 @ SE 440th Street	13.45	-	Enumclaw
48	SR 164 from High Point to Porter Street (Junction SR 169)	13.57	14.52	Enumclaw
49	SR 164 w/in the City of Enumclaw	13.57	15.13	Enumclaw
50	SR 164 @ Semanski Street and Clovercrest Street	13.81	-	Enumclaw
51	SR 164 @ Semanski Street and Clovercrest Street	13.81	-	Enumclaw
52	SR 164 from Garfield Street to Junction SR 410	14.04	15.10	Enumclaw
53	SR 164 @ Harding Street	14.11	-	Enumclaw
54	SR 164 from Pioneer Street to Lafromboise Street	14.18	14.25	Enumclaw
55	SR 164 @ Lafromboise Street	14.25	-	Enumclaw
56	SR 164 @ Wells Street	14.57	-	Enumclaw
57	SR 164 from Wells Street to Junction SR 410	14.57	15.13	Enumclaw
58	SR 164 @ Railroad Avenue (SR 164 Spur)	14.68	-	Enumclaw
59	SR 164 @ First Street	14.75	-	Enumclaw
60*	SR 164 @ Second Street (Garrett Street/Griffin Avenue signalized and completed)	14.83	-	Enumclaw
61	SR 164 @ Junction SR 410	15.13	-	Enumclaw

**Exhibit C-1 (continued)**  
**Original Projects List**

Number	Project Description	Milepost		Segment
		Begin MP	End MP	
62	SR 164 from Dogwood Street SE to Poplar Street SE vicinity	2.28	2.97	Auburn
63	Parallel to SR 164 from Elm Street to 158th Avenue SE (terminating at the proposed Skoptobsh Village Trail)	2.35	6.06	Auburn, Academy, Muckleshoot
64	SR 164 from Muckleshoot Segment to west of Enumclaw City Limits	3.82	13.57	Academy, Muckleshoot, Rural / Agricultural
65	SR 164 from Farrelly Street to SR 410	13.69	15.13	Enumclaw
66	SR 164 from Poplar Street to Farrelly Street	3.00	13.68	Academy, Muckleshoot, Rural / Agricultural, Enumclaw
T-1	SR 164 @ SR 18 on and off ramps	-	-	Auburn
T-2	Academy Segment	-	-	Academy
T-3	Muckleshoot Segment	-	-	Muckleshoot
T-4	Rural / Agricultural Segment	-	-	Rural / Agricultural
T-5	Enumclaw Segment	-	-	Enumclaw
T-6	Location to be determined	-	-	Several
T-7	SR 164 (Corridor Wide)	-	-	All
T-8	SR 164 (Corridor Wide)	-	-	All
T-9	SR 164 Traveler Information Services	-	-	All
T-10	SR 164 Variable Message Signs	-	-	All

- \* 1. The City of Enumclaw recommends eliminating project numbers 47 and 60.
- 2. The City of Enumclaw recommends adding a Porter Street + Griffin Avenue Intersection Improvement Project to redesign the intersection to handle a WB-65 turning movement. Possibly add left-turn signal phasing and consider illumination and pedestrian cross-walk safety.
- 3. The Comprehensive Plan for the City of Enumclaw: 2005 to 2022 (Winds of Tomorrow) notes that the Harding Street, Blake Street, and SR 410 intersections will degrade to LOS F by 2022 if improvements are not completed per Chapter 5, page 19 of the plan.

## Exhibit C-2

## SR 164 Projects List Post Final Screening

## Short-Term Projects

Project Number	Location	Mile-post	Segment	Jurisdiction	Project Description
10a	SR 164 from Muckleshoot Casino / Riverwalk Drive to Hemlock Street SE	2.19 - 2.54	Auburn	Auburn	Road widening.
10b	SR 164 from Muckleshoot Casino / Riverwalk Drive to Academy Drive	2.19 - 4.37	Auburn	Auburn	Provide a mid-block pedestrian crossing near Muckleshoot Casino (Near QFC) and add center left turn / reversible flow lane from Poplar Street to Academy Drive.
11	SR 164 @ Dogwood Street SE	2.28	Auburn	Auburn	Intersection improvements to help address traffic level of service.
14	SR 164 @ Hemlock Street SE	2.54	Auburn	Auburn	Improve intersection by restriping the roadway and adding travel lanes to help address bottleneck conditions at Hemlock Street SE.
17	SR 164 in the Noble Court SE vicinity	2.87 - 2.98	Academy	Auburn	Roadway maintenance, access management (eliminate left-turns from SR 164 to Poplar Street SE), and relocate flashing school ahead sign to a location that is visible to drivers to help address HAC east of 17th Street SE to east of Poplar Street SE.
21	SR 164 @ 32nd Street SE	3.82	Academy	Auburn	Intersection improvements to help enhance capacity.
22	SR 164 from 32nd Street SE and Academy Drive SE	3.82 - 4.50	Academy	Auburn	Access management and removal of line-of-sight obstructions to help address HAC from 32nd Street SE to east of SE 408th Street.

## Exhibit C-2 (continued)

## SR 164 Projects List Post Final Screening

## Short-Term Projects

Project Number	Location	Mile-post	Segment	Jurisdiction	Project Description
<b>ROADWAY PROJECTS</b>					
29	SR 164 @ SE 398th Street	~7.00	MIT	Muckleshoot Indian Reservation	Restripe the roadway to allow for left turn lanes.
31	SR 164 @ SE 416th Street / 180th Avenue SE	8.62	MIT	King County	Install guardrail on the side of the street.
32	SR 164 @ 180th Avenue SE	8.73	MIT	King County	Close access to 180th Avenue SE from SR 164.
42	SR 164 @ 228th Avenue SE	12.24	Rural	King County	Add a crosswalk at this intersection to help address HAC west of 216th Avenue SE to east of Lafromboise Street.
44	SR 164 @ 236th Avenue	12.75	Enumclaw	King County	Intersection improvements to address safety and removal of line-of-sight obstructions.
45	SR 164 @ SE 436th Way and 244th Avenue SE (SE 436th Way and SR 164 overlap)	12.86	Enumclaw	King County	Close access to 436th Street from SR 164. This project will help address HAC west of 216th Avenue SE to east of Lafromboise Street.
51	SR 164 @ Semanski Street and Clovercrest Street	13.81	Enumclaw	Enumclaw	Intersection and pedestrian improvements to help address HAC west of 216th Avenue SE to east of Lafromboise Street.
53	Harding Street and Griffin Avenue Intersection Improvements	14.11	Enumclaw	Enumclaw	Intersection and pedestrian improvements to help address HAC west of 216th Avenue SE to east of Lafromboise Street.
56	SR 164 @ Wells Street	14.57	Enumclaw	Enumclaw	Intersection and pedestrian improvements.
57	SR 164 from Wells Street to Junction SR 410	14.57 - 15.13	Enumclaw	Enumclaw	Remove street parking on both sides of the street. Restripe the road to allow for left turn lanes. Add sidewalks on both sides of the street and repave the roadway.
58	SR 164 @ Railroad Avenue (SR 164 Spur)	14.68	Enumclaw	Enumclaw	Intersection and pedestrian improvements.
59	SR 164 @ First Street	14.75	Enumclaw	Enumclaw	Intersection and pedestrian improvements.

## Exhibit C-2 (continued)

## SR 164 Projects List Post Final Screening

## Short-Term Projects

Project Number	Location	Mile-post	Segment	Jurisdiction	Project Description
67	SR 164 between Noble Court and Poplar Street	2.9	Academy	Auburn	Add pedestrian crossing between Noble Court and Poplar Streets.
68	SR 164 from Poplar Street to Academy Drive	2.97 - 4.37	Auburn / Academy	Auburn	Add sidewalk on both sides of street.
<b>MULTIMODAL PROJECTS</b>					
T-9	SR 164 Traveler Information Services		All	All	Traffic Conditions and Photo Information on the WSDOT Seattle Area Traffic Website.
T-10	SR 164 Variable Message Signs		All	All	Variable message signs at strategic locations (to be identified) along the corridor to provide motorists with real time information on traffic conditions in their direction of travel.

Note: Some project numbers missing because they were eliminated or combined with other projects

**Exhibit C-3**

**SR 164 Projects List Post Final Screening**

**Long-Term Projects**

Project Number	Location	Mile-post	Segment	Jurisdiction	Project Description
<b>ROADWAY PROJECTS</b>					
9	SR 164 in the Muckleshoot Casino / Riverwalk Drive vicinity	1.90 - 2.14	Auburn	Auburn	Access management to reduce high accidents to help address HAC east of 17th Street SE to east of Poplar Street SE. Road widening with appropriate pedestrian enhancements to help address PAL near Muckleshoot Casino.
12	SR 164 from Dogwood Street SE to Academy Drive	2.28 - 4.37	Auburn	Auburn	Roadway widening to 5 lanes with pedestrian facilities.
62	SR 164 from Dogwood Street SE to Poplar Street SE vicinity	2.28 - 2.97	Auburn	Auburn	Access management to help address HAC east of 17th Street SE to east of Poplar Street SE. In addition, pedestrian enhancements including sidewalks on both sides of the street.
<b>MULTIMODAL PROJECTS</b>					
63	Parallel to SR 164 from Elm Street to 158th Avenue SE (terminating at the proposed Skoptobsh Village Trail)	2.35 - 6.06	Auburn Academy MIT	Auburn / Muckleshoot Indian Reservation	Non-vehicular trail that ties into project number 34.
34	SR 164 from Skoptobsh Village to Muckleshoot Tribal Headquarters	6.06	MIT	Muckleshoot Indian Reservation	Non-vehicular trail adjacent to SR 164 (south side).

Note: Some project numbers missing because they were eliminated or combined with other projects

## Exhibit C-4

## SR 164 Projects List Post Final Screening

### Projects Recommended for Further Consideration

Project Number	Location	Mile-post	Segment	Jurisdiction	Project Description
<b>ROADWAY PROJECTS</b>					
1a	Link road from SR 164 to new SR 18 / R Street interchange (Long term)	1.25	Auburn	Auburn	Build a new link road from SR 164 to SR 18 along R Street with a new R Street interchange at SR 18 to help improve traffic flow along SR 164.
1c	Link road from Noble Court to New R Street interchange (Long term)	2.86	Auburn	Auburn	Build a new link road from Noble Court on SR 164 to SR 18 with a new R Street interchange at SR 18 to help improve traffic flow along SR 164.
16	SR 164 @ Noble Court SE (Short term)	2.86	Academy	Auburn	Intersection improvements to address traffic safety.
18	SR 164 from Poplar Street to 32nd Street SE (Short term)	2.97 - 3.82	Academy	Auburn	Remove line of sight obstructions to address HAC east of 17th Street SE to east of Poplar Street SE.
20	SR 164 from Poplar Street to SE 440th Street (Long term)	2.97 - 12.65	Academy, MIT, Rural	Auburn / Muckleshoot Indian Reservation / King County	Safety improvements including street lighting and removal of line-of-sight obstructions to address HAC east of 17th Street SE to east of SE 408th Street and from west of 216th Avenue SE to east of Lafromboise Street.
23	SR 164 east of Academy Drive SE (Short term)	4.5	Academy	Auburn / Muckleshoot Indian Reservation	Safety improvements including relocating street lighting and removal of line-of-sight obstructions to address HAC from 32nd Street SE to east of SE 408th Street.
26	SR 164 @ SE 380th Place (Short term)	6.06	MIT	King County	Shoulder improvements and removal of line-of-sight obstructions to address HAC from 32nd Street SE to east of SE 408th Street.
33	SR 164 @ 180th Ave SE (Short term)	8.73	MIT	King County	Clear obstacles/foliage on the road to improve drivers' line-of-sight.
35	School near White River Farms (Short term)	~5.25	MIT	King County	Restripe the roadway and provide safety improvements. Add signal at new school entrance.

**Exhibit C-4 (continued)**

**SR 164 Projects List Post Final Screening**

**Projects Recommended for Further Consideration**

Project Number	Location	Mile-post	Segment	Jurisdiction	Project Description
<b>ROADWAY PROJECTS</b>					
61	SR 164 @ Junction SR 410 (Short term)	15.13	Enumclaw	Enumclaw	Intersection improvements.
64	SR 164 from Muckleshoot Segment to west of Enumclaw City Limits (Short term)	3.82 - 13.57	Academy, MIT, Rural	Muckleshoot Indian Reservation / King County	Safety improvements such as lighting and/or reflective lane delineators to address HAC east of 17th Street SE to east of SE 408th Street and from west of 216th Avenue SE to east of Lafromboise Street.
65	SR 164 from Farrelly Street to SR 410 (Short term)	13.69 - 15.13	Enumclaw	Enumclaw	Construct continuous sidewalks on both sides of the street where missing.
<b>MULTIMODAL PROJECTS</b>					
T-2	Academy Segment		Academy	Auburn / Muckleshoot Indian Reservation	Provide a transit P&R lot at a local community center (e.g. church, government facility) with location to be determined.
T-3	Muckleshoot Segment (Short term)		MIT	Muckleshoot Indian Reservation / King County	Provide a transit P&R lot at a local community center (e.g. church, government facility) with location to be determined.
T-4	Rural / Agricultural Segment (Short term)		Rural	King County	Provide a transit P&R lot at a local community center (e.g. church, government facility) with location to be determined.
T-6	Location to be determined (Short term)		Several	Unknown	Provide transit signal priority near future transit P&R lots along the corridor.
T-7	SR 164 (Corridor Wide) (Short term)		All	Auburn / Muckleshoot / King County / Enumclaw	Work with agencies to participate in travel demand management strategies (e.g. carpool to work).

Note: Some project numbers missing because they were eliminated or combined with other projects

## **Appendix D:**

# **SAFETEA-LU Federal Funding Sources**

---

The Federal Transportation Bill known as SAFETEA-LU (Safe, Accountable, Flexible & Efficient Transportation Equity Act - a Legacy for Users) was signed into law by the President on August 10, 2005. This is the third iteration since Congress established the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991. SAFETEA-LU was preceded by the Transportation Equity Act for the 21st Century (TEA-21) which expired on September 30th, 2003. With guaranteed funding for highways, highway safety, and public transportation totaling \$244.1 billion, SAFETEA-LU represents the largest surface transportation investment in U.S. history. The following describes some of the federal funding sources covered under SAFETEA-LU.

### **Highway Bridge Program**

The Highway Bridge Program provides \$21.6 billion in funding through 2009 to allow states to improve the condition of their highway bridges through replacement, rehabilitation, and preventive maintenance. Apportioned funds are distributed using the existing formula that is based on each state's relative share of the total cost to repair or replace deficient highway bridges. The federal share for all projects, except those on the Interstate System, will be eighty percent. The Bridge program is broadened in scope to include systematic preventative maintenance, and freed from the requirement that bridges must be considered "significantly important". Each state is still required to spend at least 15 percent of its bridge apportionment for bridges on

public roads that are not Federal-aid highways (off-system bridges), but the 35 percent cap is removed. Beginning in 2006, \$100 million is to be set aside annually to fund designated projects.

### **Surface Transportation Program (STP)**

This program provides flexible funding that may be used by states and localities for projects on any Federal-aid highway, including the National Highway System (NHS), bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities. The program continues existing STP eligibilities and adds the following:

- Advanced truck stop electrification systems
- Projects relating to intersections that have:
  - Disproportionately high accident rates
  - High congestion
  - Locations on a Federal-aid highway
- Environmental restoration and pollution abatement - on a 4R project the expenditures for this activity may not exceed twenty percent of the total cost of the project.
- Control of terrestrial and aquatic noxious weeds and establishment of native species.

Starting in 2006, the Safety set-aside was eliminated as the new Highway Safety Improvement Program took over the funding of the safety programs. The Transportation Enhancements (TE) set-aside was modified to be the greater of ten percent of the state's STP apportionment or the dollar amount of the TE set aside for the state for 2005. A portion (62.5%) of the amount remaining after the TE set-aside is divided among sub-state areas based on population. The following programs are available under the STP program:

*Transportation Enhancement (STPE)*

These funds are used for transportation enhancement projects including:

- Bikeways/walkways
- Highway beautification
- Acquisition of scenic easements and scenic or historic sites
- Historic preservation
- Rehabilitation and operation of historic transportation buildings
- Preservation of abandoned railway corridors
- Control and removal of outdoor advertising
- Archaeological planning and research
- Environmental mitigation of water pollution due to highway runoff, or
- Reduction of vehicle-caused wildlife mortality while maintaining habitat connectivity
- Safety and educational activities for pedestrians and bicyclists
- Establishment of transportation museums.

A state's TE funding is derived from a set-aside from its annual Surface Transportation Program apportionment. Starting in 2006, the TE set-aside was ten percent or the amount set aside for TE in the state in 2005, whichever was greater.

*Regional STP (STPUL, STPUS, STPR)*

Formula allocations of these funds to the MPO/RTPO or county lead agencies are based on population and road mileage. The Metropolitan Planning Organization (MPO)/Regional Transportation Planning Organization (RTPO) or county lead agency selects and prioritizes projects for funding.

### *STP Competitive (STPC)*

This is a portion of the STP funds that can be used in any area of the state. The purpose of the program is to offer multimodal choices to the public. Projects of this funding type are programmed in the State Transportation Improvement Program (STIP), either in a grouping or listed individually.

### *WSDOT's STP (STP)*

This is a portion of the STP funds that are for state highway system preservation and interstate reconstruction. The WSDOT selects and prioritizes these projects.

### **Highway Safety Improvement Program (HSIP)**

The highway safety improvement program (HSIP) replaces the Safety set-aside previously under the Transportation Enhancements program. It is a core program to achieve a significant reduction in traffic fatalities and serious injuries on all public roads. Beginning in 2006, it was funded separately for the first time, with flexibility provided to allow states to target funds to their most critical safety needs. A total of \$5.1 billion was provided for 2006-2009. Of this amount, \$880 million was set aside for a separate distribution for the Highway-Railroad Grade Crossing program, with the remainder to be distributed by formula based on each state's lane miles, vehicle miles traveled, and number of fatalities; \$90 million was set aside annually for construction and operational improvements on high-risk rural roads. The HSIP requires states to develop and implement a strategic highway safety plan (SHSP) and submit annual reports to the Secretary that describe at least five percent of their most hazardous locations, progress in implementing highway safety improvement projects, and their effectiveness in reducing fatalities and injuries. States that do not develop a strategic plan by October 1, 2007, will be locked in at their FY 2007 HSIP apportionment level pending development of a plan. States with SHSPs have additional flexibility to use up to ten percent of their HSIP funds for behavioral and other safety projects if they meet rail grade crossing and infrastructure safety needs as defined in their SHSPs.

---

Starting in 2006, the Highway Safety Improvement Program took over the funding of safety programs.

---

### **High Priority Projects Program**

The High Priority Projects Program provides designated funding for specific projects identified in SAFETEA-LU. A total of 5,091 projects have been identified for a specified amount of funding through 2009. States may do advanced construction using state funds until federal funds are available. High priority projects may also be advanced with funds apportioned from another program under which the project would be eligible. Funding would be restored from future allocations of the high priority project funds for the project. The High Priority Projects program is subject to obligation limitation that is set aside specifically for this program. The limitation is special no-year limitation that remains available until used. The obligation limit is assigned individually to high priority projects numbered 1 - 3676 and in aggregate to each state for projects numbered 3677 or higher. The limitation provided to individual projects numbered 1 - 3676 may be obligated for any other project under the program as long as it is restored to the individual project when limitation is distributed in the subsequent fiscal year. There are no projects along SR 164 that are currently funded under this program.

### **Congestion Mitigation and Air Quality (CMAQ)**

The Congestion Mitigation and Air Quality Improvement Program (CMAQ) provides funding for projects and programs in air quality non-attainment and maintenance areas for ozone, carbon monoxide (CO), and particulate matter which reduce transportation-related emissions. Funds are apportioned according to a formula based on population and severity of pollution in ozone and carbon monoxide areas, similar to the formula under TEA-21, but weighting factors have been revised. The MPO selects and prioritizes projects for funding. States and MPOs will give priority in distributing funds for projects and programs to diesel retrofits and other cost-effective emission-reduction activities and cost-effective congestion-mitigation activities that provide air quality benefits.

### **Federal Lands Highways Program (FLH)**

The Federal Lands Highways (FLH) program provides for transportation planning, research, engineering, and construction of highways, roads and parkways, and transit facilities that provide access to or within public lands, national parks, and Indian reservations. The FLH program authorizations through 2009 total \$4.5 billion. FLHP funds can be used as the state/local match for Federal-aid highway or transit projects that provide access to or within federal or Indian lands.

### **Recreational Trails Program**

The Recreational Trails program authorizes \$370 million through 2009 to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Funds are available to develop, construct, maintain, and rehabilitate trails and trail facilities. Trail uses include hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles.

### **Scenic Byways**

SAFETEA-LU authorizes a total of \$175 million through 2009 for technical assistance and grants to states and Indian tribes to develop scenic byways programs, and to implement projects on highways of outstanding scenic, historic, cultural, natural, recreational, and archaeological qualities designated as National Scenic Byways, All-American Roads, America's Byways, state scenic or Indian tribe scenic byways. Additional authority totaling \$13.5 million is provided to fund technical support and educational activities provided by the America's Byways Resource Center.

### **Safe Routes to School**

This new program enables and encourages primary and secondary school children to walk and bicycle to school. SAFETEA-LU has authorized \$612 million through 2009 for this program, which is one hundred percent federally-funded. It funds both infrastructure-related and behavioral projects to provide a safe, appealing environment for walking and biking and support of national health objectives. For infrastructure projects, funding can be used toward planning, design, and construction of projects that will substantially improve the

ability of students to walk and bicycle to school. These may include sidewalks, traffic calming and speed reduction improvements, pedestrian and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle and pedestrian facilities, secure bike parking, and traffic diversion improvements in the vicinity of schools (within approximately two miles). Such projects may be carried out on any public road, any bicycle or pedestrian pathway, or trail in the vicinity of schools.

Each state is required to set aside not less than ten percent of its apportionment and not more than thirty percent of the funds for non-infrastructure related activities to encourage walking and bicycling to school. These activities include traffic education and enforcement near schools, bicycle and pedestrian safety education, public awareness and outreach to press and community leaders, training, volunteers, and managers of safe routes to school programs.

#### **Transportation, Community, and System Preservation Program (TCSP)**

The TCSP is intended to address the relationships among transportation, community, and system-preservation plans and practices and identify private sector-based initiatives to improve those relationships. State and local governments, metropolitan planning organizations (MPOs), and tribal governments are eligible for discretionary grants, authorized at \$270 million through 2009, to carry out eligible projects to integrate transportation, community, and system preservation plans and practices. Funds must be equitably distributed to a diversity of populations and geographic regions. A local match is required in accordance with Section 120(b) of Title 23, United States Code (USC). Related to the TCSP funds is a new Community Enhancement study, funded at \$2 million from TCSP funds, which will examine the impact of well-designed transportation projects on communities.

### **State Infrastructure Bank (SIB)**

SAFETEA-LU establishes a new State Infrastructure Bank (SIB) program which allows all states to enter into cooperative agreements with the Secretary to establish infrastructure revolving funds eligible to be capitalized with federal transportation funds authorized for fiscal years 2005-2009.

The new program gives states the capacity to increase the efficiency of their transportation investment and significantly leverage federal resources by attracting non-federal public and private investment. The program provides greater flexibility to the states by allowing other types of project assistance in addition to grant assistance.

# Appendix E:

## CPS Development Files

---

The files listed below are files used to create the SR 164 Corridor Planning Study (CPS).

### Documents Used to Create SR 164 CPS

#### Documents Used to Create SR 164 Corridor Planning Study

<b>Doc #</b>	<b>Document Name:</b>
Att01	SR 164 Z Draft App Att01-Charter.pdf
	<i>Content:</i> The SR 164 Corridor Working Group's Charter Document
	<i>Title of Document:</i> <b>SR 164 Corridor Planning Study Charter for Corridor Working Group</b>
	<i>Date:</i> November 16, 2004
	<i>Type of File:</i> pdf
	<i>Printed Pages:</i> 5 pages
	<i>Form:</i> Letter size

<b>Doc #</b>	<b>Document Name:</b>
Att02	SR 164 Z Draft App Att02-Goals.pdf
	<i>Content:</i> Document states goals and objectives for corridor study
	<i>Title of Document:</i> <b>GOALS &amp; OBJECTIVES</b>
	<i>Date:</i> December 7, 2004
	<i>Type of File:</i> pdf
	<i>Printed Pages:</i> 6 pages
	<i>Form:</i> Letter size

<b>Doc #</b>	<b>Document Name:</b>
Att03	SR 164 Z Draft App Att03-Eval Criteria.pdf
	<i>Content:</i> Document discusses the evaluation criteria and metrics used to analyze improvement projects
	<i>Title of Document:</i> <b>Evaluation Criteria Technical Memorandum</b>
	<i>Date:</i> February 15, 2005
	<i>Type of File:</i> pdf
	<i>Printed Pages:</i> 10 pages
	<i>Form:</i> Letter size



**Washington State  
Department of Transportation**

# SR 164 Corridor Study

## SR 164 Route Development Plan Corridor Study

### Charter for Corridor Working Group



## 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.

## Roles of Study Participants

---

For purposes of this study the following terms will be used in defining the roles of partners and stakeholders:

- **Partner:** A partner is a geographic jurisdiction with responsibility for making improvements along the corridor. The jurisdiction responsibility includes contributing study funds and implementing decisions and projects. Partners will have ultimate decision authority in implementing projects within each jurisdiction; however, partners will work collaboratively for corridor solutions. The role of each partner is to assure the study meets the needs of the jurisdictions represented. Each jurisdiction is responsible for representation of the various stakeholders within their boundaries.
- **Stakeholder:** A stakeholder is affected by what happens in the corridor. All stakeholders have equal rights to provide input into the study to be considered or used in the study as determined by the partners. In order to assure that all known issues within the corridor can be considered, it is essential to involve all stakeholders in the process.

## **Project Outcomes**

---

This study will be considered a success if the CWG partners agree to a Corridor Planning Study in which:

- Projects are clearly prioritized
- The traffic model and modeling standards conform to statewide WSDOT standards
- Stakeholders and the public are meaningfully involved in development of recommendations
- There is a clear phasing plan for implementation
- Plans fit into the context of the communities involved and recognize and respect the rural and urban character, as well as comprehensive plans along the corridor.

## **Corridor Working Group Operating Guidelines**

---

### **Ground Rules**

CWG Partners agree to:

- Maintain a focus on projects that benefit the entire corridor
- Share information openly and promptly
- Be patient when information may not be readily available
- Articulate concerns as early as possible
- Remain flexible, open-minded and actively participate in meetings
- Respect each other's time and commitment
- Meet in locations along the corridor.

### **Roles and Responsibilities**

WSDOT and the consultant team agree to:

- Effectively manage the scope, schedule and budget
- Keep partners informed of study progress
- Complete all necessary documentation to support recommendations
- Provide technical expertise when requested
- Manage logistics for meetings
- Brief local decision-makers and produce briefing materials and reports when requested by partners
- Maintain a list of stakeholders on the project website.

CWG Partners agree to:

- Comment on materials promptly when requested
- Identify the appropriate channels for communication within their organizations
- Provide specific local expertise when requested, including identifying emerging local issues
- Brief local decision-makers.

## **Communication**

Between meetings:

- E-mail: WSDOT copied on all correspondence; full team (including stakeholders and partners) copied when appropriate
- Use phone log to track issues as they arise
- WSDOT will maintain and update project website
- Meetings are only called when necessary and are driven by project need.

At meetings:

- At least one representative from each of the CWG partners should be present
- Informed alternates are acceptable and encouraged if the partner cannot attend
- Decisions are documented at the close of every meeting
- Meetings end with clear understanding of expectations and assignments for next steps.

## **Decision Making**

CWG Partners will strive to reach agreement by consensus at a level that can be characterized as partners being willing to “live with” the proposed action. Equal participation will be a goal of the decision process. Those partners with a management responsibility for the outcome of a proposed action within each jurisdiction will take the lead on developing specific recommendations. Minority opinions will be reflected in the final report on recommendations.

In addition, partners will try to avoid spending an inordinate amount of time working toward consensus on any issue at the expense of reaching consensus on other issues. Partners will also try to avoid revisiting decisions once they have been made.

## **Conflict Resolution**

When an issue arises that cannot be easily resolved, the partners agree to:

- Determine if the issue should be resolved within the group or outside of it and participate as appropriate
- Ensure the appropriate decision makers are at the table to resolve the issue
- Remember that controversial projects are unlikely to receive funding; the intent of all parties is to resolve issues so projects can be funded.

## **Partners and Contact People**

---

Points of contact for each jurisdiction are:

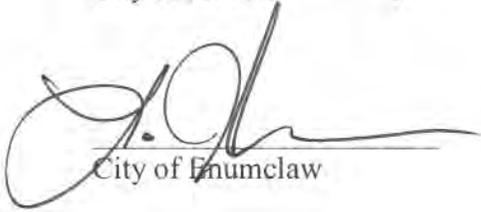
- Les Johnson, City of Enumclaw
- Steve Taylor, Muckleshoot Tribe
- Dennis Dowdy, City of Auburn
- Ann Martin, King County
- Allison Dobbins, Puget Sound Regional Council
- Seth Stark, WSDOT

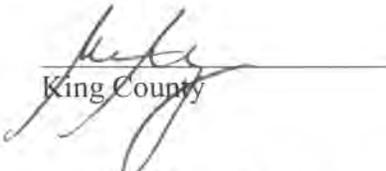
## Partner Signatures

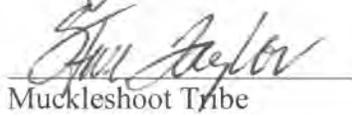
---

By signing below, I am committing to participate in the study process on behalf of my organization and agree with the guidelines as discussed in this charter. Signing this charter does not commit my agency to a particular course of action or decision.

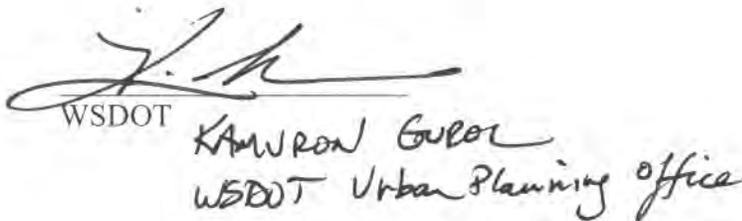
  
Dennis B. Dowdy  
City of Auburn

  
City of Enumclaw

  
King County

  
Muckleshoot Tribe

  
Puget Sound Regional Council

  
WSDOT  
KAMRON GULER  
WSDOT Urban Planning office

October 14, 2004



# STATE ROUTE 164 CORRIDOR STUDY

---

## GOALS & OBJECTIVES

**December 7, 2004**

Prepared for:

**Washington State Department of Transportation  
Urban Planning Office**

401 2nd Avenue South, Suite 300  
Seattle, Washington 98104

Prepared by:

**Parsons Transportation Group**

925 Fourth Avenue, Suite 1690  
Seattle, WA 98104

# GOALS & OBJECTIVES

## SR 164 Corridor Study

---

### Introduction

The purpose of the SR 164 Corridor Planning Study is to identify and prioritize transportation infrastructure projects that improve safety, mobility, and reliability of travel on the corridor while limiting adverse environmental impacts and generating community support. Immediate, short, and long-term\* improvements would be aimed at alleviating safety concerns, traffic congestion, and travel delay on SR 164.

The final product of the study will be a Corridor Planning Study (CPS). The CPS will address the transportation problems identified by the Corridor Working Group (CWG) partners, local jurisdictions, stakeholders, route users, and affected communities. The SR 164 CWG will develop an initial set of concept-level improvement alternatives reflecting the range of choices available. Those alternatives will then be discussed and evaluated, and a set of final recommendations will be developed. The improvement alternative packages will address the following goals and objectives.

### Route Description

Located in southeast King County, the SR 164 corridor is an important two to four lane east-west route used by local commuters, tourists, industrial and commercial businesses. The route is approximately 15 miles long, extending southeast from the SR 18 junction in Auburn, through the Muckleshoot Indian Tribal Lands and farmland in unincorporated King County to the SR 169 junction in Enumclaw. Nearly 60 percent of the corridor is located in unincorporated King County, 30 percent is located in Auburn, and 10 percent is located in Enumclaw. About half of the corridor passes through the six square-mile Muckleshoot Indian Tribe Reservation.

The corridor has experienced both residential and commercial development in the last 15 years, including the Muckleshoot Casino and the White River Amphitheatre. (The Casino and Amphitheatre serve as major income generators for the Muckleshoot Tribe). With the exception of these venues, a majority of the corridor is characterized as rural farms and low-density, single-family residential developments. There are also a number of churches and schools located along the corridor, including the Muckleshoot Tribal School, the Tribal College, Chinook Elementary School, and the Auburn Adventist Academy.

---

\* immediate term = 6 to 18 months; short term = up to 6 years; and long term = 6 to 25 years.

## Study Goals & Objectives

To determine the appropriate recommendations for SR 164, this study will identify improvement projects consistent with the following goals:

### Safety and Reliability

Identified Problems and Concerns: Safety improvements along the corridor particularly related to student walk routes, bus routes, and emergency vehicle access are a primary concern for the Corridor Working Group. Parts of the corridor now carry more than 34,000 vehicles per day and volumes are expected to continue increasing.

- Project Goal: Improve safety along the SR 164 corridor
- Project Objective: Identify improvements that will reduce incidents and accidents in the study corridor. At conflict locations, physical and/or operations improvements, including installing new traffic signals and employing access management measures will be suggested to enhance the safety of the corridor.

### Travel Demand and Mobility

Identified Problems or Concerns: In general, SR 164 is a two-lane highway within rural areas and a four-lane highway in more urban areas. There are distinct directional flows in the morning and evening peak travel periods. These flows cause considerable congestion. This is particularly evident at the SR 18 and SR 410 junctions. The corridor is used by commuters, tourists, recreationists, and commercial and industrial businesses. Traffic volumes are expected to increase in the future.

- Project Goal: Improve mobility and reduce person and vehicle delay along SR 164.
- Project Objective: Identify projects and operational improvements that address bottlenecks and chokepoints as a means of maximizing capacity along SR 164. These strategies could include operational improvements and new or improved corridor facilities that benefit all users. Transportation facilities should encourage safe use and access to bicycle and pedestrian facilities.

### **Auburn Bypass or Link Road**

Identified Problems or Concerns: The western terminus of SR 164, in Auburn, experiences significant safety and reliability problems in addition to peak-period congestion and highly-directional peak traffic flows. Problems in this area and in the narrower parts of the corridor are exacerbated by vehicle-dependent land uses on the corridor, by multiple driveways with direct access to SR 164, by intersections that meet the state route at awkward angles, and by school buses that block the road when boarding and deboarding students.

- Project Goal: In coordination with other project goals, reduce congestion and improve safety. Identify a new, preferred context-sensitive alternative access route and operational improvements that reduce congestion and improve safety within Auburn and allow for better access to and from the Enumclaw Plateau.
- Project Objective: Evaluate transportation improvements identified by the Corridor Working Group, including alternative access routes that link SR 164 and SR 18 and operational improvements that improve chokepoint and safety problems in the western part of this corridor.

### **Goods Movements and Regional Traffic**

Identified Problems or Concerns: Freight movement along SR 164 is currently exceptionally heavy. Land use planning and economic projections suggest there will be an increase in trucks carrying goods in and out of the study area.

- Project Goal: Improve freight movement along the SR 164 corridor.
- Project Objective: Identify physical or operational projects to improve the movement of goods and services on SR 164. This strategy should either maintain or improve freight travel times and trip reliability, and reduce potential conflict points between trucks, passenger vehicles, and pedestrians.

### **Environmental Impacts**

Identified Problems or Concerns: Existing traffic and future roadway improvements may impact wetlands, river and stream crossings, hazardous slopes, storm water runoff and the overall environmental quality.

- Project Goal: Minimize environmental impacts of transportation system improvements on the SR 164 study area.
- Project Objective: Review projects for environmental effects and prioritize those projects that minimize (to the extent feasible) impacts to natural and human issues, such as river and stream crossings, wetlands, hazardous slopes, and wildlife habitat within the SR 164 study area.

## Public Outreach and Input

Identified Problems or Concerns: The study area traverses the cities of Auburn and Enumclaw, Muckleshoot Indian Tribal Reservation, and unincorporated King County. The issues affecting the stakeholders in these areas are very unique and each of these potentially sensitive issues must be addressed. This will require the involvement and participation of various interest groups, community organizations, and elected officials from the local jurisdictions.

- Project Goal: Incorporate an effective outreach and public participation program.
- Project Objective: Develop a locally-preferred strategy that provides active participation of stakeholders, interest groups, and elected officials from local jurisdictions.

## Project Phasing

Identified Problems or Concerns: Transportation improvements to SR 164 will need to be phased in over time to maximize effectiveness and financial resources.

- Project Goal: Maximize compatibility between immediate, short, and long-term projects.
- Project Objective: Develop a phasing program that provides continuity and consistency between immediate, short, and long-term proposed improvements.

## Defining Alternatives

The development of the corridor alternatives focuses on potential solutions to the transportation problems and issues identified by the State in consultation with the Corridor Working Group, local jurisdictions, stakeholders, route users, and affected communities. These alternatives address the goals and objectives of the SR 164 Corridor Study as described above.

Initial alternatives will include: “No-Build” and TSM/TDM approaches. Those will be developed, screened, and evaluated using sketch planning techniques and fatal flaw analysis. The comparisons of the performance of the initial alternatives relative to the evaluation criteria may be displayed in matrix, graphic, and tabular forms as appropriate to assist in the visualization and assessment of the information. The information presented will include safety, mobility, travel choices, environmental, and cost issues for the alternatives, as well as types of impacts and order of magnitude estimates of impacts. The initial alternatives will subsequently be screened down to a maximum of six feasible “Build” alternatives for detailed analysis and review with the Corridor Working Group, stakeholders, and decision-makers.



# STATE ROUTE 164 CORRIDOR STUDY

---

## EVALUATION CRITERIA TECHNICAL MEMORANDUM

---

**February 15, 2005**

Prepared for:

**Washington State Department of Transportation  
Urban Planning Office**  
401 2nd Avenue South, Suite 300  
Seattle, Washington 98104

Prepared by:

**Parsons Corporation**  
925 Fourth Avenue, Suite 1690  
Seattle, WA 98104

## Introduction

This technical memorandum discusses the evaluation criteria and metrics that will be used to determine and compare the feasibility of the short- and long-term improvement projects proposed for the State Route 164 (SR 164) Corridor Planning Study (CPS). The evaluation criteria and metrics developed for this analysis are based on SR 164 Goals and Objectives identified by the Corridor Working Group (CWG) partners, stakeholders and the WSDOT team. The metrics will be used as a tool to compare the identified short-term and long-term physical or operational improvements along the corridor.

There will be two levels of project screening: initial screening and detailed screening. The initial screening will be a “fatal flaw” analysis to eliminate projects that fail to address the key problems along the corridor and/or present significant cost, feasibility, or environmental issues. Some of the evaluation criteria in this list will be used for this initial screening process. Those are marked with (\*). A more in-depth metric may be used in the detailed screening process.

Following the initial screening process, projects will be compiled to form a spectrum of alternatives for each roadway segment. These alternatives will be refined and a detailed screening of these alternatives will occur using all the evaluation criteria. This second screening will be conducted to select a Preferred Build Alternative(s) that will be carried forward as a whole or incrementally into subsequent project-level environmental review process(es).

For each screening process, the study team will use the best information and analysis available. See Appendix A for a flow diagram that describes the evaluation process steps and key terms.

## Evaluation Criteria and Metrics

### Safety

The safety criteria will be used to address the estimated reduction in accident frequencies and accident severities compared to baseline Years 2001-2003 conditions. Each project will be evaluated and compared to assess the safety enhancements provided by the proposed projects along the corridor. An overall safety evaluation or score will be determined from the following elements:

- Design Standards: There are likely to be segments of the corridor that do not meet current WSDOT design standards. The corridor will be evaluated using current standards to determine where deficiencies exist. This measure will evaluate whether the proposed improvements (projects or alternatives) mitigate the design deficiency.

#### **Metrics:**

- Does the improvement meet fully (+), meet generally (0), or significantly depart from (-) WSDOT’s design standards?
- Does the improvement improve (+), have no effect on (0), or worsen (-) existing design deficiencies?

- Vehicle Accidents: This measure considers accidents that may be avoided by physical enhancements such as street illumination or the addition of a left-turn signal. This measure will compare proposed accident prevention improvements using HAC/HAL data prepared by WSDOT.

**Metrics:**

- Does the improvement improve (+), have no effect on (0), or worsen (-) the likelihood of accidents in a particular location or segment of the corridor?
- Pedestrian Safety: There are a variety of pedestrian safety issues along the corridor. This metric considers pedestrian accident locations to compare how each improvement addresses pedestrian safety along the corridor.

**Metrics:**

- Does the improvement improve (+), have no effect on (0), or worsen (-) pedestrian safety at a particular location or segment along the corridor?
- School Buses and Crossings for Schoolchildren: There are several schools located in the vicinity of SR 164. Safe pedestrian crossings and walk routes are required at school bus stops to ensure that school children can walk next to or across the corridor safely. This measure will compare how each improvement addresses school crossings along the corridor.

**Metrics:**

- Does the improvement increase (+), have no effect on (0), or decrease (-) the number of safe pedestrian crossings for schoolchildren?
- Transit Buses and Crossings: King County Metro has several bus stops located on the SR 164 corridor. Safe pedestrian crossings and walk routes are needed near these stops to ensure that transit riders can walk next to or across the corridor safely. This measure will compare how each improvement addresses transit crossings along the corridor.

**Metrics:**

- Does the improvement increase (+), have no effect on (0), or decrease (-) the number of safe pedestrian crossings for transit riders?

## Mobility

The mobility criteria will be used to compare the changes in the efficiency and reliability of vehicular and emergency response along the corridor with each of the proposed improvements.

- Access to Plateau: SR 164 is a primary route for trips onto and off of the Enumclaw Plateau. Various improvements may provide alternative route(s) between the plateau and Auburn, State Route 18, and State Route 167 and would therefore reduce local vehicular demand on the SR 164 corridor. This measure would qualitatively compare the improvements with regard to improving access choices for plateau residents.

**Metrics:**

- Does the proposed improvement provide alternative access choices for Enumclaw plateau residents (yes or no)?
- Access Management: Managing access along SR 164 would reduce or consolidate the number of access points where vehicles enter and exit the corridor. Access management would reduce stop-and-go traffic and improve the safety of the corridor. This measure will qualitatively compare how access management improvements would affect mobility along the corridor.

**Metrics:**

- Does the project decrease (+), have no change (0), or increase (-) the number of access points (e.g. driveways and awkward angled intersections) along the corridor and the number of driveways within a jurisdiction's access control authority?
- Emergency Access: SR 164 is a primary emergency route used by Auburn, Enumclaw, the Muckleshoot Indian Tribe, and portions of unincorporated King County. Improving the mobility or providing alternative emergency routes could improve the response time and reliability for emergency vehicles. This measure would qualitatively compare the effect of the proposed improvements on emergency response travel time and reliability, especially in congested portions of corridor during peak periods.

**Metrics:**

- Does the proposed improvement provide improved emergency access in congested areas of the corridor during peak periods (yes or no)?

- **Freight:** SR 164 is classified as a T2 freight route (between 4 and 10 million tons of freight use the corridor annually). Freight enhancements such as freight-only lanes, bypass routes, large-sized intersections for turning movements, or encouraging freight travel during off-peak periods to lessen conflicts along the corridor during peak periods. This measure will compare the changes each improvement will have to freight mobility along the corridor.

**Metrics:**

- Does the proposed project decrease (+), have no effect on (0), or increase (-) freight travel times along the corridor?

- **Specific Event Transit Measure:** The corridor supports a number of large events (e.g. White River Amphitheater concerts, King County Fair) causing traffic conditions to worsen along the corridor. This measure will compare how the proposed transit improvements (transit service at external locations and transit amenities along the corridor) allow for expeditious and convenient movement of patrons to these venues (e.g. bus pullouts, HOV lanes, and ancillary parking away from the event).

**Metrics:**

- Does the proposed event-specific transit improvement enhance (+), have no effect (0), or worsen (-) traffic conditions along the corridor?

- **Travel Delay:** WSDOT has adopted quantitative traffic operation measures, including intersection level-of-service, total vehicle hours-of-delay, person hours-of-delay, and volume to capacity. These measures will be used to compare each of the proposed improvements.

**Metrics:**

- Does the proposed project improve (+), have no effect on (0), or worsen (-) intersection and segment level-of-service?
- Does the proposed project decrease (+), have no effect on (0), or increase (-) total intersection and person delay?
- Does the proposed project decrease (+), have no effect on (0), or increase (-) the volume to capacity ratio?
- Does the proposed project decrease (+), have no effect on (0), or increase (-) the travel time along the corridor?

### Transit/HOV Use and Functionality

These criteria will be used to evaluate the existing and future performance of bus transit and high occupant vehicle (HOV) use and functionality along SR 164. The following is a list of potential performance measures to assess the effect of each of the proposed improvements on transit and high occupant vehicle (HOV) use and functionality.

- **HOV Volumes:** This measure will compare how each improvement influences HOV performance along the corridor.

**Metrics:**

- Does the proposed improvement increase (+), have no effect on (0), or reduce (-) HOV person throughput along the corridor?

- **Transit Mode Split:** This measure will compare the mode split of each improvement to determine which ones would increase transit usage along the corridor.

**Metrics:**

- Does the improvement increase (+), have no effect on (0), or reduce (-) the percent transit usage into, away from, and within the study area?

- **Transit Service:** This measure will compare the difference in the transit and auto travel times for a set of origin-destination pairs to determine the transit benefits achieved with each of the improvements.

**Metrics:**

- Does the improvement reduce (+), have no effect on (0), or increase (-) transit travel times between selected locations along the corridor?

### **Pedestrian, Bicycle, and Horse Riders (Equestrian) Access**

This criterion evaluates pedestrian, bicycle, and horse rider access across and parallel to the corridor. The following is a list of the criteria that will be used to measure the pedestrian, bicycle, and horse rider access benefits achieved by each of the proposed improvements.

- **Pedestrian, Bicycle and Horse Trail Design Standards:** This measure will use the American Association of State Highway and Transportation Officials (AASHTO) guidelines to identify where pedestrian, bicycle, and horse rider crossing points are required and to provide acceptable design standards to promote pedestrian, bicycle, and horse rider mobility.

**Metrics:**

- Does the improvement increase (+), have no effect on (0), or worsen (-) the number of pedestrian crossings along the corridor.
- Does the improvement increase (+), have no effect on (0), or worsen (-) the number of bicycle routes on the corridor.
- Does the improvement increase (+), have no effect on (0), or worsen (-) the number of horse rider trails near the corridor.

### **Environmental Effects**

Environmental criteria will measure the effect each of the improvements has on the natural and built environment.

- **Community and Business Disturbance:** This measure will compare the potential effects on communities and businesses located near the corridor as a result of the proposed improvements.

**Metrics:**

- Does the proposed improvement improve (+), have no effect on (0), or worsen (-) the estimated number of community and business disturbances during construction?
  - Does the proposed improvement improve the quality of life of communities and businesses along the corridor (yes or no)?
  - Does the proposed improvement increase (+), have no effect on (0), or decrease (-) the number of available parking spaces available along the corridor?
  - Does the proposed project reduce (+), have no effect on (0), or increase (-) noise impacts on sensitive receptors?
- **Development Rights, Open Space, and Right-of-Way (ROW):** Road widening or other projects might require the acquisition of additional ROW and potentially result in the displacement of adjacent property or open space. This measure will use aerial photographs to estimate the effects road widening improvements might have on existing property and open-space.

**Metrics:**

- At the project level, does the proposed project require additional right-of-way (yes or no)?
  - At the alternative level, how much additional right-of-way is required (quantity)?
  - Does the proposed improvement maintain property with special status (yes or no), (i.e. Open Space designation, Farmland Preservation Program, Historical Preservation)?
- **Environmental Justice:** This measure compares the effects each of the improvements have on affordable housing, low-income, and minority population neighborhoods along the corridor.

**Metrics:**

- At the project level, does the proposed project change the characteristic of low income and/or minority communities (yes or no)? At the alternative level, how much impact does the alternative have on low income and/or minority communities (quantity)?
  - Does the proposed improvement decrease (+), have no change (0) or increase (-) the impacts on low income and/or minority neighborhoods?



**Historical / Cultural / Architectural Resources:** This measure will compare the effects each improvement may have on nearby known historical, cultural, and architectural sites.

**Metrics:**

- Does the proposed project have any adverse effects (yes or no) on known historical, cultural, and architectural site resources along the corridor?



Natural Environmental Effects: This measure will determine the potential effects each of the proposed improvements have on the adjacent environment including wetlands, floodplains, fish and wildlife habitat, threatened or endangered species habitat, geologic hazards, and riparian areas based on field observations and existing environmental mapping of the area.

**Metrics:**

- Does the proposed improvement decrease (+), have no effect on (0), or increase (-) the number of salmon and fish-bearing stream crossings along the corridor?
- Does the proposed improvement decrease (+), have no effect on (0), or increase (-) the displacement / disturbance of threatened, endangered species and habitat along the corridor?
- Does the proposed improvement increase (+), have no effect on (0), or decrease (-) the acreage by category of wetlands and floodplains along the corridor?
- Does the proposed improvement decrease (+), have no effect on (0), or increase (-) the potential impacts to geologically hazardous areas along the corridor?

## Land Use and Policy Consistency

The land use and policy consistency criteria will measure the proposed improvements to determine if they comply with the jurisdictional transportation and land use policies. The following measures will be used to assess if each of the improvements is consistent with land use policies.

- Agriculture / Farmland Preservation Plan (FPP) Effects: Preserving the areas zoned agricultural and farmland is important to the residents along the corridor. Therefore, this measure will compare how much these improvements adversely affect the areas designated as agricultural land.

**Metrics:**

- Does the proposed improvement increase (+), have no effect on (0), or decrease (-) the land located within an Agricultural Production District or land enrolled in a Farmland Preservation Program?
  - Does the proposed improvement create land use conflicts (yes or no) such as traffic, noise, or development pressure on agricultural practices?
- Comprehensive Plans: This measure will qualitatively determine if the improvements maintain the land use and transportation policies and plans of Auburn, Enumclaw, King County, the Muckleshoot Indian Tribe, and the Puget Sound Regional Council.

**Metrics:**

- Does the proposed project maintain consistency (yes or no) with each jurisdiction's Comprehensive Plan land use and transportation policies?
- Support Economic Development: Mobility and safety improvements will encourage commercial and recreational trips along the corridor. This measure will determine if the improvement meets the jurisdictions' adopted visions and strategies for promoting economic development along the corridor.

**Metrics:**

- Does the proposed project meet each jurisdiction's adopted visions and strategies for promoting economic development (yes or no) in the region?

**Project Costs and Benefits**

These criteria evaluate the financial costs and benefits to construct and maintain improvements along the corridor. Specific measures have been selected for this evaluation process based upon their appropriateness in estimating the capital cost, cost effectiveness, right-of-way, and visual effects.

- Capital Costs: Capital costs will be estimated at a planning level for each of the improvements proposed. The costs will be normalized to Year 2005 dollars, and will be estimated using per-foot or per-mile averages experienced by improvements recently implemented in the area. This measure will compare the relative costs of each improvement.

**Metrics:**

- What is the difference in the capital Year 2005 cost to build each of the proposed alternatives (comparison of estimated dollars to implement the alternative)?

- Operation and Maintenance: This measure will compare the operation and maintenance costs anticipated for each of the improvements based on estimates established by FHWA and FTA.

**Metrics:**

- What is the annual operation and maintenance cost to build and maintain each of the proposed alternatives (comparison of estimated operation and maintenance costs to maintain each of the alternatives)?
- Cost Effectiveness: This measure will look at cost savings benefits each of the alternatives provides to the user. The person hours saved and safety improvements will be the primary sources to evaluate cost effectiveness.

**Metrics:**

- What is the difference in the person-hours to travel across the corridor (comparison of the person-hours)?

- Does the improvement decrease (+), have no effect on (0), or increase (-) the user's cost to travel on the corridor due to the potential safety improvements provided?
- Right-of-Way Effects: Layouts of each alternative's potential right-of-way limits will be created on aerial photographs to estimate the size of land that will be affected within each alternative.

**Metrics:**

- At the project level, does the proposed project require additional right-of-way (yes or no)?
- At the alternative level, how much additional right-of-way is required (quantity)?
- At the project level, does the proposed project require acquisition of dwelling units adjacent to the corridor (yes or no)?
- At the alternative level, how many dwelling units will be required (quantity)?

**Public Support**

Public input for each alternative will be gathered by active participation of stakeholder, interest groups, and elected officials. Input will be summarized and analyzed, and concerns, issues, and perspectives will be considered in evaluating projects. Public support will be used as a tool to establish consensus for identifying a preferred alternative(s).

- Consensus: This measure will determine if agreement is reached by citizens, stakeholders, interest groups, and State, Local, and Tribal Representatives in an effort to move forward with improvement strategies.

**Metrics:**

- Does the proposed improvement have support (+), is of no concern (0), or have major objections (-) from citizens, stakeholders, interest groups, and State, Local, and Tribal Representatives?
- Does the proposed improvement have support (+), is of no concern (0), or have major objections (-) from elected officials?

This is a working document that contains an inventory of projects currently underway and potential projects for consideration. This list includes projects provided by Corridor Working Group (CWG) partners and other projects identified by the study team in response to recognized safety and congestion issues on the corridor. Some of these potential projects will be eliminated during the screening analysis and will NOT be a part of the final recommended Route Development Plan (RDP).

The project descriptions will be revised as the project status changes or as projects are updated. Remaining projects are subject to further analysis, and based on the analysis, projects that appear to be in conflict will be reconciled or screened from the list.

Short Term = S Long Term = L	SR 164 Project Number	Location	Milepost	Segment	Project Description	Screening Criteria - Benefits										Screening Criteria - Impacts/Costs													Subtotal - Impacts/Costs	TOTAL												
						Safety		Mobility				Transit	Non Motorized	Environmental Effects							Land Use and Policy Consistency		Project Costs		Public Support																	
						Improves existing design deficiencies	Reduces likelihood of accidents in a particular area (may include a designated HAC or HAL)	Improves pedestrian safety	Decreases number of driveways and awkward intersections	Improves emergency access in congested areas in peak periods	Improves freight travel times	Improves traffic conditions during an event	Improves operating levels of Service	Increases transit/HOV opportunities	Increases non-motorized travel opportunities	Subtotal - Benefits	Displaces business or community facilities.	Displaces dwelling units.	Creates noise impacts on sensitive receptors	Requires additional right of way.	Impacts open space or parks.	Significantly impacts low income and/or minority communities.	Potential to adversely affect historical, cultural, and architectural sites	Impacts salmon and fish bearing stream crossings.	Displaces/disturbs threatened or endangered species or their habitat	Impacts wetlands and floodplains	Remediates existing geological hazard	Is located in a geologically hazardous area			Impacts land in Agricultural Production Districts or Farmland Preservation Programs	Does not maintain consistency with Comprehensive Plans, land uses, and transportation policies	Capital Cost	Annual operation and maintenance cost	Right of way acquisition cost	Does not have support from citizens, stakeholders, interest groups, and State, Local and Tribal Reps						
6	13	11	8	11	8	8	13	4	8	90	-6.5	-6.5	-4	-3	-4	-6.5	-6.5	-4	-4	-5	5	-4	-6.5	-3	H = -6.5 M = -3.25 L = 0	H = -4 M = -2 L = 0	H = -6.5 M = -3.25 L = 0	-4	-90													
<b>RECOMMENDED TO BE CARRIED FORWARD</b>																																										
L	2	SR 164 from SR 18 to F Street	0.31 - 0.66	Auburn	Intersection improvements and roadway widening to address existing capacity issues at SR 18 eastbound on-ramp. Access management to address HAL from SR 18 to F Street SE.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																										
S	3	SR 164 from SR 18 to east of F Street	0.32 - 0.72	Auburn	INCORPORATED INTO PROJECT NUMBER 2 Access management to address HAL from SR 18 to F Street SE.	See project #2										See project #2																										
L	4a	Phase 1 - SR 164 from 6th Street SE to just east of D Street SE	0.38 - 0.54	Auburn	INCORPORATED INTO PROJECT NUMBER 2 Road widening, and synchronize traffic signals to address HAL from SR 18 to F Street SE.	See project #2										See project #2																										
S	5	SR 164 from 6th Street SE to just east of D Street SE	0.38 - 0.55	Auburn	INCORPORATED INTO PROJECT NUMBER 2 Access management and widen shoulders to address PAL near 8th Street SE	See project #2										See project #2																										
S	4b	Phase 2 - SR 164 from D Street to just east of the mid-block Pedestrian Crossing located between D Street and E Street	0.54 - 0.75	Auburn	INCORPORATED INTO PROJECT NUMBER 2 Intersection improvements at F Street to improve traffic level of service. Restripe roadway.	See project #2										See project #2																										
L	6	SR 164 @ F Street SE	0.66	Auburn	INCORPORATED INTO PROJECT NUMBER 2 Add an additional through lane in each direction or a dedicated southbound left turn lane.	See project #2										See project #2																										
S	4	SR 164 from SR 18 vicinity to Dogwood Street SE	0.32 - 2.28	Auburn	Repave the roadway.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																										
S	4c	Phase 3 - M Street SE	1.2	Auburn	Modify the traffic signal and intersection.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																										
L	7	SR 164 @ M Street SE	1.18	Auburn	INCORPORATED INTO PROJECT NUMBER 2 Add through lanes in all directions to address existing capacity issues at M Street SE, and southbound left and right turn lanes to address HAL west of M Street SE to east of 17th Street SE.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																										
S	8	SR 164 @ Dogwood Street SE	2.28	Auburn	Improve traffic signal timing, relocate bus zones, and provide safety improvements including an advance warning sign to alert drivers of upcoming intersection to address HAC east of 17th Street SE to east of Poplar Street SE.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																										
L	9	SR 164 in the Muckleshoot Casino/Riverwalk Drive Vicinity	1.90 - 2.14	Auburn	Access management to address HAC east of 17th Street SE to east of Poplar Street SE. Road widening with pedestrian enhancements to address PAL near Muckleshoot Casino.	6	13	11	8	11	0	8	13	0	8	78	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3.25	0	0	0	-11	67
S	10a	SR 164 from Muckleshoot Casino/Riverwalk Drive to Hemlock Street SE	2.19 - 2.54	Auburn	Road widening.	6	13	0	0	11	8	8	13	0	0	59	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3.25	0	0	0	-6	53
S	10b	SR 164 from Muckleshoot Casino/Riverwalk Drive to Academy Drive	2.19 - 4.37	Auburn	Provide a mid-block pedestrian crossing near Muckleshoot Casino and add center left turn/reversible flow lane from Poplar Street to Academy Drive	6	13	11	0	11	8	8	13	0	8	78	0	-6.5	0	-3	4	-6.5	-6.5	0	0	0	0	0	0	0	0	0	0	-6.5	-4	-6.5	0	-36	43			
<b>RECOMMENDED TO BE CARRIED FORWARD (Cont'd)</b>																																										
S	11	SR 164 @ Dogwood Street SE	2.28	Auburn	Intersection improvements to address traffic level of service.	6	13	0	0	11	8	0	13	0	0	51	-6.5	-6.5	0	-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3.25	0	-19	32		
L	12	SR 164 from Dogwood Street SE to Academy Drive	2.28 - 4.37	Auburn	Roadway widening to 5 lanes with pedestrian facilities.	6	13	11	0	11	8	8	13	0	8	78	-6.5	-6.5	-4	-3	0	-6.5	-6.5	0	0	0	0	0	0	0	0	0	0	-6.5	0	-6.5	0	-46	32			
L	62	SR 164 from Dogwood Street SE to Poplar Street SE vicinity	2.28 - 2.97	Auburn	Access management to address HAC east of 17th Street SE to east of Poplar Street SE. In addition, pedestrian enhancements including sidewalks on both sides of the street.	6	13	11	8	0	0	0	13	0	8	59	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-6.5	0	-10	50			
L	63	Parallel to SR 164 from Elm Street to 15th Avenue SE (terminating at the proposed Skoptobsh Village Trail)	2.35 - 6.06	Auburn Academy MIT	Non-vehicular trail that ties into project number 34.	0	13	11	0	0	0	0	0	0	8	32	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3.25	0	-6	26				
S	14	SR 164 @ Hemlock Street SE	2.54	Auburn	Intersection improvements to address bottleneck conditions at Hemlock Street SE.	6	13	0	0	11	8	8	13	0	0	59	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0	0	0	-6.5	0	-3.25	0	-13	46			
S	15	SR 164 @ Hemlock Street SE	2.54	Auburn	INCORPORATED INTO PROJECT NUMBER 14 Improve intersection by restriping the roadway and adding travel lanes to address bottleneck conditions at Hemlock Street SE.	See project #14										See project #14																										

\* HAC = High Accident Corridor; HAL = High Accident Location; PAL = Pedestrian Accident Location

This is a working document that contains an inventory of projects currently underway and potential projects for consideration. This list includes projects provided by Corridor Working Group (CWG) partners and other projects identified by the study team in response to recognized safety and congestion issues on the corridor. Some of these potential projects will be eliminated during the screening analysis and will NOT be a part of the final recommended Route Development Plan (RDP).

The project descriptions will be revised as the project status changes or as projects are updated. Remaining projects are subject to further analysis, and based on the analysis, projects that appear to be in conflict will be reconciled or screened from the list.

Short Term = S Long Term = L	SR 164 Project Number	Location	Milepost	Segment	Project Description	Screening Criteria - Benefits										Screening Criteria - Impacts/Costs										Subtotal - Impacts/Costs	TOTAL											
						Safety		Mobility				Transit	Non Motorized	Environmental Effects										Project Costs				Public Support										
						Improves existing design deficiencies	Reduces likelihood of accidents in a particular area (may include a designated HAC or HAL)	Improves pedestrian safety	Decreases number of driveways and awkward intersections	Improves emergency access in congested areas in peak periods	Improves freight travel times	Improves traffic conditions during an event	Improves operating Levels of Service	Increases transit/HOV opportunities	Increases non-motorized travel opportunities	Subtotal - Benefits	Displaces business or community facilities.	Displaces dwelling units.	Creates noise impacts on sensitive receptors	Requires additional right of way.	Impacts open space or parks.	Significantly impacts low income and/or minority communities.	Potential to adversely affect historical, cultural, and architectural sites	Impacts salmon and fish bearing stream crossings.	Displaces/disturbs threatened or endangered species or their habitat			Impacts wetlands and floodplains	Remediates existing geological hazard	Is located in a geologically hazardous area	Impacts land in Agricultural Production Districts or Farmland Preservation Programs	Does not maintain consistency with Comprehensive Plans, land uses, and transportation policies	Capital Cost	Annual operation and maintenance cost	Right of way acquisition cost	Does not have support from citizens, stakeholders, interest groups, and State, Local and Tribal Reps		
						6	13	11	8	11	8	8	13	4	8	90	-6.5	-6.5	-4	-3	-4	-6.5	-6.5	-4	-4	-5	5	-4	-6.5	-3	H = -6.5 M = -3.25 L = 0	H = -4 M = -2 L = 0	H = -6.5 M = -3.25 L = 0	-4	-90			
S	17	SR 164 in the Noble Court SE Vicinity	2.87 - 2.98	Academy	Roadway maintenance, access management (eliminate left-turns from SR 164 to Poplar Street SE), and relocate flashing school ahead sign to a location that is visible to drivers to address HAC east of 17th Street SE to east of Poplar Street SE.	0	13	0	8	0	0	0	13	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
S	21	SR 164 @ 32nd Street SE	3.82	Academy	Intersection improvements to enhance capacity and address HAC.	0	13	0	8	11	8	8	13	0	0	61	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3.25	0	-6	55
S	22	SR 164 from 32nd Street SE and Academy Drive SE	3.82 - 4.50	Academy	Access management and removal of line of sight obstructions to address HAC from 32nd Street SE to east of SE 408th Street.	0	13	0	8	0	0	0	13	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
L	34	SR 164 from Skoptobsh Village to Muckleshoot Tribal Headquarters	6.06	MIT	Non-vehicular trail adjacent to SR 164	0	13	11	0	0	0	0	0	0	8	32	0	0	0	-3	0	0	0	0	0	0	0	0	0	0	0	0	0	-3.25	0	-6	26	
S	27	SR 164 @ SE 388th Street (158th Avenue SE turns into SE 388th Street)	6.65	MIT	Intersection improvements including bus pullouts flashing overhead sign that alerts drivers to pedestrian crossing and removal of line of sight obstructions to address HAL at 158th Avenue SE.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																						
S	28	SR 164 @ SE 392nd Street	6.92	MIT	Intersection improvements to increase capacity and enhance safety in the HAC from 32nd Street SE to east of SE 408th Street.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																						
<b>RECOMMENDED TO BE CARRIED FORWARD (Cont'd)</b>																																						
S	29	SR 164 @ SE 398th Street	~7.00	MIT	Restripe the roadway to allow for left turn lanes.	0	13	0	0	11	8	8	13	0	0	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	
S	30	SR 164 @ SE 400th Street	7.51	MIT	Install an "Intersection Ahead" sign and remove obstacles on the side of the road that impair drivers' line of sight to address HAC from 32nd Street SE to east of SE 408th Street.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																						
S	31	SR 164 @ SE 416th Street	8.62	MIT	Install guardrail on the side of the street.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																						
S	32	SR 164 @ 180th Avenue SE	8.73	MIT	Close access to 180th Avenue SE from SR 164.	6	13	0	8	0	0	0	13	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	
S	37	SR 164 @ 436th Street SE/196th Street (In this section SR 164 is referred to as 436th Street SE)	10.23	Rural	Close access to 436th Street SE. In addition, remove obstacles on the side of the road that impair drivers' line of sight and install street lighting.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																						
S	38	SR 164 @ 196th Ave SE/SE 436th St	10.23 - 10.31	Rural	Intersection and pedestrian improvements.	6	0	11	0	0	0	0	13	0	8	38	0	0	0	-3	0	0	0	0	0	0	0	0	-6.5	0	0	0	0	0	0	-10	29	
S	39	SR 164 from 196th Avenue SE vicinity to 244th Avenue SE	10.32 - 13.29	Rural	Restripe the roadway and provide safety improvements to address HAC west of 216th Avenue SE to east of Lafromboise Street.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																						
S	40	SR 164 from SE 436th Street vicinity to High Point Vicinity	10.31 - 13.57	Rural	INCORPORATED INTO PROJECT NUMBER 39 Restripe the roadway and provide safety improvements to address HAC west of 216th Avenue SE to east of Lafromboise Street.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																						
S	41	SR 164 @ 212th Avenue SE	11.23	Rural	Provide safety improvements, including filling ditches and removing obstacles on the side of the road that impair drivers' line of sight to address HAC west of 216th Avenue SE to east of Lafromboise Street.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																						
S	42	SR 164 @ 228th Ave SE	12.24	Rural	Add a crosswalk at this intersection to address HAC west of 216th Avenue SE to east of Lafromboise Street.	0	13	11	0	0	0	0	0	0	8	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	
S	43	SR 164 @ 228th Avenue SE vicinity	12.24 - 12.65	Rural	Restripe the roadway to allow for left and right-turn lanes. Install a flashing beacon sign to warn drivers that pedestrian's are crossing the intersection. Install street lighting and add bus pullouts on the shoulder of the roadway. Remove obstacles on the side of the road that impair drivers' line of sight	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																						
S	44	SR 164 @ 236th Avenue	12.75	Enumclaw	Intersection improvements to address safety and removal of line of sight obstructions	0	13	0	0	0	0	0	13	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	
<b>RECOMMENDED TO BE CARRIED FORWARD (Cont'd)</b>																																						

\* HAC = High Accident Corridor; HAL = High Accident Location; PAL = Pedestrian Accident Location

This is a working document that contains an inventory of projects currently underway and potential projects for consideration. This list includes projects provided by Corridor Working Group (CWG) partners and other projects identified by the study team in response to recognized safety and congestion issues on the corridor. Some of these potential projects will be eliminated during the screening analysis and will NOT be a part of the final recommended Route Development Plan (RDP).

The project descriptions will be revised as the project status changes or as projects are updated. Remaining projects are subject to further analysis, and based on the analysis, projects that appear to be in conflict will be reconciled or screened from the list.

Short Term = S Long Term = L	SR 164 Project Number	Location	Milepost	Segment	Project Description	Screening Criteria - Benefits										Screening Criteria - Impacts/Costs													Subtotal - Impacts/Costs	TOTAL											
						Safety		Mobility				Transit	Non Motorized	Environmental Effects										Land Use and Policy Consistency		Project Costs		Public Support													
						Improves existing design deficiencies	Reduces likelihood of accidents in a particular area (may include a designated HAC or HAL)	Improves pedestrian safety	Decreases number of driveways and awkward intersections	Improves emergency access in congested areas in peak periods	Improves freight travel times	Improves traffic conditions during an event	Improves operating Levels of Service	Increases transit/HOV opportunities	Increases non-motorized travel opportunities	Subtotal - Benefits	Displaces business or community facilities.	Displaces dwelling units.	Creates noise impacts on sensitive receptors	Requires additional right of way.	Impacts open space or parks.	Significantly impacts low income and/or minority communities.	Potential to adversely affect historical, cultural, and architectural sites	Impacts salmon and fish bearing stream crossings.	Displaces/disturbs threatened or endangered species or their habitat	Impacts wetlands and floodplains	Remediates existing geological hazard	Is located in a geologically hazardous area			Impacts land in Agricultural Production Districts or Farmland Preservation Programs	Does not maintain consistency with Comprehensive Plans, land uses, and transportation policies	Capital Cost	Annual operation and maintenance cost	Right of way acquisition cost	Does not have support from citizens, stakeholders, interest groups, and State, Local and Tribal Reps					
						6	13	11	8	11	8	8	13	4	8	90	-6.5	-6.5	-4	-3	-4	-6.5	-6.5	-4	-4	-5	5	-4	-6.5	-3	H = -6.5 M = -3.25 L = 0	H = -4 M = -2 L = 0	H = -6.5 M = -3.25 L = 0	-4	-90						
S	46	SR 164 @ 244th Avenue SE and SE 440th Street	13.3	Enumclaw	Restripe the roadway to add a left-turn lane. Repave the street, and improve the traffic signal at 244th Street.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																									
S	47	SR 164 @ SE 440th Street	13.45	Enumclaw	Close access to SE 440th Street from SR 164 to address HAC west of 216th Avenue SE to east of Lafromboise Street.	6	13	0	8	0	0	0	13	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	
S	48	SR 164 from High Point to Porter Street (Junction SR 169)	13.57 - 14.52	Enumclaw	Make improvements to the crosswalk.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																									
S	49	SR 164 w/in the City of Enumclaw	13.57 - 15.13	Enumclaw	Synchronize the traffic signals within the City of Enumclaw.	Project ALREADY APPROVED and therefore not scored.										Project ALREADY APPROVED and therefore not scored.																									
S	50	SR 164 @ Semanski Street and Clovercrest Street	13.81	Enumclaw	Intersection and pedestrian improvements to address HAC west of 216th Avenue SE to east of Lafromboise Street.	0	13	11	0	0	0	0	0	0	8	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	28		
S	53	SR 164 @ Harding Street	14.11	Enumclaw	Intersection and pedestrian improvements to address HAC west of 216th Avenue SE to east of Lafromboise Street.	0	13	11	0	0	0	0	0	0	8	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	28	
S	56	SR 164 @ Wells Street	14.57	Enumclaw	Intersection and pedestrian improvements.	0	13	11	0	0	0	0	0	0	8	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	
S	57	SR 164 from Wells Street to Junction SR 410	14.57 - 15.13	Enumclaw	Remove street parking on both sides of the street. Restripe the road to allow for a left turn lanes. Add sidewalks on both sides of the street and repave the roadway.	0	13	11	0	11	0	0	13	0	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	
S	58	SR 164 @ Railroad Ave (SR 164 Spur)	14.68	Enumclaw	Intersection and pedestrian improvements.	0	13	11	0	0	0	0	0	0	8	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	
S	59	SR 164 @ First Street	14.75	Enumclaw	Intersection and pedestrian improvements.	0	13	11	0	0	0	0	0	0	8	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	
S	60	SR 164 @ Second Street	14.83	Enumclaw	Intersection and pedestrian improvements.	0	13	11	0	0	0	0	0	0	8	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	
S	T-9	SR 164 Traveler Information Services		All	Traffic Conditions and Photo Information on the WSDOT Seattle Area Traffic Website.	0	0	0	0	0	8	8	13	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29		
S	T-10	SR 164 Variable Message Signs		All	Variable message signs at strategic locations (to be identified) along the corridor to provide motorists with real time information on traffic conditions in their direction of travel.	0	0	0	0	0	8	8	13	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29		
<b>RECOMMENDED FOR FURTHER STUDY</b>																																									
L	1a	Link road from SR 164 to new SR 18/R Street interchange	1.25	Auburn	Build a new link road from SR 164 to SR 18 along R Street with a new R Street interchange at SR 18 to improve traffic flow along SR 164.	0	13	0	0	11	8	8	13	0	0	53	-6.5	-6.5	-4	-3	0	-6.5	0	0	0	-5	0	0	0	0	0	-6.5	-2	-6.5	0	-47	7				
L	1b	Link road from Riverwalk Drive to new SR 18/R Street interchange	2.07	Auburn	Build a new link road from Riverwalk Drive on SR 164 to SR 18 with a new R Street interchange at SR 18 to improve traffic flow along SR 164.	0	13	0	0	11	8	8	13	0	0	53	0	0	-4	-3	0	6.5	0	0	-5	0	-4	0	0	-6.5	-2	-6.5	0	-25	29						
L	1c	Link road from Noble Court to New R Street interchange	2.86	Auburn	Build a new link road from Noble Court on SR 164 to SR 18 with a new R Street interchange at SR 18 to improve traffic flow along SR 164.	0	13	0	0	11	8	8	13	0	0	53	-6.5	-6.5	-4	-3	-4	6.5	0	0	-5	0	-4	0	0	-6.5	-2	-6.5	0	-42	12						
S	16	SR 164 @ Noble Court SE	2.86	Academy	Intersection improvements to address traffic safety.	6	13	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19			
S	18	SR 164 from Poplar Street to 32nd Street SE	2.97 - 3.82	Academy	Remove line of sight obstructions to address HAC east of 17th Street SE to east of Poplar Street SE.	0	13	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13			
L	20	SR 164 from Poplar Street to SE 440th Street	2.97 - 12.65	Academy, MIT, Rural	Safety improvements including street lighting and removal of line of sight obstructions to address HAC east of 17th Street SE to east of SE 408th Street and from west of 216th Avenue SE to east of Lafromboise Street.	0	13	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13			
S	23	SR 164 east of Academy Drive SE	4.5	Academy	Safety improvements including relocating street lighting and removal of line of sight obstructions to address HAC from 32nd Street SE to east of SE 408th Street.	6	13	11	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-7	24			
S	26	SR 164 @ SE 380th Place	6.06	MIT	Shoulder improvements and removal of line of sight obstructions to address HAC from 32nd Street SE to east of SE 408th Street.	0	13	11	0	0	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3.25	0	-3	21				
S	33	SR 164 @ 180th Ave SE	8.73	MIT	Clear obstacles/foliage on the road to improve drivers' line of sight.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

\* HAC = High Accident Corridor; HAL = High Accident Location; PAL = Pedestrian Accident Location

This is a working document that contains an inventory of projects currently underway and potential projects for consideration. This list includes projects provided by Corridor Working Group (CWG) partners and other projects identified by the study team in response to recognized safety and congestion issues on the corridor. Some of these potential projects will be eliminated during the screening analysis and will NOT be a part of the final recommended Route Development Plan (RDP). The project descriptions will be revised as the project status changes or as projects are updated. Remaining projects are subject to further analysis, and based on the analysis, projects that appear to be in conflict will be reconciled or screened from the list.

Short Term = S Long Term = L	SR 164 Project Number	Location	Milepost	Segment	Project Description	Screening Criteria - Benefits										Screening Criteria - Impacts/Costs													Subtotal - Impacts/Costs	TOTAL								
						Safety		Mobility				Transit	Non Motorized	Environmental Effects										Land Use and Policy Consistency		Project Costs		Public Support										
						Improves existing design deficiencies	Reduces likelihood of accidents in a particular area (may include a designated HAC or HAL)	Improves pedestrian safety	Decreases number of driveways and awkward intersections	Improves emergency access in congested areas in peak periods	Improves freight travel times	Improves traffic conditions during an event	Improves operating levels of Service	Increases transit/HOV opportunities	Increases non-motorized travel opportunities	Subtotal - Benefits	Displaces business or community facilities.	Displaces dwelling units.	Creates noise impacts on sensitive receptors	Requires additional right of way.	Impacts open space or parks.	Significantly impacts low income and/or minority communities.	Potential to adversely affect historical, cultural, and architectural sites	Impacts salmon and fish bearing stream crossings.	Displaces/disturbs threatened or endangered species or their habitat	Impacts wetlands and floodplains	Remediates existing geological hazard	Is located in a geologically hazardous area			Impacts land in Agricultural Production Districts or Farmland Preservation Programs	Does not maintain consistency with Comprehensive Plans, land uses, and transportation policies	Capital Cost	Annual operation and maintenance cost	Right of way acquisition cost	Does not have support from citizens, stakeholders, interest groups, and State, Local and Tribal Reps		
						6	13	11	8	11	8	8	13	4	8	90	-6.5	-6.5	-4	-3	-4	-6.5	-6.5	-4	-4	-5	5	-4	-6.5	-3	H = -6.5 M = -3.25 L = 0	H = -4 M = -2 L = 0	H = -6.5 M = -3.25 L = 0	-4	-90			
S	35	School near White River Farms	-	MIT	Restripe the roadway and provide safety improvements; New signal at school entrance.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
S	T-2	Academy Segment		Academy	Provide a transit P&R lot at a local community center (e.g. Church, Government facility). Location to be determined	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
S	T-3	Muckleshoot Segment		MIT	Provide a transit P&R lot at a local community center (e.g. Church, Government facility). Location to be determined	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
S	T-4	Rural/Agricultural Segment		Rural	Provide a transit P&R lot at a local community center (e.g. Church, Government facility). Location to be determined	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
S	T-6	Location to be determined		Several	Provide transit signal priority near future transit P&R lots along the corridor.	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
<b>RECOMMENDED FOR FURTHER STUDY (Cont'd)</b>																																						
S	T-7	SR 164 (Corridor Wide)		All	Work with agencies to participate in travel demand management strategies (e.g. carpool to work).	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
S	61	SR 164 @ Junction SR 410	15.13	Enumclaw	Intersection improvements.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
S	64	SR 164 from Muckleshoot Segment to west of Enumclaw City Limits	3.82 - 13.57	Academy, MIT, Rural	Safety improvements such as lighting and/or reflective lane delineators to address HAC east of 17th Street SE to east of SE 408th Street and from west of 216th Avenue SE to east of Lafromboise Street.	0	13	11	0	0	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
S	65	SR 164 from Farrelly Street to SR 410	13.69 - 15.13	Enumclaw	Construct continuous sidewalks on both sides of the street.	0	0	11	0	0	0	0	0	0	8	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
<b>RECOMMENDED TO BE ELIMINATED</b>																																						
L	1f	Link road from Academy Drive to Academy Black Diamond interchange	4.37	Auburn	Build a new link road between SR 164 at Academy Drive and SR 18 at the Academy Drive interchange.	0	13	0	0	11	8	8	13	0	0	53	-6.5	-6.5	-4	-3	-4	-6.5	-6.5	0	0	-5	0	-4	-6.5	0	-6.5	-2	-6.5	0	-68	-15		
L	T-1	SR 164 @ SR 18 on and off ramps	0.00	Auburn	Provide transit signal priority under the SR 18 overpass	0	0	0	0	11	0	0	0	4	0	15	0	0	0	-3	-4	0	0	0	0	0	0	0	0	0	-6.5	0	-3.25	-4	-21	-6		
S	13	SR 164 from Dogwood Street SE to Poplar Street SE vicinity	2.28 - 2.97	Auburn	Widen roadway shoulders and other safety improvements to address HAC east of 17th Street SE to east of Poplar Street SE.	6	13	11	0	0	0	0	0	0	0	30	0	-6.5	0	-3	0	0	0	0	0	0	0	0	0	-3.25	0	-3.25	0	-16	14			
L	1d	Link road from Noble Court to Academy Black Diamond interchange	2.86	Auburn	Build a new link road between SR 164 at Noble Court and SR 18 at the Academy Black Diamond interchange.	SCREENED OUT during initial screening, therefore not scored										SCREENED OUT during initial screening, therefore not scored																						
L	1e	Link road from Noble Court to New R Street interchange and Academy Black Diamond interchange	2.86	Auburn	Build a new link road from Noble Court on SR 164 to SR 18 at a new R Street interchange and at the Academy Black Diamond interchange.	SCREENED OUT during initial screening, therefore not scored										SCREENED OUT during initial screening, therefore not scored																						
L	19	SR 164 from Poplar Street to east of SE 408th Street	2.97 - 8.07	Academy, MIT, Rural	Repave the roadway to address HAC east of 17th Street SE to east of Poplar Street SE.	Already part of regular WSDOT Paving Program and therefore not scored.										Already part of regular WSDOT Paving Program and therefore not scored.																						
L	1g	Link road from Academy Drive to New R Street interchange	4.37	Auburn	Build a new link road between SR 164 at Academy Drive and SR 18 at a new R Street interchange.	SCREENED OUT during initial screening, therefore not scored										SCREENED OUT during initial screening, therefore not scored																						
L	1h	Link road from Academy Airfield to SR 18 Academy Black Diamond interchange	4.6	Auburn	Build a new link road between SR 164 at Academy Airfield and SR 18 at the Academy Black Diamond interchange.	SCREENED OUT during initial screening, therefore not scored										SCREENED OUT during initial screening, therefore not scored																						
S	24	SR 164 @ SE 368th Street	4.72	Academy	Intersection improvement to correct awkward alignment	6	13	0	8	0	0	0	0	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-7	21
<b>RECOMMENDED TO BE ELIMINATED (Cont'd)</b>																																						
S	25	SR 164 @ SE 368th Street		Academy	INCORPORATED INTO PROJECT NUMBER 24 Restripe the roadway and add bus pullouts to address HAC from 32nd Street SE to east of SE 408th Street.	See project #24										See project #24																						
S	36	SR 164 @ 188th Ave SE	9.51	Rural	Intersection improvements for traffic service and safety.	6	0	0	0	0	0	0	13	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	-6.5	0	0	0	0	0	0	0	-7	13
S	45	SR 164 @ SE 436th Way and 244th Avenue SE (SE 436th Way and SR 164 overlap)	12.86	Enumclaw	INCORPORATED INTO PROJECT 37 Close access to 436th Street from SR 164. This project will address HAC west of 216th Avenue SE to east of Lafromboise Street.	6	13	0	8	0	0	0	13	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40

\* HAC = High Accident Corridor; HAL = High Accident Location; PAL = Pedestrian Accident Location





**Washington State  
Department of Transportation**

# Appendix F: Traffic Data

---



**Washington State  
Department of Transportation**

SR 164 Turning Movement Volumes

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1																																																														
2																																																														
3																																																														
4																																																														
5																																																														
6																																																														
7																																																														
8																																																														
9																																																														
10																																																														
11																																																														
12																																																														
13																																																														
14																																																														
15																																																														
16																																																														
17																																																														
18																																																														
19																																																														
20																																																														
21																																																														
22																																																														
23																																																														
24																																																														
25																																																														
26																																																														
27																																																														
28																																																														
29																																																														
30																																																														
31																																																														
32																																																														
33																																																														
34																																																														
35																																																														
36																																																														
37																																																														
38																																																														
39																																																														
40																																																														
41																																																														
42																																																														
43																																																														
44																																																														
45																																																														
46																																																														
47																																																														
48																																																														
49																																																														
50																																																														
51																																																														
52																																																														
53																																																														
54																																																														
55																																																														
56																																																														
57																																																														
58																																																														
59																																																														
60																																																														
61																																																														
62																																																														
63																																																														
64																																																														
65																																																														
66																																																														
67																																																														
68																																																														
69																																																														
70																																																														
71																																																														

SR 164 Turning Movement Volumes

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ																				
1			<b>2030 No-Build Volumes</b> obtained from WSDOT forecasts										<b>Alternative #1</b>										<b>Alternative #2</b>										<b>Alternative #3</b>										<b>Alternative #4</b>										<b>Alternative #5</b>										<b>Alternative #6</b> ROUNDED to 1																			
72	North-South Street		Dogwood St SE										Dogwood St SE										Dogwood St SE										Dogwood St SE										Dogwood St SE										Dogwood St SE										Dogwood St SE																			
73	East-West Street		SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164									
74																																																																																		
75			1,750 310 210 20 130 390 1,540										1,750 310 210 20 130 390 1,540										1,900 310 210 20 130 80 1,700										1,890 380 220 20 130 80 1,670										2,230 350 230 20 140 100 2,030										1,290 270 170 20 100 50 1,110										1,370 290 180 20 110 60 1,190																			
76			2,250 1,840 4,270 1,450 20 1,990										2,250 1,840 4,270 1,450 20 1,990										2,440 2,020 4,620 1,600 20 2,170										2,730 2,220 4,900 1,570 20 2,370										2,540 2,070 5,090 1,900 30 2,230										1,960 1,600 3,470 1,040 20 1,720										2,110 1,720 3,720 1,110 20 1,850																			
77			100 30 10 20										100 30 10 20										90 10 20										100 10 20										100 10 20										90 10 20										100 10 20																			
78			-0.05 140 120										140 120										150 120										170 130										170 130										130 110										140 110																			
79																																																																																		
80																																																																																		
81																																																																																		
82																																																																																		
83	North-South Street		Hemlock St SE										Hemlock St SE										Hemlock St SE										Hemlock St SE										Hemlock St SE										Hemlock St SE										Hemlock St SE																			
84	East-West Street		SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164									
85																																																																																		
86			1,000 50 20 0 10 980										1,000 50 20 0 10 980										760 50 20 0 10 740										1,280 60 20 0 10 1,260										1,450 60 20 0 10 1,430										800 40 20 0 10 780										860 40 20 0 10 840																			
87			1,960 1,910 2,970 980 1,920										1,960 1,910 2,970 980 1,920										2,170 2,120 2,940 740 2,130										2,470 2,410 3,760 1,260 2,420										2,430 2,370 3,890 1,430 2,380										1,750 1,710 2,560 780 1,720										1,880 1,840 2,750 840 1,850																			
88			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
89			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
90			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
91			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
92			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
93			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
94	North-South Street		32nd St SE										32nd St SE										32nd St SE										32nd St SE										32nd St SE										32nd St SE										32nd St SE																			
95	East-West Street		SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164									
96																																																																																		
97			1,000 100 110 0 0 900										1,000 100 110 0 0 900										1,040 100 110 0 0 940										1,170 110 120 0 0 1,060										1,200 110 120 0 0 1,090										1,210 110 120 0 0 1,100										1,210 110 120 0 0 1,100																			
98			1,850 1,750 2,860 890 1,750										1,850 1,750 2,860 890 1,750										1,940 1,840 2,990 930 1,840										1,980 1,870 3,160 1,050 1,870										2,000 1,890 3,210 1,080 1,890										2,040 1,930 3,260 1,090 1,930										2,070 1,960 3,290 1,090 1,960																			
99			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
100			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
101			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
102			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
103			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
104			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
105	North-South Street		Academy Dr SE										Academy Dr SE										Academy Dr SE										Academy Dr SE										Academy Dr SE										Academy Dr SE										Academy Dr SE										Academy Dr SE									
106	East-West Street		SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164									
107																																																																																		
108			840 140 50 0 60 830										840 140 50 0 60 830										880 140 50 0 60 870										980 150 50 0 60 980										1,010 150 50 0 60 1,010										1,030 150 60 0 70 1,020										1,020 160 60 0 70 1,010																			
109			1,730 1,590 2,670 790 1,650										1,730 1,590 2,670 790 1,650										1,810 1,670 2,790 830 1,730										1,850 1,700 2,940 930 1,760										1,870 1,720 2,990 960 1,780										1,900 1,750 3,050 970 1,820										1,940 1,780 3,080 960 1,850																			
110			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
111			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
112			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
113			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
114			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
115			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
116	North-South Street		SE 388th St										SE 388th St										SE 388th St										SE 388th St										SE 388th St										SE 388th St										SE 388th St																			
117	East-West Street		SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164									
118																																																																																		
119			740 0 0 0 0 740										740 0 0 0 0 740										740 0 0 0 0 740										870 0 0 0 0 870										890 0 0 0 0 890										910 0 0 0 0 910										900 0 0 0 0 900																			
120			1,470 1,450 2,230 730 1,460										1,470 1,450 2,230 730 1,460										1,470 1,450 2,230 730 1,460										1,570 1,550 2,460 860 1,560										1,590 1,570 2,500 880 1,580										1,620 1,600 2,550 900 1,610										1,640 1,620 2,560 890 1,630																			
121			20 10 0 10										20 10 0 10										10 0 10										10 0 10										10 0 10										10 0 10										10 0 10																			
122			30 20										30 20										30 20										30 20										30 20										30 20										30 20																			
123			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
124			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
125			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
126			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
127	North-South Street		SE 400th St										SE 400th St										SE 400th St										SE 400th St										SE 400th St										SE 400th St										SE 400th St																			
128	East-West Street		SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164										SR 164									
129																																																																																		
130			930 350 80 0 390 840										930 350 90 0 390 840										930 350 90 0 390 840										1,090 370 100 0 370 990										1,120 380 100 0 390 1,020										1,130 390 100 0 390 1,030										1,120 390 100 0 390 1,020																			
131			1,500 1,150 2,430 840 1,150										1,500 1,150 2,430 840 1,150										1,500 1,150 2,430 840 1,150										1,600 1,230 2,690 990 1,230										1,620 1,240 2,740 1,020 1,240										1,660 1,270 2,790 1,030 1,270										1,680 1,290 2,800 1,020 1,290																			
132			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
133			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
134			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
135			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
136			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
137			0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0										0 0 0																			
138	North-South Street		196th Ave SE										196th Ave SE										196th Ave SE										196th Ave SE										196th Ave SE										196th Ave SE										196th Ave SE																			

SR 164 Turning Movement Volumes

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ
1																																																														
2																																																														
3																																																														
4																																																														
5																																																														
139	East-West Street																										SR 164																																			
140																																																														
141																																																														
142																																																														
143																																																														
144																																																														
145																																																														
146																																																														
147																																																														
148																																																														
149	North-South Street																										244th Ave SE																																			
150	East-West Street																										SR 164																																			
151																																																														
152																																																														
153																																																														
154																																																														
155																																																														
156																																																														
157																																																														
158																																																														
159																																																														
160	North-South Street																										Semanski St S																																			
161	East-West Street																										SR 164																																			
162																																																														
163																																																														
164																																																														
165																																																														
166																																																														
167																																																														
168																																																														
169																																																														
170																																																														
171	North-South Street																										SR 169																																			
172	East-West Street																										SR 164																																			
173																																																														
174																																																														
175																																																														
176																																																														
177																																																														
178																																																														
179																																																														
180																																																														
181																																																														
182	North-South Street																										SR 164																																			
183	East-West Street																										SR 410																																			
184																																																														
185																																																														
186																																																														
187																																																														
188																																																														
189																																																														
190																																																														
191																																																														
192																																																														
193	North-South Street																										SR 164																																			
194	East-West Street																										Cole St																																			
195																																																														
196																																																														
197																																																														
198																																																														
199																																																														
200																																																														
201																																																														
202																																																														
203																																																														



**SR 164 Collision Data 2002 to 2004**

YEAR	TOTAL COLS	PROP DAMAGE COLS	POSS INJURY COLS	EVID INJURY COLS	DISABLING INJURY COLISIONS	TOTAL INJURY COLISIONS	FATAL COLISIONS	# OF INJURIES	# OF FATALITIES	# OF VEHS	ALCOHOL RELATED COLISIONS	FIXED OBJECT COLISIONS	REAR-END COLISIONS	OPPOSING DIRECTION COLISIONS	ENTER AT ANGLE	OVER TURN COLS	PEDL CYC COLS	PEDES COLS	OTHER
2002	290	176	76	23	13	112	2	174	2	569	24	28	98	30	46	7	3	5	73
2003	278	167	78	25	5	108	3	156	3	552	24	31	109	28	35	5	2	4	64
2004	249	147	60	26	16	102	0	148	0	512	21	19	84	23	38	3	1	3	78
<b>TOTALS</b>	<b>817</b>	<b>490</b>	<b>214</b>	<b>74</b>	<b>34</b>	<b>322</b>	<b>5</b>	<b>478</b>	<b>5</b>	<b>1633</b>	<b>69</b>	<b>78</b>	<b>291</b>	<b>81</b>	<b>119</b>	<b>15</b>	<b>6</b>	<b>12</b>	<b>215</b>

2005 Partial Totals      66      39      17      4      5      26      1      38      1      123      11      11      23      6      6      2      0      1      17

Segment	Segment Limits	Milepost to Milepost
Auburn	SE 424th Street to Griffin Street (SR	0.00 to 1.17
Academy	SE Green Valley Road to SE 424th	1.18 to 6.02
Muckleshoot	SE 288th Street to SE Green Valley	6.03 to 10.02
Rural/Agricultural	SE 216th Street to SE 288th Street	10.03 to 15.23
Enumclaw	Jones Road to SE 216th Street	15.24 to 19.22

**SR 164 Collision Data 2002 to 2004 by Segment**

TOTALS	TOTAL COLS	PROP DAMAGE COLS	POSS INJURY COLS	EVID INJURY COLS	DISABLING INJURY COLISIONS	TOTAL INJURY COLISIONS	FATAL COLISIONS	# OF INJURIES	# OF FATALITIES	# OF VEHS	ALCOHOL RELATED COLISIONS	FIXED OBJECT COLISIONS	REAR-END COLISIONS	OPPOSING DIRECTION COLISIONS	ENTER AT ANGLE	OVER TURN COLS	PEDL CYC COLS	PEDES COLS	OTHER
Auburn	466	293	123	37	12	172	1	243	1	982	25	17	179	47	59	3	3	8	150
Academy	58	35	15	4	3	22	1	35	1	112	4	11	30	4	0	2	0	0	11
Muckleshoot	112	51	33	16	9	58	3	103	3	196	22	27	35	11	10	5	0	3	21
Rural/Agricultural	50	26	13	7	4	24	0	36	0	87	5	14	9	5	4	3	0	0	15
Enumclaw	131	85	30	10	6	46	0	61	0	256	13	9	38	14	46	2	3	1	18
<b>TOTALS</b>	<b>817</b>	<b>490</b>	<b>214</b>	<b>74</b>	<b>34</b>	<b>322</b>	<b>5</b>	<b>478</b>	<b>5</b>	<b>1633</b>	<b>69</b>	<b>78</b>	<b>291</b>	<b>81</b>	<b>119</b>	<b>15</b>	<b>6</b>	<b>12</b>	<b>215</b>

**Note:** 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.

SR 164 Collision Data 2002 by Segment

TOTALS	TOTAL COLS	PROP DAMAGE COLS	POSS INJURY COLS	EVID INJURY COLS	DISABLING INJURY COLS	TOTAL INJURY COLS	FATAL COLS	# OF INJURIES	# OF FATALITIES	# OF VEHS	ALCOHOL RELATED COLS	FIXED OBJECT COLS	REAR-END COLS	OPPOSITE DIRECTION COLS	ENTER AT ANGLE	OVER TURN COLS	PEDAL CYC COLS	PEDES COLS	OTHER
Auburn	156	101	41	9	5	55	0	80	0	322	8	6	54	16	23	1	2	2	52
Academy	20	11	7	2	0	9	0	16	0	35	2	5	8	0	0	1	0	0	6
Muckleshoot	42	19	13	5	3	21	2	39	2	75	6	9	14	5	4	3	0	2	5
Rural/Agricultural	19	12	3	2	2	7	0	10	0	34	4	4	4	3	1	1	0	0	6
Enumclaw	53	33	12	5	3	20	0	29	0	103	4	4	18	6	18	1	1	1	4
<b>TOTALS</b>	<b>290</b>	<b>176</b>	<b>76</b>	<b>23</b>	<b>13</b>	<b>112</b>	<b>2</b>	<b>174</b>	<b>2</b>	<b>569</b>	<b>24</b>	<b>28</b>	<b>98</b>	<b>30</b>	<b>46</b>	<b>7</b>	<b>3</b>	<b>5</b>	<b>73</b>

SR 164 Collision Data 2003 by Segment

TOTALS	TOTAL COLS	PROP DAMAGE COLS	POSS INJURY COLS	EVID INJURY COLS	DISABLING INJURY COLS	TOTAL INJURY COLS	FATAL COLS	# OF INJURIES	# OF FATALITIES	# OF VEHS	ALCOHOL RELATED COLS	FIXED OBJECT COLS	REAR-END COLS	OPPOSITE DIRECTION COLS	ENTER AT ANGLE	OVER TURN COLS	PEDAL CYC COLS	PEDES COLS	OTHER
Auburn	160	98	45	15	1	61	1	82	1	336	9	7	72	17	13	1	0	3	47
Academy	18	13	3	0	1	4	1	6	1	36	1	3	11	2	0	1	0	0	1
Muckleshoot	37	16	13	5	2	20	1	38	1	64	8	11	12	4	4	1	0	1	4
Rural/Agricultural	15	9	4	2	0	6	0	7	0	23	1	6	1	1	1	1	0	0	5
Enumclaw	48	31	13	3	1	17	0	23	0	93	5	4	13	4	17	1	2	0	7
<b>TOTALS</b>	<b>278</b>	<b>167</b>	<b>78</b>	<b>25</b>	<b>5</b>	<b>108</b>	<b>3</b>	<b>156</b>	<b>3</b>	<b>552</b>	<b>24</b>	<b>31</b>	<b>109</b>	<b>28</b>	<b>35</b>	<b>5</b>	<b>2</b>	<b>4</b>	<b>64</b>

**Note:** 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.

SR 164 Collision Data 2004 by Segment

TOTALS	TOTAL COLS	PROP DAMAGE COLS	POSS INJURY COLS	EVID INJURY COLS	DISABLING INJURY COLS	TOTAL INJURY COLS	FATAL COLS	# OF INJURIES	# OF FATALITIES	# OF VEHS	ALCOHOL RELATED COLS	FIXED OBJECT COLS	REAR-END COLS	OPPOSITE DIRECTION COLS	ENTER AT ANGLE	OVER TURN COLS	PEDAL CYC COLS	PEDES COLS	OTHER
Auburn	150	94	37	13	6	56	0	81	0	324	8	4	53	14	23	1	1	3	51
Academy	20	11	5	2	2	9	0	13	0	41	1	3	11	2	0	0	0	0	4
Muckleshoot	33	16	7	6	4	17	0	26	0	57	8	7	9	2	2	1	0	0	12
Rural/Agricultural	16	5	6	3	2	11	0	19	0	30	0	4	4	1	2	1	0	0	4
Enumclaw	30	21	5	2	2	9	0	9	0	60	4	1	7	4	11	0	0	0	7
<b>TOTALS</b>	<b>249</b>	<b>147</b>	<b>60</b>	<b>26</b>	<b>16</b>	<b>102</b>	<b>0</b>	<b>148</b>	<b>0</b>	<b>512</b>	<b>21</b>	<b>19</b>	<b>84</b>	<b>23</b>	<b>38</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>78</b>

**Note:** 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.

**Collision Summary for Years 2005 through 2007**

STATE ROUTE	Segment	Begin MP	End MP	Societalcost	TOTAL COLS	PROP DMAG COLS	POSS INJ COLS	EVID INJ COLS	DSABL INJ COLS	TOTAL INJ COLS	FATAL COLS	# OF INJS	# OF FTLS	ALC REL COLS	FIXD OBJ COLS	REAR END COLS	OPP DIR COLS	ENTER AT ANGLE	OVER TURN COLS	PEDL CYC COLS	PEDES COLS
SR 164	Auburn Segment	0.31	2.79	\$ 22,375,000	536	355	141	30	10	181	0	242	0	31	20	226	61	45	5	4	6
				30%	63%	68%	64%	45%	24%	56%	0%	52%	0%	39%	22%	67%	69%	54%	31%	80%	50%
SR 164	Academy Segment	2.79	5	\$ 13,006,000	90	43	27	11	7	45	2	69	3	20	15	45	2	2	5	1	1
				18%	11%	8%	12%	17%	17%	14%	33%	15%	38%	25%	16%	13%	2%	2%	31%	20%	8%
SR 164	Muckleshoot Segment	5	8.78	\$ 17,120,000	67	30	14	10	11	35	2	57	3	16	19	21	6	6	5	0	2
				23%	8%	6%	6%	15%	27%	11%	33%	12%	38%	20%	21%	6%	7%	7%	31%	0%	17%
SR 164	Rural / Agricultural Segment	8.78	12.24	\$ 11,921,000	59	33	11	6	8	25	1	39	1	5	24	11	6	7	0	0	1
				16%	7%	6%	5%	9%	20%	8%	17%	8%	13%	6%	26%	3%	7%	8%	0%	0%	8%
SR 164	Enumclaw Segment	12.24	15.13	\$ 9,328,000	100	59	26	9	5	40	1	58	1	8	13	32	14	23	1	0	2
				13%	12%	11%	12%	14%	12%	12%	17%	12%	13%	10%	14%	10%	16%	28%	6%	0%	17%
<b>SR 164</b>	<b>Auburn to Enumclaw</b>	<b>0.31</b>	<b>15.13</b>	<b>\$ 73,750,000</b>	<b>852</b>	<b>520</b>	<b>219</b>	<b>66</b>	<b>41</b>	<b>326</b>	<b>6</b>	<b>465</b>	<b>8</b>	<b>80</b>	<b>91</b>	<b>335</b>	<b>89</b>	<b>83</b>	<b>16</b>	<b>5</b>	<b>12</b>



**Washington State  
Department of Transportation**

# **Appendix G: Project Cost Data**

---



**Washington State  
Department of Transportation**

### SR 164 Intersection Projects (October 2008)

ID #	SR	Begin Project ARM	I/S ARM	End Project ARM	Location	Project Description	Truck %:	Growth Rate (ADT):	Preliminary Engineering	R/W	Structures	Drainage/Grading	Others	Cost Estimate	Residual Cost	Safety Improvement Benefit	Delay Reduction Benefit	Benefit (Present Value Benefit)	Benefit / Residual Cost Ratio
11	164	1.87	1.97	2.07	Dogwood St. SE	Reconstruct/modify the existing traffic signal and reconstruct/modify intersection to provide for dual left turns for eastbound left turning traffic.	7.0%	0.69%	\$66,000	\$251,000	\$0	\$110,000	\$723,000	\$1,150,000	\$993,050	\$8,287,182	\$132,657	\$8,419,839	8.48
14	164	2.13	2.23	2.33	Hemlock	Address intersection sight distance and provide pedestrian improvements by shifting SR 164 to the south. This would be considered the first phase of widening to the 5 lane configuration. This may require the installation of traffic signal control to provide for safe access from Hemlock. Relocate power pole utilities as needed to improve sight distance.	7.0%	2.02%	\$137,000	\$62,000	\$0	\$273,000	\$1,452,000	\$1,924,000	\$1,786,900	\$790,440	\$1,159,745	\$1,950,185	1.09
21	164	3.41	3.51	3.61	32nd St SE	Install traffic signal system to enhance capacity, provide intersection pedestrian improvements and appropriate advance warning signage.	7.0%	2.03%	\$32,000	\$0	\$0	\$23,000	\$379,000	\$434,000	\$424,800	\$3,097,614	\$55,028	\$3,152,642	7.42
32	164	8.21	8.42	8.52	SE 416th St to 180th Ave SE	North leg of 180th between SR 164 and 416th Street to be fully or partially closed at SR 164. Provide left turn channelization and crosswalk at 416th to accommodate added traffic resulting from closure of 180th.	7.0%	N/A	\$18,000	\$0	\$0	\$36,000	\$196,000	\$250,000	\$235,600	\$9,012,888	\$203,065	\$9,215,953	39.12
42	164	11.83	11.93	12.03	228th Ave SE	Provide intersection pedestrian improvements and appropriate advance warning signage.	7.0%	3.69%	\$7,000	\$0	\$0	\$0	\$90,000	\$97,000	\$97,000	\$1,769,502	\$0	\$1,769,502	18.24
44	164	12.34	12.44	12.54	236th Ave SE	Construct enclosed drainage as necessary to fill in ditches, widen corner radii, and widen as needed to construct left turn channelization, provide pedestrian improvements and appropriate advance warning signage.	7.0%	3.69%	\$104,000	\$296,000	\$0	\$230,000	\$1,632,000	\$2,262,000	\$2,036,800	\$5,047,507	\$184,919	\$5,232,426	2.57
50	164	13.40	13.50	13.60	Semanski St	Install traffic signal, turn channelization and provide pedestrian improvements-improve curb ramps and crosswalks and relocate overhead utilities to accommodate signal mast arms. Major delay and traffic flow issues for school buses on Semanski turning onto SR 164. Traffic signal will create gaps to aid pedestrian crossings upstream and downstream. This will improve area wide circulation. <b>Note: This intersection may need to be realigned because side streets do not align in the current configuration. (See google maps)</b>	7.0%	1.13%	\$40,000	\$139,000	\$0	\$44,000	\$462,000	\$685,000	\$604,850	\$260,475	\$328,074	\$588,549	0.97
53	164	13.70	13.80	13.90	Harding St	Provide intersection pedestrian improvements and appropriate advance warning signage.	6.6%	1.13%	\$3,000	\$0	\$0	\$0	\$32,000	\$35,000	\$35,000	\$180,068	\$0	\$180,068	5.14
56	164	14.16	14.26	14.29	Wells St	In the vicinity of the intersection, improve sight distance and traffic flow by removing parking stalls and constructing turn channelization and provide intersection pedestrian improvements and appropriate advance warning signage.	6.6%	2.01%	\$6,000	\$0	\$0	\$6,000	\$72,000	\$84,000	\$81,600	\$943,146	\$82,454	\$1,025,600	12.57
	164	14.29	14.32	14.34	Cole St.	In the vicinity of the intersection, improve sight distance and traffic flow by removing parking stalls and constructing turn channelization and sidewalk improvements. Modify or install new traffic signal as needed to accommodate the relocation of the signal poles from the sidewalk "bulb".	6.6%	2.01%	\$28,000	\$0	\$0	\$13,000	\$340,000	\$381,000	\$375,800	\$138,518	\$419,104	\$557,622	1.48
58	164	14.34	14.37	14.40	Railroad St	In the vicinity of the intersection, improve sight distance and traffic flow by removing parking stalls and constructing turn channelization and provide intersection pedestrian improvements and appropriate advance warning signage.	6.6%	2.01%	\$3,000	\$0	\$0	\$0	\$37,000	\$40,000	\$40,000	\$1,188,899	\$78,178	\$1,267,077	31.68
59	164	14.40	14.44	14.48	First St	Provide intersection pedestrian improvements and appropriate advance warning signage.	6.6%	2.01%	\$3,000	\$0	\$0	\$0	\$32,000	\$35,000	\$35,000	\$174,677	\$0	\$174,677	4.99
60	164	14.48	14.52	14.62	Second St (Garrett St)	Modify the existing traffic signal to increase protection for left turns.	6.6%	2.01%	\$12,000	\$0	\$0	\$0	\$154,000	\$166,000	\$166,000	\$249,512	\$0	\$249,512	1.50



**Washington State  
Department of Transportation**

# **Appendix H: SR 164 Bypass Feasibility Study**

---



**Washington State  
Department of Transportation**