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SECTION 1
Summary of Impacts and Mitigation

Section to be included in EA.
SECTION 2

Purpose and Need

2.1 Purpose

The purpose of the Woodburn Interchange project is to improve the traffic flow and safety conditions of the existing I-5/Woodburn interchange. This report describes the transportation and related problems associated with the project in compliance with the National Environmental Policy Act (NEPA). It begins the Woodburn Interchange Environmental Assessment project, as required by the National Environmental Policy Act. Facts presented in this document date back to 2000 as presented in the I-5/Woodburn Interchange Refinement Plan by the Oregon Department of Transportation (ODOT). These facts would be updated as part of the Woodburn Interchange project Environmental Assessment (EA). Ultimately, an alternative will be selected that may include a “no build” or a “build” solution to improve the transportation performance and safety conditions of the interchange.

2.2 Need

2.2.1 Introduction

Interstate 5 (I-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, with one-fourth of the nation’s exports and imports passing through the corridor annually. I-5 has been designated a federal Trade Corridor because 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 is estimated to 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 in ODOT’s Region 2, a nine-county area in northwest Oregon. Located between the Portland and Salem-Keizer metropolitan areas, Woodburn lies in the heart of Oregon’s Willamette Valley (Figure 2-1). Land uses adjacent to I-5 are a mixture of urban, rural, and agricultural.

The population of Region 2 is about 670,000 people. Forecasts estimate that population will grow to 900,000 people over the next 20 years. Current traffic volumes on I-5 vary from approximately 80,000 ADT at the Clackamas/Marion County border to about 22,000 ADT just south of Cottage Grove.
Figure 2-1
8 ½ x 11
2.2.2 General Setting

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

Since the 1970s, Woodburn’s population has grown more than 60 percent and the city has developed to the south and to the west toward I-5. Land uses around the interchange vicinity are now a mixture of residential, industrial, regional retail/commercial, and traveler services/commercial. The increased population and land uses in Woodburn and the area around Woodburn in North Marion County that is served by the interchange, as well as the increase in statewide and regional traffic in the I-5 corridor, create more traffic than the interchange can accommodate, based on Oregon Highway Plan mobility standards. It is expected that the city and region will keep growing at a steady pace throughout the 20-year planning horizon.

The existing interchange is a standard diamond design. The interchange was last updated in 1975 when I-5 was widened from four to six lanes from Woodburn to Salem. At that time, traffic volumes were 28,600 ADT on I-5, 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 the low-volume, rural interchanges that were built from the mid-1960s to early 1970s. There are no other interchanges in the Woodburn urban growth boundary. Grade-separated crossings exist at Butteville Road (milepost [MP] 270.46) and Crosby Road (MP 273.21), both of which 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 will continue to grow.

The following studies have been done to improve how the interchange works:

- **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. 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.

- **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.

• **2000**—ODOT completed an interchange refinement plan that identified two interchange alternatives for study in the environmental phase.

### 2.2.3 Transportation Performance

Current problems at the interchange can be classified into three related deficiencies: geometric, operational, and safety.

#### Existing Geometric Deficiencies

The standard diamond is well suited for relatively low volumes in a rural area. The current design meets seismic requirements, and has a bridge structure sufficiency rating of 97 out of a possible 100, which represents a high-value asset. Oregon 214 functions with a through lane in each direction and continuous, two-way left-turn refuge. In 1999, travel volumes on I-5 through the interchange were 73,100 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.

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 two lanes and side-by-side left turn lanes across the overpass. 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, a raised median on either side of the Oregon 219/Arney Road intersection. Right-in/ right-out turns are allowed at Arney Road on the north side of the highway.

The deficiencies noted by the refinement planning process include:

• 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.

• Existing shoulder width/bikeway of 0 feet to 4 feet is inadequate to meet standards of 8 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. Minimum sidewalk clearance requirements are 2.5 feet for one-way and 3 feet for two-way pedestrian travel.

• Northbound and southbound existing ramp lengths do not meet current safety requirements for deceleration, stopping, and storage (Table 2.1).


<table>
<thead>
<tr>
<th>Ramp</th>
<th>Entrance</th>
<th>Exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northbound Existing</td>
<td>1,915 feet</td>
<td>1,083 feet</td>
</tr>
<tr>
<td>Northbound Required</td>
<td>1,980 feet</td>
<td>1,735 feet</td>
</tr>
<tr>
<td>Southbound Existing</td>
<td>1,100 feet</td>
<td>1,740 feet</td>
</tr>
<tr>
<td>Southbound Required</td>
<td>1,680 feet</td>
<td>1,830 feet</td>
</tr>
</tbody>
</table>

**Existing Operational Deficiencies**

The term operation refers to the quality of traffic flow. ODOT calculates the traffic volume divided by the lane capacity of the highway to measure operational performance. Other observations help to identify quality of flow issues:

- The Evergreen intersection with Oregon 214 has a volume-to-capacity ratio greater than 0.85, which exceeds the design standard of 0.80.
- The northbound ramp has a volume-to-capacity ratio greater than 1.0, which exceeds the design standard of 0.70.
- Traffic stacks up from each off-ramp signal all the way down the off-ramps into the area where drivers are expecting to slow down from freeway travel speeds and, at time, onto the I-5 shoulders or travel lanes.
- East of I-5, travel on Oregon 214 is interrupted by closely spaced intersections and driveways to business. The spacing from the interchange ramp to the nearest public street is well below Oregon Highway Plan policy for 1,320 feet, or 1/4 mile, spacing.
- The distances for making left turn decisions on Oregon 214 is inadequate, often leaving drivers trapped in the wrong lane for their desired destination.

**2001 Safety Deficiencies**

Historical crash data was collected from ODOT for the five-year period between January 1, 1997 and December 31, 2001 to identify potential safety deficiencies or conflict points in the study corridor. A summary of the intersection crash data is provided in Table 2-2, which includes crash rate, severity, and type of crashes over the five-year analysis period at the study intersections. Crash rates for intersections are reported in crashes per million entering vehicles (MEV).

In general, there were no patterns among the crashes at any intersections that indicate a geometric or operational deficiency. Both the I-5 Southbound and I-5 Northbound ramp intersections were modified in 2000 and ODOT should monitor these intersections to evaluate any change in crash histories as a result of the modifications.
### TABLE 2-2
Intersection Crash History: January 1997 to December 2001

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

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

**Future Interchange Problems**

Travel forecasts show that all intersections from Arney Road to Boones Ferry/ Settlemier will fail by 2025, increasing traffic delays significantly along Oregon 214.

The community and adjacent businesses will be greatly affected by changes in access at the interchange. Without improvements, left turns into businesses will grow much more difficult during peak traffic periods.

Travel problems would not be improved by simply widening Oregon 214 to four lanes without also making significant improvements to the interchange, adding turn lanes, and synchronizing traffic signals.

The risk of safety problems will likely increase along I-5 over time if/ when the off-ramp traffic backups back onto the freeway mainline more frequently during peak traffic times.
2.3 Goals and Objectives of the Woodburn Interchange Project

2.3.1 Safety
- Provide a facility that will safely accommodate multimodal travel demands 20 years into the future.

2.3.2 Access and Traffic Flow
- Provide safe and convenient access to interchange area businesses (i.e., consider signage and possible street connections to Oregon 214, etc.).
- Reduce congestion and improve traffic flow in the interchange area.
- Provide median treatment that will accommodate emergency vehicles.

2.3.3 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.

2.3.4 Aesthetics
- Create a gateway entrance to Woodburn (i.e., consider a variety of treatments such as underground utilities, landscaping, pavement widths, etc.).

2.3.5 Implementation
- Maximize efficient use of available funding for implementation of interchange and Oregon 214 improvements by 2008.
- Coordinate with affected property owners and provide fair compensation.
- Coordinate construction activities to maintain safe access to regional events.
- Minimize disruption and congestion due to construction activities.
- Maintain travel on I-5 at all times.
SECTION 3
Project Alternatives

Interstate 5 serves as an interstate freeway, part of the National Highway System, designated as a highway of Statewide importance in the Oregon Highway Plan (OHP) and is designated as an international trade corridor and Statewide Freight Route. The Hillsboro/Silverton Highway (Oregon 214 and 219) is District level highway on ODOT’s system and a major arterial within the City of Woodburn’s system. The posted speeds are anticipated to be 65 miles per hour (mph) along I-5 and 35 mph along Oregon 214/219.

The surrounding communities of Silverton, Mt. Angel, and Molalla take their primary I-5 access from the east by using Oregon 214 in Woodburn. The community of St. Paul accesses I-5 from the west by using Oregon 219.

3.1 Interchange Improvements

Two build alternatives for the interchange are being forwarded for environmental study. The two alternatives are similar; interchange design and local road improvements are largely the same. The most significant 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. The following section describes the physical characteristics of the two build alternatives.

The project is located at the Woodburn/I-5 interchange at MP 271.85. The physical project limits include I-5, Oregon 214, and Oregon 219. The northern limit of the project along I-5 includes new ramp connections ending at MP 272.25. The southern limits are the new ramp connections along I-5 ending at MP 271.43. The western limit of the project is along Oregon 219 ending at MP 36.40. The eastern limit of the project is along Oregon 214 ending at MP 37.51. Both project alternatives would add improvements along Arney Road (MP 36.63), Lawson Avenue (MP 36.95), Evergreen Avenue (MP 37.02), Oregon/County Club Road (MP 37.14), and Cascade Drive (MP 37.27). Other optional improvements may be made along Woodland Road (MP 36.52) and between Lawson Avenue and Stacey Alison Road. 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.

3.2 Proposed Design Changes

The existing interchange is a standard diamond design. The proposed interchange design for both build alternatives would be a partial cloverleaf-A (loop ramps in advance of the overcrossing structure of I-5) with single exit and entrance ramps from and to the I-5 mainline (see Figures 3-1 through 3-6). The existing bridge structure, currently 71 feet, 5 inches wide, would be widened by 37 feet, 3 inches for each alternative. Alternative 1
Figure 3-1
11 x 17
figure 3-2
11 x 17
figure 3-3
11x17
figure 3-4

11x17
figure 3.5
11x17
figure 3-6
11x17
(Widen Equal) would widen the bridge by 14 feet, 2 inches to the north and 23 feet, 1 inch to the south; Alternative 2 (Widen North) would widen the bridge by 37 feet, 3 inches completely to the north. The vertical clearance of the interchange structure currently ranges from 18.3 to 20 feet. The proposed widening would be designed to meet ODOT standards, which require at least 17 feet of vertical clearance.

The design speed for each ramp is listed below:

- Southbound Exit to Oregon 219—Varies from 55 miles per hour (mph) at exit to 25 mph at terminal
- Northbound Exit to Oregon 214—Varies from 55 mph at exit to 30 mph at terminal
- Southbound Entrance ramp—65 mph
- Southbound Loop entrance ramp—25 mph
- Northbound Entrance ramp—65 mph
- Northbound Loop entrance ramp—25 mph

Existing travel lanes on I-5 would remain unchanged.

Oregon 214/219 would consist of two 12-foot travel lanes in each direction, with an outside shoulder of 6 feet and an interior shy distance of 1 foot on each side of a 16-foot-wide raised curb median.

Median breaks would be provided at the interchange ramps to facilitate left turns from the ramps onto Oregon 214. Median breaks would also be provided at the following locations to allow left turns from Oregon 214:

- Eastbound Oregon 214:
  - Evergreen Avenue
  - Oregon Way
  - U-turns at Oregon Way
  - Cascade

- Westbound Oregon 214:
  - Evergreen Avenue
  - U-turns at Evergreen Avenue
  - Oregon Way
  - Cascade

- Eastbound Oregon 219
  - Woodland Avenue

- Westbound Oregon 219
Woodland Avenue

Along Oregon 214/219, new 6-foot-wide sidewalks would be added, with an additional 6-foot-wide landscaped buffer between the sidewalk and curb. One bicycle lane would be provided in each direction along Oregon 214/219 within the project boundaries.

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 southeast quadrant of the interchange would be closed.
  - Only a right-in turn would be allowed at Lawson Avenue.
  - No access would be allowed between Lawson Avenue and Evergreen Road (closes one access to McDonalds and two accesses to Union 76).
  - One shared right-in, right-out access would be allowed between 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 I-5 interchange**
  - One midblock right-in, right-out access between Oregon Way and Evergreen Road would be allowed.
  - No access would be allowed between Evergreen Road and I-5 interchange ramps.

- **Access along Evergreen Road, north and south of Oregon 214**
  - No access would be allowed 200 feet from Oregon 214 (with the exception of the Access Option described below).

- **Access along Lawson Avenue, south of Oregon 214**
  - Driveway access would be provided to the Taco Bell property.
  - The McDonald’s driveway closest to Oregon 214 would be closed, leaving the McDonald’s access across from the Taco Bell as the closest access to Oregon 214 on the east side of Lawson Avenue.

- **Access along Oregon Way, south of Oregon 214**
  - The Mid-Valley Bank would lose driveway access from both driveways onto Oregon Way (with the exception of the Access Option described below).
  - Access to the homes on both the east and west sides of Oregon Way would not be affected.

- **Access along Country Club Road, north of Oregon 214**
— The Kentucky Fried Chicken/Country Cottage Café 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.

— The intersection of Country Club Road and Rainier Road would not be affected.

Evergreen Road would be extended north of Oregon 214 to connect to Country Club Court. The extension would consist of two 12-foot-wide lanes with no median and 2-foot-wide shoulders. No bicycle lane would be added, but a curb and gutter with 6-foot-wide sidewalks would be added on both sides of Evergreen Road. Approximately 400 feet north of Oregon 214, a city access street would be extended west from the new Evergreen Road extension, which would connect Evergreen Road to an existing private paved access. The existing paved access would be improved to meet City standards with a curb and gutter. The actual design of this access point and its connections to existing developed or future undeveloped properties may depend on future development proposals.

3.2.1 Alternative 1: Widen Equal

Alternative 1 would widen Oregon 214 and Oregon 219 equally to the north and south from the existing centerline of the roadway. The design of Alternative 1 would include all improvements described above.

Access Option

As a potential add-on to Alternative 1, an additional strip of right-of-way and a strip of easement would be acquired under the Access Option. This option is not included in the previous Alternative 1 description and is included here as a separate sidebar discussion.

Two separate areas are included under this option: a 60-foot-wide right-of-way purchase and a 50-foot-wide public road easement.

A 60-foot-wide right-of-way would be acquired south of Oregon 214, extending west from Lawson Avenue. The right-of-way would begin approximately 170 feet south of Oregon 214 and would extend approximately 300 feet. A local street would be constructed in this right-of-way to provide access to businesses currently located adjacent to the I-5 interchange. This right-of-way is shown in Figure 3-3 as Note 1. Depending on future private development proposals or City actions, this right-of-way could be extended south to Stacey Alison Road as a further circulation option.

A 50-foot-wide public road easement would be acquired south of Oregon 214, extending east from Evergreen Road to the Dairy Queen property. The easement would begin approximately 100 feet south of Oregon 214 and would extend 190 feet in length. The easement would be provided as a circulation option for the Arco and Dairy Queen properties. This easement option would function as a minimal public street and is shown in Figure 3-3 as Note 2.

In addition to these options, access control would only be acquired 200 feet south of Oregon 214 along the west side of Evergreen Road to provide driveway access and improved circulation behind the existing Union 76 property. A similar accommodation would be made along the west side of Oregon Way to provide access to the existing bank property at the corner of Oregon 214 and Oregon Way.
This option in combination with Alternative 1 would require less access control be purchased than Alternative 1 without this option. This option would retain the access locations along the local street system as noted below:

- **Lawson Way**
  - Approximately 40 feet less access control would be acquired to accommodate the 60-foot-wide right-of-way. The new road on the new right-of-way would provide access to the Taco Bell property. (See Note 1 in Figure 3-3.)

- **Evergreen Road**
  - Approximately 60 feet less access control would be acquired on the west side of Evergreen Road to provide for a driveway to the Union 76 property. (See Note 1 in Figure 3-3.)
  - Approximately 130 feet less access control would be acquired on the east side of Evergreen Road to accommodate the Dairy Queen/Arco circulation easement. (See Note 1 in Figure 3-3.)

- **Oregon Way**
  - Approximately 30 feet less access control on the west side of Oregon Way would be acquired to provide driveway access to the Wells Fargo Bank (formerly Mid-Valley Bank) property. (See Note 1 in Figure 3-3.)

### 3.2.2 Alternative 2: Widen North

Alternative 2 would widen Oregon 214/219 solely to the north of the existing road, except for sidewalk and bicycle lane improvements that would be constructed south of the existing edge of pavement. The interchange design and basic Oregon 214 cross-section of Alternative 2 is the same as Alternative 1. The only difference between Alternative 1 and Alternative 2 is that Alternative 2's alignment is farther north than Alternative 1.

**Access Option**

This Access Option is the same as described in Alternative 1.

The 60-foot-wide right-of-way for Alternative 2 is shown in Figure 3-6 as Note 1. The 50-foot-wide public road easement for Alternative 2 is shown in Figure 3-6 as Note 2. Alternative 2 with this option would allow more access along the local roadway system and is shown in Figure 3-6 as Note 3.

### 3.2.3 No Build Alternative

Under this alternative, the current I-5/Woodburn interchange would remain in place into the foreseeable future, with only routine maintenance to prevent its deterioration. The No Build Alternative provides the benchmark against which the project build alternative impacts may be measured to more accurately assess future impacts of the proposed project.

Oregon 219 consists of two through lanes in each direction with left turn pocket at Woodland Avenue. Bike lanes and sidewalks are located both north and south of Oregon 219. The raised median is intended to restrict turning movements at Arney Road to right
in/right out only. The overcrossing structure of I-5 is four lanes consisting of a left turn lane for north and southbound freeway traffic and one through lane in each direction with sidewalk on the north side only. Oregon 214 east of the northbound ramp terminal consists of one through lane in each direction and a continuous left turn lane. There are curb tight sidewalks on both sides of the street.

Signalized intersections exist at Woodland Avenue, southbound ramp terminal, northbound ramp terminal, Evergreen Avenue and Oregon Way/Country Club Court intersections. The remaining intersections are stop controlled.

3.2.4 Project Phasing

Interchange improvement phasing into separate contracts has been considered but not recommended due to the approach grades to the overcrossing structure. The changes to finish grade would elevate the existing pavement from zero feet to up to seven feet higher. Based on the grade differences and other alignment changes, the project would be constructed as one project with construction staging to allow traffic flow to be continuous throughout the construction period.
SECTION 4

Affected Transportation System Environment

This section presents a description of existing socioeconomics and land use, highway and non-auto mode facilities in and around the I-5/ Woodburn Interchange area. It also discusses recent and planned capital construction projects within the Urban Growth Boundary.

The last part of this section describes Transportation Demand Management (TDM) and Transportation System Management (TSM) measures considered as part of the transportation analysis for the Woodburn/ I-5 Interchange Project.

4.1 Socioeconomics and Land Use

The area around the Woodburn Interchange has changed in the last three decades, becoming more urban in nature. The quadrants of the interchange offer social and economic distinctions, as described below:

**NW quadrant** - A mix of residential and commercial characterized by established residential neighborhood to the west of Woodland, travel services (gas, food, and lodging) and auto dealership along Arney Road near Oregon 219, and regional commercial retail merchandising from the Woodburn Factory Store Mall, also on Arney Road.

**SW quadrant** - A mix of industrial and commercial characterized by warehouse distribution and auto dealership with access from Oregon 219. There is a significant amount of vacant land zoned for industrial within the UGB.

**NE quadrant** - Primarily commercial traveler services (gas, food, and lodging) that transitions to local commercial mall and then to residential (Senior Estates).

**SE quadrant** - Commercial traveler services (gas, food, and lodging) with access to regional commercial (Wal-Mart) and residential properties. There is a significant amount of vacant land zoned commercial, industrial and residential.

If no transportation infrastructure improvements are made to these areas, travelers to and from existing developments will experience delays, the potential for crashes will increase, and limitations on the development of planned land use densities may occur, potentially causing pressure on the UGB and/ or pressure in other communities. The proposed project would serve all such development demands located within existing planned land uses and background growth on Oregon 214 and 219 related to developments in other northern Marion County communities.

4.2 Highway Facilities

The information in the following sections are presented by owning jurisdiction and functional classification. The function of a facility indicates the physical characteristics and
the design standards to be applied for safe use of the facility (e.g. lane and shoulder width, bike lane and pedestrian requirements, landscaping, parking, etc.).

4.2.1 State Facilities

**Interstate 5** is a six-lane freeway within the study area. I-5 is classified as a NHS Interstate with International Trade Corridor status. At Milepost 272, I-5 interchanges with Hillsboro/Silverton Highway. The interchange configuration is considered a standard diamond design, with diagonal ramps in each of the four quadrants.

**The Hillsboro/Silverton Highway.** Oregon 219 west of the southbound ramp and Oregon 214 east of the southbound ramp, is a major arterial. The highway is classified as a District level highway on the state system. Oregon 219 consists of a four-lane section with two travel lanes in each direction to Woodland Avenue, narrowing to a two-lane facility just to the west. At Woodland Avenue, there is a traffic signal accompanied with left turn lanes in both east and westbound directions and a right turn lane for the westbound direction. Arney Road is stop controlled and has a raised median preventing left turn movements and right turn auxiliary lane.

On the overpass, Oregon 214 consists of single through lanes in each direction from the southbound ramp eastward. Both ramps are controlled by traffic signals. The overcrossing structure has side-by-side left turn lanes providing a width of four lanes in total with a sidewalk on the north side of the structure. To the east of the southbound ramp, Oregon 214 consists of a through lane in each direction and continuous left turn lane. There are sidewalks on both sides of Oregon 214 in the vicinity of Lawson Avenue to the east. The existing Frontage Road, Lawson Avenue and Cascade Avenue are stop controlled. The intersections of Evergreen Avenue and Oregon/County Club Way are controlled by traffic signals.

4.2.2 City Facilities

**Woodland Avenue** is a two-lane street with a large landscaped median. It is under the jurisdiction of the City and classified as a Service Collector. There are two lanes at the intersection with Oregon 219, a left turn and shared left, through, and right turn lanes. There are no sidewalks back to Arney Road.

**Arney Road** is a two-lane street with bike paths and sidewalks. It is under the jurisdiction of the City and classified as a Service Collector whose primary function is to connect neighborhoods to activity centers. It’s connection with Oregon 219 is right in and right out only with a raised median preventing left turning movements.

**Lawson Avenue** is a two lane street without sidewalks, classified as a local road. The function of this facility is to provide circulation and access to property for short distances for relatively low volumes at low speeds. This classification of street would accommodate bicycle traffic in a shared lane with motorized vehicular traffic due to the relatively low volumes and low speeds.

**Evergreen Avenue** is a two-lane street classified as a Service Collector. There are existing sidewalks on Evergreen and no bike lanes. There is a left turn lane at the intersection with Oregon 214 for both southbound and northbound directions.
Oregon Way/Country Club are two-lane streets classified as an Access Streets. Golf cart traffic is permitted. There is a left turn lane at the intersection with Oregon 214 for both southbound and northbound directions. Country Club has sidewalks near Oregon 214 in the section that was realigned during the 1990s and Oregon Way does not.

Cascade Avenue is a two-lane street classified as a local road with sidewalks and on street parking. The function of this facility is to provide circulation and access to property for short distances for relatively low volumes at low speeds. This classification of street would accommodate bicycle traffic in a shared lane with motorized vehicular traffic due to the relatively low volumes and low speeds. The intersection with Oregon 214 has a left and right turn lane.

4.3 Non-Automotive Mode Facilities

Bike Facilities are lacking in the interchange improvement area. There are bicycle facilities that would be connected with the interchange improvement project along Oregon 214 to the east of the “S” curve past Cascade and then westward to Arney Road and Woodland Avenue.

Pedestrian Facilities in the immediate interchange area end abruptly on the east side of the northbound interchange ramp. The facilities that are in place along Oregon 214 are narrow with utility poles placed in the sidewalk making it difficult for people to pass by without stopping or moving towards motorized traffic.

Public Transportation is provided in the Woodburn interchange vicinity through several operators. Woodburn Transit System provides service Monday through Friday from 9 AM to 5 PM connecting residents to commercial opportunities along the route. The City of Woodburn provides paratransit for those unable to use the fixed route system with 24 hour advance notification. Oregon Housing and Associated Services operates WHEELS community Transportation Program in Marion County. They also provide for the Chemeketa Regional Transportation System (CARTS), an intercity route that connects Salem, Brooks, Woodburn, Hubbard, Mount Angel, and Silverton. Woodburn Medical Express transports patients to and from appointments from the Woodburn Medical Clinic to the Silverton Hospital. Greyhound operates three times daily between Portland and Woodburn. Hut is an airport shuttle service that provides service from Woodburn to the Portland International Airport.

Railroad - The Union Pacific Railroad provides through train service and freight service north of Hardcastle Avenue. The Willamette Valley Railroad, a short line operator, provides freight service along Front Street and Cleveland Street to serve local businesses. Willamette Valley also provides freight service to communities to the east of Woodburn on track leased from Union Pacific Railroad.

Passenger Rail - No passenger train stops are provided in Woodburn. The nearest passenger service is available in Salem. The Amtrak station in Salem operates seven days a week from 6:30 AM to 4:30 PM. A local group is currently exploring the possibility of using Willamette Valley Railroad equipment to develop excursion train service east to Silverton.
Airport - No commercial or private aviation facilities are located within the Woodburn UBG. Regional freight and passenger service is provided via the Portland International Airport, approximately 33 miles from Woodburn via I-5 and I-205. Although commercial service is not available, passenger service is accessible at the Salem Municipal Airport approximately 20 miles from Woodburn, and at Aurora State Airport approximately 10 miles from Woodburn.

Waterway - There are no water transport facilities with the Woodburn UGB.

Pipeline - There are no major pipeline transport facilities within the Woodburn UGB.

4.4 Recent and Planned Capital Construction Projects

The Statewide Transportation Improvement Program (STIP) identifies the transportation projects that the state will fund during its next four-year program. The STIP is updated every two years. These projects that are funded for construction are integrated into the Woodburn EA transportation analysis as committed projects. The 2002-2005 STIP includes $2.8 million for pavement overlay of Oregon 214 between Willow Avenue and Mount Angel (completed as an OTIA 1 project) and a $1.8 million short term improvement project between the northbound ramp and Evergreen to add a right turn lane for westbound to northbound movement at the northbound on-ramp.

The Woodburn Transportation System Plan (TSP) is in the process of being updated. It is likely the plan will be approved prior to the decision of the preferred alternative and production of the Revised Environmental Assessment for the Woodburn Interchange. The transportation analysis for the Woodburn Interchange is being done in careful coordination with the analysis being conducted and performed for the TSP. There are multiple scenarios under consideration for the TSP including three alternatives for each of the following topics; land use, highway, bike and pedestrian, and public transit. The assumptions being used for the Woodburn Interchange will be discussed in more detail in later sections under the methodology in Section 5.

4.5 Transportation Demand and System Management

Prior to developing project alternatives, the OHP Major Investment Policy requires that optimizing the existing system be examined in full prior to building new facilities. In the spirit of that policy, it is important to examine a range of system and demand management techniques in effort to avoid major investments when practical. For cities the size of Woodburn and situated along I-5, there are unique opportunities that exist for state and city facilities to lessen the overall demand on the system mostly outside of the immediate interchange vicinity. All of the significant regional and local planning documents were reviewed and their relationship to potential TDM and TSM measures were a part of the review.

4.5.1 Transportation System Management (TSM)

As part of the 2000 I-5 Woodburn Interchange Refinement Plan, the analysis indicated the benefits of transportation system management techniques alone are not enough to avoid the
need to make improvements to the interchange. The major issues needing to be resolved by this project are either too large for TSM measures to be effective on their own merit, or are unrelated to specific types of TSM measures that might be applied.

Potential TSM measures are typically presented for potential application to a specific project. The key frame of reference for the applicability of TSM measures are the specific needs that the interchange project must address. For this project, the interchange itself presents difficulties for potential TSM solutions beyond what ODOT and the City have already implemented.

- **I-5/Woodburn Interchange**—For the interchange, potential solutions must effectively address its geometric deficiencies and their relationship to both operations and safety for present and future traffic volumes. These issues cannot be effectively resolved through any typical TSM measures. There are no partial solutions to reconstruction of the interchange that would address these remedy deficiencies. The following are TSM measures that might typically be posed for an interchange located on an Interstate Highway, and the fundamental reason they do not apply here.

- **Ramp Metering**—Ramp metering is a solution that is typically proposed to manage traffic congestion and safety on the mainline of the freeway. I-5 through this section is not experiencing capacity or safety problems unrelated to the interchange. The congestion is on Oregon 214/219. Ramp metering as traditionally used on the interchange ramps would aggravate the congested situation.

- **HOV Lanes**—High Occupancy Vehicle (HOV) lanes are also a solution primarily oriented towards reducing traffic congestion on the mainline of the freeway. Further, HOV lanes are normally applied to roadways with a heavy component of commuter trips. In this situation, commuters are an element of the traffic but not the majority. Use of HOV lanes on Oregon 214/219 would create a lane imbalance and traffic weaving problem that would aggravate an already congested area.

- **Traffic Signal Timing Optimization**—Traffic signal timing optimization is another method suggested to make best use of the existing system while potentially improving volume to capacity ratios. ODOT and the City have been coordinating the traffic signal sequencing and coordination to the maximum benefit of safe travel through the interchange. In times of peak flow, staff have been on-site to manual fine tune traffic signal operations.

### 4.5.2 Transportation Demand Management (TDM)

The City, through their comprehensive planning process has carefully analyzed the balance of land use types and densities to accommodate growth with minimal adverse affects on the community within the framework of Oregon’s Land Use Planning Goals. There are situations where TDM combined with potential TSM measures can be implemented to avoid and/or defer major investments.

Through various transportation studies and literature, it has been found that voluntary TDM strategies, such as the employer-paid bus pass program can reduce vehicle miles traveled (VMT) by 3 percent, and that mandatory strategies, such as mandatory employer support, can reduce VMT up to 10 percent in metropolitan areas with a population base of
greater than 250,000 in population. Woodburn is not likely to achieve a 10 percent reduction through TDM. However, TDM will be beneficial in shaping the policy that will reduce the growth rate long term and is being dealt with through the TSP update process. The following will indicate the qualitative feasibility of TDM measures to have a benefit the performance of the Woodburn Interchange.

- **Fringe Parking and Ridesharing**—Fringe parking is most effective for commuter trips linking home to the workplace only. Additional trip links or flexibility in travel would not be applicable for trips made into and out of the interchange area related to travelers stopping for regional services such as restaurants, motels, and gasoline, or regional shopping trips to the Woodburn Factory Stores. These trips would be from decentralized locations throughout the region and/or state not interested in linking work trips with commercial trips. Fringe parking and ridesharing would not be expected to effectively address and resolve congestion problems of the interchange on their own.

4.5.3 **TSM/TDM Measures Implemented**
ODOT and the City have been working closely together to implement transportation system management measures incrementally. In the last decade traffic signals were added to the interchange ramps, Country Club was realigned with Oregon Way, and side by side left turns were added across the overcrossing structure. All of these measures are excellent examples of transportation system management measures. The next to be implemented is the westbound to northbound right turn refuge.
SECTION 5

Transportation Analysis

This section presents a description of existing socio-economics and land use, highway and non-auto mode facilities in and around the I-5/Woodburn Interchange area. It also discusses recent and planned capital construction projects within the metropolitan area.

The last part of this section describes TDM and TSM measures that were explicitly factored into the transportation analysis.

5.1 Study Area

The study area for the Woodburn/I-5 Interchange Project consists of Oregon 214/219 between Woodland Avenue and Boones Ferry Road/Settlemier Avenue. There is sufficient spacing from the Brooks Interchange to the north and the Donald/Aurora Interchange to the south on I-5 to ensure that there is no operational, geometric or safety effect of either interchange on the Woodburn Interchange. For this reason, I-5 mainline operations to the north and south of the Woodburn Interchange were not evaluated as part of this project.

5.2 Data Collection

Manual turning movement counts were collected for all study intersections on typical weekdays in January and April of 2003 in accordance with ODOT standards for traffic impact studies, Appendix A. The traffic count information included weekday PM peak period (4:00 to 6:00 PM.), which is when traffic volumes are highest on area roadways. For analysis purposes, the counts were balanced and seasonally adjusted to the 30th highest hourly volume based on ODOT’s Seasonal Factor Table.

5.3 Future Growth Forecasts

Future transportation demand within the City of Woodburn Urban Growth Boundary (UGB) was estimated based on forecasts prepared by ODOT’s Transportation Planning and Analysis Unit (TPAU) using the EMME/2 model. For modeling purposes, the City was divided into 104 Transportation Analysis Zones (TAZs). Approved population and employment forecasts were allocated for each of the TAZs for the existing year as well as year 2020.

Three land use scenarios were analyzed as part of the TSP update process and Comprehensive Plan Period Review. Scenario 1 assumes an increase in density over existing levels whereas Scenarios 2 and 3 assume a continuation of current household density trends. Scenarios 1 and 2 assume the same medium employment growth forecast with significant redevelopment and infill accommodating commercial (retail and service) demand. Scenario 3 assumed development of two new mixed-use centers (nodes) serving commercial development needs.
Considerable growth in industrial employment is anticipated in all scenarios although Scenario 3 is the most aggressive. The number of households within the Woodburn UGB is anticipated to grow by more than 5,700 units, which equates to an approximately 77 percent increase. The number of employees is anticipated to increase by more than 7,000, depending on the scenario; this equates to a 94 to 108 percent increase in employees within the UGB. Among the 2020 land use scenarios, there is an eight percent difference in the number of employees anticipated within the UGB. This difference primarily occurs in the industrial sector and to a lesser extent in the retail and service sectors. The locations of interest with greatest differences are related to the employment in the Parr Road and Crosby Road corridors.

Given the relatively small differences in PM peak hour traffic volumes between the land use scenarios, Scenario 3 was selected for use in the transportation analysis to address “worst case” traffic growth condition through 2020.

Intersection turning movements and street segment volumes were derived using the procedures outline in National Cooperative Highway Research Program (NCHRP) Report 2-55. This procedure accounts for a combination of existing turning movement counts and base and future model forecasts. The allocations were evaluated based on intersection spacing and the ability to provide access. These forecasts were escalated to 2025 for Woodburn Interchange Project assuming the design year is approximately 20 years after construction is complete and open to traffic.

The 2025 forecasts were prepared under the “No Build” condition without the Woodburn Interchange, which assumes currently committed transportation improvements, with construction funding, are made to the existing system. The results of the No Build Alternative analysis are used as a basis of comparison for the build alternatives.

5.4 Operational Analysis Methods

Operational analysis was performed for existing conditions, year 2003; future No Build, year 2025, and Build Alternatives, year 2025.

At individual intersections along the Hillsboro/Silverton Highway, volume-to-capacity ratios were used to evaluate the intersection operations. According to the functional classification of Oregon 214/219 as a district highway in the OHP, a maximum volume-to-capacity ratio of 0.70 is at the interchange ramps and 0.80 is required at the other study intersections, according to the ODOT Design Manual (ODM). Intersection operations were analyzed in accordance with the 2000 Highway Capacity Manual methodology and using the SYNCHRO analysis package.

5.5 Progression and Queuing Analysis Methods

A progression analysis was performed to evaluate the individual signalized study intersections as well as the study corridor. This analysis was performed using the SYNCHRO analysis package. This program’s input variables consisted of traffic volumes, intersection lane configurations, intersection signal phasing and timing, the spacing between study area intersections and the configuration of roadway segments connecting the
intersections. For the purposes of this analysis, signal timing and coordination was optimized to maximize individual traffic signal performance. Additional progression efficiency is possible with coordination among traffic signals and optimization based on actual field conditions.

Vehicular queue lengths at signalized intersections were calculated considering a 95 percent confidence level, i.e., spillbacks that would only be exceeded 5 percent of the time during the design hour. At unsignalized intersections, queues were estimated using SimTraffic, a traffic simulation program associated with SYNCHRO. At the corridor level, the traffic operations evaluation used two measures of effectiveness. These are reported by SYNCHRO and are discussed below.

- **Average Speed** – A measure of overall quality of flow for Oregon 214/219 from Woodland Avenue to Boones Ferry Road.

- **Bandwidth Efficiency** – A representation of the percentage of time devoted to moving the Oregon 214 traffic through the corridor. Bandwidth efficiency is divided into various upper and lower bounds that represent the quality of progression. The defined upper and lower bounds for bandwidth efficiency are as follows:
  
  - 0.00 – 0.12 – “poor progression”
  - 0.13 – 0.24 – “fair progression”
  - 0.25 – 0.36 – “good progression”
  - 0.37 – 1.00 – “great progression”

- **Queue Length** – A measure of the 95th percentile traffic queue length evaluated during PM peak hour demand. In other words, there is only a 5 percent chance the reported queue length will be exceeded.

### 5.6 Access Management and Local Circulation

The spacing of interchanges on the interstate system is governed by Federal Policy (23 CFR part 450). Access management spacing on ODOT highways is governed by Division 51 (OAR 734-051). In accordance with Division 51, the required spacing from a ramp terminal intersection to the nearest public intersection is 1,320 feet, with no private access allowed in this distance.

Exceptions to this standard require a deviation which may be granted on the basis of project specific circumstances comparing safety, operations, and cost of impacts in achieving full standards. The results of the 2000 I-5/Woodburn Interchange Refinement Plan was presented to the Oregon Transportation Commission (OTC). Staff sought guidance from the OTC regarding the likelihood of achieving standards in comparison of getting approval for a deviation to the access management standards. The OTC directed staff to protect future interchange improvements by balancing the need to achieve access standards while minimizing adverse impacts to existing development. To ensure the integrity of the system and to maintain this balance, the OTC provided the direction outlined below.

- Minimize displacements and relocations thorough examination of local circulation improvements to access property
• Maximize safety and operations by investigating appropriate application of access management measures while protecting the interchange investment into the future

• Seek consensus with local property owners and city staff on the solution package

The project team worked with the Region Access Management Team (RAM), as specified in Division 51, to apply the access management standards. The RAM determined a list of required and optional parameters that would result in acceptance of deviation approval. The required conditions were:

• In the sections between Evergreen and the northbound (NB) ramp, and Woodland and the southbound (SB) ramp there would be no private driveways and a raised median would be constructed.

• Traffic signals would be required at Woodland, Evergreen and the interchange ramps

The RAM also determined there were many other issues open to local property owners. The project team formed a stakeholder group referred to as the Local Access Circulation Committee (LAC) to make recommendations to the Stakeholder Working Group (SWG) prior to the selection of the alternatives to be evaluated in the Woodburn Interchange Project. The LAC made recommendations regarding public road connections at Arney Road and Lawson Avenue; access and circulation between Oregon/Country Club and Cascade; and location of accesses on side streets.

5.7 Transportation Analysis Results and Environmental Consequences

This analysis presents the results of an evaluation of peak period volume for each of the two Build and No Build alternatives, transportation performance, and transportation impacts common to all alternatives as well as impacts specific to each alternative. Refer to Section 3 for a description of the alternatives including the No Build Alternative, Alternative 1 (Widen Equal), and Alternative 2 (Widen North).

5.7.1 Interstate Impacts

No Build Alternative

There would be no additional mainline interstate capacity resulting from the no build or build alternatives. During peak periods, there would be times when traffic would back down the ramp onto the freeway shoulder. Occasionally, during this condition, there would be traffic in the right lane of I-5 that is stopped in attempts to merge into the traffic backed down the shoulder. This condition would not be improved with the No Build Alternative and would likely become more frequent without improvements.

Build Alternatives (Widen Equal and Widen North)

Relative to the interstate, the build alternatives would perform similarly. The build alternatives would have one off-ramp northbound and southbound, loop on-ramps for eastbound to northbound and westbound to southbound movements, and direct ramps for westbound to northbound and eastbound to southbound movements. In the build
alternatives, the improvement of the ramp terminal intersections would help to minimize the number of occasions when traffic backs onto I-5.

5.7.2 Projected Peak Hour Volumes

Travel demand will be presented as projected design hour traffic volumes. These volumes are the basis for analysis of traffic impacts. Each of the alternatives would experience similar daily traffic volumes throughout most of the study area as shown in Appendix B.

The Peak Hour Volumes were analyzed using traffic “volume” demand to facility lane “capacity” (V/C) as a numeric indicator of facility performance. As the numeric ratio approaches 1.0, the greater the congestion. Likewise, the closer the number to 0.0, the more free flowing the traffic functions. While it is possible to achieve numbers higher than 1.0 mathematically, there is no practical meaning other than failure which is characterized by sitting through several traffic signal cycles and making little progress during peak demand periods. Table 5-1 indicates the operational analysis results. See Appendix C for calculation sheets for the 2003 existing conditions, Appendix D for the future no build analysis, and Appendix E for future build analysis.

TABLE 5-1
Intersection System No Build and Build Alternatives (widen north and widen equal)
Design Hour Volume to Capacity Ratios

<table>
<thead>
<tr>
<th>Location</th>
<th>Traffic Control</th>
<th>V/C Mobility Standard</th>
<th>2003</th>
<th>2025 No Build</th>
<th>2025 Build</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodland Avenue</td>
<td>Signal</td>
<td>0.80</td>
<td>0.54</td>
<td>0.96</td>
<td>0.54</td>
</tr>
<tr>
<td>Arney Road</td>
<td>Stop</td>
<td>0.80</td>
<td>0.10*</td>
<td>0.19*</td>
<td>0.25*</td>
</tr>
<tr>
<td>I-5 Southbound Ramp</td>
<td>Signal</td>
<td>0.70</td>
<td>0.83</td>
<td>&gt;1.0</td>
<td>0.58</td>
</tr>
<tr>
<td>I-5 Northbound Ramp</td>
<td>Signal</td>
<td>0.70</td>
<td>0.81</td>
<td>&gt;1.0</td>
<td>0.63</td>
</tr>
<tr>
<td>Lawson Avenue</td>
<td>Stop</td>
<td>0.80</td>
<td>0.28*</td>
<td>0.84</td>
<td>0.11*</td>
</tr>
<tr>
<td>Evergreen Avenue</td>
<td>Signal</td>
<td>0.80</td>
<td>0.76</td>
<td>&gt;1.0</td>
<td>0.73</td>
</tr>
<tr>
<td>Oregon/Country Club</td>
<td>Signal</td>
<td>0.80</td>
<td>0.82</td>
<td>0.90</td>
<td>0.78</td>
</tr>
<tr>
<td>Cascade</td>
<td>Stop</td>
<td>0.80</td>
<td>0.39</td>
<td>0.36*</td>
<td>0.84**</td>
</tr>
<tr>
<td>Astor Way</td>
<td>Stop</td>
<td>0.80</td>
<td>0.43*</td>
<td>&gt;1.0*</td>
<td>0.42*</td>
</tr>
<tr>
<td>Boones Ferry/Settlemier</td>
<td>Signal</td>
<td>0.80</td>
<td>0.92</td>
<td>&gt;1.0</td>
<td>0.82</td>
</tr>
</tbody>
</table>
TABLE 5-1
Intersection System No Build and Build Alternatives (widen north and widen equal)
Design Hour Volume to Capacity Ratios

<table>
<thead>
<tr>
<th>Location</th>
<th>Traffic Control</th>
<th>V/C Mobility Standard</th>
<th>2003</th>
<th>2025 No Build</th>
<th>2025 Build</th>
</tr>
</thead>
</table>

Notes:

Asterisk indicates critical movement.

**Bold italics** and shaded indicates intersection does not meet standards for volume to capacity according to the Oregon Highway Design Manual.

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

**No Build Alternative**

The analysis indicates that under existing conditions, the interchange ramps, Oregon/ Country Club and Boones Ferry/ Settlemier would not meet mobility standards during peak hour periods. Traffic would flow with delays. In the No Build future year of 2025, Woodland Avenue, Evergreen Avenue and Astor Way also would not meet mobility standards. There would be five intersections at failure with significant traffic delay.

**Build Alternatives (Widen Equal and Widen North)**

With the build alternatives (future year of 2025), all intersections but Cascade would show improvement over the No Build Alternative and most would show improvement over existing conditions except Woodland Avenue and Arney Road. The ratio of vacant developable land within the urban growth boundary to developed land is higher on the east side of the interstate. There are alternative local routes to the Oregon 214/ Cascade intersection. It is likely that locals would seek alternative routes and “self regulate” the actual operational performance. Even though the Boones Ferry/ Settlemier intersection is outside the construction limits, build alternative operational performance would be improved over the existing conditions and future No Build Alternative conditions.

**5.7.3 Queuing and Traffic Progression**

A queueing analysis was conducted for the build alternatives to guide the appropriate design of turn lane storage lengths. Based on this analysis, all of the queues are anticipated to be accommodated by the build alternatives design, with one exception. Queues from the eastbound through movement at the Evergreen intersection may occasionally block right-turning traffic into Lawson Avenue. It is not practical to extend the right-turn lane any further given right-of-way constraints. This occasional queuing will not impact operations along Oregon 214.

A progression analysis was performed for traffic flow along Oregon 214/ 219. The results are shown in Table 5-2 shown below and the calculations are shown in Appendix F.

**TABLE 5-2**
Progression Analysis Results
<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>2003</th>
<th>2025 No Build</th>
<th>2025 Build</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Speed</td>
<td>16 miles per hour</td>
<td>10 miles per hour</td>
<td>18 miles per hour</td>
</tr>
<tr>
<td>Westbound Bandwidth</td>
<td>Good</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>Efficiency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastbound Bandwidth</td>
<td>Good</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>Efficiency</td>
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Bandwidth is an efficiency measure indicating the relative likelihood of traveling through all traffic signals in a series without having to stop.

**No Build Alternative**

The average travel speed would decrease from existing conditions of 16 miles per hour to 10 miles per hour due to increased congestion. The bandwidth would remain relatively the same as existing conditions.

**Build Alternatives (Widen Equal and Widen North)**

The average travel speed would increase from existing conditions of 16 miles per hour to 18 miles per hour with improvements. It is more likely that travelers would have to stop through the series of signalized intersections. However, the efficiency could be improved during design and construction, depending on how the traffic signals are timed in the corridor.

5.7.4 Impacts to Non-Auto Modes

The affected non-auto modes include freight or truck traffic, public transit, bikes and pedestrian travel. The following paragraphs discuss each of these categories and their specific impacts.

**No Build Alternative**

**Truck Traffic** – It is likely there would be increasing truck traffic demand at the interchange ramps associated with development of industrial lands. The operational characteristics for peak hour demand are covered in previous paragraphs. It is likely that safety would degrade as other motorists attempt to remedy congestion by running red lights resulting in further slow down of trucks starting their turning movement on the interchange ramps.

**Public Transit** – Public Transit vehicles would experience similar congestion and safety relative to other motorized traffic. Currently, there are no provisions for bus pull outs along Oregon 219/214.

**Bicycle** – There would be relatively no change from existing conditions. As congestion continues, bicycle travelers would likely attempt to ride up on the right hand side to bypass motorized vehicles. At intersections, motorists may not see bicycle traffic pull up on the right side creating high risk, turning conflicts for turning movements.
**Pedestrian** - There would be relatively no change from existing conditions. The lack of a continuous system for pedestrians today causes out-of-direction travel. During congested periods, pedestrians may be tempted to cut through traffic backups to shorten distances.

**Build Alternatives (Widen Equal and Widen North)**

**Truck Traffic** - Truck traffic flow would improve due to adjustments of the vertical approach grades to the interstate over-crossing structure. The entry speed to the interchange ramp intersections would increase to approximate normal operating speeds without the same concern for shifting loads as existing conditions.

**Public Transit** - Public Transit vehicles would experience similar congestion and safety relative to other motorized traffic. During the design phase, ODOT would acquire entire parcels in order to accommodate widening of Oregon 214 because of the severe impacts to current building improvements and uses. Not all of the property is required for the widening. ODOT may include bus pull outs to improve traffic flow prior to selling surplus property.

**Bicycle** - Improvements would include spaced designated for bicycle travel. Striping, signage and other traffic control devices will be designed to accommodate bicycle traffic parallel to travel lanes designated for motorized vehicles. The improvements would be typical of those found in urban settings and satisfying conditions of drivers’ expectations for safety and operation.

**Pedestrian** - Improvements would be made to pedestrian facilities. Sidewalks would meet design criteria for Americans with Disabilities Act. Utilities would be relocated and landscaping buffers will separate pedestrians from the curb, bike lane and motorized vehicle travel lane.

### 5.7.5 Access Management and Circulation

**No Build Alternative**

Congestion in the interchange vicinity would make access to and from properties and the interstate difficult during peak periods. Left turns from uncontrolled intersections and accesses during peak periods are frequently not practical due to traffic back ups and would worsen in the future.

**Build Alternatives (Widen Equal and Widen North)**

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 left turn between Arney Road and Woodland Avenue.

East of the interstate to Evergreen Road would include median barrier and eliminate all private road approaches. Lawson Way would remain open for right in only. This is necessary to relieve right turn movements from the intersection of Oregon 214 and Evergreen Road. Preliminary analysis indicates this would improve intersection operations as well as improve local circulation by providing choices to drivers. Local property owners located adjacent to Lawson and Oregon 214 would benefit through a more direct access.
opportunity for patrons. The McDonalds site frequently captures trucks, school activity buses, and recreational vehicles due to the ease of parking and this travel pattern would not be changed with either of the build alternatives. Right-out turning movements at Lawson Way would be prohibited. The potential for conflicts during peak travel demand is high. In addition, if there were a crash involving vehicles from right turning movements desiring immediate lane change to make a left turn at Evergreen Road, the potential of injury would be high due to the angle of incidence, should there be a crash.

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 open. Modifications of access may be required during the design phase based on field survey data.

From Evergreen to Oregon Way, there would be a raised median. Due to the lack of local streets parallel to Oregon 214, u-turns would be permitted at Evergreen Road and Oregon Way. Due to the proposed median, mid-block access may be permitted without adversely effecting travel. The City of Woodburn and ODOT may be required to eliminate direct access as redevelopment of Oregon 214 frontage occurs in the future. At this time, two access on the south and one access on the north were determined to be adequate.

5.8 Secondary Impacts

Secondary impacts are those effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. There are no anticipated secondary impacts.

5.9 Cumulative Impacts

Analysis of cumulative impacts requires the consideration of the impacts of potential past, present, and reasonably foreseeable future actions in combination with the impacts of the proposed project. The impacts of past projects are part of the description of existing conditions. Potential future projects are those transportation projects listed in Woodburn’s TSP and land development actions anticipated to occur as part of the full build out of undeveloped lands in the interchange area. Woodburn Factory Stores will be increasing the size of their operations.

5.10 Construction Impacts

It is ODOT’s policy to maintain reasonable access to businesses and residences during construction. Temporary delays in construction work zones would be limited to a specific time period and contractors would be carefully monitored for compliance. Contract language will be included with the project construction’s special provisions that bind the contractor to specific agreements reached with property owners during right-of-way negotiations.
SECTION 6
Interchange Capacity Improvement Measures

6.1 Description

Interchange Capacity Preservation Measures as they apply to transportation are defined as long-term performance enhancement mechanisms put in place by the City and/or State in support and protection of major investments\(^1\). Generally, these measures apply to land use and/or travel demand generated within a defined influence area where a major investment is made. Oregon Administrative Rule (OAR) 734-051 defines the requirements of an Interchange Area Management Plan. Compliance with this OAR is shown in Appendix G.

6.2 Background

Woodburn is serviced by only one interchange from Interstate 5 and this interchange provides access to northern Marion County, one of the State’s most agriculturally productive regions. Land uses surrounding the Woodburn Interchange were fully committed to development with the adoption of the 1981 Woodburn Comprehensive Plan. The existing interchange was reconstructed to service travel demands for a 20 year period and has been in service for nearly 30 years.

The City of Woodburn is situated in a location where rapid growth is likely to continue due to its relative accessibility to large metropolitan areas to the north and south, its supporting infrastructure, its locational advantage for providing industrial land, and available labor force. The City and State have been coordinating efforts to update their comprehensive plan, land use plan, and transportation system plan. The transportation system plan has been based on the proposed 20-year Woodburn population and employment projections and proposed land uses found in the draft 2004 Woodburn Comprehensive Plan, expected to be approved by the City of Woodburn in July of 2004.

The traffic forecast assumes a land use plan that will develop at a rate consistent with the citywide population and employment growth rates. Because Woodburn has provided a variety of industrial siting opportunities, vacant industrial lands may not fully develop during the planning period. The most likely property to redevelop is the commercial property located adjacent to Oregon 214 on the east side of the interchange. This property is expected to redevelop with a mixture of travel-related businesses. It is not likely that redevelopment would change peak hour trip generation dramatically.

The interchange improvement being planned is designed to meet Oregon Highway Plan and Oregon Design Manual operational standards through 2025 and accommodate the 2004 specific assumptions about the trip generation potential under the 2004 draft Comprehensive Plan.

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\(^1\) Major investments are defined in Policy 1G of the 1999 Oregon Highway Plan.
6.3 Short Term Interchange Capacity Preservation Strategies

Short term interchange capacity preservation strategies consist of opportunistic incremental improvements associated with development, maintenance and operational activities, and regulatory authority. The City of Woodburn and Oregon Department of Transportation have been working in cooperation to solve congestion problems in and around the interchange as evidenced by the following actions:

- Short term transportation improvements to facilitate traffic flow with priority given to the interstate and interchange ramps.
- Coordination of traffic monitoring of traffic signal operations during peak periods of travel demand such as Oktoberfest, Tulip Festival, and peak seasonal shopping events.
- City and State coordination efforts of updates to the local comprehensive plan, land use and urban growth boundary analysis, and transportation system plan.

Regulatory authority for the State of Oregon comes in the form of policy and administrative rules governing authority over federal and state system as granted through:

- State Agency Coordination Agreement (SAC 1990) - The purpose of this agreement is to guide the expectations and actions of coordination between state agencies and local government. Through framework contained in this document, the public service mission of each entity can be achieved and perceived conflicts resolved.
- Transportation Planning Rule (OAR 660-12) - This rule is one of several statewide planning rules that provide protection of the long term livability of Oregon’s communities for future generations. The rule requires multi-modal transportation plans to be coordinated with land use plans. In satisfying the goal, state and local governments must satisfy requirements that lead to implementation of a transportation system that functions consistent with the planned land uses.
- Access Management Rule (OAR 734-051) - This rule establishes access requirements to meet the best practices of safe land access and facility operations that have evolved over nearly a century of mixed mode transportation of people and goods.

The City of Woodburn has policy, development code, and City Ordinance language that applies to lands designated within the City limits and urban growth boundary. These measures include 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.
6.4 Medium Term Interchange Capacity Preservation Strategies

Medium term interchange capacity preservation strategies include essential features designed into the reconstruction of the interchange. Investment to reconstruct the Woodburn Interchange will improve the safety and operations of the interchange by replacing the diamond interchange with a partial cloverleaf interchange which will eliminate a left turning movement from Oregon 214 at the on ramps. After completion of the interchange modernization project, the alternative selected will provide sufficient capacity for a 20 year design life according to growth, population, and employment forecasts.

As part of the reconstruction of the interchange, medium term conservation measures to enhance traffic flow have been proposed as essential project elements to include; prohibition of full movement private accesses a quarter of mile east and west of interchange ramp terminals, design of public road approaches to minimize interference with intersection traffic control devices, and installation of raised medians from Woodland to Oregon Way along Oregon 219 and Oregon 214. While these proposed improvements do not fully meet policy and Oregon Administrative Rule standards, based on the cost of impacts to fully meet ODOT has deemed a deviation would be granted which is consistent with direction provided by the Oregon Transportation Commission when presented the results of the Woodburn Interchange Refinement Plan.

6.5 Long Term Interchange Capacity Preservation Strategy

A long term capacity preservation strategy has been developed in support and protection of the major investment improvements being planned for the Woodburn/I-5 Interchange. This strategy will become part of the overall Interchange Area Management Plan for the Woodburn Interchange.

The strategy consists of the creation of an interchange management area land use overlay zone where trip generation from the development of vacant land uses within the zone and comprehensive plan amendments will be managed within a specified trip budget. The trip budget is 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 Transportation System Plan and the Woodburn Interchange Environmental Assessment.

Budgeting trip generation in the interchange management area land use overlay zone will give the State assurances that the City intends to manage development intensity at planned levels and to preserve the capacity provided by the interchange improvement. This strategy will be implemented through development code revisions, intergovernmental agreements, and plan amendments. These changes will provide the City of Woodburn staff with the enforcement and implementation tools necessary to administer the trip budget and contribute to preserving the capacity of the interchange through legislated authority without compromising the fulfillment of the City’s plan.
6.5.1 Interchange Management Area Land Use Overlay Zone

The boundary of the Interchange Management Area Land Use Overlay Zone is shown in Figure 6-1 and defined as follows: Beginning at a point on the north urban growth boundary on Arney Road; thence west along the north urban growth boundary 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 Parr Road; thence easterly on Parr Road to Stubb Road; thence north on Stubb Road and its extension to the north to where the north Stubb Road extension intersects with an extension of Santiam Drive to the west; thence east along the west extension of Santiam Drive to the intersection of Santiam Drive and Columbia Drive; thence north along Columbia Drive to West Hayes Street; thence easterly along West Hayes Street to Oregon Way; thence northerly along Oregon Way and Country Club Road to Country Club Terrace; thence northerly along Country Club Terrace to the west extension of the north loop of Country Club Terrace; thence west along a west extension of the north loop of Country Club Terrace to Interstate 5; thence northeast along Interstate 5 to an intersection with an east extension of Arney Lane; thence west along the east extension of Arney Lane to the point of beginning.

The interchange management area land use overlay zone encompasses;

- XX acres of commercial lands (YY acres vacant)
- XX acres of industrial lands (YY acres vacant)
- XX acres of residential lands (YY acres vacant)

Within this zone, trip generation associated with redevelopment will be 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 currently interchange commercial and traveler services type uses.

6.5.2 Trip Budgets

The assumed total trip generation of all developable and re-developable land within the interchange management area land use overlay zone will serve as a 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. This interchange management area land use overlay zone 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 zone 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

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2 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 indicates that seasonal and special events are less than PM Peaks as well.
2003 existing trips generated within the overlay zone from 2025 forecasted trips generated within the overlay zone;

XXX 2003 PM Peak hour trips for existing developed land within the overlay zone are based on existing zoning and calibrated model output from the Woodburn Traffic model prepared and maintained by ODOT.

XXX 2025 PM Peak hour trips are based on trips associated with existing developed land and future forecasted trips associated with new development within the overlay zone based on 2025 trips assumed in the Woodburn Traffic model prepared and maintained by ODOT.

XXX 2025 PM Peak hour trips baseline budget are 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 Interchange Overlay Zone Trip Budget Baseline at the time of periodic review of the Comprehensive Plan and Transportation System Plan 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 zone due to the inability to control development patterns from neighboring cities and the greater northern Marion County area. The forecasted growth from other areas of Woodburn has been adequately accounted for in the Woodburn Transportation System Plan and traffic model. Given the relative accuracy of the traffic model as a forecasting tool (+ or – 10%), monitoring trip generation outside of the interchange management area land use overlay zone 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 interchange area management land use overlay zone.

6.5.3 Code Revisions

Woodburn is in the process of updating the Comprehensive Plan, Plan Policies, Development Code, and Transportation System Plan (TSP) in coordination with Marion County, the Department of Land Conservation and Development (DLCD) and the Oregon Department of Transportation (ODOT). The TSP update is based on the “preferred development scenario” adopted as the basis for the 2003 UGB expansion. The goals and policies listed below are proposed to be incorporated in the draft 2004 TSP and are expected to be approved prior to the selection of a preferred alternative for the Woodburn Interchange.

H. Transportation

Goal

H1. Adopt the Woodburn Transportation Systems Plan (TSP) to establish a framework for the development of facilities to move persons and goods in as safe, effective and efficient a manner as possible as required by
Statewide Planning Goal 12 (Transportation) and OAR Chapter 660, Division 12 (Transportation).

Policies
H1-1. Develop a transportation system that interconnects residential areas with employment centers, commercial areas, schools, parks, churches and regional transportation networks.

H1-2. Develop a street system wherein arterial streets are of sufficient width to accommodate traffic flows without interruption. Collector streets should function to conduct traffic between arterial streets, which serve to accommodate movement within neighborhoods.

H1-3. To ensure that state and federal highways with routes through the City are improved in accordance with projected traffic volumes and the elements contained within this plan.

H1-4. Develop a public transit system which will provide service and facilities to improve the mobility and accessibility of the transportation disadvantaged, consistent with ADA requirements and the Woodburn Transportation Systems Plan.

H1-5. The City shall encourage pedestrian safety and foster pedestrian activity, sidewalks shall be provided on all arterial, service collector, and access streets. Where possible, sidewalks should be detached from the curb, separated by a minimum 4-foot wide parkway strip.

H1-6. The City shall encourage large businesses in Woodburn to set up carpool and vanpool matching programs, based on employees’ residential location and work shift.

H1-7. Access to a development site shall be consistent with access management policies in the TSP. New development along state highways shall meet Oregon Highway Plan access requirements.

H1-8. Consistent with the TSP, driveway access along Highway 214 and Highway 99E shall be consolidated.

Goal
H2. Develop a transportation system that avoids or reduces reliance upon any one form of transportation.

Policies
H2-1. Encourage the development of transit services by route expansion, increasing levels of service and appropriate street design to facilitate movement of transit vehicles.
H2-2. Develop a bikeway and pedestrian system which will provide routes connecting residential areas to schools, parks, places of employment and commercial areas.

H2-3. Promote optimum efficiency within the transportation system by the use of traffic management techniques including access controls on major arterials.

H2-4. Encourage the design and development of transportation facilities that can be readily modified to accommodate future demands.

H2-5. The City shall encourage a reduction in parking for single-occupancy vehicle travel. Where carpool/vanpool, or shared parking is provided, minimum parking requirements may be reduced by 10%.

**Goal**

**H3.** Provide adequate levels of mobility with a minimum of energy consumption and environmental, social, aesthetic and economic impacts.

**Policies**

**H3-1.** Encourage the use and development of transportation modes which are the least energy consuming for the movement of people and goods.

**H3-2.** Provide a level of transportation services to the urban area that are compatible with the environmental, economic and social objectives of the community.

**Goal**

**H4.** Develop an area-wide bicycle and pedestrian plan.

**Policies**

**H4-1.** Make implementation of the area-wide bicycle and pedestrian plan a cooperative effort between the City of Woodburn and all other governmental jurisdictions within the area.

**H4-2.** Develop a comprehensive bicycle and pedestrian system including both on-street and off-street routes, which make pedestrian activity and bicycle riding feasible, safe and enjoyable as alternative modes of transportation in the area.

**H4-3.** Provide bicycle and pedestrian routes that connect residential areas with the major commercial, employment, recreational and institutional network of the area.

**H4-4.** Provide connections between local bicycle and pedestrian routes and other bicycle and pedestrian routes of a regional, state and national nature.

**H4-5.** Finance the bicycle and pedestrian system as much as possible with non-local funds. Where local funds are required, expenditures will be carefully programmed through the respective capital improvement programs of the various governmental jurisdictions associated with the plan.
H4-6. To ensure that all new commercial, industrial, institutional, residential and recreational developments consider the elements contained within the bicycle and pedestrian plan, the City will incorporate standards into its development code.

H4-7. Establish the administrative capability necessary to implement the area wide bicycle and pedestrian plan.

**Goal**

H5. Increase safety and improve security for pedestrians, bicyclists and bicycle equipment.

**Policies**

H5-1. Provide bicycle and pedestrian routes along arterial and collector streets as these streets are improved, or as programmed into jurisdictional capital improvement plans.

H5-2. Establish design standards for all new bicycle and pedestrian facilities that are consistent with state and federal design standards.

H5-3. Establish well-signed bicycle and pedestrian routes throughout the area by installing bike route signs, curb ramps and in some cases safety striping on streets and roads designated by bicycle and pedestrian use in the plan.

H5-4. Establish a bicycle and pedestrian safety plan by implementing an area wide educational and recreational program oriented toward teaching bicycle and pedestrian safety.

H5-5. Amend subdivision and zoning codes to require provisions of bicycle and pedestrian facilities.

**Goal**

H6. Increase the acceptability for bicycle and pedestrian use.

**Policies**

H6-1. Provide bicycle and pedestrian routes within all state, regional and local parks and recreation areas by applying for grant assistance to support the development of bicycle and pedestrian systems in parks and open space areas.

H6-2. Plan off-street routes along creeks and establish routes which lead to local and regional open space areas. Establish local loop routes which take advantage of local amenities and historical areas.

H6-3. Construct pedestrian facilities, rest stops, exercise loops and bicycle courses in selected areas.

H6-4. Encourage existing developments to install and construct bicycle and pedestrian facilities whenever improvements are planned.
Goal
H7. Coordinate with Marion County in planning for a safe and efficient county-wide transportation system by:
(a) Encouraging use of alternative modes of transportation including mass transit, bicycling, walking and carpooling; and
(b) Addressing transportation needs appropriate to both urban and rural areas throughout the county.

Policies
H7-1. Woodburn shall jointly plan with the county to meet the transportation needs in the future.
(a) The Marion County Transportation System Plan (TSP) will be designed to accommodate the forecast population, housing, and employment identified in the Framework Plan, except where modified by the Woodburn Economic Opportunities Analysis (EOA) and the acknowledged 2004 Woodburn Comprehensive Plan.
(b) Woodburn supports Marion County efforts to investigate countywide alternative transportation, such as inter-City transit, vanpooling, and passenger rail service serving the county and the Willamette Valley region.

H7-2. Woodburn will implement street connectivity standards and street plans as provided in the Woodburn TSP.
(a) Except where topographical conditions or existing development make this standard impractical, new subdivisions and planned developments should have internal connectivity of at least 8 through streets per mile (roughly every 660 feet) for new development, and sufficient collector and arterial systems for local access.
(b) The TSP shall include a map depicting future street connections for areas to be urbanized. This is especially important in Nodal and Industrial Overlay areas. The County will coordinate and adopt similar standards for urban areas within its planning jurisdiction.
(c) When feasible, the County will utilize local standards such as those in the Woodburn TSP and Woodburn Development Ordinance for development that occurs on unincorporated lands within UGBs.

H7-3. Woodburn will support Marion County efforts to provide transit connections within and between cities. The Woodburn TSP shall include transportation plans for the Woodburn Transit System that is consistent with the population and employment projections in the Woodburn Comprehensive Plan and coordinated with the “preferred alternative” found in the County Framework Plan.

H7-4. Woodburn should provide for a complementary mix of land uses and transportation systems by providing for mixed use development in the
Downtown Development and Conservation (DDC) and the Nodal Development Overlay (NDO) districts.

**H7-5.** Woodburn shall consider traffic calming of through traffic in neighborhoods. Woodburn will coordinate with Marion County in making recommendations for methods and procedures for traffic calming that directly affects a county road, developing recommended best practices for methods, locations, and processes for traffic calming in both existing and new developments.

**H7-6.** Woodburn will coordinate with Marion County in planning for freight movement by both rail and truck.

**H7-7.** The Woodburn TSP shall include measures to improve the walking and biking environment by providing sidewalks in all new developments and by providing an interconnecting system of pedestrian connections. Designing for a comfortable and practical pedestrian environment is especially important in Downtown Woodburn and within the Nodal Overlay District.

**Goal H8.** 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.

**Policies H8-1.** The Woodburn TSP shall minimize potential adverse impacts to state highway facilities through the following measures:

(a) Peak hour trip generation estimates and numerical ceilings based on land uses permitted by the 2004 Woodburn Comprehensive Plan shall be determined for the Interchange Management Area Land Use Overlay.

(b) The City will coordinate with ODOT in monitoring trip generation impacts within the Interchange Management Area Land Use Overlay, 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 the Interchange Management Area Land Use Overlay.

(d) Comprehensive Plan amendments that exceed the trip generation ceiling within the Interchange Management Area Land Use Overlay shall be prohibited.

(e) Comprehensive Plan amendments from Residential or Industrial to Commercial shall be prohibited within the Interchange Management Area Land Use Overlay, except where there is no net increase in Commercial land area created within the Interchange Management Area Land Use Overlay.
(f) Woodburn shall provide ODOT with copies of transportation impact studies upon request, and as part of the Periodic Review process.

(g) Woodburn shall coordinate with ODOT, DLCD and Marion County to address potential service deficiencies affecting state highway facilities through the Periodic Review process.

H8-2. The City shall cooperate with ODOT to implement medium term conservation measures to limit access to Highways 214 and 219. Such measures shall include, but shall not be limited to:

(a) Limitations or prohibition on private access within a quarter of mile east and west of interchange ramp terminals;
(b) Access controls on, public road approaches; and Raised medians from Woodland to Oregon Way along Highways 219 and 214.

In order to implement Goal H8 and its related policies, the City of Woodburn and ODOT will take the following actions and assume the following responsibilities:

### 6.6 City Actions

- Adopt goal and policies to conserve long term interchange capacity resulting from a major investment.
- Adopt an interchange management area land use overlay zone with a 2025 new trip generation budget.
- Amend its development code to require developers to perform a traffic impact study for all developments generating within the overlay zone more than 600 daily vehicle trips or more than 100 trips during the peak hour of the closest collector and/or arterial road.
- Amend its development code to prohibit comprehensive plan amendments that compromise the ability to meet the trip budget limitations.
- Amend its development code to prohibit land use and zoning changes from industrial or residential zones to commercial zones within the interchange management area overlay zone, that result in a net increase of commercially zoned land within the interchange management area land use overlay zone.
- Jointly develop with ODOT a procedure for calculating trips and managing the trip budget and adopt this procedure as part of its TSP and development code.
- Amend its development code where necessary to promote job types that help to fulfill the City’s vision of planned growth in the community and the interchange management area land use overlay zone.
- Amend its development code to establish that consumption of trips within the interchange management area land use overlay zone will occur on a first come, first serve basis.
• Amend its development code to establish that land use and zoning changes will not be allowed within the interchange management area land use overlay zone unless it can be demonstrated that the trip generation budget will not be violated and that the change will result in development and job types that help to fulfill the City’s economic development objectives.

6.7 State Actions

• The State will facilitate the completion of interchange improvements as funding allows and according to intergovernmental agreement terms and conditions to be determined collaboratively with the City.

• The State will assist the City with long-range traffic modeling, interchange operational management and monitoring, and development review.

6.8 City Responsibilities

• The City staff will perform administrative function to track development applicant trip generation for the interchange overlay zone based on traffic impact study analysis results.

• The City will coordinate with ODOT in developing minimum requirements for traffic impact studies.

• The City will require development applications with more than 100 peak hour trips within the interchange overlay zone to submit a Traffic Impact Study to ODOT for timely review and comment.

• The trip budget balance, maintained by City staff, will be updated based on the approved Traffic Impact Study as development is approved.

• The City will participate in analysis and review of the trip budget baseline during periodic updates to the Comprehensive Plan or the Transportation System Plan. Adjustments to the trip budget baseline will be jointly agreed to by ODOT and the City.

6.9 State Responsibilities

• ODOT will monitor and review changes in the trip budget that occur with all major developments.

• ODOT will review and comment on Traffic Impact Studies prepared for development with the Interchange Management Area Land Use Overlay Zone, in a manner that permits the City land use decisions within 120 days.

• ODOT will participate in analysis and review of the trip budget baseline during periodic updates to the Comprehensive Plan or the Transportation System Plan. Adjustments to the trip budget baseline will be jointly agreed to by ODOT and the City.