Revised Environmental Assessment
Woodburn Interchange and Transit Facility
Woodburn, Oregon

Utilities Technical Memorandum

Prepared for:
Federal Highway Administration
and
Oregon Department of Transportation

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Introduction

The purpose of this utilities technical memorandum is to discuss and disclose any potential environmental effects that may result from the proposed improvements to the Woodburn Interchange and Transit Facility. The project has been previously evaluated under the National Environmental Policy Act (NEPA) and documented in a 2005 Environmental Assessment (EA) and again in 2006 in a Revised Environmental Assessment (REA). Additionally, changes have occurred in the affected environment and to regulations and policies relevant to the proposed project. This evaluation documents changes to the project design, affected environment, and relevant regulations and policies and any potential environmental effects as a result of those changes.

Project Background

The Woodburn Interchange is located on Interstate 5 (I-5) at milepost (MP) 271.85 in Marion County, Oregon, see Figure 1. The overcrossing roadway is Oregon Highway 214 (OR 214) east of the interchange and Oregon Highway 219 (OR 219) west of the interchange. The proposed project consists of reconstruction of the northbound and southbound highway ramps and widening of the overcrossing, as well as related improvements along the OR 214 and OR 219 approaches to accommodate the reconfigured interchange. The project also includes construction of a public transit center at the northwest corner of OR 214 and Evergreen Road.

The 2006 REA analysis of the Recommended Interchange Alternative did not comprehensively address the development of the public transit facility, which is identified in the Woodburn Interchange Area Management Plan (IAMP) as a component of the improvements supporting the function of the reconstructed interchange. Due to this omission, it is necessary to incorporate the potential effects of the transit facility into a Re-evaluation of the 2005 EA and 2006 REA. The Re-evaluation will update technical studies and findings, as needed, to address the transit facility and analyze the completeness of the preceding environmental reports in terms of the latest available information on the interchange design and refinements, changes in the affected environment, regulatory changes, and NEPA compliance. The Re-evaluation and supporting technical reports will not be stand-alone documents, but rather supplement the previous environmental documentation.

The interchange is the only I-5 connection (Exit 271) within the City of Woodburn and also provides access to northern Marion County. Woodburn has grown to a population of 24,080 in 2010, a 20% increase from its 2000 population. In the same time period, Marion County’s population increased by 10.7% to 315,335 people. Average Annual Daily Traffic on I-5, taken from an ODOT traffic counter 0.3 miles south of the Woodburn Interchange, was 81,900 vehicles in 2009 (41,190 vehicles southbound and 40,710 vehicles northbound). At the interchange, average daily traffic (ADT) volumes on the ramps ranged from 6,620 ADT (northbound off-ramp) to 7,810 ADT (northbound on-ramp) in 2009. Total volume of all four ramps was 28,830 vehicles. The ramp
volumes show a substantial increase (89.2%) in traffic over previous years—in comparison, total ramp traffic volume in 2001 was 15,240 vehicles.

The Woodburn Interchange Project (Key No. 15739 (OR 214 @ Evergreen Rd. Transit Facility); Key No. 12518 (I-5 @ OR 219/214)) is intended to address existing operational and safety deficiencies that are anticipated to worsen with continued growth in Woodburn and the Willamette Valley as a whole. Safety deficiencies are characterized by high crash rates at six intersections and inadequate queuing storage at the southbound off-ramp, leading to traffic queues that occasionally back on to the shoulder of southbound I-5. Road grades that exceed acceptable standards are present on the eastbound and westbound approaches to the overcrossing bridge, resulting in poor sight-distance for drivers and creating delay. To help alleviate these issues and enhance overall function of the interchange area, geometric and capacity improvements to the road network are proposed as well as enhancements to pedestrian/bicycling facilities and multi-modal connectivity.

Figure 1. Project Vicinity Map
As noted earlier in this report, considerable time has been spent studying potential effects of the proposed interchange improvements on transportation conditions and the surrounding environment. An Environmental Assessment was completed in 2005. In 2006, the Recommended Interchange Alternative was evaluated in a Revised Environmental Assessment, which updated the 2005 EA, as needed, based on acceptance of the preferred alignment alternative. Following review of these environmental documents, a Finding of No Significant Impact (FONSI) was signed by the Federal Highway Administration in December 2006.

The Final Interchange Area Management Plan (IAMP) for the Woodburn Interchange, published June 2006 and adopted by the Oregon Transportation Commission (OTC), documents interchange management measures agreed to by the City and ODOT. It summarizes information on the Woodburn Interchange Project's background, purpose and need, relevant plans and policies, land use and environmental issues, transportation conditions and deficiencies, alternatives development and analysis, plan recommendations, public involvement, and implementation strategies.

Project Description

The Recommended Interchange Alternative is a hybrid of the “widen north” and “widen equal” alternatives (developed and evaluated in the 2005 EA) that would reconstruct the interchange at the junction of I-5 and OR 214 and OR 219 to a partial cloverleaf-A (loop ramps in advance of the overcrossing structure of I-5) and widen OR 214 and OR 219 equally or northerly of the existing centerline, depending on the segment. The Recommended Interchange Alternative widens the overcrossing structure to the north. The design alignment along existing OR 214 east of the Woodburn Interchange is addressed using the following principles:

- Public support for widening north of the existing centerline west of Evergreen Road.
- Shift the alignment towards an equal widening on both sides of the existing centerline, as is practical and feasible, between Evergreen Road and Cascade Drive.
- Between Evergreen Road and Cascade Drive, particular attention should be given to minimizing impacts, as is practical and feasible, to the property currently occupied by Kentucky Fried Chicken and to the Senior Estates properties adjacent to Oregon 214.
- East of Cascade Drive, particular attention should be given to providing as much space as is practical and feasible between the medical offices at the southeast corner of Oregon 214 and Cascade Drive and the back of the sidewalk running along the south side of Oregon 214.
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The Recommended Interchange Alternative includes new 6-foot sidewalks with an additional 6-foot wide landscaped buffer between the sidewalk and the curb. A bicycle lane is provided in each direction along OR 214 and OR 219. A raised median is added and modifications to access for city streets would be made at Oregon Way, Evergreen Road, and Lawson Avenue. Further, the project alternative provides dedicated turning lanes onto local streets at key intersections with OR 214 along with local street improvements along Old Arney Road (MP 36.63), Lawson Avenue (MP 36.95), Evergreen Road (MP 37.02), Oregon Way/Country Club Road (MP 37.14), and Cascade Drive (MP 37.27).

To support multi-modal use, the project includes a new transit park and ride facility in the northeast quadrant of the interchange at the intersection of OR 214 and Evergreen Road, and an extension of Evergreen Road north of OR 214 to Country Club Court. The transit site, located north of OR 214 and between the extended Evergreen Road and I-5 northbound on-ramp, will facilitate alternative mode (bus) travel at the interchange. The Evergreen Road extension will provide alternative access to adjacent properties during and after construction.

Per discussion with ODOT staff, it is anticipated that construction staging areas will be located within the project footprint.

Purpose

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

Need

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

Project Design Changes
The project design concept is the same as the alternative evaluated in the 2006 REA with the exception of a transit park and ride facility. The transit park and ride facility is planned at the northwest corner of OR 214 and Evergreen Road. While the transit facility has been part of the interchange concept for some time, it was not evaluated as part of the Recommended Interchange Alternative in the 2006 REA. Inclusion of the transit center involves extension of Evergreen Road to the north along the existing northern leg of the OR 214 / Evergreen Road intersection, providing improved access to the transit center and adjacent properties. Although the extension of Evergreen Road was an element of the Recommended Interchange Alternative and included in the previous environmental analysis, the design and evaluation of the transit center was not included in the 2006 REA.

A Utility Technical Report was prepared by CH2MHill (January 2004) for the 2005 Environmental Assessment. The report analyzed the potential effect to utilities from the alternatives evaluated in the EA. Since completion of the previous environmental analysis, the ODOT Right of Way Manual has been updated (last updated January 2011). The Manual reflects federal and state policy regarding utility relocation and placement.

Area of Potential Impact
For the purposes of this analysis, the Area of Potential Impact (API) is the study area shown in Figure 1. This is inclusive of the transit center that was not previously analyzed.

Relevant Policies and Regulations

Relevant policies and regulations are provided as a reference. The only updated guidance from the previous analysis is the ODOT Right-of-Way Manual. The other relevant policies and regulations listed below are unchanged.

Federal
The Code of Federal Regulations contains rules related to utilities:

23 CFR 645A Utility Relocations, Adjustments and Reimbursement
23 CFR 645B Accommodation of Utilities
23 CFR 172 Administration of Engineering and Design Related Service Contracts
48 CFR 31 Contract Cost Principles and Procedures

Utility Relocation and Accommodation on Federal-Aid Highway Projects
This is utility program guidance created by FHWA for highway projects. ODOT refers to this guidance for Federal-Aid projects.
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State

ODOT Right-of-Way Manual (updated January 2011)
The ODOT-ROW-Manual is regularly updated to reflect federal and state policy regarding land acquisitions, appraisals, access rights, utilities, displacements, and relocation procedures.

Oregon Administrative Rule (OAR) 734, Division 55
This rule applies to and governs the location, installation, construction, maintenance and use of pole lines, buried cables, pipe lines, signs, miscellaneous operations upon State Highway right-of-way and properties under the jurisdiction of the Department of Transportation.

Oregon Administrative Rule (OAR) 952, Division 1
This establishes the Oregon Utility Notification Center and procedures to follow for any projects that require excavation.

Local

City of Woodburn Ordinance No. 1795
This ordinance establishes construction permit fees for work in the public right-of-way in the City of Woodburn. A permit is required for all street, water, sewer, and storm drain service connections, installations, and alterations. The permit is issued by the Woodburn Public Works Department.

Environmental Consequences

Construction of the transit facility will impact additional underground utility infrastructure that was not previously analyzed. Utilities present in the API are detailed below in the Existing Conditions section. The existing conditions are unchanged from the previous analysis, but more detail may be provided since a Subsurface Utility Engineering report was drafted in April 2011. Potential project affects are discussed in the Potential Impacts section.

Existing Conditions

Existing active utilities in the project area include water, gas, sanitary sewer, storm sewer, power, and communications (telephone, cable, fiber optics). Utility owners/providers are shown below:

- City of Woodburn (water, sanitary sewer, storm sewer)
- ODOT (storm sewer)
- Northwest Natural (natural gas)
- Data Vision Communications (communications)
Utilities

- Qwest (communications)
- Wave Broadband (communications)
- Bonneville Power Administration (power)
- Portland General Electric (power)

The following descriptions of utility infrastructure are taken from the draft Subsurface Utility Engineering (SUE) report, prepared for this project by MSA (April 2011).

Water
The City of Woodburn has extensive underground transmission and distribution facilities throughout the project area. The largest water facility in the project is a 12-inch diameter cast iron transmission line located on the south side of OR 219/214 from Woodland Avenue to Lawson Avenue. The City also owns a 12-inch diameter ductile or cast iron waterline transmission and distribution line located at the west side of Woodland Avenue, Lawson Avenue, and Evergreen Road. Other facilities consist of 10-inch, 8-inch and 6-inch diameter ductile iron waterlines branching off of the 12-inch mains at various locations and intersecting streets throughout the project area, as well as a number of fire hydrants.

Gas
Northwest Natural (NWN) owns underground facilities throughout the project area. The primary gas facility in the project area is a 6 5/8-inch diameter wrapped steel pipe that parallels the north side of OR 219/214 from Willow Avenue to Cascade Drive. NWN also owns a 6-inch diameter polyethylene gas line along the west side of Evergreen Road and a 4-inch diameter polyethylene gas lines along the west side of South Woodland Avenue, and west and north side of Arney Road. Smaller diameter (2-inch to 1-inch) steel wrap and/or polyethylene gas lines tie into the 6 5/8-inch and/or 4-inch diameter mains at all intersecting streets.

Sanitary Sewer
The City of Woodburn has extensive collection and conveyance facilities throughout the entire project area. These sewer lines generally consist of 18” to 8” PVC or concrete and are located on the south side of OR 214 between Cascade Drive and Frontage Road, as well as on Cascade Drive, Oregon Way, Country Club Road, Arney Road, Woodland Avenue, and within the Transit Facility site. In addition, record drawings from the City of Woodburn indicate that a sanitary sewer force main runs on the south side of OR 219/214 from Woodland Avenue to Cascade Drive. City staff confirmed that this line is abandoned.

Storm Sewer
Existing storm sewer facilities are located throughout the project area. The State owns and maintains the storm facilities inside the State’s right-of-way (ROW), while the City of Woodburn owns any other facilities located outside the State’s ROW. Generally, existing storm facilities consist primarily of a series of inlets and connecting pipes along both sides of the OR 219 and OR 214 highways.
UTILITIES

Storm pipes range in size and material from 8” PVC in some collectors to 54” CMP main lines emptying into drainage ditches.

Power
Portland General Electric (PGE) owns and operates underground and aerial transmission lines throughout the project area. Bonneville Power Administration (BPA) also owns and operates a high voltage aerial transmission line located parallel to the west side of I-5. The BPA aerial transmission lines run along Arney Road and cross OR 214/219, continuing south along I-5.

Communication
Qwest Communications has underground telephone facilities throughout the project limits including direct buried cable, conduit, and duct banks. Wave Broadband, a cable TV, high speed internet, and phone service provider owns and operates communication facilities throughout the project area. These facilities are generally underground on the north side of OR 219 between Willow Avenue and Woodland Avenue, on the west side of Woodland Avenue, and on the north side of Arney Road west of I-5. These underground facilities generally consist of direct buried cable, PVC and PE conduit and range in depth to top of facility from 0.85 to 2.5 feet. Underground facilities observed east of I-5 include an approximately 830 foot long 2” PVC service to Holiday Inn Express from Country Club Court at a depth of 4.5 to 5.5 feet, and on the east side of Oregon Way south of OR 214.

Overhead facilities within the project limits exist along a short section of Arney Road on the north side of OR 214 from Country Club Road to Broughton Way, with an aerial crossing running south on the east side of Cascade Drive for approximately 600 feet, and running west on the south side of OR 214 for 300 feet. The most significant overhead facilities include fiber on PGE poles on the south side of OR 219/214 throughout the project from Woodland Avenue and continuing east of Broughton Way.

Data Vision Communications, a division of Gervais Telephone Company, owns and operates cable TV, high speed internet, and phone service within the project area. Underground facilities observed east of I-5 include three 1.5” diameter conduits along the east side of Cascade Drive and the south side of OR 214 east of Cascade Drive.

Potential Impacts

Project related construction impacts will likely occur due to the planned widening of the existing bridge and highways, installation of storm drainage facilities, retaining and/or sound wall construction, realignment of cross streets, and construction of the transit facility. In addition to potential impacts documented in the previous Utility Technical Report for the Woodburn Environmental Assessment, construction of the transit facility will potentially affect various utilities. This includes sanitary sewer pipe, water pipe, natural gas pipe, communication lines, power lines,
and stormwater catch basins and pipe. Another likely affected element is traffic control infrastructure with the extension of Evergreen Road—i.e. signals, loops, pedestals, vaults, and cabinets.

Within the API, many of the utility facilities are located within existing road right-of-way, but there are exceptions where utilities are present on easements through private property. Utilities that conflict with proposed construction would need to be relocated from existing right-of-way or easements to replacement right-of-way or easements. The preliminary Woodburn Interchange design has placed utility / slope easements at locations behind the right-of-way of affected streets.

Although many utilities could be affected, routine alteration and relocation of electric, communication, water, and sewer services is expected for a reconstruction project this size. Stormwater facilities will be incorporated into the project design and affected facilities will be altered or replaced as needed. New storm sewer lines are proposed to extend east of the project area to the North Boones Ferry Road / North Settlemier Avenue intersection; this work will occur in existing OR 214 right-of-way.

The interchange project should avoid impacts to significant utilities if at all feasible. A significant utility in the project area is a high-voltage aerial transmission line located parallel to the west side of I-5, owned by Bonneville Power Administration (BPA). A section of this line will need to be temporarily powered down during construction of the project. No permanent disruptions will occur. ODOT received a permit from BPA to initiate work under the power lines and to ensure a minimum vertical clearance is maintained.

**Possible Mitigation**

Utilities are typically governed by franchise agreements between the utility provider and the jurisdiction where they are located. When located within the public road right-of-way, utility coordination is addressed through the policies of the agency that has jurisdiction over the right-of-way. For ODOT, utilities that occupy existing highway right-of-way by permit are required to relocate at the cost of the utility provider. ODOT is responsible for the relocation cost of facilities that pre-exist on private property or are city facilities within city street right-of-way.

Due to the long lead time associated with utility relocation, it is recommended that coordination and negotiation with utility providers begin early in the design schedule. As recommended by the previous Utility Technical Report, Subsurface Utility Engineering was conducted to increase the efficiency of this process. As a result, a MicroStation model was completed showing the horizontal and vertical location of underground utilities to facilitate coordination between project designers and utility providers. Potential impacts are minimized when the precise location of all underground utilities are verified.
### Utilities

For greater efficiency, it is recommended that all new right-of-way and utility easements be purchased in advance of construction. Where feasible, overhead and underground utility work could proceed before roadway widening. As the stormwater design is established, it will likely require additional right-of-way for treatment facilities. This will need to be coordinated with the roadway design to minimize conflicts with existing utilities and to recognize opportunities for joint usage areas (storm facilities and utilities). Ongoing coordination between the contractor, utility providers, and ODOT staff (or utility coordinator consultant) will be needed to deliver a timely, cost effective project. During construction, service disruptions to adjacent homes and businesses should be minimized.

### Conclusion

New potential impacts are likely as a result of constructing the transit park and ride facility, located at the northwest corner of OR 214 and Evergreen Road. Affected utilities in the transit facility area include sanitary sewer pipe, water pipe, natural gas pipe, communication lines, power lines, and stormwater catch basins and pipe. In addition, relocation and installation of traffic signals, loops, pedestals, vaults, and cabinets is anticipated. Owners and operators of these facilities are the City of Woodburn, ODOT, Northwest Natural, PGE, and communication service providers (Data Vision Communications, Qwest, Wave Broadband).

No other new impacts are anticipated. Potential impacts of the interchange project and related roadway improvements (outside of the transit facility) previously anticipated and discussed in the Utility Technical Report (CH2M-Hill, 2004) remain the same. Potential impacts documented in the 2004 report are repeated in Table 1 below.

At this stage of the project, specific impacts to utilities have yet to be fully documented. As the interchange design progresses and becomes more refined, the precise extent of the affected utilities will be better known. The SUE investigation will help identify impacts to underground utilities and facilitate the avoidance of impacts, where feasible. ODOT utility coordinators will need to be actively involved in this process to ensure the efficient relocation of facilities and minimal disruptions to service.
### Utilities

#### Table 1: Woodburn Interchange and Transit Facility Summary of Potential Impacts, Benefits and Mitigation Measures

|--------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Utilities                | • No significant adverse impacts  
• Aerial utilities (TV cable and PGE) on the south side of OR 214 between I-5 and Evergreen Drive would be impacted by the proposed roadway widening and require relocation  
• All aerial utilities (PGE) on the north side of OR 214 from Oregon Way to east of Cascade Drive would be impacted.  
• The realignment of Old Arney Road would require the relocation of all existing buried utilities, which include electric, telephone, and gas lines.  
• Relocation of a single utility pole at the following three locations:  
  • 1) SW corner of OR 219 and Woodland Drive (PGE)  
  • 2) NE corner of OR 214 and Cascade Drive (PGE and TV cable)  
  • 3) SE corner of OR 214 and the I-5 NB ramps (PGE and TV cable) | • No significant adverse impacts  
• Potential relocation of utility facilities at the transit center site--sanitary sewer pipe, water pipe, natural gas pipe, communication lines, power lines, and stormwater catch basins and pipe.  
• Alteration and installation of traffic controls at Evergreen Road extension--signals, loops, pedestals, vaults, and cabinets.  
• Aerial utilities (TV cable and PGE) on the south side of OR 214 between I-5 and Evergreen Drive would be impacted by the proposed roadway widening and require relocation  
• All aerial utilities (PGE) on the north side of OR 214 from Oregon Way to east of Cascade Drive would be impacted. | • Purchase new right-of-way and utility easements in advance of construction.  
• Conduct utility relocations prior to roadway widening.  
• Coordinate stormwater facility right-of-way with roadway design to minimize conflicts with existing utilities and to recognize opportunities for joint usage areas.  
• Initiate coordination and negotiations with utility providers early in the design schedule – provide utility owners with advance plans of the interchange project design.  
• Utilize SUE investigation to minimize conflicts with underground utilities and avoid schedule delays due to “unknown” conflicts. |
## Utilities

Table 1: Woodburn Interchange and Transit Facility Summary of Potential Impacts, Benefits and Mitigation Measures (Cont)

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<td>• Underground telephone, gas, and water running along the frontage road located at the SE quadrant of the interchange (adjacent to Trailer World) would be removed for construction of the proposed NB off ramp</td>
<td>• The realignment of Old Arney Road would require the relocation of all existing buried utilities, which include electric, telephone, and gas lines.</td>
<td>• Relocation of a single utility pole at the following three locations:</td>
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<td>• Roadway widening would require the relocation of four pad-mounted transformers.</td>
<td>• Relocation of a single utility pole at the following three locations:</td>
<td>1) SW corner of OR 219 and Woodland Drive (PGE)</td>
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<td>• Roadway widening would require the relocation of four pad-mounted transformers.</td>
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<td>• New storm sewer lines are proposed to extend east of the project area to the North Boones Ferry Road / North Settlemier Avenue intersection; this work will occur in existing OR 214 right-of-way.</td>
<td>• Temporary de-powering of BPA transmission line during construction</td>
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Utilities

References

23 CFR 645A Utility Relocations, Adjustments and Reimbursement

23 CFR 645B Accommodation of Utilities

23 CFR 172 Administration of Engineering and Design Related Service Contracts

48 CFR 31 Contract Cost Principles and Procedures

City of Woodburn Ordinance No. 1795.
http://www.ci.woodburn.or.us/administration/ordinances/WoodburnCityOrdinance2011.pdf

Oregon Administrative Rule (OAR) 734, Division 55

Oregon Administrative Rule (OAR) 952, Division 1


