
Final



Interchange Area Management Plan

Interstate 5 (Pacific Highway) @ Oregon 214/219

Oregon Department of Transportation

June 2006

Contents

Section	Page
1 Background	1-1
Introduction.....	1-1
Purpose and Reasons for Preparing the IAMP	1-2
Description of Planning Area	1-2
Other Work Products.....	1-3
Interchange Classification and Function.....	1-5
2 Problem Statement, Project Purpose and Need, and Project Goals	2-1
Problem Statement	2-1
Purpose and Need of the Project.....	2-3
Project Goals and Objectives.....	2-3
3 Existing Plans and Policies Review and Findings of Compliance	3-1
Overview	3-1
Federal and State Plans, Policies, and Regulations.....	3-1
Local Plans, Policies, and Ordinances	3-17
4 Land Use and Environmental Analysis	4-1
Land Use.....	4-1
Environmental	4-4
5 Existing Conditions and Forecast Deficiencies Analysis	5-1
Existing Geometric Conditions.....	5-1
Safety Analysis.....	5-2
Traffic Operations Analysis	5-5
Summary of Existing and Future Deficiencies	5-7
6 Alternatives Analysis	6-1
Introduction.....	6-1
Process Overview	6-2
EA Management Structure and Decision Process.....	6-7
Definition of Transportation Problem	6-8
Development of Evaluation Framework.....	6-8
Formulation of Alternatives.....	6-12
Threshold Screening of Alternatives	6-18
Evaluation of Feasible Alternatives	6-20
Selection of Alternatives for Detailed Evaluation.....	6-26
NEPA Evaluation	6-26

7	Plan Recommendations	7-1
	Proposed Project	7-1
	Traffic Operations Analysis	7-2
	Access Management.....	7-7
	Land Use Management and Findings	7-9
8	Public Involvement Summary.....	8-1
9	Plan Implementation Responsibilities	9-1
	Implementing Actions	9-1
	Local Adoption Process	9-3
	State Adoption Process.....	9-3
	Cooperative Plan Implementation.....	9-3
	Investment Requirements	9-3
10	References	10-1

Appendixes

A	Land Use Planning Maps
B	Accident History, Traffic Volumes, Lane Configurations, and Queues of Alternatives (2025)
C	Standards Deviation Approval
D	Woodburn Development Ordinance 2.116
E	Intergovernmental Agreements
F	Public and Agency Coordination
G	Technical Ratings Methods and Measures

Tables

3-1	Intersection Signal Spacing in Study Area.....	3-9
3-2	Proposed Deviations to Access Management Spacing Standards.....	3-13
4-1	Summary of Distinguishing Environmental Impacts	4-5
5-1	Ramp Length Deficiencies.....	5-2
5-2	Intersection Crash History: January 1997 to December 2001	5-3
5-3	ODOT 2001 Woodburn Interchange Project Study Corridor Top 10 percent SPIS Segments	5-4
5-4	Existing and Future Design Hour Volume to Capacity Ratios	5-6
6-1	Threshold Criteria	6-9
6-2	Evaluation Criteria	6-10
6-3	Interchange Concept	6-14
6-4	Oregon 214 Widening Alternative	6-15
6-5	Local Access and Circulation Options.....	6-16
6-6	Application of Threshold Criteria	6-18
6-7	Oregon 214 Widening Alternative	6-19
6-8	Local Access and Circulation Options.....	6-19
6-9	Technical Ratings of Alternative Packages	6-21

6-10 Community Values and Relative Weights..... 6-23
 7-1 Intersection System No Build and Build Alternatives (widen north and
 widen equal) Design Hour V/C Ratios..... 7-2

Figures

1 Planning Study Area 1-4
 2 Planning Area and Functional Classifications 1-7
 3 Interchange Design Concepts 6-13
 4 Local Access Options 6-17
 5 Woodburn Interchange Improvements, Widen North 7-3
 6 Woodburn Interchange Improvements, Widen North 7-5
 7 Access Management Study Area..... 7-8
 8 Interchange Management Area (IMA) Overlay District 7-11

Background

Introduction

The Oregon Department of Transportation, the City of Woodburn, Marion County and the Federal Highway Administration have been monitoring land use development and transportation issues in the vicinity of Interstate 5 and Oregon 214/219 in Woodburn for more than a decade. In the early 1990s, the City, County, and ODOT began discussing problems of the existing interchange. Growing car and truck traffic has resulted in congestion and safety issues on Oregon 214 and on the I-5 interchange. The population in the area has more than tripled since design of the interchange in the late 1960s. Annual community events in the vicinity draw thousands of people from other parts of the state and through the interchange. Today, Woodburn is a more urban community, with large industrial, commercial, and residential developments, and regional travel services near the interchange.

Work begun by ODOT in the early 1990s to identify possible solutions was interrupted due to limited statewide money for transportation projects. The City of Woodburn in 1999 finished a study of Oregon 214 that looked at options to widen Oregon 214 but which did not look at interchange improvements. Shortly thereafter ODOT, with local agency and public involvement, led development of a Refinement Plan for the interchange, which identified improvement options and the need for an environmental assessment (EA). The alternative analysis conducted for the Refinement Plan, and subsequently updated and validated as part of an EA developed in 2004 and 2005, confirms that replacing the existing diamond interchange with a partial cloverleaf interchange would improve safety and provide operational performance that meets Oregon Highway Plan (OHP) and Highway Design Manual (HDM) standards through 2025 and accommodates the 2005 Woodburn Comprehensive Plan growth assumptions. A new interchange in north Marion County continues to be of interest in the community. However, the problems at the Woodburn interchange and on Oregon 214 need to be fixed even if a new I-5 interchange were to be constructed in the future. A new interchange would not solve problems at the existing Woodburn interchange.

Efforts over the last several years by the City and the Oregon Department of Transportation (ODOT), with extensive stakeholder and public involvement, have now advanced project development to the point of pending approval of an EA of alternatives, a revised city Transportation System Plan and Comprehensive Plan that implement an updated land use plan and development code, and this Interchange Area Management Plan (IAMP), which draws from the previous work.

This IAMP documents interchange management measures agreed to by the City and ODOT and summarizes information on the Woodburn Interchange Project's background, purpose and need, relevant plans and policies, land use and environmental issues, transportation conditions and deficiencies, alternatives development and analysis, plan recommendations,

public involvement, and implementation strategies. The action elements that constitute the substance of the IAMP are provided in Section 9, Plan Implementation Responsibilities. Appendixes include land use planning maps, project issues and traffic operations diagrams, standards deviation authorization, development code revisions, intergovernmental agreement, public and agency coordination, and technical ratings methods and measures of alternatives.

Purpose and Reasons for Preparing the IAMP

ODOT is required by Oregon Administrative Rule (OAR) 734-051, which addresses highway approaches, access control, spacing standards, and medians, to prepare an IAMP for the I-5/Woodburn interchange. The IAMP will help ensure that when the interchange is reconstructed it will function safely and efficiently through the 2025 planning horizon.

ODOT and local governmental agencies are also required by Oregon's Transportation Planning Rule (OAR 660-012) to collaborate in addressing development and transportation issues in the vicinity of interchanges. The development of IAMPs (per OAR 734-051-0155) is one way to address these issues. This IAMP for the Woodburn Interchange Project has been developed in cooperation with the City of Woodburn. When reconstructed as described in the Woodburn Interchange Project EA, the interchange is forecast to meet ODOT mobility standards and improve highway safety through the 2025 planning horizon. The chief purpose of the IAMP is to:

- Protect the function of the reconstructed interchange to serve statewide and regional travel through the 2025 planning horizon
- Minimize the probability of needing additional major improvements to the reconstructed interchange through the 2025 planning horizon

The IAMP will achieve this purpose by:

- Helping to ensure that the land uses in the vicinity of the interchange around I-5 and Oregon highways 214 and 219 develop as forecast in the 2005 Woodburn Comprehensive Plan and Transportation System Plan updates
- Providing for safe and efficient operations along Oregon 214 and 219 and on connecting roadways by establishing access management and local connectivity objectives.

Description of Planning Area

The Woodburn Interchange is located on I-5 at milepost (MP) 271.85. The crossing roadway is Oregon Highway 214 east of the interchange and Oregon 219 west of the interchange. The proposed interchange reconstruction project limits along I-5 include proposed ramp connections ending at MP 272.25 north of the interchange crossroad and at MP 271.43 south of the crossroad. The eastern limit of the proposed reconstruction project on Oregon 214 is at MP 37.51. The western limit of the proposed reconstruction project on Oregon 219 is at MP 36.40.



I-5 generally runs north-south through the Willamette Valley and intersects with Oregon 214/219 at Woodburn.

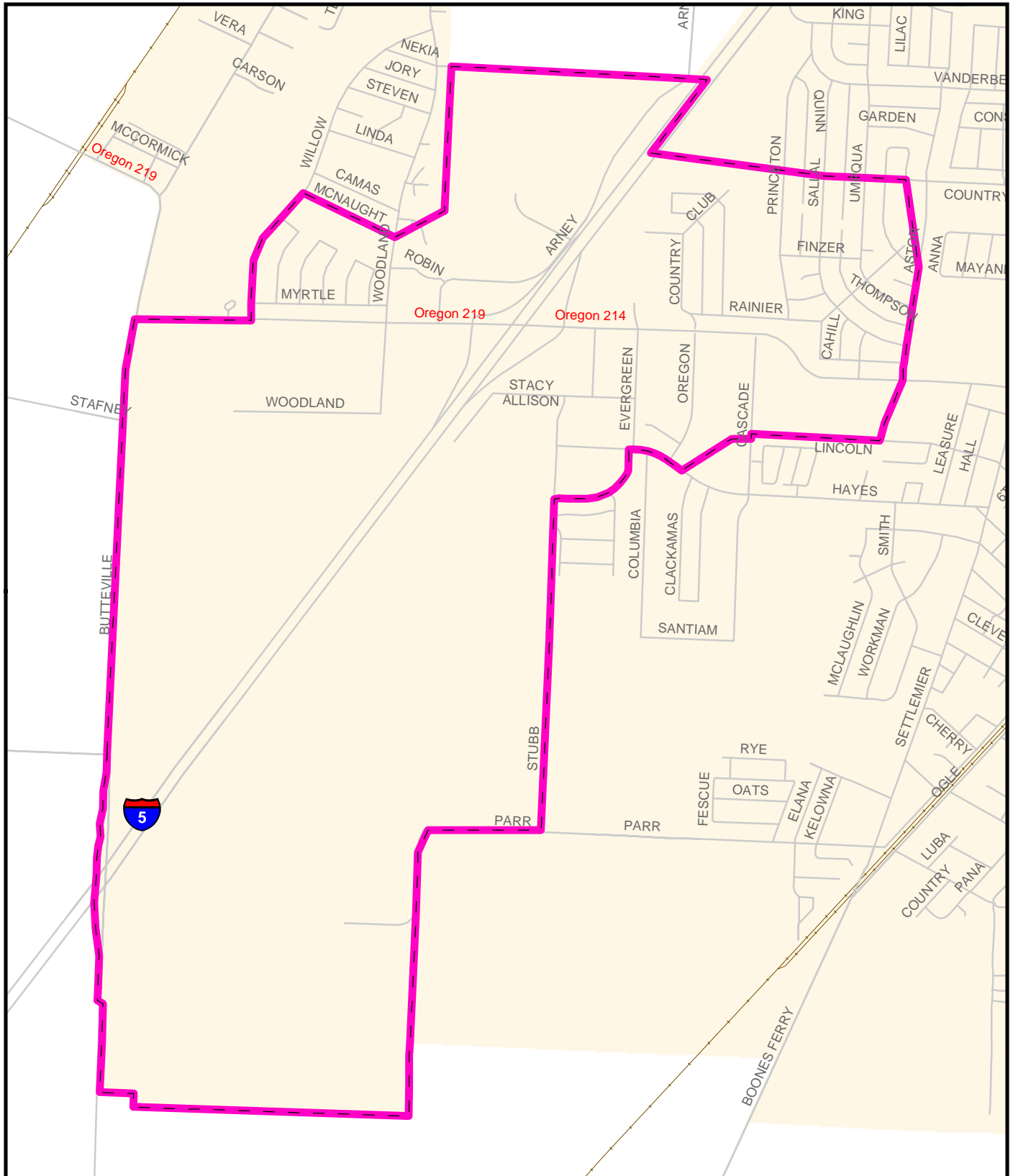
This interchange is the only I-5 connection within the City of Woodburn. This interchange also provides access to northern Marion County, one of the state's most agriculturally productive regions. The next closest interchanges to the Woodburn interchange are the Brooks interchange at MP 263 and the Aurora/Donald interchange at MP 278.

In establishing the Planning Study Area (PSA) for this interchange, existing land use patterns, proposed land use patterns, and the existing and proposed roadway network were all taken into account. Most of the land surrounding the Woodburn interchange was fully committed to urban development with the adoption of the 1981 Woodburn Comprehensive Plan. Recently adopted changes to Woodburn's land use plan have added industrial lands south and west of the interchange within an expanded urban growth boundary (UGB). Based on the existing and proposed roadway network, all of this new land will produce or attract vehicle trips that directly impact the interchange's operations. Additionally, much of the land around the interchange that has been in the UGB since 1971 remains undeveloped.

The PSA was defined to encompass the areas of most direct transportation impact, which were identified as the PSA in the 2000 Refinement Plan. In addition, the PSA was expanded for the IAMP to encompass what has become the Interchange Management Area (IMA). Existing residential areas, because they are very stable land uses from a trip generation standpoint, were not specifically targeted for inclusion in the IMA. They are only included incidentally for the purpose of IMA boundary continuity. The IAMP PSA is shown in Figure 1.

Other Work Products

In 2005 the City and the State of Oregon coordinated efforts to update Woodburn's Comprehensive Plan and Transportation System Plan (TSP), along with an EA, to determine how best to address identified problems at the I-5/Woodburn interchange. The Woodburn TSP is based on the 20-year Woodburn population and employment projections (from a year 2000 baseline) and land uses found in the adopted 2005 Woodburn Comprehensive Plan.



Legend

- Planning Study Area
- Urban Growth Boundary
- Roads
- Railroad

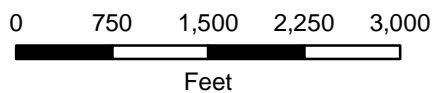


Figure 1

**Planning Study Area
I-5/Woodburn IAMP**

ODOT's Woodburn Interchange EA was developed for the 2025 planning horizon and 5-year population and employment extrapolations from the adopted Woodburn Comprehensive Plan and TSP. These documents provide the technical basis for this IAMP. The Comprehensive Plan and TSP were adopted by the Woodburn City Council in September 2005.

A brief timeline of previous studies of how to improve the interchange includes:

1983 - ODOT prepared an analysis showing that Oregon 214 needs to expand to five lanes by 1988 to accommodate traffic.

1984 - ODOT prepared two interchange layouts for the 1985 Statewide Transportation Improvement Program (STIP). The project failed to receive funding.

1987 - ODOT updated an interchange layout with a recommendation to build it before 2015.

1989 - ODOT prepared alternatives for the Pacific Highway (I-5) to Park Street EA project on Oregon 214. The project was not funded for construction.

1991 - ODOT responded to a federal mandate for a balanced transportation program (revenues to equal estimated construction costs) by canceling the Pacific Highway to Park Street EA project.

1993 - City completed an interchange study to evaluate four interchange concepts.

1996 - City Transportation System Plan identified three interchange alternatives and recommended a refinement plan.

1998 - City completed a study of widening alternatives for Oregon 214 east of I-5.

1999 - ODOT started interchange refinement plan that concluded in 2000 with two interchange alternatives for study in the environmental phase.

2003 - ODOT started an environmental assessment of the proposed interchange improvement alternatives, and completed a public review draft in 2005.

2005 - City completed update of its TSP, which includes I-5/Oregon 214/219 interchange protection measures and a development ordinance for an Interchange Management Area Overlay District.

2005 - ODOT prepared Interchange Area Management Plan for approval by Oregon Transportation Commission.

2006 - ODOT and City of Woodburn entered into two Intergovernmental Agreements; one related to interchange administration and monitoring, and the other to funding.

Interchange Classification and Function

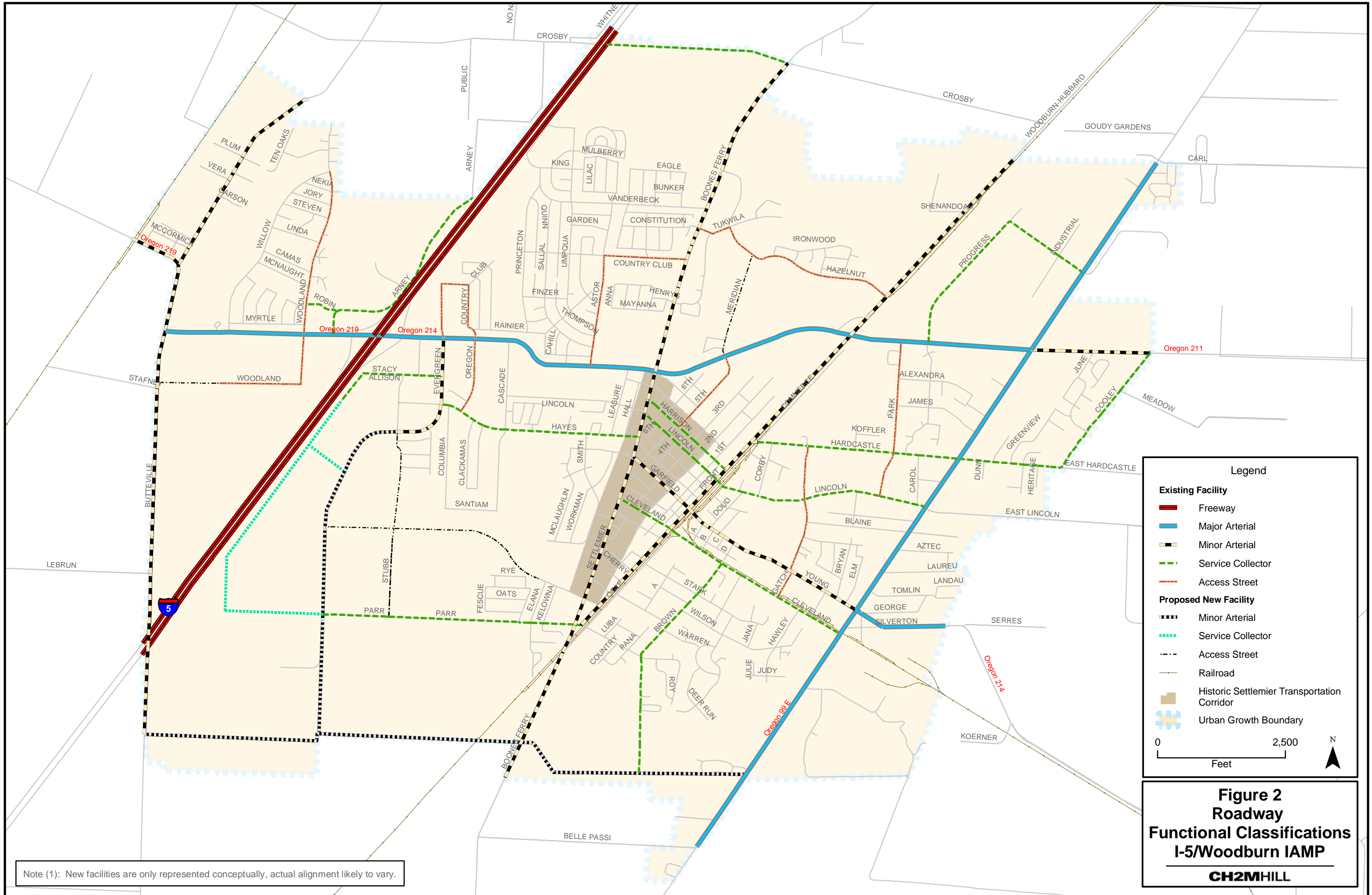
I-5 is an interstate freeway, part of the National Highway System, part of the Strategic National Defense Highway Network (STRAHNET), an International Trade Corridor, and is designated as a highway of statewide importance and Statewide Freight Route in the OHP. It is the highest order highway in ODOT's functional classification. Oregon 214/219 (the

Hillsboro/Silverton Highway) is a district-level highway on ODOT's system and a major arterial within the City of Woodburn's TSP. Functional classifications of roadways (existing and proposed) are shown in Figure 2. The posted speed along I-5 is 65 miles per hour (mph) and is 35 mph along Oregon 214/219.

The surrounding communities of Silverton, Mt. Angel, Gervais, Hubbard, and Molalla access I-5 primarily from the east by using Oregon 214 in Woodburn. The communities of Newberg and St. Paul access I-5 from the west by using Oregon 219.

The function of the Woodburn interchange is to serve statewide travel through the Woodburn area, and regional travel; that is, travel with one trip end in Woodburn and one somewhere outside of Woodburn. An operationally functional Woodburn interchange is also vital to Woodburn's economic development and future growth. To that end, the City identified industrial development in the IMA within defined economic sectors as a key element in the City's future growth and development. Serving this industrial development is another primary function of this interchange. As part of its function to serve statewide travel, provision of services for I-5 travelers is also a primary function of this interchange. While a certain number of intra-local trips will also use this interchange, it is not a primary function of this interchange to serve these trips. Development of a well-connected local transportation system is essential for reducing local travel demand on state highways in the interchange area.

The function of Oregon 214/219 is to serve regional travel and provide access between the local transportation system and the higher order state highway facilities, including I-5.



Note (1): New facilities are only represented conceptually, actual alignment likely to vary.

Legend

- Existing Facility**
 - Freeway
 - Major Arterial
 - Minor Arterial
 - Service Collector
 - Access Street
- Proposed New Facility**
 - Minor Arterial
 - Service Collector
 - Access Street
 - Railroad
- Historic Settler Transportation Corridor
- Urban Growth Boundary

0 2,500 Feet

N

Figure 2
Roadway
Functional Classifications
I-5/Woodburn IAMP
CH2MHILL

SECTION 2

Problem Statement, Project Purpose and Need, and Project Goals

Problem Statement

Interstate 5 is a critical link for moving commerce and people along the West Coast from Mexico to Canada. I-5 is the third most heavily traveled truck corridor in the United States. One-fourth of the nation’s exports and imports pass through the corridor annually. I-5 is a federal Trade Corridor in recognition of its critical role in the nation’s commerce.

In Oregon, I-5 spans 308 miles from California to Washington. I-5 passes through nine Oregon counties with a population of 2.25 million people. During the next 20 years the population will grow to 3 million. Traffic volumes along the length of the corridor vary from a high of 150,000 Average Daily Traffic (ADT) in the Portland metropolitan area to a low of 12,000 ADT on rural segments in southwest Oregon.

Woodburn is located in ODOT’s Region 2, a nine-county area in northwest Oregon. Woodburn is between the Portland and Salem-Keizer metro areas, in the heart of Oregon’s Willamette Valley. Lands adjacent to I-5 are a mixture of urban, rural, and agricultural uses.



Woodburn Interchange Project Vicinity

The population of Region 2 is about 670,000. Forecasts show that population will grow to 900,000 during the next 20 years. Current traffic volumes on I-5 vary from over 80,000 ADT at the Clackamas/Marion County border to about 60,000 ADT just south of Oregon 22 in Salem.

The surrounding communities of Silverton, Mt. Angel, and Molalla access I-5 by using Oregon 214 in Woodburn. The surrounding communities of St. Paul and Newberg access I-5 by using Oregon 219. In 1975, when upgrades to the interchange were completed, roadside development near the interchange was minimal (see photo). Woodburn was more oriented around Oregon 99E.

Since the 1970s, Woodburn has grown and developed west toward I-5. The population of Woodburn has grown more than 60 percent since the early 1970s. The interchange vicinity is now a mixture of residential, industrial, regional retail/ commercial, and traveler services/commercial land uses (see photo).

The population and land uses create more traffic than the interchange can serve. It is likely that Woodburn will keep growing. Congestion in the interchange area is a common experience today and will also keep growing.



Land Development Pattern, ca 1975



Land Development Pattern, ca 2003

The existing interchange is a standard diamond design. The interchange was last updated when I-5 was widened from four to six lanes from Woodburn to Salem. When the project was completed in 1975, traffic volumes were 28,600 ADT on I-5 and 2,900 ADT west of the interchange on Oregon 219 and 5,600 ADT east of the interchange on Oregon 214.

The interchange design is typical of low-volume, rural interchanges designed and built in the mid-1960s to early 1970s. There are no other interchanges in the Woodburn UGB. There are grade separated crossings at Butteville Road (MP 270.46) and Crosby Road (MP 273.21) that provide some circulation east and west of I-5.

Without improvements to the interchange, traffic growth and safety concerns on Oregon 214 and I-5 (see Section 5) will continue to grow.

The Woodburn I-5 interchange is a gateway to Woodburn and much of northern Marion County. Development in the interchange area has occurred on one property at a time, with piecemeal modifications to existing highways and the street system over the last 30 years. The streetscape of the interchange lacks coordination of signage. The visual impact of utility poles, landscaping, and drainage features in the interchange area do not present the image of Woodburn that area residents would like to present. Little about the interchange is inviting as a gateway to Woodburn visitors.

The interchange links regional communities of north Marion County with Woodburn commercial, retail, and industrial centers. Resolving traffic congestion and safety issues on Oregon 214 at the interchange is critical in sustaining business, agriculture, and commercial activity in the area, thereby sustaining jobs for the community.

Congestion in the interchange area hampers getting to and from the interstate and has a significant detrimental affect on residents and businesses throughout the region. Travel to local and regional attractions is critical to local economies. Examples include the St. Paul Rodeo, Silver Creek Falls, Oregon Garden, and Mt. Angel Oktoberfest.

Without improvements to traffic flow, travelers from surrounding communities may avoid Woodburn, and businesses may avoid locating or doing business in Woodburn and

surrounding areas. Interchange area business patrons are often confused by the lack of clearly defined access and by the current local street system, which also may reduce the number of return trips.

Purpose and Need of the Project

The purpose of the Woodburn Interchange Project is to improve the traffic flow and safety conditions of the existing I-5/Woodburn interchange.

The existing I-5/Woodburn interchange does not meet current design and operational standards, which causes traffic to move at slower speeds and increases congestion. Future growth in the interchange area will increase congestion problems, increase the difficulty to access adjacent businesses, and increase the likelihood of safety problems for drivers, bicyclists, and pedestrians.

Project Goals and Objectives

The IAMP shares the project goals included in the EA. The goals for the interchange reconstruction project and for this IAMP go beyond the state transportation issues identified in the Purpose and Need Statement of the EA. The goals are intended to balance state and local environmental and transportation values. Although the natural environment was originally considered as an evaluation criterion, it was not considered a goal because environmental impacts were not found to be a differentiator among the project's alternatives.

The following goals were approved by the EA Project Management Team after a recommendation by the EA Stakeholder Working Group (SWG). The SWG recommendation was formulated based, in part, on the review and comment by the general public at an open house meeting:

- Safety. Provide a facility that would safely accommodate multimodal travel demands 20 years into the future.
- Access and Traffic Flow
 - Provide safe and convenient access to interchange area businesses (that is, consider signage and possible street connections to Oregon 214).
 - Reduce congestion and improve traffic flow in the interchange area.
 - Provide median treatment that would accommodate emergency vehicles.
- Social/Economics
 - Minimize displacements to existing residences and businesses.
 - Minimize adverse impacts on existing residences and businesses.
 - Minimize land conversion from private ownership to public transportation use.
- Aesthetics. Create a gateway entrance to Woodburn (that is, consider a variety of treatments such as underground utilities, landscaping, pavement widths).

- Implementation
 - Maximize efficient use of available funding for implementation of interchange and Oregon 214 improvements.
 - Coordinate with affected property owners and provide fair compensation.
 - Coordinate construction activities to maintain safe access to regional events.
 - Minimize disruption and congestion caused by construction activities.
 - Maintain travel on I-5 at all times.

The additional goals that are specific to this plan are:

- To help ensure that the reconstructed Woodburn Interchange can serve its intended function through the 20-year planning horizon.
- To help ensure that the interchange can safely meet Highway Design Manual mobility standards through the planning horizon.
- To help ensure that the Woodburn Interchange reconstruction meets the requirements of ODOT's access management administrative rule (OAR 731-0015).
- To support the development of the land use plan adopted in the City of Woodburn's 2005 Comprehensive Plan update for the interchange management overlay district established by the City's adoption of City Ordinance 2.116.
- To establish that ODOT and the City of Woodburn will work together to monitor and administer development within the interchange management overlay district described in City Ordinance 2.116 in order to help ensure that this area develops as planned.
- To provide an interchange funding strategy that enables ODOT to acknowledge the Woodburn Interchange reconstruction as a planned improvement in the Woodburn Comprehensive Plan and Transportation System Plan.

SECTION 3

Existing Plans and Policies Review and Findings of Compliance

Overview

IAMP development involves close cooperation between ODOT and local government agencies. Management of the I-5/Oregon 214/219 interchange at Woodburn involves coordination between ODOT and the City of Woodburn. State and federal policies and rules, as well as local policies and codes and a history of public involvement (see Section 8), play a key part in the development, adoption, and implementation of IAMPs. State and federal policies guide the development and selection of alternative elements and interchange area management strategies; the IAMP must be consistent with federal and state policies. Policies and code language from local documents form a policy framework and serve as provisions to manage transportation and land use in the interchange influence area with the goals of protecting interchange function, providing for safe and efficient operations, and minimizing the need and expense for additional major improvements to the interchange through the 2025 planning horizon.

The review of state and federal plans presents discussion regarding how the Woodburn IAMP is consistent with relevant state and federal planning documents. The review of local planning documents (begins on page 3-16) and development codes (begins on page 3-20) presents local policies and code provisions that address interchange capacity protections or long-term interchange area management tools and describes how these policies and code provisions effectively support management of the I-5/Oregon 214/219 interchange.

The following subsections also summarize the analysis of how the build alternatives proposed in the Woodburn Interchange Project EA comply with federal, state, and local plans, policies, goals, and regulations.

Federal and State Plans, Policies, and Regulations

Through the alternative development and screening process of the EA, the proposed project was found to be in compliance with relevant federal and state planning goals and plans, and their implementing administrative rules. These include the National Environmental Policy Act (NEPA), Federal Interchange Policy, Oregon Transportation Commission (OTC) Policy for New Interchanges, the Oregon Transportation Plan (OTP), the OHP, Statewide Planning Goals, State Agency Coordination Program, Western Transportation Trade Network Report, Freight Moves the Oregon Economy, Willamette Valley Transportation Strategy, and the Woodburn/I-5 Refinement Plan. Also receiving particular attention was the project's need to comply with provisions of OAR 660-012 (Transportation Planning Rule) and OAR 734-051 relating to interchange area and access management.

National Environmental Policy Act (1969)

NEPA, signed into law in 1969, requires that, to the extent possible, the policies, regulations, and laws of the federal government be interpreted and administered in accordance with the protection goals of the law. For highway projects using federal funds, NEPA requires the examination and consideration of potential impacts on sensitive social and environmental resources when considering the approval of a proposed transportation facility.

Finding: The IAMP was developed in coordination with the NEPA process. Impacts to the natural and human environments were fully evaluated as part of the project's draft EA, in compliance with the requirements of NEPA. With the exception of environmental regulations (for example, wetlands, floodplains), there are no federal land use or management policies or regulations applicable to the Woodburn Interchange Project. Compliance with federal environmental regulations associated with the project is discussed in the project's draft EA.

Federal Interchange Policy (1998)

The purpose of the Federal Interchange Policy is to provide guidance to state transportation officials in justifying and documenting requests to add access or revise existing access to the interstate system. This policy defines eight specific requirements for adding a new access to the interstate system:

- Existing interchanges cannot satisfy design year traffic requirements.
- All transportation system management (TSM) improvements have been assessed. TSM includes activities that maximize the efficiency of the present system. TSM improvements might include such measures as ramp metering and high-occupancy vehicle (HOV) lanes.
- The proposed access point does not have a significant adverse impact on the safety and operation of the interstate facility.
- The proposed access connects to a public road only.
- The proposed access is consistent with local and regional land use and transportation plans.
- Where the potential exists for multiple interchange additions, requests for new access are supported by an interstate network study.
- The revised access demonstrates appropriate coordination with related or required transportation system improvements.
- The request contains information relative to the planning requirements and the status of the environmental processing of the proposal.

Revised access points must be coordinated with the District Office of the Federal Highway Administration (FHWA) and must be closely coordinated with planning and environmental processes. Major changes in access must be approved through the central office of FHWA in Washington, DC.

Finding: Under this policy, revised access is considered to be a change in the interchange configuration even though the actual number of points of access does not change. Interchange spacing standards are 3 miles in an urban area and 6 miles in a rural area. The project alternatives meet the requirements spelled out in the policy and will accommodate design-year traffic demands as a threshold. Alternatives advanced for the Woodburn Interchange Project meet the requirements of the policy.

Oregon Transportation Plan (1992)

The goal of the OTP is to promote a safe, efficient, and convenient transportation system that improves livability and facilitates economic development for residents of the state. The OTP sets out four goals with numerous actions to support their achievement. Many of these actions do not apply to the Woodburn Interchange Project, but relate more to the establishment of regional transportation plans. Those actions that do apply are addressed below.

Action 1G.4

Action 1G.4 states that resources should be targeted to dangerous routes and locations in cooperation with local and state agencies. Currently, the I-5/Oregon 214 interchange is identified as a relatively high-accident location.

Finding: The Woodburn Interchange Project build alternative would reconstruct this intersection to improve safety by adding capacity to reduce congestion, reducing multiple access point conflicts along Oregon 214 through consolidation of access points and adding medians, and correcting geometric conditions that do not meet current standards.

Action 1H.3

Action 1H.3 gives priority to funding transportation needs identified in state, regional, and local transportation system plans.

Finding: The Woodburn Interchange Project is identified in the Woodburn Comprehensive Plan and the Woodburn TSP as a means to address traffic congestion and safety problems that currently affect Oregon 214/219 and Interstate 5.

Action 4G.1

Action 4G.1 calls for preserving, maintaining, and improving transportation infrastructure and services that are of statewide significance.

Finding: The Woodburn interchange links an interstate highway (I-5) with a state (district) highway (Oregon 214) and facilitates access to a popular regional commercial destination—the Woodburn Company Stores. The Woodburn Interchange Project calls for improving an existing interchange and is therefore consistent with this action.

Action 4G.2

Action 4G.2 requires that access control be a part of transportation system projects to achieve reasonable levels of service.

Finding: The Woodburn Interchange Project build alternatives would enhance the already consolidated I-5 access to destinations within Woodburn and surrounding areas. Discussion of access control is continued in the OHP section below.

Action 4G.4

Action 4G.4 calls for controlled accesses to statewide transportation corridors and facilities.

Finding: The Woodburn Interchange Project build alternatives continue controlled access to I-5. Also, as part of the project, driveways along Oregon 214 would be consolidated and turn movements controlled through the installation of a center median. Elsewhere along the proposed footprint raised curbs would be used to control turning movements. These changes would improve safety along the highway and meet state access control guidelines.

Oregon Highway Plan (1999)

The 1999 OHP is a modal element of the 1992 OTP and defines policies and investment strategies for Oregon's state highway system over the next 20 years. The plan contains three elements: a vision element that describes the broad goal for how the highway system should look in 20 years; a policy element that contains goals, policies, and actions to be followed by state, regional, and local jurisdictions; and a system element that includes an analysis of needs, revenues, and performance measures.

The OHP is a modal element of the OTP. It addresses the following issues:

- Efficient management of the system to increase safety, preserve the system, and extend its capacity
- Increased partnerships, particularly with regional and local governments
- Links between land use and transportation
- Access management
- Links with other transportation modes
- Environmental and scenic resources

The OHP designates I-5 as part of the National Highway System and as a designated freight route between the California and Washington borders.

The policy element contains several policies and actions that are relevant to the Woodburn Interchange Project, described in the following subsections.

Policy 1A, Action 1A.1

Action 1A.1 categorizes state highways for planning and management decisions. Under this policy, I-5 is classified as an Interstate Highway, which provides connections to major cities and regions within Oregon and facilitates movement to and from other states. The operational objective for Interstate Highways is to provide safe and efficient high-speed travel in urban and rural areas.

Oregon 214/219 is classified as a District Highway, which provides connections between small urbanized areas, rural centers, and urban hubs, as well as providing access for local

traffic. The operational objective for District Highways is to allow safe and efficient moderate- to low-speed travel in urban and urbanizing areas for traffic flow, as well as bicycle and pedestrian movements.

Finding: The Woodburn Interchange Project build alternatives would support the existing highway classifications and would enhance the ability of either I-5 or Oregon 214/219 to serve in their defined functions. Furthermore, by addressing capacity and safety issues, the Woodburn Interchange Project would improve their ability to serve their defined functions and support the operational objective for safe and efficient high-speed travel on I-5 and safe and efficient regional and local travel and access on Oregon 214/219.

Policy 1B, Action 1B.7

Policy 1B directs the state to work with regional agencies and local jurisdictions to consider land use when planning transportation systems and projects. Action 1B.7 gives special designations for certain land use patterns off the freeway to foster compact development patterns in communities. The four designations provided are special transportation area, commercial center, urban business area, and urban.

Finding: Although the commercial center designation might apply to this interchange area, no formal designation has been made or requested. Furthermore, the City is now pursuing a more industrial land use pattern as defined in the 2005 Comprehensive Plan update and in the Interchange Capacity Preservation Measures included in the IAMP. Because the designation would not change the design or operational parameters of the improvements proposed at this interchange or along Oregon 214/219, the City of Woodburn, upon consideration, did not choose to pursue any special designation under Policy 1B.

Policy 1C, Action 1C.4

Action 1C.4 states that the timeliness of freight movements should be considered when developing and implementing plans and projects on freight routes.

Finding: I-5 is part of the statewide freight system, and the Woodburn TSP identifies Oregon 214/219 as a truck route. The Woodburn Interchange Project build alternatives would replace the existing access ramps from and to the I-5 mainline with a partial cloverleaf design. This design is expected to reduce delay for vehicles accessing the freeway at this location, including commercial vehicles. The nature of the design is particularly accommodating to freight truck travel. Through improved ramp geometry and operations, the likelihood of vehicles queuing onto I-5 or trucks tipping over when turning to and from the ramps onto Oregon 214/219, as occasionally occurs today, would be virtually eliminated. This would also be a major improvement for through and local freight traffic on I-5 and Oregon 214/219.

Policy 1F, Action 1F.1

Action 1F.1 requires that highways operate at a certain level of mobility, depending on their location and classification. Part of this action requires that freeway interchanges be managed to maintain safe and efficient operation of the freeway through the interchange area. The OHP directs that the maximum volume-to-capacity (V/C) ratio for the ramp terminals of interchange ramps be the smaller of the values of the V/C ratio for the crossroad or 0.85.

Relevance: The Woodburn Interchange Project is inside the Woodburn UGB, but outside of the boundary of a Municipal Planning Organization (MPO). As such, the V/C ratio that applies to the I-5 mainline is 0.70. As a District Highway with a speed limit of less than 45 mph, the V/C standard for Oregon 214/219 is 0.85. This V/C ratio is equal to the OHP prescribed maximum V/C ratio and therefore applies as the threshold V/C ratio for the interchange ramp termini.

The highest expected V/C ratio for any intersection on Oregon 214/219 within the project area under either build alternative is 0.84 at Cascade Drive. Expected V/C ratios for both build alternatives for the ramp termini are 0.58 at the I-5 southbound ramp and 0.63 at the I-5 northbound ramp.

Finding: Both Oregon 214/219 within the project area and the ramp termini of the proposed project will meet or better the OHP V/C ratio standards under either build alternative. For more detail on V/C ratios, refer to the Transportation Operations Analysis section of Section 7 of this report.

Policy 1G, Action 1G.1

Action 1G.1 directs agencies to make the fewest number of structural changes to a roadway system to address its identified needs and deficiencies through the 20-year planning horizon, and to protect the existing highway system before adding new facilities to it. The action ranks four priorities of projects, as follows:

- Preserving the functionality of the existing system
- Making minor improvements to improve the efficiency and capacity of the existing system
- Adding capacity to the existing system
- Building new transportation facilities

Finding: As described below, the Woodburn Interchange Project falls under the top three priorities.

Priority One. Protect the Existing System

The project build alternatives would preserve the functionality of Oregon 214/219 by consolidating access points and improving the facilities for alternative modes of transportation such as transit, cycling, and walking. Additionally, lesser improvements to maintain and keep functional have been made to the interchange over the last 30 years, including narrowing shoulders to provide additional travel lanes on the existing structure and adding turn lanes at the ramp terminals. Additional incremental improvements to the interchange to further extend its operational viability are not possible without reconstructing the entire interchange.

Priority Two. Improve Efficiency and Capacity of Existing Highway Facilities

Capacity improvements to Oregon 214 and to the northbound and southbound I-5 ramps would fall under priority two, by making minor improvements to existing highway facilities. However, as explained in the Priority One discussion, additional incremental improvements to the interchange to further extend its operational viability are not possible

without reconstructing the entire interchange. The proposed improvements would add to the existing roadway to improve safety and mobility along both I-5 and Oregon 214. Also, analysis conducted for the Woodburn Interchange Refinement Plans and the draft EA demonstrated that simply managing the existing interchange area by addressing issues like access and signal timing would not be sufficient to address forecasted growth in this area.

Priority Three. Add Capacity to the Existing System

The project build alternatives would add capacity to the existing system by adding general purpose lanes to Oregon 214/219 and Evergreen Road and making alignment corrections to the corridor to better accommodate commercial vehicles. The analysis in the draft EA demonstrated that any lesser measures would not address the project goals or other OHP policies.

Policy 1G, Action 1G.2

The intent of Action 1G.2 is to ensure that major improvement projects to state highway facilities have been through a planning process that involves coordination between state, regional, and local stakeholders and the public, and that there is substantial support for the proposed improvement.

Finding: The Woodburn Interchange Project is consistent with Action 1G.2 because the project went through a thorough public alternatives development and evaluation process, as explained below.

Improvements to the I-5/Oregon 214 interchange are recommended in the 1996 and 2005 Woodburn TSP and the Woodburn Comprehensive Plan. In 2000, the Woodburn/I-5 Interchange Refinement Plan was published. This plan documents preliminary alternatives analysis and recommendations for alternatives to advance into an EA process, as well as stakeholder input. Of the 45 stakeholders interviewed, many agreed that the partial cloverleaf option (recommended in both of the proposed build alternatives) showed the lowest level of impacts and lowest cost and provided good traffic flow. The EA process currently underway also includes substantial stakeholder and public involvement, as documented elsewhere in this report.

Although the costs associated with restructuring the interchange are substantial, the project would use some of the existing pavement and the existing bridge structure. Of the effective alternatives considered at this location, the partial cloverleaf option costs the least.

The 2002–2005 STIP includes \$2 million for completing the EA and, if remaining funding allows, preliminary right-of-way (ROW) acquisition. The 2004–2007 STIP included \$9.7 million for preliminary and final design and ROW acquisition. The draft 2006–2009 STIP increases this amount to a total of \$14.7 million (including \$2.5 million provided by the City of Woodburn to assist with early acquisition of ROW). This is about 25–30 percent of the total funding expected to be needed to complete construction of this project.

Policy 2F, Action 2F.1

Policy 2F identifies the need for projects in the state to improve safety for all users of the state highway system.

Finding: The Woodburn Interchange Project is consistent with this policy, in particular as it relates to motor vehicle safety. Both the Oregon 214/I-5 northbound ramp intersection and the Oregon 214/I-5 southbound ramp intersection have been identified as high-accident locations in the Woodburn TSP, with an average of between 4.4 and 5.0 crashes per year. In addition, several segments of Oregon 214/219 within the study area are listed in the top 10 percent of the ODOT Safety Priority Index System (SPIS) list. The SPIS, which is maintained by the ODOT traffic management section, identifies locations where safety problems exist that may be addressed through operational or maintenance improvements. The top 10 percent SPIS sites are those with the highest priority. Study area intersections on the top 10 percent of the SPIS include Old Arney Road, the I-5 southbound ramp, the I-5 northbound ramp, and Lawson Avenue, based on data collected between 1998 and 2000. The proposed improvements will reduce the vehicle crash potential at this interchange by eliminating existing operational and geometric problems and will improve bicycle and pedestrian safety by providing upgraded facilities that meet current standards.

Policy 3A, Action 3A.1

Action 3A.1 directs access management along state highways based on access management guidelines.

Finding: I-5 is classified as an interstate freeway, and the proposed project complies with stated policies of no driveways, no traffic signals, no parking, and grade-separated crossings. Access and circulation issues are addressed in detail in the IAMP, and major actions are summarized below. Oregon 214/219 is classified as an urban District Highway. The project supports the access management directives as follows:

Discourage Private Access

No access to privately owned roads is provided as part of the build alternatives. Approximately three private driveways would continue to have direct access to Oregon 214/219 between Oregon Way and Evergreen Road, subject to ROW negotiations, all of which would be restricted to right-in, right-out operations only. In total, more than 20 driveways are expected to be consolidated as part of this project on Oregon 214/219 or the local streets, Lawson Avenue and Evergreen Road.

Appropriately Space Public Road Connections

The build alternatives would consolidate access and space access to better comply with state design standards. However, a deviation will be required for the continued use of Evergreen and Woodland which, while meeting all operational requirements, will not meet the OHP spacing standards for full intersection spacing from interchange ramp terminals of 1,320 feet. Evergreen is approximately 900 feet from the new ramp terminal and Woodland is about 1,100 feet from the new ramp terminal. The ODOT Region 2 Access Management Engineer approved this deviation in accordance with the deviation process requirements. The deviation approval letter is provided in Appendix C.

Discourage Traffic Signals

The build alternatives would keep or improve the signals of Oregon 214 with Woodland Avenue, the I-5 southbound ramp, the I-5 northbound ramp, Evergreen Road, and Oregon Way. Because of the heavy traffic volumes, the existing traffic signals are retained as part of this project as a way to manage traffic flows in the north-south and east-west directions.

Provide Nontraversable Medians

The OHP directs that nontraversable medians be considered for roadway projects where a median could improve safety. Nontraversable, raised curb medians, with 1-foot shy distance on each side, would be included along Oregon 214/219 to restrict left-turn movements. These medians would vary between 2 and 16 feet in width. Medians are planned from the I-5/Oregon 214/219 interchange west to Woodland Avenue, and east from the interchange to Lawson Avenue. Medians are planned from Lawson Avenue to Evergreen Road and from Evergreen Road to Oregon Way. Full turning movements would be allowed at Woodland Avenue, Lawson Avenue, Evergreen Road, and Oregon Way.

Prohibit Parking

Parking along this segment of Oregon 214/219 is prohibited.

Policy 3A, Action 3A.2

Action 3A.2 relates to establishing spacing standards on state highways. The spacing standard for interstate and noninterstate freeway interchanges is 6 miles in rural areas.

Finding: Although it does not add new access to the interstate highway interchange, the Woodburn Interchange Project complies with ODOT and the FHWA minimum spacing standards. The closest intersections to the Woodburn interchange are located 7 miles to the north at Aurora/Donald and 8 miles to the south at Brooks/Gervais.

Policy 3A, Action 3A.3

Action 3A.3 calls for management of location and spacing of traffic signals along state highways. Table 3-1 shows the spacing of intersections along Oregon 214/219 in the study area.

TABLE 3-1
Intersection Signal Spacing in Study Area
Woodburn Interchange Project IAMP

From Intersection	To Intersection	Spacing (feet)
I-5/Oregon 214/219 Interchange	Woodland Avenue	1,080
I-5/Oregon 214/219 Interchange	Evergreen Road	900
Evergreen Road	Oregon Way	640

Finding: Due to pre-existing conditions in this already built environment, intersection spacing does not meet the minimum 1/2-mile desired spacing as described in Action 3A.3. Left-turn storage pockets are planned for Oregon 214/219 at Woodland Avenue, Evergreen Road, and Oregon Way. According to the Traffic Technical Report, study intersections under the build alternatives would operate acceptably in the 2025 forecast year and would meet OHP and HDM mobility standards. Because mobility standards are met and the access situation is improved, even though the spacing standards are not fully met, this policy is satisfied.

Policy 3C, Action 3C.1

Action 3C.1 requires that an IAMP be developed to protect the function of interchanges and provide safe and efficient operations between connecting roadways.

Finding: This IAMP was developed for the Woodburn interchange. The intent of the IAMP is to manage the facility and adjacent land use to protect the function of the interchange to ensure safe and efficient operations between Highway 214 and I-5. The purpose of the IAMP is described further in Chapter 2 of this document.

Policy 3C, Action 3C.2

Action 3C.2 addresses spacing, access, and other supporting requirements for an interchange improvement project.

Finding: The requirements of this policy are discussed below:

Spacing Standards

As mentioned above, the spacing standard for interstate and noninterstate freeway interchanges is 6 miles in rural areas. The Aurora/Donald interchange is 7 miles to the north of the Woodburn interchange and Brooks/Gervais is 8 miles to the south.

Necessary Supporting Improvements

Necessary supporting improvements such as road networks, channelization, medians, and access control in the interchange management area must be identified in the local comprehensive plan and committed with an identified funding source or must be in place. The Woodburn TSP, adopted October 31, 2005, does commit to a network of local road improvements that have been demonstrated to reduce demand for state highway travel in the interchange management area. These facilities will largely be constructed as a requirement of new development. The proposed Woodburn Interchange reconstruction project does include channelization, medians and access control as described in Section 7 of this report.

Access to Cross Streets

ODOT minimum spacing standards require that full access to cross streets be no closer than 1,320 feet from an interchange ramp when possible. At a minimum, the access conditions associated with a reconstruction project should improve on current conditions by moving in the direction of the spacing standards. The nearest full access cross streets to the I-5/Oregon 214/219 intersection are Woodland Avenue (1,090 feet to the west) and Evergreen Road (900 feet to the east). These cross streets exist today and are also closer to the I-5 ramps than called for by the ODOT spacing standards. Closing them to meet ODOT spacing standards would negatively affect land use and traffic operations along Oregon 214/219. These connections are essential to maintain local access and total transportation system circulation in the area. Old Arney Road (500 feet to the west) and Lawson Avenue (460 feet to the east) are the closest limited access public road connections to the ramp terminals. Old Arney Road would continue to be limited to right-in, right-out movements and Lawson Avenue would be limited to right-in only movements. These connections will also contribute to improved traffic operations in the project area. While these access locations do not meet the full spacing standards, they do improve on the current condition, will operate adequately over the 20-year planning horizon, and have been approved through a deviation granted by

the Region 2 Access Engineer. This IAMP and the traffic analysis from the draft EA serve as the documentation to support the deviations from the ODOT spacing standards required to maintain these connections. The letter from the Region 2 Access Management Engineer approving these deviations is included in Appendix C.

Road Classification

The Woodburn interchange connects an Interstate Highway with a state-operated District Highway, which complies with the request that freeways connect with state highways.

Alternative Transportation Modes

Widening Oregon 214/219 for this project would create bicycle lanes and sidewalks on both sides to facilitate bicycle and pedestrian movement, including transit users. Limited fixed-route transit service operated by the City of Woodburn is available along this stretch of Oregon 214/219 on weekdays between 9:00 AM and 5:00 PM.

Policy 4B, Action 4B.4

Action 4B.4 requires that highway projects encourage the use of alternative passenger modes to reduce local trips.

Finding: The portion of the Woodburn Interchange Project that relates to Oregon 214/219 would add one bicycle lane and 6-foot sidewalks on both sides of the roadway, where bicycle and pedestrian facilities do not exist today. In addition, widening Oregon 214 would improve transit movement along the corridor and would facilitate bicycle and pedestrian movement between the retail development near the interchange and the residential uses to the east and west. ODOT is also pursuing the establishment of a transit park-and-ride facility on property purchased in the interchange area.

Oregon's Statewide Planning Goals

The State of Oregon has established 19 statewide planning goals to guide local and regional land use planning. The goals express the state's policies on land use and related topics. The Oregon Department of Land Conservation and Development (DLCD) has acknowledged that the Marion County Comprehensive Plan and the Woodburn Comprehensive Plan are in compliance with the statewide planning goals. Because the Woodburn Interchange Project is consistent with the City and County comprehensive plans (as discussed in the Local Plans, Policies, and Codes subsection below), the project is thus consistent with the statewide planning goals. No exceptions to statewide planning goals are needed.

Transportation Planning Rule

The Transportation Planning Rule (TPR) implements Oregon Statewide Planning Goal 12, which encourages construction of transportation facilities that are safe and efficient and designed to reduce automobile reliance. The objective of the TPR is to reduce air pollution, congestion, and other livability problems found in urban areas. Its relation to the proposed interchange project is described in the following subsections.

660-012-0010—Transportation Planning

Section 660-012-0010 discusses the two phases of transportation planning: transportation system planning, where land use controls are established, and transportation project development, where specific projects are designed to implement the TSP.

Finding: Improvements to the Woodburn interchange are recommended in the 1996 and 2005 Woodburn TSPs. The build alternatives being analyzed through the EA process include reconstructing the interchange from a diamond to a partial cloverleaf pattern and widening Oregon 214, bringing it up to state design standards.

660-012-0035 – Evaluation and Selection of Transportation System Alternatives

Section 660-012-0035 describes standards and alternatives available to entities weighing and selecting transportation projects, including benefits to different modes, land use alternatives, and environmental and economic impacts.

Finding: The primary users of the Woodburn interchange are personal and commercial vehicles. Other modes, such as bicyclists and pedestrians, do not use the interstate highway system, and the City of Woodburn Transit Division does not operate a transit route on I-5. The objective of the proposed project is to improve mobility and safety, consolidate access, and bring Oregon 214/219 up to state design standards. A portion of this project would be widening Oregon 214/219 and adding bicycle and pedestrian facilities where currently there are none. ODOT is currently pursuing development of a park-and-ride facility in the study area east of the I-5 interchange along Oregon 214/219. In addition, fixed-route transit operating along this corridor would benefit from the improved mobility at these intersections.

660-012-0050—Transportation Project Development

Section 660-012-0050 prescribes that transportation projects be reviewed for compliance with local and regional plans and, where applicable, undergo a NEPA process.

Finding: The EA addresses how the proposed project complies with applicable acknowledged comprehensive plan policies and land use regulations. When a preferred alternative is chosen, compliance and potential issues will be addressed. Improvements at the Woodburn interchange were adopted in the 1996 and 2005 Woodburn TSPs

ODOT Access Management Rules OAR 734-051

The intention of ODOT's Access Management Rule is to balance the safety and mobility needs of travelers along state highways with the access needs of property and business owners. ODOT's rule sets guidelines for managing access to the state's highway facilities in order to maintain highway function, operations, safety, and the preservation of public investment consistent with the policies of the 1999 OHP.

734-051-0080, (2) Public Approach

Section 734-051-0080 provides details on how to address an application for public approach to a state highway.

Finding: This OAR is relevant to the Woodburn Interchange Project because both Alternative 1 and Alternative 2 propose consolidating approaches to improve safety and mobility along the Oregon 214/219 corridor. As described in Appendix D of the OHP, I-5 is classified as an Interstate Highway and Oregon 214/219 are classified as District Highways. Spacing standards that apply along Oregon 214/219 in the vicinity of the I-5 interchange are 1,320 feet from the centerline of the access ramp to the centerline of the closest public full access roadway and 750 feet to the closest right-in, right-out roadway. Although the build alternatives consolidate more than 20 driveways, the proposed project does not fully meet these access standards. Table 3-2 outlines those access points to Oregon 214/219 in the study

area that would not meet the 1,320 and 750-foot standards under the proposed build alternatives. This IAMP serves as the documentation to support the deviations from the ODOT spacing standards required to maintain these connections. The letter from the Region 2 Access Management Engineer approving these deviations is included in Appendix C. By approving this deviation, ODOT has met this provision of the access management rule.

TABLE 3-2
Proposed Deviations to Access Management Spacing Standards
Woodburn Interchange Project IAMP

Name of Access	Distance from Closest Freeway Access Point (feet) ^a
Woodland Avenue	1,080
Old Arney Road (right-in, right-out)	530
Lawson Avenue (right-in only)	460
Evergreen Road	900

^a Distances are recorded from the centerline of the nearest freeway ramp to the centerline of the intersection.

734-051-0115, Access Management Spacing Standards for Approaches

Section 734-051-0115 states that access management spacing standards depend on highway classification, type of area, and posted speed, and are to be applied to reconstruction as well as new construction projects.

Finding: The proposed project includes widening Oregon 214 from roughly 700 feet west of Woodland Avenue to the west to the intersection with Cascade Drive to the east, a stretch of roughly 0.9-mile. The build alternatives would consolidate access from more than 20 businesses to the state highway. Deviations to the access management spacing standards are being requested as part of the project. Section 734-051-0190 allows deviations in cases where a right of access exists, the designated access management standards cannot be accomplished, and where the property(ies) do not have reasonable access. The proposed access management spacing deviation locations at Old Arney Road (right-in, right-out only), Woodland Avenue, Lawson Avenue (right-in, right-out only), Evergreen Road, the Crossroads Shopping Center (right-in, right-out only), and the Wells Fargo Bank (right-in, right-out only) all currently exist, are in areas where development has largely occurred, have proposed modifications to either consolidate or modify access, and provide the only reasonable access for many businesses to the public street system. Deviations to the access management spacing standards were requested and granted as part of the project (see deviation memo, Appendix C).

734-051-0125, Interchange Access Management Area Spacing Standards for Approaches

Policy 734-051-0125 calls for a plan to be developed for the management of grade-separated interchange areas to ensure safe and efficient operation between connecting roadways.

Finding: This IAMP addresses access management for the area of the Woodburn interchange. Because it will correct existing geometric conditions that do not meet current standards and provide for improved operations that meet OHP and HDM mobility

standards, the proposed interchange reconstruction and Oregon 214 access management elements ensure the safe and efficient operation between connecting highways.

734-051-0155, Access Management Plans, Access Management Plans for Interchanges, and Interchange Area Management Plans

Section 734-051-0155 encourages the development of highway segment access management plans and interchange area management plans, especially for facilities with high traffic volumes and/or that provide important statewide or regional connectivity, and have the following characteristics: where existing developments do not meet spacing standards, existing development patterns and plans would result in a deviation request, or an access management plan would preserve or enhance the safe and efficient operation of a state highway.

Finding: By documenting the access strategy developed for Oregon 214/219 as part of the Woodburn Interchange reconstruction EA and the 2005 Woodburn TSP elements that support access management in the interchange area, this IAMP addresses this provision of Division 51.

734-051-0165, Design of Approaches

Section 734-051-0165 stipulates access control measures related to the construction or improvement of roads and/or interchanges. In accordance with 734-051-0165, approaches may be mitigated, modified, or closed pursuant to an adopted access management plan or IAMP.

Finding: The proposed project consolidates roughly 20 driveways along the Oregon 214/219 corridor, Lawson Avenue, and Evergreen Road, closing driveways where multiple driveways exist and, where possible, combining driveways to serve multiple businesses. Five accesses would be modified from full access to right-in, right-out only: Old Arney Road, Lawson Avenue, the entrance to the Crossroads Shopping Center, the driveway to Wells Fargo Bank, and the shared driveway to the ARCO Station/Dairy Queen. As described under the discussion of OHP Action 1.G.2, the proposed project is listed in the Woodburn TSP and the Woodburn Comprehensive Plan, and funding is provided through the STIP for environmental assessment, design, and ROW acquisition. The project is not fully funded at this time.

Approaches to cross streets are not fully consistent with established access management standards, as listed in Table 3-2. Deviations to authorize this project to advance with lesser spacing are described in this IAMP and have been approved by the Region 2 Access Management Engineer. The deviation approval letter is included in Appendix C. The Woodburn interchange connects an Interstate Highway to a state-controlled District Highway. Widening Oregon 214/219 would include adding bicycle and pedestrian facilities where none exist today. Fixed-route transit operations along this stretch of Oregon 214 would benefit from the widening project.

State Agency Coordination Program (December 1990) (OAR 731-0015)

State agency coordination programs describe what agencies will do to comply with Oregon's land use planning program. Specifically, they describe how an agency (that is, ODOT) will meet its obligations under ORS 197.180 to carry out its programs affecting land use in compliance with the statewide planning goals and in a manner compatible with

acknowledged comprehensive plans. Any needed local agency coordination not already accomplished or underway would occur before or as part of final project design.

Finding: The consistency of the proposed alternatives with local plans documented herein meets the stipulations of the state agency coordination program.

Western Transportation Trade Network, Final Report Phase II

The Western Transportation Trade Network is a multi-state network of agencies addressing surface freight transportation issues with the goal of enhancing the economic prosperity of the 17 western U.S. states. The Phase II report identifies deficiencies in freight corridors around the study area and offers a set of possible solutions.

I-5 between Canada and Mexico is listed as one of 20 freight corridors in the Western Transportation Trade Network. The I-5 corridor has the highest percentage of pavement deficiencies and the second highest share of capacity deficiencies for the forecast year of 2016. The segment of I-5 between Eugene and Portland has a deficiency level of 22 percent, with an increase to 100 percent deficiency expected by 2016. One of the supplemental solutions offered by the network is to construct new or rehabilitate existing interchanges along I-5.

Finding: The Woodburn/I-5 Interchange build alternatives are consistent with the goals and recommendations of the Western Transportation Trade Network Phase II Report. The project would facilitate easier access to and from businesses in Woodburn, including the many large freight destinations in the interchange area by improving mobility as described in Section 7 of this document.

Freight Moves the Oregon Economy (1999)

As indicated in this publication, “Freight plays a major role in moving the Oregon economy. Most freight moves by truck, rail, waterway, air, and pipeline with truck accounting for the greatest volume of freight.” Information found in this publication that may affect I-5 includes the following:

- Because the state’s largest airports are located in four metropolitan areas along I-5, the majority of Oregon’s in-state air traffic follows the I-5 corridor as well.
- Approximate daily truck volumes in the I-5 corridor are:
 - 10,000 per day across the I-5 bridge
 - 10,000 to 15,000 per day in the Salem and Eugene areas

Finding: By reconstructing the Woodburn Interchange to better serve truck and freight traffic (both geometrically and operationally), the Woodburn interchange is consistent with proposed strategies in this document to reduce delay and eliminate travel barriers. The IAMP is consistent with this plan because it seeks to accommodate the safe and efficient movement of freight.

Willamette Valley Transportation Strategy—Phase One Report

The Willamette Valley Transportation Strategy is a modal element of the OTP (discussed below under State Plans and Policies). The goal of the Willamette Valley Transportation

Strategy is to improve mobility, industrial growth, and livability for communities in the Willamette Valley and promote an understanding of the extent and significance of the transportation interdependence among these various communities.

Finding: Both Woodburn Interchange Project build alternatives are compatible with this stated goal because they would facilitate improved mobility at the interchange and build-out of adjacent developable lands in this location to the densities identified in the Woodburn Comprehensive Plan. Adjacent lands in this area are zoned for commercial use and identified as a commercial center. Transportation improvements to support focused development would discourage dispersed development in other locations. The project would improve livability by alleviating congestion on the roads, leading to shorter in-vehicle times and improved safety. Specific objectives of the plan relevant to the proposed project are discussed below.

Select Highway Projects that Maximize the Net Full Benefits to the Valley's Transportation System as a Whole

The Woodburn interchange serves a regional market. Not only is it the most direct regional approach to the Woodburn Company Stores, which received 3.2 million visitors in 2002, but it provides access from I-5 to downtown Woodburn and many communities in north Marion County. The interchange currently operates near capacity and is projected to exceed capacity levels before 2020. The Woodburn Interchange Project build alternatives would make improvements to the interchange to provide a greater level of mobility and improved safety for travelers on I-5 and Oregon 214/219.

Coordinate Highway Projects with Land Use Policies and Other Transportation Improvements

The land surrounding the Woodburn interchange is mostly zoned CG and LI. The build alternatives would bring Oregon 214 into compliance with state highway design standards and are compatible with local land use planning by improving access to commercial uses along Oregon 214/219. The project is further coordinated with land use policies and other transportation improvements through the provisions of the City's Interchange Management Overlay ordinance (Appendix D) and through the coordinated analysis that led to the selection of the supporting transportation improvements that were adopted into the City's 2005 Transportation System Plan (TSP). This IAMP adopts and relies on those documents as key components of ODOT's long range management strategy to protect the operations and function of this interchange.

Make Strategic Capacity Enhancements to Controlled Access Highways

The Woodburn Interchange Project build alternatives would create a strategic capacity enhancement to a controlled-access highway (I-5). The current interchange experiences higher than average accident rates and is operating near capacity. Development in the area is growing at a rapid pace. The project is strategic because it takes advantage of the infrastructure already in place and supports planned land uses in this location. The project would add capacity in a way that improves overall operations along I-5 and the Oregon 214/219 corridor, benefitting local as well as statewide and regional traffic.

Improve North-South and East-West Links to the Existing State Highway System

The main objective of the Woodburn Interchange Project is to improve the connection between I-5 (a north/south freeway through Woodburn) and Oregon 214/219 (an east/west District Highway through Woodburn).

Include Provision for Bicycle and Pedestrian Use in All New Facilities and Major Construction

Currently there are no bicycle or pedestrian facilities along Oregon 214/219 in the study area. The proposed project would include bicycle lanes and sidewalks along Oregon 214 to improve connections for bicyclists and pedestrians between residential and commercial development east of I-5 with the outlet stores and residential areas west of I-5.

Woodburn/I-5 Interchange Refinement Plan (2000)

ODOT's Woodburn/I-5 Interchange Refinement Plan was prepared in 1999 and 2000 to address the capacity and safety problems at the I-5/Oregon 214 interchange. This work was called for in the 1996 Woodburn TSP to determine the best way to address the problems at the existing Woodburn interchange. The study considered a total of ten alternatives, including a second interchange, a split diamond, a tight urban diamond, and a partial cloverleaf. Seven of these alternatives were dismissed, and three – the standard diamond, tight urban diamond, and partial cloverleaf – were recommended for advancement into the NEPA environmental documentation effort.

Finding: The refinement plan serves as a reference document to the Land Use Technical Report and does not contain any specific policies relevant to this review. This plan did address other interchange options originally raised in the 1996 TSP and provided guidance for access management and circulation options to consider during interchange project development.

Local Plans, Policies, and Ordinances

Marion County Rural Transportation System Plan (1998)

The published mission statement for the Marion County Rural Transportation System Plan (Marion County TSP) is to develop a balanced, multimodal transportation system to accommodate planned growth, facilitate economic development, and maintain a high standard of livability. Goals of the plan that apply to the proposed project are as follows:

- Improve transportation system safety
- Provide an accessible, efficient, and practical transportation system
- Provide sufficient transportation capacity
- Consider land use and transportation relationships

Finding: The plan identifies the Woodburn interchange as unsafe and congested and recommends that a refinement study be conducted for constructing a new interchange in Woodburn or modifying the existing interchange. The Woodburn Refinement Plan was completed in 2000 and led to the development of the Woodburn Interchange EA and this IAMP and also served to support the 2005 Woodburn TSP. The proposed project will improve safety by adding capacity to reduce congestion, reducing multiple access point conflicts along Oregon 214 through consolidation of access points and adding medians, and correcting geometric conditions that do not meet current standards. Many of the policies in the Marion County TSP are related to the county road system. No county roads would be affected by this project; therefore, the following policies generally affect most proposed projects in Marion County.

Transportation System Planning—Policy 2

Policy 2 addresses the need to evaluate all investments in the transportation system for efficiency, effectiveness, and practicality. The Woodburn Interchange Project build alternatives qualify as an efficient investment because they would improve an existing interchange instead of building a new one. The project would be an effective investment because the capacity improvements would decrease congestion and support existing and planned development. The Woodburn Interchange Project would be a practical investment because capacity improvements in conjunction with access consolidation would improve local and regional mobility and safety.

Transportation System Planning—Policy 8

Policy 8 relates to the role of state highways and county arterials as the backbone of the transportation network. The Marion County TSP supports efforts to enhance and maintain the capabilities of these roads. I-5 and Oregon 214/219 are both under the state's jurisdiction. The need for the capacity improvements, which has been identified in the Woodburn TSP and the Woodburn Comprehensive Plan, is also identified in the STIP, described below under State Plans and Policies.

State Highways

The Marion County TSP section on state highways addresses the county's desire to have ODOT address certain needs for the state highways within a 20-year time horizon. The Woodburn interchange is identified as such a need. The county recommends that ODOT conduct a refinement study to determine the best set of improvements for this location.

Marion County Comprehensive Plan

The goal of the Marion County Comprehensive Land Use Plan is to provide a guide to development and conservation of Marion County's land resources and to create a long-range policy guide that explains the basis for decisions about physical, social, and economic development of the county.

Finding: The Marion County Comprehensive Plan generally applies to land under the county's jurisdiction that is outside the Woodburn city limits. The Woodburn Interchange Project is completely inside Woodburn's city limits and the UGB. The county's transportation element, however, does include policies relevant to the Woodburn Interchange Project, as discussed below:

Policy 1

Policy 1 states that additional interchanges onto I-5 from the northern county line to the Chemawa interchange be discouraged. The Woodburn Interchange Project build alternatives are consistent with this policy because they would create improvements to an existing interchange rather than building a new one.

Policy 2

Policy 2 requires that the number of access points on collector and arterial roads be kept to a minimum. The Woodburn Interchange Project build alternatives are consistent with this

policy because they would propose to combine and consolidate existing accesses along Oregon 214/219 and implement other access management changes.

Policy 4

The intent of Policy 4 is to minimize damage from highway projects on the natural environment, specifically soil, timber, water, scenic or cultural resources. The Woodburn Interchange Project build alternatives are proposed for an area that is zoned commercial and industrial and is already largely developed. There would be minimal damage to soil, timber, water, scenic, or cultural resources, as documented in the draft Woodburn EA.

Policy 13

Policy 13 states that new transportation facilities should use existing ROWs as much as possible to minimize disruption to existing land use. The Woodburn Interchange Project build alternatives are consistent with this policy because most improvements would be made on or adjacent to existing rights of way.

City of Woodburn Transportation System Plan (1996, updated 2005)

The Woodburn TSP identifies transportation needs to support planned land uses in the city over a 20-year time horizon as defined by the 2005 Woodburn Comprehensive Plan update. The TSP was created in accordance with the TPR (Oregon Administrative Rule [OAR] 660-012-045) and the Comprehensive Land Use Planning Statute (Oregon Revised Statutes [ORS] 197.712). The Woodburn TSP was originally developed in 1996. The updated TSP serves as the new transportation element of the 2005 Woodburn Comprehensive Plan update.

Finding: The following elements of the Woodburn TSP are directly related to the Woodburn Interchange Project:

Goal 2, Policy 2

This policy calls for a strategy to improve certain highways in Woodburn, including Oregon 214 and Oregon 219, through added travel lanes, signalization, and access management. The proposed Woodburn Interchange Project is consistent with this goal because it would add capacity and consolidate access along Oregon 214/219 in the city, with the objective of improving safety and mobility through the corridor. The Woodburn Interchange reconstruction project does not improve the entire Oregon 214/219 corridor, but a follow-on environmental documentation process to determine how best to improve the rest of the corridor between the interchange project area and Oregon 99E is funded in the STIP and scheduled to begin in 2006.

Goal 3, Policy 1

This policy describes the need for access management strategies for three highways in Woodburn, particularly focusing on Oregon 214 between I-5 and Cascade Drive. The Woodburn Interchange Project is consistent with this goal because it would remove 14 driveways and modify an additional 4 driveways from full access to right-in, right-out only, instituting a higher degree of access control along this portion of Oregon 214/219.

Existing Conditions and Deficiencies

The TSP identifies current deficiencies within the study area as follows:

- Pedestrian facilities are not provided on Oregon 214 west of Evergreen Road
- Bicycle facilities are not provided on Oregon 214 west of Boones Ferry Road
- Twenty-three crashes have been reported at the intersection of I-5/Oregon 214 at the southbound ramp over the last 5 years
- Twenty-four crashes have been reported at the intersection of I-5/Oregon 214 at the northbound ramp over the last 5 years
- Relevant sections of Oregon 214 (milepost [MP] 36.63 to 36.79, MP 36.81 to 36.91, MP 36.84 to 36.95, and MP 37.03 to 37.12) are listed in the top 10 percent of SPIS sites

The Woodburn Interchange Project would address these deficiencies through the addition of pedestrian and bicycle facilities, roadway and intersection reconstruction, and access management on these roadways.

Future Transportation Conditions, Deficiencies, and Needs

The TSP identifies anticipated future transportation system deficiencies within the study area. By 2020, it is expected that both the northbound and southbound ramps of I-5 at Oregon 214/219 will reach capacity deficiency if no improvements are made to the existing system. Oregon 214/Evergreen Road is also expected to reach capacity deficiency by 2020, and Oregon 219/Woodland Avenue and Oregon 214/Oregon Way are expected to operate near capacity. The lack of pedestrian and bicycle facilities along Oregon 214 in the study area was also identified as a future transportation need.

The Woodburn Interchange Project would address these deficiencies through roadway and intersection reconstruction and access management on Oregon 214/219.

Transportation Systems Plan Alternatives

The TSP chapter on alternatives specifically identifies and authorizes widening on-ramps and off-ramps at the I-5/Oregon 214/219 interchange, widening Oregon 214/219, and constructing turn lanes along Oregon 214 between Woodland Avenue and Oregon Way. These improvements are recommended in all three alternatives discussed in the TSP chapter.

The TSP recommends bicycle and pedestrian treatments for major streets. The proposed Woodburn Interchange Project build alternatives are consistent with the recommended projects in the TSP.

The Woodburn Interchange Project directly addresses the identified existing and future anticipated safety and capacity deficiencies along the Oregon 214/219 corridor and the I-5/Oregon 214/219 intersection. The proposed project is consistent with the Woodburn TSP.

City of Woodburn Comprehensive Plan (1978, amendments through 2005)

The Woodburn Comprehensive Plan was written in 1978 with subsequent amendments, the latest in 2004. The Woodburn Comprehensive Plan establishes goals for development and redevelopment in Woodburn over a 20-year time frame. It serves as the controlling land use document for the city and its UGB.

Finding: The following policies within the transportation element are relevant to the Woodburn Interchange Project.

Policy H1-3

Policy H1-3 states that state and federal highways with routes through Woodburn should be improved in accordance with projected traffic volumes and other elements. Existing and projected traffic volumes are discussed in more detail in the Transportation Technical Report, but the current interchange operates near capacity and development in the area is growing at a rapid pace. With the widening included in the project build alternatives, the interchange is expected to operate at acceptable mobility levels in the year 2025.

Policy H1-5

Policy H1-5 states that the city should promote pedestrian safety and activity by providing sidewalks with a minimum 4-foot width. Currently, Oregon 214/219 does not have sidewalks near the I-5 interchange. The project build alternatives would provide 6-foot-wide sidewalks along Oregon 214/219 at this location.

Policy H1-8

Policy H1-8 stipulates that driveway access along Highway 214 be consolidated. More than 20 driveways are expected to be consolidated as part of the proposed project, from Oregon 214/219 or from Lawson Avenue and Evergreen Road. In addition, access to three businesses has been modified to right-in, right-out operations only. See the Transportation Technical Report for more information.

Woodburn Development Ordinance

The Woodburn Development Ordinance supplies a set of regulations for development within the City of Woodburn. Two sections of the ordinance – land use zoning and street design standards – are applicable to the proposed project.

Finding: A new section addressing the Interchange Capacity Preservation Measures was adopted (see Appendix D) into the Woodburn Development Ordinance (2.116) in conjunction with the October 31, 2005 update of the Woodburn Comprehensive Plan and TSP. The predominant land use zoning for the study area is CG, although the predominant use in the SW quadrant is IL. At both edges of the proposed project footprint there are smaller areas of noncommercial land uses, including RS, R1S, and P/SP (see Figure 3-5 in the main body of the EA). Each of these zones allows “rights of way and easements and the improvements therein for streets...” as a permitted use.

Because I-5 and Oregon 214 are both under state jurisdiction, the local street standards in the Woodburn Development Ordinance do not apply to most of the proposed project. Modifications to access for city streets at Woodland Avenue, Old Arney Road, Lawson

Avenue, Oregon Way, and Cascade Drive do not affect the footprint of the city roads beyond the intersection area. Modifications to Evergreen Road, however, are under city jurisdiction; therefore, local street standards apply. The standards relevant to this project are outlined in the following subsections.

Section 3.101.12.1B Street Improvement Standard

The City of Woodburn street improvement standards call for 12-foot travel lanes, 5-foot sidewalks, proper drainage facilities, and bicycle facilities for one side of the road. The extension of Evergreen Road north from Oregon 214 to Country Club Road (included in both build alternatives) would consist of two 12-foot travel lanes with no median and 2-foot shoulders. Curbs and gutters with 6-foot sidewalks would be added on both sides of the road.

Finding: No bicycle lane would be added, which does not comply with the City of Woodburn street improvement standards. A deviation from this standard would be required from the city for the project design.

Section 3.104.01A Street Access Required

This policy directs that every developed lot will be given an irrevocable access easement to have entry to a public street or shared driveway. The policy was established to guarantee that a property owner would have access to their property, and that customers could reach a business.

Finding: The project build alternatives without the Access Option would eliminate two driveways to Evergreen Road – the Union 76 and ARCO parcels. Under this scenario, both parcels would be acquired by ODOT. The Access Option (for both build alternatives) would provide access to the ARCO parcel by way of a 50-foot public road easement south of the ARCO structure.

Section 3.104.01B Access to City Streets, Permit Required

Modifications to access for city streets would be made at Oregon Way, Evergreen Road, and Lawson Avenue as follows:

- Eastbound on Oregon 214 from the I-5 interchange
 - Access to existing frontage road located in the SE quadrant of the interchange would be closed.
 - Only a right-in turn would be allowed from Oregon 214 onto Lawson Avenue. The right-out from Lawson onto Oregon 214 is prohibited.
 - No access would be allowed between Lawson Avenue and Evergreen Road (closes one access to McDonalds and two accesses to Union 76).
 - One right-in, right-out access would be allowed at the ARCO gas station and Dairy Queen; one right-in, right-out access would be allowed at Wells Fargo Bank (formerly Midland Bank).
- Westbound on Oregon 214 from Oregon Way toward the I-5 interchange

- One mid-block access between Oregon Way and Evergreen Road would be allowed.
- No access would be allowed between Evergreen Road and the I-5 interchange ramps.
- Access along Evergreen Road, north and south of Oregon 214
 - No access would be allowed 200 feet from Oregon 214 except under the Access Option, where access to the Union 76 parcel would be allowed along its southern property line.
- Access along Oregon Way, south of Oregon 214
 - The Mid-Valley Bank would lose driveway access from both driveways onto Oregon Way under both build alternatives without the Access Option.
- Access along Country Club Road, north of Oregon 214
 - The Mae Thai Restaurant on the west side of Country Club Road would lose direct driveway access to Oregon 214. The northern driveway onto Country Club Road would remain.

Old Arney Road would remain as right-in, right-out access only. Although geometric modifications would be made to Woodland Avenue, access would not be affected.

Finding: Access modification permits would be requested from the city during the preconstruction phase of this project. All access modifications to private road and driveway approaches are subject to future ROW negotiations with property owners.

Land Use and Environmental Analysis

Land Use

The City of Woodburn was founded about 2 miles east of the current I-5/Woodburn interchange near the tracks of the Oregon & California (O & C) Railroad, (now owned and operated by Southern Pacific Railroad). City development patterns began to move west in 1954 when I-5 was constructed with an interchange connection to the City. As of the 2000 U.S. Census, the City's population was 20,100.

Existing Land Use

Most of the land in the immediate vicinity of the I-5 and Oregon 214/219 interchange is developed, primarily with commercial and light industrial uses and a smaller amount of residential development. However, the IMA also includes a number of undeveloped properties. Appendix A includes land use planning maps (existing uses, comprehensive plan, and zoning) that served as the basis for the analysis in the EA and the IAMP.

West of the interchange, land uses are commercial, industrial, and single-family residential. The northwest quadrant is dominated by the Woodburn Company Stores outlet mall, which opened in 2000. This development consists of approximately 300,000 square feet of retail development. Access to the company stores is along Woodland Avenue and Old Arney Road. Other commercial uses in the northwest quadrant include three car dealerships, a motel, a gas station, one sit-down restaurant and two fast-food restaurants. A single-family neighborhood is located immediately west of Woodland Avenue and north of Oregon 219. Land in the southwest quadrant is primarily light industrial, with two large warehousing and distribution centers.

East of the interchange, nearby land uses are mainly commercial, including gas stations, fast-food or sit-down restaurants, a bank, and a motel. This area also contains an older shopping center development and a vacant motel. Along most of the eastern edge of the IMA, north and south of Oregon 214 is Senior Estates, a large development of single-family homes zoned for retirement use that also includes a golf course. A tunnel under Oregon 214 is used by golf carts and pedestrians and links the northern and southern portions of the golf course. The Woodburn Super Wal-Mart store is located in the southeast quadrant along with a relatively new residential development adjacent to Senior Estates.

Future Land Use Assumptions

Woodburn's 2005 Comprehensive Plan update includes the addition of several hundred acres of industrially zoned land south of Oregon 214/219, both east and west of I-5. On the west side, this land is located east of Butteville Road and north of the Parr Road overpass. On the east side, the industrial land is located north and south of Parr Road. The travel model forecast developed for the EA and the TSP assume this land will be developed, in accordance with the 2020 population and employment forecasts adopted in 2004 for

Woodburn by Marion County. The analysis for the EA extrapolated these forecasts to 2025. The travel models forecasts for the TSP and the EA also assumed the redevelopment of all currently underdeveloped commercial property located adjacent to Oregon 214 on the east side of the interchange.

ODOT and the City of Woodburn are in agreement regarding the travel demand (trips and trip distribution) based on the population and employment assumptions. The City has updated its Comprehensive Plan policies and implementation ordinances to reflect these agreements and to provide safeguards to maximize the service and function of the interchange. These provisions are highlighted in the next section.

Comprehensive Plan Policies and Implementation Ordinance

The Woodburn Development Ordinance (WDO) includes the City ordinances that implement the goals and policies established in the WCP. The WDO combines zoning, specified use standards, development guidelines and standards (for example, street standards), partition and use standards, administration and procedures, and application requirements in one ordinance.

The Interchange Management Area Overlay District described in WDO (2.116) is the primary provision in the WDO supporting preservation of the long-term capacity of the Woodburn interchange. The IMA Overlay District protects interchange capacity by establishing trip generation budgets for parcels in the overlay district. The parcel budgets are intended to be high enough to accommodate peak hour trips anticipated by the 2005 WCP and TSP, while not providing for unplanned vehicle trips that could adversely affect the interchange. The IMA Overlay District also ensures that needed industrial, commercial, and residential land is protected from commercial encroachment. This complements and supports provisions of the Southwest Industrial Reserve (SWIR) District (2.114) by ensuring that industrial land is retained for targeted employment called for in the Woodburn Economic Opportunities Analysis (EOA) and the Economic Development Strategy. The IMA Overlay District ordinance is included in Appendix D.

In addition to the provisions in the WDO, the WCP includes specific goals and polices that guide land development in the IMA and support this IAMP, including:

- B-2. Woodburn will coordinate with affected state agencies regarding proposed comprehensive plan and land use regulation amendments, as required by state law.
 - (e) The state agencies most interested in transportation programs and projects are ODOT and DLCD. These agencies will be notified and asked to participate in amendments to the TSP, or regarding plan amendments or zone changes that could adversely affect a state transportation facility.
- E-1. Woodburn shall provide and maintain an adequate supply of suitable industrial sites to attract targeted firms consistent with Statewide Planning Goal 9 (Economy of the State), the recommendations of the 2002 Woodburn EOA and the Woodburn Economic Development Strategy.
 - E-1.1 It is the policy of the City to provide for developments that, whenever possible, will allow residents of the City of Woodburn to work in Woodburn and not have

to seek employment in other areas. To accomplish this, the City should encourage that there be a healthy job market within the City and enough industrial land is available for industrial growth to accommodate the residential growth expected in the City.

- E-1.6 The industrial park concept is one that the City deems is the most desirable form of industrial development. Whenever possible the industrial park concept will be encouraged in an attractive and functional design. Master planning of industrial areas shall be required prior to annexation of industrial land to the City. Master plans shall reserve parcels of sufficient size to meet the needs of targeted industries identified in the EOA.
- E-1.8 Industrial lands shall be protected from encroachment by commercial or other uses that will either increase the price of industrial land or cause traffic generation that will interfere with the normal industrial practices.
- E-2. Woodburn shall reserve suitable sites in the SWIR for targeted industrial firms, as directed by the 2002 Woodburn EOA.
 - E-2.1 Woodburn shall designate industrial land near Interstate 5 with a SWIO (Southwest Industrial Overlay) designation. Land within this designation shall be reserved exclusively for industrial uses identified in the EOA, and shall not be converted to another commercial or residential plan designation.
 - E-2.2 A master development plan shall be approved by the City Council prior to annexation to the City. The master plan shall show how streets, sanitary sewer, water and stormwater services will be sized and located to serve the entire SWIO area. The master plan shall show how arterial, collector, and local street access will be provided to each lot if land division is proposed. The proposed master plan shall be referred to Marion County for comment prior to consideration by the City Council.
 - E-2.3 This SWIO master plan shall demonstrate how sites with the size and access characteristics identified in the EOA will be maintained, consistent with Policy Table 3 (not included).
- G-1. The City's goal is to manage growth in a balanced, orderly, and efficient manner, consistent with the City's coordinated population projection.
 - G-1.3 The City shall provide an interconnected street system to improve the efficiency of movement by providing direct linkages between origins and destinations.
 - G-1.4 The City shall assure the provision of major streets as shown in the TSP. The City shall hold development accountable for major streets within and abutting the development. In addition, the policy of the City is to emphasize development outward in successive steps and phases that avoid unnecessary gaps in the development and improvement of the major streets.
 - G-1.7 The City's policy is to accommodate industrial and commercial growth consistent with the 2002 Woodburn EOA.

- G-1.10 Woodburn will ensure that land is efficiently used within the UGB by requiring master development plans for land within Nodal Overlay or Industrial Overlay designations. Master plans shall address street connectivity and access, efficient provision of public facilities, and retention of large parcels for their intended purpose(s).
- H-5. Develop amendments to City land use standards and ordinances to reduce travel demand and promote use of modes of transportation other than the automobile.
- H-5.1 Identify a range of potential Transportation Demand Management (TDM) strategies that can be used to improve the efficiency of the transportation system by shifting single-occupant vehicle trips to other modes and reducing automobile reliance at times of peak traffic volumes.
- H-7. Coordinate with the Oregon Department of Transportation (ODOT) to maintain highway and intersection capacity, safety, and functionality by:
- (a) Developing and adopting performance standards; and
 - (b) Prohibiting comprehensive plan amendments that do not meet adopted performance standards.
- H-7.1 The Woodburn TSP shall determine and implement an interchange capacity management plan within the UGB based on potential and substantial adverse impacts to state highway facilities.
- (a) Peak hour trip generation estimates and numerical ceilings based on land uses permitted by the updated Woodburn Comprehensive Plan (2005) shall be determined for each designated sub-area.
 - (b) The City will coordinate with ODOT in monitoring trip generation impacts for each designated sub-area, considering the cumulative impacts of existing and new development.
 - (c) Transportation impact studies shall be required for subdivisions and planned developments, and for new commercial, industrial, public and multi-family residential development within designated sub-areas.
 - (d) Comprehensive Plan amendments that exceed the trip generation ceiling for a designated sub-area shall be prohibited.
 - (e) Comprehensive Plan amendments from Industrial to Commercial shall be prohibited, regardless of impact, within the SWIR Overlay.
 - (f) Woodburn shall provide ODOT with copies of transportation impact studies upon request, and as part of the Periodic Review process.

Environmental

Because the area is already significantly disturbed and committed to urbanization, the Woodburn Interchange EA determined that environmental consequences to natural resources were generally negligible and could be mitigated as necessary. The EA addressed

potential natural and human impacts to hydrology and water quality, biology and wetlands, cultural resources, transportation, land use, socioeconomics, environmental justice, visual quality, air quality, noise, and hazardous materials. Many of these resources also were analyzed for secondary, cumulative, and construction impacts.

Because the two build alternatives considered in the EA are the same in function and design and only differ in the direction in which Oregon 214/219 is widened, most of the environmental impacts are the same for both alternatives. The differences in environmental impacts between the build alternatives are mostly due to Alternative 1 (Widen Equal) widening to the south of Oregon 214/219 and Alternative 2 (Widen Equal) widening to the north of Oregon 214/219. The key distinguishing potential environmental impacts for all the alternatives are shown in Table 4-1.

The build alternatives would result in minor noise increases (1 to 4 decibels A-scale [dBA]) compared to the No Build Alternative. Although it is not a substantial increase, traffic noise impacts do occur and are expected to continue to occur in the future without sound walls. Four new sound walls are proposed to be built with the build alternatives. The project would have only minor impacts on air quality, visual landscape, and land use.

No resources of the historic built environment exist within the project area. However, the project area does contain archaeological potential beneath existing transportation corridors, utility corridors, and other buildings and structures. Potential impacts on subsurface resources would be addressed during interchange reconstruction. If cultural resources are discovered during construction, a qualified archaeologist would be brought to the area to properly document and assess the significance of the find. More detailed information about environmental issues can be found in the Woodburn interchange draft and revised EA documents. The No Build Alternative would not meet the project's purpose and need (improving the interchange design and safety).

TABLE 4-1
Summary of Distinguishing Environmental Impacts
Woodburn Interchange Project IAMP

Environment	Alternative 1 Widen Equal	Alternative 2 Widen North	No Build Alternative
Wetlands Impact	Up to 0.01-acre (may not be jurisdictional)	Up to 0.01-acre (may not be jurisdictional)	--
Waters of the U.S. Impact	Up to 0.01-acre	Up to 0.01-acre	--
New Impervious Surface Area	2.97 acres (12,019 square meters)	2.58 acres (10,442 square meters)	--
Average Travel Speed on Oregon 214/219	18 mph	18 mph	10 mph
Volume to Capacity Ratio (v/c) at:			
I-5 Southbound Ramp	0.58	0.58	>1.0
I-5 Northbound Ramp	0.63	0.63	>1.0
Woodland Avenue	0.54	0.54	0.96

TABLE 4-1
 Summary of Distinguishing Environmental Impacts
Woodburn Interchange Project IAMP

Environment	Alternative 1 Widen Equal	Alternative 2 Widen North	No Build Alternative
Evergreen Road	0.73	0.73	>1.0
Oregon Way/Country Club Road	0.78	0.78	0.90
Boones Ferry/Settlemer Road	0.82	0.82	>1.0
Business Displacements	7-10 businesses	8-11 businesses	--
Residential Displacements	1-3 residences	3-5 residences	--
Right-of-Way Required	11.1 acres required 56-59 parcels affected	10.9 acres required 55-58 parcels affected	--
Cost of Right-of-Way	\$17.5 million	\$17.1 million	--
Cost to Construct	\$23.3 million (plus \$650,000 for Access Option)	\$23.4 million (plus \$650,000 for Access Option)	--

mph = miles per hour

SECTION 5

Existing Conditions and Forecast Deficiencies Analysis

This IAMP is based on the operational, geometric, and safety analyses contained in the Woodburn Interchange EA. The traffic forecast upon which this IAMP is based assumes a land use plan that will develop at a rate consistent with the citywide population and employment growth forecasts in the adopted 2005 Comprehensive Plan. Without improvements to the interchange, traffic growth and safety concerns on Oregon 214 and I-5 will continue to grow. Appendix B includes figures depicting accident history, existing and forecast traffic volumes, proposed lane configurations, and queuing lengths (2025) for the proposed project alternatives. Figure 2 (see Section 1) shows the location and functional classifications of the roads.

Existing Geometric Conditions

The existing standard diamond interchange configuration of the Woodburn interchange is typical of an interchange designed to accommodate relatively low traffic volumes in a rural area. The current bridge structure design meets seismic requirements and has a sufficiency rating of 97 out of a possible 100, which represents a high-value asset. Oregon 214 functions with a travel through lane in each direction and continuous two-way left turn refuge. Over the Woodburn interchange, Oregon 214 has one lane in each direction and continuous side-by-side left turn lanes between the ramp terminal intersections.

On the east side of I-5, Oregon 214 is a three-lane section, with one through lane in each direction and a continuous two-way left turn lane widening to one through travel lane in each direction and side-by-side left turn lanes across the overpass. A right turn lane to the northbound on-ramp to I-5 was recently added to facilitate operational improvements. Oregon 219 on the west side of I-5 is a four-lane section between the freeway ramps and Woodland Avenue, with two lanes in each direction, and a raised median on either side of the Oregon 219/Old Arney Road intersection. Right-in/right-out turns are allowed at Old Arney Road on the north side of the highway.

Deficiencies noted by the ODOT refinement planning process in 2000 and affirmed in the EA include the following:

- Vertical grades across the structure are 5 percent and 5.5 percent, which are greater than the desired 3 percent. This causes truck traffic to move at slower than normal speeds to counteract tipping motions when turning from or onto the ramps.
- Even though bicycle lanes have been added at the Oregon 214 approach to the northbound ramps, the existing shoulder width/bikeway of 0 feet to 4 feet is inadequate to meet standards of 6 feet next to Oregon 214/219 and 6 feet across the overpass.

- Existing access spacing from the ramp end to the first unsignalized intersection is 550 feet, and 1,105 feet to a signalized intersection. This does not meet current minimum spacing standards of 1,320 feet to the first intersection.
- There are no sidewalks on the south side of the overpass, creating circulation problems for pedestrians.
- Utility power poles are placed in the sidewalks and do not meet standards of the federal Americans with Disabilities Act (ADA). Minimum sidewalk clearance requirements are 3 feet according to the ADA and 4 feet according to ODOT standards.
- Northbound and southbound existing ramp lengths do not meet current safety requirements for deceleration, stopping, and storage (Table 5-1).

TABLE 5-1
Ramp Length Deficiencies
Woodburn Interchange Project IAMP

Ramp	Entrance	Exit
NB Existing	1,915 feet	1,083 feet
<i>NB Required</i>	<i>1,980 feet</i>	<i>1,735 feet</i>
SB Existing	1,100 feet	1,740 feet
<i>SB Required</i>	<i>1,680 feet</i>	<i>1,830 feet</i>

Safety Analysis

The crash analysis performed using the latest 5 years of crash statistics (1997-2001) did not identify any patterns among crashes at any intersection in the Woodburn Interchange Project study area that indicate a geometric or operational deficiency. In 2000, both the I-5 southbound and northbound ramp intersections were modified as part of the mitigation for the Woodburn Company Stores. ODOT will monitor these intersections to evaluate any change in crash histories as a result of the modifications. The 2003 operational analysis found that critical ramp movements are far in excess of a 1.0 V/C ratio. The critical movements at failure are leading to safety concerns related to traffic backing up into the ramp deceleration zone and even spilling back onto the shoulder and travel lanes during special events in the Woodburn area. These backups pose extreme safety risks because resulting accidents involve collisions between slow-moving or stopped vehicles and vehicles traveling at high speeds.

Crash rates for intersections are reported in crashes per million entering vehicles (MEV). In addition to patterns among crashes, such as rear-end or side-swipe collisions, a crash rate greater than one may indicate the need for further analysis. None of the Oregon 214 intersections in the study area had a crash rate exceeding one, even though several intersections experienced a relatively high number of crashes. Even in the absence of clear patterns among the crashes and crash rates below one, it is worth noting that over

50 percent of all of the crashes resulted in injury. A summary of the intersection crash data is provided in Table 5-2, which includes crash rate, severity, and type of crashes over the 5-year analysis period at the study intersections.

TABLE 5-2
Intersection Crash History: January 1997 to December 2001
Woodburn Interchange Project IAMP

Intersection	# of Crashes	Crashes per MEV	Collision Type				Severity		
			Rear End	Angle	Turning	Head On	Other	Injury	PDO
Oregon 219/ Woodland Ave.	4	0.19	0	0	4	0	0	1	3
Oregon 219/ Arney Road	5	0.21	0	0	5	0	0	4	1
Oregon 214/ I-5 SB Ramp	23	0.67	5	0	16	0	2	12	11
Oregon 214/ I-5 NB Ramp	24	0.61	18	1	4	0	1	14	10
Oregon 214/ Lawson	1	0.02	0	0	1	0	0	1	0
Oregon 214/ Evergreen Road	17	0.48	9	2	5	0	1	10	7
Oregon 214/ Oregon Way/ Country Club	21	0.64	12	3	6	0	0	11	10
Oregon 214/ Cascade	2	0.07	1	0	1	0	0	0	2

MEV – Million Entering Vehicles
PDO – Property Damage Only
SB – Southbound
NB – Northbound

No fatalities were reported at the study intersections during the study period. A brief synopsis of the detailed analysis for intersections with the highest number of crashes is discussed below.

Oregon 214/I-5 Southbound Ramp

Twenty-three crashes were recorded during the 5-year study period. This intersection was improved in 2000. Of the 15 crashes recorded in 2000 and 2001, eight involved turning collisions on the westbound approach. The left turns on the east and west approaches are controlled by permitted phasing.

Oregon 214/I-5 Northbound Ramp

During the 5-year study period, 24 crashes were reported at this intersection. This intersection was also improved in 2000. Of the eight reported crashes in 2000 and 2001, the majority (seven) were rear-end collisions and these occurred on all of the intersection

approaches. No pattern that is indicative of an existing safety deficiency at the intersection was established among the crashes.

Oregon 214/Oregon Way/Country Club Road

Of the 21 reported crashes at this intersection, the majority (12) were rear-end collisions on the east and west approaches, which is fairly common at a signalized intersection. The remaining crashes involved turning movement collisions and angle crashes. No pattern was apparent from the crash data history that is indicative of an existing safety deficiency at the intersection.

Safety Priority Index System (SPIS) Locations

ODOT has developed a SPIS, generated annually and based on the most recently available 3 years of crash data, to identify hazardous locations along state highways. Highway locations within the highest 10 percent SPIS score are evaluated for potential safety improvements. Four roadway segments within the Woodburn Interchange Project study corridor on Oregon 214/219 fall within the top 10 percent of ODOT’s SPIS rankings of the worst crash locations in the state. These highway segments are summarized in Table 5-3. Of the highway segments identified in the top 10 percent SPIS group, four of the study intersections are located within these segments. These intersections include the north and southbound I-5 ramp terminals, the Oregon 219 intersection with Old Arney Road, and the Oregon 214 intersection with Lawson Avenue. Three other study intersections are located close to the SPIS segments, including Evergreen Road, Oregon Way/Country Club Road, and Cascade Drive.

TABLE 5-3
 ODOT 2001 Woodburn Interchange Project Study Corridor Top 10 percent SPIS Segments
 Woodburn Interchange Project IAMP

Route	Beginning Milepost	Ending Milepost	Length	1999 ADT	Crash	SPIS
OR-214	36.63	36.79	0.16	10,800	25	55.06
OR-214	36.81	36.91	0.10	19,200	23	46.55
OR-214	36.84	36.95	0.11	19,200	24	48.69
OR-214	37.03	37.12	0.09	19,200	27	52.03

ADT Average daily traffic.
 SPIS Safety Priority Index System.

Previous Safety Analysis

The results of the safety analysis done in 1999 (prior to the opening of the Woodburn Company Stores complex) show:

I-5 mainline and ramps (MP 271.4 to 272.4) – There are no significant hot spots or high-crash sites.

- **Crash severity** – of 25 total crashes recorded, there was 1 fatality (involving a pedestrian) and 11 injuries.

- **Crash type** – 10 are rear-end crashes, 6 are overtaking or passing crashes, and 4 crashes involved hitting a fixed object in the roadside.
- **Crash location** – about 50 percent of all crashes happened on the interchange ramps.
- **Crash rate** – the crash rate is 0.51 compared to a statewide average of 0.30 for suburban interstate highways.

Oregon 214, I-5 to Evergreen (MP 36.5 to 37.2) - There are 10 locations in the top 10 percent of the state listing for comparable urban highway segments.

- **Crash severity** – of 75 total crashes recorded, there was 1 fatality (involving a pedestrian) and 65 injuries.
- **Crash type** – 33 crashes happened while turning, 29 are rear-end with the remaining 13 a combination of categories.
- **Crash location** – 40 of the crashes occurred at intersections (the two worst sites are the accesses between Lawson Avenue and Evergreen Road).
- **Crash rate** – the crash rate is 5.39, more than twice the statewide average of 2.14 for urban arterials.

Traffic Operations Analysis

The term “operation” refers to the quality of traffic flow. Travel demands are represented as projected design hour traffic volumes. These volumes are the basis for analysis of traffic impacts. The peak-hour volumes were analyzed using traffic “volume” demand to facility lane “capacity” (V/C) as a numeric indicator of facility performance. The V/C ratio is the degree of saturation of an intersection. As the numeric ratio approaches 1.0, congestion increases. Likewise, the closer the number is to 0.0, the more free-flowing the traffic functions. Although it is possible to achieve numbers higher than 1.0 mathematically, there is no practical meaning other than failure, which is characterized by motorists sitting through several traffic signal cycles and making little progress during peak demand periods.

Signalized intersections and unsignalized intersections have different measures of level of service. For signalized and four-way stop intersections, level of service is based on the average delay experienced by all vehicles entering the intersection. For two-way stop intersections, level of service is based on the delay experienced by the worse movement, which is usually the left-turn movement on the stopped approach. ODOT has specific mobility standards for the state facilities within the city of Woodburn based on the facility’s classification and travel speed.

Existing and Future No Build Operational Conditions

In 1999, travel volumes on I-5 through the interchange were 73,100 Average Daily Traffic (ADT). Ramp volumes varied from a high of 6,300 ADT to a low of 4,000 ADT. In July 1999, manual counts recorded 18,900 ADT on Oregon 214 east of the interchange, and 15,000 ADT west of I-5. In 2004, ADT just south of the interchange was 85,400 vehicles and increases to nearly 115,000 vehicles just south of Wilsonville.

An operational analysis was performed for nine study area intersections along Oregon 214/219 in the study corridor. Under current conditions three of the nine intersections, including both north- and southbound ramp terminals, fail to meet designated mobility standards. Without improvement, future 2025 volumes indicate that seven of the nine study intersections will fail to meet the mobility standard and the ramp terminal intersections will exceed capacity. This level of congestion represents significant traffic delay on 214/219, with impacts expanding beyond the immediate study area. This congestion also increases the likelihood for traffic queues on the ramp terminals to back up from each off-ramp signal all the way down the off-ramps into the freeway shoulder and travel lanes. Table 5-4 presents the OHP mobility standards, and 2003 observed and forecast 2025 V/C ratios for study area intersections.

TABLE 5-4
Existing and Future Design Hour Volume to Capacity Ratios
Woodburn Interchange Project IAMP

Location	Traffic Control	V/C Mobility Standard	2003	2025 No Build
Woodland Avenue	Signal	0.80	0.54	0.96
Old Arney Road	Stop	0.80	0.10	0.19
I-5 Southbound Ramp	Signal	0.70	0.83	>1.0
I-5 Northbound Ramp	Signal	0.70	0.81	>1.0
Lawson Avenue	Stop	0.80	0.28	0.84
Evergreen Road	Signal	0.80	0.76	>1.0
Oregon Way/Country Club	Signal	0.80	0.82	0.90
Cascade Way	Stop	0.80	0.39	0.36
Astor Way	Stop	0.80	0.43	>1.0
Boones Ferry/Settlemier	Signal	0.80	0.92	>1.0

Notes:

All volume-to-capacity ratios are shown as average intersection conditions and may include critical movements that do not meet standards.

The Cascade Way intersection is stop-controlled. Local traffic will reroute critical northbound left turns to Evergreen Road, a signalized intersection, during peak periods.

Old Arney Road is right-in and right-out only.

The Boones Ferry/Settlemier intersection is outside of the project construction limits.

Currently, the average travel speed through the corridor is 16 miles per hour (mph). The average travel speed will decrease to 10 mph as a result of increased congestion in the No Build scenario. Under these conditions, emergency service providers noted that this type of congestion could impede response times, especially for locations east of the freeway.

Summary of Existing and Future Deficiencies

Analysis of existing and future No Build conditions revealed geometric, safety and operational deficiencies throughout the study area. Appendix B includes diagrams depicting accident history, and existing and future traffic volumes. Key deficiencies in the corridor include:

- Access spacing standards between ramp terminals and street intersections do not meet the 1,320 feet spacing standard. East of I-5, travel on Oregon 214 is also interrupted by closely spaced intersections and driveways to businesses.
- Bicycle and pedestrian facilities are incomplete and/or inadequate.
- Northbound and southbound existing ramp lengths do not meet current safety requirements for deceleration, stopping, and storage.
- Vertical grades across the overpass are greater than the desired grades
- Safety improvements to the ramp terminals have been made, but there are four top 10 percent SPIS segment locations in the study corridor.
- Traffic operations at the interchange ramps currently exceed mobility standards. Future operations demonstrate failures throughout (and beyond) the study corridor, from Woodland Avenue to Boones Ferry Road.

Alternatives Analysis

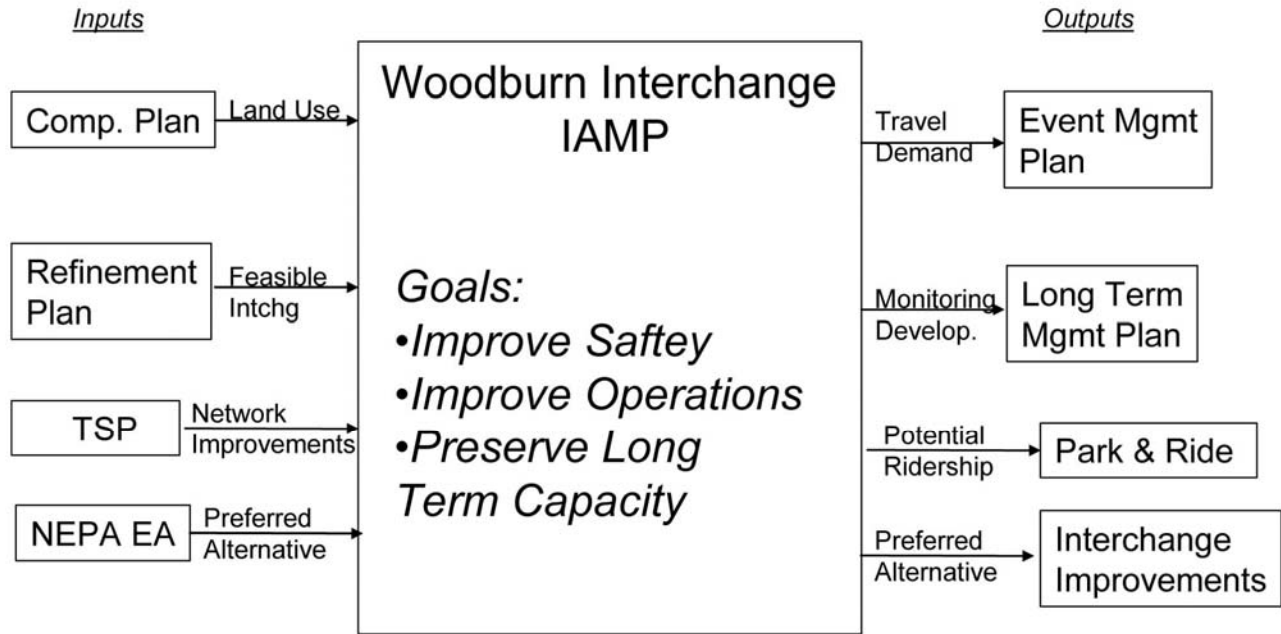
Introduction

The purpose of this section of the IAMP is to document the Alternatives Analysis process. This process was extensive from a planning process, public involvement, and technical analysis perspective. The organization of this section includes the following topics:

- **Process Overview** – Review of the Woodburn Interchange Refinement Plan, Woodburn Comprehensive Plan, Woodburn TSP and Comprehensive Plan, long-term solution set, and Woodburn Interchange Environmental Assessment.
- **EA Management Structure and Decision Process** – The EA project defined roles and responsibilities for decision making prior to initiating the study. The decision hierarchy culminated in ODOT recommending a decision to FHWA regarding the selection of a preferred alternative for implementation.
- **Definition of Transportation Problem** – The problem to be solved was defined during the Refinement Plan and updated for the NEPA process.
- **Development of Evaluation Framework** – The evaluation framework consisted of threshold criteria and evaluation criteria.
- **Formulation of Alternatives** – The formulation of alternatives involved consideration of interchange layout alternatives, Oregon 214 layout alternatives, and local access/circulation options.
- **Threshold Screening of Alternatives** – Threshold screening consisted of eliminating infeasible and unreasonable alternatives/options.
- **Evaluation of Feasible Alternatives** – The method for evaluating alternatives consisted of developing technical ratings to the evaluation criteria, applying the relative weights for each of the criteria, and determining the alternative ranking.
- **Selection of Alternatives for Detailed Evaluation** – Through a process of public comment, stakeholders recommend alternatives for detailed evaluation in the NEPA process, with approval of the Project Management Team (PMT).
- **NEPA Evaluation** – For the selected alternatives, a more detailed safety and operational analysis was performed using the land use scenario providing the most conservative capacity requirements. The evaluation examined existing conditions, growth rates, progression and queuing analysis, access management, and local circulation comparing the No Build, Widen North, and Widen Equal alternatives.

Process Overview

The Woodburn Interchange Improvement Project has come about as a result of several planning processes executed in collaboration between the City of Woodburn, ODOT, Marion County and FHWA. The IAMP is the culmination of a multi-pronged project approach. The following diagram illustrates the inter-relationships of the IAMP with other projects:



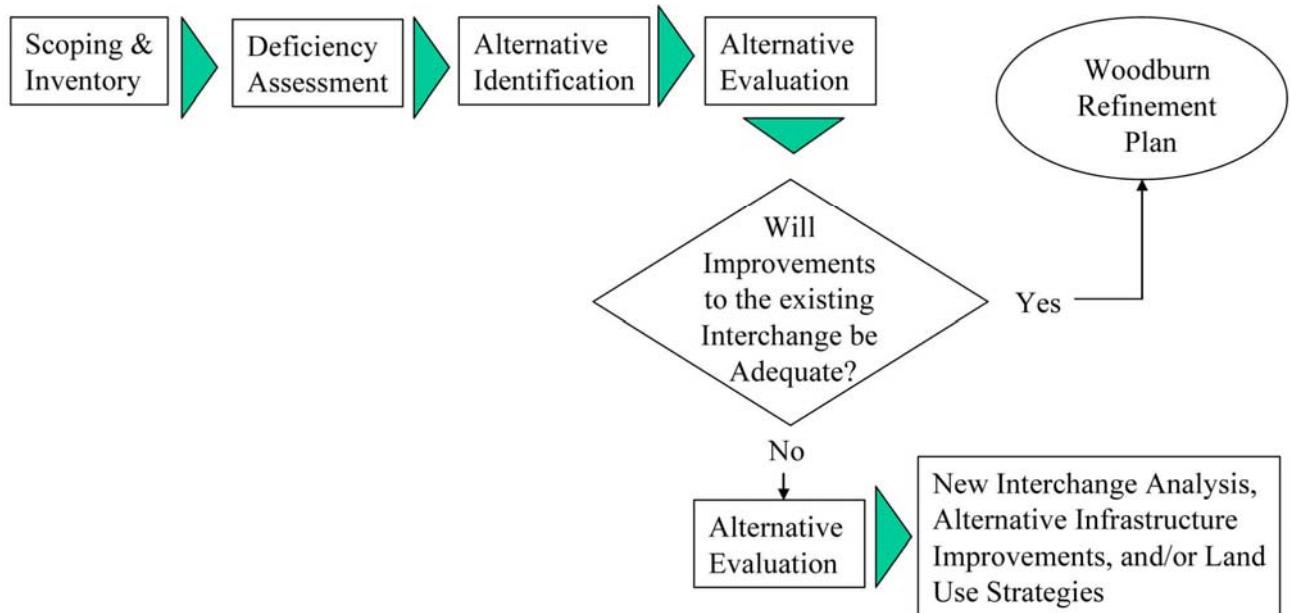
Highway 214 Study

The City of Woodburn conducted a technical study to evaluate the existing conditions and future needs of Highway 214 east of the interchange but not including the interchange. Without the interchange, the full implications of the interchange improvements were not evaluated. As part of the process, widen north, widen equal, and widen south were evaluated. *Outcome: The study determined the root problem of local congestion was the interchange rather than Highway 214 capacity restriction. Widening south alternative was determined to be infeasible politically due to the cost of ROW. The number of displacements existing property improvements would be greater than the other alternatives, resulting in higher relative costs.*

Refinement Plan

The general approach for the refinement planning process included a “decision point” to determine the long-term capacity of the existing interchange. This was concluded prior to the final identification and evaluation of alternatives because ODOT is required by policy to optimize investment in existing facilities before expanding the transportation system. If the existing interchange was proven unable to meet future demand, then study of a second interchange access or some alternative infrastructure service or land use strategy would

have been initiated and completed simultaneously with the Refinement Plan for the existing interchange. The public involvement process consisted of presenting information to focus groups representing expanded City and County staff, Public and Emergency Services, General Citizens, Representative Citizens, Elected Officials and one-on-one interviews with the Silverton Mayor, Mt. Angel Mayor, Woodburn Schools Superintendent, Woodburn City Councilor, and representatives from Concerned Business Owners on Highway 214. The Refinement Plan is depicted in the following diagram:



The Refinement Plan consisted of the following tasks:

- Scoping and Inventory** – Review of all existing plans, policies, and study documentation related to the existing interchange to determine data collection needs. *Outcome: There have been numerous studies performed since the early 1980s with a technical analysis showing Oregon 214 would require five lanes and traffic signals at interchange ramps by 1988. Studies of one type or another were initiated about every other year as the interchange vicinity and growth in the Woodburn area continued to put pressure on the low volume, rural interchange. Due to funding limitations ODOT and the City of Woodburn did not implement interchange improvements to keep up with increasing demands. An environmental scan including literature search and site recon ‘wind shield’ survey was performed to determine vicinity constraints.*
- Deficiency Assessment** – Analysis and validation of existing operating and geometric conditions; development of future year traffic volumes; and analysis of operating conditions assuming the existing geometric conditions remained in place. *Outcome: Vertical alignment and ramps are typical of 1960s and 70s ‘rural interchange’ design, which is substandard for existing volumes and future needs. There is inadequate capacity on Oregon 214, causing delay and traffic spill back from the ramps onto I-5 mainline. The accident rate along*

Oregon 214 in the vicinity of the interchange is indicative of areas with high volumes and numerous accesses. Bike and pedestrian facilities are inadequate to provide safe travel. Freight movement is impaired by slower travel speeds through the interchange due to substandard alignments.

- **Alternative Identification** – Identification of a range of facility management and improvement alternatives and screening to select the most feasible alternatives for evaluation. Improvements considered a full range of solutions; highway network improvements, alternative modes, freight mobility, TDM, intelligent transportation systems, and land use. *Outcome: System to Service interchanges in an urban setting connecting to a primary highway or major street were determined to be the appropriate interchange family. All other forms of interchanges were dismissed from consideration on the basis of form inconsistency with the function of the highway system. For example, it would not be appropriate to provide high-speed, free-flow operations at the Woodburn interchange vicinity and a low-speed, rural interchange is not capable of handling current travel demand. Other alternatives considered and dismissed included a second interchange at Butteville Road and St. Louis Road, split diamond, single point diamond, Parclo B, and folded diamond.*
- **Alternative Evaluation** – Evaluation of operational performance and geometric feasibility of the selected alternatives using the future traffic volumes for year 2020. Alternatives were evaluated on a comparative basis using transportation mobility, progression, and mobility as well as impacts and ease of implementation including costs of ROW and construction. *Outcome: Three feasible alternatives were evaluated including the diamond, tight urban diamond, and partial cloverleaf A type interchanges. The tight urban diamond did not offer any advantages compared to others from a transportation performance perspective, impact footprint, and ease of implementation.*
- **Refinement Plan Preparation** – Preparation of interchange refinement plan including summary of previous steps, investment requirements, and recommendations for adoption. *Outcome: The results of the Plan were presented to the OTC for guidance on the formulation of alternatives to be recommended for the NEPA process. It was determined that full standards would not be in the interests of ODOT or the City of Woodburn. ODOT staff was directed to pursue the diamond and partial cloverleaf A in combination with resolving local access and circulation issues existing in the interchange vicinity. Based on the findings of the Refinement Plan, a collaborative methodology was developed to proceed to the NEPA process through to implementation should the NEPA process result in a build alternative.*

Woodburn TSP and Comprehensive Plan

The City of Woodburn Transportation System Plan update served as one element of the City's comprehensive plan periodic review process. During development of the 1996 TSP, the Woodburn Transportation Task Force, in concert with the City of Woodburn staff, developed five goals and associated policies to guide development and implementation of the TSP. As part of the 2005 plan update, a Technical Advisory Committee (TAC) was established to provide direction throughout the project and endorsed continued use of the established goals and policies with minor revisions to guide this update. The TAC considered the impacts of three future land use alternatives before selecting three system alternatives for the TSP to address deficiencies identified as part of the existing conditions and future No Build analyses. Alternative 1 primarily includes those improvements as part

of the Woodburn Interchange EA, as well as those improvements anticipated as part of ongoing land use applications. Alternative 2 included elements of Alternative 1 and added improvements to other arterials. Alternative 3 is a policy-driven alternative that was developed to determine improvements located outside of the UGB that would benefit the overall transportation system (that is, State, County and City), complementing Alternatives 1 and 2. These projects are of priority to the City but need to be planned for and incorporated into the Marion County TSP. Roadway facilities shown outside the UGB are recommended, not planned facilities in the TSP, and are logical extensions and improvements to the planned roadway network.

Elements of the adopted TSP acknowledge the critical importance of the I-5/Woodburn interchange and associated Oregon 214/219 corridor improvements. The TSP assumptions are consistent with recommendations contained in the environmental assessment described below. The TSP also recognizes the importance of complementary arterial and collector facilities to provide more efficient circulation for both east/west and north-south travel demands. Ultimately, this system will provide better balance for access to the interchange from both east and west sides of I-5. In addition, formulation of the Interchange Management Area Overlay District ordinance was initiated as part of the TSP update process recognizing that interchange capacity preservation is an essential element of the City's economic development strategy. The ordinance, developed with considerable City input and thorough review by both the city council and planning commission, establishes a vehicle trip budget for the overlay district consistent with the City's population and employment forecast. The TSP will guide management and development of appropriate transportation facilities in Woodburn, incorporating the community's vision, while remaining consistent with state, regional, and local plans. The TSP provides the necessary elements to be adopted as the transportation element of the City's comprehensive plan.

Other Long-Term Solutions

The long-term solution set consists of a multifaceted approach to improve mobility in the Woodburn interchange vicinity. The interchange improvements would be enhanced through other complementary proposed solutions:

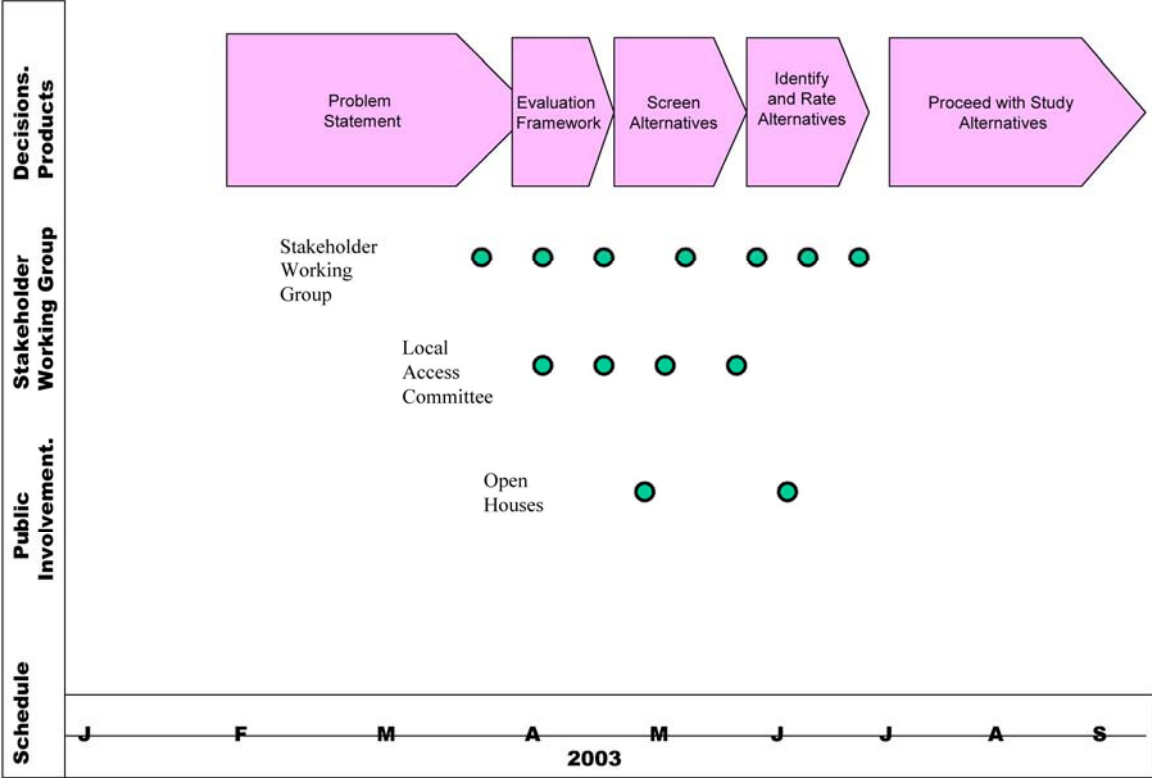
- **Events Management Plan** – This plan catalogues the special events that occur in the Woodburn and North Marion County area, evaluates travel demand, and proposes a system management plan tailored to each event with agency coordination plan.
- **Intergovernmental Agreements** – Two agreements between ODOT and the City of Woodburn provide long-term management measures and funding for state facilities within the City (see Appendix E).
- **Interchange Park-and-Ride** – ODOT will pursue development and improvement of a park-and-ride on property acquired as a result of construction of the westbound to northbound auxiliary lane on Oregon 214 and other property that became available. The park-and-ride will lessen the long-term demand on I-5. Intercity transit service will be sought to connect Woodburn to Salem, Wilsonville, Washington County, and other locations as opportunities arise.

Environmental Assessment

The general approach was developed to build on the previous work of the Refinement Plan and coordinate with other efforts underway consistent with the NEPA process and incorporating community values in the solutions to be evaluated. The public involvement process consisted of information kiosks placed in prominent community locations, website, Open Houses, stakeholder working group, local access and circulation committee, and PMT consisting of technical planning and engineering representatives from City of Woodburn, Marion County, ODOT, and FHWA. The structure of the process followed the following steps:

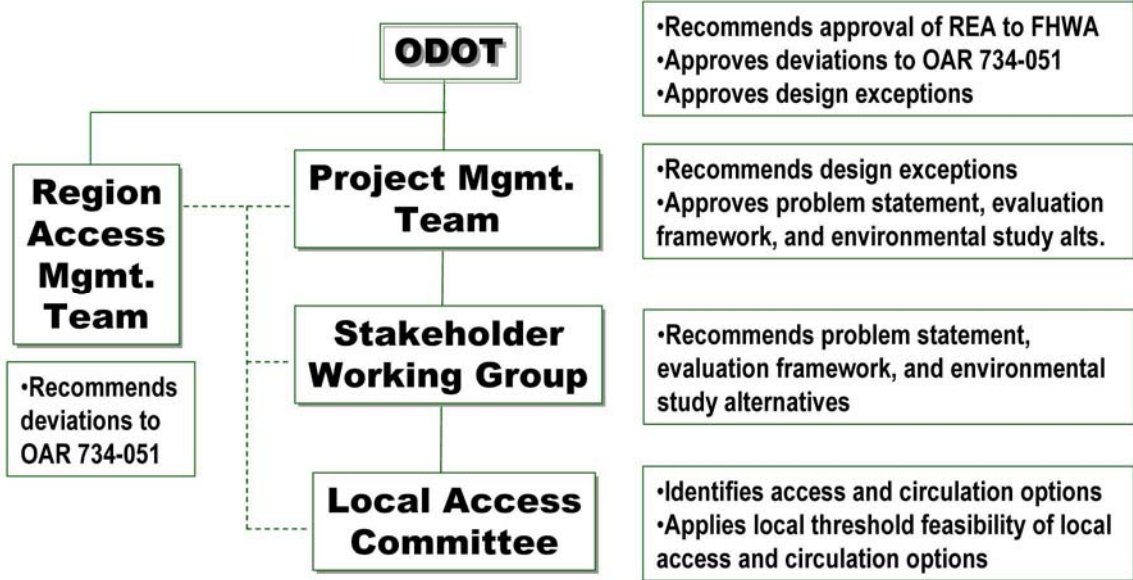
- **Problem Definition** – update and reformat the information from the Refinement Plan.
- **Evaluation Framework** – threshold and evaluation criteria were developed to select alternatives for evaluation in the NEPA process. Threshold criteria were developed to determine feasible alternatives from infeasible alternatives on the basis of sound engineering principles and agency policies and standards. The evaluation criteria were developed on the basis of the project goals developed for the project by SWG and approved by the PMT.
- **Identification of Alternatives** – package interchange layouts, Oregon 214 widening alternatives, and local access and circulation options. Packages were formulated to develop an ‘apples to apples’ comparison. Validation of previous alternatives considered and dismissed.
- **Threshold Screening** – application of threshold screening criteria to determine feasible and non-feasible alternatives. Non-feasible solutions were dismissed from further consideration.
- **Evaluate Alternatives** – using the evaluation criteria, determine the technical ratings to compare alternatives (apples to apples) on a quantitative or scaled basis. Using the results of the highs and lows for each evaluation criteria category, members of the SWG were asked to apply relative weights to each category. There was an opportunity to view the results and reapply relative weights.
- **Selection of NEPA Study Alternatives** – with the application of the relative weights, the alternatives were ranked and NEPA study alternatives were recommended by the SWG and approved by the PMT.

The general approach, key public involvement process, and schedule used to perform the alternative analysis for the Woodburn Interchange EA is shown in the following diagram:



EA Management Structure and Decision Process

ODOT developed a management structure for the Woodburn Interchange EA project to provide a framework for identification and analysis of project alternatives, as shown in the following diagram:



The management structure consists of the following groups:

- **ODOT** - The agency recommends approval of the Revised EA (after public hearing comment period of EA) to FHWA. The agency is responsible to approve deviations to the Access Management Policy as defined in OAR 734-051 and design exceptions from ODOT's Highway Design Manual. The Agency's decision makers include: Chief Highway Engineer, Region 2 Manager, and Technical Services Engineer.
- **Project Management Team** - Recommends design exceptions for approval. PMT approves the problem statement, evaluation framework, and environmental study alternatives.
- **Region Access Management Team** - Recommends access management deviations to the ODOT Region 2 Manager in compliance with OAR 734-051.
- **Stakeholder Working Group** - Recommended the problem statement, evaluation framework, and environmental study alternatives.
- **Local Access Committee (LAC)** - Identified access and circulation options. Applied local threshold feasibility criteria to local access and circulation options in the formulation of alternative packages to SWG.

Definition of Transportation Problem

A detailed description of the problem definition was provided in Section 2 of this IAMP document. A summary of the problem consists of the following points:

- The interchange was designed in the late 1960s to handle traffic for a small rural town.
- Over the last 30 years, Woodburn and the area around the interchange have developed and now attract high volumes of local, regional, and truck traffic.
- Oregon 214 gets very congested and it can be difficult to get to I-5 from surrounding communities.
- The road congestion leads to unsafe situations with traffic backing up on the freeway, and makes it hard to get to local businesses.

This is a priority project. The City, County, and ODOT completed the Refinement Plan. The Mid-Willamette Valley Area Commission on Transportation has highlighted the project as one of their top two priorities. The City and ODOT have acquired property and constructed the westbound to northbound right turn lane in 2004, and anticipate a future park-and-ride in the northeast quadrant of the interchange.

Development of Evaluation Framework

The evaluation framework is a tool to assist in evaluating alternatives. The framework is divided into two main parts:

- **Threshold Criteria:** These criteria are "pass/fail" thresholds used to screen out non-feasible alternatives (see Table 6-1). The thresholds represent minimum conditions of

acceptance encompassing federal, state, and local parameters. Alternatives that do not meet the threshold criteria are dismissed from further consideration. Feasible solutions are refined further to account for local site conditions as well as to minimize adverse impacts. These thresholds will remain as considerations throughout the project; if data analysis completed in later phases of the alternative evaluation indicates that an alternative does not meet a threshold criterion, it can be eliminated from further consideration at that point.

- Evaluation Criteria:** These criteria are used to evaluate the performance of feasible alternatives against a broad range of desired project characteristics (see Table 6-2). These characteristics represent the full range of stakeholder values. Evaluation criteria within each of the broad categories were selected to most effectively differentiate among potential alternative solutions for this project location; the evaluation criteria do not include the full universe of potential criteria.

The performance of each of the feasible alternatives (those meeting the threshold criteria) was evaluated by technical staff for each of the evaluation criteria. The methods used to determine the technical ratings are included in Appendix G. The SWG set a weighting factor for each evaluation criterion to establish its relative importance. A total score (the sum of all the performance ratings times weighting factors) was calculated for each feasible alternative, and an associated ranking of alternatives prepared. The higher the score, the more successfully the alternative matches the SWG values for the project. The ranking was used by the SWG in developing its recommendation of alternatives to be evaluated further as part of the environmental documentation process.

TABLE 6-1
 Threshold Criteria
Woodburn Interchange Project IAMP

Recommended Threshold Criteria	Recommended Measure
F1. FHWA Policy 1F - 20-year Design Life (2025), OHP Mobility Standard	Does the alternative accommodate the 20-year projected traffic demand on the affected system, in its ultimate configuration, by meeting the mobility standards?
F2. FHWA Interstate Access, Policy 4 – meets design and access requirements for an interchange	Do the freeway ramps connect to public roads and provide traffic movements in all directions?
F3. FHWA Interstate Access, Policy 5 – Local Plan Consistency, – transportation improvements are consistent with land use and transportation plans.	A. Does the interchange alternative conform to County and City plans or reasonably stand a good chance of plan amendment? B. Does the interchange alternative conform to statewide goals and transportation plans or reasonably stand a good chance of plan amendment?
F4. FHWA Interstate Access, Policy 7 – local system improvements	Does the improvement package address local system needs necessary to support interchange investment?
S1. State Highway Freight System, OHP Policy 1C – provides for safe movement of trucks.	Does the alternative improve safe movement of freight on or to/from the interstate?

TABLE 6-1
 Threshold Criteria
Woodburn Interchange Project IAMP

Recommended Threshold Criteria	Recommended Measure
S2. Lifeline Route, OHP Policy 1E – provides for emergency traffic	Does the alternative satisfy defense design requirement on the interstate (vertical clearance under the overcrossing)?
S3. OHP Major Improvements, OHP Policy 1G	Does the alternative provide improvement according to the major investment policy hierarchy? <ol style="list-style-type: none"> 1. Protect the existing system 2. Improve efficiency and capacity of existing highway facilities 3. Add capacity to the existing system 4. Add new facilities to the system
S4. OHP Access Management Standards, Appendix C	Does the distance of public roads and private accesses from interchange terminal meet policy requirements or reasonably justify deviation?
L1. Direct one to one comparison.	Does this alternative have relatively the same impacts or a distinct advantage over another alternative (e.g., lower costs, lower right-of-way impacts)?

¹ The FHWA Interstate Access Policy is derived from Section 111 of Title 23 USC. This essentially establishes the policy for amending or adding new points of access to the interstate system. All elements of the policy will apply.

TABLE 6-2
 Evaluation Criteria
Woodburn Interchange Project IAMP

Recommended Categories	Recommended Performance Measure	Comments
A. Safety		
A1. Truck safety and operations	High, medium, low ratings for functional operations and safety.	Quality of truck turning movements at ramp terminals as a function of speed, turning radius, etc.
A2. Pedestrian safety and operations	High, medium, low ratings for functional operations and safety.	Route continuity, quality of design to meet Americans with Disabilities Act, number of conflicting movements, etc.
A3. Bike safety and operations	High, medium, low ratings for functional operations and safety.	Route continuity, number of conflicting movements.
A4. Auto safety and operations	High, medium, low ratings for functional operations and safety.	Number of conflicting movements.
B. Access and Traffic Flow		
B1. Mobility – Traffic flow at intersections	Volume to Capacity Ratio	Report volume-to-capacity results for two intersections; one state/regional and one regional/local to indicate travel performance (e.g., NB ramp terminal and Evergreen).

TABLE 6-2
Evaluation Criteria
Woodburn Interchange Project IAMP

Recommended Categories	Recommended Performance Measure	Comments
B2. Travel time delay – Traffic Flow along Highway 214	Cumulative travel time of ten movements weighted by volume, sum of interchange intersection system delay in seconds	Report time from Synchro analysis. Includes social/ economic attribute of access to neighboring communities, special events, and east/west movement of agricultural goods and services.
B3a. Economic – accessibility change to businesses	Out of direction travel to access sensitive businesses (gas, food, and lodging).	Some consider access to more important than access from destination business.
B3b. Economic – accessibility change to businesses	High, medium, low of out-of-direction travel for all businesses	Travel distance increase out of out-of-direction travel due to access change. Improved safety is covered under transportation operations category.
C. Social/Economics		
C1. Noise	# of potential receptors impacted	Not likely to differentiate among build alternatives.
C2. Land use – conversion to transportation	A. Area converted to transportation use by type of loss B. Value in dollars	Use of common metrics will be determined by the technical team rating the alternatives.
C3. Economic – displacements	A. # of displacements B. # of jobs	Number of jobs is less important than unique displacements.
D. Aesthetics		
D1. Aesthetics – gateway creation	High, medium, low	Gateway identity, landscaping, surface widths, surface texture and color, materials selection, etc. Aesthetic features are comprised of elements of design; for example, color, texture, form, shape, balance.
E. Implementation		
E1. Funding – Project Construction Costs	Total construction cost in dollars (includes order of magnitude estimates for construction, and mitigation costs.)	City and County CIP include two line items; one for construction costs and one for ROW and Engineering.
E2. Funding – Right-of-way and Engineering Costs	Total estimated costs to acquire right-of-way and perform engineering, permitting, and construction contract management.	City and County CIP include two line items; one for construction costs and one for R/W and Engineering.
E3. Coordination – Constructability	High, medium, and low	Factors to include estimated number of construction seasons, maintaining I-5 traffic flow and access to regional events. Includes impact to commerce during construction.

TABLE 6-2
 Evaluation Criteria
 Woodburn Interchange Project IAMP

Recommended Categories	Recommended Performance Measure	Comments
F. Environment		
F1. Air quality	Number of intersections within study area exceeding volume-to-capacity ratio of 0.9	Not likely to differentiate among build alternatives.
F2. Water quality	Total square feet of impervious surface	
F3. Biology	High, medium, and low based on the quantity and quality of impacts, # of species, or acres of affected habitat	Not likely to differentiate among build alternatives.
F4. Wetlands	Acres of affected critical habitat	Not likely to differentiate among build alternatives.
F5. Hazardous Materials	# of parcels with known contamination	

Formulation of Alternatives

The formulation of alternatives consisted of the interchange layouts, Oregon 214 widening alternatives, and local access and circulation options. The interchange layouts were determined during the Interchange Refinement Plan. The widening of Oregon 214 alternatives were determined during the Highway 214 Study and the Woodburn Interchange EA process defined the local access and circulation options through the use of the Region Access Manager (RAM) and the LAC. During the Woodburn Interchange EA process, each of the previous steps (interchange layout solutions and widening alternatives) were summarized, presented to the SWG for validation, presented at an Open House for comment, SWG (with public comment) for recommendation, and for PMT for approval.

Interchange Layouts

Through the years of highway design and use of modern vehicles, engineers and planners have found that by knowing the function of intersecting facilities along with using a structured system hierarchy, the correct form can be determined. There are a limited number of interchange layout concepts and combinations. The practice of interchange design begins with a practice referred to as Functional Planning. Functional Planning combines the use of proven geometric concepts with travel demand to determine an engineered single line sketch with scaled lengths for ramps and curves. The family of interchange concepts determined applicable during the Refinement Plan are shown in Figure 3.

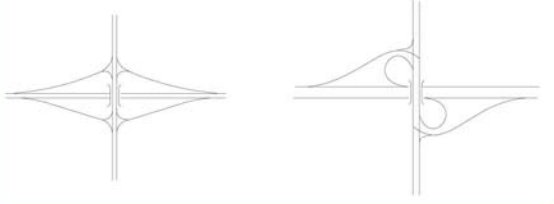
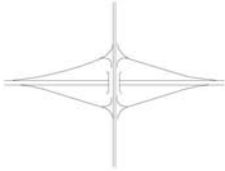
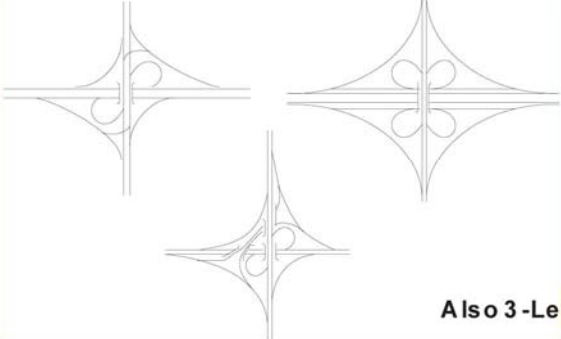
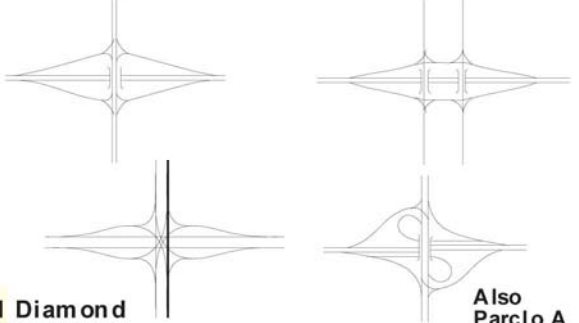
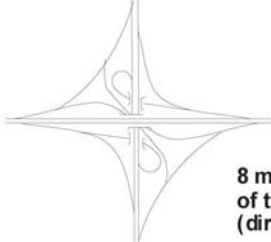
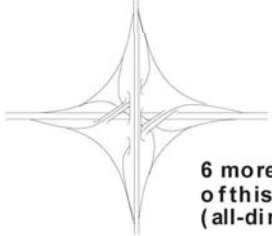
Type of Intersecting Facility	RURAL	SUBURBAN	URBAN
Local Road or Minor Street			
Primary Highway or Major Street	 <p data-bbox="1037 870 1314 899">Also 3-Level Diamond</p>		 <p data-bbox="1654 862 1755 906">Also Parclo A</p>
Freeway	 <p data-bbox="961 1110 1159 1182">8 more varieties of this general (directional) form</p>		 <p data-bbox="1528 1110 1759 1182">6 more varieties of this general (all-directional) form</p>

FIGURE 3
Interchange Design Concepts

The rationale for selection of the concept solution family is based on I-5 functioning as a fully access controlled, free flow facility and Oregon 214 functioning as a major highway in an urban setting. Table 6-3 indicates a range of interchange layouts considered.

TABLE 6-3
Interchange Concept
Woodburn Interchange Project IAMP

Concept	Advantages
Split Interchange – uses parallel arterials for half diamond ramp pairs with connecting frontage roads between to connect ramp pairs.	Works well in larger urban areas with well-defined network grid
3 Level Diamond – uses two pair of arterials for ramps to/from both mainline and intersecting facility.	Works well in extremely large urban areas and provides very high capacity
Partial Cloverleaf B – uses loop ramps beyond intersection facility to facilitate departure from freeway	Works well for the opposite skew of I-5/Oregon 214 and extremely high volume freeway or mainline facility
Tight Diamond – reduces right-of-way impact by compressing ramp spacing and storing left turning movements external to signals	Works well with 90 degree skew in urban environment
Single Point Diamond – reduces right-of-way impact by compressing ramp spacing by funneling ramp pair through a single traffic signal	Works well with 90 degree skew in urban environment with closely spaced high volume signalized intersections
Folded Diamond – uses combination of Parclo A or B loop and eliminates diamond ramp in opposite quadrant.	Works well when one or two quadrants is constrained by built or natural environment from development of roadway
Standard Diamond – uses single ramp in each quadrant with full movements at ramp terminals	Works well with rural and moderately urban traffic volumes
Parclo A – uses loops to eliminate left turns from crossing facility with diamond ramps at all four quadrants.	Works well in urban setting with moderate urban traffic volumes and skewed roadway

Note: The auxiliary lane configuration is slightly different for each layout to meet the future travel demand.

Widening Alternatives

The proposed standard typical section is consistent for each widening configuration. The widening alternatives are as shown in Table 6-4.

TABLE 6-4
Oregon 214 Widening Alternative
Woodburn Interchange Project IAMP

Widening Alternative	Advantages
North Widening (NW) – uses existing south curb line with limited additional right-of-way to the south to accommodate bike/pedestrian facilities.	Supported locally by property owners on the south side of Oregon 214.
Equal Widening (EW) – uses approximate centerline and impacts property on each side of the highway equally.	Supported locally by property owners on the north side of Oregon 214.
South Widening (SW) – uses existing north curb line with limited additional right-of-way to the north to accommodate bike/pedestrian facilities.	No support locally due to the highest property impacts.

Local Access and Circulation Options

The RAM reviewed the existing project conditions and examined the potential to move toward full compliance with OAR 734-051 and developed parameters for the LAC as givens and options for choices the LAC could discuss.

- Things to think about
 - Diamond or Parclo A
 - Widening north, south, or equal
 - Business and individual property access
 - Median width, shoulder width, and u-turns
 - Bike and pedestrian traffic (current and future potential)
 - Transit facilities
 - Park-and-ride locations
- Assumptions
 - Deviation from OAR 734-051 is expected, provided access management requirements are followed
 - All options are subject to threshold and evaluation criteria
- Access Management Requirements
 - Evergreen to NB Ramp and Woodland to SB Ramp will have a raised median and no private driveways
 - Traffic signals at Woodland, Evergreen, and interchange ramps
- Access Management Options on Oregon 214
 - Lawson and Old Arney Road options are subject to analysis for right-in, right-out, and no connection
 - Evergreen to Oregon Way options will have a median with driveways and redevelopment code revisions or no median and no driveways.

- Access management Options on Local Streets
 - Access management choices are subject to location and operational evaluation, median treatment, and local street improvements

The LAC carefully considered the RAM guidance by reviewing the issues within the corridor. The LAC had a chance to take the identified issues into account in formulating the local access options. For a brief description of each option and the naming convention for the various access options, see Table 6-5. The options are depicted in Figure 4.

TABLE 6-5
Local Access and Circulation Options
Woodburn Interchange Project IAMP

Naming Convention	Option Description	Advantages
W1	Woodland Realignment – Arney Road would be realigned from a tee intersection with Woodland to a curve. Woodland would be tee up to Arney Road in the curve.	Realigns street to favor heaviest travel pattern.
A0	Arney Road – access to Oregon 219 would be closed.	The risk of traffic conflicts and delay on Oregon 219 would be eliminated, reducing the potential conflicts with ramp traffic to zero.
A1	Arney Road – right in access only, no left turns	The risk of traffic conflicts and delay on Oregon 219 is due to the deceleration of traffic to make a right turn.
A2	Arney Road – right in and right access, no left turns	The risk of traffic conflicts and delay on Oregon 219 is associated with the deceleration of right turning movements and acceleration of Arney Road traffic merging with Oregon 219 traffic.
L0	Lawson Road – access to Oregon 214 would be closed.	The risk of traffic conflicts and delay on Oregon 214 would be eliminated, reducing the potential conflicts with ramp traffic to zero.
L1	Lawson Road – right in access only, no left turns	The risk of traffic conflicts and delay on Oregon 214 is due to the deceleration of traffic to make a right turn.
L2	Lawson Road – right in and right access, no left turns	The risk of traffic conflicts and delay on Oregon 214 is associated with the deceleration of right turning movements and acceleration of Arney Road traffic merging with Oregon 214 traffic.
B0	South Side Cross Property Easement (Evergreen to Oregon Way) – acquire property rights and reconfigure multi-property circulation patterns to accommodate flow of traffic.	This allows businesses to remain intact with minimal disruption.
B1	South Side Backage Road – construct public street on the back of properties adjacent to the south side of Oregon 214 between Evergreen and Oregon Way	This allows business to remain with public access.

Note: All of the local street access and circulation patterns include realignment of Evergreen Road to provide improved access to Woodburn Company Stores. Access would be provided to properties in the NE quadrant and the private road connecting Lawson Road with Evergreen Road would be acquired as a public right-of-way.

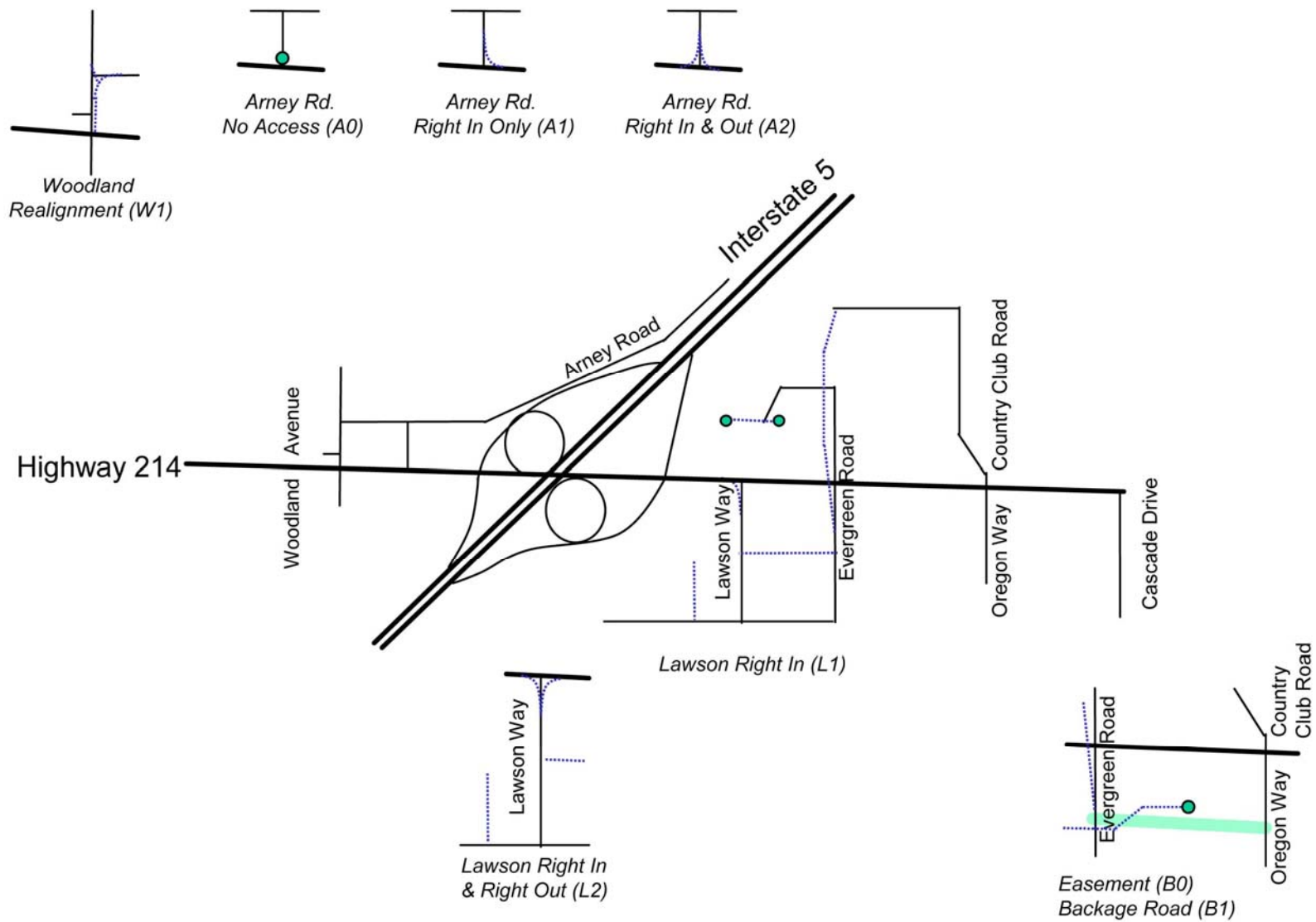


FIGURE 4
Local Access Options

Threshold Screening of Alternatives

As the basis for the threshold criteria, there are federal and state criteria based on FHWA and ODOT policy that pertain specifically to the interchange layout solutions. The local threshold is based on political and/or relative cost feasibility if all else is equal and is applicable to the widening alternatives and local access and circulation options.

Interchange Layout Solutions

The application of the threshold criteria to the interchange layouts was performed by technical staff and presented to the SWG for validation, as shown in Table 6-6.

TABLE 6-6
Application of Threshold Criteria
Woodburn Interchange Project IAMP

Alternative ¹	F1	F2	F3A ²	F3B	F4	S1	S2	S3	S4	L1 ³
2 nd Interchange @ Butteville Road	No	Yes	Yes	No	No	No	Yes	No	Yes	No
2 nd Interchange @ St. Louis Road	No	Yes	Yes	No	No	No	Yes	No	Yes	No
Split Interchange	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Single Point Diamond	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
3 Level Diamond	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	No
Partial Cloverleaf B	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Folded Diamond	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Standard Diamond	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Partial Cloverleaf A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tight Diamond	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

1 The 2nd interchange alternatives are not forwarded as mutually exclusive alternatives to solve existing interchange deficiencies.

2 Neither County or City plan calls for or precludes a second interchange.

3 The 2nd interchange on its own may be less expensive. However, to address deficiencies of the existing interchange, the costs would likely require one of the other solutions in addition to the improvements to a second interchange.

When the layouts were described, the SWG perceived the diamond interchange as being a minimal upgrade to the existing interchange when compared to the Parclo A. The Parclo A would have less impact to the properties on the east side of I-5 while the diamond would have less impact to the southeast and northwest quadrants. Vacant land for curing impacts in the quadrants is more plentiful than adjacent to Oregon 214. Upon review, SWG recommended not evaluating the Standard Diamond.

Oregon 214 Widening Alternatives

The SWG recommended dropping the widen south alternative of Oregon 214 after the preliminary recommendation went to an Open House for review and comment. The impacts to property improvements would be more than the other two alternatives. The impacts to the natural environment and transportation benefits are very similar with the other two alternatives. The SWG recommendation went to the PMT and was approved. The results of threshold screening of the widening alternatives are shown in Table 6-7.

TABLE 6-7
Oregon 214 Widening Alternative
Woodburn Interchange Project IAMP

Widening Alternative	Application of Threshold Criteria
North Widening (NW) – uses existing south curb line with limited additional right-of-way to the south to accommodate bike/pedestrian facilities.	Yes
Equal Widening (EW) – uses approximate centerline and impacts property on each side of the highway equally.	Yes
South Widening (SW) – uses existing north curb line with limited additional right-of-way to the north to accommodate bike/pedestrian facilities.	Dismissed – high right-of-way costs and politically unacceptable.

Local Access and Circulation Options

The results of threshold screening of the local access and circulation options are shown in Table 6-8.

TABLE 6-8
Local Access and Circulation Options
Woodburn Interchange Project IAMP

Naming Convention	Option Description	Application of Threshold Criteria
W1	Woodland Realignment – Arney Road would be realigned from a tee intersection with Woodland to a curve. Woodland would be tee up to Arney Road in the curve.	Yes
A0	Arney Road – access to Oregon 219 would be closed.	Yes
A1	Arney Road – right in access only, no left turns	Yes
A2	Arney Road – right in and right out access, no left turns	Yes
L0	Lawson Road – access to Oregon 214 would be closed.	Dismissed – local circulation to commercial and retail
L1	Lawson Road – right in access only, no left turns	Yes

TABLE 6-8
Local Access and Circulation Options
Woodburn Interchange Project IAMP

Naming Convention	Option Description	Application of Threshold Criteria
L2	Lawson Road – right in and right out access, no left turns	Dismissed – the conflicts of the right out would cause spill back on the northbound ramp terminal and adversely impact mobility and safety.
B0	South Side Cross Property Easement (Evergreen to Oregon Way) – acquire property rights and reconfigure multi-property circulation patterns to accommodate flow of traffic.	Yes
B1	South Side Backage Road – construct public street on the back of properties adjacent to the south side of Oregon 214 between Evergreen and Oregon Way	Yes

Note: All of the local street access and circulation patterns include realignment of Evergreen Road to provide improved access to the Woodburn Company Stores. Access would be provided to properties in the NE quadrant and the private road connecting Lawson Road with Evergreen Road would be acquired as a public right-of-way.

Evaluation of Feasible Alternatives

The method for evaluating alternatives consists of assigning technical ratings to the evaluation criteria, then applying the relative weights for each of the criteria to determine the alternative ranking. The technical team develops the technical ratings. The SWG develops the relative weights. The technical team analyzes the ranking results and performs sensitivity testing for the benefit of the SWG recommendation process.

Technical Rating

The general approach of evaluating alternatives was to use the criteria and measurement system defined in the methods. To achieve consistency from alternative to alternative, the assigned lead evaluated each of the alternatives for their criteria category. The technical ratings were loaded into a spreadsheet as shown in Table 6-9. There were a few criteria that became non-differentiated among the alternatives using the rating measurement methodology. They were:

- **Bike safety and operations** – alternatives will provide similar standard facilities.
- **Mobility** – alternatives will provide the same capacity for the same demand.
- **Gateway Creation** – the aesthetic treatments are a design feature that will be defined in future phases.
- **Hazardous Materials** – the alternatives impact the same known properties.

TABLE 6-9
 Technical Ratings of Alternative Packages
 Woodburn Interchange Project IAMP

	Category/Title	Measure	Minimum Score	Maximum Score	NW1A0B0	NW1A0B1	NW1A1B0	NW1A1B1	NW1A2B0	NW1A2B1	EW1A0B0	EW1A0B1	EW1A1B0	EW1A1B1	EW1A2B0	EW1A2B1
A.	Safety															
A1.	Truck safety and operations	High, medium, low ratings for functional operations and safety.	25	27	25	25	26	26	27	27	25	25	26	26	27	27
A2.	Pedestrian safety and operations	High, medium, low ratings for functional operations and safety.	5	7	7	7	5	5	7	7	7	7	5	5	7	7
A3.	Bike safety and operations	High, medium, low ratings for functional operations and safety.	5	5	5	5	5	5	5	5	5	5	5	5	5	5
A4.	Auto safety and operations	High, medium, low ratings for functional operations and safety.	0	10	9	0	9	0	10	1	9	0	9	0	10	1
B.	Access and Traffic Flow															
B1.	Mobility - Traffic flow at intersections	Volume to Capacity	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
B2.	Business Accessibility	Out of direction travel to/from access of travel service businesses (gas, food, lodging) in distance.	34,610	52,320	43230	43085	35760	35615	34755	34610	52320	52175	44850	44705	43845	43700
B2.	Business Accessibility	Out of direction travel to/from access of non-travel service businesses in distance.	41,500	52,190	52190	51395	47980	46670	46145	46000	48095	47950	42315	42170	41645	41500
C.	Social/Economics															
C1.	Land-use - Conversion to Transportation	Acres converted to transportation use by type of loss	7	8	7.05	7.65	7.05	7.65	7.07	7.67	6.85	7.45	6.85	7.46	6.87	7.47
C1.	Land-use - Conversion to Transportation	Value of land in Dollars	13,115,000	19,245,000	\$18,615,000	\$19,165,000	\$18,695,000	\$19,245,000	\$18,615,000	\$19,165,000	\$13,115,000	\$13,665,000	\$13,195,000	\$13,745,000	\$13,115,000	\$13,115,000
C2	Displacement impacts to adjacent properties	# of residential properties	0	2	2	2	2	2	2	2	0	0	0	0	0	0
C2	Displacement impacts to adjacent properties	# of business properties	7	10	10	10	10	10	10	10	7	7	7	7	7	7
C2	Displacement impacts to adjacent properties	# of jobs lost resulting from business displacements	91	134	134	134	134	134	134	134	91	91	91	91	91	91
D.	Aesthetics															
D1.	Gateway Creation	High, medium, low	5	5	5	5	5	5	5	5	5	5	5	5	5	5
E.	Implementation															
E1.	Project Construction Costs	Total construction cost in dollars (includes order of magnitude estimates for construction, mitigation and construction management costs)	24,060,000	24,290,000	\$24,060,000	\$24,140,000	\$24,085,000	\$24,165,000	\$24,110,000	\$24,190,000	\$24,090,000	\$24,240,000	\$24,185,000	\$24,265,000	\$24,210,000	\$24,290,000
E1 A	Project Staging Safety	Traffic staging simplicity High, Low	0	5	5	5	5	5	5	5	0	0	0	0	0	0
E2.	Right of way Preliminary Engineering Costs	Total estimated costs in dollars to acquire right-of-way and perform engineering and permitting	4,812,000	4,858,000	\$4,812,000	\$4,828,000	\$4,817,000	\$4,833,000	\$4,822,000	\$4,838,000	\$4,818,000	\$4,848,000	\$4,837,000	\$4,853,000	\$4,842,000	\$4,858,000
F.	Environment															
F1.	Water Quality	Total square feet of impervious surface	311,800	331,000	311800	327800	315000	331000	315000	331000	311800	327800	315000	331000	315000	331000
F2.	Hazardous Materials	# of parcels with known contamination	4	4	4	4	4	4	4	4	4	4	4	4	4	4

Notes:
 N - Widen Oregon 214 north, holding the south right-of-way line.
 E - Widen Oregon 214 equal, holding the existing centerline.
 A0 - Arney Road no access to Oregon 214
 A1 - Arney Road, right in access only
 A2 - Arney Road, right in and right out
 B0 - Oregon to Evergreen, raised median with U-turns allowed at the intersections
 B1 - Oregon to Evergreen, raised median, backage road, and no U-turns allowed.

Relative Weighting

There was a workshop held with the SWG to determine the relative weights. The technical team facilitated the session. SWG members were asked to first allocate 100 points to the high-level categories (5). The team provided real-time visual feedback showing the high, low, and average. The SWG was asked to revisit their allocation of points for up to two more cycles prior to moving to the sub-categories using the same process. The relative weights were as shown in Table 6-10. The results of the relative weights were provided to the PMT for review and validation. There were no objections.

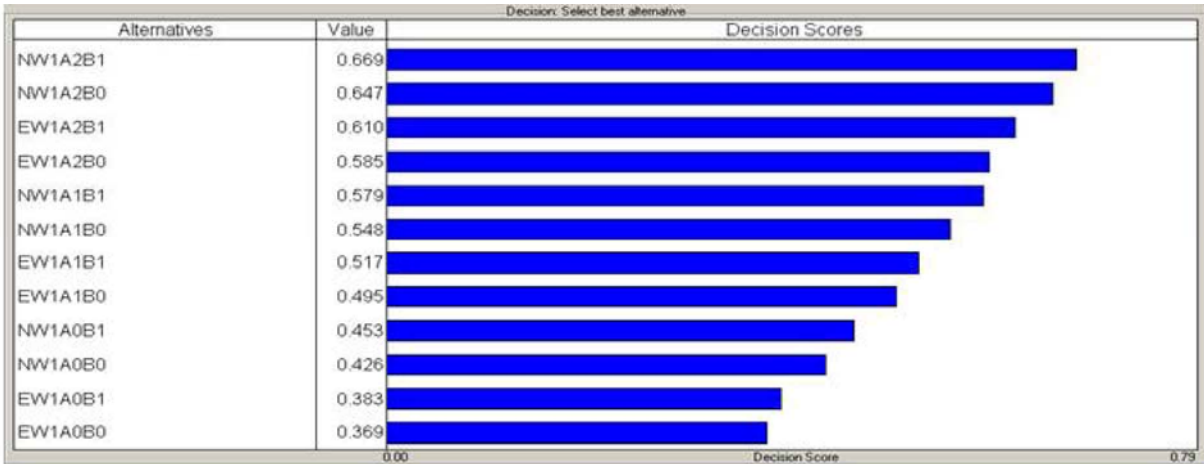
TABLE 6-10
Community Values and Relative Weights
Woodburn Interchange Project IAMP

Category/Measure	Category Weight	X	Sub-Category Allocation	=	Relative Weight
Safety & Operations					
Trucks	21	X	39	=	8
Pedestrians	21	X	14	=	3
Bikes	21	X	6	=	1
Auto	21	X	42	=	9
Access and Traffic Flow					
Mobility	33	X	41	=	14
Business Travel Services	33	X	35	=	12
Business Non-travel Services	33	X	24	=	8
Implementation					
Construction Costs	9	X	55.5	=	5
R/W & Engineering Costs	9	X	45.5	=	4
Social/Economic					
Loss in Acres	23	X	16	=	4
Value	23	X	14	=	3
Residential Displacements	23	X	16	=	4
Business Displacements	23	X	31	=	7
Loss of Jobs	23	X	22	=	5
Aesthetics					
	8	X	100	=	8
Environment					
Water quality	6	X	49	=	3
Hazardous Materials	6	X	51	=	3
					100

Ranking Process

To determine the ranking, each evaluation category contribution is weighted based on the relative weight as a percentage of the total. The percentage is applied to the range of the

technical ratings. The highest of the range (best) in each category multiplied by each of the relative weights will total 1.0 for the maximum ranking potential for each alternative. The results of the ranking process are shown in the diagram below:



Legend:

- N - widen north
- E - widen equal
- W1 - realign Woodland Avenue
- A0 - no access to Arney Road
- A1 - right in only to Arney Road
- A2 - right in/right-out to Arney Road
- B0 - no backage road
- B1 - backage road

The analysis of the results indicates the top two alternatives are a tradeoff between staging costs (widen north) and right-of-way costs (widen south). The most sensitive evaluation criteria toward determining a new alternative ranking first is auto safety. The SWG was presented the following findings:

- Based upon relative weights by strength of ranking
 - Arney Road - right-in/ out ranks higher than right-in, which ranks higher than no access
 - Widen North - preferred over widen equal
 - Backage Road - preferred over no backage road
- Cost was less of a value than convenience to access and least disruption

The preliminary recommendations and questions from the SWG to take to the PMT were:

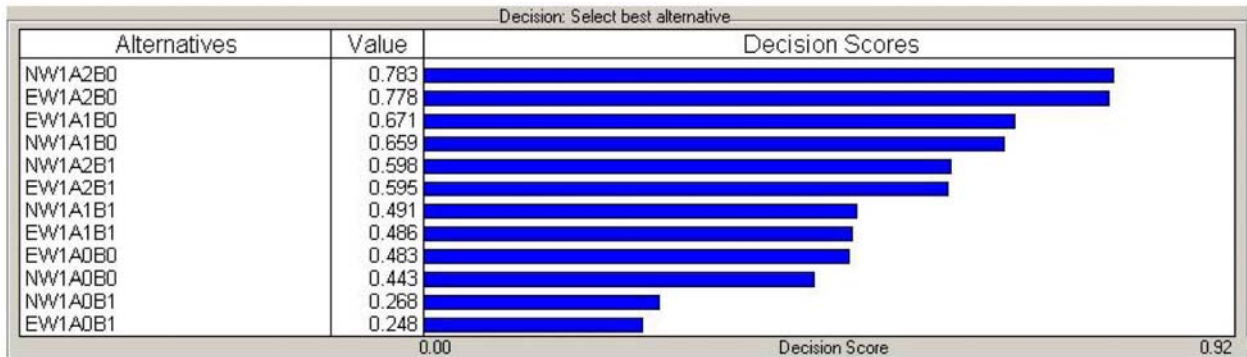
- Preferences
 - Widen Oregon 214 to the north is preferred over widen equal even though:
 - Property acquisition costs an additional \$4M dollars
 - Has three more business displacements
 - Impacts 43 more jobs
 - Lawson right-in is assumed a given as the only option passing threshold criteria.

- Questions
 - Is Woodland realignment necessary?
 - Is Arney Road safety of right-in only preferred over the convenience of right-in/right-out?
 - Is backage road worth additional investment?

The PMT responded by eliminating the realignment of Woodland. For Arney Road right-in/right-out, the traffic analysis determined there was very minimal impact to queuing. The backage road is not worth the investment if the property owners are willing to participate in cross property easements.

Sensitivity Testing

Based on the preliminary SWG recommendation, the team reviewed the results of the weighting by taking out the non-differentiating scores. The ranking results are shown in the diagram below:



The findings from the sensitivity testing analysis was:

- Top two are very close, clearly scoring better than others
 - NW1A2B0 – North widening, Arney Road right-in/right-out, and cross property easement
 - EW1A2B0 – Equal widening, Arney Road right-in/right-out, and cross property easement
- The backage road is not in the top four
- Arney Road with right in/out scores better than right in only
- Closing Arney scores the lowest four
- The top six are all strong alternatives by score

Selection of Alternatives for Detailed Evaluation

The SGW selected two preliminary alternatives for evaluation in the NEPA process. The selected alternatives are described in Section 7 of this IAMP. The preliminary alternatives were presented at an Open House for review and comment. The comments were reviewed by the SWG and confirmed the recommendation. The PMT approved the recommendation to evaluate the following alternatives along with the No Build, as shown below:

Alternative	Interchange Layout	Widening Alternative	Option
Alternative 1	Parclo A	Equal	Arney right-in/right-out, Lawson right in, easement from Evergreen to the Dairy Queen property (no backage road)
Alternative 2	Parclo A	North	Arney right-in/right-out, Lawson right in, easement from Evergreen to the Dairy Queen property (no backage road)

NEPA Evaluation

Two build alternatives for the interchange were being forwarded for environmental study. The interchange design and local road improvements for both alternatives are the same. The difference between the alternatives is the alignment of the alternative configuration - how Oregon 214 and 219 are widened to accommodate the new interchange. For additional information about the alternatives evaluation, see the *Woodburn Interchange Environmental Assessment*. The NEPA evaluation process included definition of the study area, data collection, future growth forecasts, operational analysis (including progression and queuing analysis), local circulation and access management, transportation demand management, forecast traffic volumes, public involvement, environmental impacts (including secondary and cumulative impacts), construction impacts, and mitigation measures. Section 7 of this IAMP summarizes a description of the alternatives.

Plan Recommendations

Proposed Project

The alternatives analysis conducted for the Refinement Plan and subsequently updated and validated for the EA confirm that replacing the existing diamond interchange with a partial cloverleaf interchange would improve safety and provide operational performance that meets OHP and HDM standards through 2025 and accommodates the 2005 Woodburn Comprehensive Plan growth assumptions.

Two build alternatives for the interchange, both based on the Parclo A design, were analyzed for the EA. Because the two alternatives advanced have the same basic design, they operate identically. That is, the lane configurations, traffic control, access management and local road improvements are the same for both variations. The most substantial difference is how Oregon 214/219 and the interchange structure would be widened to accommodate the travel lanes needed to achieve the project's operational, geometric, and safety goals. One alternative would widen the facilities equally on both sides of the roadway, while the second would widen to the north. The interchange reconstruction alternative for north widening is shown in Figures 5 and 6. For the purpose of the EA, these differences are significant because of the properties that they impact. For the purpose of this IAMP, these differences are not significant. Neither alternative impacts any interchange management expectations. The north alternative is shown for illustration purposes only and its use does not constitute an endorsement of it versus the widen equal alternative.

Both alternatives would include new 6-foot sidewalks with an additional 6-foot-wide landscaped buffer between the sidewalk and the curb. One bicycle lane would be provided in each direction along Oregon 214 and 219 for both alternatives. A raised median would be added and modifications to access for city streets would be made at Oregon Way, Evergreen Road, and Lawson Avenue for both alternatives.

As a potential add-on option to both build alternatives, an Access Option is included that would acquire an additional 60-foot-wide strip of ROW and a 50-foot-wide strip of easement. The 60-foot-wide ROW purchase would be acquired south of Oregon 214, extending west from Lawson Avenue. The 50-foot-wide public road easement would be acquired south of Oregon 214, extending east from Evergreen Road to the Dairy Queen property.

Both project alternatives would add improvements along Old Arney Road (MP 36.63), Lawson Avenue (MP 36.95), Evergreen Road (MP 37.02), Oregon Way/Country Club Road (MP 37.14), and Cascade Drive (MP 37.27). Other optional improvements may be made along Woodland Avenue (MP 36.52) and between Lawson Avenue and Stacey Allison Way. These optional improvements, which could be constructed as part of either alternative, have minimal operational value to the statewide transportation system, but could be advanced as improvements to local system function and property access.

Traffic Operations Analysis

As described in Section 4, modeling of the alternatives was based on what are now adopted growth, population, and employment forecasts. The transportation system operational performance expected upon completion of the interchange reconstruction is shown in Table 7-1. After completion of the Woodburn Interchange Project, the interchange will provide sufficient capacity for a 20-year design life according to the traffic modeling performed for the Woodburn EA and TSP update.

Transportation impacts of the build alternatives would result in less congestion at all intersections except Cascade Drive, as compared to the No Build Alternative. Truck traffic flow would improve under the build alternatives, and there would be lower V/C ratios for the I-5/Woodburn interchange area and the related local transportation network east of I-5. In addition, the build alternatives would improve intersection operations as well as local circulation. Safety of the Woodburn interchange would be improved by upgraded roadway geometry. The improvements would increase average traffic speeds on Oregon 214/219 from 10 mph to 18 mph.

TABLE 7-1
Intersection System No Build and Build Alternatives (widen north and widen equal) Design Hour V/C Ratios
Woodburn Interchange Project IAMP

Location	Traffic Control	V/C Mobility Standard	2003	2025 No Build	2025 Build
Woodland Avenue	Signal	0.80	0.54	0.96	0.54
Old Arney Road	Stop	0.80	0.10	0.19	0.25
I-5 Southbound Ramp	Signal	0.70	0.83	>1.0	0.58
I-5 Northbound Ramp	Signal	0.70	0.81	>1.0	0.63
Lawson Avenue	Stop	0.80	0.28	0.84	0.11
Evergreen Road	Signal	0.80	0.76	>1.0	0.73
Oregon Way/Country Club	Signal	0.80	0.82	0.90	0.78
Cascade Way	Stop	0.80	0.39	0.36	0.84
Astor Way	Stop	0.80	0.43	>1.0	0.42
Boones Ferry/Settlemier	Signal	0.80	0.92	>1.0	0.82

Notes:

All volume-to-capacity ratios are shown as average intersection conditions and may include critical movements that do not meet standards.

Bold italics and shaded indicates intersection does not meet standards for volume-to-capacity according to the Oregon Highway Design Manual. All intersections meet the Oregon Highway Plan volume-to-capacity standards in the 2025 Build scenario.

The Cascade Way intersection is stop-controlled. Local traffic will reroute critical northbound left turns to Evergreen Road, a signalized intersection, during peak periods.

The Boones Ferry/Settlemier intersection is outside of the project construction limits.

- ① Median Island Between Interchange and Woodland
- ② Old Arney Rd. Right in & Right Out

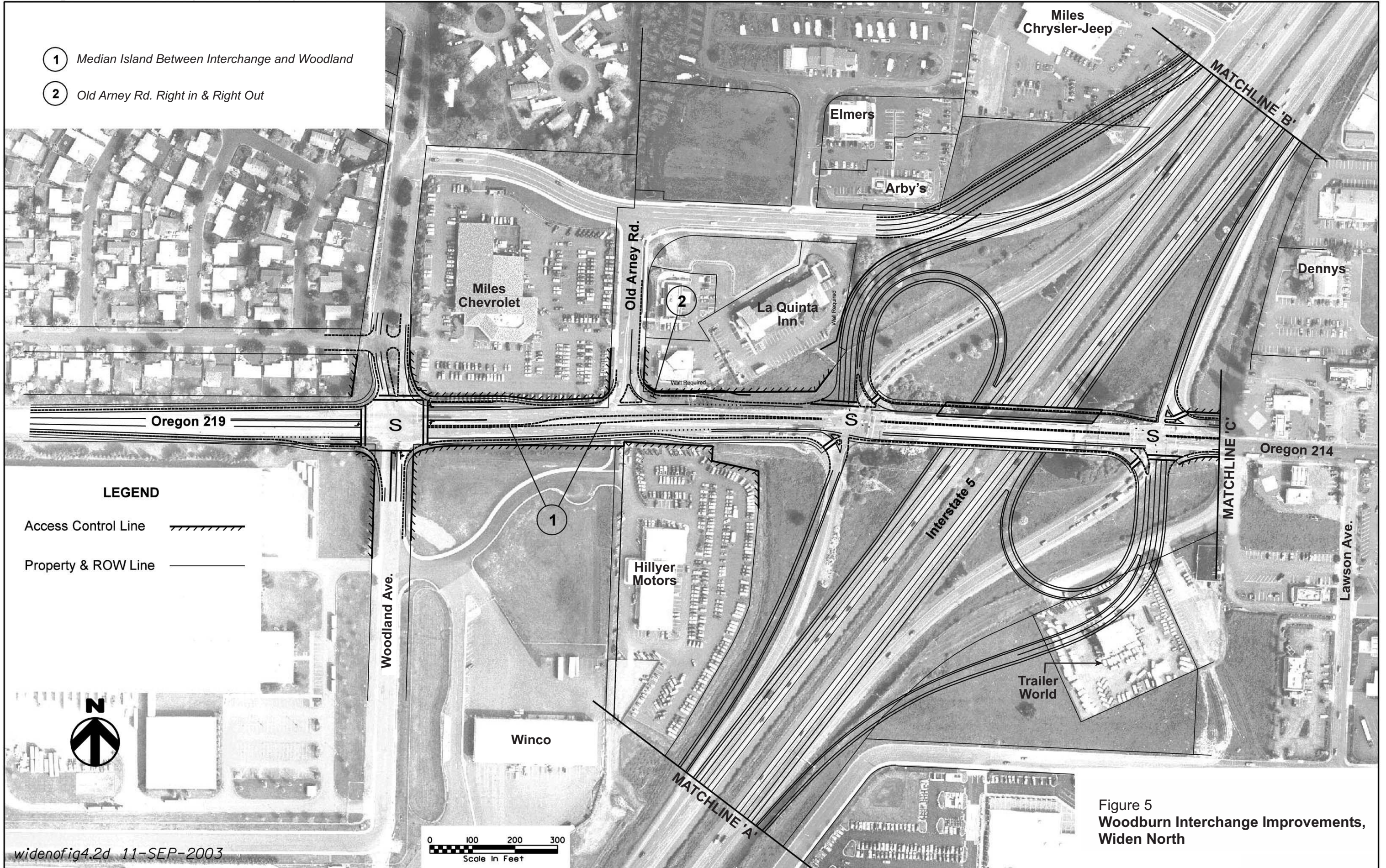


Figure 5
Woodburn Interchange Improvements,
Widen North



- ① Access Option Includes 60-Ft. Right-Of-Way Purchase At Back Of Chevron Property
- ② Access Option Includes 50-Ft. Public Right-Of-Way Purchase At Back Of ARCO Property
- ③ Access Option Does Not Include Access Purchase At This Location
- ④ Median Island Between Interchange and Evergreen Way
- ⑤ Median Island Between Evergreen Way and Oregon Way
- ⑥ U-Turns Permitted
- ⑦ Lawson Way, Right-In Only

LEGEND

Access Control Line

Property & ROW Line

Figure 6
Woodburn Interchange Improvements,
Widen North



The City of Woodburn and ODOT have been working in cooperation to solve congestion problems in and around the interchange as evidenced by the following actions:

- **Facilitation of traffic flow, especially at interstate and interchange ramps.** Chief among these short-term transportation improvements was the I-5 to Evergreen project. This project resulted in closure of all accesses on the north side of Oregon 214 between Evergreen Road and the northbound I-5 on-ramp. A median also was constructed to restrict left turn movements from a driveway on the south side of Oregon 214 that is directly adjacent to the northbound I-5 off-ramp.
- **Establishment of an interim park-and-ride lot.** The park-and-ride lot is to be sited on three properties owned by ODOT that are adjacent to I-5 and have access through the traffic signal at Oregon 214 and Evergreen Road. Funding will be sought to add amenities such as shelters and landscaping to make this a fully improved park-and-ride facility. This park-and-ride would be able to serve Woodburn's local transit service, the CARTS paratransit service, and express commuter service between Wilsonville to Salem provided by South Metro Area Rapid Transit (SMART) of Wilsonville. The connection to Wilsonville would also provide transit access for Woodburn residents to the METRO commuter rail that is scheduled to begin operation in 2006.
- **Coordination of traffic monitoring and signal operations.** Monitoring will be focused on peak periods of travel demand for events such as Oktoberfest, Tulip Festival, and holiday sales. A Woodburn Events Management Plan is being prepared to formalize temporary travel routing to improve safety in the interchange vicinity.

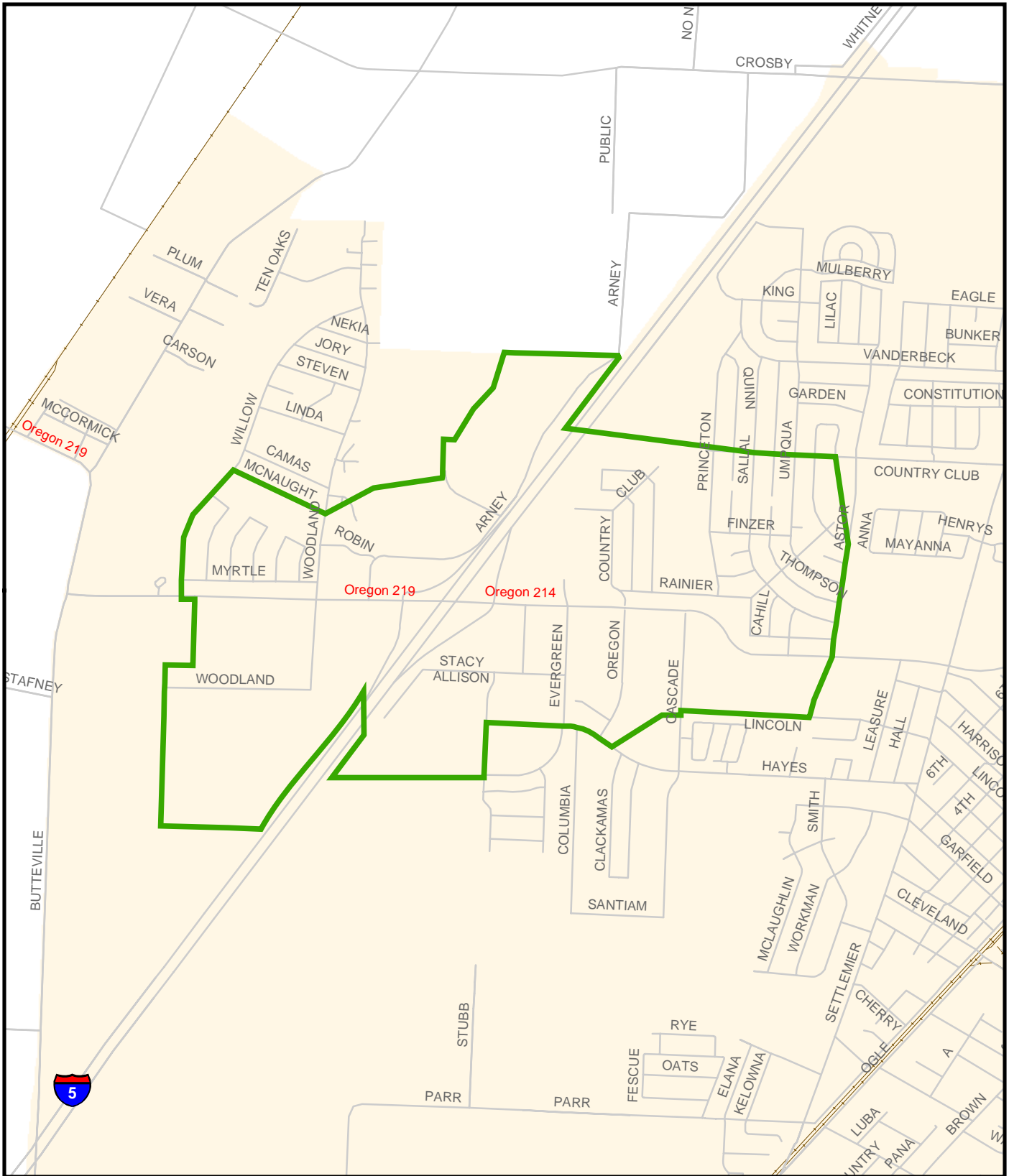
Access Management

OAR 734-051 promotes the protection of emerging development areas rather than the retrofit of existing built-up roadways. The rules also provide access management spacing standards for approaches for various types of state roadways and for interchanges. OAR 734-051-0190 specifies that these standards are to be used in planning processes involving state highways, including corridor studies, refinement plans, state and local TSPs, and local comprehensive plans. The access management plan contained in this IAMP is consistent with the strategy identified in the Woodburn Interchange EA. The access management plan for the interchange area was prepared under the project development guidelines rather than an application for an individual permit application.

Figure 7 depicts the boundary of the Access Management Study Area for this IAMP.

On Oregon 214 and Oregon 219, the access spacing standard for both public and private approaches is 400 feet. Access spacing standards along Oregon 214/219 from the I-5 ramps are 1,320 feet for full access intersections and 750 feet for right-in and right-out intersections.

West of the interstate, direct access to Oregon 219 would remain unchanged. The median would be extended to the Woodland Avenue intersection. The extension of the median barrier would reduce the number of occurrences where drivers attempt a mid-block U-turn between Old Arney Road and Woodland Avenue.



Legend

- Access Management Study Area
- Urban Growth Boundary
- Roads
- Railroad

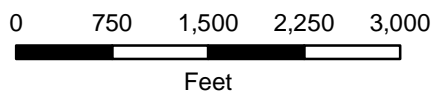


Figure 7

Access Management Study Area

I-5/Woodburn IAMP

East of the interstate to Evergreen Road, Oregon 214 would have a median barrier and would eliminate all private road approaches. Lawson Way would remain open for right-in only. The McDonalds site travel pattern would not be changed with either of the build alternatives. Right-out turning movements at Lawson Way would be prohibited.

The northbound approach of Evergreen Road to Oregon 214 would provide double left turns to expedite clearing the intersection and reducing the traffic back ups. This would allow local street accesses to remain on Evergreen and would minimize adverse impacts to existing and potential redevelopment land uses.

From Evergreen Road to Oregon Way there would be a raised median. Because of the lack of local streets parallel to Oregon 214, U-turns would be permitted at Evergreen Road and Oregon Way. Because of the proposed median, mid-block access may be permitted without adversely affecting travel.

Proposed project elements include prohibition of full movement private accesses a quarter mile east and west of interchange ramp termini, design of public road approaches to minimize interference with intersection traffic control devices, and installation of raised medians from Woodland Avenue to Oregon Way along Oregon 219 and Oregon 214.

The City of Woodburn and ODOT may be required to eliminate direct accesses as redevelopment of Oregon 214 frontage occurs in the future. Two accesses on the south and one access on the north were determined to be adequate. The EA includes an option to provide backage access to existing land uses.

These proposed changes do not fully meet OHP spacing policy and OAR standards. However, based on the cost of impacts to fully meet the standards, including impacts to the local transportation system and businesses, ODOT has deemed the proposed project, although a deviation from the standards, would move toward the standards while providing for safe and efficient operations. The Region Access Management Engineer has thus approved the deviation (see Appendix C). This is consistent with direction provided by the OTC when presented with the results of the Woodburn Interchange Refinement Plan in 2000.

Land Use Management and Findings

There was extensive collaboration between the City of Woodburn and State of Oregon on plan updates. The agencies coordinated updates to the Woodburn Comprehensive Plan, including land use and UGB analysis, and the updated TSP (2005).

The City of Woodburn already has policy, development code, and city ordinance language that applies to lands designated within the city limits and UGB. These measures were updated as part of the Comprehensive Plan and TSP updates, and include new land use and transportation policy that legislate City authority through the following mechanisms:

- Land use controls, including Comprehensive Plan, sub-area master planning, zoning and subdivision ordinance, overlay zoning, design review, and conditions of development
- Transportation controls, including transportation design and access standards and traffic impact study requirements

A long-term interchange management strategy that improves interchange operations and safety and preserves capacity was developed in support and protection of the major investment improvements being planned for the I-5/Woodburn interchange. This strategy is the centerpiece of the IAMP for the Woodburn interchange and will be implemented by new provisions to the WDO (see Appendix D). Procedures for ongoing monitoring of the strategy's implementation are defined in an intergovernmental agreement (IGA) between the City of Woodburn and ODOT (see Appendix E).

The revised WDO creates an IMA Overlay District, where trip generation from the development of vacant land uses within the district and from comprehensive plan amendments will be managed within a specified trip budget. The adopted IMA Overlay District is shown in Figure 8. The trip budget was established at a level consistent with the land use designations and assumed rate of development so as to not exceed the 2025 forecasted trip generation and travel demand assumed in the traffic modeling for the TSP and the Woodburn Interchange EA. The parcel trip budgets are intended to be high enough to accommodate peak hour trips (based on forecasts consistent with the 2005 TSP) but low enough to restrict unplanned vehicle trips that could adversely affect the interchange.

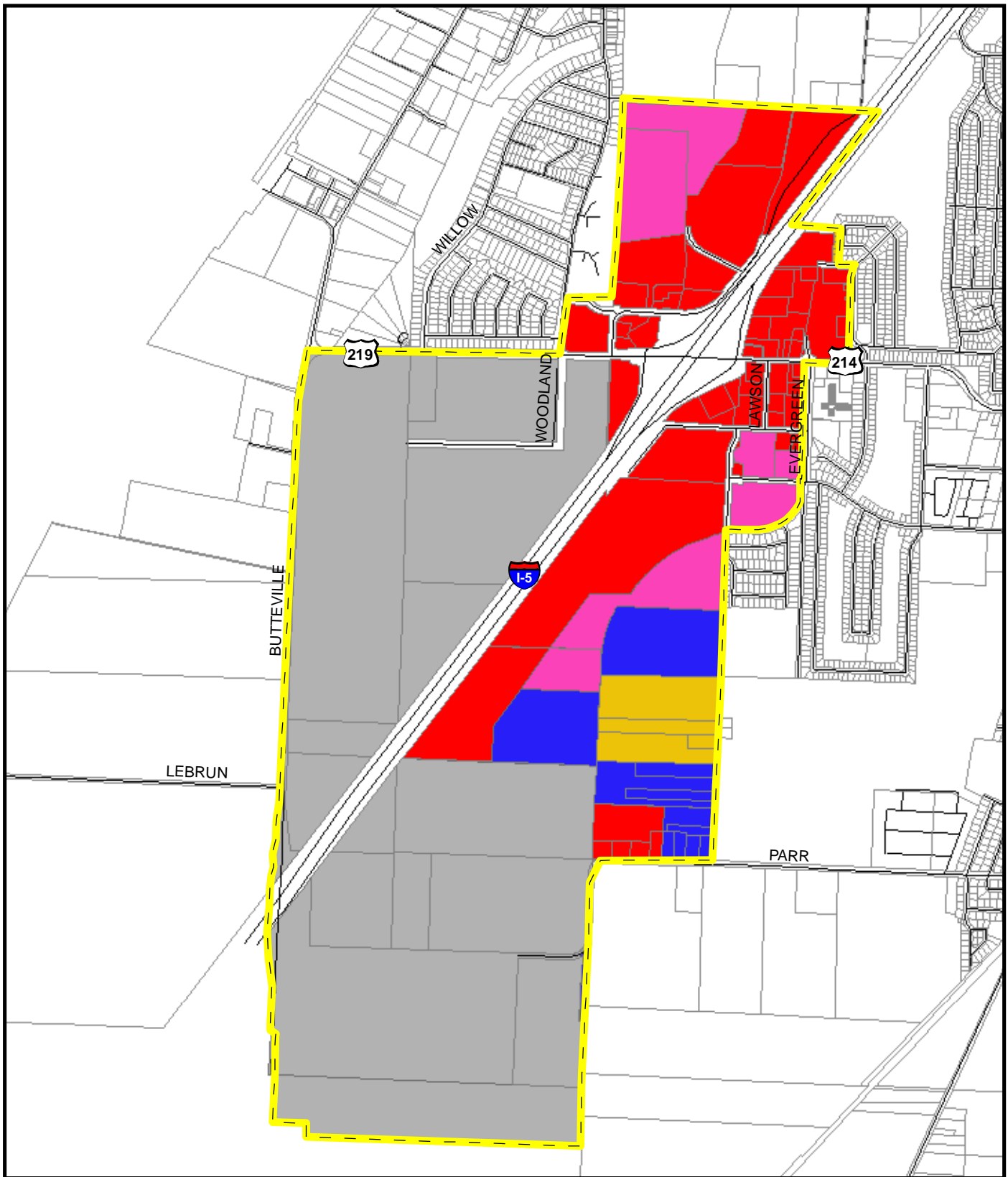
Budgeting trip generation in the IMA Overlay District provides the State and City with a tool to manage development within the Overlay District at planned levels to protect the function of the interchange and preserve the capacity provided by the interchange improvement. The purpose of this Overlay District is to preserve the long-term capacity of Woodburn's I-5 interchange with Oregon 214, in coordination with ODOT.

Preserving the capacity of this interchange is an essential element of the City's economic development strategy, because continued access to I-5 is necessary to attract and maintain basic employment within the Woodburn UGB. This strategy complements the provisions of the existing Southwest Industrial Area Reserve (SWIR) Overlay District by ensuring that industrial land is retained for targeted basic employment, which is called for in the Woodburn Economic Opportunities Analysis (EOA). Creation of the IMA Overlay District also ensures that industrial and residential land within the district is protected from commercial encroachment.

With the improvements to the interchange and the management tools provided by the local ordinance and the ODOT and City agreements, the City of Woodburn and ODOT staff have the means necessary to administer the trip budget, protect the function of the interchange, and preserve the capacity of the interchange without compromising the legitimate fulfillment of the City's adopted 2005 Comprehensive Plan.

Interchange Management Area Overlay District

The boundary of the IMA Overlay District is shown in Figure 8 and is described approximately as follows: Beginning at a point on the north UGB on Old Arney Road at I-5; thence west along the north UGB to the west edge of high-density residential property; thence south along high-density residential property and commercial property to Robin Avenue; thence west along Robin Avenue to Woodland Avenue; thence south on Woodland Avenue to Oregon 219; thence west on Oregon 219 to Butteville Road; thence south on Butteville Road to Le Brun Road; thence approximately 1,500 feet west on Le Brun Road; thence south approximately 2,700 feet following the UGB; thence east approximately



- Legend**
- Comprehensive Plan
 - Commercial
 - Industrial
 - MDR
 - Residential < 12
 - Residential > 12
 - Roads
 - Tax Lots
 - Overlay Zone

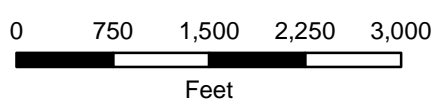


Figure 8
Interchange Management Area (IMA) Overlay District
I-5/Woodburn IAMP

500 feet to I-5; thence northeasterly following I-5 to Butteville Road; thence south on Butteville Road approximately 2,000 feet; thence west approximately 3,500 feet; thence north approximately 2,500 feet to Parr Road; thence easterly on Parr Road to Stubb Road; thence north on Stubb Road and its extension to the north to the intersection with Evergreen Road; thence east, then north on Evergreen Road to the intersection with Oregon 214; thence east to the intersection with Country Club Road; thence northerly along Country Club Road to Country Club Terrace; thence northerly along Country Club Terrace to the west extension of the north loop of County Club Terrace; thence west along a west extension of the north loop of County Club Terrace to Interstate 5; thence northeast along Interstate 5 to the point of beginning.

This area includes approximately 1,000 acres total, of which approximately 462 acres are vacant and buildable. These lots would be served by the I-5 interchange via Parr Road, Butteville Road, Crosby Road and Oregon 214. The IMA Overlay District includes the SWIR, the Parr Road Nodal Development Area, and other vacant commercial areas immediately served by the I-5 interchange. The interchange management area land use overlay zone encompasses approximately:

- 205 acres of commercial lands (64 acres vacant)
- 533 acres of industrial lands (362 acres vacant)
- 166 acres of residential lands (36 acres vacant)

Within this zone, trip generation associated with redevelopment is based on existing zoning. This is a reasonable assertion assuming the most likely properties to redevelop are those located in the immediate interchange vicinity and are currently commercial uses and traveler services.

Trip Budgets

The assumed total trip generation of all developable and re-developable land within the IMA Overlay District serves as the trip budget baseline. This total is based on an assumed rate of build-out consistent with adopted population and employment forecasts as reflected in the Woodburn traffic model prepared and maintained by ODOT. The operational performance indicator was determined to be the PM peak hour travel demand.¹ This IMA Overlay District will be managed as a single land use unit, not on a parcel by parcel basis, with a baseline of trip generation potential from trips associated with existing land use zoning. For simplicity of administration and ongoing tracking purposes, the budget will apply to development of vacant properties within the overlay district, assuming the differences in trip generation associated with redevelopment are negligible relative to the overall trip generation and the precision of forecasting methodologies. The baseline budget is established by subtracting 2003 existing trips generated within the overlay district from 2025 forecasted trips generated within the overlay district.

A total trip generation budget for planned employment (commercial and industrial) land uses within the IMA Overlay District—defined as the IMA Trip Budget—and a trip budget for

¹ Morning and mid-day peak flows have historically been lower than PM peak periods in this vicinity, indicating driver preference to link trips of multiple purposes at the end of the day. Traffic count data indicate that seasonal and special events are less than PM peaks as well.

each vacant commercial or industrial parcel—defined as the parcel budget—was determined. The IMA Trip Budget for commercial and industrial uses within the IMA Overlay District is 2,500 peak hour vehicle trips through the Year 2020. (An estimated 1,500 additional peak hour residential trips are planned within the IMA District.) The IMA Trip Budget will be allocated to vacant commercial and industrial parcels on a first developed, first served basis. According to the current for the IMA Overlay District (WDO 2.116), the overall trip budget for vacant SWIR parcels is 2,703; for vacant commercial properties the budget is 2,789 (see Appendix D, Table 2.116.1).

The parcel budget for each vacant commercial or industrial parcel within the IMA Overlay District is based on 11 peak hour trips per developed industrial acre, and 33 peak hour trips per developed commercial acre. The parcel budget for each parcel will be reduced in proportion to actual vehicle trips generated by new development on any portion of the parcel. The City *may* allow development that exceeds the parcel budget for any parcel in accordance with specified exemptions and conditional use provisions of the revised WDO.

There are 6,534 2003 PM peak hour trips for existing developed land within the overlay district, based on existing zoning and calibrated model output from the Woodburn traffic model prepared and maintained by ODOT.

12,628 2025 PM peak hour trips are based on trips associated with build-out of existing developed land and future forecasted trips associated with new development within the overlay district, based on 2025 trips assumed in the Woodburn traffic model prepared and maintained by ODOT.

A 6,094 2025 PM peak hour trips baseline budget is based on the difference between the two previous 2003 and 2025 PM peak hour trips described above.

Baseline budget adjustments will be made periodically to reflect any major changes in redevelopment assumptions that may occur. These changes will be measured and incorporated into a revised trip budget baseline at the time of periodic review of the Comprehensive Plan and TSP updates in accordance with statewide planning goals.

The state will not track, bind, or hold the City accountable for travel demand variances in growth originating from outside the Overlay District that result from the inability to control development patterns from neighboring cities and the greater northern Marion County area. The forecasted growth from other areas of Woodburn was adequately accounted for in the Woodburn TSP and traffic model. Given the relative accuracy of the traffic model as a forecasting tool (+ or - 10 percent), monitoring trip generation outside of the IMA Overlay District would provide only marginal value compared to the cost and complexity of implementing such an all-encompassing approach. ODOT will monitor overall traffic growth in the interchange area to ensure that any potential operational problems are identified and addressed as early as possible. Such problems might result if more rapid than forecasted growth occurs outside the IMA Overlay District.

SECTION 8

Public Involvement Summary

Public involvement was an ongoing and consistent activity with the Woodburn Interchange Project, from refinement planning through development of the EA, TSP, and Comprehensive Plan amendments. This history of public involvement is summarized below. Appendix F includes a summary of public and agency coordination for the EA, along with attachments that include meeting minutes and summaries over the course of project development.

For the Refinement Plan, three alternative solutions were identified and evaluated: standard diamond, tight urban diamond, and partial cloverleaf interchange forms. The results of this evaluation were presented to stakeholders through six focus group meetings, at which 26 people participated; six one-on-one meetings; an OTC presentation; and a City Council and Planning Work Session. This outreach was not considered to be extensive or conclusive of opinions held by the general public or the City of Woodburn, the surrounding community, and other transportation users. The input was sought as a process and product check to help focus the plan. Based on input and comments received, additional evaluation and consideration was given to the alternatives and next steps for project development.

For the TSP, the community's goals and visions were assessed. The plan's results were reviewed by the public through a variety of forums. Throughout development of the TSP, public input was sought through an Open House in January 2004, three work sessions with the City Council and Planning Commission in the spring and summer of 2004, and various community meetings. In addition, input on the plan was also received via public forums held for the Woodburn Interchange EA. City staff gave a presentation of the plan to a group from Senior Estates in July 2004. This valuable feedback, combined with input from the Technical Advisory Committee (TAC), has produced a plan that will help to guide the future of Woodburn's transportation system for the next 20 years. The plan had a public hearing before the Woodburn Planning Commission in February 2005, and the City Council held hearings on the TSP as part of the Comprehensive Plan periodic review package from March to July 2005. Hearings in September/October 2005 resulted in adoption on October 31, 2005.

For the EA, the Project Management Team (PMT) developed an interview strategy to elicit information on project issues and general project approach from Woodburn Interchange Project area stakeholders. The PMT consisted of lead ODOT and consultant team staff assigned to manage the project components, as well as FHWA, city, and county staff who are responsible for planning and transportation policy within their jurisdictions. Data from interviews were used to develop a public involvement and agency coordination plan to detail outreach activities that were conducted during the project. The plan defined activities to be conducted throughout the project, expected timing in relation to decision points and project milestones, and participating roles, commitments, and lead-time requirements for decision makers and other participants. Measures to evaluate the effectiveness of the public involvement activities were also identified. The plan provided recommendations concerning

membership of the Stakeholder Working Group (SWG). Three committees were formed to provide direction and input on the project: PMT, the SWG, and the Local Access Committee (LAC). The SWG consisted of representatives from local business, emergency services, residential communities, cultural communities, outlying communities, and other appropriate interest groups. The role of the SWG was to be advisory to the PMT on values, ideas, and concerns of the broader community. Seven SWG meetings were held between March and July 2003.

The LAC functioned as a sub-committee of the SWG. There were people on the LAC who were not on the SWG, and vice versa. All property owners located immediately adjacent to the interchange and property owners who rely on access to or from Oregon 214/219 between Country Club Road and Woodland Avenue were invited to participate on the LAC. The purpose of the LAC was to recommend an access plan as a part of the recommended set of improvements to the I-5/Woodburn interchange. The access plan, together with the favored alternative, was forwarded to the PMT from the SWG. Three LAC meetings were held during May and June 2003.

A fact sheet was developed in March 2003. A project newsletter was distributed to all property addresses and property owners within the project area in May 2003. Two project postcards were distributed to the same mailing list and through the informational displays – the first in late May 2003, and the second in mid-June 2003.

To reach the traveling public, cultural communities, and the surrounding community, informational displays were constructed at locations within and around the project area. Press releases were issued that announced process steps and opportunities for involvement. Press releases were distributed through ODOT's communications office. Display ads in local news publications were used to advertise public meetings, and reporters wrote articles on the meetings.

Two public meetings were held to introduce the project to the public and discuss alternatives being studied. The purpose of these meetings was to provide maps of the alternatives under consideration, the recommendations from the SWG, and the project goals, and to gather input on outstanding issues to address. Forty-three people signed in as participants.

ODOT's Region Access Manager (RAM) was involved to establish the range of access alternatives with locations and turning movements that would meet ODOT policies. These options were presented to the LAC and modified to apply the actual context. The LAC and RAM clarified the alternatives and they were then evaluated for operations and feasibility. The LAC then made a recommendation to the SWG of their preferred ranking of alternatives. These alternatives were evaluated by the SWG and a recommendation was developed for public comment at the open house. The PMT then decided on the access alternatives to be carried forward into the EA process based on public comment and the SWG recommendation.

A Public Hearing on the EA was held in Woodburn on July 21, 2005; nineteen citizens provided oral testimony, 9 citizens submitted written comments at the hearing, 5 submitted e-mails, and 8 sent letters, including the Senior Estates Golf and Country Club. Comments from the Public Hearing are summarized in Appendix F. No clear consensus regarding the

Widen North versus the Widen Equal alternatives presented in the EA document emerged from the comments received through the public hearing process conducted for the EA in July and August 2005.

In November 2005, the SWG met to consider a recommended alternative. Those favoring the Widen North alternative were mostly concerned about impacts to the properties south of Oregon 214 between Evergreen Road and the northbound Woodburn Interchange ramps. Those favoring the Widen Equal alternative were mostly concerned about impacts north of Oregon 214 between Evergreen Road and Cascade Drive. The SWG also noted the desire expressed by several of those commenting to avoid or minimize impacts to the Kentucky Fried Chicken property north of Oregon 214 between Evergreen Road and Oregon Way and the medical offices at the southeast corner of Oregon 214 and Cascade Drive.

Based on these comments and concerns, the SWG recommended advancing a “hybrid” build alternative that blends elements of both the Widen North and Widen Equal alternatives. Specifically, the SWG recommended fitting the design alignment along existing Oregon 214 east of the Woodburn Interchange using the following principles:

- Favor the Widen North alternative west of Evergreen
- Shift the alignment towards the Widen Equal alternative, as is practical and feasible, between Evergreen Road and Cascade Drive
- Between Evergreen Road and Cascade Drive, particular attention should be given to minimizing impacts, as is practical and feasible, to the Kentucky Fried Chicken property and to the Senior Estates properties adjacent to Oregon 214
- East of Cascade Drive, particular attention should be given to providing as much space as is practical and feasible between the medical offices at the southeast corner of Oregon 214 and Cascade Drive and the back of the sidewalk running along the south side of Oregon 214.

Upon adoption of the IAMP, the Recommendation Document will be submitted for ODOT approval, and then the Revised EA will be submitted for FHWA approval.

Plan Implementation Responsibilities

Implementing Actions

The I-5/Woodburn Interchange Project (including the 2000 Refinement Plan, the Woodburn Interchange EA, and the Woodburn TSP update) and this IAMP were conducted and developed with ODOT and local agency coordination and extensive public participation. Because this facility is contained within the City of Woodburn's UGB, no goal exceptions are required for the I-5/Woodburn Interchange Project or this IAMP. Because the City adopted a significant update to their Comprehensive Plan and TSP in 2005 (Ordinance 2391, October 31, 2005) that addressed and incorporated all of the local actions needed to be consistent with and support the I-5 Woodburn Interchange Project and this IAMP, further Comprehensive Plan amendments are also not required for this IAMP. City actions and policies from the 2005 TSP are provided in detail in Sections 3 and 4 and Appendix D.

All of these processes and actions ensure that this IAMP, as an ODOT Facility Plan, is consistent with the State Agency Coordination (SAC) Agreement and Administrative Rule (731-0015) that defines the process for how ODOT Facility Plans must be developed to comply with Oregon's Statewide Planning Goals and Land Use Planning Program. A summary of the ODOT and Woodburn implementing actions identified in the 2005 Woodburn Comprehensive Plan and TSP update and in this IAMP is provided below. These actions constitute the substance of the Woodburn Interchange IAMP.

1. ODOT shall reconstruct existing interchange to meet forecasted traffic demand and ODOT operational standards through 2025-2030 in accordance with the EA, if approved, and the City of Woodburn's TSP as soon as full funding can be secured to do so.
2. ODOT has entered into an IGA (#23,240) with the City of Woodburn (see Appendix E) that describes funding responsibilities and establishes the Woodburn interchange reconstruction as a planned facility for the purpose of implementing the City's Comprehensive Plan and TSP.
3. ODOT shall close all private access on Oregon 214 and 219 between the interchange ramps and the first existing signalized public road intersections (Evergreen Road and Woodland Avenue) when the Woodburn interchange is reconstructed.
4. ODOT shall construct full median control between Woodland Avenue and Oregon Way at the time of the reconstruction of the Woodburn interchange.
5. ODOT is developing a permanent park-and-ride facility on newly acquired properties in the northeast quadrant of the interchange. This is currently expected to be constructed in 2007 or 2008.

6. ODOT has entered into an IGA (#22,933) with the City of Woodburn (see Appendix E) to monitor development in the interchange management area overlay zone and track the application of the adopted trip budget.
7. Woodburn has adopted and shall implement policies (Comprehensive Plan Policy H-7.1) to discourage strip commercial development and promote downtown redevelopment.
8. Woodburn has adopted and shall implement an IMA overlay zone ordinance (WDO 2.116) that:
 - a. Allows no conversion of industrial lands to commercial or residential zoning.
 - b. Allows no increase in trip generation potential above the level forecasted in the City's traffic model (based on the City's adopted 2005 land use plan update).
 - c. Creates a trip budget based on the City's traffic model and implementation of the newly updated Comprehensive Plan.
 - d. Links implementation and allocation of trip budget to City's economic development goals.
 - e. Provides for use of TDM measures (in development code) to meet trip budget requirements.
9. Woodburn has adopted (Ordinance 2391, October 31, 2005) and shall implement a TSP that includes policies that:
 - a. Provide for the improvements being proposed to the existing interchange and Oregon 214/219. (Comprehensive Plan Policy H-7.1; TSP pages 6-3 and 7-5)
 - b. Call for development of and identify supportive local transportation system improvements. (Comprehensive Plan Policy H-7.2; TSP pages 7-5 through 7-7)
10. Woodburn has adopted and shall implement a revised land use plan and development code changes to increase city-wide residential density approximately 20 to 25 percent. (Ordinance 2391; WDO 2.115; Comprehensive Plan Policy Table 1)
11. Woodburn has adopted and shall implement maximum and minimum density standards for new development. (Ordinance 2391; WDO 2.115; Comprehensive Plan Policy Table 1)
12. Woodburn has entered into an IGA (#22,933) with ODOT (see Appendix E) to monitor development in the IMA overlay zone and track the application of the adopted trip budget.
13. Woodburn has entered into an IGA (#23,240) with ODOT (see Appendix E) that describes funding responsibilities and establishes the Woodburn interchange reconstruction as a planned facility for the purpose of implementing the City's Comprehensive Plan and TSP.

Local Adoption Process

The City of Woodburn coordinated the development of the Woodburn Refinement Plan, EA, and IAMP with major updates to their Comprehensive Plan and TSP that were completed through their periodic review process between 2000 and 2005. Hearings to adopt these documents were conducted between May 2005 and September 2005, concluding with the Woodburn City Council directing staff to draft an ordinance to adopt the updated plans. Ordinance 2391 was adopted by the Woodburn City Council on October 31, 2005.

State Adoption Process

ODOT developed an EA of the potential reconstruction of the Woodburn interchange. Based on SAC requirements, ODOT must complete all local land use actions that demonstrate that the ODOT project is compatible and consistent with the Woodburn Comprehensive Plan and TSP prior to completing the EA. The IAMP is an ODOT Facility Plan that documents that the project will be compatible and consistent with the 2005 Woodburn Comprehensive Plan and TSP. As such, OTC adoption of this IAMP as a Facility Plan is required prior to completing the EA process. Prior to taking this plan to the OTC for adoption, ODOT must also submit the plan to the City of Woodburn for a formal assessment of its compatibility and consistency with their adopted plans. The City of Woodburn's letter confirming the IAMP's compatibility and consistency will be presented to the OTC when the IAMP is presented to them for adoption.

Cooperative Plan Implementation

This section clarifies IAMP implementation consequences. Because the Woodburn Comprehensive Plan and TSP elements upon which the IAMP relies to help protect long-term interchange function and operation have already been adopted by the City of Woodburn, no additional changes to these local plans are necessary to implement this IAMP. If or when the City of Woodburn seeks to amend the existing policies or code provisions relied on for this IAMP, it will be necessary for ODOT to review the proposed changes to ensure that these remain consistent with the IAMP. If ODOT finds that proposed plan or code amendments are not consistent with the IAMP, then ODOT and the City of Woodburn must work together to reach agreement on methods and mechanisms to resolve all identified conflicts. Implementation of the agreed upon solution(s) may require amendments to local plans and codes, or to this IAMP, or both.

Investment Requirements

The total project cost is estimated in the EA at approximately \$48 million, including preliminary engineering and ROW acquisition. Full funding has not been secured as of the writing of this IAMP, but ODOT and the City of Woodburn have entered into an IGA (included in Appendix D) that defines the local cost share for the reconstruction of the Woodburn interchange as \$8 million. ODOT and the City are committed to jointly pursuing and securing full funding for the reconstruction project as quickly as possible.

SECTION 10

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APPENDIX A

Land Use Planning Maps

APPENDIX B

Accident History, Traffic Volumes, Lane Configurations, and Queues of Alternatives (2025)

APPENDIX C

Standards Deviation Approval

APPENDIX D

Woodburn Development Ordinance 2.116

APPENDIX E

Intergovernmental Agreements

APPENDIX F

Public and Agency Coordination

APPENDIX G

Technical Ratings Methods and Measures
