

Chemawa Road IAMP: Technical Memorandum 7.1

2031 Baseline Modeling Summary

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1. Introduction

This memorandum provides an overview of the future 2031 Baseline modeling that is being used as part of the Chemawa Road Interchange Area Management Plan (IAMP). This document is part of several memorandums that will support the development of the Chemawa Road IAMP.

2. Future Study Area & Base Year

2.1 Study Area

The future study area will be consistent with the existing study area. The main project area roughly extends along Lockhaven Drive-Chemawa Road to River Road, south to the intersection of OR 99E Business-Salem Parkway/Verda Lane-Hyacinth Street, east to OR 99E-Portland Road/Astoria-Ward Street, north on OR 99E-Portland Road to Kale Street, east to Cordon Road, north to Hazelgreen Road-Chemawa Road and west back to Lockhaven Drive/Chemawa Road.

An expanded traffic analysis study area was also developed to understand the effects of traffic patterns shifts that may occur as a result of future projects and potential changes in future land use. The expanded traffic analysis study area includes the twenty-four (24) intersections that were included in the existing conditions analysis. The study intersections include nineteen (19) intersections within the main project study area as well as five (5) intersections in the vicinity of the Brooklake and I-5 interchange.

The freeway analysis study area consists of fourteen (14) freeway segments within the vicinity of the Chemawa/I-5 interchange. All mainline segments, on-ramps, and off-ramps from Salem Parkway and Chemawa Road will be analyzed for the 2031 Baseline scenario.

2.2 Horizon Year

In order to stay consistent with the Salem-Keizer Area Transportation Study (SKATS), the year 2031 was chosen as the horizon year. A Synchro model will be developed and used for the 2031 Baseline intersection traffic analysis. Highway Capacity Software (HCS) will be utilized for the 2031 Baseline freeway traffic analysis.

3. Demand Modeling Assumptions

Future traffic demand forecast volumes will be developed by the consultant using the Salem/Keizer Area Transportation Study's (SKATS) EMME2 travel demand model. The 2031 Baseline analysis will include land use represented in the SKATS year 2031 Action (Build) forecasts. The Chemawa IAMP 2031 Baseline scenario is based off of the SKATS 2031 Action network. SKATS will be responsible for providing the future 2031 Action (Build) forecast model for the I-5/Chemawa Study Area.

3.1 Network Assumptions

The SKATS 2031 Action (Build) network includes all financially constrained projects expected to occur through 2031. All projects listed on pages 14-21 of the SKATS *Air Quality Conformity Determination for the SKATS 2031 Regional Transportation and the SKATS FY 2008-2011 Transportation Improvement Program* are included in the 2031 Baseline analysis. The projects included in the analysis are based off of several transportation system plans (TSP), including the City of Salem TSP, City of Keizer TSP, Marion County TSP, and the SKATS Regional TSP.

Table 1 shows a listing of all projects within the project study area that are expected to be built by 2031. The projects listed will be incorporated into the 2031 Baseline traffic analysis.

TABLE 1
2031 Baseline Traffic Analysis Projects

Jurisdiction	Intersections	Improvement
Marion County	Hazelgreen Rd./Cordon Road NE-55th Ave	Realign, add turn lanes and signal
Marion County	River Rd./Brooklake Rd.	Signalize and realign intersection
ODOT	Chemawa Road/I-5 NB Ramps	Improve intersections w/ additional turn lanes
ODOT	Chemawa Road/I-5 SB Ramps	Improve intersections w/ additional turn lanes
ODOT	OR99E Business- Salem Parkway/Hyacinth-Verda Lane	Intersection Improvements to address safety issues
ODOT	Hyacinth/OR 99E-Portland Ave	East Leg: Widen to 2 travel lanes with center turn lane where needed.
ODOT	Chemawa-Hazelgreen/OR 99E-Portland	Upgrade signal and interconnect

3.2 Land Use Assumptions

Land use assumptions for the 2031 Baseline scenario are based off the adopted comprehensive plans from the City of Keizer, the City of Salem, and Marion County. Forecasts related to population and employment estimates were overseen by a working group comprised of representatives from the local jurisdictions. The population and employment forecasts were developed for the year 2030 and then extrapolated to the year 2031 by SKATS staff.

4. Volume Post-Processing Techniques

2031 Baseline traffic volumes from the travel demand model will be reviewed and post-processed following guidelines in National Cooperative Highway Research Program (NCHRP) 255 to ensure reasonableness validity. The overall analysis and post-processing should be according to ODOT Analysis Procedures Manual (APM), particularly Chapter 4.

4.1 Intersections

The post-processing of turning movements for the intersections will follow the steps below:

1. Obtain the 2005 and 2031 SKATS model outputs by links
2. Determine the appropriate projection method (difference and/or growth) for the growth by link
3. Using the 2008 balanced volumes and the growth, project the traffic to create the 2031 link volumes
4. Using a turn balancing program (such as WTurns or equivalent method) with the 2008 volumes and the 2031 link volumes, create 2031 intersection turn volumes

4.2 Freeway Segments

The post-processing of freeway mainline and ramps volumes will follow the steps below:

1. Obtain the 2005 and 2031 SKATS model outputs by links
2. Determine the appropriate projection method (difference and/or growth) for the growth by link
3. Using the 2008 balanced volumes and the growth, project the traffic to create the 2031 volumes