

**I-5 Exits 40 and 43 (Gold Hill)
Interchange Area Management Plans**

**DRAFT Technical Memorandum #3
Appendix A: Methodology Memorandum**

Prepared for

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A.1. Introduction

This methodology report summarizes the approach for data collection, impacts analysis, and mitigation that the IAMP for I-5 Exits 40 and 43 will use for traffic analysis.

A.2. Study Area

The study area includes I-5 Exits 40 and 43, extending about ½-mile from each interchange, but remaining outside of both Gold Hill city limits and the urban growth boundary.

IAMP 40 includes five intersections for analysis:

- OR 99/2nd Ave / Blackwell Rd at Access Rd
- Lampman Rd at Access Rd
- I-5 Northbound Ramps at Access Rd
- I-5 Southbound Ramps at Access Rd
- Old Stage Rd at Access Rd

IAMP 43 includes seven intersections for analysis:

- N River Rd at Hwy 234/OR 99
- Lampman Rd at Hwy 234/OR 99
- Main St at Hwy 234/OR 99
- I-5 Northbound Ramps at Main St
- I-5 Southbound Ramps at Main St
- Main St at Frontage Rd/Profetta Ln
- Profetta Ln at Old Stage Rd

A.3. Study Period

The transportation and traffic analysis will be based on existing year 2013 conditions for the design hour (30th highest) volumes.

Future analysis will focus on design hour conditions for the year 2038 to correspond with the forecast period for the nearby Rogue Valley Metropolitan Planning Organization (MPO).

A.4. Data Collection

ODOT will provide current manual 16-hour vehicle classification counts for all of the study area intersections listed above, except for Lampman Rd at Hwy 234/OR 99, N River Rd at Hwy 234/OR 99, and Profetta Ln at Old Stage Rd, which ODOT will provide 4-hour classification counts for. Data for existing weekday counts will be reviewed to determine which hour is the highest traffic demand hour for each interchange management area. Turning movements, peak hour factors, vehicle classification, and other data describing demand in the corridor will be derived for this peak hour.

Crash data will be obtained from the ODOT Crash Analysis and Reporting Unit for the most recent five complete years for the study area. Data will be requested for the following locations:

Interchange 40:

- Access Rd: Old Stage Rd to OR 99/Hwy 234/Blackwell Rd
- I-5: Mile Points 40 to 41.5
- I-5 Interchange 40 northbound and southbound ramps

Interchange 43:

- Frontage Rd/Profetta Lane: Main St to Old Stage Rd
- Main St: Frontage Rd/Profetta Ln to Rogue River Hwy/OR 99/Hwy 234
- Rogue River Hwy/OR 99/Hwy 234: Main St to N River Rd/Hwy 234
- Lampman Rd: Section between the 2 intersections with OR 99
- I-5: Mile Points 42 to 44.5
- I-5 Interchange 43 northbound and southbound ramps

A.5. Inventory of Existing Facilities

The transportation system inventory examines the highway and intersecting roadways, bicycle and pedestrian facilities, transit facilities, bridges conditions, access locations, and rail facilities.

A.6. Traffic Volumes

Traffic volumes will be developed for two study periods: existing 2013 and design year 2038.

A.6.1. Existing 2013 Volumes

The existing peak hour volumes will be determined from the existing weekday counts and adjusted to design hourly volumes following the methodologies outlined in the ODOT Transportation Planning and Analysis Unit's (TPAU) Analysis Procedures Manual (APM).

A.6.2. Future Design Year 2038 Volumes

Forecast traffic volumes will be developed for the 2038 forecast year based on TPAU's cumulative analysis process. Calculation of volumes on I-5 will use ODOT's Future Volume Tables to estimate through trips.

A.7. Evaluation Comparison Tools

Tools and techniques used to evaluate and compare the alternatives include traffic operations analysis tools for more detailed assessment of future conditions.

A.7.1. Traffic Operations Standards

The operational standards from the Oregon Highway Plan (OHP) and the Highway Design Manual (HDM) will be used in the assessment of intersection operations. Both documents base their mobility standards on the calculation of volume-to-capacity (v/c) ratios; however, the standards in the HDM are based on higher performance levels than those in the OHP. The mobility standards from the OHP will be applied to the existing and no build analysis while the standards from the HDM will be applied to the design alternatives. The HDM standards are used for build alternatives to reflect the expectation that an investment in the highway system should result in better operations than the no build alternative, where no investment is made.

A.7.2. Arterial and Intersection Operations

The operational analysis will evaluate v/c ratios along with delay and queuing using the Synchro/SimTraffic software program. Throughout the analysis process, TPAU staff will review modeling assumptions, analysis settings, and other assumptions to help ensure consistency of data with other studies under way.

An assessment of adding traffic signals may be needed. Any traffic signal assessments will use ODOT's traffic signal warrants. Analysis results must be compared with ODOT's mobility standards and specific recommendations for mitigation improvements needed to meet standards must be identified and verified by TPAU.

A.8. Crash History Analysis

The study area evaluation will include an analysis of the most recent five-year crash history to identify any patterns amongst the crashes that are indicative of existing geometric or operational deficiencies. The analysis will also identify any recent changes in the crash patterns over the five-year period. Based on the crash patterns, the analysis may identify improvements for the build alternatives that could mitigate safety issues.

A.9. Non-Auto Modes Evaluation

Non-auto modes will also be evaluated to identify improvements included in the build alternatives that would impact bicycle and pedestrian facilities.