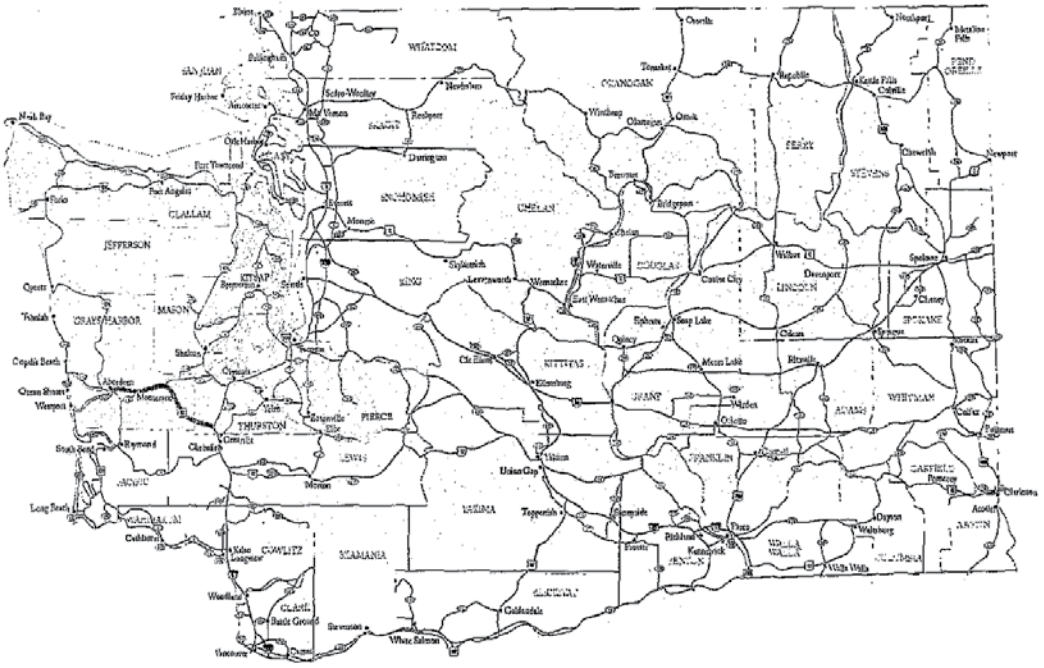
U.S. 12 Route Development Plan

City of Aberdeen to Grand Mound



Washington State Department of Transportation
Olympic Region

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May 24, 1999

A message to the reader,

We are pleased to announce that the Washington State Department of Transportation (WSDOT) has completed the US 12 Route Development Plan. Enclosed is a copy of this document for your information and future reference.

This Route Development Plan outlines a vision for the future development of US 12 by recommending improvement strategies for existing and future deficiencies of the transportation system along the US 12 corridor.

This final version of the US 12 Route Development Plan includes many of the comments and suggestions received from community involvement, the steering committee members, and WSDOT internal staff during their review of this document. Any future comments or suggestions will be kept with the project files.

If you have any questions, please call Larry Anderson at (360) 357-2710.

Sincerely,

Robert E. Jones
Transportation Planning Manager
WSDOT Olympic Region

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
OLYMPIC REGION
TUMWATER, WASHINGTON

ROUTE DEVELOPMENT PLAN
UNITED STATES ROUTE 12
Milepost 0.00 to Milepost 46.62

US 101 in Aberdeen
to
Interstate 5 in Grand Mound

APRIL 1999

GARY F. DEMICH, P.E.
REGION ADMINISTRATOR

ROBERT E. JONES
TRANSPORTATION PLANNING MANAGER

Participating Agencies and Individuals

The following individuals participated in the creation of the *US 12 Route Development Plan* as Stakeholder representatives of their jurisdictions.

City of Aberdeen
Mr. Ron Merila

City of Elma
Mr. Jim Starks

City of Oakville
Mayor Bernard Meile
Ms. Darla Taylor, Councilmember
Mr. Daniel B. Thompson, Maintenance Director

City of Montesano
Mr. Mike Wincewicz
Mr. Clint Dice

Chehalis Indian Reservation
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Port of Grays Harbor
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Grays Harbor County Planning
Ms. Lee Hansmann
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Grays Harbor Regional Planning Commission
Ms. Vicki Cummings

Grays Harbor Transit Authority
Mr. Don Fargo

Thurston County
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WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
OLYMPIC REGION

ROUTE DEVELOPMENT PLAN

UNITED STATES ROUTE 12
US 101 TO I-5
MP 0.00 TO MP 46.62

Approved By:

Region Administrator, Olympic Region — Date: Apr 27, 1999

Concurrence:

State Design Engineer, O.S.C. — Date: 5/24/99

Concurrence:

Transportation Planning Office Manager, O.S.C. — Date: 5/24/99

Vision Statement

An efficient network of transportation facilities in the Puget Sound Region is vital to moving people and goods. Transportation affects us all, our lives and livelihoods are predicated on an efficient transportation system that offers opportunities for various choices and modes of travel. To many extents our transportation facilities have served our travel needs, but they were constructed to accommodate a population of the past. It is evident that many transportation facilities in Washington State are now experiencing their service limits.

In order to assure an efficient transportation system for the future, it is important to plan for the growth that continues to occur. This *Route Development Plan* (*RDP*) outlines a vision for the future development of United States Route 12. It was created by a Stakeholder Committee and citizens who took an active interest in the transportation planning process. This *RDP* provides recommended improvement strategies to existing and future deficiencies of the transportation system in the US 12 corridor. Some of the recommended improvements in this *RDP*, such as access management implementation, are critical to assure adequate operation of US 12 in the future.

The recommended improvements and goals for the future development of US 12 were achieved through cooperative planning efforts and consensus with affected city, county, and regional agencies. The United States Route 12 Stakeholder Committee members provided valuable contributions in the development of this RDP. They shared with the committee their respective jurisdiction's Comprehensive Plans and transportation goals, policies, and targeted highway improvement projects. Collectively, these Comprehensive Plans and the *WSDOT State Highway System Plan* provided the impetus for what is recommended in this *US 12 Route Development Plan*.

US 12 Route Development Plan

Study Limits

The study limits of this *RDP* begin at the US 101/US 12 intersection in Aberdeen, and end at Interstate 5 in Thurston County. The milepost limits are from MP 0.00 to MP 46.62.

Organization of this Report

This US 12 Route Development Plan is organized by various topics. **Chapter 1** discusses the route location, its classifications, and existing conditions such as highway alignment, right-of-way, and geometric cross sections.

Traffic information and land use are presented in **Chapter 2**. Highway operating Levels of Service (LOS) are summarized, and tables are provided that highlight existing and future LOS forecasts for highway segments.

Chapter 3 focuses on environmental issues at a screening level of analysis. This provides an overview of existing environmental conditions and resulting concerns and/or limitations for the study area. Future highway projects will likely require an in-depth analysis of these conditions.

Chapter 4 presents recommendations for highway improvements. Nearly all of the mobility improvements listed will required additional revenue authority in order to be designed and constructed.

Chapter 5 presents the various funding and implementation options that may be utilized for the projects that may come from recommendations in this *RDP*.

Appendix A summarizes the jurisdictional and public involvement process and lists the objective statements that were developed and adopted by the Stakeholder Committee. These efforts were invaluable in the formation of this report, allowing the Stakeholder Committee to make decisions and recommend improvements based on many different agency and public needs.

Appendix B offers selected text from WAC 468-52 for informational purposes as it relates to highway access management.

Appendix C provides a glossary of terms and abbreviations used in this RDP.

Appendix D contains the references used in the preparation of this RDP.

Stakeholder and Public Involvement

A Stakeholder Committee was formed to guide transportation decisions and reach a common vision on issues discussed in this *Route Development Plan*. This Committee includes representatives from city, town, county, regional, and transit agencies. Individual participants are listed in the front of this summary.

Public workshops were conducted by the Stakeholder Committee to solicit comments from the traveling public regarding issues or concerns that they have with the corridor and to hear their ideas about potential highway improvements.

Stakeholder Committee Recommendations

The recommendations in this *Route Development Plan* represent the efforts of many discussions with local agencies and the public. To aid the Stakeholder Committee in reaching consensus on issues such as mobility, access management, and highway safety improvements, many WSDOT documents, including the current *State Highway System Plan, January 1998* and available city and county comprehensive planning documents, were reviewed. The *WSDOT Access Management Plan* classifications of US 12 provided guidance to the Committee on the type of roadway proposed as part of the mobility recommendations. The following pages provide a brief summary of the Stakeholder Committee's recommendations. A complete discussion of recommendations is presented in Chapter 4.

Summary of Stakeholder Committee Recommendations

General Recommendations

Several sections of US 12 fall within one mile of a school. Future projects should include coordination with the local school districts for possible construction of student walking facilities and to minimize impact to school facilities.

The Stakeholder Committee has agreed to adopt the preferred alternative being developed in the *Aberdeen - Hoquiam Corridor Project Environmental Impact Statement*. Due to this continuing EIS process, no other capacity improvement recommendations are suggested in this Plan for downtown Aberdeen. Additionally, the Stakeholder Committee recommends that the pedestrian walkway crossing over the Wishkah River be improved to ADA standards.

Aberdeen to Devonshire Road Recommendations

Channelization of intersections at warranted locations.
Limit access points and at grade intersections.
Provide more effective signing to direct visitors to and from their destinations.
Emphasize Travel Demand Management (TDM) strategies.

Devonshire Road to SR 8 Recommendations

Construct interchanges at the Satsop Road, Brady Road and Keys Road at grade intersections. As an interim measure, construct left and right turn deceleration and acceleration lanes.
Encourage TDM Strategies.

Elma to the City of Oakville Recommendations

Construct passing lanes between Elma and Oakville.
Improve sight distances as required.
Realign intersections as required.
Widen / replace deficient bridges.
Emphasize Travel Demand Management (TDM) strategies.
Maintain and pursue present Class 2 and 3 Access Management Plan for this route segment per WAC 468-52.
Channelize intersections where warranted.

City of Oakville Recommendations

The City of Oakville should notify WSDOT of any meetings of their Oakville Development Committee in order to facilitate the coordination of transportation improvements between the city and WSDOT

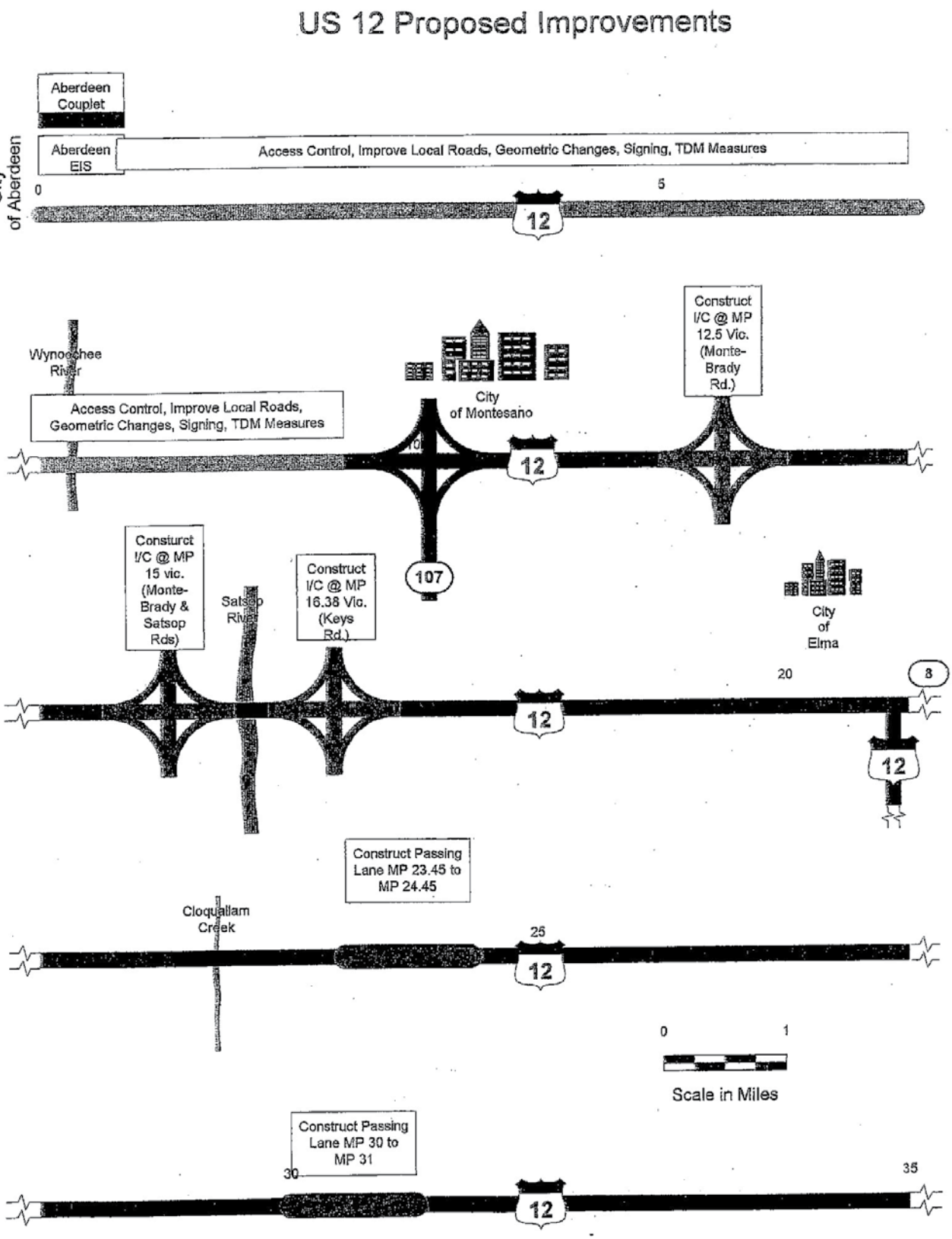
City of Oakville to Grand Mound Recommendations

Construct four to five lane sections from Anderson Road vic. to I-5.
Construct a couplet around Rochester.
Realign intersections as required.
Install signals where warranted.
Widen / replace deficient bridges.
Emphasize Travel Demand Management (TDM) strategies.
Maintain and pursue present Class 2 and 3 Access Management Plan for this route segment per WAC 468-52.
Channelize intersections where warranted.
Investigate for possible needed access management revisions during the design phase.

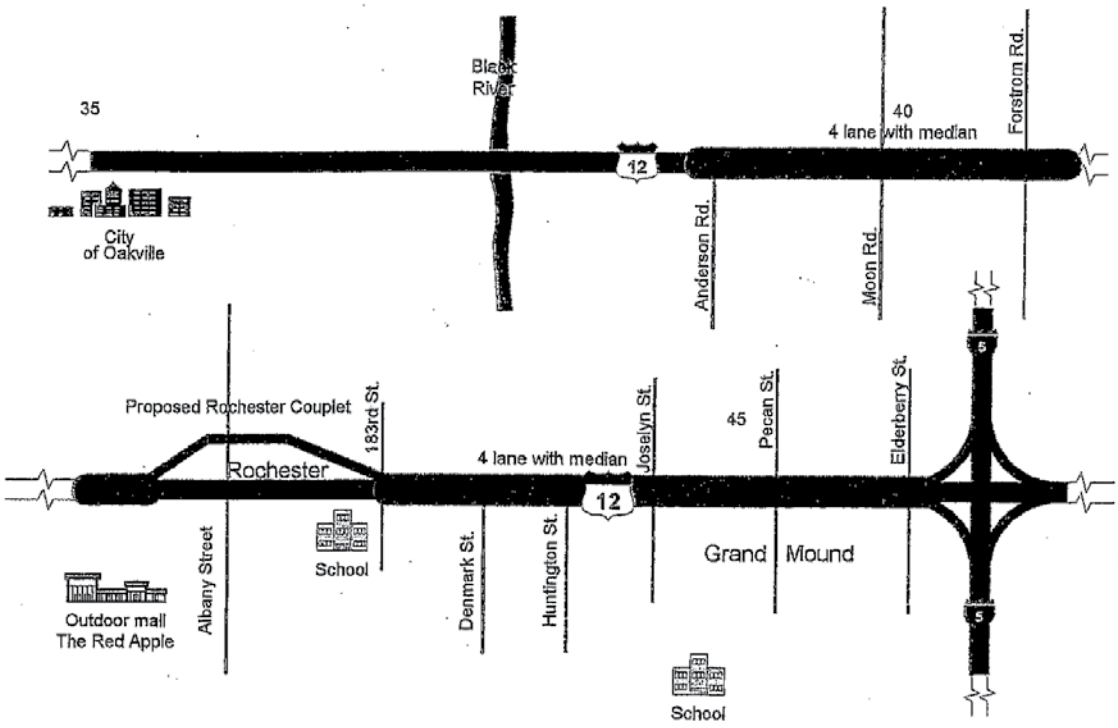
Conclusion

Planning is an ongoing process and must be flexible in order to incorporate unforeseen trends. One of the goals of this plan is to integrate the Department of Transportation's needs with the needs of local transit authorities, cities, counties, regions, citizen groups, and the traveling public. It is believed that this plan along with a certain amount of flexibility will provide a safe and well integrated transportation system for United States Route 12. This Route Development Plan will be updated and modified periodically.

When approved, this long range plan will provide guidance for development of the Olympic Region's program of projects as well as guiding the Region's Development Services Team in defining developer impact mitigation measures. The Washington State Department of Transportation would like to express its sincere appreciation to the individuals and local and regional agencies that took an active role in the development of this plan. The WSDOT encourages these agencies to actively participate in future planning processes and to review and comment on the contents of this plan. Final approval of the United States Route 12 Route Development Plan will be issued by the WSDOT Olympic Region Administrator.


US 12 Proposed Improvements
Aberdeen Couplet
Aberdeen EIS
Access Control, Improve Local Roads, Geometric Changes, Signing, TDM Measures
City of Aberdeen
0
5
12
Wynoochee River
Access Control, Improve Local Roads, Geometric Changes, Signing, TDM Measures
City of Montesano
Construct I/C @ MP 12.5 Vic. (Monte-Brady Rd.)
12
Consturct I/C @ MP 15 vic. (Monte-Brady & Satsop Rds)
Satsop River
Construct I/C @ MP 16.38 Vic. (Keys Rd.)
107
City of Elma
20
8
12
12
Construct Passing Lane MP 23.45 to MP 24.45
Cloquallam Creek
25
12
0
1
Scale in Miles
Construct Passing Lane MP 30 to MP 31
30
35
12

US 12 Proposed Improvements



0 1

Scale in Miles

= GENERAL IMPROVEMENTS

= NO IMPROVEMENTS PROPOSED

= SPECIFIC IMPROVEMENTS

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Chapter 1 Description of Existing Facility and Services

1.1 Highway Location and Route Overview

This US 12 Route Development Plan addresses the portion of US Route 12 contained within the Olympic Region of the Washington State Department of Transportation, from the route's beginning in the City of Aberdeen to the junction with Interstate 5 in Grand Mound. (See the vicinity maps on pages 1-5 and 1-6.) The following sections describe the varying existing highway characteristics of US 12.

US 12 in the City of Aberdeen

In the downtown area of Aberdeen, the route begins as a one-way couplet system, providing two or more lanes each direction, with a posted speed limit of 30 miles per hour. In this area US 12, together with US 101, provides a main artery in the city's grid system. Land use developments are primarily commercial with numerous public and private intersections and driveway approaches. Curbing and sidewalks support pedestrian and non-motorized travel, while helping delineate legal road approaches.

The Multi-lane Highway from Aberdeen to Devonshire Road Interchange

Leaving Aberdeen and entering the area known as Central Park, US 12 is a four-lane divided highway (2 lanes each direction, separated by median barrier). The speed limit increases to 45-55 mph in this area. Frequent breaks in the median occur at public road intersections. At these "full access" intersections, left turn channelization has been provided. Some right turn lanes have also been constructed. Other public and private roads, including over 100 private driveways, intersect US 12 in this section, but due to the median barrier, access to these has been reduced to right turns on and off of US 12. The highway shoulders in some areas are narrow.

Between Clemons Road and the beginning of the freeway at Devonshire Road, the median is unprotected. A wide yellow stripe separates the opposing travel lanes. The Wynoochee Bridge falls within this section and does not offer any usable shoulder. This section of US 12 serves as a transition in roadway character (and a change in driver expectancy) between the Central Park multi-lane section and the freeway.

The Freeway from Montesano to Elma

Continuing eastbound on US 12, the corridor "opens up" near the Devonshire Road Interchange in Montesano, where the route becomes a freeway, with full control limited access. A soil median separates the two travel lanes in each direction. The current posted speed limit is 60 miles per hour. This character continues to the

US 12/SR 8 Interchange in the City of Elma.

This section of US 12 has been developed over time with the construction of several interchanges (Devonshire Road, US 12/SR 107, Satsop, and Elma interchanges). These interchanges have helped reduce accidents and increase capacity by eliminating at-grade intersections from the more heavily traveled roads near populated areas. However, several at-grade intersections still exist in this segment between Montesano and Elma and are viewed by the Stakeholder Committee as issues to address.

The US 12 freeway ends at the Elma / SR 8 Interchange. At this point the SR 8 freeway begins, and it provides travelers with a connection to US 101 in the Olympia area.

The Two-lane Highway from Elma to Grand Mound

At the interchange with State Route 8 in Elma, US 12 changes direction and becomes a two-lane rural highway traveling southeast through the communities of Malone, Porter, Oakville, and Rochester until it joins I-5 near Grand Mound. The posted speed limit is predominately 55 miles per hour through the rural sections, with lower speed limits through the towns. Some intersections have been channelized, providing left or right turn lanes for safer access to and from the highway. However, most of the county road intersections in this segment have not been channelized and several intersect US 12 at sharp angles. With the mix of heavy trucks in the traffic stream, motorists find it difficult to pass slower vehicles along this two-lane highway. Some segments of US 12 in this area of the corridor have been "carved out", with rock bluffs to the immediate east and an existing railroad and the Chehalis River following closely along the west side of the highway.

Throughout the length of US 12 as addressed in this report, the route travels mostly through the Chehalis River Valley and passes through various communities interspersed with areas of relatively flat sections of farm land.

1.2 Character of Traffic and the Local Network of Roads

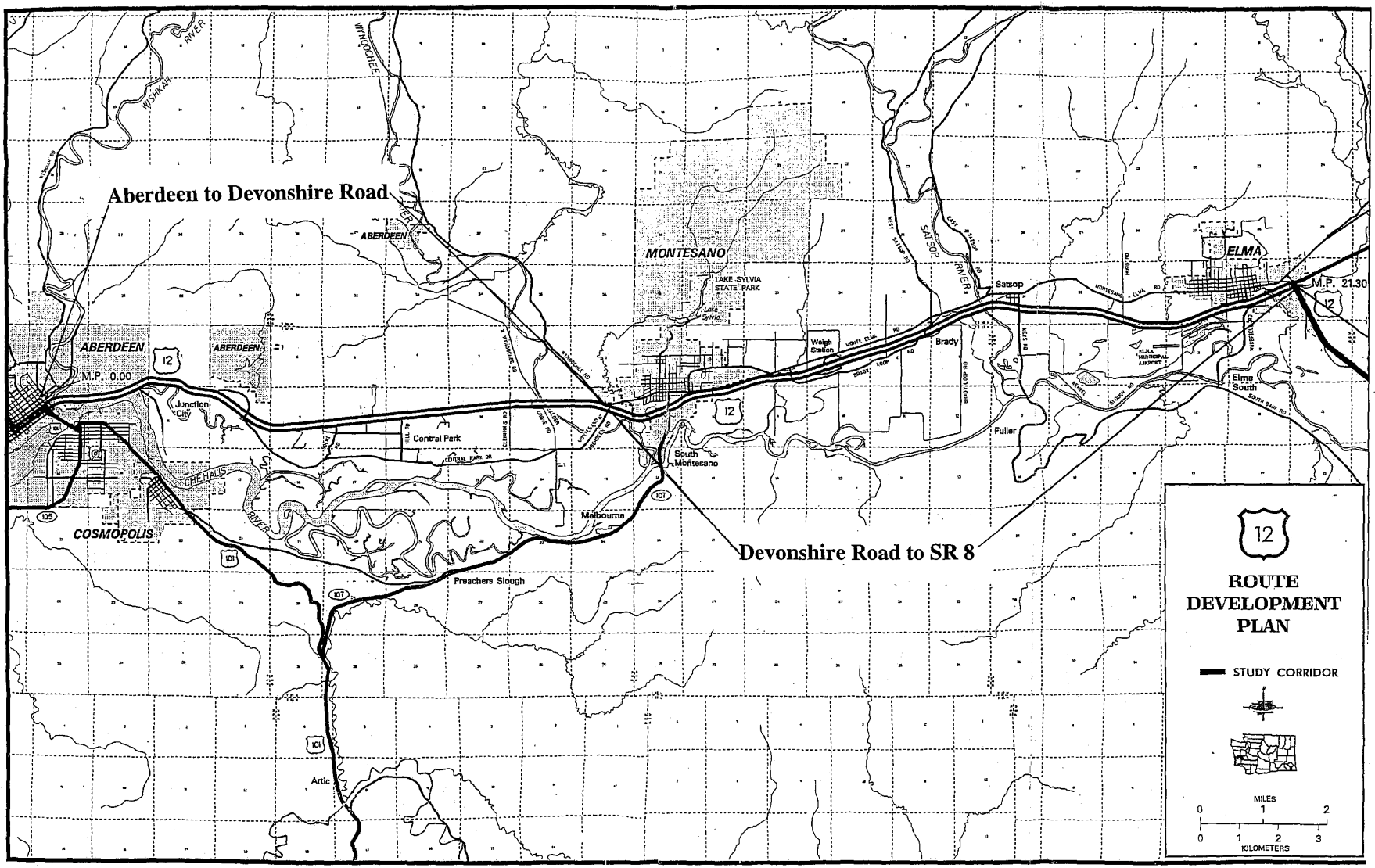
US 12 provides a primary travel corridor that links the cities of Aberdeen, Montesano, and Elma, in Grays Harbor County with the South Puget Sound area at Interstate 5 in Grand Mound, in Thurston County. US 12 provides travelers with a connection to US 101 in Aberdeen, for trips to and from the Olympic Peninsula and the Washington Coast. The traffic mix on US 12 consists of commuters, recreational vehicles, and a fairly high volume of freight traffic. The Olympic Peninsula and ocean beaches draw many tourists each year. Traffic volumes along the route are highest in the summer season due to the area being a "Gateway" to the Olympic National Park and the Washington coastline.

Traffic volumes are anticipated to continue to grow at a steady rate. Growth rates based on land use are expected to range from two percent to nearly four percent annually over the next twenty years. This increased population of vehicles using the corridor will cause a substantial increase in needed mobility improvements in order to maintain an acceptable operating level of service (LOS). This increased demand is expected to be difficult to accommodate along some sections of the highway due to land uses and environmental constraints.

In addition to US 12, other local and regional roadways provide motorists with other travel options along the US 12 corridor area of Grays Harbor and Thurston Counties. However these county roads do not offer the direct, long range connections that US 12, US 101, and SR 8 provide. US 101 is the only route serving much of the Olympic National Park and the various beaches, towns, Indian Reservations, and communities on the Olympic Peninsula.

Local county roads such as Central Park Drive, South Bank Road, Keys Road, and Schouweiler Road provide important local access facilities for those living and working in the area of US 12.

US 101 south of Aberdeen provides valuable links to the communities of Westport, Grayland, and the Twin Harbors/Longbeach areas. While the entire route is a major freight and tourist corridor, the portion of US 12 between Montesano and I-5 also provides a vital connection between the farming communities and serves as a farm-to-market road.



U S Route 12 Route Development Plan

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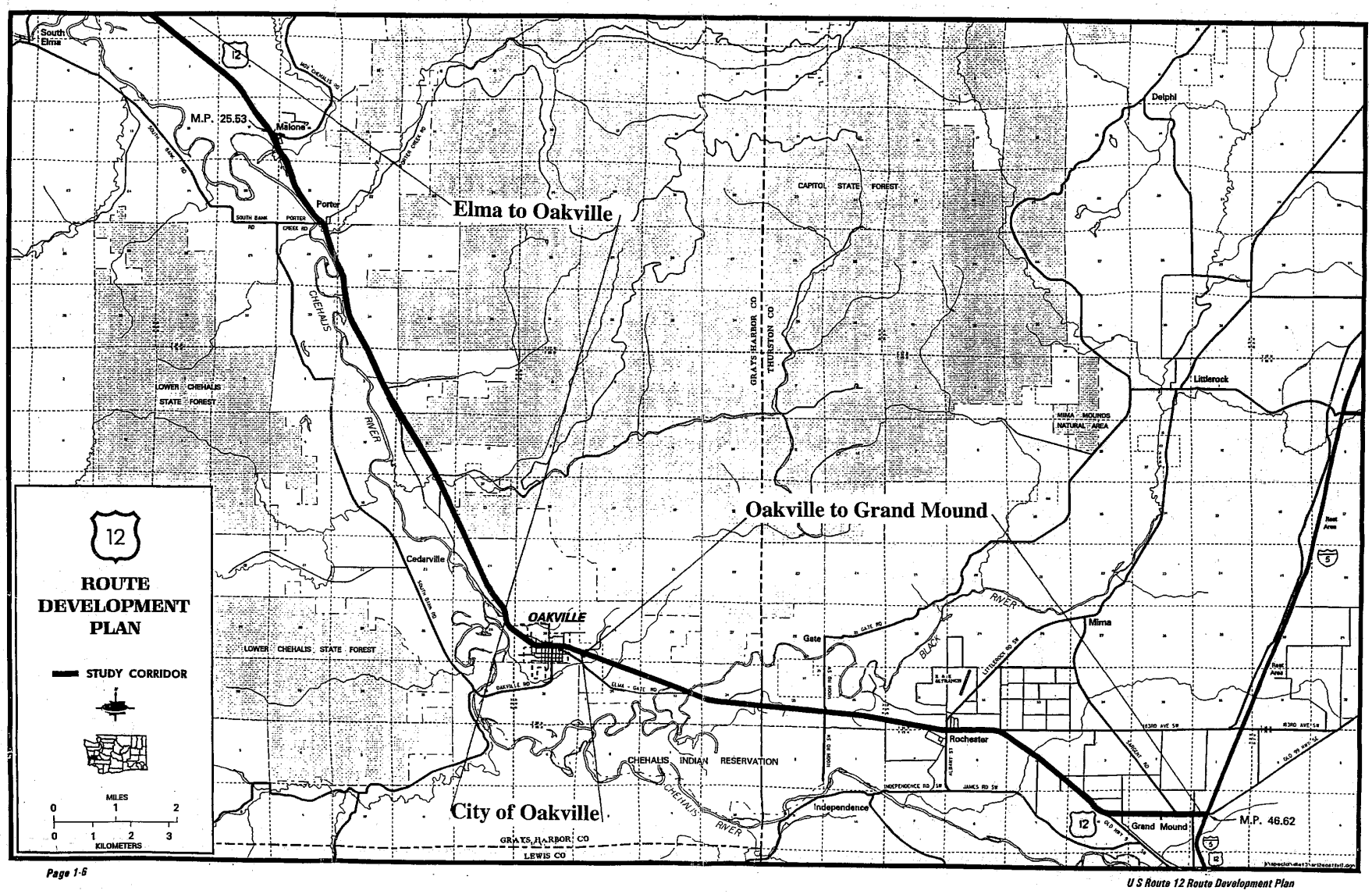

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U S Route 12 Route Development Plan

1.3 US 12 Route Classifications

All of the state and federal highways in Washington are classified under various systems to allow for appropriate development and design standards. The following sections describe the various classification systems as they apply to US 12. Access Management is a major topic and is presented separately in Section 1.4.

National Highway System

The entire length of United States Route 12 in Washington State is designated as part of the National Highway System (NHS).

The fact that US 12 is part of the National Highway System influences the level of standards applied to design elements during project development. The *WSDOT Design Manual* contains information about these standards. Chapter 5 of this *Route Development Plan* provides a further discussion on design standards as well.

The National Highway System (NHS) consists of highways designated as part of the Interstate System, other urban and rural principal arterials, and highways that provide motor vehicle access between such an arterial and major port, airport, public transportation facility, or other intermodal transportation facility. The NHS includes a highway network that is important to the United States strategic defense policy and provides defense access, continuity, and emergency capabilities for the movement of personnel, materials, and equipment during times of war and peace. It also includes major network connectors that provide motor vehicle access between major military installations and other highways that are part of the strategic highway network.

Functional Classification

The State Functional Classification for US 12 is Principal Arterial.

- From milepost 0.00 to milepost 7.05, US 12 is an **Urban Principal Arterial.**
- From milepost 7.05 to 46.62, US 12 is designated as **Rural Principal Arterial.**

The functional classifications play an important role in determining appropriate levels of design standards for Washington's highways.

The WSDOT has subdivided all state highways into functional classifications such as:

- Interstate
- Principal Arterial
- Minor Arterial
- Collector

Highways in each classification generally have a distinct and predominant function in serving different types of traffic and traffic generators. The objective of functional classification is to define appropriate purposes of various highways in providing service and influencing development. The result should be a system that meets needs in an economical and efficient manner.

Scenic and Recreational Highway System Status

US 12 is designated as one of Washington's Scenic and Recreational Highways from its beginning at the junction with US 101 in Aberdeen to the connection with SR 8 in Elma. The two-lane highway section from Elma to Grand Mound is not included in the current Scenic and Recreational Highway System.

Washington's Heritage Corridor Program oversees the Scenic and Recreational Highways of Washington State. The preservation of the Scenic and Recreational Highways of Washington State is dependent upon successful financial and policy based partnerships between the property owners along the routes, resource management agencies, local governments, tribes, corridor advocacy groups and the public. Together these groups work for the long term stewardship of the resources that make these routes special. Many Scenic and Recreational Highways are eligible for national recognition and potential funding under the National Scenic Byways Program. More information about this program is available from Washington Department of Transportation's Heritage Corridor Program.

Freight and Goods Transportation System Status

US 12 has various designations in the Statewide Freight and Goods Transportation System (FGTS), based on freight tons transported annually over various segments of the highway.

Roads on the FGTS (which includes various local and county facilities) have designated classifications ranging from "T1" to "T5". Routes with a "T1" designation carry the most annual freight tonnage (over 10,000,000 tons) and "T5" routes carry the least annual tonnage (equivalent to 100,000 tons per year).

Table 1.3-1 US 12 F.G.T.S. Classifications

Milepost Locations		Classification
Aberdeen couplet 0.33 to 0.68	South Newell St. to US 101	T1
0.00 to 19.93	US 12 to West Elma City Limits	T2
19.93 to 20.26	West Elma City Limits to 3rd St. Undercrossing	T3
20.26 to 20.61	3rd St. Undercrossing to East Elma City Limits	T2
20.61 to 27.14	East Elma City Limits to Porter Creek Road vicinity	T3
27.14 to 34.92	Porter Creek Road Vicinity to North Oakville City Limits	T2
34.92 to 35.50	North Oakville City Limits to South Oakville City Limits	T3
35.50 to 46.35	South Oakville City Limits to Old Highway 99 South West	T2
46.35 to 46.62	Old Highway 99 South West to Interstate 5	T1

WSDOT Freight & Goods Transportation System, 1995

While the FGTS is in essence a current inventory, the system is dynamic and periodic reviews and revisions will be needed. The forces of economic growth and change can bring about a need to add or delete routes or to change route tonnage classifications.

Roadside Classification Plan

This class system refers to the roadside of the state route. The roadside encompasses the area between the roadway pavement edge and right-of-way boundaries. Roadside character is a description of the roadside landscape from the roadway user's perspective. It describes what you see along the road as you travel it.

The *WSDOT Roadside Classification Plan* provides development guidance on issues relating to vegetation and landscaping along the route. This plan emphasizes the use of native vegetation to blend the transportation facility with the natural environment. Use of native plants also helps reduce the need for maintenance of the landscape. For further information consult the *WSDOT Roadside Classification Plan.* The *RCP* was last printed in 1996, and also contains information regarding community enhancement areas. The following sections of US 12 are shown with their existing class of roadside.

Table 1.3-2 US 12 Roadside Classification Plan Designations

Location MP to MP	Classification
0.0 to 0.40 US 101 to South Chehalis Street vicinity	Urban
0.40 to 26.00 South Chehalis Street vicinity to Mox Chehalis Creek vicinity	Rural
26.0 to 34.70 Mox Chehalis Creek vicinity to North Oakville City Limits vicinity	Forest
34.70 to 35.30 North Oakville City Limits vicinity to Center Street	Semi-urban (Oakville)
35.30 to 37.60 Center Street to Black River	Forest
37.60 to 41.70 Black River to Albany Street vicinity	Rural
41.70 to 42.20 Albany Street vicinity to Foster Street South West	Semi-Urban (Rochester)
42.20 to 46.60 Foster Street South West to Interstate 5	Rural

1.4 Access Management and Limited Access Control Classifications

Background on the Access Management Plan

Access management is a technique for protecting the carrying capacity of highways and improving highway safety. It accomplishes these goals by minimizing disruptions to through traffic by eliminating unnecessary driveways and spacing them. managing the roadway median, spacing traffic signals, and managing turning traffic. as well as other measures.

The Washington State Legislature passed a law called "Highway Access Management," RCW Chapter 47.50, in 1991. This law required the WSDOT to develop two sets of rules. The first set created an administrative application process for gaining access from private property to state highways and established access permit fees. The second set established a set of five classifications for non-limited-access highways.

Access is controlled in two ways: through the purchase of access rights or by management. A freeway is an example of a fully controlled, limited-access highway. Some highways are partially limited with access rights having been purchased for parts of the roadway, thereby restricting access but not limiting it to ramps as with freeways. Managing access is more flexible than purchasing and may be less costly to taxpayers.

The five access management classifications that have been assigned to state highways reflect different highway environments. Factors that were considered in developing the classifications are: traffic volume, speed limit, adjacent land use, functional classification, and existing access density. Typical characteristics of the five classifications are provided at the end of this section.

Access Control Design Policy

Access control is established to preserve the safety and efficiency of specific highways and to preserve the public investment. Control is effected by acquiring rights of access from abutting property owners and by selectively limiting approaches to the facility.

Facilities thus controlled are termed limited access or access controlled highways and are further distinguished as having full, partial, or modified access control. The establishment of full, partial, or modified control of access shall be considered whenever major improvements, reconstruction, relocation, or new facilities are required on all highways or whenever the route is shown on the *Master Plan for*

Limited Access Highways as "planned for access control." The access control criteria are described below.

Full Access Control Criteria
Fully controlled access highways provide almost complete freedom from disruption by permitting access connections only through interchanges at selected public roads, rest areas, viewpoints, or weighing stations, and by prohibiting all crossings and private connections at grade.

Partial Access Control Criteria.
Partial access control may be established when warranted on highways other than Interstate. Partial control provides a considerable degree of protection from traffic interference and protects the highway from future strip-type development.

Access control on partially controlled highways is exercised to the degree that, in addition to connections with selected public roads, some crossings and private driveway connections may be permitted at grade. Commercial approaches are not allowed within the limits of partial access control.

Modified Access Control Criteria.
Modified access control is intended to prevent further deterioration in the safety and operational characteristics of existing highways due to traffic interference associated with strip development by limiting the number and location of access points to the highway.

In general, modified access control is applied where some degree of control is desired, but existing and potential commercial development preclude the implementation of partial or full control.

Access Management on US Route 12

The Stakeholder Committee reviewed the present *Access Management Plan* (AMP) classifications, its associated typical restrictions and the importance of practical access management for US 12. Table 1.4-1 summarizes the existing *Access Management Plan* Classifications for US Route 12.

Table 1.4-1 Limited Access Control and Access Management Classifications

Highway Section Description with Mileposts	Current Access Classifications*	*Planned* Limited Access Control **	Speed Limit	Land Use
Aberdeen - Jct. US 101 to MP 0.83	**Class 4**	**Modified** Limited Access	30	Urban
Aberdeen - MP 0.83 to MP 0.95	**Class 3**	**Modified** Limited Access	30	Urban
Aberdeen - MP 0.95 to East City Limits (MP 1.76)	**Class 3**	**Modified** Limited Access	45	Urban
Aberdeen ECL to vic. Alderbrook Drive (MP 1.76 to MP 7.04)	**Class 2**	**Modified** Limited Access	45/55	Urban
Vic. Alderbrook Dr to Vic. Devonshire Road (MP 7.04 to MP 9.04)	**Class 2**	**Modified** Limited Access	55	Rural
Vic. Devonshire Rd. to Elma City Limits (vic. Railroad overcrossing) (MP 9.04 to MP 20.61)	**Full Control** Limited Access Established		55/60	Rural
Elma -vic. R/R Overcrossing to Cloquallum Creek Bridge (MP 20.61 to MP 21.37)	**Partial Control** Limited Access Established		60/35	Rural
Cloquallum Crk. Br. to Elma SCL (MP 21.37 to MP 21.70)	**Class 3**	**Partial** Limited Access	35/55	Rural
Elma SCL to Oakville WCL (MP 21.70 to MP 34.92)	**Class 2**	**Partial** Limited Access	55/30	Rural
Oakville WCL to ECL (MP 34.92 to MP 35.50)	**Class 3**	**Partial** Limited Access	30	Rural
Oakville ECL to vic. Albany Street in Rochester (MP 35.50 to MP 41.81)	**Class 2**	**Partial** Limited Access	55	Rural
Rochester Community-vic. Albany St. to vic. Poulson St. SW (MP 41.81 to MP 42.33)	**Class 3**	**Partial** Limited Access	30	Rural
vic. Paulson St. SW to Vic Old No. 9 Highway SW (MP 42.33 to MP 44.57)	**Class 2**	**Partial** Limited Access	55	Rural
vic. Old No. 9 Highway SW to vic. Interstate 5 (MP 44.57 to MP 46.53)	**Partial Control** Limited Access Established		55/40	Rural
vic. I-5 to Jct. Interstate-5 (MP 46.53 to MP 46.62)	**Full Control** Limited Access Established		40	Rural

Sources: * *WSDOT Access Management Plan*
** *Master Plan for Limited Access Highway Route Listing, January 1, 1988*

Access Management Plan Classifications Typical Characteristics

The following provides a brief description of the characteristics of the five different access classifications as described in the *WSDOT Access Management Plan*.

Class 1 Facility

- High speed, high traffic volumes, long trips
- Restrictive median required on multi-lane facilities
- Planned intersection spacing = 1 mile
- Minimum private connection spacing = 1320 feet
- Private direct access to the state highway shall not be allowed except when the property has no other reasonable access to the general street system.

Class 2 Facility

- Medium to high speeds, medium to high traffic volumes, medium to long trips
- Restrictive median required on multi-lane facilities
- Planned intersection spacing = 1/2 mile
- Minimum private connection spacing = 660 feet
- Private direct access to the state highway shall not be allowed except when the property has no other reasonable access to the general street system.

Class 3 Facility

- Moderate speeds, moderate traffic volumes, short trips
- Balance between land access and mobility
- Median constructed of curbed asphalt or landscaped traffic islands
- A center two-way left-turn lane may be used as warranted
- Planned intersection spacing = 1/2 mile
- Minimum private connection spacing = 330 feet

Class 4 Facility

- Moderate speeds, moderate traffic volumes. short trips
- Balance between land access and mobility
- Two-way left-turn lane is typically used
- Planned intersection spacing = 1/2 mile
- Minimum private connection spacing = 250 feet

Class 5 Facility

- Low to moderate speeds, moderate to high traffic volumes, short trips
- Highest service to land access
- Planned intersection spacing = 1/4 mile
- Minimum private connection spacing = 125 feet

For additional information regarding the *WSDOT Access Management Plan*, consult Chapter 468-51 and 468-52 of the Washington Administrative Code (WAC) and Chapter 47.50 of the Revised Code of Washington (RCW). Some of this information has been provided in Appendix B of this document.

1.5 Existing Right-of-Way

As with many transportation corridors, the right-of-way widths for US 12 vary throughout its length. A review of the US 12 highway right-of-way plan sheets was conducted to obtain a general idea of the existing right-of-way conditions. Due to the many changes in right-of-way widths along the US 12 corridor, a detailed description is not presented in this *RDP*. Further research of right-of-way information will occur during project development, as needed for future projects. A general description of highway right-of-way follows wherein the noticeable patterns of right-of-way are presented.

City of Aberdeen

The highway right-of-way for US 12 in downtown Aberdeen is generally defined by that portion of the roadway contained between curbs. These widths vary in the City and appear to range typically from 50 feet to 60 feet. Beginning in the vicinity of Fleet Street and the Aberdeen bluffs, the highway right-of-way expands to the north side to include the slopes of the bluffs. To the south side of the highway, the Burlington Northern Railroad shares a common boundary line with US 12.

Central Park Vicinity

In the Central Park area the highway right-of-way provides a corridor of approximately 100 feet or greater. In many segments, the right-of-way varies to include highway slopes and drainage structures. This section of the route appears to just "squeeze" through the natural and built environments, leaving very little space for any future roadway expansion. Future improvement projects in this area will likely require additional right-of-way.

The Freeway Section

The US 12 freeway between Devonshire Road and SR 8 provides a wider facility with a right-of-way corridor of 220 feet or greater in most cases. In the vicinity of established interchanges, right-of-way expands to contain the structures and access ramps that have been constructed in this section. The WSDOT has previously purchased right-of-way for improvements at Brady Road, Satsop Road, Schouweiler Road, and at Third Street in Elma. These parcels were purchased during the initial design phases of US 12 and may or may not meet the needs for future improvements.

The right-of-way plan sheets also show concepts for providing interchanges at the following at-grade intersections along the freeway.

- **Monte-Brady Road**
  Plan sheet #12-20 (July, 1965) indicates that a future bridge was once planned at

the milepost 12.5 vicinity that would carry Monte-Brady Road over the freeway with no access ramps.

- **Brady Vicinity (Monte-Brady and Satsop Roads)**
  Plan sheets #12-24 and 12-27 (March, 1963) identify a planned, future interchange at Brady, in the vicinity of milepost 15.

- **Satsop Vicinity (Keys Road)**
  Plan sheets #12-25, 29 and 30 (March, 1963) show plans for an interchange serving the Satsop area at Keys Road at milepost 16.4.

- **Schouweiler Road**
  Plan Sheets #12-33 and 12-35 (September, 1962) indicate that a bridge is planned to carry Schouweiler Road over US 12. The plans don't indicate that an interchange was necessary for this location.

City of Elma to Grand Mound

US 12 becomes a two-lane highway and changes direction at the interchange with SR 8 in Elma. For much of the segment running between Elma and Oakville, US 12 parallels an existing railroad, and a common property boundary is shared between the two. Right-of-way varies greatly along this two-lane section of US 12 from Elma to Grand Mound. Plan sheets #12-42 through 12-84 provide specific details.

1.6 Existing Surface Geometrics

Information regarding the configuration of existing lanes and shoulders is provided in the following table. Descriptions include dimensions of lanes, shoulders, and sidewalks, and lane functions such as General Purpose (GP) and Two-way Left-turn Lane (TWLTL). There are no High Occupancy Vehicle (HOV) Lanes established or planned for US 12. Milepost locations are used to identify where significant changes occur, such as the number of existing lanes, or where any other significant change in the geometry occurs. The information represents the conditions along US 12 in a general sense. For a thorough listing of all geometric conditions, refer to the most current WSDOT *State Highway Log* and other resources such as as-built highway plans.

Table 1.6-1 US 12 Existing Surface Geometrics

Section Description	Traffic Lanes	Shoulders & Sidewalks (dimensions)
vic. Aberdeen section (includes couplet) MP 0.00 to MP 0.60	2 through lanes each way, 12' turn lanes 3 lanes on EB couplet east of Wishkah River Bridge	Concrete curb and bridge rail to 30' asphalt in sections
Central Park vicinity to Devonshire Road vicinity MP 0.60 to MP 9.13	2 through lanes each direction with occasional turn lanes, variable asphalt median with mostly barrier throughout	3' to 8' paved shoulders
Devonshire Road vicinity to Junction with SR 8 MP 9.13 to MP 20.99	Freeway section 2 through lanes each direction	Mostly 10' paved shoulder on both sides
Junction with SR 8 to I-5	2 through lanes	Mostly 4' shoulders on both sides. Widens to 8'to 12' in towns of Oakville and Rochester to accommodate parking

Source: WSDOT *State Highway Log, 1998*

1.7 Bridge and Structure Inventory

The study limits of this *Route Development Plan* include that portion of US Route 12 from its beginning in Aberdeen to the junction with Interstate 5 in Thurston County. There are numerous bridges that are an integral part of this corridor. Many of the older structures should be widened to provide appropriate standard widths for roadway shoulders. While some of these bridges may not offer desirable shoulders, the structural integrity may be sufficient for years to come. This means that any particular bridge may not be replaced or widened, unless an improvement, such as a highway widening project, goes through the section and requires improvements be made to the structure. WSDOT periodically inspects all bridges and structures to identify preservation needs and life expectancies. Specific preservation strategies for the bridges on US 12 were not obtained for this study.

Aberdeen Vicinity Structures

As mentioned previously in this report, the *Aberdeen - Hoquiam EIS*, recommends strategies to improve traffic mobility and safety in the downtown area of the city. The improvements identified in the *EIS* and those being performed near the Aberdeen Bluffs will likely resolve any deficiencies with structures in the area. Table 1.7-1 presents an inventory of these US 12 structures.

Table 1.7-1 US 12 Bridge and Structure Inventory, Aberdeen Vicinity

Bridge Number Crossing Name	Milepost	Span Type	Length (feet)	Width (feet)
12/12 South Wishkah River, Heron St.	0.1	SS, SG	235	28
12/12 North Wishkah River	0.1	BAS, ST, CTB, CS	363	27
12/15 Aberdeen Viaduct	1.1	CTB	152	58

Source: *WSDOT 1997 Bridge List M 23-09*

Span Types:

BAS = Bascule Lift Span
CS = Concrete Slab
CTB = Concrete T-Beam
SG = Steel Girder
SS = Steel Span
ST = Steel Truss

Central Park to Elma Structures

There are no bridges on US 12 in the Central Park area, except for the Wynoochee River Bridge. The other structures identified in the following table are part of the US 12 Freeway section, and most of them appear to have sufficient shoulder widths.

Table 1.7-2 US 12 Bridge and Structure Inventory, Wynoochee River to Elma

Bridge Number Crossing Name	Mile Post	Span Type	Length (feet)	Width (feet)*	Desirable new construction width standards (feet)
12/25 Wynoochee River	8.33	ST, SB	286	44	66
12/28 Devonshire Road Undercrossing	9.40	PCB	247		
12/31S Sylvia Creek	9.65	PCB	1106	33	38
12/31N Sylvia Creek	9.65	PCB	1094	33	38
12/34S SR 107 Overcrossing	10.24	PCB	2008	33	38
12/34N SR 107 Overcrossing	10.24	PCB	1991	33	38
12/48S Satsop River Overflow #3	15.37	CS	259	30	38
12/48N Satsop River Overflow #3	15.37	CS	212	30	38
12/49S Satsop River Overflow #2	15.57	CS	175	30	38
12/49N Satsop River Overflow #2	15.57	CS	175	30	38
12/50S Satsop River Overflow #1	15.68	CS	184	30	38
12/50N Satsop River Overflow #1	15.68	CS	184	30	38
12/51S Satsop River	15.79	SA, PCB	410	30	38
12/51N Satsop River	15.79	SA, PCB	410	30	38
12/53S Newman Creek	16.87	CS	60	36	38
12/53N Newman Creek	16.87	CS	60	36	38
12/57 3RD Street Undercrossing	20.44	PCB	191		
12/59S BN RR Overcrossing (NP)	20.59	PCB	134	30	38
12/59N BN RR Overcrossing (NP)	20.59	PCB	134	30	38
12/60S SR 8/US 12 I/C US 12 Undercrossing	21.34	PCB	144	30	38
12/60N SR 8/US 12 I/C US 12 Undercrossing	21.34	PCB	144	30	38

Source: *WSDOT 1997 Bridge List M 23-09*
** Curb to Curb*
Span Types:
CS = Concrete Slab
PCB = Pre-Tensioned Concrete Beam
SA = Steel Arch
SB = Steel Beam
ST = Steel Truss

Elma to Grand Mound Structures

Numerous highway structures exist along this two-lane section of US 12 between Elma and Grand Mound, traversing several creeks, the Black River, flooding overflow areas, and railroads. Several of these bridges should be widened to appropriate design standards, providing improved shoulder dimensions. This is discussed further in Chapter 4.

Table 1.7-3 US 12 Bridge and Structure Inventory, Elma to Grand Mound

Bridge Number Crossing Name	Mile Post	Span Type	Length (feet)	Width (feet)	Desirable width (feet) for two-lane Highway *	Desirable width (feet) for four-lane Highway **
12/61 Cloquallum Creek	21.37	PCB	232	24	40	38
12/64 Mox Chehalis Creek	25.80	CTB	165	24	40	38
12/66 Porter Creek	27.35	CTB	146	24	40	38
12/68 Gibson Creek	29.93	CTB	189	24	40	38
12/70 Cedar Creek	31.80	CTB	121	24	40	38
12/73 BN RR Overcrossing (NP)	34.25	CTB	163	24	40	38
12/76 Black River	37.59	ST, CTB	169	24	40	38
12/78 Slough Bridge	38.72	PCS	131	37	40	38
12/102 Overflow Channel	39.20	PCS	138	38	40	38
12/104 Slough Bridge	39.86	TTT	60	36	40	38
12/106 Slough	40.30	CTB	45	36	40	38
12/108 Slough	41.40	CTB	45	36	40	38
12/111 Scatter Creek	43.37	CS	62	24	40	38
12/114 BN RR Overcrossing (NP)	44.92	CS	261	28	40	38
12/117 CW RR OC (CMSTPP)	46.52	CS	137	45	40	38
12/118 I-5 Overcrossing	46.57	PCB	255	45	40	38

Source: *WSDOT 1997 Bridge List M 23-09*

Span Types:

CS = Concrete Slab
CTB = Concrete T-Beam
PCB = Pre-Tensioned Concrete Beam
PCS = Pre-Tensioned Concrete Slab
ST = Steel Truss
TTT = Creosote Treated Timber Trestle

* Desirable full design level bridge width on two-lane highway

** Desirable full design level bridge width on four-lane highway assuming twin bridges

1.8 Existing Horizontal and Vertical Alignment

The horizontal and vertical alignments of the subject area of this route development plan were examined. The vertical alignments of US 12 generally provide travelers with fairly level grades. There is an isolated 9.41% grade on a bridge ramp area over the Wishkah River for a short distance. The minimum and maximum vertical curve lengths used are 100 ft and 2200 ft.

For the horizontal alignment, the curve radii range from 155 ft to 6000 FT., with the lengths of curves ranging from 60 ft. to 2906 ft. The horizontal alignment is fairly good along US 12. There is an area of reverse horizontal curvature along the two-lane section of the highway in the Oakville vicinity. For a complete listing of this data, refer to the most current version of the *Horizontal and Vertical Alignment Report* from the WSDOT Trips System and other sources such as plan sheets and surveying data.

1.9 Existing Traffic Signals

The following table provides information relating to existing traffic signals on US 12. Traffic signals are further discussed in Chapter 4 of this document, where possible future signal locations are presented for the Central Park section.

Table 1.9-1 US 12 Existing Traffic Signal Locations

Intersecting Street Name	Milepost	Speed Limit (mph)
East Heron Street	0.00	30
Chehalis Street	0.39	30
Wishkah Mall on right. South Tyler St. on left	0.54	30
Pioneer Road (Flashing yellow for fire station)	5.50	50
Albany Street	41.88	30
Elderberry Street on left, Old Hwy 99 SW on right	46.37	40

1.10 Existing Public Transit Service

Public transit services can create a positive effect on US 12 and the local transportation network by reducing the volumes of general purpose vehicles. The WSDOT supports efforts to provide increased transit service to US 12 and is committed to providing safe and efficient access to transit users along the route.

Intercity Transit

Intercity Transit provides a wide range of transportation services including fixed route, ridesharing, and paratransit services. Intercity Transit's ridesharing service matches people with carpool partners and coordinates vanpool formation and operation by providing training, technical assistance and vehicles for vanpool groups. In addition to operating transit service in the urban areas of Thurston County, Intercity Transit provides fixed-route connections between the urban and rural areas of Thurston County. Intercity Transit currently serves the south county area of Grand Mound and Rochester via Route #98, which provides a connection by bus between Rochester / Grand Mound to Littlerock, Tumwater and Olympia, including the Grand Mound park and ride. Intercity Transit's twenty-year plan does not show any significant changes in this route.

Grays Harbor Transit Authority

Grays Harbor Transit provides transit inter-city services to Olympia and Centralia and provides connections to Jefferson Transit in Amanda Park at Lake Quinault and to Pacific Transit in Aberdeen. Grays Harbor Transit serves the Central Park / Montesano / Elma area via Route 40 and has a transit center in Montesano and Aberdeen. There is limited service going south toward Oakville, where a weekly service is provided. Grays Harbor Transit targets routes showing increased usage for future service increases. Routes losing riders are subject to adjustment.

Chapter 2 Land Use and Traffic Conditions

2.1 Land Use and Zoning

The Washington State Growth Management Act became effective in 1992. In response to this Act, the counties and cities in Washington State have written Comprehensive Plans that address land use planning and regulation. The Comprehensive Plans are a legally recognized framework for making land use decisions. A goal required by GMA for the Comprehensive Plans is to control and direct urban growth.

Land use plans are written by city and county governments to meet their unique needs. Land use planning and regulations insure that the land uses conform to the environmental protection laws of the state and federal governments. Transportation improvements can be planned and scheduled to meet the needs of the residents. Planning and regulation of present and future land use will help the communities and counties of the State of Washington develop and prosper to meet the present and future needs of the county residents.

Grays Harbor County is exempt from the Washington State Growth Management Act and does not have a Comprehensive Plan. The county does have zoning regulations that conform to the Washington State Growth Management Act and is in the process of completing its land use plan.

Thurston County has developed a Comprehensive Plan. The plan details the county's land use planning, zoning and regulation.

Thurston County

Thurston County uses a comprehensive plan to address the difficult issues associated with land use, zoning and transportation. A comprehensive plan guides the county's physical development and identifies what transportation and other public facilities are needed to meet the needs of population growth. These plans are the framework for zoning and other development regulations, which must be consistent with comprehensive plans.

Thurston County's view of the relationship between transportation and land use is contained in the *Thurston County Comprehensive Plan*:

"*Transportation systems serve an important function in our society; they connect communities and provide routes for trade and commerce, easy access to a variety of destinations, and recreation and exercise. Transportation systems can also generate noise and safety hazards and create barriers or boundaries. In order to realize the*

most good and limit adverse impacts, transportation systems must be thoughtfully planned, and coordinated with planned land use patterns and intensities, taking into account regional and local needs in the process."

Grays Harbor County

The relationship between transportation and land use in Grays Harbor County is set down in environment impact studies, transportation studies and transportation improvement programs. These programs provide a plan for improvements to state, county, city and tribal highways and roadways as well as a six-year transit plan in and around Grays Harbor County.

2.2 Traffic Data Collection and Operational Analysis

The WSDOT Olympic Region Traffic Office collected tube and manual traffic counts from various locations along the route from Aberdeen to I-5. Most of these counts were from 1994, although some other year counts were used for comparison and projection purposes. This provided the Stakeholder Committee with current data regarding vehicle travel demand along US 12.

The *Highway Capacity Manual* and associated software were used to analyze traffic operations of highway segments. In the analysis of highway segments, the traffic volumes and associated factors used were based on actual traffic counts projected forward to 1998. Projected future traffic volumes were computed using growth rates provided by the Thurston Regional Planning Council (TRPC) travel forecast model for the Thurston County portion of US 12 and by Grays Harbor Regional Planning for Grays Harbor County.

The growth factor to increase the 1994 traffic count volumes to 1998 and 2020 values was calculated according to the following formula:

Growth Factor $= (1+p)^n$
where p = growth rate (percent growth per year)
n = number of years of growth

Table 2.2-1 provides growth rate values obtained from the two counties.

Table 2.2-1 Annual Growth Rates and Sources

Highway Section Description	Annual Growth Rate %	Source
City of Aberdeen from US 101 to Fleet Street	2	Grays Harbor Regional Planning and the *Aberdeen-Hoquiam Project EIS*
Fleet St to Clemons Rd	2	Grays Harbor Regional Planning
Clemons Rd to SR 8 I/C	2.1	
SR 8 I/C to Anderson Rd	2	
Anderson Rd to Albany St	3	Thurston Regional Planning Council T Model Base year 1994 PM peak network
Albany St to Joselyn Rd	3	
Joselyn Rd to Sargent Rd	3	
Sargent Rd to Interstate 5	2.4	

2.3 Present and Future Traffic Conditions

Level of Service Defined

Level of service (LOS) describes a range of operational conditions within a traffic stream. There are six different levels of service which are denoted by letters from A to F, as shown in Table 2.3-1. Level of service A represents free-flow conditions while LOS F represents stop-and-go operating conditions. Level of service E generally indicates that a facility is operating at or beyond capacity and that speeds can drop significantly under less than ideal conditions. Passing is virtually impossible on a two-lane facility and platooning becomes intense.

The *Highway Capacity Manual, 1994 Update*, defines level of service for arterials in terms of average travel speed for all vehicles on the arterial. Average travel speed on an arterial is influenced by the spacing and number of traffic signals on the arterial and by delays to through movements caused by turning vehicles at intersections and driveways. Levels of service as described in the *Highway Capacity Manual* are outlined in the following table.

Table 2.3-1 Level of Service Defined for Arterial Segments

Level of Service	Operating Conditions
A	• Free-flow operations at average travel speeds • Vehicles completely unimpeded within the traffic stream • Stopped delays at intersections are minimal
B	• Reasonably unimpeded operations at average travel speeds • Maneuverability within traffic stream is slightly restricted
C *(minimum LOS for Washington's Rural Highways)*	• Stable operations • Ability to maneuver becomes more restrictive • About 50% of average free-flow speed is achieved
D *(minimum LOS for Washington's Urban Highways)*	• Small increases in flow may cause substantial increases in delays and speed • Average travel speeds are about 40% of free-flow speeds
E	• Significant delays and average travel speeds of one-third of the free-flow speed • Adverse progression, high signal density, high volumes typical
F	• Average travel speeds as low as 25% of free-flow speeds • Intersection congestion likely at critical signalized intersections • High delays and queuing expected

Sources: *Highway Capacity Manual, 1994*

Level of Service Standards for US 12

From the beginning of US 12 through Aberdeen (including the one-way couplet) to Alderbrook Drive at MP 7.05, the route is classified as "Urban". The remainder of the route within the study area is classified as "Rural". These Urban and Rural designations are important to WSDOT due to established minimum Level of Service (LOS) objectives for Washington's highways. For example, the Mobility Program of the *WSDOT State Highway System Plan* states:

> ***"Mitigate congestion on urban highways in cooperation with local and regional jurisdictions when the peak period level of service falls below Level of Service D."***
>
> ***"Provide uncongested conditions (Level of Service C) on rural highways."***

Existing and Projected Operating Levels of Service

Without any capacity improvements to the existing facility, the traffic operations on US 12 will continue to deteriorate below current WSDOT standards in many sections by 2020.

The highway capacity segment analysis was performed to determine the operational levels of service of the existing and future traffic conditions on US 12. The following tables summarize current and future level of service operating conditions. Specific improvements are discussed in Chapter 4, Stakeholder Recommendations.

Urban Arterial Level of Service on US 12 in Aberdeen

The *Aberdeen-Hoquiam Project* technical reports provide detailed descriptions of existing and projected traffic volumes and associated level of service. For further understanding of existing and future traffic conditions, levels of service, and a description of the "Preferred Alternative" for US 101 and US 12 in downtown Aberdeen, consult these reports. Since this area falls under the urban designation, a minimum level of service D is desired.

US 12 Urban Arterial Level of Service - Fleet Street to Alderbrook Drive

Table 2.3-2a uses the 2% growth rate and provides traffic volume and level of service information for US 12 between Fleet Street (the eastern terminus of the *Preferred Alternative* in the *Aberdeen-Hoquiam EIS*) and Alderbrook Drive (the end of the Urban-classified section of US 12). This includes the area known as Central Park. Since this section is defined as Urban, the minimum level of service for US 12 is LOS D. Using the 2% growth rate provided by Grays Harbor County, it can be seen from Table 2.3-2a that much of this section will fall below this standard without any highway improvements by year 2020.

Table 2.3-2a US 12 Urban Arterial (Fleet Street to Alderbrook Drive)
Existing and Projected Traffic Volumes and Levels of Service Without Mobility Improvements using a 2% growth rate

Segment Description	Current Conditions			Future Conditions Without Improvements		
	1998 ADT	1998 DHV	1998 LOS	2020 ADT	2020 DHV	2020 LOS
Fleet Street to Copeland Road MP 0.62 to MP 1.93	25,490	3,060	C	39,400	4,750	E
Copeland Road to Lake Aberdeen Road MP 1.93 to MP 3.50	25,490	3,060	C	39,400	4,750	E
Lake Aberdeen Road to Solki Road MP 3.50 to MP 5.00	21,950	2,630	B	33,950	4,070	E
Solki Road to Alderbrook Drive MP 5.00 to MP 7.05	19,640	2,360	B	30,400	3,650	D (acceptable)

By comparing previous WSDOT traffic counts over a period of several years, a historic growth rate can be calculated. The historic growth rate for the Central Park area of US 101 is 1.5%. As shown in table 2.3-2b below, calculating the projected LOS using the 1.5% historic growth rate yields an acceptable year 2020 LOS for this area. If the future growth rate exceeds the WSDOT projected growth rate, then it is likely that the LOS will fall below standards and more stringent measures may be required to alleviate the increased congestion.

Table 2.3-2b US 12 Urban Arterial (Fleet Street to Alderbrook Drive)
Existing and Projected Traffic Volumes and Levels of Service Without Mobility Improvements using a 1.5% growth rate

Segment Description	Current Conditions			Future Conditions Without Improvements		
	1998 ADT	1998 DHV	1998 LOS	2020 ADT	2020 DHV	2020 LOS
Fleet Street to Copeland Road MP 0.62 to MP 1.93	25,490	3,060	C	35,370	4,240	D
Copeland Road to Lake Aberdeen Road MP 1.93 to MP 3.50	25,490	3,060	C	35,370	4,240	D
Lake Aberdeen Road to Solki Road MP 3.50 to MP 5.00	21,950	2,630	B	30,460	3,660	D
Solki Road to Alderbrook Drive MP 5.00 to MP 7.05	19,640	2,360	B	27,250	3,270	C

Level of Service with Improvements

- A level of service analysis was conducted to determine the type of facility required in order to achieve a minimum LOS D for this urban segment. The analysis using the 1.5% growth rate shows an acceptable LOS in the year 2020. If the actual growth rate exceeds the historic trend line growth rate, then a six-lane-wide divided highway may be required in order to provide a LOS D or better by year 2020.
- Chapter 4 presents the recommendations.

US 12 Rural Arterial Level of Service - Alderbrook Drive to Devonshire Road Interchange

Mobility improvements to US 12 will be necessary from Alderbrook Drive to Clemons Road in order to maintain the adopted level of service standard of LOS C or better on state highways in rural areas (if the rural/urban boundary remains static). However, due to the short section of roadway involved and the likelihood that this section will be classified as "Urban" in the next census update, no improvements other than access management are recommended at this time. (LOS D is satisfactory for urban areas.)

Table 2.3-3 US 12 Rural Arterial (Alderbrook Drive to Devonshire Road Interchange) Existing and Projected Traffic Volumes and Levels of Service Without Improvements

Segment Description	Current Conditions			Future Conditions Without Improvements		
	1998 ADT	1998 DHV	1998 LOS	2020 ADT	2020 DHV	2020 LOS
Alderbrook Drive to Clemons Road MP 7.05 to MP 7.80	19,640	2,360	B	30,400	3,650	D
Clemons Road to Devonshire Road MP 7.80 to MP 8.93	18,390	2,210	B	29,600	2,700	B

US 12 Rural Freeway Level of Service - Devonshire Road I/C to SR 8 Elma I/C

Table 2.3-4 indicates that the existing and future year 2020 traffic conditions are expected to remain within reasonable operating levels along this rural freeway section of US 12. The target LOS for rural areas is C or better.

An interesting observation of data presented in Tables 2.3-2 through 2.3-4 is that on US 12 the further west one travels toward Aberdeen, the more traffic volumes increase and the facility itself drops in character from a full standards freeway to an arterial highway. This is the opposite of what would be desirable to accommodate the inevitable increase in traffic growth. Certainly the difference in types of facilities US 12 offers travelers has much to do with the built environment in the Aberdeen and Central Park areas, making it difficult to widen the highway or extend the freeway westerly in the name of level of service standards. Chapter 4 addresses this dilemma in further detail.

Table 2.3-4 US 12 Rural Freeway (Devonshire Road Interchange to SR 8 Interchange) Existing and Projected Traffic Volumes and Levels of Service

Segment Description	Current Conditions			Future Conditions Without Improvements		
	1998 ADT	1998 DHV	1998 LOS	2020 ADT	2020 DHV	2020 LOS
Devonshire Road vic. MP 8.93 to MP 9.12	18,390	2,210	B	29,600	2,700	B
Devonshire Road to SR 107 MP 9.12 to MP 10.7	18,350	2,200	B	29,000	3,450	C
SR 107 to Monte-Brady Road vic. MP 10.7 to MP 14.6	19,060	2,290	B	30,100	3,600	C
Monte-Brady Rd vic. to SR 8 I/C MP 14.6 to MP 21.00	18,450	2,210	B	29,140	3,500	C

US 12 Two-lane Rural Highway Level of Service - Elma to Grand Mound

With the mix of heavy trucks and recreational vehicles in the traffic stream and the roadway alignment and profile, motorists find it difficult to pass slower vehicles along this two-lane highway. Some segments of US 12 in this area of the corridor have been "carved out", with rock bluffs to the immediate east and an existing railroad and the Chehalis River following closely along the west side of the highway.

Table 2.3-5 idicates that this entire section from Elma to Grand Mound will eventually fall below the adopted standard of LOS C unless improvements are constructed. Chapter 4 presents recommendations to provide mobility improvements to this section of US 12.

Table 2.3-5 US 12 Rural Two-lane Highway (Elma to Grand Mound)
Existing and Projected Traffic Volumes and Associated Levels of Service

Segment Description	Current Conditions			Future Conditions Without Improvements		
	1998 ADT	1998 DHV	1998 LOS	2020 ADT	2020 DHV	2020 LOS
Elma Interchange (MP 21.00) to Milepost 25.00	6,030	720	C	9,300	1,120	D
MP 25.00 to State Street in Oakville (MP 35.24)	5,200	620	C	8,400	970	D
Oakville vicinity, State Street to Anderson Road (County line) MP 35.24 to MP 38.84	6,030	720	C	9,320	1,100	D
Rochester Vicinity, Anderson Rd to Albany St MP 38.84 to MP 41.88	8,390	1,010	D	16,080	1930	E
Albany St to Joselyn Rd MP 41.88 to MP 44.45	10,740	1,290	D	20,580	2,470	F
Joselyn Rd to Sargent Rd MP 44.45 to MP 46.37	10,070	1,210	D	19,300	2,320	F
Grand Mound Vicinity, Elderberry Street to I-5 MP 46.37 to MP 46.6	15,900	1,910	E	26,790	3,210	F

Level of Service With Improvements

The levels of service for this section of US 12 by year 2020 will be measurably improved with the construction of improvements recommended in Chapter 4. These improvements include constructing two one-mile long passing-lane sections between Elma and Oakville, and creating a multi-lane divided highway from Anderson Road to Interstate 5.

- ***Elma to Oakville Passing Lanes LOS***

  Passing lanes are recommended for this two-lane highway running between Elma and Oakville. A multi-lane highway analysis was performed in order to determine a future LOS condition with these improvements.

  1. It was determined that if the entire section was constructed as a four-lane highway, the resulting condition would be LOS A for year 2020.
  2. If nothing is done to improve capacity on this two-lane section, Table 2.3-5 shows that a LOS D will result by year 2020.
  3. These two analyses show a possible range of conditions from LOS D (do nothing) to LOS A (widen the entire section). Since the passing lanes would only provide two one-mile long four-lane sections, it can be assumed that future conditions will fall somewhere between the range of LOS A to D, likely LOS C. It can reasonably be assumed that the passing lanes and the relief opportunities they offer will raise the LOS on the whole section to LOS C which will satisfy the current standard.

- **Anderson Rd to I-5 Multi-lane Divided Highway LOS Predictions**

A multi-lane divided highway analysis of the section running between Anderson Road and Interstate 5 resulted in an expected condition of LOS B in the planning horizon year 2020. This will provide a marked improvement over the expected LOS F which is based on no improvements. Chapter 4 presents the details of these recommendations.

Chapter 3 Environmental and Roadside Preservation

This environmental screening was prepared by the Olympic Region Planning office. with the concurrence of the Olympic Region Environmental and Hydraulic Services unit. and provides an overview of existing environmental conditions and considerations for the study area. For the purposes of this Route Development Plan. this chapter does not include the portion of US 12 from the US 101 Intersection to the east city limits of Aberdeen. Improvements to this section of the highway are being considered, and environmental documentation for this section will be available for future reference.

3.1 Environmental Elements

Earth

The existing highway alignment traverses rolling terrain, with a few isolated steeper grades and steep slopes. The roadway profile includes grades up to 5%; most roadway cuts and embankments are 50% slope or flatter.

The Natural Resources Conservation Service (NRCS) *Soil Survey of Thurston County Area, Washington,* General Soil Map, compiled in 1985, classifies the soils in the corridor, from east to west, milepost (MP) 46.62 to MP 38.84 as:

- Spanaway-Nisqually association: Very deep, somewhat excessively drained, nearly level to rolling soils on glacial outwash terraces; and
- Chehalis-Newberg association: Very deep, well drained, nearly level soils found on floodplains.

The NRCS *Soil Survey of Grays Harbor County Area, Washington,* General Soil Map, compiled in 1983, classifies the soils in the SR 12 corridor, starting at MP 38.84 and continuing west to the end of the route at MP 0.00 as:

- Chehalis-Skamo-Spanaway: Very deep, moderately well drained to somewhat excessively drained, nearly level to gently sloping soils on flood plains, terraces and fans;
- Buckpeak-Centralia: Deep and very deep, well drained, nearly level to extremely steep soils on siltstone and sandstone uplands;
- Hoquiam-Le Bar: Deep and very deep, well drained, nearly level to steep soils on uplands;
- Zenker-Elochoman: Very deep, well drained, nearly level to extremely steep soils on sandstone uplands; and

- Ocosta: Very deep, poorly drained, nearly level soils on flood plains and deltas protected from tidal overflow.

Within these broad soil associations there are a number of soil series including the following hydric (wetland) soils: Mckenna gravelly silt loam; Rennie silty clay loam; Salzer silty clay; Nemah silty clay loam; Riverwash; Orcas peat; and Ocosta silty clay loam.

There are two geologic slide areas that have been identified within the corridor. The Malone to Porter Slide lies between MP 25.80 and MP 27.14 and originates on the north side of the highway. The Porter Slide near the City of Porter lies between MP 27.46 and MP 28.00 and also originates on the north side of the highway. Roadway developments in these areas will need further in-depth study to provide the most efficient upgrades with minimal impact to the slide areas.

Air

The US 12 corridor is not located within a designated Air Quality Non-attainment Area; however, at the time of this report, EPA is reconsidering the current National Ambient Air Quality Standards (NAAQS). New standards, if enacted, will be more stringent than those in place.

Aquatic Resources

Aquifers are geological formations of rock and soil that bear or carry water through the earth to wells or water tables. Often activities at the surface of the earth have little effect on aquifers. Occasionally there are aquifers that are close enough to the earth's surface that projects can cause impacts by limiting recharge or introducing pollutants. Currently there are no critical aquifer recharge or sensitive aquifer areas recorded in Grays Harbor County. Many of the city water systems along the corridor depend on wells and well-head protection plans that will need to be explored and/or created during individual project development.

Thurston County has mapped areas that are designated as sensitive aquifers in the Thurston County Comprehensive Plan. The US 12 corridor lies in a sensitive aquifer area from approximately ½ mile east of Forstrom Road in the City of Rochester through Grand Mound to the intersection with Interstate 5. Impacts and mitigation for this area will need to be investigated during project development.

See table 3.1-1 for waterbodies that are located within the US 12 corridor. This information was collected from on-site investigations and office review of resources such as USGS quad maps, Thurston County Critical Areas maps, Priority Habitats and

Species maps from the Washington State Department of Fish and Wildlife, air photos, and stream catalogs.

Table 3.1-1 Known Waterbodies Along US 12 Corridor

Waterbody Name	Mile Post	WRIA*
Wynoochee River	8.33	22
Sylvia Creek	9.65	22.0262, 0263
Satsop River	15.79	22
Unnamed Creek		22.0361
Sherwood Creek		
Newman Creek	16.87	22.0483
Vance Creek		22.0482
McDonald Creek		
Cloquallum Creek	21.37	22.0516
Mox Chehalis Creek	25.80	22.0535
Unnamed Creek		22.0542
Porter Creek	27.35	23.0547
Gibson Creek	29.93	23.0566
Cedar Creek	31.80	23.0571
Unnamed Creek		23.0619
Black River	37.59	23
Scatter Creek	43.37	23.0719

**Water Resource Inventory Area*

Fish passage barrier information can be obtained from Washington State Fish and Wildlife. Department of Natural Resources Stream type can be obtained from the Department of Natural Resources and local jurisdictions.

Vegetative indicators suggest that there may be a seepage wetland located on the north side of US 12 at milepost 30.5 (approximately). There are also two small areas designated on the Wetlands Map of the Thurston County Comprehensive Plan. They are located in the vicinity of Rochester. Traveling in the direction of increasing milepost, the first is located on the south side of US 12 just east of the intersection with Moon Road. The second is also located on the south side of US 12 and begins approximately ¼ mile east of the intersection with Forstrom Road and continues in a southwesterly direction to approximately ½ mile west of Forstrom Road. The wetland veers away from US 12 as it moves southwest.

When sections of the route are funded and scheduled for project development, detailed investigations and wetland delineations will be conducted to determine the actual presence and extent of wetlands and other aquatic resources.

Flooding

The majority of US 12 lies in areas that are designated 100-year flood plains as recorded on Flood Insurance Rate Maps (FIRM) for the Grays Harbor area and Flood Boundary and Floodway Maps. Both types of maps are provided by the Federal Emergency Management Agency (FEMA). Areas of US 12 between Anderson Road and Forstrom Road have been designated as 500-year flood plains by FEMA. US 12 generally parallels the Chehalis River along the entire length of the study site. Some measure of flooding occurs annually. Development within flood plains and floodways is usually restricted, not only to minimize flood damage, but also to prevent possible flood conditions from worsening.

Parts of the US 12 corridor and the associated basin are designated as flood plains. A flood plain is an area of low-lying land near rivers. The floodway is the area that contains the majority of the flow or movement of the floodwaters. Most of the areas around the Chehalis River have been classified as 100-year flood plains. The area has a 1/100 or 1% chance of flooding in any given year. In the event of a 100-year flood, the Chehalis River Basin would receive approximately 5 inches of rain over a 24-hour period. In comparison, a 2-year event is approximately 2.5 inches of rain over a 24-hour period. If it rains 2.5 inches in a 24-hour period for three days, the basin would have to retain or drain 7.5 inches of rain. The amount of rain associated with this type of event would exceed a single 100-year storm.

The Chehalis River is a long and winding river that flows adjacent to US 12, west of I-5. The Chehalis River begins in the south west corner of Lewis County and travels in a north easterly direction until it passes near the city of Chehalis where it winds and meanders in a north westerly direction and flows into the waters of Grays Harbor. The river provides fish and wildlife habitat and adds to the beauty of the surrounding area. The Chehalis River has many associated tributary rivers and creeks. These tributaries are contained within the boundaries of what is known as the Chehalis River Basin which covers approximately 2600 square miles. The accumulation of waters within the banks of the Chehalis River originates from the waters that drain these 2600 square miles of land. There are eight rivers which flow into the Chehalis, and each of these rivers has its own "drainage basin." Each of these eight basins adds its total flow to that of the Chehalis, especially during western Washington's traditionally long late-fall and spring rainy seasons. Melting snows can significantly raise the amount of water flowing across the land during the spring thaws.

There are two types of flooding that occur in the Aberdeen area, exterior and interior. Exterior flooding occurs when high waters from the rivers, streams and harbor overflow onto the surrounding land. Interior flooding occurs when the waters of the rivers, stream and harbor are not at flood stage but are high enough to prevent the current stormwater runoff systems from functioning properly.

The area between Oakville and Rochester experiences the most flooding along the route. This area tends to flood annually closing many of the local access roads as well as inundating US 12. This is the location of the junction of the Black River and the Chehalis River. Studies completed by a consultant for the county, the Chehalis Tribal Council, and other local agencies all identify two major causes for flooding in this area. The area is low within the basin and the Chehalis River tends to over-run its banks. These over-run waters tend to flow north into the Black River. Compounding this problem is the fact that the high waters of the Chehalis at flood stage prevent the waters of the Black River from flowing into the Chehalis. This in turn causes the Black River to overflow its banks adding to the overflowing waters of the Chehalis.

The land west of Rochester is higher and further removed from the Chehalis River and is not usually impacted by flooding on an annual basis. Although the Community of Rochester will be implementing a development plan which will increase the volume of surface runoff within the Rochester Sub-area, they will also be developing ways to handle, treat and disperse the added volumes so as to protect the quality of the water and wetland systems. These added volumes of runoff should not significantly impact flooding.

Grays Harbor County and Lewis County have hired a consultant to conduct a flood hydraulic analysis as well study several erosion sites along the Chehalis River. The study area runs from the mouth of the Satsop River where it flows into the Chehalis toward the Oakville area. The consultant will conduct flood damage reduction research and provide possible development recommendations to help control erosion. This study may be useful to future WSDOT flood analyses in this area.

Currently WSDOT is researching several options for upgrading the safety and efficiency of US 12 from the Aberdeen area to the community of Grand Mound. Possible transportation solutions include widening shoulders, bridges, channelization, signing, adding passing lanes, and widening the roadway to four lanes. Repairs or upgrades to existing roadways that result in additional impervious surface, a raised roadbed, or any change in water retention and capacity can change flood patterns. Resurfacing of roadways can raise the height of a roadway bed causing the roadway to act as a dike. Widening the roadway or adding a passing lane can reduce the size and capacity of natural detention areas. Culverts or small bridges should be considered to provide flood equalization wherever feasible. Alternate routes, relocating US 12 from the flood plain, should also be considered. All considerations should include an analysis of impacts to both the flood plain and local residents.

Vegetation

US Highway 12 lies in an area that is habitat to many species of plants and animals. Typical trees are the Douglas Fir, Western Red Cedar, and Black Cottonwood and various species of alder, maple, and willow. Shrubs and bushes include blackberries, salmonberries, scotch broom, huckleberry, and ornamental shrubs. Various wild and turf grasses along with mosses and lichen are common to the area. Aquatic plant life growing common in rivers and on riverbanks is also present. They provide an excellent habitat for small fish, microscopic organisms, and algae.

Fish and Wildlife

Habitat in the corridor is available for a variety of species including songbirds, hawks, amphibians, large and small mammals, resident fish, and anadromous fish.

Herbivores include deer, elk, bear, mountain beaver, muskrat and various other rodents. The Black Tailed Deer are the most abundant of the game animals. Elk and bear are much less common.

Omnivores and insectivores include bats, shrews, moles, raccoon, skunk and opossum. Other types of animals that are occasional inhabitants of the region are weasels, martens, fishers, bobcat, fox and mountain lion.

Many types of fowl are also common to the region. Wintering species include mallard, wood duck, pintail, widgeon, teal and goldeneye with the occasional Great Blue Heron or American Bittern. Upland game birds include the quail, pheasant and dove. Predatory birds include the bald eagle, marsh hawk, osprey and seven species of owl. The region is also home to many non-game birds such as the blackbird, starling, crow, hummingbird, sparrow, meadowlark, junco, wren, thrush, chickadee, jay, finch, and woodpecker.

The rivers and streams in the region are home to both resident and anadromous fish. The lower Chehalis River serves as a major migration route for fish spawning and rearing in the basin waterways. Coho, chum, and chinook salmon use the river to reach the upper tributaries where they spawn and rear their young. Resident game fish in the Chehalis River include the rainbow and cutthroat trout, bass, perch, crappie, and sunfish. The Chehalis River fishery is supplemented by a managed fish-stocking program. Salmonids are released into the Chehalis River and several of its tributaries. The river and tributary stream bottoms are home to many varieties of benthic invertebrates.

Roadway designs should carefully consider the impacts of design features that inhibit wildlife passage across the road such as noise and median barriers as well as impassable fencing. Salmonid release points as well as barriers to fish passage should also be a concern of future project development.

Endangered, Threatened and Sensitive Species

The following plants are listed with the Washington Natural Heritage Program (www.wa.gov/dnr/htdocs/fr/nhp/index.html) as endangered, threatened or sensitive species:

Table 3.1-2a
Endangered, Threatened, or Sensitive Plant Species in Grays Harbor County

Scientific Name	Common Name	State Status
Arenaria paludicola	Swamp sandwort	Pos Extirpate
Aster curtus	White-top aster	Sensitive
Botrychium lanceolatum	Lance-leaved grape-fern	Sensitive
Botrychium simplex	Little grape-fern	Sensitive
Carex anthoxanthea	Yellow-flowered sedge	Sensitive
Carex buxbaumii	Buxbaum's sedge	Sensitive
Carex circinata	Coiled sedge	Sensitive
Carex macrochaeta	Large-awn sedge	Sensitive
Cimicifuga elata	Tall bugbane	Threatened
Claytonia lanceolata var pacifica	Pacific lance-leaved spring-beauty	Sensitive
Cochlearia officinalis	Scurvygrass	Sensitive
Coptis aspleniifolia	Spleenwort-leaved goldthread	Sensitive
Dodecatheon austrofrigidum	Frigid shootingstar	Threatened
Erigeron aliceae	Alice's fleabane	Sensitive
Erigeron peregrinus ssp peregrinus var thompsonii	Thompson's wandering daisy	Sensitive
Erythronium revolutum	Pink Fawn-lily	Sensitive
Galium kamtschaticum	Boreal bedstraw	Sensitive
Montia diffusa	Branching montia	Sensitive
Parnassia palustris var neogaea	Northern grass-of-parnassus	Sensitive
Plantago macrocarpa	Alaska plantain	Sensitive
Polemonum carneum	Great polemonium	Threatened
Ranunculus cooleyae	Cooley's buttercup	Sensitive
Sanguisorba menziesii	Menzies' burnet	Sensitive
Sanicula arctopoides	Bear's-foot sanicle	Sensitive

Table 3.1-2b
Endangered, Threatened, or Sensitive Plant Species in Thurston County

Scientific Name	Common Name	State Status
Agoseris elata	Tall agoseris	Sensitive
Aster curtus	White-top aster	Sensitive
Carex comosa	Bristly sedge	Sensitive
Castilleja levisecta	Golden indian-paintbrush	Endangered
Cimicifuga elata	Tall bugbane	Threatened
Erythronium revolutum	Pink fawn-lilly	Sensitive
Githopsis specularioides	Common blue-cup	Sensitive
Isoetes nuttallii	Nuttall's quillwort	Sensitive
Lycopodiella inundata	Bog clubmoss	Sensitive
Polystichum californicum	California sword-fern	Sensitive
Puccinellia nutkaensis	Alaska alkaligrass	Sensitive
Sidalcea malviflora ssp virgata	Rose checker-mallow	Pos Extirpate
Trillium parviflorum	Small-flowered trillium	Sensitive
Woodwardia fimbriata	Chain-fern	Sensitive

Table 3.1-3 lists fish and wildlife reported by the Washington Natural Heritage Program (www.wa.gov/dnr/htdocs/fr/nhp/index.html) as endangered, threatened, or sensitive species:

Table 3.1-3
Sensitive Animal Species of Washington State

Scientific Name	Common Name	State Status
Balaenoptera borealis	Sei whale	Endangered
Blaenoptera musculus	Blue whale	Endangered
Balaenoptera physalus	Fin whale	Endangered
Bartramia longicauda	Upland sandpiper	Endangered
Brachylagus idahoensis	Pygmy rabbit	Endangered
Brachyramphus marmoratus	Marbled murrelet	Threatened
Branta canadensis leucopareia	Aleutian canada goose	Threatened
Buteo regalis	Ferruginous hawk	Threatened
Canis lupus	Gray wolf	Endangered
Caretta caretta	Loggerhead	Threatened
Charadrius alexandrinus	Snowy plover	Endangered
Chelonia mydas	Green turtle	Threatened
Clemmys marmorata	Western pond turtle	Endangered
Dermochelys coriacea	Leatherback	Endangered
Enhydra lutris	Sea otter	Endangered
Enhydra lutris kenyoni	Sea otter	Endangered
Eschrichtius robustus	Gray whale	Sensitive
Eubalaena glacialis	Black right whale	Endangered
Eumetopias jubatus	Northern sea lion	Threatened
Falco peregrinus	Peregrine falcon	Endangered
Grus canadensis	Sandhill crane	Endangered
Haliaeetus leucocephalus	Bald Eagle	Threatened
Lynx canadensis	Lynx	Threatened
Megaptera novaeangliae	Humpback whale	Endangered
Odocoileus virginianus leucurus	Columbian white-tailed deer	Endangered
Pelecanus erythrorhynchos	American white pelican	Endangered
Pelecanus occidentalis	Brown Pelican	Endangered
Physeter macrocephalus	Sperm Whale	Endangered
Rana pretiosa	Oregon spotted frog	Endangered
Rangifer tarandus	Woodland caribou	Endangered
Sciurus griseus	Wester gray squirrel	Threatened
Speyeria zerene hippolyta	Oregon silverspot	Endangered
Strix occidentalis	Spotted owl	Endangered
Ursus arctos	Grizzly or brown bear	Endangered

Threatened, endangered, and sensitive plants and wildlife may be found adjacent to the route. When sections of the route are funded and scheduled for project development, a Biological Assessment (BA) will be prepared (if required). A BA documents (1) the presence of endangered/threatened species; (2) the impacts to those species or their habitats; (3) the mitigation measures necessary to avoid or minimize impacts to those species. A habitat management plan may be required for local jurisdictions if important species are present.

Energy and Natural Resources

Electricity, to power intersection illumination and signalization systems, is the only permanent energy requirement for proposed improvements.

Environmental Health

Proposed highway improvements, particularly within the cities of Oakville and Rochester, should consider potential impacts to abandoned or operating underground fuel storage tanks, or any other potentially hazardous substance. Future proposed right-of-way purchases will be preceded by Initial Site Assessments. There are confirmed underground storage tanks near the historic Gate City General Store at the corner of Moon Road and US 12. Tanks have been removed from the corner of Albany Street and US 12. A structure on the corner of Dallas Street and US 12 appears to be an abandoned gas station.

Highway capacity improvements that increase capacity have the potential to increase noise impacts to sensitive receptors above acceptable levels. Where these improvements are proposed, noise impact analyses must be provided and practicable abatement treatments considered. Limited access facilities, with widely spaced access points, offer the best mitigation possibilities.

Local governments are encouraged to regulate noise-sensitive land uses adjacent to state highways and to advocate that developments near highways be planned, designed and constructed in such a way that noise impacts are minimized.

Land and Shoreline Use

Land use and zoning are discussed in Chapter 2 of this Plan. The agricultural lands adjacent to the highway consist of forest, crop, and pasture lands.

Any work within the jurisdictional shorelines (within 200' of the Ordinary High Water Line for streams and rivers) will require compliance with the Shoreline Management Act.

Housing

The existing US 12 right-of-way will not accommodate the proposed widening: construction of these improvements will result in impacts to properties, dwellings and businesses adjacent to the highway. For this Plan, the level of design detail required to quantify these impacts is not available. As growth and development continues along the corridor, the potential for impacts due to facility expansion will increase.

Again, WSDOT encourages local governments to regulate development immediately adjacent to state highways to minimize impacts resulting from these anticipated expansions.

Aesthetics

The roadside character of the existing highway transitions from urban to rural, from west to east. Roadside treatments outlined in the *WSDOT Roadside Classification Plan* should be implemented.

Lighting and Glare

The only light produced by proposals in this Plan will be from traffic signals, installed at selected intersections, operating day and night; and by highway illumination systems, installed at all channelized or signalized intersections, operating at night.

Recreation

US 12 is a well-traveled route to the Olympic National Park and all of the geographical area of the Olympic Peninsula via connections to US 101.

Historic and Cultural Preservation

There are no historical sites listed on Federal, State or local registers within the US 12 corridor. The Gate City General Store, now a private residence located at the corner of Moon Road and US 12, is eligible for the National Register of Historic Places. Structures within Oakville and Rochester may be eligible for the National Register, and an Archaeological and Historical Study should be conducted for highway improvements in these areas. Right-of-way purchase or proposed earthwork activities outside the existing roadway prism will require an Archaeological and Historical Study.

Transportation

Existing local streets and state highways accessing US 12 are described in section 1.2. Transit facilities and Park and Ride proposals are discussed in section 1.10.

The primary transportation impact will be to travel patterns resulting from the proposed improvements, limiting crossing opportunities to selected intersections. Public services such as school buses and mail carriers, as well as local freight deliveries, local residents, and local business employees will need to adjust.

Public Service

The US 12 improvements proposed in this plan will not directly result in an increased need for public services. However, the increased capacities of the roadway may result in an increased demand for public services because of increased populations. WSDOT will work to accommodate the needs placed upon the various public agencies as the demand for their services increase.

Utilities

No new utilities are required by proposals included in this Plan. Electric power, already available throughout the corridor, will be required for new traffic signal and highway illumination installations. In addition, no existing utilities have been noted that are likely to be significantly impacted by these proposals.

Chapter 4 Stakeholder Recommendations

This chapter presents the Stakeholder Committee's recommendations for improving US Route 12 from US 101 in Aberdeen to Interstate 5 in Grand Mound. The recommendations reflect stakeholder agency policies, public involvement, and sound engineering judgments. Several public workshops were conducted (see Appendix A. Public Involvement) during the course of this study to learn of concerns and issues from the traveling public. These workshops provided valuable input to the recommendations listed in this *Route Development Plan*.

Highway capacity and highway safety improvement recommendations are presented, as well as visions for improved transit and non-motorized facilities and services. The recommendations are intended to serve as a planning tool to be used by local and regional agencies when planning for transportation and land uses and by WSDOT for developing highway projects.

US Route 12 passes through several jurisdictions from Aberdeen to Grand Mound. Travelers using US 12 as it exists today experience various highway and roadside environments. Travelers encounter significant highway character changes, such as the number of traffic lanes provided and associated geometrics, changes in speed limits, and variations in land use. Because of these differences, and the variations in proposed strategies for future improvements, the Stakeholder recommendations for the US 12 corridor are presented according to these sections:

- **Section 4.1 Recommendations: US 12 in the City of Aberdeen**
- **Section 4.2 Recommendations: Fleet Street to Devonshire Road**
- **Section 4.3 Recommendations: Devonshire Road Interchange to Elma SR 8 Interchange**
- **Section 4.4 Recommendations: Elma to the City of Oakville**
- **Section 4.5 Recommendations: The City of Oakville**
- **Section 4.6 Recommendations: Oakville to Anderson Road (County Line)**
- **Section 4.7 Recommendations: Anderson Road to Interstate 5**
- **Section 4.8 Discussion: Highway Safety**
- **Section 4.9 Discussion: Traffic Signals**
- **Section 4.10 Discussion: Transportation Demand Management**
- **Section 4.11 Non-motorized Facilities and Transit Services**

4.1 Recommendations: US 12 in the City of Aberdeen

This section address the segment of US 12 between the US 101 intersection and Fleet Street.

Highway Capacity and Access Management

The Stakeholders' Mobility Objective States:

"Maintain current level of service standards for efficient movement of people and goods along US 12 and at intersections."

The Stakeholder Committee adopts the recommendations that are being developed in the *Aberdeen - Hoquiam Corridor Project EIS*. Due to this continuing EIS process, no other capacity improvement recommendations are suggested in this Plan for downtown Aberdeen at this time.

Major transportation needs within the cities of Aberdeen and Hoquiam have received extensive analysis through a heavily studied environmental process in recent years. A resulting document titled ***"Aberdeen - Hoquiam Corridor Project, Draft Environmental Impact Statement"*** serves to summarize the alternatives under consideration. The Aberdeen-Hoquiam Corridor Project will establish a new transportation corridor (or will enhance the existing transportation system) for highway routes US 12, and US 101 through the Cities of Aberdeen and Hoquiam. Alternatives range from a no build scenario to a complete new routing with new bridges. The corridor begins in the vicinity of the US 12 and Fleet Street intersection and terminates in the vicinity of the SR 109 and SR 109 Spur junction, a distance of approximately 8 miles.

Highway System Plan Safety Strategies

The current *WSDOT State Highway System Plan, 1999-2018*, identifies the following safety improvement strategies for US 12 in the Aberdeen area:

Table 4.1-1 State Highway System Plan Safety Strategies - Aberdeen Area

US 12 Section Description	Safety Strategy
Wishkah River Bridge to Kansas St. vicinity MP 0.13 to MP 0.15	Safety strategies for these sections will be included in the mobility improvements in the Aberdeen-Hoquiam Corridor Project
S Chehalis St. to South Tyler St., vic. MP 0.39 to MP 0.50	

Source: *WSDOT State Highway System Plan, 1999-2018*

For further information about the WSDOT Safety Program, refer to Section 4.8 and Chapter 5 of this *Route Development Plan*.

4.2 Recommendations: Fleet Street to Devonshire Road

This segment addresses the section of US 12 between Fleet Street in Aberdeen and Devonshire Road Interchange, a distance of approximately nine miles. The Stakeholders and public have commented that this area, including Central Park, is quite congested. Pedestrian and motorist safety, as well as improvements to the congestion problems, were high concerns of those who participated in this plan. The Port of Grays Harbor has heard from freight hauling companies that their drivers are experiencing increasing difficulties in moving freight through this multi-lane corridor. The primary reason noted was the presence of many intersections and private driveways, adding to the congestion problems.

Traffic volumes along this segment of the highway appear to be heavier than other segments. Improvements to the Montesano-Aberdeen road (East Central Park Drive) by local jurisdictions would provide an alternate local connection. While traffic volumes increase westerly on US 12, the freeway does not continue through this area, but rather becomes a lower-speed, narrower corridor.

Highway Capacity and Access Management

The Stakeholders' Mobility Objective States:

> ***"Maintain current level of service standards for efficient movement of people and goods along US 12 and at intersections."***

This objective relates to the WSDOT Mobility service objective of maintaining a minimum level of service D and level of service C on urban and rural highways respectively.

Recommendation: Increased Access Control with Geometric Changes.
In table 2.3-2a in Chapter 2, the level of service for this section of highway is shown to be currently functioning at a LOS B and C. Since this section is urban, a minimum LOS D is acceptable. Historic projections from WSDOT sources show the predicted growth rate in this area to be 1.5% which yields a horizon year 2020 LOS of D. This is an acceptable LOS, but if the Grays Harbor growth rate projection of 2% materializes causing the LOS to drop below acceptable levels, then more stringent solutions such as increased access control, improved local roads, or adding lanes to the highway would need to be considered. (Funding issues are a limiting factor and may cause significant delays in implementing improvements.)

Since access to adjacent land use and approach roads affects the highway's ability to move people and goods, sound access management practices should be adhered to in order to maximize the public's investment in this state highway. Access management techniques can also increase highway safety benefits.

A reduction in the number of private driveways and public intersections along with geometric improvements such as widening shoulders will be necessary. To implement these improvements through this area, impacts to the environment (natural and built) can be expected. The stakeholders feel that the construction of frontage roads in this area will also reduce the need for so many direct accesses.

Recommendation: Purchase Access Rights or Additional Right-of-way as needed to implement the above recommendations.
Presently, US 12 in the Central Park area operates within a narrow right-of-way corridor (see Chapter 1). These recommendations would require additional right-of-way.

Recommendation: Provide Effective Signing
The Stakeholders also recommend providing more effective signing in both directions to direct travelers to and from their destinations using alternate routes such as SR 107 where feasible.

Recommendation: Encourage Travel Demand Management
The Stakeholder Committee also identified the need to emphasize Travel Demand Management (TDM) strategies such as encouraging people to walk, bicycle, carpool or use existing and future transit options to help offset the increase in traffic volumes along this segment of US 12.

Highway Safety Strategies

The Stakeholders' Safety Objective States:

> *"Reduce accident rates and severity. Continue to use the 85th percentile to set speed limits."*

Roadway Shoulder and Cross-section Recommendations

The Stakeholders and the public commented that this section should be improved by constructing roadway shoulders of consistent standard widths. Full design level applies to this route, indicating that four-foot shoulders should be provided between the median barrier and the inside travel lanes, and ten-foot shoulders along the outside. The current *WSDOT State Highway System Plan, 1999-2018*, identifies the following safety improvement strategies for this section of US 12 (see Table 4.2-1). The listed strategies of providing roadway cross-section improvements would solve the inconsistent shoulder issue.

Table 4.2-1 State Highway System Plan Safety Strategies - Central Park Area

US 12 Section Description	Safety Strategy
Tyler Street vic. to Central Park / Aberdeen Lake Rd. MP 0.50 to MP 3.50	Identified as a High Accident Corridor (HAC) Proposed strategies include cross section/geometric improvements. and grade separation.
Linkshire Dr. vic to Bryrwood Drive vic. MP 4.00 to MP 6.50	Identified as a High Accident Corridor (HAC) Proposed strategies include cross section/geometric improvements. access and operational improvements.
Clemons Road vic. to Montesano West City Limits Vic MP 7.50 to MP 10.00.	Identified as a High Accident Corridor (HAC) Proposed strategies include Construct Interchange (Clemons Rd), grade separation, geometric improvements. and frontage roads.

Source: *WSDOT State Highway System Plan, 1999-2018*

The Stakeholders Committee also recommended that a parallel Wynoochee River Bridge be constructed.

For further information about the WSDOT Safety Program, refer to Section 4.8 and Chapter 5.

Access Control Recommendations

Safety improvement suggestions also include **implementing access control measures** that would reduce the current number of public and private road approaches. This is discussed above under mobility improvements.

Speed Limit Recommendations

The speed limit in Central Park was mentioned by some public participants as a problem, and they felt the limit should be lowered. The Stakeholders' Safety Objective Statement clearly indicates that the speed limit will continue to be based on the "85th Percentile" so no recommendations to lower the speed limit will be made.

Speed limits are not set arbitrarily, but rather by using the nationally adopted "85th percentile" speed, which is based on actual vehicle speeds. This 85th percentile speed is the speed at which or below which 85% of the drivers are traveling. This national standard is based upon roadway studies which have shown that 85 percent of drivers travel at a speed that they believe to be reasonable and prudent, and that setting the speed limit at this "85th percentile" speed actually results in fewer accidents. Recent studies by WSDOT in the Central Park area confirm that the current speed limit reflects the 85th Percentile.

Traffic Signal Recommendations

Table 4.2-2 on the following page identifies all public road intersections in the Central Park Area and delineates those that are potential locations for future traffic signals as per the Olympic Region Traffic Engineer. A further discussion on traffic signals is provided in Section 4.9 of this plan.

Where a particular intersection is identified as a possible location for a traffic signal, it is important to realize that the "candidate" intersection will have to meet warrants, rank high, and prioritize well on a regional list to become eligible for a traffic signal in the future. Generally, intersections of county arterials or major/minor collectors will rank higher on the WSDOT Olympic Region Signal Priority List. Traffic signal needs created by private developments are generally not included on the Signal Priority List but rather are handled as part of the development review process within the Developer Services office in the Olympic Region Planning Office.

Table 4.2-2 US 12 Central Park Vicinity
Public Intersection Inventory and Traffic Signal Locations

Intersection Street Name	Left Right Both	US 12 Milepost	Intersection Type and Current Access	Signalization	
				Existing Signal Yes/No	Possible Future Candidate Location for Signal? Yes/No
Sargent Blvd	**Right**	**1.74**	**"Tee" with Full Access**	**No**	**Yes**
Copeland Rd	Left	1.93	"Tee" with Full Access	No	No
Lake Aberdeen Rd	Left	2.93	"Tee" with Full Access	No	No
Lake Aberdeen Rd / Central Park Dr	**Both**	**3.49**	**4-way with Full Access**	**No**	**Yes**
Linkshire Terrace / Linkshire Dr	Both	4.39	4-way with Full Access	No	No
York Dr	Left	4.52	"Tee" with Right in/out only	No	No
Karjala Rd	**Right**	**4.8**	**"Tee" with Full Access**	**No**	**Yes Solki Rd or Karjala Rd (not both)**
Solki Rd	**Right**	**5.01**	**"Tee" with Full Access**	**No**	
Pioneer Rd	**Right**	**5.50**	**"Tee" with Full Access**	**Yes Flashing**	**Yes**
Reynvaan Rd	Left	5.60	"Tee" with Full Access	No	No
Hirschbeck Heights Rd	Left	5.72	"Tee" with Full Access	No	No
Hill Rd	Right	6.07	"Tee" with Full Access	No	No
North Bank Rd	Left	6.13	"Tee" with Full Access	No	No
Deer Park Rd	**Right**	**6.38**	**"Tee" with Full Access**	**No**	**Yes**
Bryrwood Dr	Right	6.67	"Tee" with Full Access	No	No
Alderbrook Dr	Right	7.04	"Tee" with Full Access	No	No
Clemons Rd	**Both**	**7.81**	**4-way with Full Access**	**No**	**Yes**
Wynoochee Rd	Both	8.16	4-way with Full Access	No	No

Implementing greater access control may cause those intersections not receiving signalization to be closed off with barriers. Alternate access, (such as frontage roads) would be provided.

Additionally, due to the many varied factors influencing the issues in the Central Park area, the Stakeholder Committee recommends that further studies be conducted to address issues as the situations change.

4.3 Recommendations: Devonshire Road Interchange to Elma SR 8 Interchange

This section of US 12 functions as a rural freeway between the Devonshire Road Interchange (MP 8.9) in the vicinity of the Montesano and the SR 8 Interchange in Elma (MP 21 vicinity).

Recommendations for this freeway include eliminating all of the at-grade intersections that still exist today. This is discussed under the Safety Strategies section.

Highway Mobility Recommendations

The Stakeholders' Mobility Objective States:

> ***"Maintain current level of service standards for efficient movement of people and goods along US 12 and at intersections."***

This relates to the WSDOT mobility objective of maintaining a minimum level of service C on rural highways. The operating level of service on this freeway is predicted to stay within the minimum LOS objective through the planning horizon year 2020, thus no specific mobility recommendations are provided.

The following safety strategies for this section will also provide increased mobility benefits to the freeway.

Highway Safety and Access Strategies

The Stakeholders' Safety Objective States:

> ***"Reduce accident rates and severity. Continue to use the 85th percentile to set speed limits."***

Recommendation: Eliminate at-grade crossings, construct interchanges and frontage roads

The current *WSDOT State Highway System Plan, 1999-2018,* identifies the following safety improvement strategies for US 12 in the Aberdeen area:

Table 4.3-1 State Highway System Plan Safety Strategies - The US 12 Freeway

US 12 Section Description	Safety Strategy
Monte-Brady Road Wye connection. Monte-Brady Road. MP 12.46 to MP 12.57 vicinities.	This section has been identified for safety improvements because of the at-grade intersection. Proposed strategies include constructing an interchange and frontage road.
Monte Brady-Road MP 14.76 vicinity.	This section has also been identified for safety improvements because of the at-grade intersection. Proposed strategies include constructing an interchange.
4th Street. Keys Road. MP 16.38 vicinity.	This section has also been identified for safety improvements because of the at-grade intersection. Proposed strategies include constructing an interchange.

Source: *WSDOT State Highway System Plan, 1999-2018*

For further information about the WSDOT Safety Program, refer to Section 4.8 and Chapter 5 of this *Route Development Plan*.

To meet the Safety Objective, the Stakeholders recognize that the four at-grade county road intersections (Monte-Brady Road, Monte-Brady and Satsop Road, Keys Road, and Schouweiler Road) in this segment should be grade-separated. This should be accomplished by constructing interchanges at some locations and undercrossings at other locations, with frontage roads providing a connecting network between locations. Construction of interchanges at the three at-grade intersections (Schouweiler Road is addressed on the following page) identified in the *State Highway System Plan Safety Strategies* (and shown in table 4.3.1 above) is recommended by the Stakeholder Committee with input from the public workshops. As an interim measure, the Stakeholder Committee recommends construction of left and right turn deceleration and acceleration lanes while waiting for the grade separations to be constructed.

The WSDOT has previously purchased right-of-way for improvements at Monte-Brady Road, Satsop Road, Schouweiler Road, and at Third Street in Elma. These parcels were purchased during the initial design phases of US 12 and may or may not meet the needs for today's improvements.

The right-of-way plan sheets show concepts of providing grade separations at the at-grade intersections along the freeway.

- **Monte-Brady Road**
  Plan sheet #12-20 (July, 1965) indicates that a future bridge was once planned at the milepost 12.5 vicinity that would carry Monte-Brady Road over the freeway with no access ramps.

- **Brady Vicinity (Monte-Brady and Satsop Roads)**
  Plan sheets #12-24 and 12-27 (March, 1963) identify a planned. future interchange at Brady, in the vicinity of milepost 15.

- **Satsop Vicinity (Keys Road)**
  Plan sheets #12-25 29 and 30 (March, 1963) show plans for an interchange serving the Satsop area at Keys Road at milepost 16.4.

- **Schouweiler Road**
  Plan Sheets #12-33 and 12-35 (September, 1962) indicate that a bridge is planned to carry Schouweiler Road over US 12. The plans didn't indicate that an interchange was necessary for this location. (*Grays Harbor County Planning has requested improvements at Schouweiler Road to accommodate future growth in that area. Schouweiler Road is classified as a "Local Access" road by Grays Harbor County. "Local Access" roads do not allow state work to be scheduled for that classification. Grays Harbor County will need to work with the Olympic Region Trans Aid division to get the classification changed to "collector" for inclusion into future plans.*)

The Stakeholder Committee further recommends that action on Schouweiler Road be deferred until it is reclassified as a "collector roadway" and plans dealing with the area's flooding problems are in place. The Stakeholder Committee recognizes that this area, including the Satsop area, has been zoned as "Commercial" and may be a future traffic generator. The Stakeholder Committee also recommends that Grays Harbor County, the City of Elma, and WSDOT form a partnership in order to construct a pedestrian overcrossing at Grays Harbor County's Vance Creek Park.

Recent events indicate that there is likely to be increased traffic from renewed activity at the Satsop WPPSS plant site.

4.4 Recommendations: Elma to The City of Oakville

Highway Capacity

The Stakeholders' Mobility Objective States:

> ***"Maintain current level of service standards for efficient movement of people and goods along US 12 and at intersections."***

This relates to the WSDOT mobility objective of maintaining a minimum level of service C on rural highways.

Recommendation: Construct Intermittent Passing Lanes
To increase the capacity of this segment of US 12, the Stakeholder Committee recommends the construction of one-mile-long passing lanes at several locations.

Background and Details on the Passing Lane Recommendations:
US Highway 12 is a two-lane facility from milepost 21.30 at the junction with SR 8 to milepost 46.62 where it becomes coincident with Interstate Highway 5. Two-lane sections of highway often work well in rural settings in that they are able to handle rural traffic volumes, they blend in with the natural surroundings, and they have less impact on the environment than their larger counterparts. However, peak hour volumes and slow moving vehicles in rural settings can cause traffic to begin queuing with little relief if there are no opportunities to pass. Although there are some passing opportunities available along this portion of the highway, they are not enough to relieve the platooning of vehicles that occurs during peak hour traffic or when there are large logging trucks and commercial and recreational vehicles on the road.

FHWA Report: FHWA/RD-85/028 titled "*Passing Lanes and Other Operational Improvements on Two-Lane Highways*" gives the recommended distances between passing opportunities of 3-8 miles, with the average being 5 miles.

"One study of passing behavior found that when forced to follow a slow-moving vehicle for distances of up to 5 miles, almost 25% of the drivers made an illegal pass in a no-passing zone."

The current ***State Highway System Plan*** recommends the addition of intermittent passing lanes between Elma and Rochester. During the preparation of this RDP, a team from the Olympic Region Planning Office drove the length of the two-lane section to consider geometric, geologic, environmental and right-of-way advantages and constraints in order to choose sites for the intermittent passing lanes. These recommended sites are as follows:

First Passing Lane Section: Milepost 23.45 to milepost 24.45

The recommended action in this section is to widen the roadway and provide a four-lane section for passing between MP 23.45 and 24.45. The length of one mile is an optimum length and would include the addition and drop tapers. This location is well removed from the Chehalis River and the Cloquallum Creek; therefore, widening in this area would not significantly impact flooding from these bodies of water. There are several at-grade intersections for private homes and farms throughout the section. The greatest impact may be to six homes that share a common access located in the vicinity of MP 24.45. As project development gets underway, a closer study will need to be done in order to provide the optimum improvements with minimum impact. This passing opportunity will disperse traffic platoons traveling westbound on US 12 as they exit the "Porter Hills" area and will allow an opportunity for faster moving vehicles in the eastbound direction to get ahead of slower moving traffic before entering the "Porter Hills" area.

Second Passing Lane Section: Milepost 30 to milepost 31

The Planning Team examined the sections that were 3 to 5 miles from the first recommended site and found several constraints that might affect safety, constructability and benefit/cost scenarios.

The first constraint noticed by the team upon visual inspection was the hilly terrain and cuts and fills on both sides of the road. Cuts in this area may require blasting and the cuts/fills needed to widen the roadway for the addition of passing lanes may not be cost effective for this type of improvement. Safety constraints include sight distance and foul weather hazards. The roadway travels through hilly terrain and is enclosed by tall trees which cause patchy shading and sunlight. Both of these conditions reduce visibility and sight distance. Improvement projects should take these issues into consideration.

The recommended site for passing lanes is the vicinity of MP 30.00 to 31.00 with MP 29.00 to 30.00 as an alternate. This section, beginning at MP 30.00, is straight and fairly level with moderate slopes on either side. There are few local accesses, and it appears that the addition of two passing lanes could be constructed in this segment. Although there are some overhanging trees, visibility and sight distance are within normal standards and there would be very little shading to prohibit the melting of ice or snow.

An alternate site is available in this area, but there appear to be several drawbacks to its use. The first is the close proximity of an active railway line throughout the entire length of this site. The other is the amount of cut and fill that would need to be done in order to construct the passing lanes. Existing cuts show the presence of solid rock which may need to be blasted in order to achieve the desired alignment. The increasing mile post side of the roadway in this vicinity is already partially built on a

large fill above the railway. The costs of blasting and importing standard fill materials may greatly reduce the benefit/cost ratio for this site.

The site at MP 30.00 to 31.00 is approximately 5.5 miles from the first set of passing lanes. This begins to push the envelope of comfort for drivers traveling behind slow moving vehicles, but the Planning Team felt that this could be handled with proper signing to let drivers know that a passing opportunity would be coming up.

Other Sections considered, but not recommended for passing lanes
MP 32.00 to 33.83 Shelton Rd./Downey Ln. I/S to Alfredson Rd. vicinity.
This section of US 12 was inspected by the Planning Team but was removed from consideration for intermittent passing lanes due to the existing roadway geometry and the proximity of the proposed passing opportunity at MP 30.00. The proximity of the proposed passing lane at MP 30.00 to 31.00 would push the location of the next opportunity to somewhere between MP 34.00 to 36.00, which is almost entirely within the City of Oakville. As US 12 enters the City of Oakville, it encounters an "S" curve with an associated bridge over the RR. (Bridge #012/73). This is not a desirable location for passing lanes. This "S" curve and its associated bridge are candidates for realignment and bridge replacement in the 20-year safety improvement strategies of the *1998 State Highway System Plan*. Controlled intersections, low speed limits and non-motorized transportation are some of the other constraints within the city limits of Oakville.

Highway System Plan Safety Strategies

The Stakeholders' Safety Objective States:

> ***"Reduce accident rates and severity. Continue to use the 85th percentile to set speed limits".***

The current *WSDOT State Highway System Plan, 1999-2018*, identifies the following safety improvement strategies for US 12 in the Oakville area:

Table 4.6-1 State Highway System Plan Safety Strategies - Elma to Grand Mound

US 12 Section Description	Safety Strategy
Burlington Northern RR Bridge #012/73 Vic MP 34.34 to MP 34.46	This section has been identified as a risk area because of the highway alignment curves and bridge geometry. Safety strategies include realigning the roadway and constructing a new bridge.

Source: *WSDOT State Highway System Plan, 1999-2018*

For further information about the WSDOT Safety Program, refer to Section 4.8 and Chapter 5 of this *Route Development Plan*.

4.5 Recommendations: The City of Oakville

MP 34.73 to MP 35.57
The City of Oakville has initiated an Oakville Development committee that has proposed some projects (and will propose others) within the City of Oakville. The City should continue to facilitate the coordination of transportation improvements between the city and WSDOT.

4.6 Recommendations: Oakville to Anderson Road (County Line)

MP 35.57 to 38.84 Oakville East Corporate Limit Vicinity to Grays Harbor/Thurston County Line
The *State Highway System Plan* recommends constructing passing lanes in the section between MP 35.54 to 38.84, which begins at the east Oakville city limits and continues to the vicinity of Anderson Road. The area from the east corporate limit of Oakville through to Anderson Road falls into an apparent environmentally sensitive area, which appears to contain several wetland areas. Therefore, it is the recommendation of the Stakeholders Committee not to construct passing lanes in the vicinity of the wetland areas. Instead, the recommendation is to begin the four-lane section in the vicinity of MP 38.00, which will provide an earlier passing opportunity for vehicles arriving/departing the City of Oakville, while minimizing constraints such as local access and visibility and sight distance. This section should be constructed prior to the other multi-lane sections in order to provide the much needed passing opportunities.

Flooding of the nearby land from the Chehalis and Black Rivers and road closures due to flooding are some of the most sensitive of the issues in this area. These issues are discussed in depth in Chapter 3 of this report. *(At the time of this report, several flooding studies are underway. In addition to addressing the local flooding issues on the county roads, these studies will also address US 12 solutions to alleviate the flooding problems. The designer is requested to consult these studies.)*

4.7 Recommendations: Anderson Road to Interstate 5

Highway Capacity and Access Management

The Stakeholders' Mobility Objective States:

> ***"Maintain current level of service standards for efficient movement of people and goods along US 12 and at intersections."***

This relates to the WSDOT mobility objective of maintaining a minimum level of service C on rural highways.

Recommendation: Construct a Multi-lane Divided Highway
The Stakeholders recommend that US 12 be constructed to a four-lane divided highway from the Anderson Road vicinity to Interstate 5 with turning movements as described below. Realign intersections as required, install signals where warranted, and institute access management strategies. This improvement will result in a satisfactory operating level of service through the year 2020.

In order to provide reasonable access for those living in the Thurston County area near US 12, the Stakeholder Committee recommends that breaks in the median for turning movements be provided at:

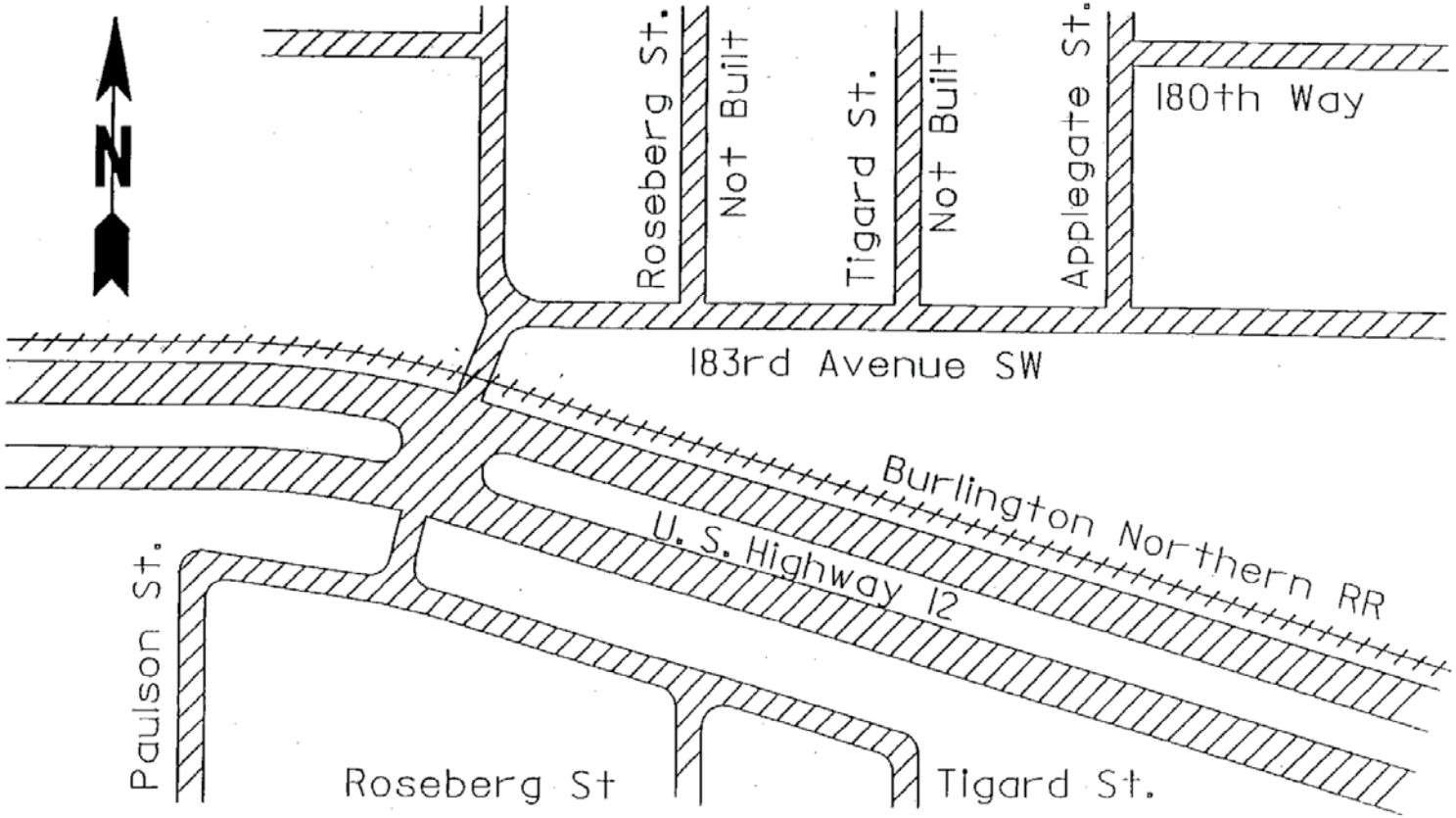
- Anderson Road at MP 38.84 near the beginning of the multi-lane section
- Moon Road at MP 39.85 vic.
- Forstrom Road at MP 40.86
- 183rd St. with re-locations of access from Paulson Road, Roseberg Road, and Holt St. to directly opposite the 183rd St. access at MP 42.55 (See drawing on page 4-16a)
- Denmark Street at MP 43.49
- Huntington Street at MP 43.96
- Joselyn Street with Old SR 9 access relocated to directly opposite Joselyn Street at MP 44.44 (See drawing on page 4-16b and the following paragraph)
- Pecan St. at MP 45.20
- Elderberry Street / Old Highway 99 SW at MP 46.37

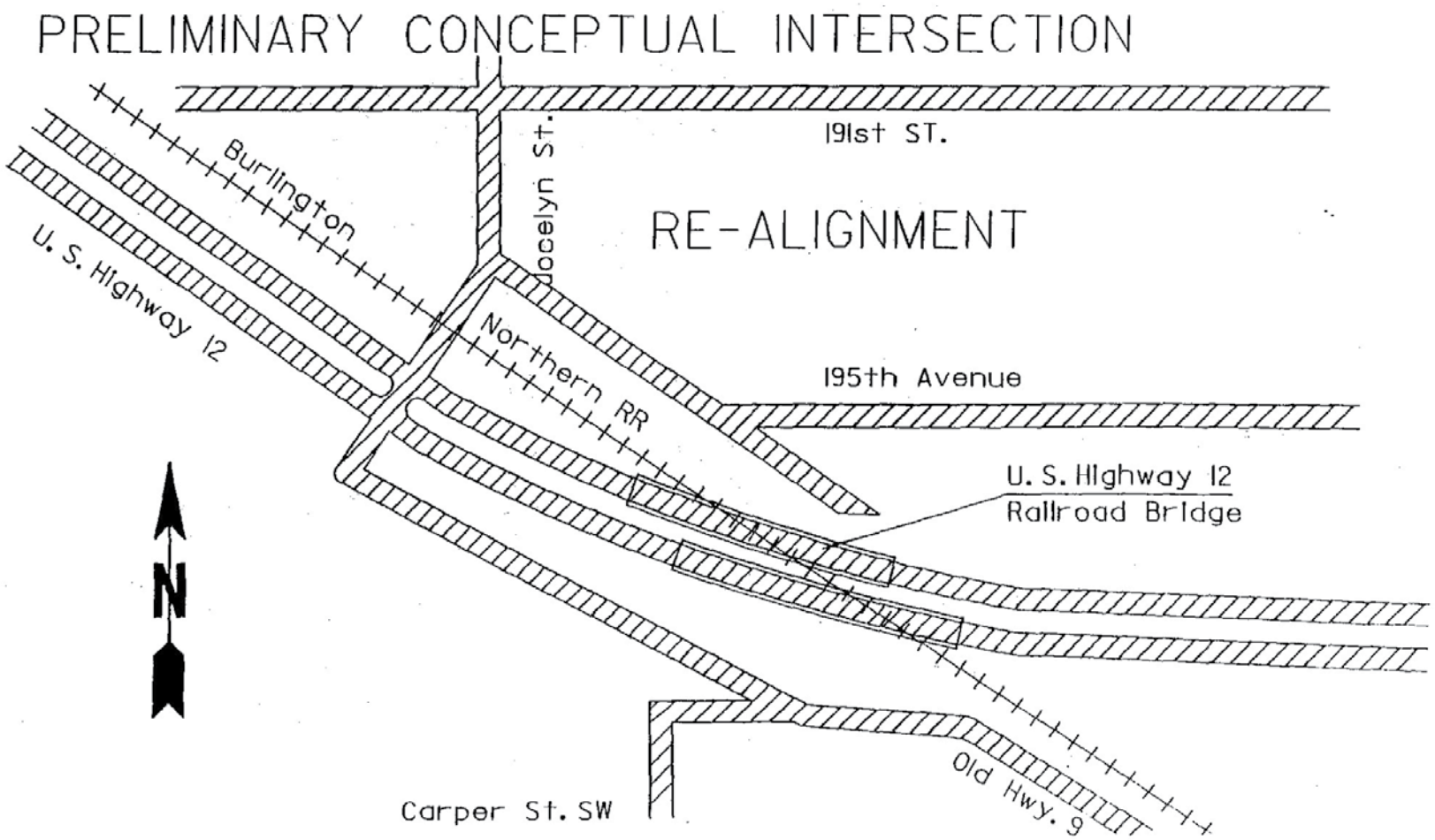
Additionally, in order to preserve the small town atmosphere in Rochester, the highway through the community of Rochester core area should not have a median, but should be a couplet from the area of the Red Apple Market to near 183rd Street. Approximate MP 41.65 to 42.65. The community of Rochester requests that there be a one way westbound couplet following along the railroad ROW north of the existing US 12 and that the existing US 12 through Rochester be one-way eastbound. They also request that this be the preferred alternative with the second alternative being widening the existing US 12 through town with restricted parking in this section. The Design team should work with the Rochester School District in order to minimize

impacts to their school facilities. The community of Rochester also recommends that the designers investigate the possibility of re-aligning the Old SR 9 intersections so that the westbound traffic would cross under the highway alongside the existing RR tracks, thereby having right-in, right-out movements only on Old SR 9. This would eliminate the problems associated with a full at-grade intersection.

The Stakeholder Committee recommended that the present *Access Management Plan* Classes 2 and 3 be maintained and actively pursued for this route segment per WAC 468-52. The community of Rochester requests that the Access Management Plan be reviewed for possible reclassification during the design phase due to expansion of the Rochester core area.

PRELIMINARY CONCEPTUAL INTERSECTION RE-ALIGNMENT




PRELIMINARY CONCEPTUAL INTERSECTION
191st ST.
Burlington
Jocelyn St.
RE-ALIGNMENT
U. S. Highway 12
Northern RR
195th Avenue
U. S. Highway 12
Railroad Bridge
N
Carper St. SW
Old Hwy. 9

Highway System Plan Safety Strategies

The Stakeholders' Safety Objective States:

> ***"Reduce accident rates and severity. Continue to use the 85th percentile to set speed limits".***

The current *WSDOT State Highway System Plan, 1999-2018*, identifies the following safety improvement strategies for US 12 in the Thurston County area:

Table 4.7-1 State Highway System Plan Safety Strategies - Thurston County Section

US 12 Section Description	Safety Strategy
Albany Street Vic to Paulson Street SW Vic MP 41.50 to MP 42.50	This section has been identified as a High Accident Corridor (HAC). Proposed strategies include cross section/geometric improvements and improvements included in upcoming projects. Cross section and geometric improvements include widening. channelization, etc.

Source: *WSDOT State Highway System Plan, 1999-2018*

For further information about the WSDOT Safety Program, refer to Section 4.8 and Chapter 5 of this *Route Development Plan*.

4.8 Discussion: Highway Safety

Highway safety is a very important issue for all routes, and WSDOT addresses this issue throughout all programs, including such areas as Maintenance, Preservation, Improvements, and Traffic Operations. Here are a few examples, taken from WSDOT's *State Highway System Plan*, of specific Service Objectives and Action Strategies that address Highway Safety:

Maintain and operate state highways on a daily basis to ensure safe, reliable, and pleasant movement of people and goods:

- Maintain roadway surfaces by sweeping, pavement patching, and crack sealing.
- Clean drainage facilities and repair slope failures.
- Manage roadsides by removing litter and by controlling weeds and vegetation
- Maintain the structural integrity of bridges and tunnels.
- Provide for reliable winter travel, including on major mountain passes.
- Maintain and operate traffic control markings, devices, and systems.
- Provide the traveler with clean, reliable, and pleasant rest area facilities.
- Respond to calls from the public and other maintenance support activities.
- Repair damage resulting from errant vehicles and natural disasters.

Operate the highway transportation system safely and efficiently:

- Increase highway efficiency and safety through full utilization of the existing system.
- Improve arterial efficiency and safety through traffic signal timing and coordination efforts.
- Perform safety and efficiency investigations in response to customer concerns on traffic flow and safety.
- Implement consistent statewide traffic design and operation policy, specifications, and standards.
- Evaluate and deploy proven technology to optimize existing system investments.
- Develop and implement small cost, immediate solutions to address operational, safety, and efficiency concerns.

Preserve the highway infrastructure cost effectively to protect the public investment:

- Repave highways at regular intervals to minimize long-term costs. Restore existing safety features.

Provide the safest possible highways within available resources:

- Improve highway sections that have a high accident history.
- Improve roadways where geometrics, traffic volumes, and speed limits indicate a high accident potential.
- Eliminate major at-grade intersections on multi-lane highways with speed limits of 45 mph or higher.
- Construct intersection channelization, signals, or both when traffic volume warrants (thresholds) are met.

Improve pedestrian safety along state highways:

- Improve pedestrian safety along or across state highways that exhibit a high incidence of pedestrian accidents.
- Proactively address pedestrian safety along state highway segments that exhibit high pedestrian use and the potential for future accidents.

One function of the Route Development Planning process is to provide an opportunity for WSDOT staff to gather data that can support the various ways in which WSDOT addresses highway safety.

This *US 12 Route Development Plan* does not provide specific recommendations on highway safety improvements. That function is already provided within the WSDOT Program, in reference to the examples listed above, and through standards that are applied to many types of work that WSDOT performs on state highways.

Safety Strategies contained in the current *WSDOT State Highway System Plan (1999-2018)* are presented in the appropriate Sections 4.1 through 4.3 and Sections 4.6 through 4.7 of this Route Development Plan.

4.9 Discussion: Traffic Signals

Traffic signals impact highway mobility and highway safety and are often suggested as a cure for problems at intersections. Traffic signals help traffic move more smoothly and safely only if used in the proper situations.

During the preparation of this *RDP*, the Olympic Region Traffic Engineer provided a "practical" viewpoint on how traffic signal use on US 12 should be carried out. The following discussion summarizes preliminary concepts developed with the Traffic Engineer and the philosophy on the use of traffic signals.

- Any new signal installations, whether rural or urban, must first meet the necessary warrants and be approved by the Olympic Region Traffic Engineer.
- Proposed installations must compete with other proposed signal locations through a prioritization process.
- Future traffic signal locations in rural areas would only occur at significant cross-county road intersections.
- In urban areas, any new signal location would be determined through a joint analysis with the appropriate jurisdiction and the WSDOT. Traffic signals in an urban area would only be at main city or county streets that are a part of the city's grid system.
- Due to the high number of access points and congestion along the Central Park section of US 12, the Traffic Engineer assisted in established a listing of "candidate" intersections for possible future traffic signal locations. Thought was given to establishing signals at the major county roads that serve the highest number of vehicles, and the spacings between them. Table 4.2-2 in Section 4.2 presents this information.

The Right Reasons for Stopping Traffic

After lesser forms of control have proven ineffective, traffic engineers will often review an intersection to determine if a traffic signal is warranted. The Department of Transportation traffic engineers follow specific, uniform guidelines to determine whether a traffic signal is called for. For example, they consider traffic volumes on the intersection approaches, the accident history, the number of other signals in the area and the effect a new signal will have on other streets in the vicinity. These criteria are critical in determining if a signal will have a positive effect on the safety and operational efficiency of an intersection.

Traffic signals impact highway mobility and highway safety and are often suggested as a cure for problems at intersections. They control the operating level of service of a facility, often in a negative manner if they are spaced incorrectly. Traffic signals can sometimes create a safer facility by reducing the severity of accidents at intersections. They may be the solution to some specific traffic problems, such as stopping the heavy flow of traffic in one direction to permit crossing by minor movements which could not otherwise move safely through an intersection. Traffic signals help traffic move more smoothly and safely only if used in the proper situations.

It should be recognized that unwarranted traffic signals can cause traffic to stop where it did not have to before. This can lead to more accidents and driver frustration, causing drivers to seek secondary, alternative roads. This can negatively impact the network of roadways, which may not have been developed to carry such travel demand.

4.10 Discussion: Transportation Demand Management

Transportation demand management (TDM) contains a broad range of strategies intended to reduce and reshape the demand of the transportation system. Such strategies are often relatively low in cost. Their success depends both upon the active cooperation of the private sector and upon effective decision making by the individuals who use the transportation system. System expansion for single-occupancy vehicles is a last resort strategy. TDM measures can include:

- Carpool or vanpool formation assistance
- Encouraging people to walk or ride a bike
- Transit & transit subsidies
- Worker-driver programs for buses and vanpools
- Passenger-only ferry systems
- Designated carpool or vanpool parking
- Parking restrictions - increased parking prices
- Work hour flexibility
- Tele-commuting - Telework Programs.

The Stakeholder Committee did not discuss this issue in the detail necessary to prescribe recommendations. There are possibilities for effective TDM strategies along our state highways, US 12 included. TDM strategies are typically not controlled by WSDOT but are in the hands of the local and regional agencies and the private sector. WSDOT does encourage these agencies to move forward with plans to implement these strategies. Where found, Local and Regional Comprehensive and Transportation Plans were reviewed during the preparation of this RDP. It was found that many plans support strategies related to TDM.

4.11 Non-motorized Facilities and Transit Services

The Stakeholders' Non-motorized and Transit Objectives States:

"Provide a pedestrian / bicycle route that meets the needs of its users with safe pedestrian access to transit stops".

Non-motorized Transportation Facilities

The Stakeholder Committee discussed the needs of non-motorized travelers such as pedestrians and bicyclists. The result was a generic list of recommended improvements to US 12 that will result in wider shoulders for use as bike lanes and walkways. Such improvements would likely occur during mobility or safety improvement projects.

US 12 is classified by WSDOT as a Type IV bikeway, which is defined as a "publicly maintained facility that is not designated with signs as a bicycle route and is shared with other transportation modes". US 12 is listed as a designated bicycle touring route in the 1995 Thurston County Comprehensive Plan.

Non Site Specific

Public Transit

Public transit services can have a positive effect on US 12 by reducing the volume of general purpose vehicles. The city, county, and regional transportation plans were reviewed to acknowledge any plans for future improvements. Grays Harbor Transit and local agencies need to coordinate on operation and maintenance of bus stops and pullouts in their respective jurisdictions.

There is a Grays Harbor Transit Friday-only bus through Elma to Centralia which makes stops along the way wherever it is "flagged down". This is route number 90 and makes stops near the outlet malls and the Amtrak station in Centralia. Commuter service is not provided on this route.

School Walkways

Several sections of US 12 fall within walking routes of students attending the local schools. Future projects should include coordination with school districts' needs for student walking facilities.

Site Specific

Aberdeen Area

The Stakeholder Committee recommends that the pedestrian walkway crossing over the Wishkah River be improved to ADA standards and connected to the Morrison Park pathway.

Central Park to Devonshire Road Area

Transit and pedestrian issues of concern to the Stakeholders and public include: Transit stops are located along US 12 in this area, and pedestrians cross the highway to access these stops.

Transit Recommendations:

Re-locate transit stops to take advantage of the safety opportunities offered when grade separation improvements are constructed allowing pedestrians to access the transit stops without crossing the highway at grade.
Install fencing through the Central Park area to prevent unauthorized pedestrian access to the highway.
Pick up passengers away from the traveled way where possible.
Utilize Central Park Drive as parallel facility for potential transit routes.

Devonshire Road to Elma

The Stakeholders have recommended that increased pedestrian safety measures at Vance Creek Park near Elma be constructed. *(Grays Harbor County needs to partner with the City of Elma and WSDOT in order to construct a pedestrian overcrossing in this area.)* Current transit routes leave US 12 at Devonshire Road and do not access US 12 again in this sector.

Elma to Oakville

No recommendations made at this time.

The City of Oakville

The City of Oakville has proposed improvements to increase pedestrian safety in future projects. The City should continue to facilitate the coordination of transportation improvements between the City and WSDOT.

Oakville to Grand Mound

Intercity Transit:

Intercity Transit provides a wide range of transportation services including fixed route, ridesharing, and paratransit services. IT's ridesharing service matches people with carpool partners and coordinates vanpool formation and operation by providing training, technical assistance, and vehicles for vanpool groups. Daily public transportation in this sector is only provided between SR 5 and Albany Street in Rochester and thence North on Albany Street to Tumwater. This is IT's route number 98 and includes service to the Grand Mound Park and Ride.

Chapter 5 Funding and Implementation

This chapter provides information about WSDOT design and funding procedures to interested parties and provides necessary design information to the WSDOT design staff.

5.1 WSDOT Design Standards

The *WSDOT Design Manual* addresses the design standards and processes to be followed during project development. The *Design Manual* reflects policy, outlines a uniformity of methods and procedures, and communicates vital information to design staff. The following discussion summarizes how design standards are determined for a project.

Framework of WSDOT Design Levels

The *Design Manual* presents three levels of design for highway projects: the Basic, Modified, and Full design levels.

Within the *Design Manual* are Design Matrices (information tables) that are used to determine the design level for a project. The matrices focus on those design elements that are of greatest concern in project development. These elements include: geometric data for roadway lanes, shoulders, bridges, and medians; roadway alignments; intersections and interchanges; and access issues.

Recommended Design Levels for US 12

When funded for project development, the Stakeholders' recommended highway improvement strategies presented in Chapter 4 should be designed according to standard conventions outlined in the *WSDOT Design Manual.*

The route classifications discussion in Chapter 1 explains that US 12 is part of the National Highway System (NHS) and is classified as a Principal Arterial in the Washington State Functional Classification System.

The US 12 NHS classification requires use of Design Matrices #3 & #4.

- Design Matrix #3 applies to NHS Routes (Mainline)
- Design Matrix #4 applies to Non-Interstate Interchange areas.

In general for highway improvement projects on NHS Routes, Design Matrix #3 Full Design Level applies to US 12. Highway improvement projects developed under Full Design levels typically make use of wider shoulders and lanes, etc., than basic or modified design levels provide.

The State Functional Classification affects the design elements of a project developed with a Full design level designation. US 12 is a Principal Arterial, requiring a fairly high standards level.

In some instances, based on a corridor or project analysis, such as this *RDP*, a Modified Design Level can be recommended and applied. The flexibility in design level is intended to allow design of a project at a lesser level based on circumstances and sound engineering judgment. Such circumstances could lessen the project impact on natural or built environments and in turn lessen the overall costs and benefits that a project provides. A benefit-to-cost ratio of a project can influence its priority in the funding process when compared against other potential projects competing for limited funding.

For instance, the recommendation to provide intermittent passing lanes on the two-lane section of US 12 between Elma and Oakville will need to be analyzed in greater detail during project development to determine the "best fit" design level. In this area, it is probable that a Full Design level would call for a wider roadway cross-section (lanes, shoulders, and cross slopes) than a modified level would prescribe, thus creating a larger impact on the environment.

5.2 WSDOT Program Structure

The recommended improvement strategies presented in this *Route Development Plan* help WSDOT to further the visions and strategies contained in the current *State Highway System Plan* as it relates to US 12. It provides a more in-depth analysis of the route. The recommendations in this *RDP* focus on the "Improvement Program" contained in the *State Highway System Plan.*

The following discussion of the *State Highway System Plan* and the *Washington Transportation Plan* is included to provide a brief description of how improvement projects are prioritized, funded, and ultimately constructed.

Washington's Transportation Plan

The Washington State Transportation Commission, through the efforts of the Washington State Department of Transportation, is meeting the future challenges facing the state's transportation systems by developing *Washington's Transportation Plan* (*WTP*). This plan addresses transportation facilities owned and operated by the state, including state highways, the Washington State Ferries, and state owned airports. It also addresses facilities and services that the state does not own, but has an interest in, as they are vital to the entire transportation system. These include public transportation, freight rail, intercity passenger rail, marine ports and navigation, non-motorized transportation, and aviation. This planning is being carried out in cooperation with local governments, regional agencies, and private transportation providers to ensure that Washington's transportation system provides convenient, reliable, efficient, and seamless connections for all citizens.

WTP presents a sensible, 20-year vision for state-owned and state-interest modes of transportation. Transportation "needs" have been identified for each mode and "service objectives" with associated action strategies have been developed to address those needs.

State Highway System Plan

The state-owned component of *WTP* is commonly referred to as the *State Highway System Plan* (*SHSP*). The *SHSP* is comprised of four main categories:

- Maintenance - Maintain state highways on a daily basis to ensure safe, reliable, and pleasant movement of people and goods.
- Preservation - Preserve the highway infrastructure effectively to protect the public investment.
- Traffic Operations - Operate the highway transportation system safely and efficiently.
- Improvements - Make the highway system more efficient. There are four subcategories which were developed for this purpose. They are:

1. Mobility - Improve mobility within congested corridors.

2. Highway Safety - Provide the safest possible highways within available resources.

3. Economic Initiatives - Support efficient and reliable freight and goods movement. Support tourism development and other Washington industries. Reinforce the state's competitive position in international trade.

4. Environmental Retrofit - Appropriately retrofit state highway facilities to reduce existing environmental impacts.

Transportation projects state-wide are identified based on the contribution towards achieving WSDOT service objectives over the 20-year period. Currently the total estimated cost associated with meeting all service objectives over the 20-year time frame exceeds 40 billion dollars. Three different scenarios were looked at in relation to funding the improvements to meet the identified 20-year needs. The three possible revenue scenarios are: 1) no revenue increase for 20 years; 2) revenue increases based on a historical trend line; and 3) a fully-funded 20-year system plan. The Transportation Commission selected the trend line scenario to establish a baseline funding "cutoff" to establish priorities for all needed projects. The current goal of the Transportation Commission is to fully fund the safety category, the environmental retrofit category, and the economic initiative category of the 20-year *SHSP*. Projects within these subprograms will be prioritized to determine the order in which needed improvements will be constructed.

Using the 20-year historical trend line funding scenario, the mobility subprogram would likely only be 25% funded. There is not enough revenue to address all the capacity needs in the state. Two different lists of mobility projects are included in the *SHSP*. The first list contains the projects that are likely to be funded over next 20 years. The second list includes the remaining projects that are needed but not funded under the 20-year trend line scenario.

WSDOT Two-Year Operating Program

To advance the most important projects in all subprograms of the *SHSP*, a Two-Year Operating Program is developed based on proposed improvement strategies in the financially constrained 20-year plan. It is the intention of WSDOT to ultimately create a Six-Year Plan, from which future Two-Year Operating Programs would be developed. The Six-Year Plan will also assist WSDOT Olympic Region in helping to identify priorities for project scoping efforts.

US 12 Improvements With Funding Sources Identified (financially constrained)

At the time of this *Route Development Plan* printing, the following projects and/or strategies related to US 12 were identified as funded in the various plans and programs discussed above.

MP 21.34 to MP 25.49 Construct intermittent passing lanes.
MP 25.49 to MP 28.00 Construct intermittent passing lanes.
MP 32.00 to MP 33.83 Construct intermittent passing lanes.
MP 35.54 to MP 38.84 Construct intermittent passing lanes.
MP 41.88 to MP 44.57 Widen from 2 lanes to 4-5 lanes.
MP 44.57 to MP 46.62 Widen from 2 lanes to 4 lanes.
Further Study US 12 and I-5 Interchange.

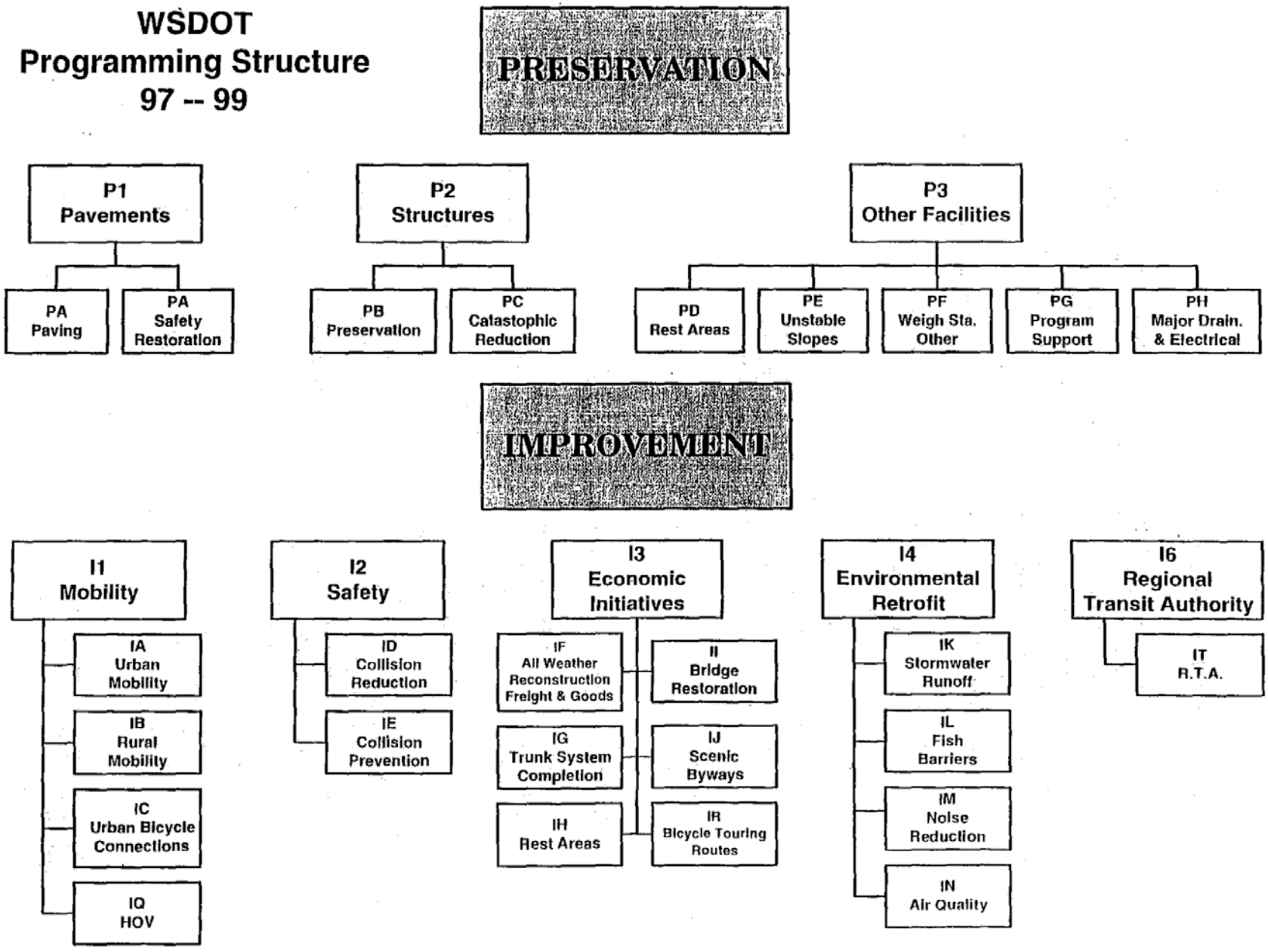
US 12 Improvements With No Funding Sources Identified

At the time of this *Route Development Plan* printing, the following strategies related to US 12 were identified in the *SHSP* as excluded from the financially constrained element.

MP 0.00 to MP 1.84 including the Aberdeen Couplet. See the US 101 Aberdeen / Hoquiam EIS for improvements in this area.
MP 0.65 to MP 1.76 Purchase of access rights, proposed full access control.
MP 1.76 to MP 7.02 Purchase of access rights, proposed full access controlled, multi-lane divided highway.
MP 7.02 to MP 9.04 Purchase of access rights, proposed full access controlled for route continuity, multi-lane divided highway.
MP 38.84 to MP 41.88 Construct intermittent passing lanes.
MP 42.65 to MP 44.57 Purchase of access rights, proposed partial access control.

For further information about highway improvement strategies, consult the most current *State Highway System Plan*. A Highway Improvement Program Structure tree is shown on the following page.

WSDOT Programming Structure 97 -- 99



As a result of this community based study, the following additional recommendations will be forwarded for possible inclusion in the next Highway Systems Plan (HSP). As part of the evaluation process, each project will be evaluated to see if it addresses a strategy in the WTP. If so, then the local RTPO group will rank these projects.

1. Revise signing to enable drivers to use alternate routes.
2. Install traffic signals when warrants are met.
3. Construct right and left turn acceleration and deceleration lanes on the at-grade intersections on the freeway section.
4. Construct a multi-lane highway with soil median between Anderson Road and Rochester.

The *US 12 Route Development Plan* was created with contributions from various jurisdictions and the traveling public. A Stakeholder Committee was formed to assist the WSDOT Olympic Region in the route development planning process. Several public meetings were facilitated by WSDOT where the traveling public shared with the Stakeholders their concerns and suggested improvement ideas. This information was used by the Stakeholders when they developed their recommendations presented in Chapter 4.

The Stakeholder committee was comprised of representatives from the cities of Aberdeen, Elma, and Montesano, the Community of Rochester, Gray's Harbor Transit Authority, Grays Harbor Regional Planning, Grays Harbor Planning, Port of Grays Harbor, Chehalis Tribe, Thurston County Engineer, Federal Highway Administration, and the WSDOT Olympic Region Planning, Maintenance, and Project Development Offices.

The Stakeholder Committee provided valuable input to the process, through a series of meetings, ultimately resulting in this "consensus-based" *Route Development Plan*.

Stakeholder Meeting #1, July 16, 1998 - Issues Identification

The initial Stakeholder meeting was designed to allow the group to come together and provide input from various perspectives about the issues along US Highway 12 from Aberdeen to Grand Mound. The purpose of Route Development Planning and how it fits within WSDOT's planning and program structure was introduced.

In addition to providing their respective agency's long range plans as they related to US 12, the Committee established a set of Objective and Generic Alternative Statements that was used to identify issues and areas of improvement.

A Brainstorming session was done during this meeting which proved very productive. This also developed into a listing of facilities and services that appear to be lacking in general or could be improved (non-motorized paths or transit service along other parallel alignments would be an example of this).

The summary of the issues identified has been sorted below by locations along the route (Aberdeen vicinity, Montesano, Elma, etc.)

Identified Issues: City of Aberdeen through Central Park

Transit & Non-motorized Issues

- East Aberdeen does not adequately address transit stops (limited right of way)
- Central Park - Need crossing for transit (including Clemons Road)
- Passenger pick up should be off the highway - Central Park Drive serves as parallel facility for potential transit route
- Need pedestrian access across Wishkah River connecting to pathway at Chehalis River at Morrison Park
- Need ADA Accessible route from city center to Walmart (sidewalk improvements)
- Lacking adequate bike route from East Aberdeen

Environmental Issues

- Aberdeen Bluffs / Slides
- Hard to bypass Central Park and the Bluffs ($$$)
- Central Park - Old County Road, wetland issues

Mobility and Access Issues

- Congestion on US 12 in East Aberdeen
- Industrial traffic capacity
- Central Park Drive access issues - Old County Road. Apply further access management through Central Park (115 private road approaches), improve access to major cross streets while limiting other intersections
- Need Frontage Road

Highway Safety Issues

- Narrow shoulders and congestion/access

Identified Issues: Wynoochee River Vicinity to Elma Vicinity

Transit & Non-motorized Issues

- Pedestrians crossing the "freeway" in Elma to get to the Park
- Need properly placed transit stops for residents
- Transit - exist/proposed service
  agreement on operation and maintenance on bus stops and pullouts
- SR 107 is a Bicycle and Pedestrian Route

Environmental Issues

- Apparent large wetland area in vicinity of Montesano - SR 107 Interchange area
- Flood plains
- Wetlands? Flooding?, Schouweiler Road - impacts of land use - flood plain

Mobility Issues

- SR 107 serves South US 101 travelers,-Blue Slough Road (107 to 101) if improved would help.

Highway Safety and Access Issues

- Provide grade separations / interchanges at the at-grade intersections (Keys Rd, Monte-Brady Rds. Schouweiler Rd)
- The WSDOT SHSP identifies the need to provide a highway safety rest area between Mileposts 7 and 24 (since SR 8 in Elma provides a rest stop for eastbound travelers. the logical need is to provide a rest stop on US 12 in the westbound direction)

Identified Issues: Elma to Grand Mound

Transit & Non-motorized Issues

- Need properly placed transit stops for residents
- Transit - exist/proposed service
  agreement on operation and maintenance on bus stops and pullouts
- US 12 in Rochester needs to be more "pedestrian friendly"
- Need Properly placed transit stops for residents
- Transit - exist/proposed service
  agreement on operation and maintenance on bus stops and pullouts for any new service

Environmental Issues

- Flooding, wetlands
- Flooding between Rochester and Oakville (need box culverts)

Mobility Issues

- Lack of passing opportunities (WSDOT State Highway System Plan)

Access Issues

- Intersections, driveways

Highway Safety Issues

- Sight distance - poor visibility coming off of EB US 12 to Elma
  Also, other public/private road approaches intersect at sharp angles (sight distance)
- Old Bridges - Black River, 7 narrow bridges from Elma to Black River
- The Traffic Mix
  Elma to I-5 - **high truck route**
  High truck traffic in the mix
  Main route to beaches / Recreation route - **unfamiliar drivers**
- Channelization wanted at SR 12 and Joselyn. SR 12 parallel to railroad at this location
- Want intersection improvement Grand Mound/Sargent Road/Old 99

Stakeholder Meeting #2, August 13, 1998 - Identify Preliminary Solution Strategies

- At the second stakeholder meeting, the group developed Objective Statements along with generic alternatives to achieve the objectives.
- Following the successful creation of these guiding phrases, the committee brainstormed solution strategies that will help achieve the objectives.

Objective Statements and Alternatives Developed

The following Objective Statements and Alternatives were developed and adopted by the US 12 Stakeholder Committee.

Highway Mobility Objective

"Maintain current level of service standards for efficient movement of people and goods along US 12 and at intersections."

Generic Alternatives

- Channelize intersections in appropriate areas
- Limit access points and intersections in appropriate areas
- Add more travel lanes in appropriate areas
- Construct passing lanes in appropriate areas
- Provide efficient signing in appropriate areas

Highway Safety Objective

"Reduce accident rates and severity. Continue to use the 85th percentile to set speed limits."

Generic Alternatives

- Provide passing lanes
- Limit access points
- Create pedestrian routes and crossings
- As appropriate, use channelization and grade separation at "at-grade" intersections
- Incorporate slope flattening into improvement projects
- Provide sight distance improvements
- Improve shaded areas to reduce ice-related accidents
- Make use of effective signing
- Construct roadway to current standards, widen shoulders
- Widen bridges to current standards

Transit Objective

"Provide safe pedestrian access to transit stops."

Generic Alternatives

- Establish more transit stops
- Give shelters greater visibility
- Increase the transit capacity along US 12
- Construct more bus pull outs

Non-motorized Travel Objective

"Provide a pedestrian / bicycle route that meets the needs of its users."

Generic Alternatives

- Create safer access to recreational facilities
- Incorporate bicycle / pedestrian facilities into other projects
- Provide connections linking to existing systems and parking areas
- Improve Wishkah River Bridge facilities

Environmental Objective

"Balance environmental, social, and economic impacts when developing transportation improvements".

Preliminary Solution Strategies Identified

Identified Solutions: City of Aberdeen to the Wynoochee River

- Build pedestrian overcrossings in association with transit stops, install fencing through the Central Park area to prevent unauthorized pedestrian access to the highway
- Improve pedestrian crossing over the Wishkah River, incorporate into other improvements
- Construct US 101 / US 12 interchange per EIS
- Implement the strategies identified in the Aberdeen/Hoquiam EIS
- Implement access management procedures, balancing mobility and access to land use
- Widen shoulders to current standards

Identified Solutions: Wynoochee River to Elma

- Widen the Wynoochee River Bridge (or construct 2nd bridge)
- Construct pedestrian overcrossing to Elma Lakes park
- Eliminate at-grade crossings, construct interchanges and frontage roads
- Satsop River Access: Sight distance, construct acceleration / deceleration lanes, add shoulders on bridge

Identified Solutions: Elma to Grand Mound

- Improve hydraulic capacity to reduce flooding
- Construct passing lanes / widen to four lanes.
- Improve sight distances
- Realign Intersections, channelize as warranted, signals as warranted, institute access management
- Widen bridges
- Widen shoulders
- Fix problems associated with ice on roadways
- Slope flattening

Public Meetings, August - September 1998

Public open house workshops were held in September 1998 at Montesano, Rochester, and at the Chehalis Indian Reservation. A booth at the Grays Harbor County Fair was also provided in August 1998 to alert the public to the route development planning process and to take public input.

The public meetings allowed the traveling public to participate in the development of issues identification and potential solution strategies. By conducting these meetings at various geographic locations along US 12, the Stakeholders heard of local issues important to people who live and travel along US 12.

During the first series public input was requested for consideration by the stakeholders for inclusion in the RDP. A second open house workshop was held at the Rochester High School on February 3rd, 1999, to obtain further input from the residents of the Rochester-Grand Mound areas. This workshop resulted in the recommended couplet for the Rochester area. Many of the public concerns were about the safety of the route and, where appropriate, these concerns were incorporated into the Stakeholders Committee comments and have been included in the RDP.

Stakeholder Meeting #3, October 8, 1998 - Refine Solution Strategies

This third stakeholder meeting allowed the group to focus on information learned from the public workshops and to recommend solutions to achieve the objectives. The preliminary strategies developed at the second stakeholder meeting were further refined and are reflected in the recommendations presented in Chapter 4 of the RDP.

Stakeholder Meeting #4, November 19, 1998 - Review Draft *RDP*

The Stakeholders reviewed the *Draft US 12 Route Development Plan* at this meeting and provided comments on editing for final RDP. This meeting began a review period with the Stakeholders and WSDOT.

Stakeholder Meeting #5, March 30, 1999 - Review Final *RDP*

The Stakeholders reviewed chapters 2 and 4 of the *Draft US 12 Route Development Plan* and approved changes for inclusion in the final *US 12 RDP*.

Adopt Final *RDP*

To be completed in final RDP

Appendix B Highway Access Management Law

This Appendix provides selected text from WAC 468-52 for informational purposes as it relates to highway access management. Due to volume, the complete chapter is not presented. For additional information, please refer to other related chapters such as WAC 468-51 and RCW 47.50 (not reproduced in this Appendix).

WAC 468-52-010 Purpose.

This chapter is adopted in accordance with chapter 47.50 RCW for the implementation of an access control classification system and standards for the regulation and control of vehicular ingress to, and egress from the state highway system.

WAC 468-52-020 Definitions.

For the purposes of this chapter, the following definitions of the terms shall apply unless the context clearly indicates otherwise:

"Conforming connection" means a connection that meets current department location, spacing, and design criteria.

"Connection" means approaches, driveways, turnouts, or other means of providing for the right of access to or from controlled access facilities on the state highway system.

"Connection permit" means a written authorization given by the department for a specifically designed connection to the state highway system at a specific location for a specific type and intensity of property use and specific volume of traffic for the proposed connection, based on the final stage of proposed development of the applicants property. The actual form used for this authorization will be determined by the department.

"Controlled access facility" means a transportation facility (excluding limited access facilities as defined in chapter 47.52 RCW) to which access is regulated by the governmental entity having jurisdiction over the facility. Owners or occupants of abutting lands and other persons have a right of access to and from such facility at such points only and in such manner as may be determined by the governmental entity.

"Corner clearance" means the distance from an intersection of a public or private road to the nearest connection along a controlled access facility. This distance is measured from the closest edge of the traveled way of the intersecting road to the closest edge of the traveled way of the connection measured along the traveled way (through lanes).

"Department" means the Washington state department of transportation.

"Governmental entity" means, for the purpose of this chapter, a unit of local

government or officially designated transportation authority that has the responsibility for planning, construction, operation, maintenance, or jurisdiction over transportation facilities.

"Intersection" means an at grade connection on a state highway with a road or street duly established as a public road or public street by the local governmental entity.

"Joint use connection" means a single connection point that serves as a connection to more than one property or development, including those in different ownership's or in which access rights are provided in the legal descriptions.

"Limited access facility" means a highway or street especially designed or designated for through traffic, and over, from, or to which owners or occupants of abutting land, or other persons have no right or easement, or only a limited right or easement of access, light, view, or air by reason of the fact that their property abuts upon such limited access facility, or for any other reason to accomplish the purpose of a limited access facility.

"Nonconforming connection" means a connection not meeting current department location, spacing, or design criteria.

"Permit" means written approval issued by the department, subject to conditions stated therein, authorizing construction, reconstruction, maintenance, or reclassification of a state highway connection and associated traffic control devices on or to the departments right of way.

"Permitting authority" means the department or any county, municipality, or transportation authority authorized to regulate access to their respective transportation systems.

"State highway system" means all roads, streets, and highways designated as state routes pursuant to chapter 47.17 RCW.

WAC 468-52-030 General.

The connection and intersection spacing distances specified in this chapter are minimums. Greater distances may be required by the department on individual permits issued in accordance with chapter 468-51 WAC to provide desirable traffic operational and safety characteristics. If greater distances are required, the department will document, as part of the response to a connection permit application pursuant to chapter 468-51 WAC, the reasons, based on traffic engineering principles, that such greater distances are required. Nonconforming permits may be issued in accordance with chapter 468-51 WAC allowing less than minimum spacing where no other reasonable access exists, or where it can be substantiated by a traffic analysis in the permit application that allowing less than the minimum spacing would not adversely affect the desired function of the state highway in accordance with the assigned access classification, and would not adversely affect the safety or operation of the state highway.

WAC 468-52-040 Access control classification system and standards.

This section provides an access control classification system consisting of five classes. The functional characteristics and the access control design standards for each class are described. The classes are arranged from the most restrictive, class one, to the least restrictive, class five. This access control classification system does not include highways or portions thereof that have been established as limited access highways pursuant to chapter 47.52 RCW. For state highways that are planned for the establishment of limited access control in accordance with the Master Plan for Limited Access Highways, an access control classification will be assigned to each highway segment to remain in effect until such time that the facility is established as a limited access facility.

On all access classes, property access shall be located and designed to minimize interference with transit facilities and/or high occupancy vehicle (HOV) facilities on state highways where such facilities exist or where such facilities are proposed in a state, regional, metropolitan, or local transportation plan. In such cases, if reasonable access is available from the general street system, primary property access shall be provided from the general street system rather than from the state highway.

(1) Class one.

(a) Functional characteristics:

These highways have the capacity for safe and efficient high speed and/or high volume traffic movements, providing for interstate, interregional, and intercity travel needs and some intracity travel needs. Service to abutting land is subordinate to providing service to major traffic movements. Highways in this class are typically distinguished by a highly controlled, limited number of public and private connections, restrictive medians with limited median openings on multilane facilities, and infrequent traffic signals.

(b) Access control design standards:

(i) It is the intent that the design of class one highways be generally capable of achieving a posted speed limit of fifty to fifty-five mph. Spacing of intersecting streets, roads, and highways shall be planned with a minimum spacing of one mile. One-half mile spacing may be permitted, but only when no reasonable alternative access exists.

(ii) Private direct access to the state highway shall not be permitted except when the property has no other reasonable access to the general street system. The following standards will be applied when direct access must be provided:

(A) The access connection shall continue until such time that other reasonable access to a highway with a less restrictive access control classification or access to the general street system becomes available and is permitted.

(B) The minimum distance to another public or private access connection shall be one thousand three hundred twenty feet. Nonconforming connection permits may be issued to provide access to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming connection permit. No

more than one connection shall be provided to an individual parcel or to contiguous parcels under the same ownership.

(C) All private direct access shall be for right turns only on multilane facilities, unless special conditions warrant and are documented by a traffic analysis in the connection permit application, signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43 RCW.

(D) No additional access connections to the state highway shall be provided for newly created parcels resulting from property divisions. All access for such parcels shall be provided by internal road networks. Access to the state highway will be at existing permitted connection locations or at revised connection locations, as conditions warrant.

(iii) A restrictive median shall be provided on multilane facilities to separate opposing traffic movements and to prevent unauthorized turning movements.

(2) Class two.

(a) Functional characteristics:

These highways have the capacity for medium to high speeds and medium to high volume traffic movements over medium and long distances in a safe and efficient manner, providing for interregional, intercity, and intracity travel needs. Direct access service to abutting land is subordinate to providing service to traffic movement. Highways in this class are typically distinguished by existing or planned restrictive medians, where multilane facilities are warranted, and minimum distances between public and private connections.

(b) Access control design standards:

(i) It is the intent that the design of class two highways be generally capable of achieving a posted speed limit of thirty-five to fifty mph in urbanized areas and forty-five to fifty-five mph in rural areas. Spacing of intersecting streets, roads, and highways shall be planned with a minimum spacing of one-half mile. Less than one-half mile intersection spacing may be permitted, but only when no reasonable alternative access exists. In urban areas and developing areas where higher volumes are present or growth that will require signalization is expected in the foreseeable future, it is imperative that the location of any public access be planned carefully to ensure adequate signal progression. Addition of all new connections, public or private, that may require signalization will require an engineering analysis signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43 RCW.

(ii) Private direct access to the state highway system shall be permitted only when the property has no other reasonable access to the general street system or if access to the general street system would cause traffic operational conditions or safety concerns unacceptable to the local governmental entity. When direct access must be provided, the following conditions shall apply:

(A) The access connection shall continue until such time that other reasonable access to a highway with a less restrictive access control classification or acceptable access to the general street system becomes available and is permitted.

(B) The minimum distance to another public or private access connection shall be six hundred sixty feet. Nonconforming connection permits may be issued to

provide access to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming connection permit. No more than one connection shall be provided to an individual parcel or to contiguous parcels under the same ownership unless the highway frontage exceeds one thousand three hundred twenty feet and it can be shown that the additional access would not adversely affect the desired function of the state highway in accordance with the assigned access classification, and would not adversely affect the safety or operation of the state highway.

(C) All private direct access shall be for right turns only on multilane facilities, unless special conditions warrant and are documented by a traffic analysis in the connection permit application, signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43 RCW.

(D) No additional access connections to the state highway shall be provided for newly created parcels resulting from property divisions. All access for such parcels shall be provided by internal road networks. Access to the state highway will be at existing permitted connection locations or at revised connection locations, as conditions warrant.

(iii) On multilane facilities a restrictive median shall be provided to separate opposing traffic movements and to prevent unauthorized turning movements.

(3) Class three.

(a) Functional characteristics:

These highways have the capacity for moderate travel speeds and moderate traffic volumes for medium and short travel distances providing for intercity, intracity, and intercommunity travel needs. There is a reasonable balance between direct access and mobility needs for highways in this class. This class is to be used primarily where the existing level of development of the adjoining land is less intensive than maximum buildout and where the probability of significant land use change and increased traffic demand is high. Highways in this class are typically distinguished by planned restrictive medians, where multilane facilities are warranted, and minimum distances between public and private connections. Two-way left-turn-lanes may be utilized where special conditions warrant. Development of properties with internal road networks and joint access connections are encouraged.

(b) Access control design standards:

(i) It is the intent that the design of class three highways be generally capable of achieving a posted speed limit of thirty to forty mph in urbanized areas and forty-five to fifty-five mph in rural areas. In rural areas, spacing of intersecting streets, roads, and highways shall be planned with a minimum spacing of one-half mile. Less than one-half mile intersection spacing may be permitted, but only when no reasonable alternative access exists. In urban areas and developing areas where higher volumes are present or growth that will require signalization is expected in the foreseeable future, it is imperative that the location of any public access be planned carefully to ensure adequate signal progression. Where feasible, major intersecting roadways that may ultimately require signalization shall be planned with a minimum of one-half mile spacing. Addition of all new connections, public

or private, that may require signalization will require an engineering analysis signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43 RCW.

(ii) Private direct access:

(A) No more than one access shall be provided to an individual parcel or to contiguous parcels under the same ownership unless it can be shown that additional access points would not adversely affect the desired function of the state highway in accordance with the assigned access classification, and would not adversely affect the safety or operation, of the state highway.

(B) The minimum distance to another public or private access connection shall be three hundred thirty feet. Nonconforming connection permits may be issued to provide access to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming connection permit.

(4) Class four.

(a) Functional characteristics:

These highways have the capacity for moderate travel speeds and moderate traffic volumes for medium and short travel distances providing for intercity, intracity, and intercommunity travel needs. There is a reasonable balance between direct access and mobility needs for highways in this class. This class is to be used primarily where the existing level of development of the adjoining land is more intensive and where the probability of major land use changes is less probable than on class three highway segments. Highways in this class are typically distinguished by existing or planned nonrestrictive medians. Restrictive medians may be used as operational conditions warrant to mitigate turning, weaving, and crossing conflicts. Minimum connection spacing standards should be applied if adjoining properties are redeveloped.

(b) Access control design standards:

(i) It is the intent that the design of class four highways be generally capable of achieving a posted speed limit of thirty to thirty-five mph in urbanized areas and thirty-five to forty-five mph in rural areas. In rural areas, spacing of intersecting streets, roads, and highways shall be planned with a minimum spacing of one-half mile. Less than one-half mile intersection spacing may be permitted, but only when no reasonable alternative access exists. In urban areas and developing areas where higher volumes are present or growth that will require signalization is expected in the foreseeable future, it is imperative that the location of any public access be planned carefully to ensure adequate signal progression. Where feasible, major intersecting roadways that may ultimately require signalization shall be planned with a minimum of one-half mile spacing. Addition of all new connections, public or private, that may require signalization will require an engineering analysis signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43 RCW.

(ii) Private direct access:

(A) No more than one access shall be provided to an individual parcel or to contiguous parcels under the same ownership unless it can be shown that additional access points would not adversely affect the desired function of the state highway in

accordance with the assigned access classification. and would not adversely affect the safety or operation of the state highway.

(B) The minimum distance to another public or private access connection shall be two hundred fifty feet. Nonconforming connection permits may be issued to provide access to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming connection permit.

(5) Class five.

(a) Functional characteristics:

These highways have the capacity for moderate travel speeds and moderate traffic volumes for primarily short travel distances providing for intracity and intracommunity trips primarily for access to state highways of higher classification. Access needs may generally be higher than the need for through traffic mobility without compromising the public health, welfare, or safety. These highways will generally have nonrestrictive medians.

(b) Access control design standards:

(i) It is the intent that the design of class five highways be capable of achieving a posted speed limit of twenty-five to thirty-five mph. In rural areas, spacing of intersecting streets, roads, and highways shall be planned with a minimum spacing of one-quarter mile. Less than one-quarter mile spacing may be permitted where no reasonable alternative exists. In urban areas and developing areas where higher volumes are present or growth that will require signalization is expected in the foreseeable future, it is imperative that the location of any public access be planned carefully to ensure adequate signal progression. Where feasible, major intersecting roadways that may ultimately require signalization shall be planned with a minimum of one-quarter mile spacing. Addition of all new connections, public or private, that may require signalization will require an engineering analysis signed and sealed by a qualified professional engineer, registered in accordance with chapter 18.43 RCW.

(ii) Private direct access:

(A) No more than one access shall be provided to an individual parcel or to contiguous parcels under the same ownership unless it can be shown that additional access points would not adversely affect the desired function of the state highway in accordance with the assigned access classification, and would not adversely affect the safety or operation of the state highway.

(B) The minimum distance to another public or private access connection shall be one hundred twenty-five feet. Nonconforming connection permits may be issued to provide access to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming connection permit.

(6) Interim standards. The interim standards set forth in this section shall be effective for all segments of the state highway system, except where access rights have been previously acquired pursuant to chapter 47.52 RCW, until superseded by an adopted access control classification as defined in this chapter. These interim standards are mandatory for all state highways where the department is the permitting authority, and are advisory for city streets designated as state highways pursuant to chapter 47.24 RCW where incorporated cities or towns are the

permitting authority. Permit applications received after adoption of this chapter, but before the classification of a highway segment is adopted, shall be reviewed for consistency with the interim standards. After a highway segment has been classified pursuant to this chapter, the standards described for that particular class shall supersede the interim standards for the classified highway segment.

(7) **Corner clearance**. Corner clearances for connections shall meet or exceed the minimum connection spacing requirements of the interim standards, or of the applicable access class where the highway segment has been assigned a classification. A single connection may be placed closer to the intersection, pursuant to the permit application process specified in chapter 468-51 WAC, and in accordance with the following criteria:

(a) If, due to property size, corner clearance standards of this chapter cannot be met, and where joint access meeting or exceeding the minimum corner clearance standards cannot be obtained, or is determined by the department to be not feasible because of conflicting land use or conflicting traffic volumes or operational characteristics, then the following minimum corner clearance criteria may be used:

*For Access Class 5 and for speeds less than thirty-five mph, one hundred twenty-five feet may be used.

(b) In cases where connections are permitted under the above criteria, the permit issued pursuant to chapter 468-51 WAC shall contain the following additional conditions:

(i) There shall be no more than one connection per property frontage on the state highway.

(ii) When joint or alternate access meeting or exceeding the minimum corner clearance standards becomes available, the permittee will close the permitted connection, unless the permittee shows to the department's satisfaction that such closure is not feasible.

WAC 468-52-050 Application of access control classification system standards. (1) Review of permits on classified highway segments. Connection permit applications on controlled access facilities of the state highway system received on a particular segment that has been classified in accordance with this chapter shall be reviewed subject to the requirements of this chapter pursuant to the permit application process specified in chapter 468-51 WAC. (2) Prior approvals. Connections permitted prior to the adoption of this chapter and unpermitted connections that do not require closure in accordance with WAC 468-51-030 are not required to meet the interim standards or the standards of assigned access classifications adopted pursuant to this chapter. (3) New permits required by chapter 468-51 WAC. All new connection permits required due to significant changes in property site use pursuant to WAC 468-51-110, or permit modification pursuant to WAC 468-51-120 shall be reviewed subject to the requirements of this

chapter. (4) Permits approved under interim standards. Connection permits issued in accordance with the interim standards in WAC 468-52-040 on a highway segment where an access classification has not been adopted shall remain in effect after adoption of an access classification on that highway segment unless a new permit is required due to changes in property site use pursuant to WAC 468-51-110 or unless permit modification, revocation, or closure of the permitted connection is required pursuant to WAC 468-51-120. (5) Nonconforming permits. Nonconforming permits may be issued in accordance with WAC 468-51-100 for certain connections not meeting the interim standards in WAC 468-52-040 or the access classification location and spacing standards adopted for a particular highway segment.

WAC 468-52-060 Assignment of access control classifications to highway segments. The assignment of an access control classification to all controlled access segments of the state highway system shall be the responsibility of the department. The process to be followed in assigning the classifications is as follows: (1) Defining segments. The determination of the length and termini of segments shall be the responsibility of the department working in cooperation with the Regional Transportation Planning Organizations, Metropolitan Planning Organizations, and the appropriate local governmental entities. (a) Segments of highways to be assigned to a particular access control classification shall be defined by the department in cooperation with local governments. The length and termini of segments shall take into consideration the mobility and access needs of the traveling public, the access needs of the existing and proposed land use abutting the highway segment, and the existing and desired mobility characteristics of the roadway. The number of classification changes occurring along a particular highway shall be minimized to provide highway system continuity, uniformity, and integrity to the maximum extent feasible. The segments shall not necessarily be confined by local jurisdictional boundaries. Points of transition between classifications along a particular route should be located on boundaries, or coincident with identifiable physical features. (2) Assignment of classifications. All segments of all controlled access facilities on the state highway system shall be assigned to one of the access control classes one through five. The assignment of a classification to a specific segment of highway shall be the responsibility of the department. The classification shall be made in cooperation with the Regional Transportation Planning Organization, Metropolitan Planning Organization, and the appropriate local governmental entities. For city streets that are designated as state highways pursuant to chapter 47.24 RCW, the department will obtain concurrence in the final class assignment from the city or town for those state highways where the city or town is the permitting authority. The assignment of a classification shall take into consideration the following factors: (a) Local land use plans, zoning, and land development regulations as set forth in adopted comprehensive plans; (b) The current and potential functional classification of the highway; (c) Existing and projected future traffic volumes; (d) Existing and projected state, local, and metropolitan planning organization transportation plans and needs including consideration of new or improved parallel facilities; (e) Drainage requirements; (f)

The character of the lands adjoining the highway; (g) The type and volume of traffic requiring access; (h) Other operational aspects of access, including corridor accident history; (i) The availability of reasonable access to the state highway by way of county roads or city streets as an alternative to a connection to the state highway; (j) The cumulative effect of existing and projected connections on the state highway systemps ability to provide for the safe and efficient movement of people and goods within the state. (3) Changes in jurisdiction. When the boundaries of an incorporated city or town are revised to include a portion of a controlled access state highway resulting in a change in the permitting authority from the department to the city or town in accordance with chapter 47.24 RCW. the access classification of that portion of the state highway shall remain unchanged unless modified in accordance with WAC 468-52-070.

WAC 468-52-070 Review and modification of classifications. (1) Department initiated action. The department may, at any time, initiate a review of the access control classification of any segment of any state highway. When a major change occurs in any of the factors noted in WAC 468-52-060(2), the department shall review the access classification for the specific segments of any state highway affected by the change. Prior to the initiation of any change in classification of a highway segment, the department shall notify in writing the appropriate Regional Transportation Planning Organization, Metropolitan Planning Organization, and local governmental entities. The department will consult with the RTPO, MPO, and local governmental entities and shall take into consideration, any comments or concerns received during the review process. For city streets that are designated as state highways pursuant to chapter 47.24 RCW, the department will obtain concurrence in the final class assignment from the city or town for those state highways where the city or town is the permitting authority. The department shall notify the RTPO, MPO, and local governmental entities in writing of the final determination of the reclassification action. (2) Requests for departmental review. A Regional Transportation Planning Organization, Metropolitan Planning Organization, or local governmental entity may request, in writing, at any time that the secretary of transportation initiate a review of the access control classification of a specific segment or segments of a state highway(s). Such written request shall identify the segment(s) of state highway for which the review is requested and shall include a specific recommendation for the reclassification of the highway segment(s) involved. Justification for the requested change shall be provided in the request taking into account the standards and criteria in WAC 468-52-040 and 468-52-060. The department will consult with the RTPO, MPO, and local governmental entities involved and shall take into consideration, any comments or concerns received during the review process. The department shall notify the RTPO, MPO, and local governmental entities in writing of the final determination of the reclassification action. Other interested persons or organizations who wish to initiate a review of the access control classification of a specific highway segment shall do so through the local governmental entity, MPO, or RTPO.

Appendix C Glossary of Terms

Activity Center - A major concentration of employment and commercial activity which may be found in suburban areas as well as in the downtown areas.

Alignment - The specific path a highway will take between two designated points within a corridor.

Americans with Disabilities Act of 1990 (ADA) - mandates changes in building code, transportation services and facilities and hiring practices to prevent discrimination against persons with disabilities.

Average Daily Traffic (ADT) - The average number of vehicles that pass a specified point during a 24-hour period.

Capacity - Maximum number of vehicles (vehicular capacity) or persons (person capacity) that can pass over a given section of roadway in one or both directions during a given period of time under prevailing environmental, roadway and roadway user conditions, usually expressed as vehicles per hour or persons per hour.

Channelization - The separation or regulation of conflicting traffic movements into definite paths of travel by use of pavement markings, raised islands or other means.

Comprehensive Plan - Developed by town, city and county jurisdictions to manage their future growth and economy while protecting the environment. Individual elements of most comprehensive plans include: Land Use, Transportation, Housing, Capital Facilities, Utilities, Economic Development and the Environment.

Corridor - One of several general paths which a highway can take to satisfy the route requirements and which has one or more specific alignment alternatives. A corridor can include, as a whole or in part, any existing state highway facility, county highway facility, city street, new alignments or any combination of these.

Directional Design Hour Volume (DDHV) - The traffic volume for the design hour in the peak direction of flow, usually a forecast of the relevant peak hour volume, in vehicles per hour.

Design Hour Volume (DHV) - The traffic volume for the design hour, in vehicles per hour.

Divided Highway - A highway with separated roadbeds for traffic in opposing directions.

Full Access Intersection - An intersection that provides for both left and right turning movements for vehicles entering the intersection from any direction.

Grade - The rate of ascent or descent of a roadway, expressed as a percent: the change in roadway elevation per unit of horizontal length.

Horizontal Alignment - The straight lines (tangents) and curves of the road.

Intersection Improvements - provide obstruction-free sight triangles (often achieved through slope flattening, selective clearing or both), eliminate skews where possible, separate grades where possible, provide illumination and other enhancements to improve the safety characteristics of the intersection which may have the desirable collateral effect of improving the transportation characteristics of the intersection.

Lane - A portion of a street or highway, usually indicated by pavement markings. that is intended for one line of vehicles.

Level of Service (LOS) - The level of service is a measure of how well a transportation facility is serving the volume of vehicles using it. A descriptive measure of the quality and quantity of transportation service provided to users. Quantifiable characteristics such as travel time, travel cost, number of transfers. etc., are considered.

Median - The portion of a divided highway separating the traveled ways for traffic in opposite directions.

Metropolitan Planning Organization (MPO) - MPOs were organized after passage of the 1962 Federal Highway Act which first formally legislated cooperation between state DOTs and local communities in urban areas. The 1991 ISTEA greatly expanded MPO authority. MPOs have the authority to allocate federal funds coming into their regions through the Surface Transportation Program (STP) and Congestion Mitigation and Air Quality (CMAQ) Program.
The MPO is responsible for regional transportation planning in an urbanized area. Members are designated by the governor and local elected officials.

Milepost (MP) - A sequential number, in designated direction of travel, of 1/100 mile increments along a State Route.

Mobility - Ability to move from one place to another. As congestion increases, mobility decreases.

Objectives - Specific, measurable statements related to the attainment of goals.

Park-and Ride-Lot - A transit. carpool and/or vanpool facility where people can park their auto and then ride transit or join a carpool or vanpool to work.

Queue - A line of people or vehicles.

Revised Code of Washington (RCW)

Right-of-way - Land owned by the state for the purposes of highway and transportation facility construction and operation.

Sight Distance - Minimum distance necessary for a driver to see conflicting traffic and take the action necessary to avoid colliding with that traffic.

State Environmental Policy Act (SEPA)

Transit - Passenger transportation that is available to any person who pays a prescribed fare. Operating on established schedules along fixed routes and designated stops, transit is designed to move relatively large groups of people at one time.

Transit Center (transit station) - A mode transfer facility serving transit buses and other modes such as automobiles, bicycles and pedestrians.

Travel Demand Management (TDM) - refers to the policies, programs and actions implemented to increase the use of High Occupancy Vehicles (public transit, carpooling and vanpooling) and non-motorized transportation and/or spread the timing of travel to less congested time periods through alternate work-hour programs.

Transportation System Management (TSM) - improves the flow of traffic through traffic signal synchronization, freeway on-ramp signals, the construction of high-occupancy-vehicle (HOV) lanes, left turn restrictions and other measures.

Vertical Alignment - The grades the road takes as it passes over terrain. Typically the vertical alignment attempts to use the natural contours and geography of the area.

Washington Administrative Code (WAC)

Washington State Department of Transportation (WSDOT)

Appendix D References

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