

**I-5 Interchange 19 (North Ashland)  
Jackson County, Oregon**

**Interchange Area Management Plan**

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**Technical Memorandum #1: Definition and Background**

*Prepared for*

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## ***Purpose and Introduction***

As outlined in OAR 734-051-0155(7), an Interchange Area Management Plan (IAMP) is “required for new interchanges and should be developed for significant modifications to existing interchanges.” Public investments for new interchanges and major improvements to existing interchanges are very costly and it is in the interest of the State, local governments, citizens of Oregon, and the traveling public to ensure that the interchange functions as it was designed for as long a time period as possible.

Development of this IAMP is the planning process intended to assess existing and potential land use and transportation conditions, opportunities and limitations, identify long-range needs, and identify recommended improvements to the North Ashland Interchange (I-5 Interchange 19). This process includes identifying necessary improvements to the local street network in the vicinity of the interchanges to ensure consistency with operational standards.

This IAMP follows detailed analyses conducted for preparation of the *Traffic Analysis Report for I-5 Interchanges 14 and 19* (TAR), dated August 22, 2006 and prepared by David Evans and Associates, Inc. The analyses summarized in the report were used to gain a better understanding of both the current and the future deficiencies of the two interchanges, and to examine the performance of a number of alternative interchange configurations under projected future traffic volumes. The TAR provides the basis for the North Ashland Interchange IAMP.

## ***Planning and Management Area***

The North Ashland Interchange 19 is located outside of the Ashland urban growth boundary but within the boundaries of the Rogue Valley Metropolitan Planning Organization. It is a standard diamond type interchange. South Valley View Road, a county facility, is the interchange crossroad and intersects the interstate at approximately 50-degrees. South Valley View Road connects with OR 99 (Rogue Valley Highway) approximately a half mile to the south. The section of South Valley View Road between the interchange and OR 99 is currently in the process of being transferred from Jackson County to ODOT jurisdiction.

The defined boundaries of the Interchange Area Planning and Management Area (Planning Area), displayed in Figure 1, includes land where existing and future development has the potential to significantly affect the interchange function. It also encompasses key roadways in the vicinity that relate to traffic operations at the interchange.

The Planning Area is roughly bounded by OR 99 and the CORP railroad tracks to the south, West and East Valley View Roads to the north, and Irish Lane to the east. The western boundary is located approximately one half mile to the west of the interchange. The Planning Area consists primarily of land zoned for rural residential, exclusive farm uses and open space reserve. However, the land just south of the interchange along South Valley View Road is commercially zoned and currently has a number of businesses, including gas stations, a hotel and a fast food restaurant. The Planning Area also includes some commercially and residentially zoned land within the Ashland UGB. Further, based on the existing density of development, possible future UGB expansions and pending Measure 37 claims, significant intensification is almost certain to occur in the vicinity of the Planning Area.

## ***Problem Statement***

### ***Operational and Safety Deficiencies***

The TAR provided traffic operations analyses at key intersections and freeway facilities in the planning area. The traffic analyses addressed both existing conditions (2006) and future no-build conditions (2010 and 2030). The TAR showed that the existing bridge and ramps are functionally obsolete to adequately serve the long-range transportation needs.

Under existing (2006) conditions, traffic operations analyses of the North Ashland Interchange revealed that both ramp terminals currently meet ODOT mobility standards. However, queuing on the southbound exit ramp extends into the deceleration portion of the ramp. Queue lengths are expected to lengthen as traffic volumes increase in the future.

Under 2030 no-build conditions, the critical v/c at the northbound ramp terminal was calculated to be 0.95, which exceeds the mobility standard. The v/c at the southbound ramp terminal was calculated to be greater than 1.00 prior to the plan horizon year, which indicates that demand is expected to exceed intersection capacity prior to year 2030. Queuing on the southbound exit ramp will be significant and will extend into the deceleration area of the ramp, creating a potential safety problem.

The northbound ramp terminal intersection has an unconventional configuration in which left turning vehicles from South Valley View Road to the I-5 northbound entrance ramp have a free movement. All other approaches must yield to the northbound through and left turning movements. This type of intersection control violates driver expectation and is generally not recommended for new construction.

Existing peak hour traffic operations at the intersection of South Valley View Road with OR 99 currently meets the ODOT mobility standard. However, queuing on the single-lane southbound approach is significant, at nearly 800 feet. Future traffic operations are expected to worsen with major queuing on the southbound approach leg that could impact operations as far north as the North Ashland Interchange. Both the Jackson County TSP and Rogue Valley Regional Transportation Plan recognize the need for improvements to South Valley View Road between the North Ashland Interchange and OR 99, as this segment of arterial carries the highest traffic volume of any County roadway. Proposed improvements to this segment of South Valley View Road consist of an upgrade to a five-lane arterial with sidewalks and bike lanes.

Compounding the operational problems at the ramp terminal intersections are the presence of several accesses to South Valley View Road very close to the interchange ramp terminal intersections. East Ashland Lane and Lowe Road each intersect South Valley View Road within approximately 200 feet of the northbound and southbound ramp terminals, respectively. Several other approaches are located within a quarter mile of the ramp terminals. These public and private approaches create potential vehicular conflicts and delay that may impact operations at the interchange. ODOT interchange area access spacing standards, as stated in OAR 734-051 (Division 51), specify that no approaches should be located within 1320 feet of ramp terminal intersections along the cross street. While Division 51 may not be fully attainable in this area, it is desirable to move in the direction of the standards through access management techniques such as consolidation or elimination of accesses and implementation of turn prohibitions. The purpose of these mitigation measures would be to ensure long-term public safety and operations of the interchange and associated immediate local street network.

The conflict between passenger vehicles and trucks due to the proximity of the northbound exit ramp to the Ashland Port of Entry entrance ramp has been identified as a deficiency by the Citizen's Advisory

Committee. The Port of Entry, operated by ODOT Motor Carrier Transportation Division, provides truck size and weight enforcement, and it operates 24 hours a day, seven days a week. The merge point of the northbound Port of Entry entrance ramp is located approximately 2400-feet south of the gore point of the southbound exit ramp at Interchange 19. The high volume of slow-moving trucks accelerating to freeway speed is reported to cause difficulties for northbound drivers to safely move into the right lane as they prepare to exit at Interchange 19.

#### ***Structural and Geometric Deficiencies***

The bridge structure (ODOT Bridge No. 08693) is a reinforced concrete deck-girder span constructed in 1961, and has only had guardrail upgrades since. An Engineering Baseline Report (EBR) was prepared in 2003 that determined that the bridge is structurally deficient. The EBR recommended that the bridge be replaced and listed the following structural and geometric deficiencies:

- Bridge is in Crack stage 3 and cracks are up to 0.030" in width
- Bridge is Structurally Deficient
- Deck is in need of rehabilitation
- Bridge railing is substandard
- Width of roadway on the bridge is substandard (two 12-foot lanes with 3-foot shoulders);
- Presence of roadside hazards including substandard guardrail terminals and bridge connections and median column protection

The EBR assumed that a feasible replacement structure would be a four-lane structure, and estimated the replacement cost at approximately \$6.8 million.

The I-5 State of the Interstate Report also listed deficiencies, including:

- The existing pavement width on the crossroad does not provide adequate shoulders for emergency stops or safe pedestrian and bicycle movements
- The northbound and southbound exit ramps do not provide an adequate distance for deceleration based on the horizontal alignment
- The northbound and southbound entrance ramps do not provide an adequate distance for acceleration based on the horizontal alignment; and
- Signing at the northbound ramp terminal does not meet driver expectations.

Other deficiencies include:

- Vertical clearance less than 17.5'
- Lack of bicycle/pedestrian facilities

#### ***Bicycle and Pedestrian Deficiencies***

There are currently no provisions for bicycle and pedestrian traffic.

ORS 366.514 specifies, in part, that "...reasonable amounts shall be expended as necessary to provide footpaths and bicycle trails, including curb cuts or ramps as part of the project. Footpaths and bicycle trails, including curb cuts or ramps as part of the project, shall be provided wherever a highway, road or street is

being constructed, reconstructed or relocated.” Three exceptions are provided: “(a) Where the establishment of such paths and trails would be contrary to public safety; (b) If the cost of establishing such paths and trails would be excessively disproportionate to the need or probable use; or (c) where sparsity of population, other available ways or other factors indicate an absence of any need for such paths and trails.”

## ***Goals and Objectives***

The goals of this IAMP are to develop a plan for improvements that can be implemented over time to:

- Improve safety and operations of Interchange 19 for all modes of travel;
- Improve safety and operations of the I-5 mainline;
- Identify adequate local street network improvements for all modes of travel; and
- Protect the investment in I-5 and its interchanges and maintain the function of the interchange.

The objectives of the IAMP are to:

- Evaluate the need for capacity improvements based on the adopted, comprehensive land use plans of Jackson County and Ashland, the Regional Transportation Plan, and the mobility standards prescribed in the Oregon Highway Plan (OHP), the Highway Design Manual and the Jackson County Transportation System Plan (TSP).
- Evaluate concepts to improve safety and increase capacity of the interchange and roadways to address existing and future needs. The concepts that will be evaluated consist of the following:
  - No Build
  - Three-lane bridge
  - Three-lane bridge with loop ramp in the northeast quadrant (to carry traffic from northbound South Valley View Road to northbound I-5)
- Develop an access management plan that provides for safe and acceptable operations on the transportation network and that meet, or move in the direction of meeting the access spacing standards prescribed in the OHP.
- Develop and evaluate potential management actions that have the potential to protect the future function, capacity, and mobility of the interchange.
- Protect the capability of the interchange to provide for bicycle and pedestrian traffic.

## ***Interchange Function***

The North Ashland Interchange provides the main link between the I-5 corridor and the northern end of Ashland via OR 99, which intersects South Valley View Road approximately 2500-feet south of the interchange. South Valley View Road, a Jackson County arterial, has the highest lane volume of any Jackson County jurisdiction facility due to significant volumes of intraregional trips between Ashland and Medford. In addition to the heavy movement of intraregional trips, the interchange also serves local residents and businesses in the interchange vicinity.

Interstate 5 is classified as an interstate highway, a designated freight route and is on the National Highway System. The primary function of interstate freeways is to serve inter-regional and interstate passenger and freight traffic. OR 99 is classified by the OHP as a District Highway. According to the OHP, the function of

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District-level highways is to “provide connections and links between small urbanized areas, rural centers and urban hubs, and also serve local access and traffic.”

The function of Jackson County arterials is to provide through traffic movement between major communities in Jackson County, and distribute traffic between the State Highway system and the local streets network.

The intended function of the North Ashland Interchange 19 is to safely and efficiently accommodate future vehicle, bicycle, and pedestrian traffic demands generated by population and employment growth in the region.