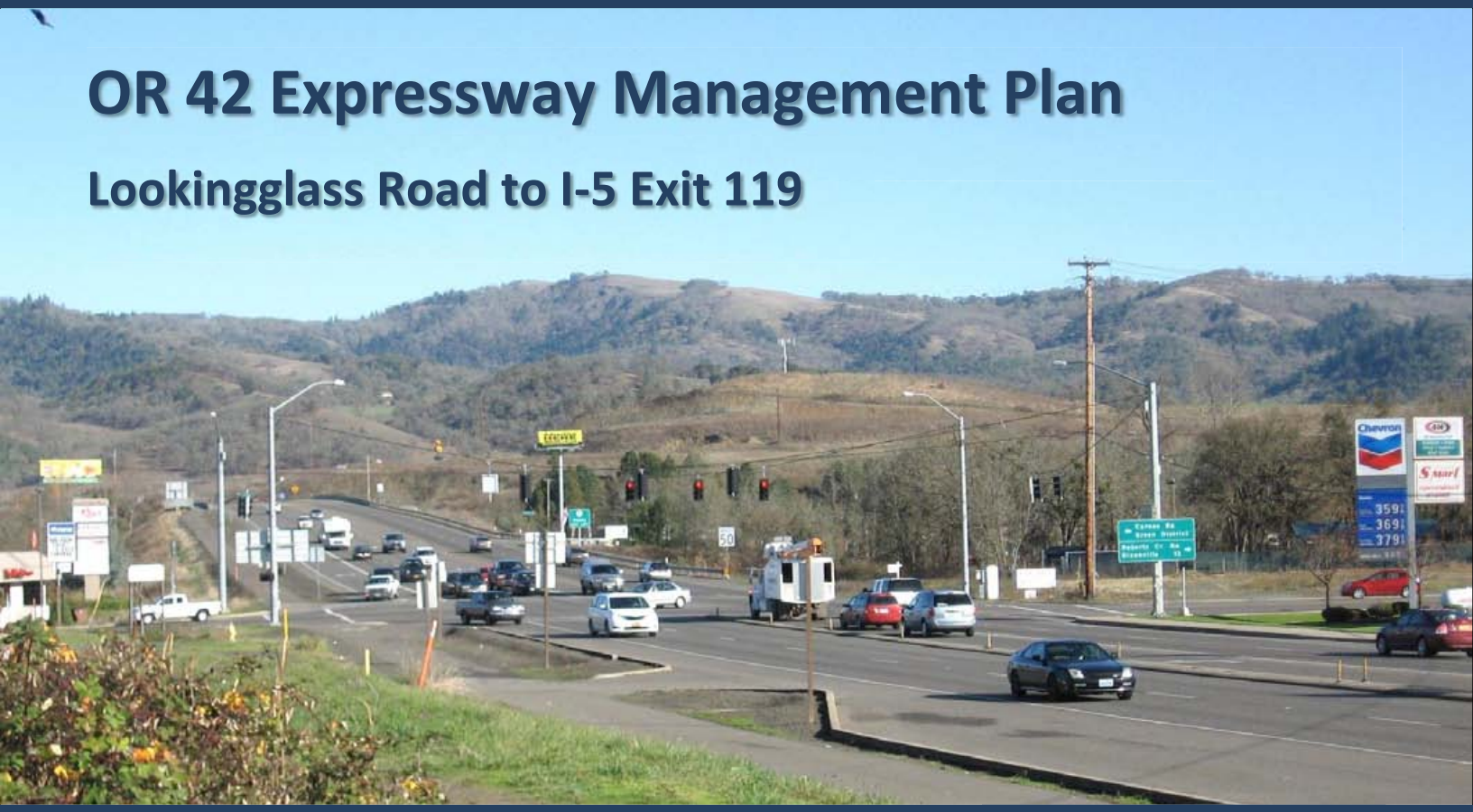
OR 42 Expressway Management Plan

Lookingglass Road to I-5 Exit 119



August 2013

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Prepared for:

Oregon Department of Transportation

OR 42 Expressway Management Plan:

Lookingglass Road to I-5 Exit 119

Prepared for

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REFERENCE MATERIAL (COMPANION DOCUMENT)

Project Sheets

List of Tables

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List Acronyms

ADT	Average Daily Traffic
CDS	Crash Data System
CORP	Central Oregon and Pacific Railroad
DHV	Design Hourly Volume
HDM	Highway Design Manual
IAMP	Interchange Area Management Plan
ITS	Intelligent Transportation Systems
MP	Milepoint
MTIP	Metropolitan Transportation Improvement Program
mvm	million vehicle miles
NHS	National Highway System
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
OTC	Oregon Transportation Commission
ROW	Right of Way
SPIS	Safety Priority Index System
STIP	Statewide Transportation Improvement Program
TDM	Transportation Demand Management
TIS	Traffic Impact Study
TSM	Transportation System Management
UGB	Urban Growth Boundary
UUA	Urban Unincorporated Area
v/c	volume-to-capacity

EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

This *Oregon Route (OR) 42 Expressway Management Plan* (EMP) focuses on the section of OR 42 that extends from I-5, through the Green Urban Unincorporated Area (UUA), to Lookingglass Road. The plan examines how the expressway operates both now and over the next 20 years. It identifies strategies to preserve and improve safety and capacity consistent with an expressway route designation.

Corridor Goal and Objectives

Five (5) goals provide guiding principles for planning, programming and managing the OR 42 expressway corridor:

- Improve safety and operations of the expressway corridor for all modes of travel.
- Upgrade the corridor to meet Expressway design and performance standards.
- Facilitate freight travel by maintaining efficient traffic movement through the corridor.
- Develop integrated transportation facilities and services that support economic development.
- Provide better accessibility to the Cities of Roseburg and Winston and the Green UUA consistent with the adopted local comprehensive land use and transportation plans.

Regulatory Framework

The OR 42 EMP establishes mobility and access management standards based on policy in the Oregon Highway Plan (OHP). The Highway Mobility Policy (1F) establishes maximum thresholds for peak hour congestion on highways in Oregon which should be maintained through a 20-year planning horizon. Mobility targets (or standards) for a statewide expressway apply to OR 42 through the corridor. The OHP also addresses access management with the most recent revisions adopted in March 2012. Access spacing standards for the EMP were developed based on a statewide expressway designation.

Baseline Conditions and Identified Deficiencies

Baseline conditions were evaluated to understand land use, identify potential environmental constraints, and determine existing (year 2011) and future (year 2035) transportation deficiencies. Identified deficiencies and related goals include:

- Eastbound bridge over the South Umpqua River is 26-feet wide and does not have any shoulders on either side of the roadway; *Related Goals – Mobility, Freight, Safety, Multimodal*
- Eastbound bridge over the South Umpqua River is identified as having a low service life and vertical clearance issues; *Related Goals – Mobility, Freight, Safety*

- No sidewalks or multi-use pathways on the south side of OR 42; *Related Goals – Multimodal, Safety*
- Two unsignalized intersections have significant safety concerns related to turning movements; *Related Goal – Safety*
- Two signalized intersections are in the worst five (5) percent of the Safety Priority Index System database; *Related Goal – Safety*
- Future operations of four (4) intersections exceed applicable mobility standards; *Related Goals – Mobility, Freight, Economic, Safety*

Expressway Plan Improvements

The OR 42 EMP improvements address identified deficiencies, improve the multimodal functionality of the corridor, and allow the corridor to accommodate traffic, including freight, safely and efficiently into the future. Figure ES-1 indicates the location of EMP improvements and includes a brief description of the project along with a general priority. Detailed project sheets have been prepared for each expressway improvement.

All travel modes were considered in the development of the EMP improvements. Several bicycle and pedestrian facility improvements were identified to augment the existing multi-use path and minimum 8-foot shoulders were included in the improvements. Considerations for existing and future transit needs were also incorporated into the EMP.

In addition to the EMP improvements, other management actions are included to protect and extend the life of the expressway and provide for incremental implementation of EMP improvements. These actions are summarized in Section 6. Other Management Actions and include: Transportation System Management (TSM) Measures, Transportation Demand Management (TDM) Measures, Bicycle and Pedestrian Facilities, and Park-and-Ride Facilities.

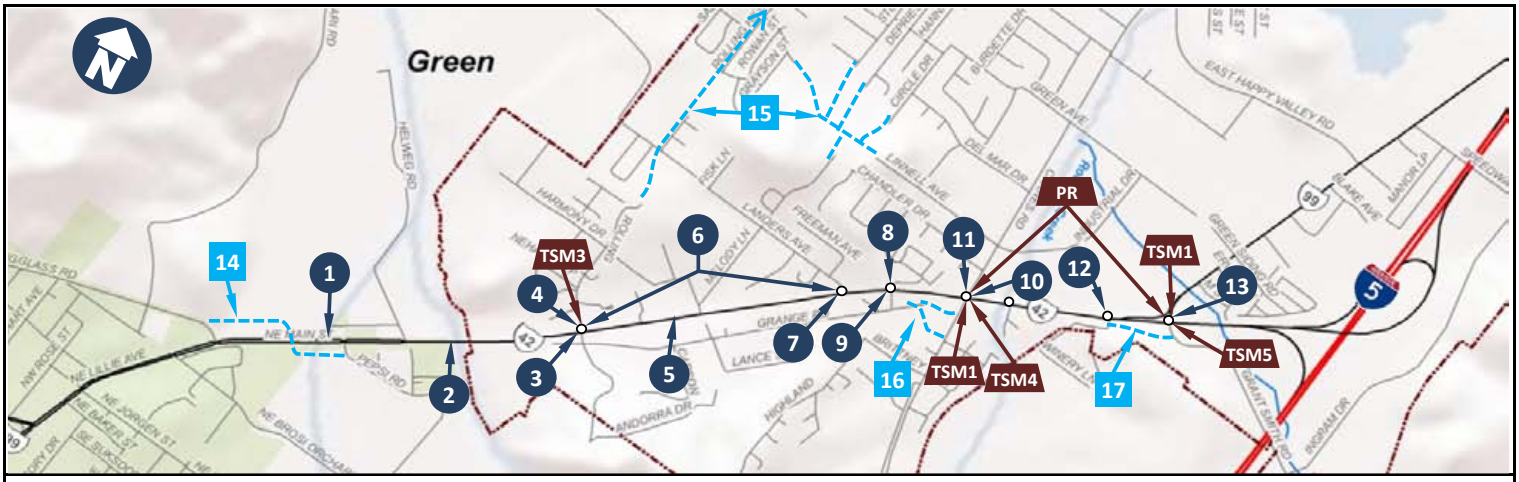
Access Management Plan

The Access Management Plan includes a combination four (4) types of actions:

- EMP improvement projects related to raised barriers and turning restrictions
- Local street network improvements
- Transportation system management measures
- Private access control measures

The actions were developed balancing the key principles of safety and mobility for all users with regional and local economic vitality, which is consistent with the overarching EMP goals. Actions may be triggered as future EMP improvements are implemented, as safety and operational issues arise, or as land use changes occur (new development or redevelopment).

Note: All access management measures shall be applied with a desire to move towards achieving applicable access spacing standards over time.



1 **OR 42 - Lookingglass Rd to Winston Section Rd (73.88-74.35)**: *Add two-way, buffered multi-use path on the south side of the expressway (High to Medium Priority)*

2 **OR 42/Winston Section Rd (74.35-74.41):** *Connect Winston Section Rd to path on north side with a multi-use path undercrossing (High to Medium Priority)*

3 **OR 42/Rolling Hills Rd Intersection (74.77):** *Install traffic signal at OR 42/Rolling Hills Rd, improve access road connecting to Jackie Ln and restrict access to OR 42 from west of Rolling Hills Rd through Jackie Ln (High Priority)*

4 **OR 42/Rolling Hills Rd Intersection (74.77):** *Add eastbound and westbound right-turn deceleration lanes on OR 42 (Medium Priority)*

5 **OR 42 – East of Rolling Hills Rd through Landers Ave (74.78-75.42):** *Add raised barrier to restrict turn movements to right-in/right-out (Medium Priority)*

6 **OR 42/Rolling Hills Rd and OR 42/Landers Ave Intersections (74.77 & 75.42):** *Add lighting at the unsignalized intersections (High Priority)*

7 **OR 42/Landers Ave Intersection (75.42):** *Add westbound right-turn deceleration lane on OR 42 (Medium Priority)*

8 **OR 42/Emils Way/Grange Rd Intersection (75.53):** *Add raised median to restrict turn movements to left-in/right-in/right-out (High Priority)*

9 **OR 42/Emils Way/Grange Rd Intersection (75.53):** *Add eastbound and westbound right-turn deceleration lanes on OR 42 (Medium Priority)*

10 **OR 42/Carnes Rd/Roberts Creek Rd Intersection (75.72):** Add third westbound travel lane on west of the intersection and convert the westbound right-turn lane into a shared through-right lane (Medium to Low Priority)

11 **OR 42/Carnes Rd/Roberts Creek Rd Intersection (75.72):** *Add second southbound left-turn lane on Carnes Rd (Medium Priority)*

12 **OR 42/Winery Ln Intersection (76.07):** *Add raised barrier to restrict turn movements to right-in/right-out (Medium Priority)*

13 **OR 42/OR 99/Grant Smith Rd Intersection (76.22):** *Add second eastbound left-turn lane on OR 42 and a second northbound receiving lane on OR 99 (Medium Priority)*

14 **Lookingglass Rd and Pepsi Rd:** *Extend Lookingglass Rd eastward and Pepsi Rd westward to connect at a 4-way signalized intersection; close current connections to OR 42; and connect other access points to extensions (Low Priority)*

15 **Local Network Connections:** *Extend Rolling Hills Rd northward to Happy Valley Rd and improve connectivity between Melody Ln, Cameron Ave, Chandler Dr, Stella St, and other local streets in the Douglas County TSP (RH: High Priority; Other: Medium Priority)*

16 **Grange Rd:** *Create a new connection from the east end of Grange Rd to Roberts Creek Rd via Brittney Ave (High Priority)*

17 **Winery Ln:** *Extend Winery Ln to Grant Smith Rd (Medium Priority)*

TSM1 **OR 42/Carnes Rd/Roberts Creek Rd Intersection (75.72):** *Modify signal timing to provide protected left-turn phases and clearance intervals in the north-south direction (High Priority)*

TSM2 **OR 42/OR 99/Grant Smith Road Intersection (76.22):** *Modify signal timing to provide protected left-turn phases and clearance intervals in the north-south direction (High Priority)*

TSM3 **OR 42/Rolling Hills Rd Intersection (74.77):** *Permit U-turns for passenger vehicles with protected left-turn arrow*

TSM4 **OR 42/Carnes Rd/Roberts Creek Rd Intersection (75.72):** *Permit U-turns for passenger vehicles with protected left-turn arrow*

TSM5 **OR 42/OR 99/Grant Smith Rd Intersection (76.22):** *Permit U-turns for passenger vehicles with protected left-turn arrow*

PR **OR 42 Park-and-Ride Lot:** *Create facility using an existing underutilized parking lot, a future shared-use development, or a standalone parking lot*

OR 42 Expressway Management Plan

Legend

- Expressway Improvements
- Local System Improvements
- Other Improvements
- Future Roadway Connection

Figure ES-1
Expressway Management Plan Improvements

Corridor Monitoring

Both the projects in the Expressway Management Plan and the Access Management Plan include triggers that identify when a project or a strategy may be warranted. Although some priority has been assigned to the projects, periodic monitoring should occur to identify when projects may be needed. In some cases priority may be elevated based on traffic volume trends or crash history while others may be delayed.

The monitoring program should include two elements:

1. **Periodic corridor monitoring** of traffic and crash data can be used to identify the need for capacity and safety improvements in the corridor. Data collection should include:
    - *Intersection traffic volumes should be collected and analyzed every three (3) to five (5) years to identify the need for traffic signals, left-turn lanes, right-turn lanes, and other capacity and safety improvements identified in the EMP.*
    - *Crash rates should be reviewed every two (2) to three (3) years and SPIS rankings should be reviewed annually to identify when safety improvements such as traffic signals, left-turn lanes, right-turn lanes, and access management measures may be necessary.*
2. **Traffic impact studies** (TIS) for proposed development should be part of the monitoring process. Proposed developments that could generate a sufficient number of trips to impact the corridor intersections or other public intersections along OR 42 should be required to prepare a TIS. Actions related to TIS preparation include:
    - *Minimum trip thresholds for when a TIS is required should be reviewed for consistency with monitoring needs of the EMP.*
    - *Improvements that are triggered by development should be incorporated into the conditions of approval for the proposal.*

Oregon Transportation Commission (OTC) Actions

Adoption of this EMP will require the OTC to amend the 1999 Oregon Highway Plan to adopt the OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119 and amend the OR 42 Corridor Plan improvements for the OR 42/Pepsi Road/Helweg Road intersection. This will establish consistent policies for the corridor to guide management of the expressway facility. It will also establish performance targets and minimum access spacing standards for the corridor.

1 INTRODUCTION

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1. INTRODUCTION

This *Oregon Route (OR) 42 Expressway Management Plan* (EMP) focuses on the section of OR 42 designated as an Expressway which begins at Lookingglass Road in the City of Winston and travels through the Green Urban Unincorporated Area (UUA) in Douglas County to the ramps at I-5 Exit 119.[1] The plan examines how the expressway operates both now and over the next 20 years. It identifies strategies to preserve and improve safety and capacity consistent with an expressway route designation.

1.1 Study Area

The study area focuses on a 3.32-mile segment of OR 42 designated as an Expressway which extends from Lookingglass Road to the ramps at I-5 Exit 119 (see Figure 1). Although designated as an Expressway, the highway has never been fully upgraded to meet Expressway design and performance standards. The Oregon Highway Plan (OHP)[2] describes Expressways as complete routes or segments of existing highways and planned highways that offer safe and efficient high speed and high volume traffic movements. Their primary function is to provide for intercity travel and connections to ports and major recreation areas with minimal interruptions. In urban areas, speeds are moderate to high. Usually there are no pedestrian facilities, and bikeways may be separated from the roadway. Private access is discouraged and public road connections are highly controlled.

Like many highways in Oregon, OR 42 must serve both regional traffic and local traffic generated by the adjacent communities. It must also serve the varied needs of the commuters, recreational users, and freight as well as accommodating different modes of travel (i.e., vehicles, bicycles, pedestrians, transit). These diverse users and demands must be balanced both the length of the corridor and within the study area.

1.1.1 Regional Perspective

OR 42 plays an important role in the communities of Coos and Douglas Counties. This highway works together with I-5, US 101, and a number of other state and local roads to form a regional transportation system that serves both the traveling public and freight travel. OR 42 also serves as an alternate route to OR 38 through the coast range. Both routes are designated as statewide highways and freight routes, and are part of the National Highway System, because they serve an important economic role in terms of freight movement between the coast and the interstate.

[1] The entire OR 42, also known as "Coos Bay-Roseburg Highway", connects to Interstate 5 (I-5) at Exit 119 and extends to US 101 in Coos County.

[2] 1999 Oregon Highway Plan, Oregon Department of Transportation, Salem, OR, 2006.

The overall management focus for the entire OR 42 corridor,[3] including this EMP study area, is to balance:

- **Safety**: ODOT is charged with ensuring the traveling public is provided a safe and efficient transportation system.
- **Freight movements and economic development**: In serving as a primary link between the South Coast and I-5 corridor, the freight function of the OR 42 corridor must be protected and enhanced. Specifically, maintaining travel times and highway capacity will ensure efficient freight movement and therefore support the regional economy.
- **Local transportation needs**: The highways will continue to serve as primary arterials in the communities along the corridor. Providing access to local land uses and adequate pedestrian facilities will continue to be a consideration in the operation of both facilities.

1.1.2 Local Perspective

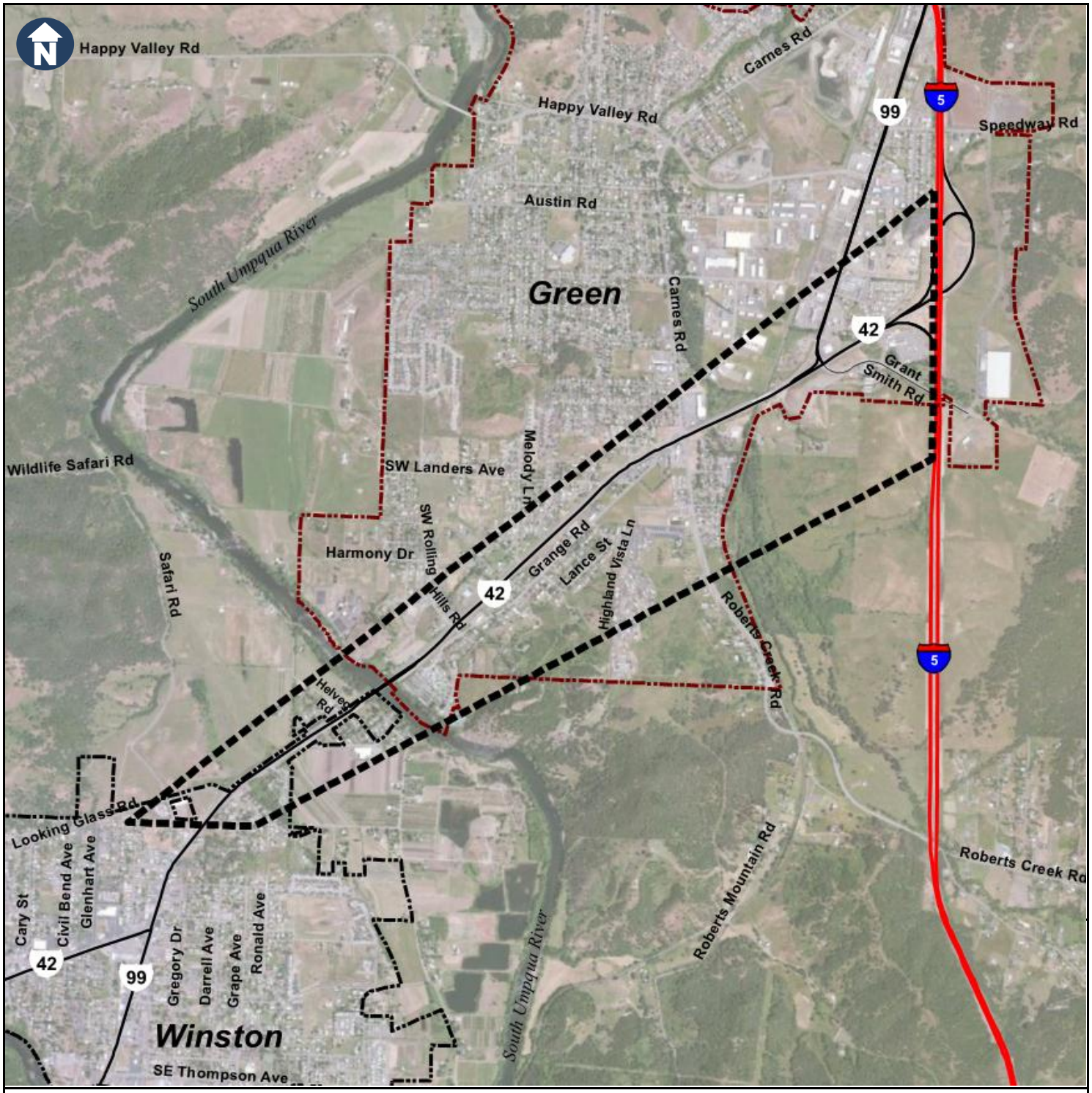
This EMP study area focuses on the section of OR 42 classified as an Expressway beginning at Lookingglass Road (Mile point 73.88) and ending at I-5 Exit 119 (Mile Point 77.17).

The western portion of the corridor, from Lookingglass Road to the South Umpqua River, lies within the City of Winston. OR 42 provides the Winston area with the major east-west access to the Roseburg Urban Area, Oregon Coast port facilities, regional recreation areas, and provides a connection to I-5 for north-south travel through the county. Most private access is restricted along this stretch of expressway but there are a number of public access points.

From the South Umpqua River to the bridge crossing the Central Oregon and Pacific (CORP) Railroad line, OR 42 is surrounded by a mix of land uses. Commercial and retail developments are primarily focused around Kelly's Corner, (i.e., the signalized intersection of OR 42 with Carnes Road and Roberts Creek Road). This section of the expressway contains numerous private accesses and local road connections.

The eastern portion of the corridor extends from the bridge crossing the CORP rail line to the ramps at I-5 Exit 119. The south side of the Exit 119 ramp terminal is largely comprised of undeveloped land, with the exception of a truck stop. The north side of the exit is comprised of a dense mix of commercial, industrial, and residential developments. Access is restricted to public roads including the signalized intersection with Old Highway 99S, which extends northward through the Green UUA and into Roseburg.

[3] Corridor Plans for the OR 38 and OR 42 Corridors, Volume 1. Oregon Department of Transportation, Region 3, Roseburg, OR, June 2001.



Legend

- Study Area
- City of Green UUA Boundary
- Winston City Limits
- Interstate
- Oregon Routes

OR 42 Expressway Management Plan

Data Sources:
ESRI, 2011
Oregon Department of Transportation (ODOT), 2009
Oregon Geospatial Enterprise Office (GEO). 2009

Figure 1
Study Area

1.2 Expressway Management Plan Goal and Objectives

The following goals and objectives provide the guiding principles for planning, programming, and managing the OR 42 corridor.

1.2.1 Goals

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

- Improve safety and operations of the expressway corridor for all modes of travel.
- Upgrade the corridor to meet Expressway design and performance standards.
- Facilitate freight travel by maintaining efficient traffic movement through the corridor.
- Develop integrated transportation facilities and services that support economic development.
- Provide better accessibility to the Cities of Roseburg and Winston and the Green UUA consistent with the adopted local comprehensive land use and transportation plans.

1.2.2 Objectives

The objectives of the EMP are to:

- Identify existing operational deficiencies based on the mobility standards prescribed in the Oregon Highway Plan (OHP) and the level-of-service standards in the Douglas County and City of Winston Transportation System Plans (TSP).
- Review crash patterns and the state rating systems (Safety Priority Index System and Safety Improvement Program) to identify safety deficiencies.
- Evaluate the need for capacity improvements based on the adopted, comprehensive land use plans of Douglas County and the Green Urban Unincorporated Area and the City of Winston.
- Develop concepts to upgrade the corridor to Expressway design and performance standards, improve safety, and increase capacity to address existing and future needs.
- Develop an access management plan that provides for safe and acceptable operations on the transportation network, while considering the economic needs of abutting properties, and meets OHP requirements and the access spacing standards in Oregon Administrative Rule (OAR) 734-051.
- Identify potential local system enhancements that maintain connectivity and complement the expressway upgrades.
- Incorporate off-road bicycle and pedestrian elements, such as sidewalks, bike lanes, and pathways, as well as corresponding roadway crossings.
- Coordinate planning efforts for OR 42 with other plans and projects in the study area.

2 EVALUATION OF BASELINE CONDITIONS

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2. EVALUATION OF BASELINE CONDITIONS

This section summarizes baseline conditions including an overview of the regulatory framework that guides the process. Land use is presented and potential land use or environmental constraints are identified. Existing (year 2011) transportation system and traffic conditions are evaluated to identify deficiencies. Future (year 2035) traffic operations and safety are then assessed to determine how baseline conditions may change over time.

2.1 Regulatory Framework

State and local regulations, policies, land use plans, and transportation plans provide the legal framework for preparing the Corridor Plan. The language contained within these documents provides guidance to the state and local jurisdictions on how to manage transportation facilities and land uses to protect highway function, provide for safe and efficient operations, and minimize the need and expense for making major improvements to the corridor through the year 2035 planning horizon. *(Refer to Technical Memorandum #1: Review of Adopted Plans, Rules, and Regulations in the Reference Material for a complete list of the guiding framework).*

2.1.1 Operational Standards

The OHP has several policies aimed at maintaining highway mobility. The Highway Mobility Policy (1F) establishes maximum volume-to-capacity (v/c) ratios for peak hour operating conditions of highways in Oregon.[4] The OHP policy also specifies that the v/c ratios be maintained for ODOT facilities through a 20-year planning horizon.

The v/c ratio target is 0.80 for the OR 42 entire expressway corridor. This standard applies to the intersections within the City of Winston Urban Growth Boundary (UGB) and the Green Urban Unincorporated Area (UUA) boundary which form a nearly continuous urban area.

2.1.2 Applicable Access Management Standards

The OHP also addresses access management with the most recent revisions adopted in March 2012.[5] **The OR 42 expressway corridor standard is 2,640 feet (½ mile) between intersections**. More detailed requirements, action definitions, and the access spacing standards for state

[4] Table 6: Maximum Volume to Capacity Ratio Targets for Peak Hour Operating Conditions, 1999 Oregon Highway Plan, OHP Policy 1F Revisions, Adopted December 21, 2011, Oregon Department of Transportation, website: http://www.oregon.gov/ODOT/TD/TP/docs/ohp11/policyadopted.pdf

[5] 1999 Oregon Highway Plan Revisions to Address Senate Bill 264 (2011) Policy 3A, website: http://www.oregon.gov/ODOT/TD/TP/docs/ohp_am/accessm.pdf

highways are specified in OAR 734-051 (Division 51): Highway Approaches, Access Control, Spacing Standards, and Medians.[6]

2.2 Land Use and Environmental Resources

To understand the potential existing environmental and land use issues, and to help inform the conceptual alternatives development process in a subsequent phase of planning for improvements in the study area, this section identifies and reviews the existing land use and environmental conditions in the study area. *(For more detailed information regarding these topics, refer to Technical Memorandum #3: Existing Conditions in the Reference Material.)*

2.2.1 Current Designations and Zoning

The OR 42 EMP was developed consistently with existing land use conditions from the Comprehensive Plans and Land Use and Development Ordinances for Douglas County and the City of Winston. The existing and planned land uses affect traffic patterns and the operations of the expressway.

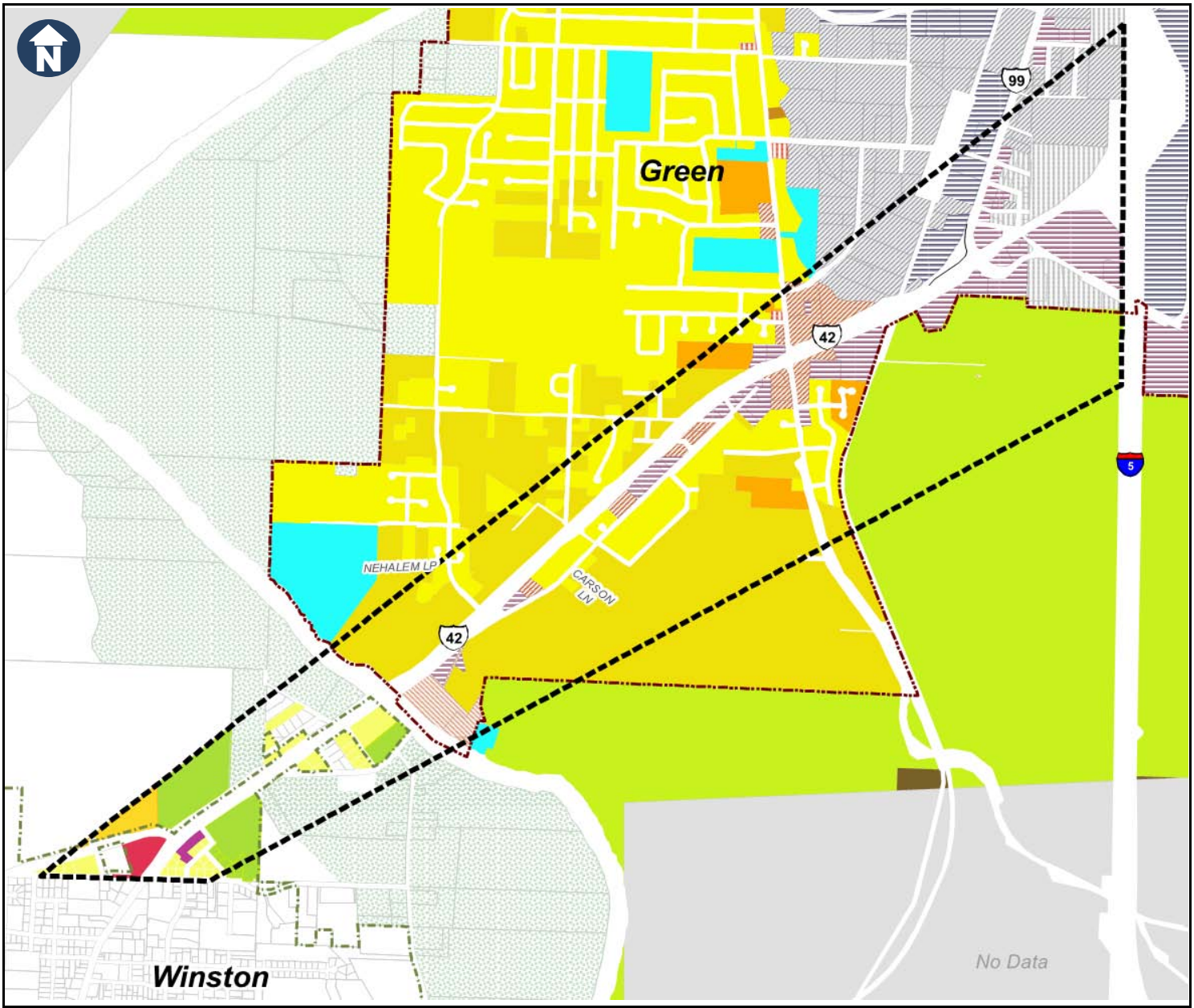
Most of the study area is located within the Douglas County Green UUA. The portion of the study area west of the South Umpqua River is in the City of Winston. Although Green is not incorporated, it is developed with higher densities than typical rural areas with industrial, commercial, and residential development.

Comprehensive plan maps were not available digitally. However, Comprehensive plan designations are in most areas consistent with the zoning designations for the study area. Comprehensive plan land use policies for Green UUA applicable to the study area include:

- **Policy 3. (Commercial)** Future commercial development should be located along Carnes Road, at Kelley's Corner, and along Grange Road.
- **Policy 4. (Commercial/Industrial)** A mix of light industrial and heavy commercial uses are encouraged in the designated portions of the area bounded by Carnes Road, OR 42, and I-5.

The Zoning map is illustrated in Figure 2.

[6] Oregon Administrative Rules Chapter 734, Division 51, Highway Approaches, Access Control, Spacing Standards, and Medians, Temporary Rules Effective January 1, 2012, Amended May 3, 2012, website: http://www.oregon.gov/ODOT/HWY/ACCESSMGT/docs/pdf/734-051.pdf



Legend

Study Area
Green UUA Boundary
Winston City Limits

City of Winston Zoning

Ag - Open Space (A-O)
Office Professional/Commercial (C-OP)
General Commercial (GC)
Residential Low Density (RLA)
Residential High Density (RH)

Douglas County Zoning

Exclusive Farm Use - Grazing (FG)
Exclusive Farm Use - Cropland (F1)
Rural Residential - 5 (5R)
Rural Residential - 2 (RR)
Suburban Residential (RS)
Rural Residential - 1 (R1)
Rural Residential - 2 (R2)
Rural Residential - 3 (R3)

Tourist Commercial (CT)
Limited Commercial (C1)
Community Commercial (C2)
General Comercial (C3)
Light Industrial (M1)
Medium Industrial (M2)
Heavy Industrial (M3)
Public Reserve (PR)

OR 42 Expressway Management Plan

Data Sources:
Douglas County, Oregon 2011
Oregon Department of Transportation (ODOT), 2009
Oregon Geospatial Enterprise Office (GEO). 2009

Figure 2
Zoning Map Designations

Following the general guidelines of the Comprehensive Plan, the Zoning map designates more specific uses and densities within the general land use categories. Zoning designations along the corridor include a variety of industrial, commercial, and residential uses. A mix of commercial zoning (Tourist Commercial – CT, Community Commercial – C2, and General Commercial – C3) is present predominantly on the south side of the expressway although there is some commercial zoning on the north side around Carnes Road. Beyond the commercial zoning, Light (M1), Medium (M2), and Heavy (M3) Industrial uses are located at the eastern end of the corridor. Suburban (RS) and Rural Residential (R1 and R2) are located east of the South Umpqua River. In Winston, adjacent uses include Residential Low Density (RLA) and Ag-Open Space (A-O). There is also some lands designated Exclusive Farm Use (EFU) that abut the expressway west of the South Umpqua River.

2.2.2 Environmental, Community, and Cultural Resources

Research and mapping of environmental features and community resources was used to identify known issues and those that may pose potential challenges or barriers to expressway improvements. The information gathered was taken primarily from published documents and maps, GIS data, and conversations with appropriate professional contacts. The analysis is limited to "visual windshield validation." Further resources may exist that are not yet documented or are not visually apparent.

Environmental features researched in the corridor include:

- Goal 5 - Natural Resources
    - Wildlife Habitat
    - Wetlands
    - Recreation Trails
- Threatened and Endangered Species
- Floodplains and Floodways

Community and cultural resources identified in the corridor include:

- Parks and Recreation Areas
- Historic and Archaeological Resources
- Section 4(f) Resources
- Section 6(f) Resources

Socioeconomic data was also mapped to incorporate environmental justice considerations into the EMP.

2.2.3 Potential Design Constraints

Table 1 summarizes resources that may present potential design constraints. Depending on the location of the preferred project, final design and construction details, there will be specific permits, regulatory requirements, or authorizations required prior to construction of the project. Additional design constraints not covered in this report could include the location of Hazardous Material sites, fish passage requirements at stream crossings, and storm water treatment requirements.

Table 1. Environmental and Land Use Summary

Feature	Summary of Key Resources and Concept Guidance	Key Potential Conflict Location(s)
Wildlife Habitat & Wetlands	Riparian corridors, aquatic habitat, wildlife habitat and wetlands along the South Umpqua River and Roberts Creek. *Disturbance to undeveloped areas especially should be avoided if possible. Wetland delineations should be conducted once concept footprints are identified. Impacts to wetlands should be avoided; mitigation and permitting will be necessary if impacts cannot be avoided. BMPs incorporated into project design and construction can help minimize impacts.*	South Umpqua River and Roberts Creek
Threatened and Endangered Species	T&E Species are found in the study area - *Concepts should avoid disturbance of areas where the species are found and water quality impacts and physical impediments in T&E species contributing waterways.*	South Umpqua River and Roberts Creek
Floodplains and Floodways	Umpqua Floodway – Floodway is over 2,000 feet wide. *Fill in floodways and floodplains should be avoided. No net rise will have to be demonstrated if improvements involve any sort of fill in floodways. Cut and fill requirements will need to be adhered to in floodplains.*	South Umpqua River and Roberts Creek
Socioeconomic and Environmental Justice	Businesses and affected communities - *Displacements should be avoided or minimized.*	None
Land Use and Zoning	EFU, Floodplain Overlays, Riparian Corridor Overlays, - *Impacts to resource zones should be avoided. Impacts to EFU and Open Space zones may require goal exception.*	Eastern and western ends of study area.
Historical and Archaeological Resources	Historical and cultural resources - *Further surveys will need to be completed, especially if improvements will include ground-disturbing activities and or right-of-way acquisition of lots with potential historical resources.*	Throughout corridor
Parks and Recreation and Section 4(f) Resources	Parks and Historical/Cultural Resources - *Avoid resources if possible. Any "use" of Section 4(f) lands will need to demonstrate that it is either a "de minimis" impact or that there was no alternative for the impact.*	Throughout corridor
Section 6(f) Resources	County Bikeway Parks funded by Land and Conservation Funds - *Avoid resources if possible. Use of Section 6(f) land needs to be mitigated in kind.*	Throughout corridor

2.3 Transportation System Inventory

The transportation system inventory examines the expressway, intersecting roadways, bridges, pavement conditions, bicycle and pedestrian facilities, transit facilities, and rail facilities. *(For more detailed system inventory information, refer to Technical Memorandum #3: Existing Conditions in the Reference Material.)*

2.3.1 Roadway Inventory

OR 42 is an expressway, statewide highway, and freight route in the study area. It is also part of the National Highway System (NHS).

Table 2 summarizes the roadway characteristics for OR 42 within the study area. The inventory reviews the state and local (Douglas County) functional classification as well as posted speed, number of lanes, and widths of the travel lanes, total surface, and right of way. The majority of the inventory was constructed from ODOT mapping and online databases.

Table 2. OR 42 Roadway Inventory

OR 42 Segment	Functional Classification		Posted Speed (mph)	No. of Lanes[3]	Width (ft)	
	State[1]	Douglas County[2]			Surface[3]	Travel Lane[3]
Brosi Orchard Rd to Lookingglass Rd (MP 73.76 to 73.88)	Rural Principal Arterial, Expressway, NHS, FR	Principal Highway	45	5	70	48
Lookingglass Rd to Helweg Rd (MP 73.88 to 74.36)	Rural Principal Arterial, FR	Principal Highway	55	5	84-96	48
Helweg Rd to End of Structure (MP 74.36 to 74.52)	Urban Principal Arterial, FR	Principal Highway	55	4	48-52	48-52
End of Structure to Carnes Rd (MP 74.52 to 75.72)	Urban Principal Arterial, FR	Principal Highway	55	5	80-85	48
Carnes Rd to Roberts Creek (MP 75.72 to 75.81)	Urban Principal Arterial, FR	Principal Highway	55	5	96	48
Roberts Creek to Winery Ln (MP 75.81 to 76.07)	Urban Principal Arterial, FR	Principal Highway	50	6	88-96	60
Winery Ln to Grant Smith Rd (MP 76.07 to 76.22)	Urban Principal Arterial, FR	Principal Highway	50	5	78-92	48
Grant Smith Rd to I-5 (MP 76.22 to 76.64)	Urban Principal Arterial, FR	Principal Highway	50	4	42-68	24-48

NHS – National Highway System, FR – Freight Route

Notes:

1. Functional Classification and National Highway System Status on Oregon State Highways, Prepared by the Road Inventory and Classification Services Unit of ODOT 1/26/2011, http://www.oregon.gov/ODOT/TD/TDATA/rics/docs/ORStateHwysFCandNHS.pdf
2. Douglas County Transportation System Plan, Adopted February 14, 1998
3. Highway Inventory Summary Report, http://highway.odot.state.or.us/cf/highwayreports/aml_summary_report_by_route_no.cfm

Lane and Shoulder Widths

Existing lane and shoulder widths were compared with the ODOT standards in the 2012 Highway Design Manual (HDM) for new or reconstruction projects. Travel lanes meet the desired width standards throughout the corridor. Shoulders are generally 10 feet wide with a few exceptions. The bridge across the railroad tracks has 6-foot shoulders, which is acceptable but narrower than the 8-foot desired width. The eastbound bridge over the South Umpqua River is 26-feet wide and does not have any shoulders on either side of the roadway.

Right of Way

Right of way for the OR 42 expressway ranges from a minimum of 80 feet to more than 200 feet in some sections.

Cross Street Characteristics

Table 3 summarizes characteristics for some of the key intersecting roadways along OR 42 within the study area. The inventory reviews the functional classification as well as posted speed and number of lanes.

Table 3. OR 42 Corridor Cross-Street Inventory

Intersecting Roads	Functional Classification[1]	Jurisdiction	Traffic Control at OR 42	Posted Speed (mph)	No. of Lanes
Lookingglass Road	Minor Arterial	City of Winston	STOP Sign	40	2
Umpqua Safari RV Park	Private	Private	STOP Sign	20	2
Pepsi Road	Local	Douglas County	STOP Sign	20	2
Helweg Road	Local	Douglas County	STOP Sign	20	2
Winston Section Road	Major Collector	Douglas County	STOP Sign	20	2
Rolling Hills Road	Minor Collector	Douglas County	STOP Sign	20	2
Grange Road/Andorra Drive	Minor Collector	Douglas County	STOP Sign	20	2
Landers Avenue	Minor Collector	Douglas County	STOP Sign	20	2
Emils Way	Local	Douglas County	STOP Sign	20	2
Grange Road	Minor Collector	Douglas County	STOP Sign	20	2
Carnes Road	Major Collector	Douglas County	Traffic Signal	30	2
Roberts Creek Road	Major Collector	Douglas County	Traffic Signal	30	2
Art Mill Lane	Private	Private	STOP Sign	30	2
Winery Lane	Local	ODOT	STOP Sign	30	2
OR 99	Arterial	Douglas County	Traffic Signal	30	2
Grant Smith Road	Minor Collector	Douglas County	Traffic Signal	30	2

Notes:
1. Functional classification as identified in the Douglas County and City of Winston Transportation System Plans

Bridge Facilities

The 2012 bridge inventory data for OR 42 was obtained from ODOT's Bridge Maintenance Section and reviewed. Five (5) bridges are located on OR 42; only one (1) has any identified deficiencies. The eastbound bridge over the South Umpqua River is identified as having a low service life and vertical clearance issues; although, recent work in year 2009 was conducted to strengthen piers, improve the vertical clearance, and provide a seismic and bridge rail retrofit.

Pavement Conditions

The ODOT Pavement Services Unit surveyed pavement conditions on the highway system in year 2010. With the exception of structures, OR 42 is constructed of asphalt concrete pavement. All of the pavement is rated as Good or Very Good condition.

Access Inventory

Refer to *Section 5. Access Management Plan*.

2.3.2 Pedestrian and Bicycle Facilities Inventory

Limited on-roadway bicycle and pedestrian facilities are expected along the expressway corridor. Rather, off-system bicycle and pedestrian elements such as pathways, as well as alternate parallel routes are acceptable.

There are a few sections of the expressway with sidewalks or marked bike lanes and only two (2) intersections with marked crosswalks (Carnes Road/OR 42 and Grant Smith Road/OR 42). On the north side OR 42, a multi-use path extends the length of the expressway. On the south side of OR 42, sidewalks and bike lanes are present on OR 42 southwest of Lookingglass Rd but these facilities end where the expressway begins. Some isolated segments of bike lanes and sidewalks are also present at the intersections of Carnes Road, and Roberts Creek Road.

2.3.3 Transit Inventory

Umpqua Transit serves the expressway and adjacent community with paratransit, fixed route, and commuter bus service on weekdays. Paratransit, or dial-a-ride, service is provided five (5) days per week between 6:50 a.m. and 6:30 p.m. for people with qualifying disabilities who cannot use the fixed route service. South County Route 99 extends from the City of Roseburg to the City of Canyonville and runs along OR 42 between I-5 and the City of Winston with a stop on Carnes Road. Morning service includes two (2) northbound bus runs and three (3) southbound bus runs that stop at Carnes Road. Afternoon service includes three (3) northbound bus runs and two (2) southbound bus runs that stop at Carnes Road. The Winston Commuter Route extends from the City of Roseburg to the City of Winston and also uses OR 42

and the stop on Carnes Road. The commuter service includes nine northbound bus runs and eight southbound bus runs each day.

2.3.4 Rail Inventory

One railroad line passes under OR 42 with a grade-separated crossing. The Central Oregon and Pacific (CORP) Railroad is a short line railroad owned by RailAmerica, Inc., which is based in Jacksonville, Florida. Currently, the railroad line is exclusively for freight, with 90 percent of their delivery consisting of forest products.

2.4 Existing Operations and Safety

Existing traffic analysis includes development of year 2011 existing traffic volumes, traffic operations evaluation, and a review of historical crash patterns. *(For more detailed data and evaluation results, refer to Technical Memorandum #3: Existing Conditions in the Reference Material.)*

2.4.1 Existing Traffic Volumes

Existing traffic volume data is presented in Figure 3. Data were provided by ODOT's Transportation Systems Monitoring Unit and include intersection traffic counts collected in 2010 and 2011 in the study area.

Average Daily Traffic (ADT) Volumes

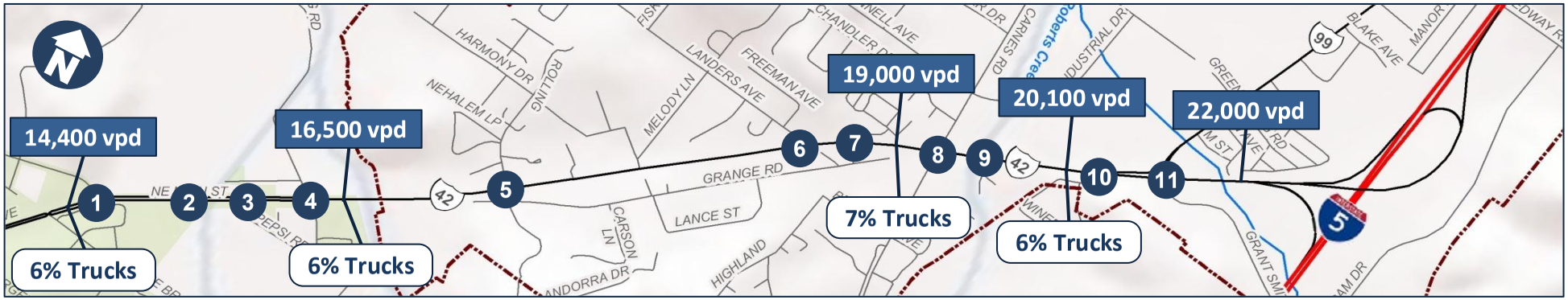
Annual traffic volumes on OR 42 have varied considerably over recent years.[7] Current data shows that volumes range from 14,400 vehicles per day (vpd) near Lookingglass Road to 22,000 vpd just west of I-5 ramps.

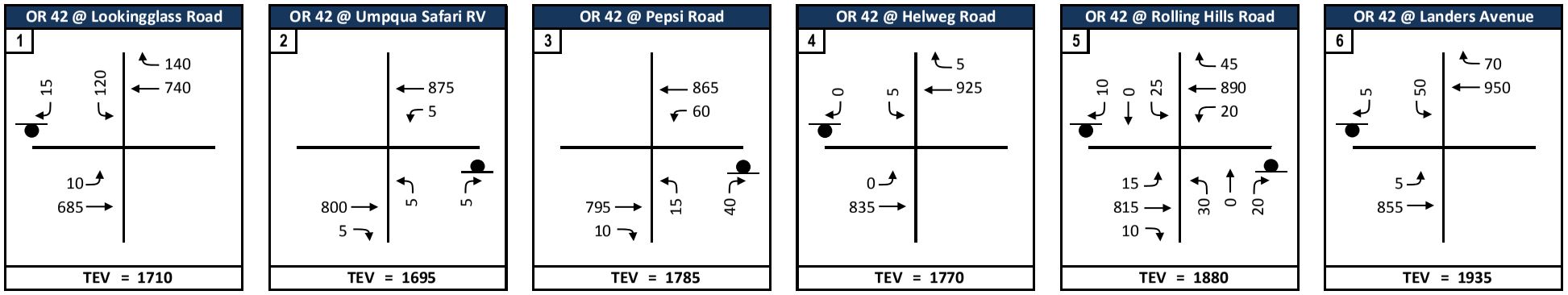
Design Hourly Volumes

Turning movement count data were collected primarily in May and June of 2010 and 2011. Traffic volumes were seasonally adjusted to correspond to traffic volumes that are seen during the peak months of the year (July/August), also known as the Design Hourly Volume[8] (DHV). Volumes were balanced to achieve a uniform dataset for analysis. Figure 3 shows the existing balanced PM peak hour volumes developed for this project.

[7] Lower present day traffic volumes on OR 42 are consistent with trends throughout the state and likely reflect the economic downturn that influenced driver behavior.

[8] Design hourly volumes were developed following the practices outlined in ODOT's Analysis Procedures Manual, website: http://www.oregon.gov/ODOT/TD/TP/pages/apm.aspx.





OR 42 Expressway Management Plan

Legend

- Turning Movement
- ### PM Peak Hour Volume
- TEV: Total Entering Volume
- Signalized Intersection
- STOP-Controlled
- # Intersection Number
- #,### vpd — 2011 Average Daily Traffic Volume (vehicles per day)
- #% Trucks — Truck Percentage of Total Trafffic (Single Unit and Semi-Trailer)

Figure 3
Existing (2011)
Design Hour Traffic Volumes

Freight Traffic

OR 42 is designated as a freight route throughout the study area. However, trucks are a moderate component of traffic along the corridor, with a range of approximately 4 to 7 percent in the eastbound direction, and 4 to 6 percent in the westbound direction during the peak hour. Most truck traffic continues through the entire corridor (very little local traffic), with approximately half of the vehicles turning to or from OR 99/Grant Smith Road, and the other half traveling to or from I-5. Some of the traffic coming to or from OR 99/Grant Smith Road is related to the dense mix of commercial, industrial, and residential developments north of I-5 Exit 119.

Similar truck percentages are evident when averaged over the course of a day, although the truck activity generally peaks earlier in the day than overall traffic volumes.

Traffic Behavior

A significant imbalance develops in the eastbound direction as drivers destined for I-5 begin to make lane choices as they travel through the OR 42 corridor. Ramp volumes from ODOT's Transportation Volume Tables show that approximately 85 percent of the traffic from OR 42 at Exit 119 is traveling northbound on I-5 and only 15 percent is traveling southbound.

The two travel lanes on OR 42 currently split after the OR 99/Grant Smith intersection with the left through lane destined for I-5 northbound and the right through lane destined for I-5 southbound. Observations indicate that after drivers cross the river, they begin to shift towards the left of the two through travel lanes in preparation for the freeway ramps. The lane imbalance builds throughout the length of the corridor until the lane utilization resembles the distribution of ramp volumes with 80 to 85 percent of the traffic in the left lane and 15 to 20 percent of the traffic in the right lane as drivers approach OR 99/Grant Smith Road.

This lane imbalance is present throughout the day but is particularly acute during peak commuting hours, when traffic volumes on the roadway are greatest.

2.4.2 Existing Traffic Operations

Traffic operations[9] were evaluated at the 11 study area intersections. Table 4 summarizes the results of the existing conditions traffic operations analysis. The current lane imbalance in the eastbound direction is reflected in the analysis by modifying the factors that represent lane utilization for the eastbound travel lanes.

[9] Current signal timing plans implemented by ODOT were used at all signalized intersections.

Table 4. Existing (2011) Design Hour Intersection Operations

Intersection	Critical[1] or Controlling Movement		2011 PM Peak Hour			Operational Standards[3]
	Approach	Movement	V/C Ratio[2]	LOS[2]	Delay[2] (sec.)	
1. OR 42 @ Lookingglass Rd	Local	SB L	0.37	C	29	0.80
	Expressway	WB T	0.23	-	-	
2. OR 42 @ Umpqua Safari RV Park	Local	NB L/R	0.03	B	9	0.80
	Expressway	EB T	0.34	-	-	
3. OR 42 @ Pepsi Rd	Local	WB L	0.09	B	5	0.80
	Expressway	WB T	0.29	-	-	
4. OR 42 @ Helweg Rd/Winston Section Rd	Local	SB L/R	0.02	C	14	0.80
	Expressway	WB T	0.39	-	-	
5. OR 42 @ Rolling Hills Rd/Grange Rd	Local	NB L/T/R	0.17	C	13	0.80
	Expressway	WB T	0.37	-	-	
6. OR 42 @ Landers Ave	Local	SB L	0.20	C	36	0.80
	Expressway	WB T	0.40	-	-	
7. OR 42 @ Emils Way/SW Grange Rd	Local	NB L/T/R	0.56	E	20	0.80
	Expressway	WB T	0.40	-	-	
8. OR 42 @ Carnes Rd/Roberts Creek Rd (Signalized)	Overall		0.77	C	30	0.80
9. OR 42 @ Art Mill Ln	Local	NB L/R	0.02	A	20	0.80
	Expressway	EB T	0.45	-	-	
10. OR 42 @ Winery Ln	Local	WB L	0.01	B	23	0.80
	Expressway	EB T	0.44	-	-	
11. OR 42 @ OR 99/Grant Smith Rd (Signalized)	Overall		0.78	C	24	0.80

Acronyms: For intersection approaches NB = northbound, SB = southbound, EB = eastbound, and WB = westbound. At the intersection approach L = left-turn movement, T = through movement, and R right-turn movement. Some approaches have shared lanes where two or more travel movements may be permitted as indicated with a slash.

Notes:

1. The critical movement at a signalized intersection is the overall operation of the intersection. The controlling movement at an unsignalized intersection is the stopped (or yield) movement with the worst v/c ratio.
2. The v/c ratio and LOS are provided from Synchro HCM Intersection Analysis Reports, while delay values are from SimTraffic.
3. Mobility standards are drawn from Table 6 of the 1999 OHP.

SHADED – results indicate where operational standards are not met

Vehicular traffic operations meet mobility standards under existing conditions throughout the corridor. The signalized intersection of OR 42 at Carnes Road approaches mobility standards with a v/c ratio of 0.77 and LOS C. The signalized intersection of OR 42 at Grant Smith Road approaches mobility standards with an overall v/c of 0.78 and LOS C.

2.4.3 Crash History Analysis

A crash history analysis was conducted to determine whether any significant, documented safety issues exist. As part of the crash analysis, historical crash data were reviewed, intersection and segment crash rates were calculated, and the state's Safety Priority Index System (SPIS) was examined. The crash analysis included a review of crash history data supplied by the ODOT Crash Data System (CDS) for the period between January 1, 2005, and December 31, 2010, which were the six (6) most recent full years for which crash data were available at the time of the analysis.

The CDS includes records for 166 crashes in the corridor. Of these crashes, 8 resulted in a fatality or incapacitating injury (Type A), 89 resulted in minor injuries (Type B), and the 69 resulted in property damage only (PDO). The distribution of crashes is illustrated in Figure 4.

Segment Crash Rate

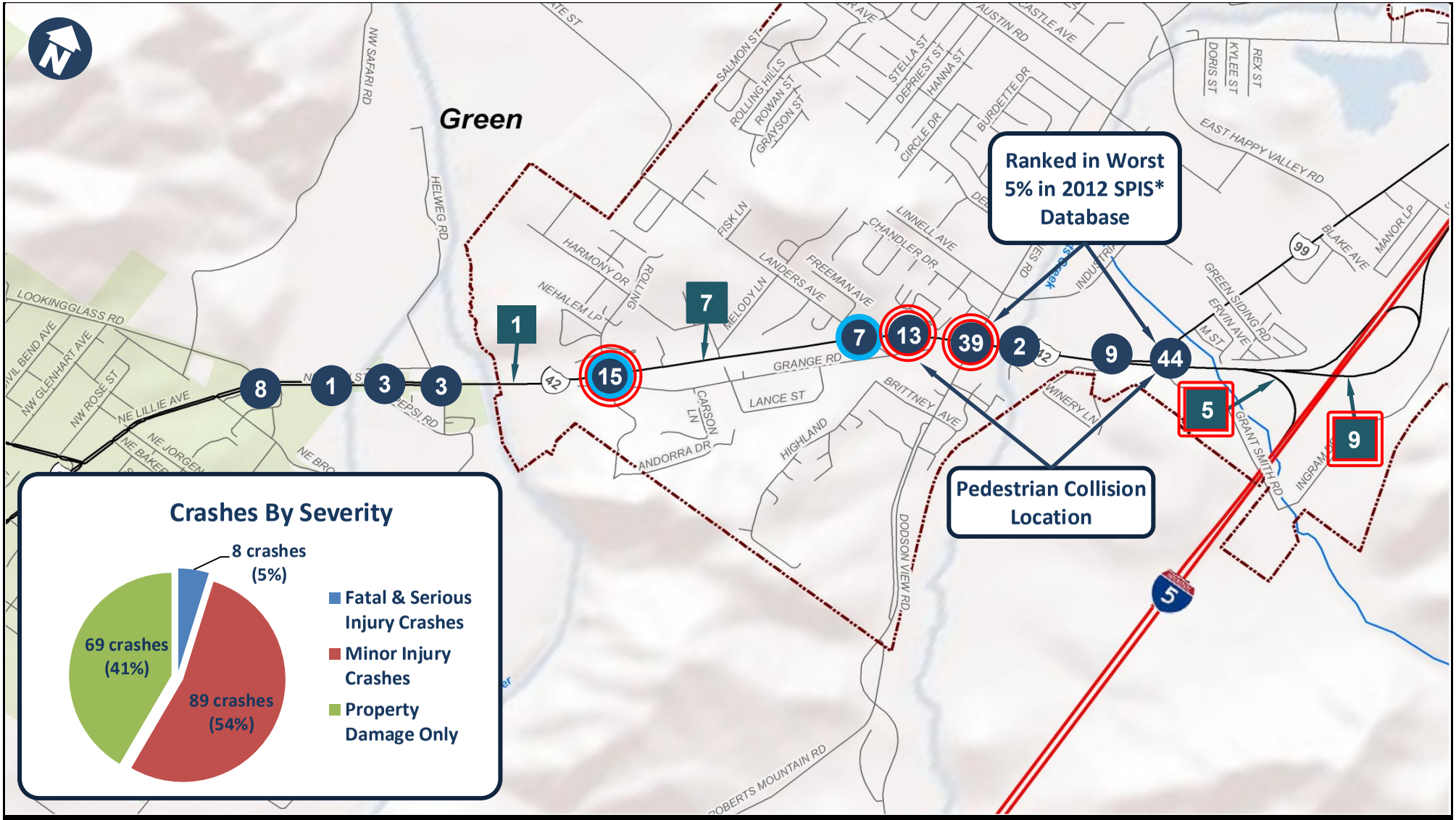
Crash rates were calculated for the expressway intersections and entire corridor segment. For the corridor, the crash rate is calculated as the number of crashes per million vehicle miles traveled (crashes/mvm). The overall segment crash rate was calculated at 1.21. This rate is compared with the 2010 average statewide crash rates for expressways in the suburban highway system of 1.33.[10]

Intersection Crash Rates

Two unsignalized intersections were identified as safety concerns based on the Highway Safety Manual (HSM)[11] critical crash rate analysis: OR 42/Rolling Hills/Andorra Drive and OR 42/Emils Way/Grange Road. At the OR 42/Rolling Hills Road/Andorra Drive intersection, 16 crashes were reported over the 6-year analysis period including 1 crash that resulted in a fatality, 2 crashes that resulted in severe injuries, and 8 other crashes that resulted in minor injuries. Thirteen (13) of the crashes were related to vehicles turning to or from Rolling Hills Road/Andorra Drive. At the OR 42/Emils Way/Grange Road intersection, 12 crashes were over the 6-year analysis period including 8 minor injury crashes. Eight (8) of the crashes were related to vehicles turning to or from Emils Way/Grange Road. One (1) crash involved a collision with a pedestrian.

[10] 2010 Oregon State Highway Crash Rate Tables, p. 5, ODOT, August 2011.

[11] Highway Safety Manual, 1st Edition, 2010, Section 4.4.2.5 Critical Rate, American Association of State Highway and Transportation Officials, 2010.



OR 42 Expressway Management Plan

Legend

- (#) Number of crashes at an intersection
- [#] Number of crashes on a segment between intersections
- Indicates an incapacitating injury occurred in one or more crashes
- Indicates a fatality occurred in one or more crashes

**The Safety Priority Index System (SPIS) is a method used in Oregon to identify safety issues along state highways. Each year these locations are ranked by assigning a SPIS score based on the frequency and severity of crashes observed. The worst 10% of the index warrant additional analysis.*

Figure 4
Summary of Crash History (January 1, 2005 through December 31, 2010)

The two signalized intersections on OR 42 had the greatest number of crashes and the highest crash rates. OR 42/OR 99/Grant Smith Road had 44 reported crashes; most were rear end (31) and turning-related (8) collisions. However, one of the reported crashes resulted in a pedestrian fatality, approximately 600 feet west of the intersection. This fatal crash resulted from an impact of an eastbound vehicle with a pedestrian crossing OR 42 from the north side to the south side of the expressway, and was attributed to low pedestrian visibility at night. The OR 42/Carnes Road/Roberts Creek Road intersection had 39 reported crashes; most were also rear-end (23) and turning-related (14) collisions. One fatal crash was reported at this intersection involving a vehicle turning from Carnes Road that was hit by a vehicle on OR 42 that disregarded the traffic light.

Safety Priority Index System (SPIS)

There are two segments within the corridor identified in the worst 5% of the 2012 SPIS[12] database rankings. These locations are at OR 42/Carnes Road/ Roberts Creek Road intersection and the OR 42/OR 99/Grant Smith Road intersection.

2.5 Future Baseline Conditions

The analysis of future baseline (year 2035) conditions examines long-term expressway operational and safety concerns. *(For more detailed data and evaluation results, refer to Technical Memorandum #4: Future Baseline Conditions in the Reference Material.)*

2.5.1 Transportation Network Assumptions

The network used in the forecasts for the OR 42 expressway is a future network that includes two improvement projects currently identified in the 2012-2015 Statewide Transportation Improvement Program (STIP), as Amended:

1. OR 42: Grant Smith Road to I-5 northbound on-ramp – Extend the outside lane across I-5; Adjust the entrance to the southbound ramp *(STIP Key 17918)*
2. OR 99: I-5 Exit 120 to Happy Valley Road – Add signalization, add dual left-turn lanes, widen OR 99 *(STIP Key 17121)*

[12] The SPIS is a method used in Oregon to identify safety problem areas along state highways. Highways are evaluated in approximately one-tenth mile increments (often grouped into larger segments). Each year these segments are ranked by assigning a SPIS score based on the frequency and severity crashes observed, while taking traffic volume into account. When a segment is ranked in the worst 10% of the index, a crash analysis is typically warranted and corrective actions are considered.

2.5.2 Future Traffic Volumes

Turning movement traffic forecasts for intersections were developed from the year 2009 and year 2035 forecasting models and the year 2011 existing traffic data. The process followed the procedures from ODOT's APM; however, due to anticipated congestion and network changes, some additional adjustments to traffic volumes were made. The resulting volumes are shown in Figure 5 for the year 2035.

A revised land use forecast model was recently developed based on the recent changes to the City of Roseburg growth forecasts. To address the proposed growth forecast changes, an annual growth rate of 1.2 percent within the City of Roseburg and 1.0 percent outside the City (compared to the previous 2.0 and 2.5 percent growth rates) has been incorporated into the land use forecast model. This revised model was used to develop year 2035 forecasts for this EMP.

2.5.3 Future Traffic Operations

Traffic operations were evaluated at the 11 corridor intersections. All existing traffic signal timing and phasing was assumed to be optimized and coordinated (where applicable). Table 5 summarizes the results of the future baseline traffic operations analysis.

Vehicular traffic operations would meet OHP performance standards under future baseline, with three exceptions. The unsignalized intersection of OR 42 at Emils Way/Grange Road would exceed standards with a v/c ratio of 1.59 and LOS F on the southbound side street approach. The signalized intersection of OR 42 at Carnes Road/Roberts Creek Road would exceed standards with a v/c ratio of 0.95 and LOS D. The signalized intersection of OR 42 at OR 99/Grant Smith Road would exceed standards with an overall v/c of 0.98 and LOS D.

Significant queuing would occur at the signalized intersections of Carnes Road and OR 99/Grant Smith Road at OR 42. Both intersections would have queues that spill out of the available storage in turn lanes which would impact flow in the adjacent through travel lanes. These conditions would be present on multiple approaches at these intersections.

The nearness of Grange Road on the south side of OR 42 also creates some queuing concerns. The northbound approach of Rolling Hills Road at OR 42 would have queues that extend well past Grange Road as would the northbound approach on Grange Road opposite Emils Way.

Although intersection operations would exceed OHP performance standards, the second through-lane on OR 42 in the eastbound direction, from OR 99/Grants Smith Road to the I-5 NB On Ramp, would improve v/c ratios and reduce queuing from OR 99/Grants Smith Road to Carnes Road/Roberts Creek Road. A more equal distribution of vehicles between the left and right through-lanes is expected.

Table 5. Future Baseline (2035) Design Hour Intersection Operations

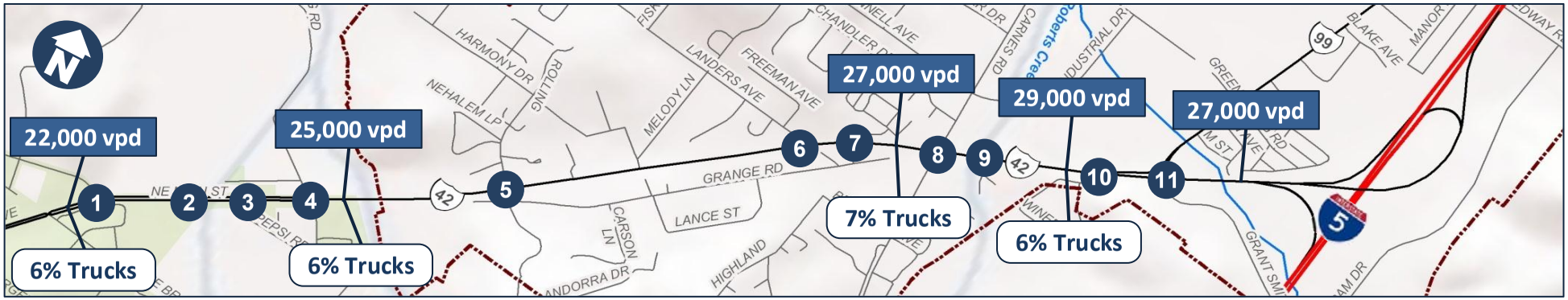
Intersection	Critical[1] or Controlling Movement		2035 PM Peak Hour			Operational Standards[3]
	Approach	Movement	V/C Ratio[2]	LOS[2]	Delay[2] (sec.)	
1. OR 42 @ Lookingglass Rd	Local	SB L	0.62	E	> 200	0.80
	Expressway	WB T	0.33	-	-	
2. OR 42 @ Umpqua Safari RV Park	Local	NB L/R	0.03	C	13	0.80
	Expressway	EB T	0.43	-	-	
3. OR 42 @ Pepsi Rd	Local	NB L	0.10	C	39	0.80
	Expressway	WB T	0.39	-	-	
4. OR 42 @ Helweg Rd/Winston Section Rd	Local	SB L/R	0.03	C	51	0.80
	Expressway	WB T	0.53	-	-	
5. OR 42 @ Rolling Hills Rd/Grange Rd	Local	SB L/T/R	0.38	E	46	0.80
	Expressway	WB T	0.51	-	-	
6. OR 42 @ Landers Ave	Local	SB L	0.51	E	>200	0.80
	Expressway	WB T	0.54	-	-	
7. OR 42 @ Emils Way/Grange Rd	Local	NB L/T/R	**1.59**	F	>200	0.80
	Expressway	WB T	0.57	-	-	
8. OR 42 @ Carnes Rd/Roberts Creek Rd (Signalized)	Overall		**0.95**	D	51	0.80
9. OR 42 @ Art Mill Ln	Local	NB L/R	0.01	A	12	0.80
	Expressway	EB T	0.56	-	-	
10. OR 42 @ Winery Ln	Local	WB L	0.01	B	24	0.80
	Expressway	EB T	0.55	-	-	
11. OR 42 @ OR 99/Grant Smith Rd (Signalized)	Overall		**0.98**	D	50	0.80

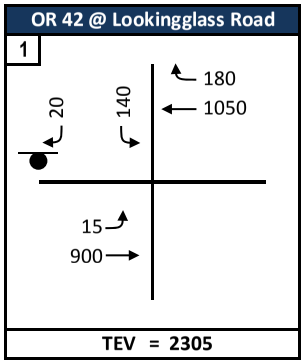
Acronyms: For intersection approaches NB = northbound, SB = southbound, EB = eastbound, and WB = westbound. At the intersection approach L = left-turn movement, T = through movement, and R right-turn movement. Some approaches have shared lanes where two or more travel movements may be permitted as indicated with a slash.

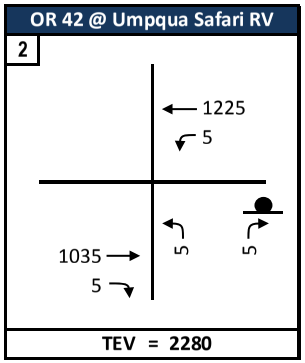
Notes:

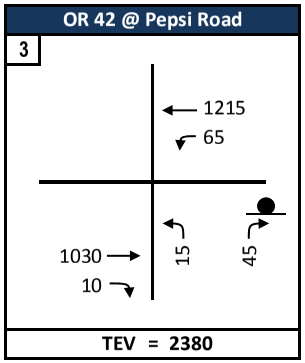
1. The critical movement at a signalized intersection is the overall operation of the intersection. The controlling movement at an unsignalized intersection is the stopped (or yield) movement with the worst v/c ratio.
2. The v/c ratio and LOS are provided from Synchro HCM Intersection Analysis Reports, while delay values are from SimTraffic.
3. Mobility standards are drawn from Table 6 of the 1999 OHP.

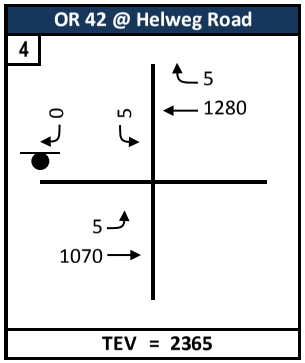
SHADED – results indicate where operational standards are not met

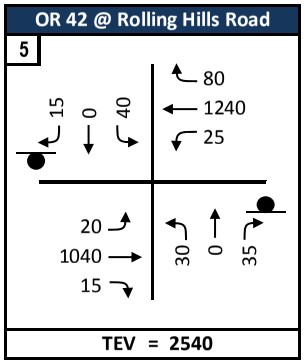


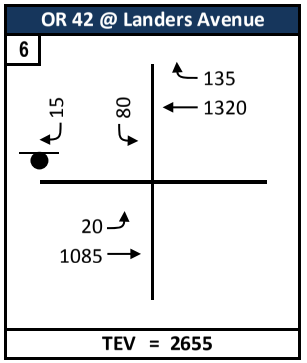


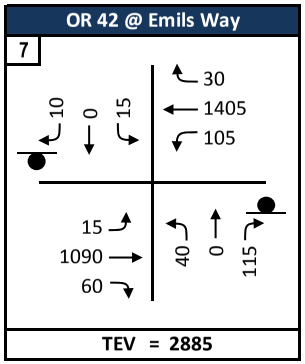


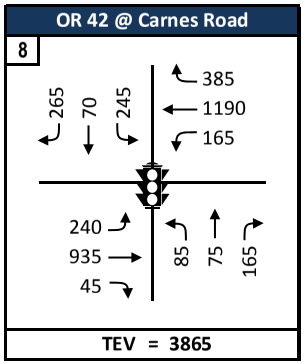


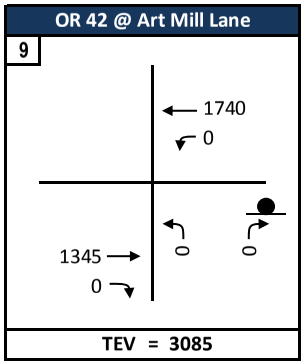


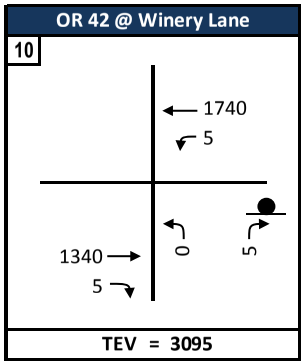


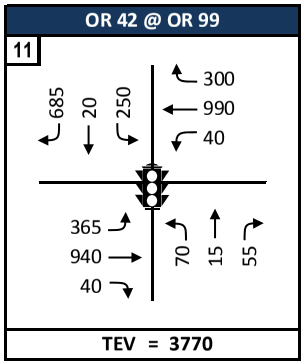












OR 42 Expressway Management Plan

Legend

- Turning Movement
- ### PM Peak Hour Volume
- TEV: Total Entering Volume
- Signalized Intersection
- STOP-Controlled
- # Intersection Number
- #,### vpd — 2035 Average Daily Traffic Volume (vehicles per day)
- #% Trucks — Truck Percentage of Total Trafffic (Single Unit and Semi-Trailer)

Figure 5
Future Baseline (2035)
Design Hour Traffic Volumes

3 SUMMARY OF EXPRESSWAY DEFICIENCIES

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3. SUMMARY OF EXPRESSWAY DEFICIENCIES

Deficiencies identified through the expressway inventory and operational analyses are summarized in Table 6.

Table 6. Summary of Deficiencies

Deficiency	Location	Related Goals
Roadway Inventory		
Substandard Shoulders	▪ The eastbound bridge over the South Umpqua River is 26-feet wide and does not have any shoulders on either side of the highway.	▪ Mobility ▪ Freight ▪ Safety
Bridge Deficiency	▪ The eastbound bridge over the South Umpqua River is identified as having a low service life and vertical clearance issues; although, recent work in year 2009 was conducted to strengthen piers, improve the vertical clearance, and provide a seismic and bridge rail retrofit.	▪ Mobility ▪ Freight ▪ Safety
Pedestrian and Bicycle Facilities Inventory		
Limited Sidewalks	▪ There are no sidewalks or multi-use pathways on the south side of OR 42.	▪ Multimodal
Limited Bike Lanes	▪ The eastbound bridge over the South Umpqua River does not have any shoulders to accommodate bicycle traffic on the roadway.	▪ Multimodal
Existing Traffic Operations & Safety		
Safety	▪ OR 42/Rolling Hills/Andorra Drive intersection had 15 reported crashes (in 6 years) including 2 crashes that resulted in severe injuries, and 8 other crashes that resulted in minor injuries. ▪ OR 42/Emils Way/Grange Road intersection had 13 reported crashes (in 6 years) including 1 crash that resulted in a fatality and 8 minor injury crashes. One (1) crash involved a collision with a pedestrian. ▪ OR 42/OR 99/Grant Smith Road intersection had 44 reported crashes including a pedestrian fatality, approximately 600 feet west of the intersection. ▪ OR 42/Carnes Road/Roberts Creek Road intersection had 39 reported crashes including 1 fatal crash was reported at this intersection involving a vehicle turning from Carnes Road hit by a vehicle on OR 42.	▪ Safety
Future Traffic Operations		
Operations	▪ Four (4) intersections are expected to have v/c ratios that would exceed the applicable OHP target v/c ratios under future baseline conditions: - OR 42 at Rolling Hills Rd - OR 42 at Emils Way/Grange Rd - OR 42 at Carnes Rd/Roberts Creek Rd - OR 42 at OR 99/Grant Smith Rd	▪ Mobility ▪ Freight ▪ Safety ▪ Economic

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4 EXPRESSWAY MANAGEMENT PLAN IMPROVEMENTS

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4. EXPRESSWAY MANAGEMENT PLAN IMPROVEMENTS

The OR 42 EMP improvements address identified deficiencies and allows the expressway to accommodate traffic, including freight, safely and efficiently into the future.

4.1 Improvement Development Process

After evaluating existing and future baseline conditions, an initial list of improvement concepts was created to address operational deficiencies. These concepts focused on three (3) areas for consideration:

- **Multi-Modal Improvements** – These concepts identify potential improvements to enhance bicycle, pedestrian, and transit facilities along the OR 42 corridor.
- **Intersection Improvements** – These concepts identify potential improvements to improve traffic flow, provide additional capacity, or address safety concerns at individual intersections within the OR 42 corridor.
- **Network Connectivity and Access Control** – These concepts identify potential roadway connections that would improve access for local traffic, address conformity to access control standards along OR 42, and improve safety.

The concept analysis included an assessment of many factors such as:

- **Traffic Operations and Safety** – Traffic operations were evaluated for concepts that were identified to address operational deficiencies. Safety improvements also considered the potential to address historical crash patterns from the six-year analysis period (Years 2005 through 2010).
- **Basic Roadway Geometries and Right-of-Way Requirements** – Illustrations of basic roadway geometry and right-of-way needs were developed for concepts that involve infrastructure improvements.
- **Environmental and Land Use Assessment** – Impacts to resources were qualitatively assessed based on the data assembled for the environmental and land use reconnaissance.
- **Concepts Cost Opinions** – Rough order of magnitude cost opinions were developed using present day dollars and standard estimating methods. The estimates include a contingency factor and preliminary engineering but do not include ROW, utility relocation, or hazardous material costs.

(Note: For more detailed information regarding the alternatives evaluation and selection of the preferred improvements, refer to Technical Memorandum #5: Concept Development and Evaluation in the Reference Material).

4.2 Summary of Improvements

Table 7 summarizes the EMP improvements and Figure 6 identifies the location of the improvements. The summary includes a brief description of the project along with a general priority and triggers for the improvement. Traffic volumes and safety (crash patterns) in the corridor should be monitored to identify when conditions may be approaching levels that could trigger an improvement. The proposed projects should be implemented based on need rather than a specific timeline; some may be constructed within the next 20 years while other projects may not be needed until sometime beyond the 20-year planning horizon.

None of the projects listed in Table 7 has identified funding but potential funding sources have been included in the table. Additional discussion of potential funding is included in *Section 7.2 Potential Funding Sources.*

4.3 Project Sheets

Project sheets have been prepared for each EMP improvements identifying:

- Name
- Location
- Recommended Improvement
- Project purpose
- Existing/Future Deficiencies without project
- Result of improvements (i.e., how it addresses deficiencies)
- Considerations/potential impacts
- Cost opinion
- Implementation (priority, phasing, triggers)
- Illustration

Project sheets were prepared for the 17 expressway and local network improvement projects; none were prepared for the TSM improvement or the park-and-ride facility.

Table 7. Summary of Expressway Management Plan Improvements

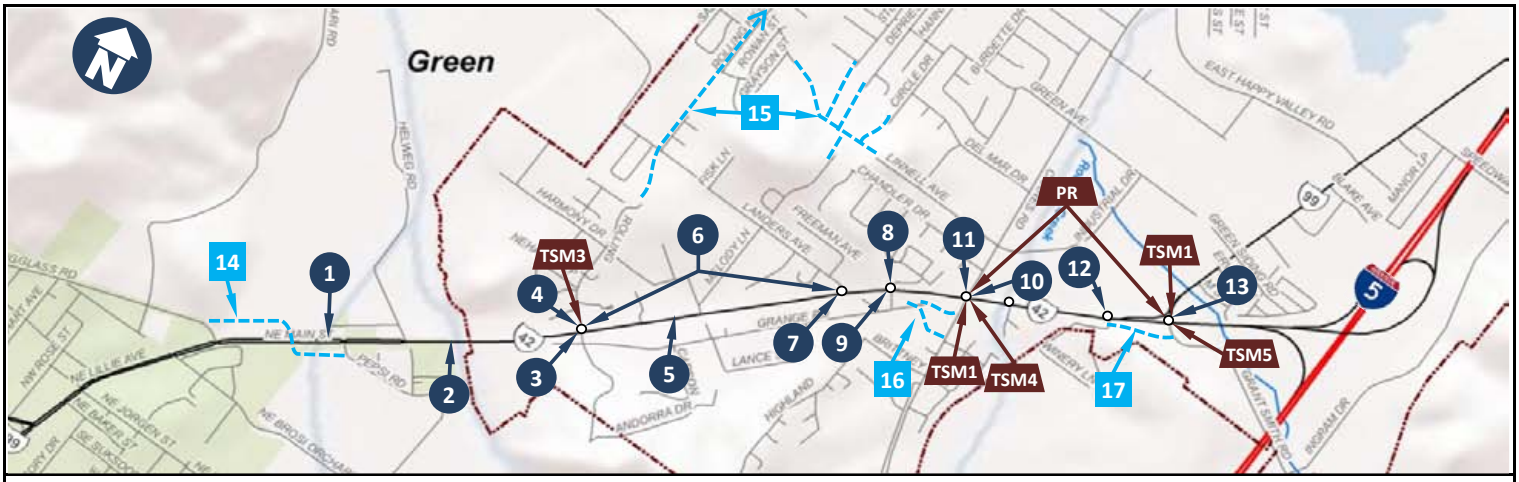
Concept			Mobility	Freight	Safety	Multimodal	Economic	Implementation			Estimated Cost[1]	Potential STIP Funding Category		Other Funding[3,4]
ID	Description	Milepoint						Priority	Triggers	Related Projects		Enhance[2, 3]	Fix It[3]	
EXPRESSWAY IMPROVEMENTS														
1	**OR 42 - Lookingglass Rd to Winston Section Rd:** Add two-way, buffered multi-use path on the south side of the expressway	73.88-74.35			✓	✓		High to Medium	▪ Current deficiency	#2: OR 42 undercrossing	$750,000	◆	◆	
2	**OR 42/Winston Section Rd:** Connect Winston Section Rd to path on north side with a multi-use path undercrossing	74.35-74.41			✓	✓		High to Medium	▪ Current deficiency	#1: Multi-use path	$450,000	◆	◆	
3	**OR 42/Rolling Hills Rd Intersection:** Install traffic signal at OR 42/Rolling Hills Rd, improve access road connections to Jackie Lane, and restrict access to OR 42 from west of Rolling Hills Rd through Jackie Lane	74.77	✓		✓	✓	✓	High	▪ Traffic signal warrants ▪ Continued pattern of turning and angle collisions	#4: Rolling Hills Rd deceleration lanes #5: Raised barrier/turn restrictions #6: Rolling Hills lighting #15: Local network connections	$1,200,000	◆	◆	◆
4	**OR 42/Rolling Hills Rd Intersection:** Add eastbound and westbound right-turn deceleration lanes on OR 42	74.77	✓		✓			Medium	▪ Right-turn lane warrants (met now) ▪ Increased crash frequency related to right turns	#3: Rolling Hills Rd traffic signal #6: Rolling Hills lighting	$500,000		◆	
5	**OR 42 – East of Rolling Hills Rd through Landers Ave:** Add raised barrier to restrict turn movements to right-in/right-out	74.88-75.46	✓	✓	✓			Medium	▪ Continued pattern of turning and angle collisions	#3: Rolling Hills Rd traffic signal #15: Local network connections #TSM3-5: U-turns at signals	$350,000		◆	
6	**OR 42/Rolling Hills Rd and OR 42/Landers Ave Intersections:** Add lighting at unsignalized intersections	74.77 & 75.42			✓	✓		High	▪ Current deficiency ▪ Continued pattern of turning and angle collisions	#3: Rolling Hills Rd traffic signal #4: Rolling Hills Rd deceleration lanes #7: Landers Ave deceleration lanes	$40,000		◆	
7	**OR 42/Landers Ave Intersection:** Add westbound right-turn deceleration lane on OR 42	75.42	✓	✓	✓			Medium	▪ Right-turn lane warrants (met now) ▪ Increased crash frequency related to right turns	#5: Raised barrier/turn restrictions #6: Landers Ave lighting #10: Third westbound through lane	$250,000		◆	
8	**OR 42/Emils Way/Grange Rd Intersection:** Add raised median to restrict turn movements to left-in/right-in/right-out	74.46-75.60			✓			High	▪ Continued pattern of crashes related to left turns	#3: Rolling Hills traffic signal #16: Grange Rd extension #TSM3-5: U-turns at signals	$300,000		◆	
9	**OR 42/Emils Way/Grange Rd Intersection:** Add eastbound and westbound right-turn deceleration lanes on OR 42	75.53	✓	✓	✓			Medium	▪ Right-turn lane warrants (met now) ▪ Increased crash frequency related to right turns	#8: Raised median/turn restrictions #10: Third westbound through lane	$500,000		◆	
10	**OR 42/Carnes Rd/Roberts Creek Rd Intersection:** Add third westbound travel lane west of Carnes Rd and convert the westbound right-turn lane into a shared through-right lane	75.72	✓	✓	✓		✓	Medium	▪ Persistent congestion (v/c ratio > 0.80)	#7: Landers Ave deceleration lane #9: Emils Way deceleration lane #11: Second southbound left-turn lane	$1.0 million	◆	◆	
11	**OR 42/Carnes Rd/Roberts Creek Rd Intersection:** Add second southbound left-turn lane on Carnes Rd approach to OR 42	75.72	✓	✓	✓		✓	Low	▪ Persistent congestion (v/c ratio > 0.80)	#10: Third westbound through lane #TSM1: Modified signal timing	$1.3 million	◆	◆	◆
12	**OR 42/Winery Ln Intersection:** Add raised barrier to restrict turn movements to right-in/right-out	76.03-76.12	✓	✓	✓			High to Medium	▪ Continued pattern of turning and angle collisions	#17:Winery Lane extension #TSM4-5: U-turns at signals	$75,000		◆	
13	**OR 42/OR 99/Grant Smith Rd Intersection:** Add second eastbound left-turn lane on OR 42 and a second northbound receiving lane on OR 99	76.22	✓	✓	✓		✓	Medium	▪ Persistent congestion (v/c ratio > 0.80)	#TSM2: Modified signal timing #TSM5: U-turns at signals	$1.0 million	◆	◆	◆

Table 7. Summary of Expressway Management Plan Improvements

Concept			Mobility	Freight	Safety	Multimodal	Economic	Implementation			Estimated Cost[1]	Potential STIP Funding Category		Other Funding[3,4]
ID	Description	Milepoint						Priority	Triggers	Related Projects		Enhance[2, 3]	Fix It[3]	
LOCAL SYSTEM IMPROVEMENTS														
14	**Lookingglass Rd and Pepsi Rd:** Extend Lookingglass Rd eastward and Pepsi Rd westward to connect at 4-way intersection, close current connections to OR 42, connect other access points to extensions; and install traffic signal	NA	✓		✓			Low	▪ Traffic signal warrants ▪ Persistent congestion and queuing on side streets ▪ Crash pattern of turning and angle collisions	#1: Multi-use path	$6.0 million	◆		◆
15	**Local Network Connections:** Extend Rolling Hills Rd(RH) northward to Happy Valley Rd and improve connectivity between Cameron Ave, Melody Ln, Chandler Dr, Stella St and other local streets as identified in the Douglas County TSP	NA	✓		✓			RH: High Other: Medium to low	▪ Phased with development ▪ Access restrictions on OR 42	#3: Rolling Hills Rd traffic signal #5: Raised barrier/turn restrictions	RH: $3.5 million Other: TBD			◆
16	**Grange Rd:** Create a new connection from the east end of Grange Rd to Roberts Creek Rd via Brittney Ave as identified in the Douglas County TSP.	NA	✓		✓			High	▪ Access restrictions on OR 42	#8: Raised median/turn restrictions	$2.1 million	◆		◆
17	**Winery Lane:** Extend Winery Lane to Grant Smith Rd	NA	✓		✓			Medium	▪ Phased with development ▪ Continued pattern of turning and angle collisions at Winery Lane	#12: Winery Lane turn restrictions	$600,000	◆		
OTHER IMPROVEMENTS														
TSM1	**OR 42/Carnes Rd/Roberts Creek Rd Intersection:** Modify signal timing to provide protected left-turn phases and clearance intervals in the north-south direction	75.72			✓			High	▪ Crash pattern of turning and angle collisions	#10: Third westbound through lane #11: Second southbound left-turn lane	$25,000	◆	◆	
TSM2	**OR 42/OR 99/Grant Smith Rd Intersection:** Modify signal timing to provide protected left-turn phases and clearance intervals in the north-south direction	76.22			✓			High	▪ Crash pattern of turning and angle collisions	#13: Second eastbound left-turn lane	$25,000	◆	◆	
TSM3	**OR 42/Rolling Hills Rd Intersection:** Permit U-turns for passenger vehicles with protected left-turn arrow.	74.77	✓		✓			NA	▪ Access restrictions on OR 42 (Projects #5 & #8) ▪ Concurrent with Project #3	#3: Rolling Hills Rd traffic signal #5: Raised barrier/turn restrictions #8: Raised median/turn restrictions	$10,000	◆	◆	
TSM4	**OR 42/Carnes Rd/Roberts Creek Rd Intersection:** Permit U-turns for passenger vehicles with protected left-turn arrow.	75.72	✓		✓			NA	▪ Access restrictions on OR 42 (Projects #5 &#8)	#5: Raised barrier/turn restrictions #8: Raised median/turn restrictions #12: Raised barrier/turn restrictions	$10,000	◆	◆	
TSM5	**OR 42/OR 99/Grant Smith Rd Intersection:** Permit U-turns for passenger vehicles with protected left-turn arrow.	76.22	✓		✓			NA	▪ Access restrictions on OR 42 (Project #17)	#12: Raised barrier/turn restrictions	$10,000	◆	◆	
PR	**OR 42 Park-and-Ride Lot:** Create a facility using an existing underutilized parking lot, a future shared-use development, or a standalone parking lot.	TBD				✓		NA	▪ Existing demand along Umpqua Transit routes		$1.0 million	◆		

Acronyms: NA = Not applicable, TBD = To be determined

Notes:
1. Estimated costs exclude right of way acquisition, hazardous materials mitigation, and natural resource mitigation.
2. Assumes projects that involve both state and county participation will have costs split at 70% funding from state/federal sources and 30% from local match.
3. Assumes ODOT will fund 100% of all state highway projects in the EMP.
4. Assumes Douglas County will fund all projects identified in the Green Transportation System Plan (December 2009).



1. **OR 42 - Lookingglass Rd to Winston Section Rd (73.88-74.35)**: *Add two-way, buffered multi-use path on the south side of the expressway (High to Medium Priority)*
2. **OR 42/Winston Section Rd (74.35-74.41):** *Connect Winston Section Rd to path on north side with a multi-use path undercrossing (High to Medium Priority)*
3. **OR 42/Rolling Hills Rd Intersection (74.77):** *Install traffic signal at OR 42/Rolling Hills Rd, improve access road connecting to Jackie Ln and restrict access to OR 42 from west of Rolling Hills Rd through Jackie Ln (High Priority)*
4. **OR 42/Rolling Hills Rd Intersection (74.77):** *Add eastbound and westbound right-turn deceleration lanes on OR 42 (Medium Priority)*
5. **OR 42 – East of Rolling Hills Rd through Landers Ave (74.78-75.42):** *Add raised barrier to restrict turn movements to right-in/right-out (Medium Priority)*
6. **OR 42/Rolling Hills Rd and OR 42/Landers Ave Intersections (74.77 & 75.42):** *Add lighting at the unsignalized intersections (High Priority)*
7. **OR 42/Landers Ave Intersection (75.42):** *Add westbound right-turn deceleration lane on OR 42 (Medium Priority)*
8. **OR 42/Emils Way/Grange Rd Intersection (75.53):** *Add raised median to restrict turn movements to left-in/right-in/right-out (High Priority)*
9. **OR 42/Emils Way/Grange Rd Intersection (75.53):** *Add eastbound and westbound right-turn deceleration lanes on OR 42 (Medium Priority)*
10. **OR 42/Carnes Rd/Roberts Creek Rd Intersection (75.72):** Add third westbound travel lane on west of the intersection and convert the westbound right-turn lane into a shared through-right lane (Medium to Low Priority)
11. **OR 42/Carnes Rd/Roberts Creek Rd Intersection (75.72):** *Add second southbound left-turn lane on Carnes Rd (Medium Priority)*
12. **OR 42/Winery Ln Intersection (76.07):** *Add raised barrier to restrict turn movements to right-in/right-out (Medium Priority)*
13. **OR 42/OR 99/Grant Smith Rd Intersection (76.22):** *Add second eastbound left-turn lane on OR 42 and a second northbound receiving lane on OR 99 (Medium Priority)*
14. **Lookingglass Rd and Pepsi Rd:** *Extend Lookingglass Rd eastward and Pepsi Rd westward to connect at a 4-way signalized intersection; close current connections to OR 42; and connect other access points to extensions (Low Priority)*
15. **Local Network Connections:** *Extend Rolling Hills Rd northward to Happy Valley Rd and improve connectivity between Melody Ln, Cameron Ave, Chandler Dr, Stella St, and other local streets in the Douglas County TSP (RH: High Priority; Other: Medium Priority)*
16. **Grange Rd:** *Create a new connection from the east end of Grange Rd to Roberts Creek Rd via Brittney Ave (High Priority)*
17. **Winery Ln:** *Extend Winery Ln to Grant Smith Rd (Medium Priority)*

- **TSM1** **OR 42/Carnes Rd/Roberts Creek Rd Intersection (75.72):** *Modify signal timing to provide protected left-turn phases and clearance intervals in the north-south direction (High Priority)*
- **TSM2** **OR 42/OR 99/Grant Smith Road Intersection (76.22):** *Modify signal timing to provide protected left-turn phases and clearance intervals in the north-south direction (High Priority)*
- **TSM3** **OR 42/Rolling Hills Rd Intersection (74.77):** *Permit U-turns for passenger vehicles with protected left-turn arrow*
- **TSM4** **OR 42/Carnes Rd/Roberts Creek Rd Intersection (75.72):** *Permit U-turns for passenger vehicles with protected left-turn arrow*
- **TSM5** **OR 42/OR 99/Grant Smith Rd Intersection (76.22):** *Permit U-turns for passenger vehicles with protected left-turn arrow*
- **PR** **OR 42 Park-and-Ride Lot:** *Create facility using an existing underutilized parking lot, a future shared-use development, or a standalone parking lot*

OR 42 Expressway Management Plan

Legend

- Expressway Improvements
- Local System Improvements
- Other Improvements
- Future Roadway Connection

Figure 6
Expressway Management Plan Improvements

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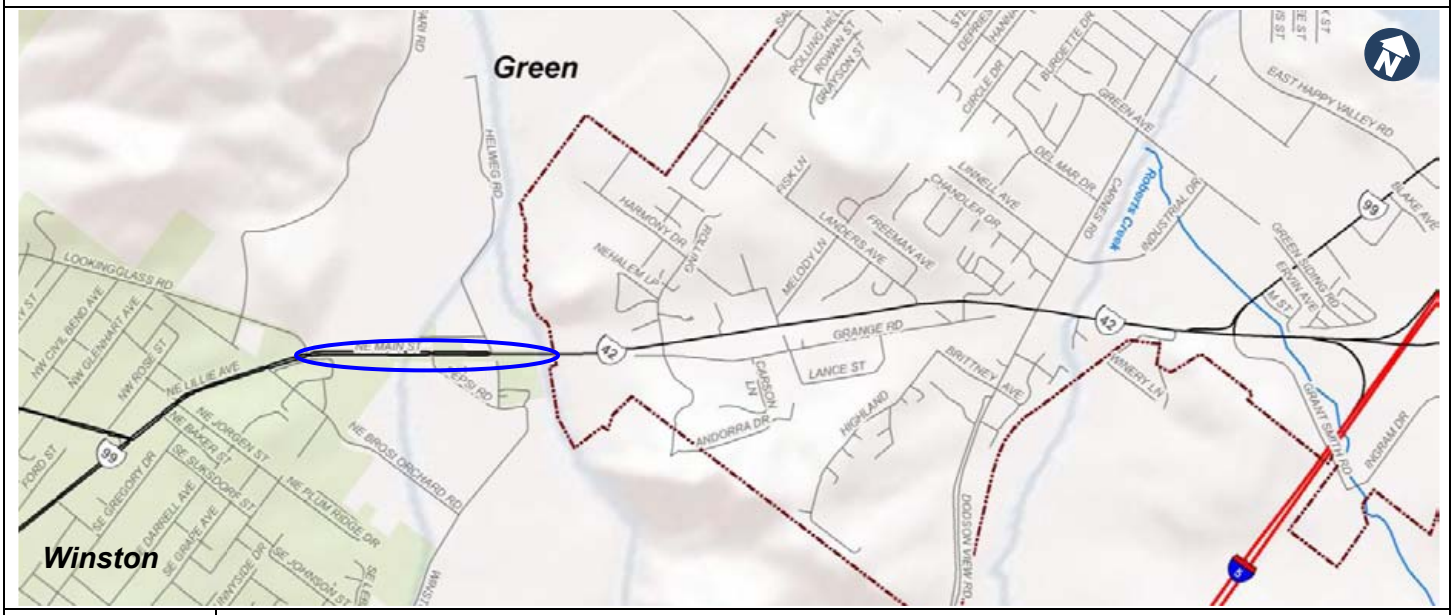
Project 1. OR 42 – Lookingglass Rd to Winston Section Rd: Add Multi-Use Path on South Side of OR 42



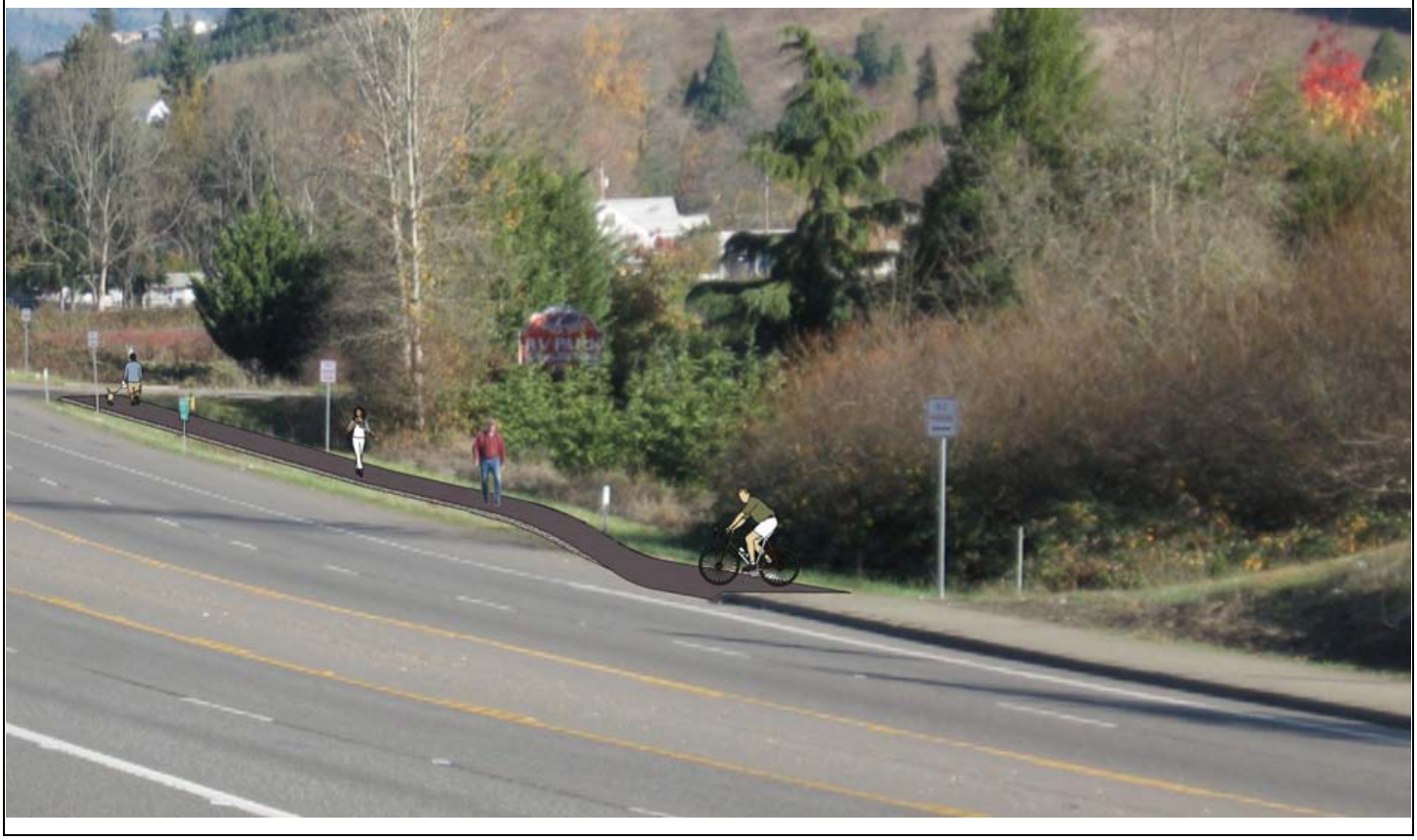
Location	Lookingglass Rd to Winston Section Rd (MP 73.88-74.35)	
Description	Provide two-way, multi-use path with buffer from expressway traffic along the south side of OR 42 between Lookingglass Rd and proposed Winston Section Rd undercrossing (Project 2)	
Purpose	▪ Provide facilities along OR 42 for all modes of travel	
Roadway Characteristics	▪ OR 42 - Current ADT: 15,000; Forecast ADT: 22,000 ▪ Posted speed is 55 mph ▪ 5-lane roadway cross section ▪ Bridges and culverts are present along OR 42	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Existing bicycle and pedestrian facilities not present on south side of OR 42 east of Lookingglass Rd ▪ Bicyclists and pedestrians have no crossing opportunities between Lookingglass Rd and Winston Section Rd	▪ 10-ft multi-use path would be added along south side of OR 42 with 8-10-ft buffer separating path from traffic (consistent with the Oregon Bicycle and Pedestrian Design Guidelines recommendations) ▪ Connection to proposed Winston Section Rd multi-use undercrossing (Project 2) would allow users to cross under OR 42 to access the path on north side ▪ Would increase safety for vulnerable users
Additional Considerations	▪ Could be constructed within available ROW ▪ Pathway would need to return to shoulder at S Umpqua Overflow Channel otherwise structure would need to be widen or a separate path crossing would be needed ▪ Would include illumination for new facilities ▪ Drainage improvements would be required ▪ Assumes no retaining walls would be required	
Cost Estimate & Assumptions	▪ $750,000 ▪ Does not include costs for widening bridges/culvert over S Umpqua Overflow Channel; a separate path crossing may be needed	
Implementation	▪ High to medium priority ▪ Related to Project 2 – OR 42 undercrossing at Winston Section Rd	

Project 1. OR 42 – Lookingglass Rd to Winston Section Rd: Add Multi-Use Path on South Side of OR 42

Preliminary Alignment Concept

Site Photo

View of South Side of OR 42 – Pedestrian walking on shoulder near proposed multi-use pathway



Project 2. Winston Section Rd: Add Multi-Use Undercrossing

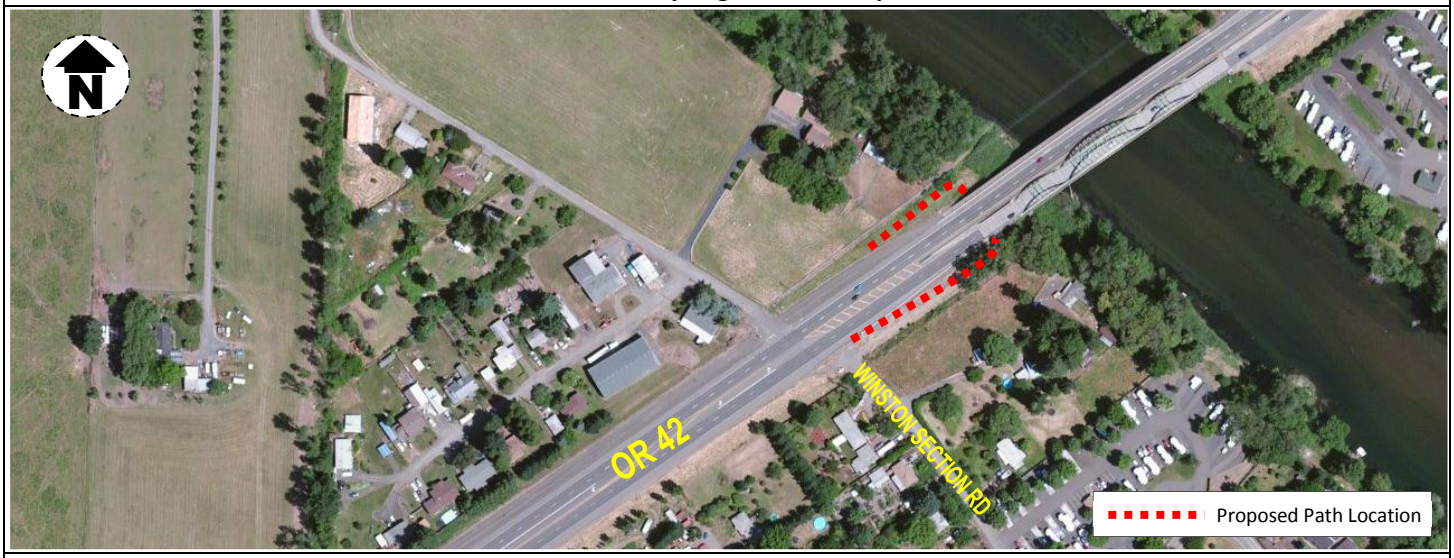
OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119

Location	Winston Section Rd to north side of Green Bridge (MP 74.35-74.41)	
Description	Provide two-way, multi-use path connection the south side of OR 42 at Winston Section Rd to the multi-use path on the north side of OR 42 near the South Umpqua River (under bridges)	
Purpose	▪ Provide facilities along OR 42 for all modes of travel	
Roadway Characteristics	▪ OR 42 - Current ADT: 15,000; Forecast ADT: 22,000 ▪ Posted speed is 55 mph ▪ 5-lane roadway cross section ▪ Bridges and culverts are present along OR 42	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Bicyclists and pedestrians have no controlled (signalized) or grade-separated crossing opportunities between the City of Winston and traffic signal at Carnes Rd/Roberts Creek Rd	▪ Users would be able to safely cross OR 42 and access the multi-use path on the north side of OR 42 ▪ Undercrossing could be connected to multi-use path on south side of OR 42 (Project 1) ▪ Could minimize pedestrian & bicycle crossings at unsignalized locations ▪ Would increase safety for vulnerable users
Additional Considerations	▪ Would involve some out-of-direction travel ▪ Could be constructed within available ROW ▪ Would include illumination for new facilities under the bridge ▪ South Umpqua River is riparian corridor with aquatic habitat, wildlife habitat, and wetlands ▪ Existing area underneath the bridges is already heavily disturbed	
Cost Estimate & Assumptions	▪ $450,000 ▪ Assumes no retaining walls would be required and minimal excavation would be needed because of the existing terrain ▪ Drainage improvements would be required	
Implementation	▪ High to medium priority ▪ Related to Project 1 – multi-use path on the south side of OR 42	

Project 2. Winston Section Rd: Add Multi-Use Undercrossing

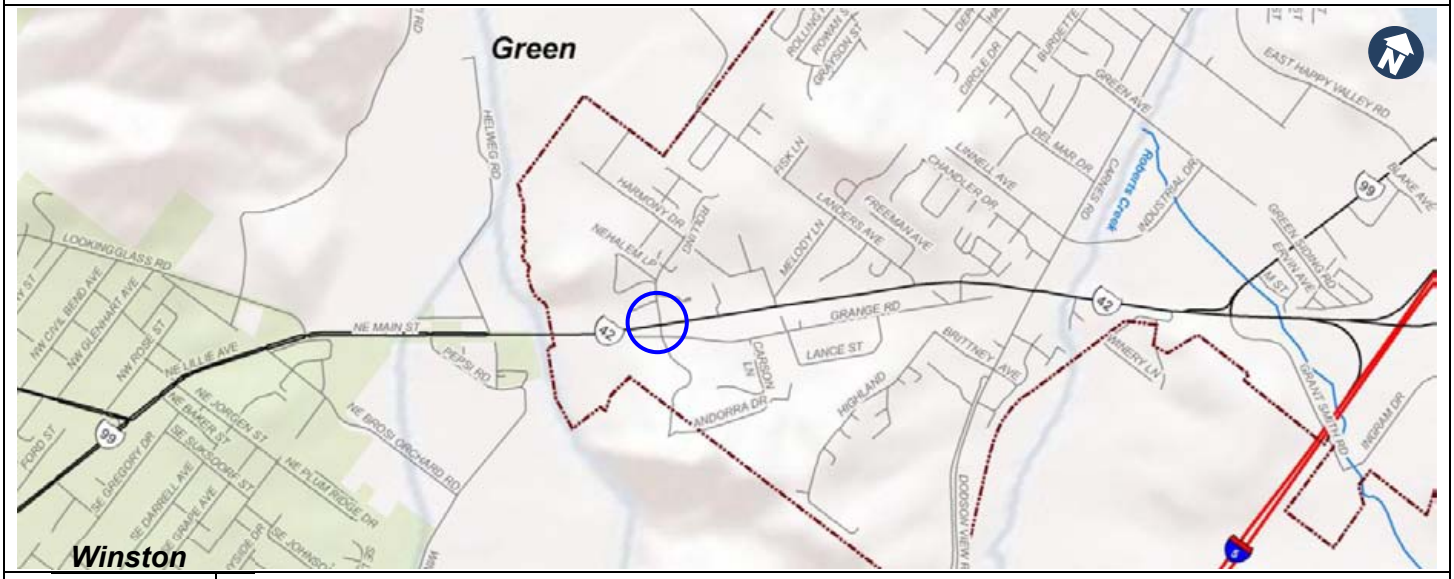
OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119

Preliminary Alignment Concept



Site Photo

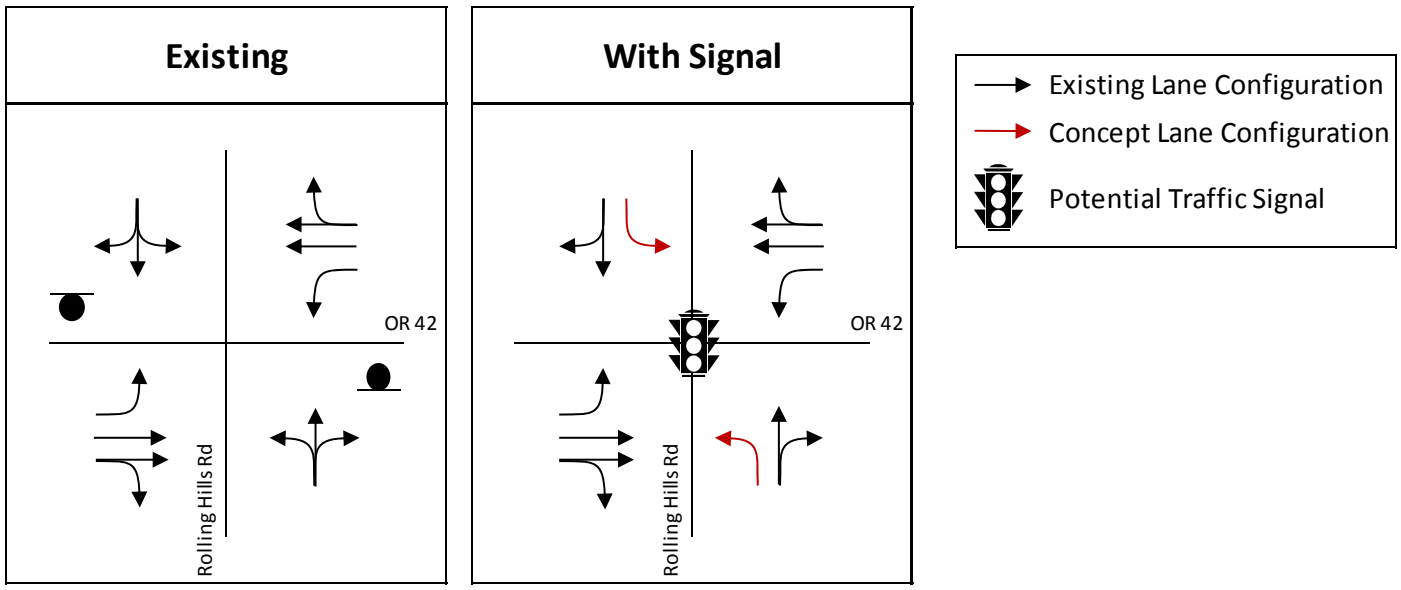
Project 3. OR 42/Rolling Hills Rd: Install Traffic Signal and Restrict Access to OR 42



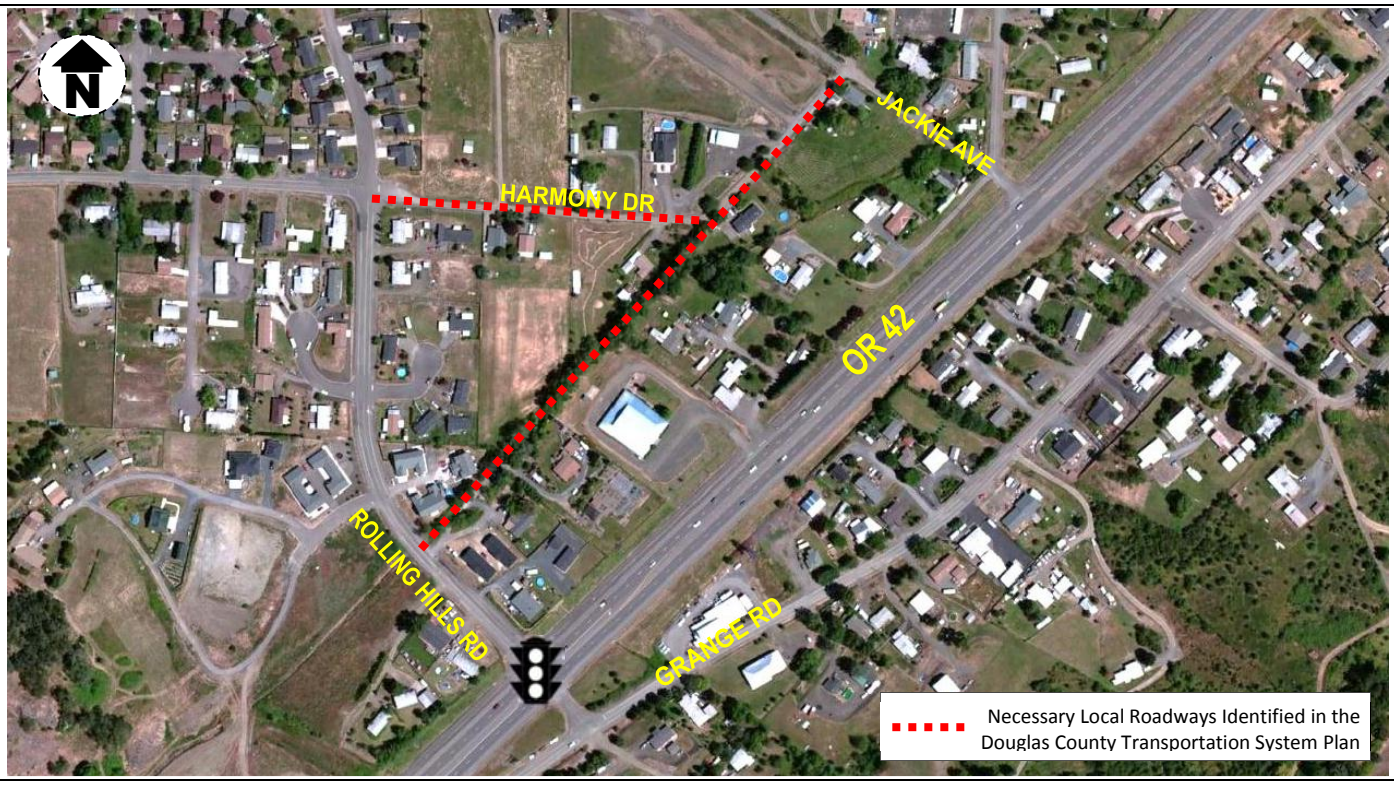
Location	Rolling Hills Rd Intersection (MP 74.77)	
Description	Install traffic signal at OR 42/Rolling Hills Rd, improve local road connections to Jackie Lane, and restrict access to OR 42 from west of Rolling Hills Rd through Jackie Lane	
Purpose	▪ Improve traffic operations and safety	
Roadway Characteristics	▪ OR 42 - Current ADT: 19,000 vpd; Forecast ADT: 27,000 vpd ▪ Rolling Hills Rd- Current ADT: 500 vpd; Forecast ADT: 5,000 vpd (with extension to Happy Valley Rd) ▪ Posted speed: 55 mph ▪ 15 crashes reported at Rolling Hills Rd intersection (2005-2010)	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Current (2011) v/c ratio = 0.17 on Rolling Hills Rd; 0.37 on OR 42 ▪ Future (2035) v/c ratio = 0.38 on Rolling Hills Rd; 0.57 on OR 42 ▪ No existing traffic signals for over two miles between Carnes Rd and City of Winston ▪ 13 crashes were turning (12) or angle (1) collisions ▪ Longer delays for left turns onto OR 42 will worsen as traffic volumes on the expressway grow ▪ Jackie Ln and private properties have direct access onto OR 42	▪ Future (2035) v/c ratio = 0.67 (intersection) ▪ Traffic signal would reduce delays and queues for Rolling Hills Rd but increase delays on OR 42 ▪ Traffic signal would likely reduce the frequency and severity of the turning and angle collisions but it may increase the number of rear-end collisions (generally less severe) ▪ Additional turn lane delineation would separate left- and right-turns on side street approaches
Additional Considerations	▪ Preliminary signal warrants are not currently met ▪ If access management east of this intersection directs more traffic to this location, or if Rolling Hills extends to Happy Valley Rd, signal would be warranted within approximately 5 to 10 years ▪ Without other improvements, a signal would still be warranted at this location within the horizon year (2035) ▪ Local network improvements identified in the Douglas County TSP (p. 4-22) and Green Circulation Plan (p. 81) would provide alternate access for Jackie Ln and private property and allow access restrictions to OR 42	
Cost Estimate & Assumptions	▪ $1.2 million ▪ Estimated cost based on 2012-2015 STIP project	
Implementation	▪ High priority due to current crash frequency/severity and side street delay ▪ Related to Project 4 (right-turn deceleration lane at Rolling Hills Rd), Project 5 (access control from east of Rolling Hills Rd through Landers Ave), and Project 15 (local network enhancements)	

Project 3. OR 42/Rolling Hills Rd: Install Traffic Signal and Restrict Access to OR 42

Preliminary Alignment Concept



Preliminary Design Schematic

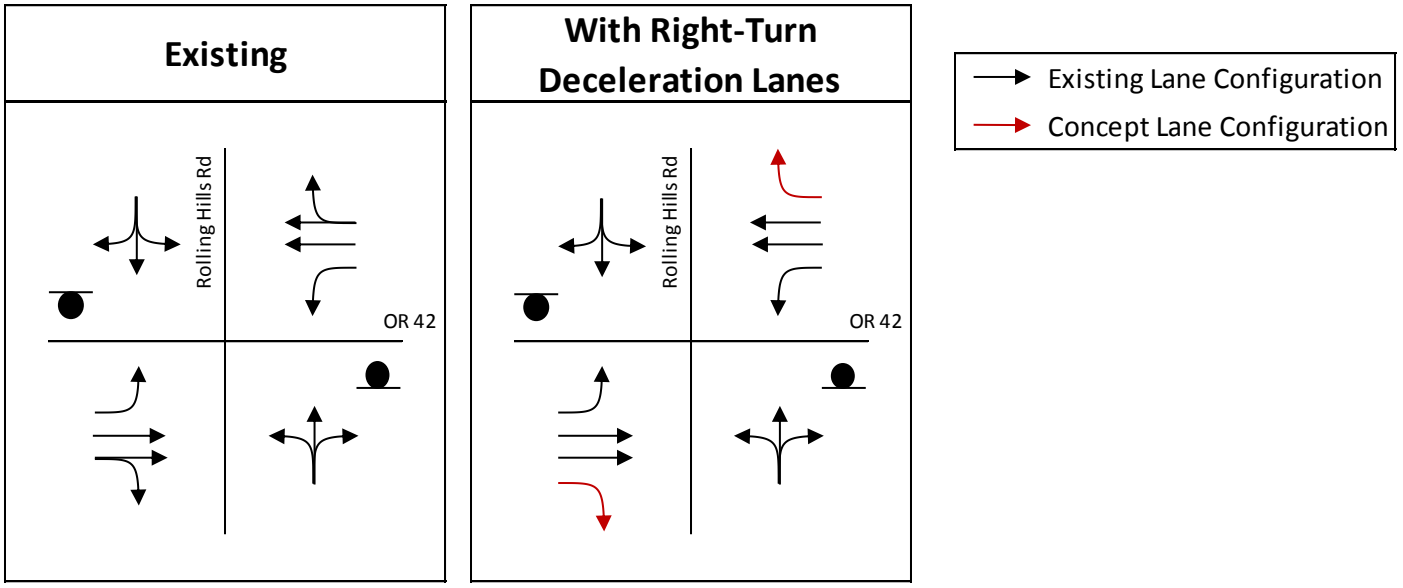


Project 4. OR 42/Rolling Hills Rd: Add Eastbound & Westbound Right-Turn Deceleration Lanes

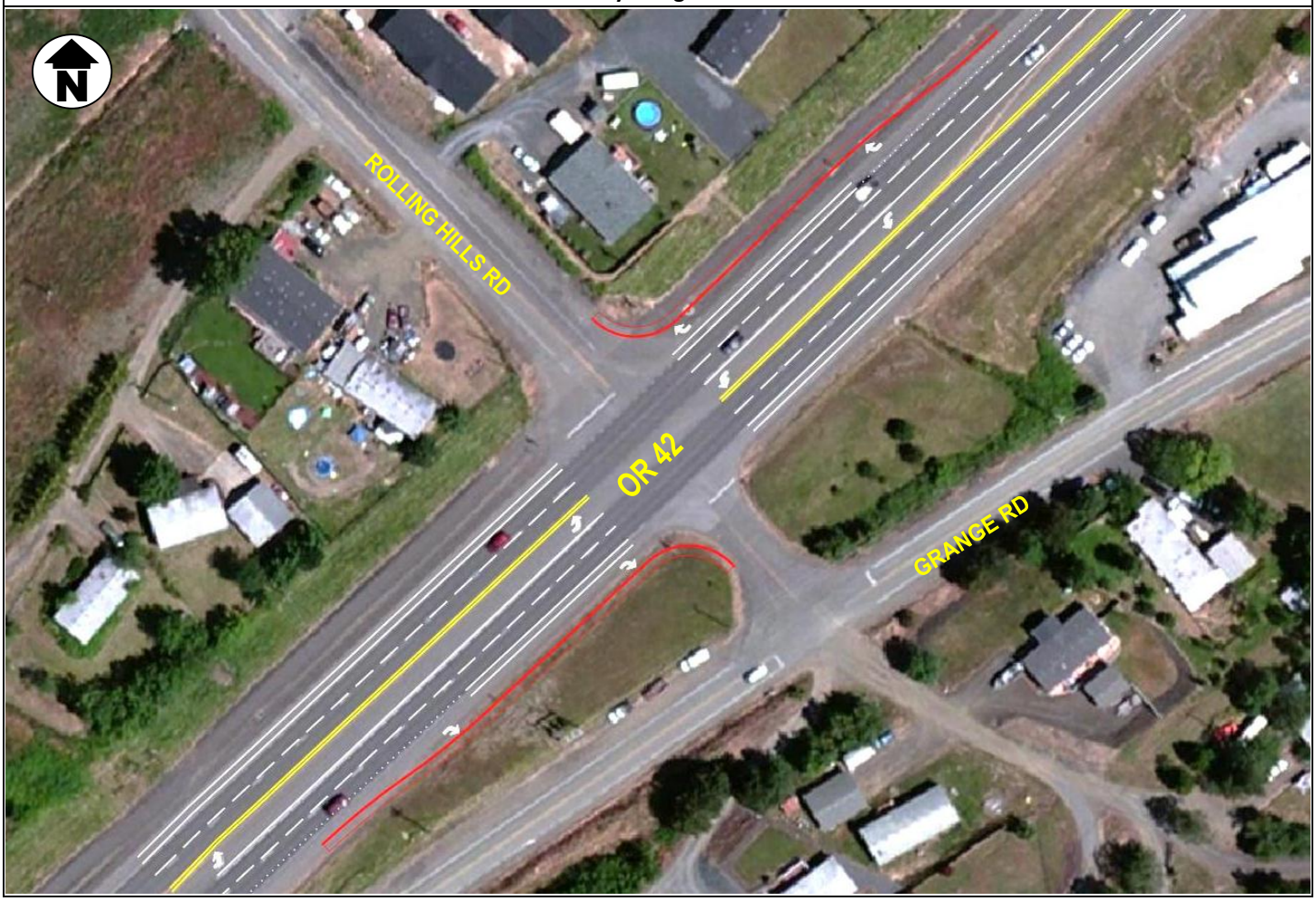
Location	Rolling Hills Rd Intersection (MP 74.77)	
Description	Add right-turn deceleration lanes on OR 42 in the eastbound and westbound directions	
Purpose	Address existing safety concerns and decrease delay	
Roadway Characteristics	▪ OR 42 - Current ADT: 19,000 vpd; Forecast ADT: 27,000 vpd ▪ Rolling Hills Rd – Current ADT: 500 vpd; Forecast ADT: 5,000 vpd (with extension to Happy Valley Rd) ▪ Posted speed: 55 mph ▪ 15 crashes reported at Rolling Hills Rd intersection (2005-2010)	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Existing OR 42 does not have right-turn deceleration lanes at Rolling Hills Rd ▪ Vehicles making right turns must either decelerate in the high-speed travel lane which can result in rear-end collisions ▪ No documented crashes related to right-turning vehicles	▪ Proposed addition of eastbound and westbound right-turn deceleration lanes ▪ Right-turn deceleration lanes would improve safety by allowing vehicles to decelerate in a lane separated from high-speed through traffic ▪ Would provide minor increase in through capacity with separate turn lane
Additional Considerations	▪ Existing volumes are sufficient to warrant right-turn deceleration lanes for both the eastbound and westbound approaches of OR 42 at Rolling Hills Rd ▪ Can be accommodated within the existing ROW ▪ Adjacent drainage and multi-use path on the northeast quadrant would need to be shifted to the north	
Cost Estimate & Assumptions	▪ $500,000 ▪ Would modify only the northeast and southwest corners of the intersection to provide a deceleration lane of appropriate length to allow vehicles to slow to an appropriate turning speed	
Implementation	▪ Medium priority ▪ Related to Project 3 (Rolling Hills Rd signalization and access control) and Project 15 (local network enhancements)	

Project 4. OR 42/Rolling Hills Rd: Add Eastbound & Westbound Right-Turn Deceleration Lanes

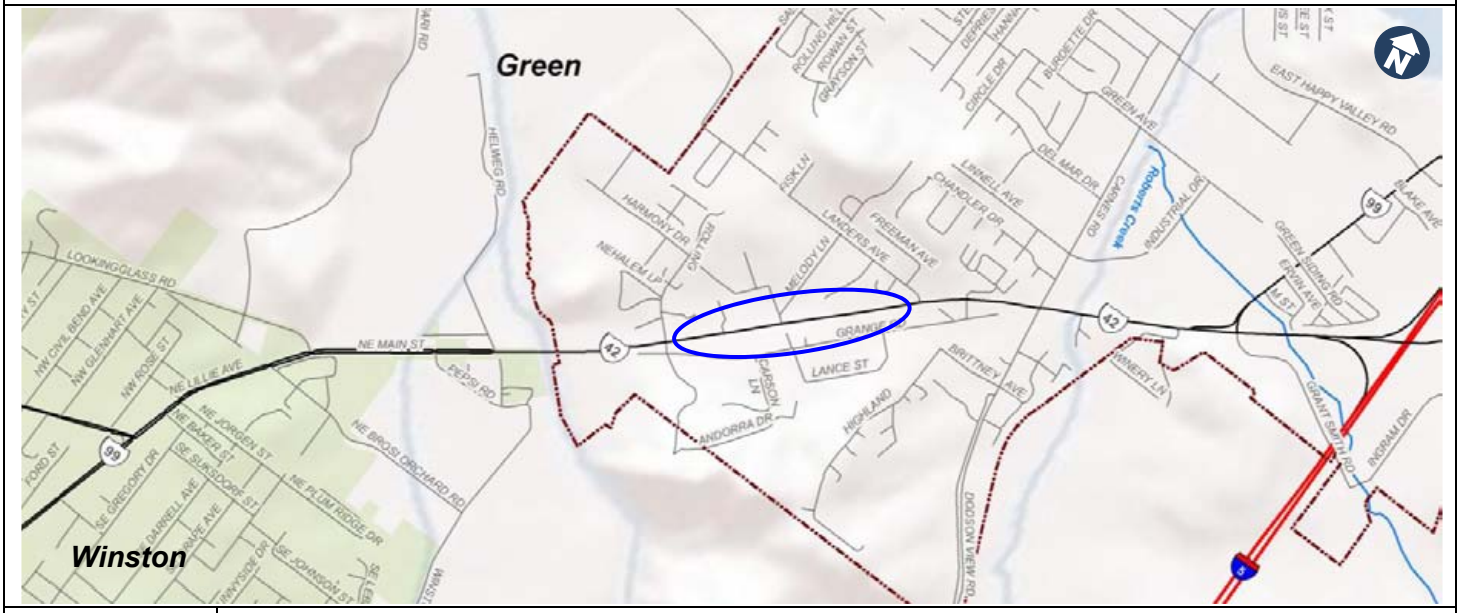
Preliminary Alignment Concept



Preliminary Design Schematic



Project 5. East of Rolling Hills Rd through Landers Ave: Add Raised Barrier



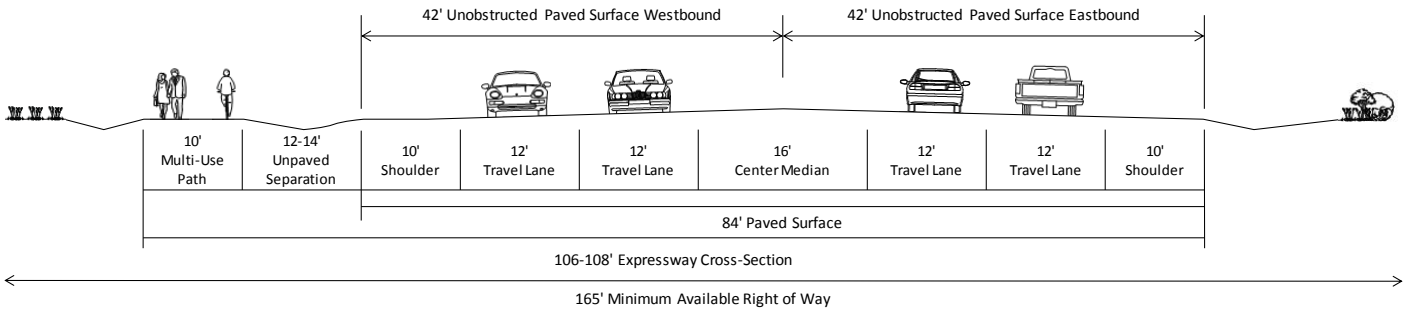
Location	East of Rolling Hills Rd through Landers Ave (MP 74.88-75.46)
Description	Install raised concrete barrier to restrict turn movements to right-in/right-out
Purpose	▪ Improve traffic operations and safety
Roadway Characteristics	▪ OR 42 - Current ADT: 17,000 vpd; Forecast ADT: 24,000 vpd ▪ 7 crashes reported on segment between Rolling Hills Rd and Landers Ave (2005-2010) ▪ 7 crashes reported at Landers Ave intersection (2005-2010) ▪ Posted speed: 55 mph ▪ Existing unobstructed roadway is 42 ft in both eastbound and westbound directions

How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Does not meet expressway standards for access spacing (1/2 mile between access points) ▪ Left turns permitted at unsignalized side streets on a 55 mph segment of the expressway ▪ Pattern of turning (7) and angle (1) collisions at access points ▪ 1 head-on collision	▪ Would eliminate left turns onto OR 42 at unsignalized intersections ▪ Safety for all vehicles would be improved by directing turning vehicles to targeted and signalized locations where they can be accommodated with lower crash risk ▪ Raised barrier would also reduce head-on collisions

Additional Considerations	▪ Would require U-turns at signalized intersections and/or local street connectivity to support traffic circulation ▪ May result in some out of direction travel for side street traffic ▪ Depending on barrier type, transitions may require impact attenuators ▪ Proposed unobstructed roadway would be 41 ft in both eastbound and westbound directions which is wider than the restricted eastbound bridge cross section over the S Umpqua River (26 ft) and westbound off-ramp from I-5 Exit 119 (29 ft)
Cost Estimate & Assumptions	▪ $350,000 ▪ Concrete barrier would be placed in existing striped median; no roadway widening would be needed
Implementation	▪ Medium priority ▪ Related to Project 3 (Rolling Hills Rd traffic signal and access restrictions), `TSM3 (U-Turns at Rolling Hills Rd traffic signal) ▪ Should not be implemented until at least one Douglas County local enhancement connection (Project 15) has been constructed unless an identified hazard that adversely affects public health, safety, or welfare prevails (i.e., continued pattern of turning and angle collisions or identified worst 10% in SPIS)

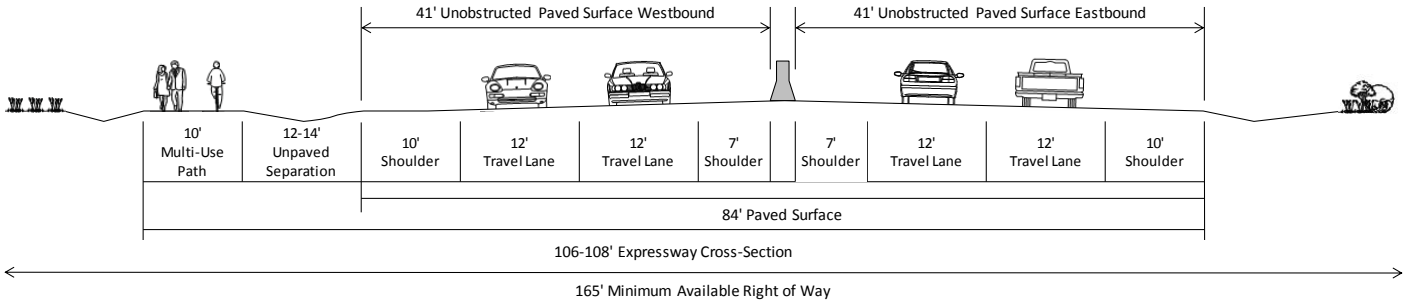
Project 5. East of Rolling Hills Rd through Landers Ave: Add Raised Barrier

Existing Roadway Cross-Section



Note: This is the minimum cross-section on OR 42 between MP 74.88 and MP 75.46.

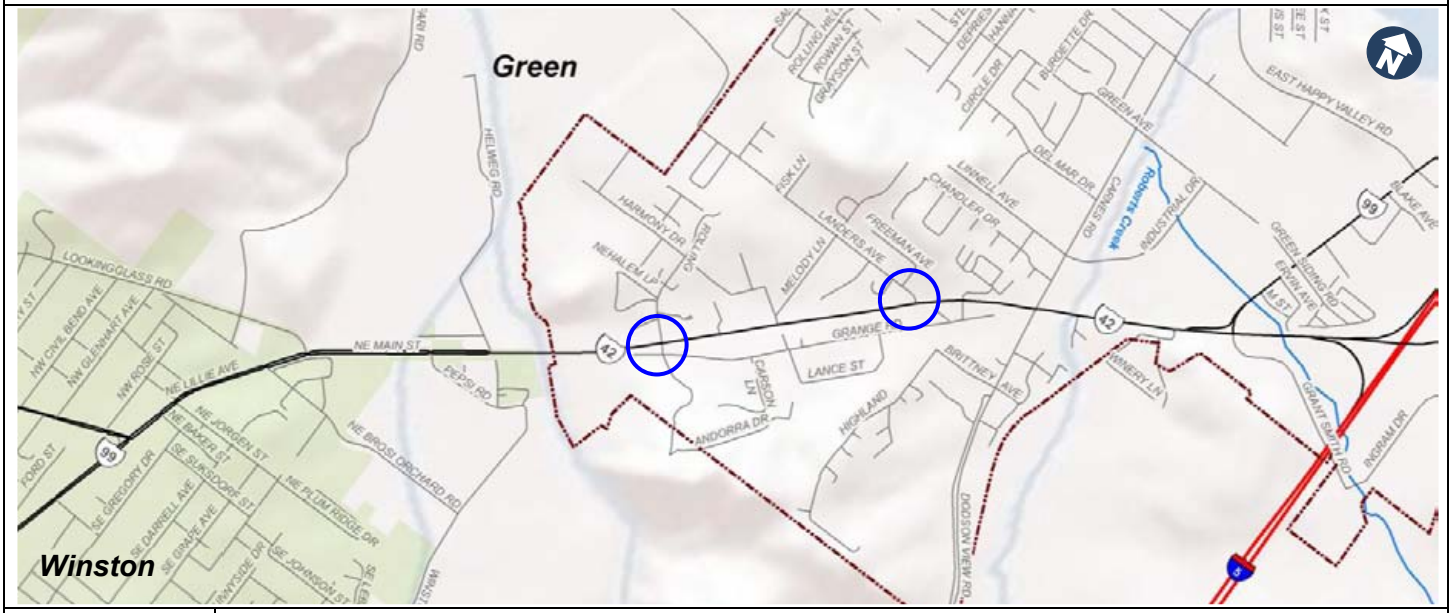
Potential Roadway Cross-Section



Note: This would the minimum cross-section on OR 42 between MP 74.88 and MP 75.46.

Project 6. Install Roadway Lighting at Key Locations

OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119



Location	Rolling Hills Rd and Landers Ave Intersections with OR 42 (MP 74.77 & 75.42)	
Description	Install roadway lighting at key locations	
Purpose	▪ Enhance visibility and safety in the corridor near intersections and conflict points	
Roadway Characteristics	▪ OR 42 - Current ADT: 15,000 to 23,000 vpd; Forecast ADT: 22,000 to 31,000 vpd ▪ Posted speed ranges from 45 to 55 mph	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Currently unlit intersections can make it difficult for vehicles turning to/from OR 42 to see bicycles and pedestrians using the multi-use path after dusk ▪ Reduced visibility may increase the potential for crashes ▪ Limited visibility may reduce the attractiveness of pedestrian and bicycle facilities after dusk	▪ Lighting would improve visibility of bicycles and pedestrians traveling along the multi-use path along the north side of OR 42 and reduce potential intermodal conflicts ▪ Visibility of side street traffic would also be improved ▪ May also increase the attractiveness of pedestrian and bicycle facilities after dusk
Additional Considerations	▪ No anticipated environmental or land use impacts associated with the proposed lighting improvements ▪ Lighting spillover and skyglow may reach adjacent properties	
Cost Estimate & Assumptions	▪ $40,000	
Implementation	▪ High priority ▪ Related to Project 3 (Rolling Hills Rd signalization and access restrictions), Project 4 (Rolling Hills Rd right-turn deceleration lanes), and Project 7 (Landers Ave right-turn deceleration lanes) ▪ If a traffic signal is installed at Rolling Hills Rd (Project 3) prior to improvement, lighting should be included at that time	

Project 7. OR 42/Landers Ave: Add Westbound Right-Turn Deceleration Lane

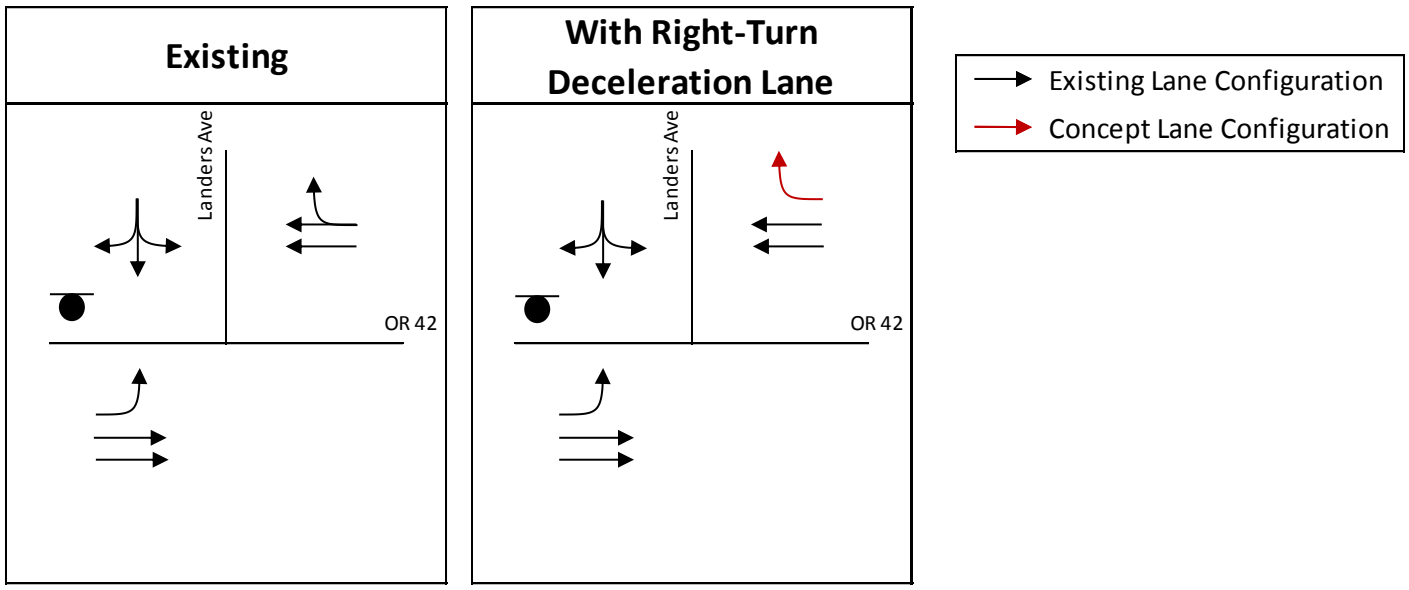
Location	Landers Avenue (MP 75.42)
Description	Add right-turn deceleration lane on OR 42 in the westbound direction
Purpose	Address existing safety concerns and decrease delay
Roadway Characteristics	▪ Current OR 42 ADT: 19,000 vpd - Forecast ORADT: 27,000 vpd ▪ Posted speed: 55 mph ▪ 7 crashes reported at Landers Ave intersection (2005-2010)

How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Existing OR 42 does not have right-turn deceleration lanes at Landers Ln ▪ Vehicles making right turns must either decelerate in the high-speed travel lane which can result in rear-end collisions ▪ 1 serious injury crash related to right-turning vehicles was reported	▪ Proposed addition of eastbound and westbound right-turn deceleration lanes ▪ Right-turn deceleration lanes would improve safety by allowing vehicles to decelerate in a lane separated from high-speed through traffic ▪ Would provide minor increase in through capacity with separate turn lane

Additional Considerations	▪ Existing volumes are sufficient to warrant a right-turn deceleration lane ▪ Would modify the northeast corner of the intersection to provide a deceleration lane of appropriate length to allow vehicles to slow to an appropriate turning speed
Cost Estimate & Assumptions	▪ $250,000 ▪ Can be accommodated within the existing ROW ▪ Adjacent drainage and multi-use path on the northeast quadrant would need to be shifted to the north
Implementation	▪ Medium priority ▪ Implementation of Project 10 (extension of third westbound through lane west of Carnes Rd) would require converting deceleration lane into through lane that would need 500-ft taper on west side of Landers Ave (not included in cost)

Project 7. OR 42/Landers Ave: Add Westbound Right-Turn Deceleration Lane

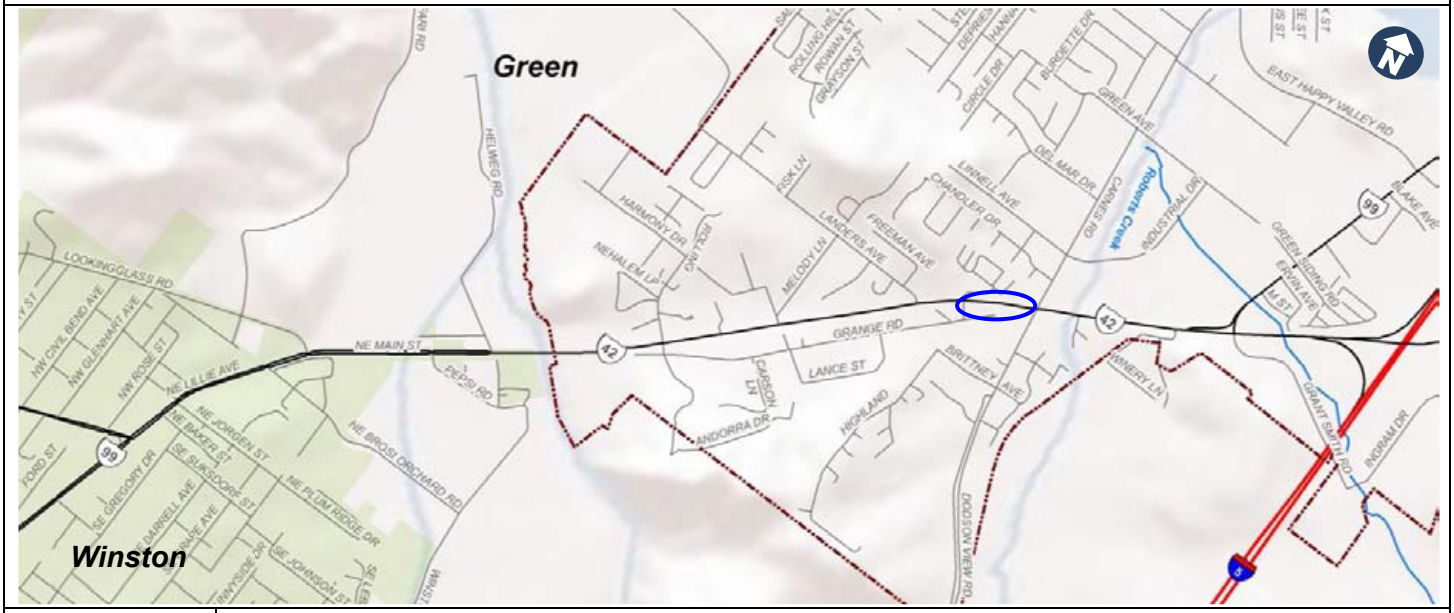
Preliminary Alignment Concept



Preliminary Design Schematic

Project 8. OR 42/Emils Way/Grange Rd: Add Raised Median

OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119



Location	OR 42/Emils Way/Grange Rd Intersection (MP 74.46-75.60)	
Description	Install raised median to restrict turn movements to left-in/right-in/right-out	
Purpose	▪ Improve traffic operations and safety	
Roadway Characteristics	▪ OR 42 - Current ADT: 19,000 vpd; Forecast ADT: OR 42 - 27,000 vpd ▪ Grange Rd - Current ADT: 2,500-3,000 vpd; Forecast ADT: 3,000-3,500 vpd ▪ Emils Way - Current ADT: <500 vpd; Forecast ADT: <500 vpd ▪ Posted speed: 50 mph ▪ 13 crashes reported at Emils Way/Grange Rd Intersection including one fatality (2005-2010) ▪ Existing unobstructed roadway is 42 ft in both eastbound and westbound directions (total pavement 84 ft)	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Left turns are permitted from Emils Way/Grange Rd onto OR 42 at this location within close proximity to Carnes Rd ▪ Continued pattern of turning collisions (4 related to left turns from Grange Rd) ▪ Congestion and queuing occurs at this location due to vehicles waiting to make left turns onto OR 42	▪ Eliminates left turns onto OR 42 at this unsignalized intersection ▪ Still allow ingress to local businesses, but would require some egress to use alternative routing ▪ Improves safety along the expressway by directing left-turning vehicles to targeted and signalized locations with lesser crash risk
Additional Considerations	▪ May result in some out of direction travel for traffic from Grange Rd and Emils Way ▪ Would require U-turns at signalized intersections (TSM3 at Rolling Hills Rd and TSM4 at Carnes Rd) ▪ Connection to Roberts Creek Rd (Project 16) would provide alternate route for traffic from Grange Rd ▪ Proposed unobstructed roadway would be a minimum 33 ft in both eastbound and westbound directions which is wider than the restricted eastbound bridge cross section over the S Umpqua River (26 ft) and westbound off-ramp from I-5 Exit 119 (29 ft)	
Cost Estimate & Assumptions	▪ $300,000 ▪ Would require some pavement widening and/or reduction in shoulder width to add median ▪ Does not include shifting multi-use path if paved roadway surface is widened	
Implementation	▪ High priority ▪ Should not be implemented until the Douglas County local enhancement connection (Project 16) has been constructed unless an identified hazard that adversely affects public health, safety, or welfare prevails (i.e., continued pattern of turning and angle collisions or identified worst 10% in SPIS) ▪ Restriction of all left-turn movements may be re-evaluated if an identified safety hazard prevails	

Project 8. OR 42/Emils Way/Grange Rd: Add Raised Median

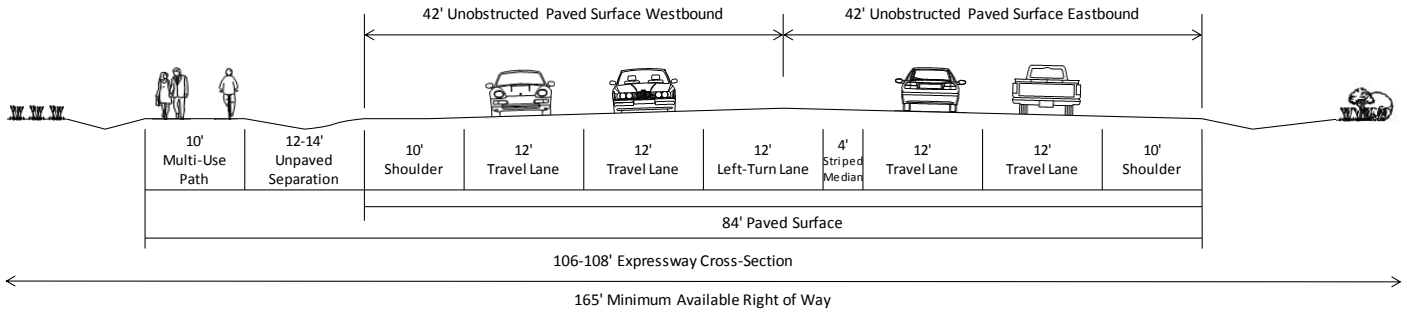
Preliminary Design Schematic

Preliminary Rendering

Project 8. OR 42/Emils Way/Grange Rd: Add Raised Median

Existing Roadway Cross-Section

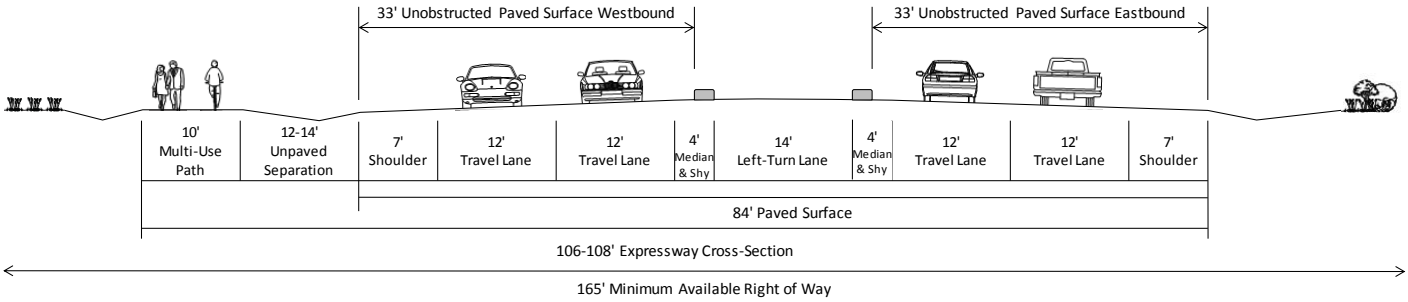
EXISTING 4-LANE EXPRESSWAY CROSS-SECTION



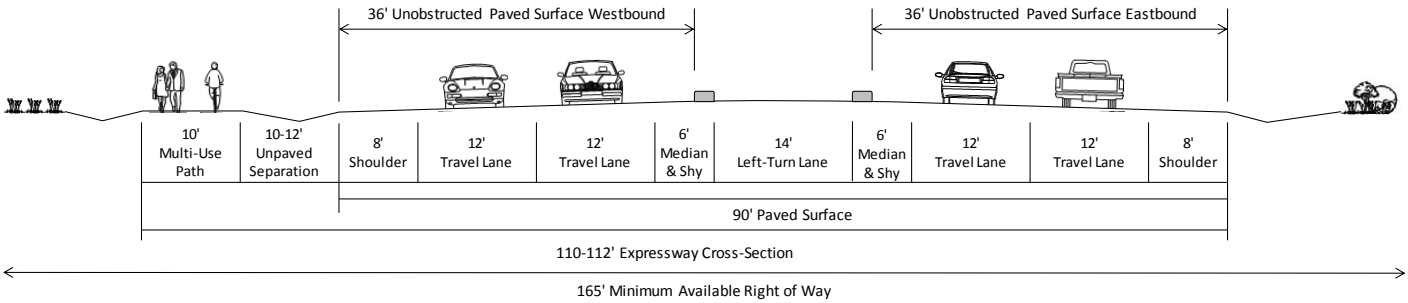
Note: This is the minimum cross-section on OR 42 between MP 74.46 and MP 75.60.

Potential Roadway Cross-Sections

4-LANE EXPRESSWAY CROSS-SECTION WITH RAISED MEDIAN (NO WIDENING)

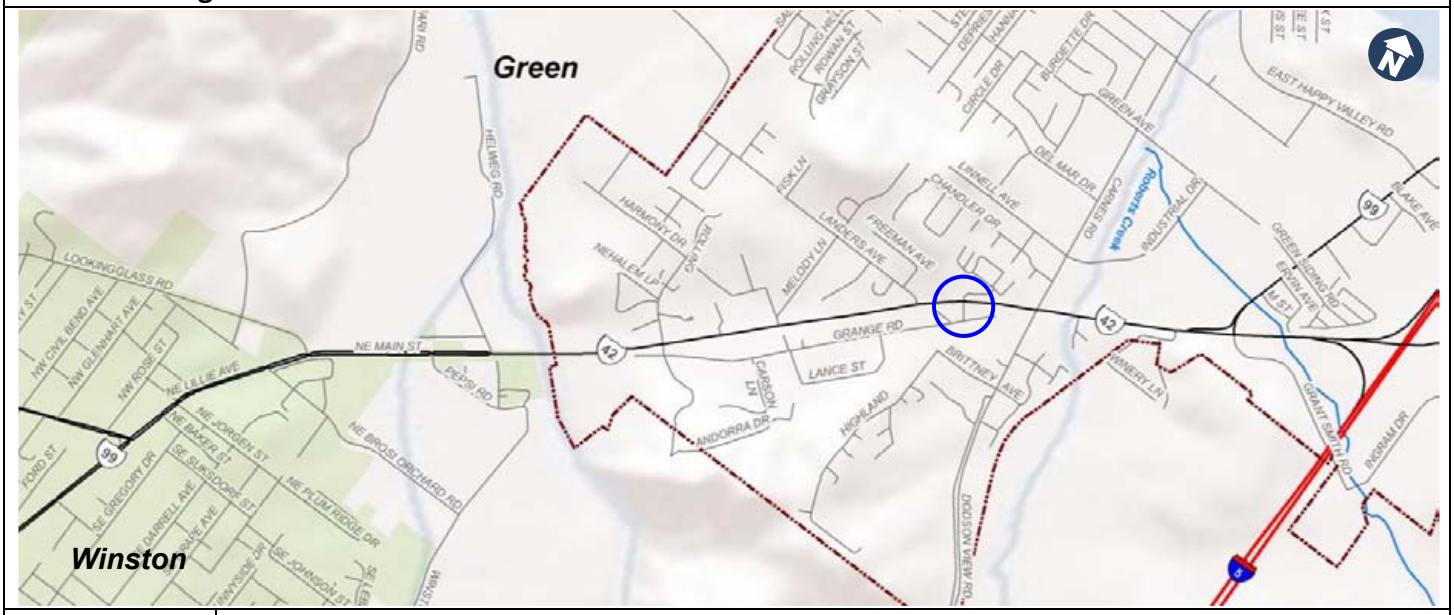


4-LANE EXPRESSWAY CROSS-SECTION WITH RAISED MEDIAN (WIDENING)



Note: This would the minimum cross-section on OR 42 between MP 74.46 and MP 75.60.

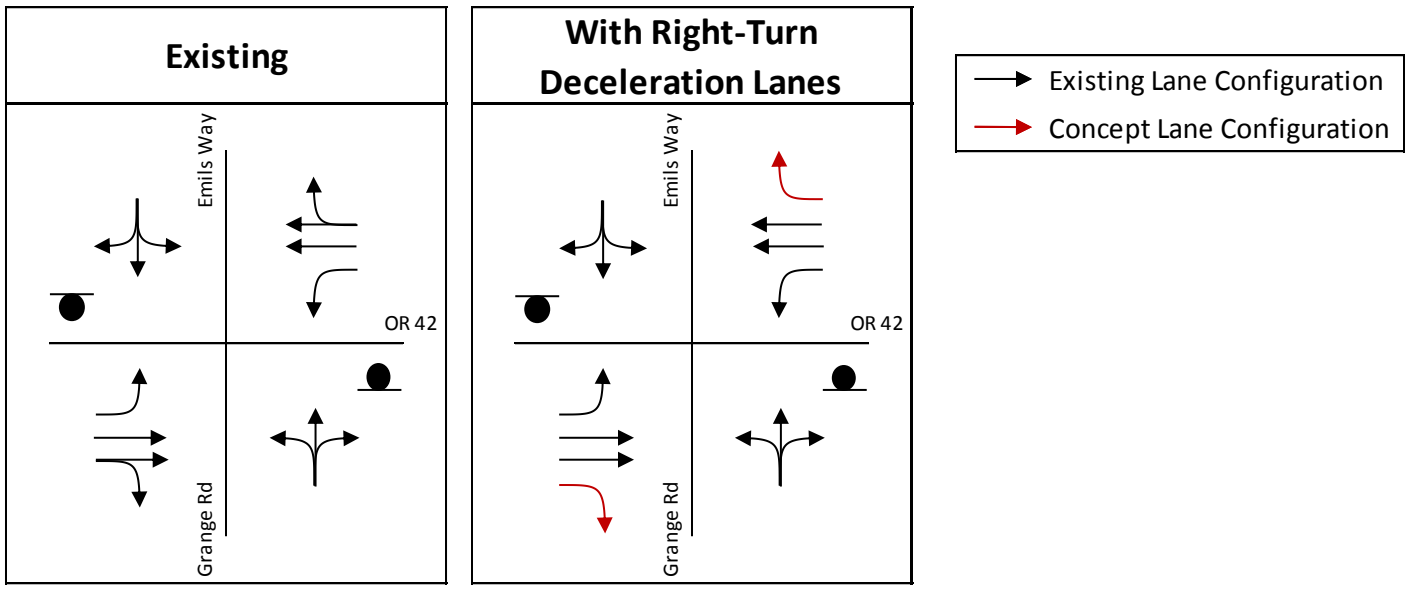
Project 9. OR 42/Emils Way/Grange Rd: Add Eastbound & Westbound Right-Turn Deceleration Lanes



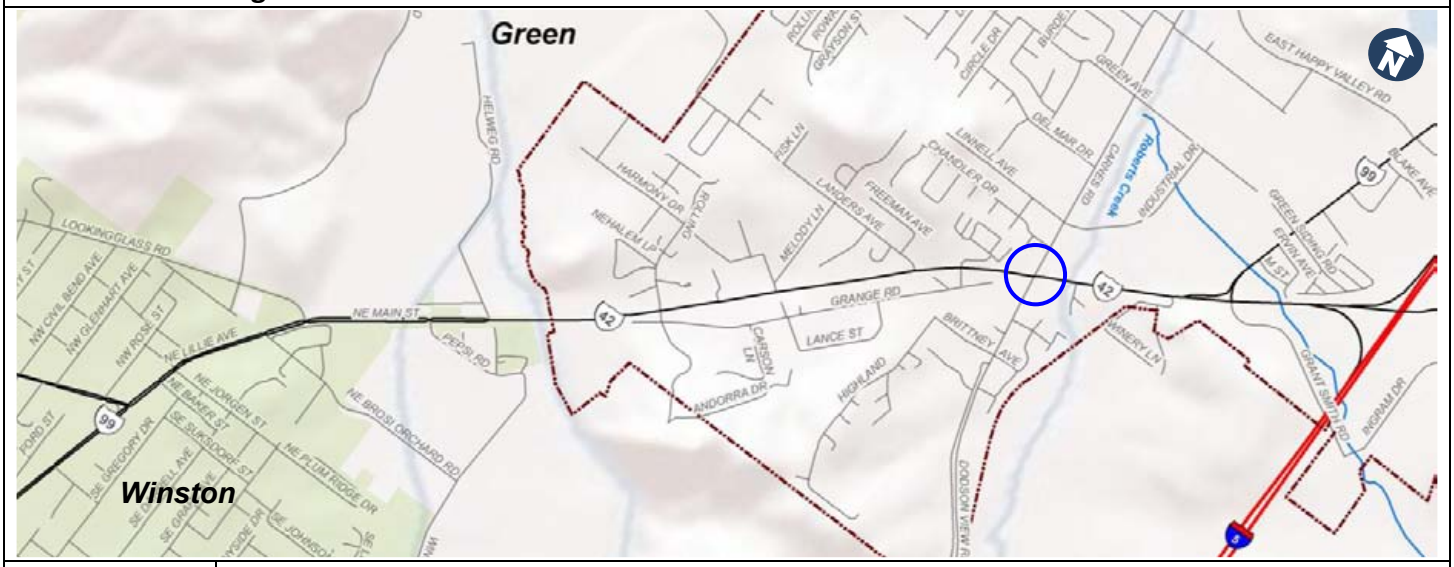
Location	Emils Way/Grange Rd (MP 75.53)	
Description	Add right-turn deceleration lanes on OR 42 in the eastbound and westbound directions	
Purpose	Address existing safety concerns and decrease delay	
Roadway Characteristics	▪ OR 42 - Current ADT: 19,000 vpd; Forecast ADT: OR 42 - 27,000 vpd ▪ Grange Rd - Current ADT: 2,500-3,000 vpd; Forecast ADT: 3,000-3,500 vpd ▪ Emils Way - Current ADT: <500 vpd; Forecast ADT: <500 vpd ▪ Posted speed: 50 mph ▪ 13 crashes reported at Emils Way/Grange Rd Intersection including one fatality (2005-2010)	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Existing OR 42 does not have right-turn deceleration lanes at Grange Rd/Emils Way ▪ Vehicles making right turns must either decelerate in the high-speed travel lane which can result in rear-end collisions ▪ 1 documented crash related to right-turning vehicles	▪ Proposed addition of eastbound and westbound right-turn deceleration lanes ▪ Right-turn deceleration lanes would improve safety by allowing vehicles to decelerate in a lane separated from high-speed through traffic ▪ Would provide minor increase in through capacity with separate turn lane
Additional Considerations	▪ Existing volumes are sufficient to warrant right-turn deceleration lanes for both the eastbound and westbound approaches of OR 42 at Emils Way/Grange Rd ▪ Can be accommodated within the existing ROW ▪ Adjacent drainage and multi-use path on the northeast quadrant would need to be shifted to the north	
Cost Estimate & Assumptions	▪ $500,000 ▪ Would modify only the northeast and southwest corners of the intersection to provide a deceleration lane of appropriate length to allow vehicles to slow to an appropriate turning speed	
Implementation	▪ Medium priority ▪ Related to Project 8 (raised median/turn restrictions at Emils Way/Grange Rd) ▪ Implementation of Project 10 (third westbound through lane west of Carnes Rd) would convert the westbound right-turn deceleration lane into a through travel lane	

Project 9. OR 42/Emils Way/Grange Rd: Add Eastbound & Westbound Right-Turn Deceleration Lanes

Preliminary Alignment Concept



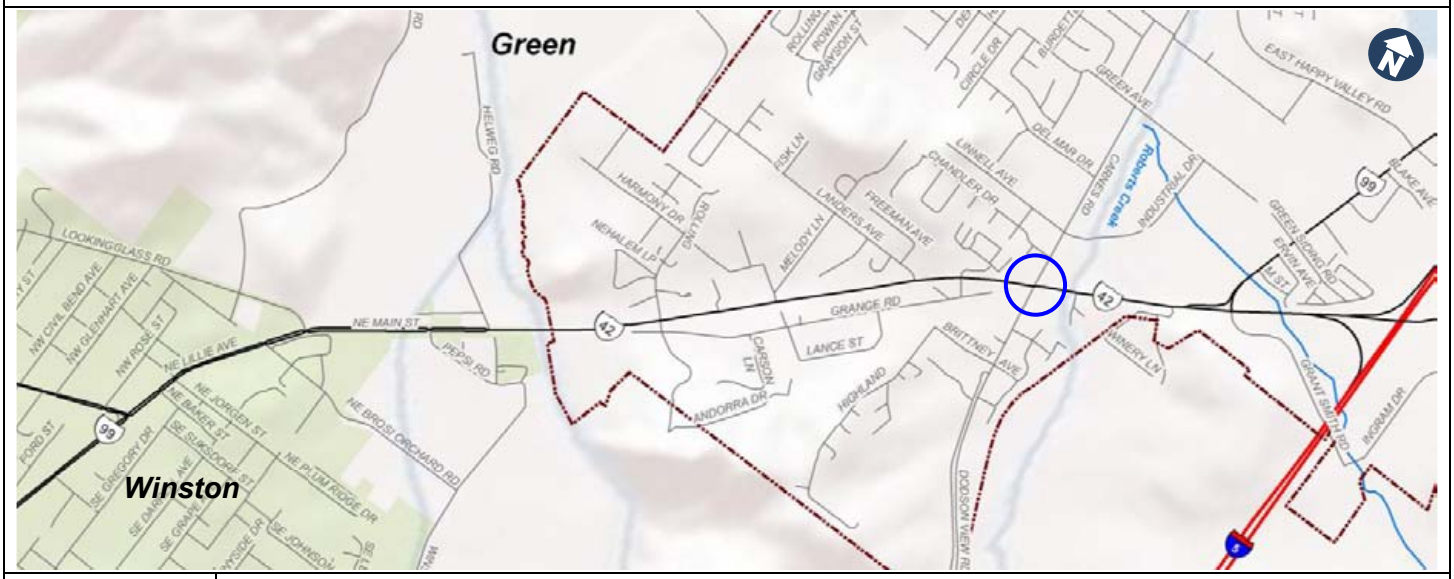
Preliminary Design Schematic

Project 10. OR 42/Carnes Rd/Roberts Creek Rd: Add Third Westbound Through Lane		***OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119***
		
Location	Carnes Rd/Roberts Creek Rd Intersection (MP 75.72)	
Description	Add third westbound travel lane west of Carnes Rd and convert the westbound right-turn lane into a shared through-right lane	
Purpose	▪ Improve traffic operations and safety	
Roadway Characteristics	▪ Intersection - Current total entering volume: 28,000 vpd; Forecast total entering volume: 40,000 vpd ▪ Top 5% of statewide Safety Priority Index System rankings (2012) ▪ 39 crashes including 1 fatal crash and 19 crashes resulting in injuries (2005-2010) ▪ Posted speed: 50 mph	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency** ▪ Current (2011) v/c ratio = 0.77 ▪ Future (2035) v/c ratio = 0.95 ▪ Would exceed OHP target v/c ratio of 0.80	**With Improvement** ▪ Future (2035) v/c ratio = 0.84 (assuming Rolling Hills Rd extension to Happy Valley Rd) ▪ Future (2035) v/c ratio = 0.80 when combined/phased with Project 11 ▪ Would reduce peak hour delay and queuing
Additional Considerations	▪ Would still exceed the OHP target v/c ratio of 0.80 and require adoption of an alternative mobility standard unless combined with other improvements such as Project 11 (dual left-turn lanes on southbound Carnes Rd) ▪ When combined with Project 11, would still require a design exception to meet OHP target v/c ratio of 0.80 but exceed HDM v/c ratio standard of 0.70 ▪ Could be accommodated within existing ROW ▪ Multi-use path would need to be shifted northward to allow for third travel lane on OR 42 west of Carnes Rd	
Cost Estimate & Assumptions	▪ $1.0 million ▪ Extend an additional westbound through lane 1,500 ft west of Carnes Rd to allow for typical lane reduction, including taper, matching into the existing alignment by Landers Ave	
Implementation	▪ Medium priority due to current congestion ▪ Should be considered when v/c ratio exceeds OHP target v/c ratio of 0.80 ▪ Should be considered with TSM1 (signal phasing changes at Carnes Rd/Roberts Creek Rd intersection) ▪ Could be paired with Project 11 (dual left-turn lanes on southbound Carnes Rd) as a phased solution (Project 10 – Phase 1, Project 11 – Phase 2) ▪ Implementation of this project would likely make westbound right-turn decelerations lanes in Project 7 (Landers Ave) and Project 9 (Emils Way) infeasible	

Project 10. OR 42/Carnes Rd/Roberts Creek Rd: Add Third Westbound Through Lane

Preliminary Design Schematic

Project 11. OR 42/Carnes Rd/Roberts Creek Rd: Add Second Southbound Left-Turn Lane



Location	Carnes Rd/Roberts Creek Rd Intersection (MP 75.72)	
Description	Add second southbound left-turn lane on the Carnes Rd approach to OR 42	
Purpose	▪ Improve traffic operations and safety	
Roadway Characteristics	▪ Intersection - Current total entering volume: 28,000 vpd; Forecast total entering volume: 40,000 vpd ▪ Top 5% of statewide Safety Priority Index System rankings (2012) ▪ 39 crashes including 1 fatal crash and 19 crashes resulting in injuries (2005-2010) ▪ Posted speed: 50 mph	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Current (2011) v/c ratio = 0.77 ▪ Future (2035) v/c ratio = 0.95 ▪ Would exceed OHP target v/c ratio of 0.80	▪ Future (2035) v/c ratio = 0.88 (assuming Rolling Hills Rd extension to Happy Valley Rd) ▪ Future (2035) v/c ratio = 0.80 when combined/phased with Project 10 ▪ Would reduce peak hour delay and queuing
Additional Considerations	▪ Would still exceed the OHP target v/c ratio of 0.80 and require adoption of an alternative mobility standard unless combined with other improvements such as Project 10 (third westbound through lane on OR 42 at Carnes Rd/Roberts Creek Rd) ▪ When combined with Project 10, would still require a design exception to meet OHP target v/c ratio of 0.80 but exceed HDM v/c ratio standard of 0.70 ▪ Would impact ROW in the northeast or northwest quadrant to add dual southbound lefts on Carnes Rd ▪ All widening on Carnes Rd could occur on only one side to minimize property impacts ▪ Implements planned improvement in the Douglas County TSP ▪ Assumes Rolling Hills Rd extension occurs as identified in the Douglas County TSP	
Cost Estimate & Assumptions	▪ $1.3 million (not including ROW) ▪ Improvement assumes Carnes Rd would be widened approximate 700 ft to add second southbound left-turn lane and that 6-ft sidewalks would be included on the east side of Carnes Rd	
Implementation	▪ Low priority due to potential ROW impacts ▪ Should be considered when v/c ratio exceeds the OHP target v/c ratio of 0.80 ▪ Should be include signal phasing changes at OR 42/Carnes Rd/Roberts Creek Rd intersection ▪ Could be paired with Project 10 (third westbound through lane on OR 42 at Carnes Rd/Roberts Creek Rd) as a phased solution (Project 10 – Phase 1, Project 11 – Phase 2)	

Project 11. OR 42/Carnes Rd/Roberts Creek Rd: Add Second Southbound Left-Turn Lane

Preliminary Design Schematic

Project 12. OR 42/Winery Ln: Add Raised Barrier

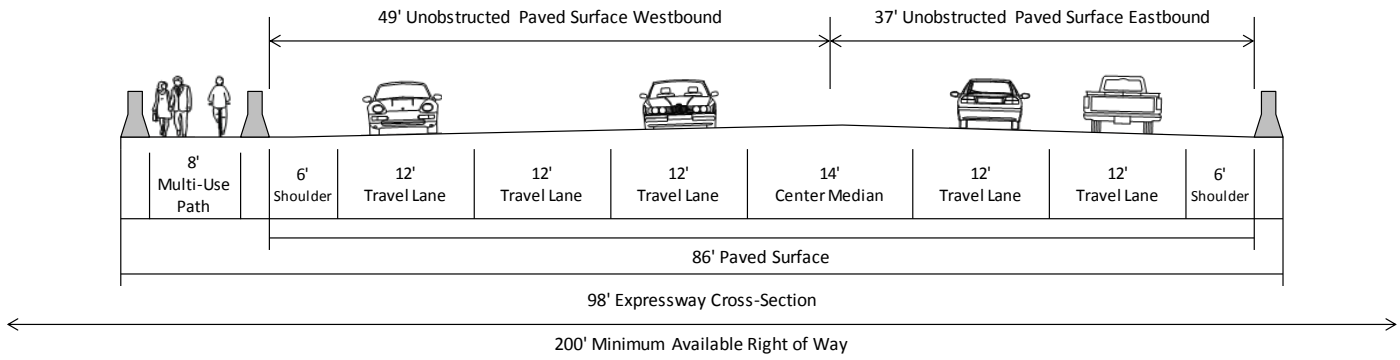
OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119

Location	Winery Ln (MP 76.03-76.12)	
Description	Install raised barrier to restrict turn movements to right-in/right-out	
Purpose	▪ Improve traffic operations and safety	
Roadway Characteristics	▪ OR 42 - Current ADT: 20,100 vpd; Forecast ADT: 29,200 vpd ▪ 9 crashes reported at or near Winery Ln intersection (2005-2010) ▪ Posted speed: 50 mph ▪ Existing unobstructed roadway is 37 ft in the eastbound direction and 49 ft in the westbound direction	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Does not meet expressway standards for access spacing (1/2 mile between access points) ▪ Left turns permitted at unsignalized side streets on a 50 mph segment of the expressway ▪ Pattern of turning (3) collisions at access point ▪ 1 head-on collision and 1 sideswipe collision between vehicles traveling in opposite directions	▪ Would eliminate left turns onto OR 42 at unsignalized intersections ▪ Safety would be improved by directing turning vehicles to targeted and signalized locations where they can be accommodated with lower crash risk ▪ Raised barrier would also reduce head-on and sideswipe collisions
Additional Considerations	▪ Would require U-turns at signalized intersections (TSM4 and TSM5) and/or local street connectivity (Project 17) to support traffic circulation ▪ May result in some out of direction travel for side street traffic ▪ Depending on barrier type, transitions may require impact attenuators ▪ Proposed unobstructed roadway would be is 36 ft eastbound and 48 ft westbound which is wider than the restricted eastbound bridge over the S Umpqua River (26 ft) and westbound off-ramp from I-5 Exit 119 (29 ft) ▪ Could be extended westward to include turn restrictions at Art Mill Ln	
Cost Estimate & Assumptions	▪ $75,000 ▪ Concrete barrier would be placed in existing striped median; no roadway widening would be needed	
Implementation	▪ High to medium priority ▪ Related to TSM4 (U-turns at Carnes Rd) and TSM5 (U-turns at OR 99) ▪ Should not be implemented until the Winery Ln connection (Project 17) has been constructed unless an identified hazard that adversely affects public health, safety, or welfare prevails (i.e., continued pattern of turning and angle collisions or identified worst 10% in SPIS) ▪ If extended to Art Mill Ln, a median that permits left turns into Art Mill Ln could be considered as an alternative to a barrier when the project is implemented (design exception may be required for median vs. barrier)	

Project 12. OR 42/Winery Ln: Add Raised Barrier

Existing Roadway Cross-Section

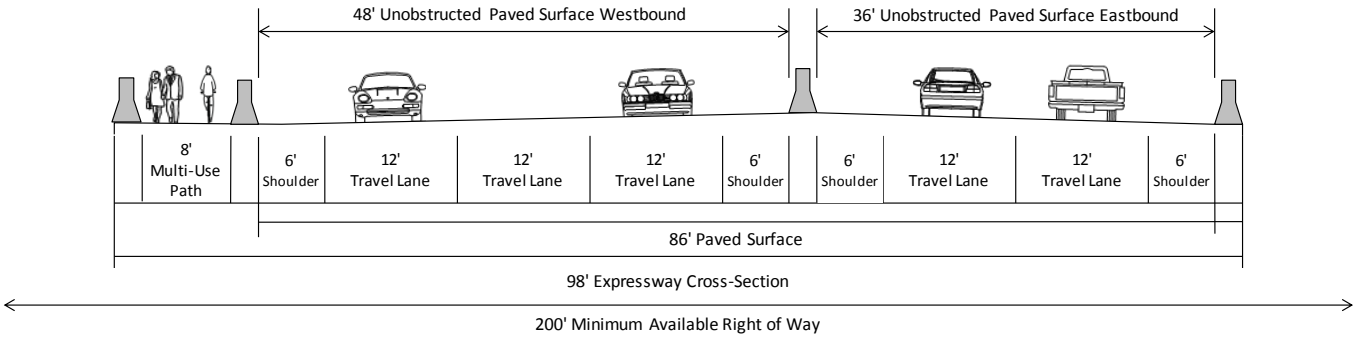
EXISTING 5-LANE EXPRESSWAY CROSS-SECTION EAST OF CENTRAL OREGON & PACIFIC OVERCROSSING



Note: This is the minimum cross-section on OR 42 between MP 76.03 and MP 76.12.

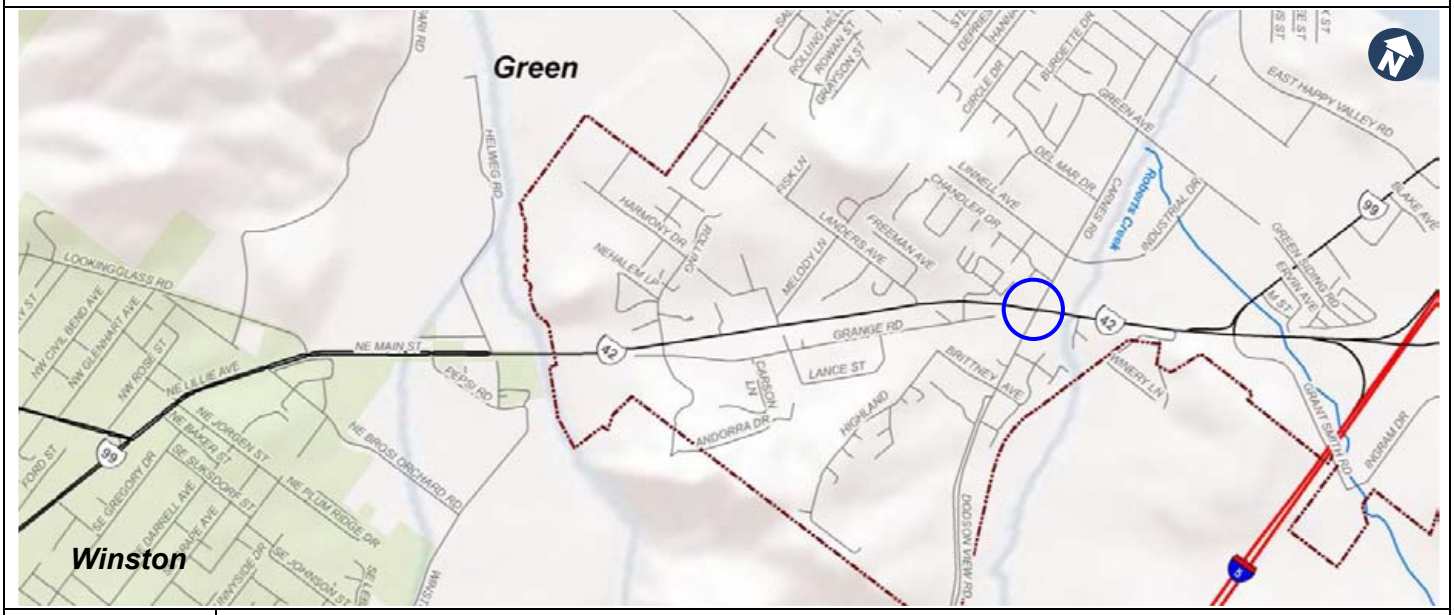
Potential Roadway Cross-Section

5-LANE EXPRESSWAY CROSS-SECTION WITH RAISED BARRIER EAST OF CENTRAL OREGON & PACIFIC RAILROAD OVERCROSSING



Note: This would the minimum cross-section on OR 42 between MP 76.03 and MP 76.12.

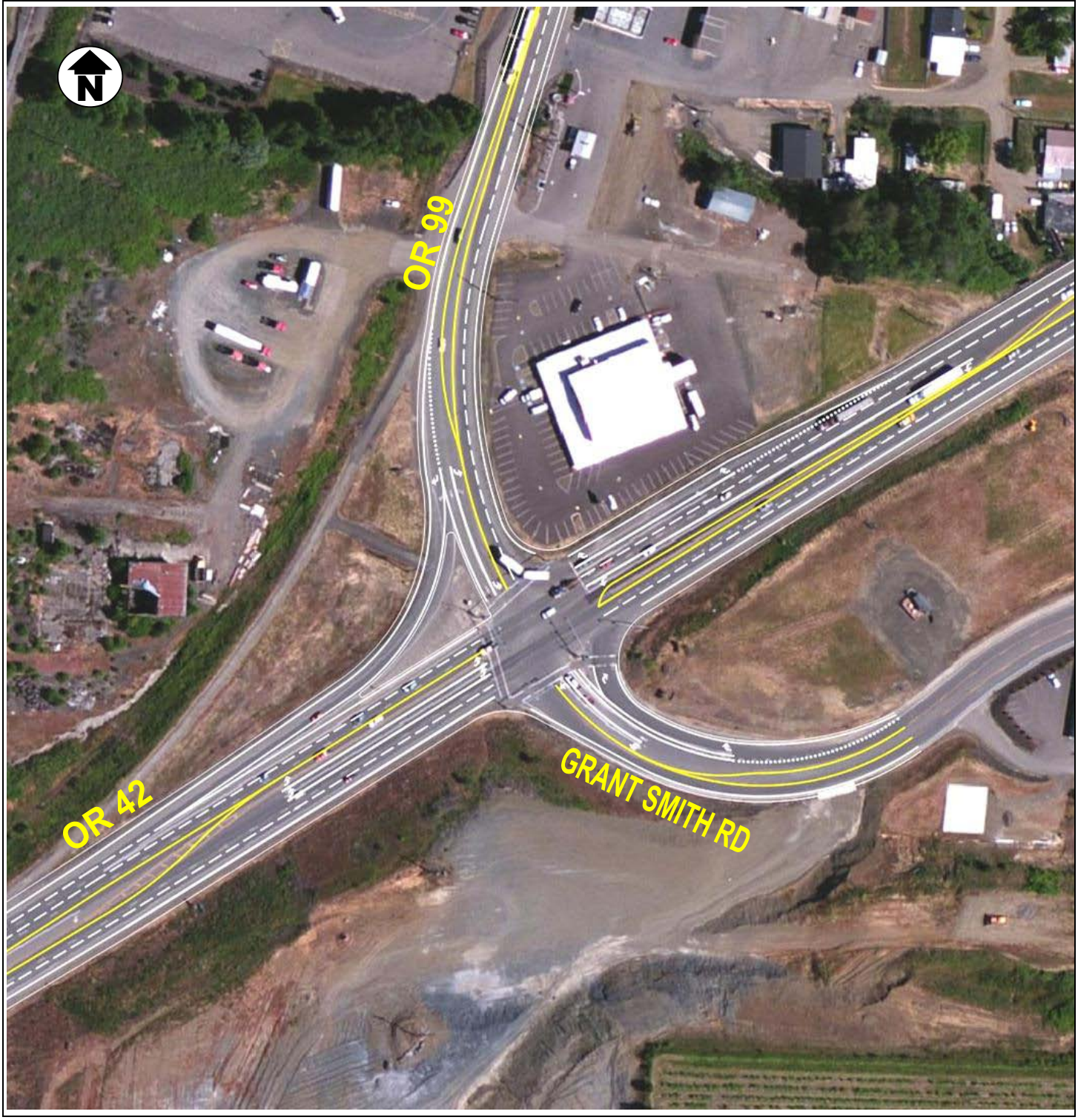
Project 13. OR 42/OR 99/Grant Smith Rd: Add Second Eastbound Left-Turn Lane

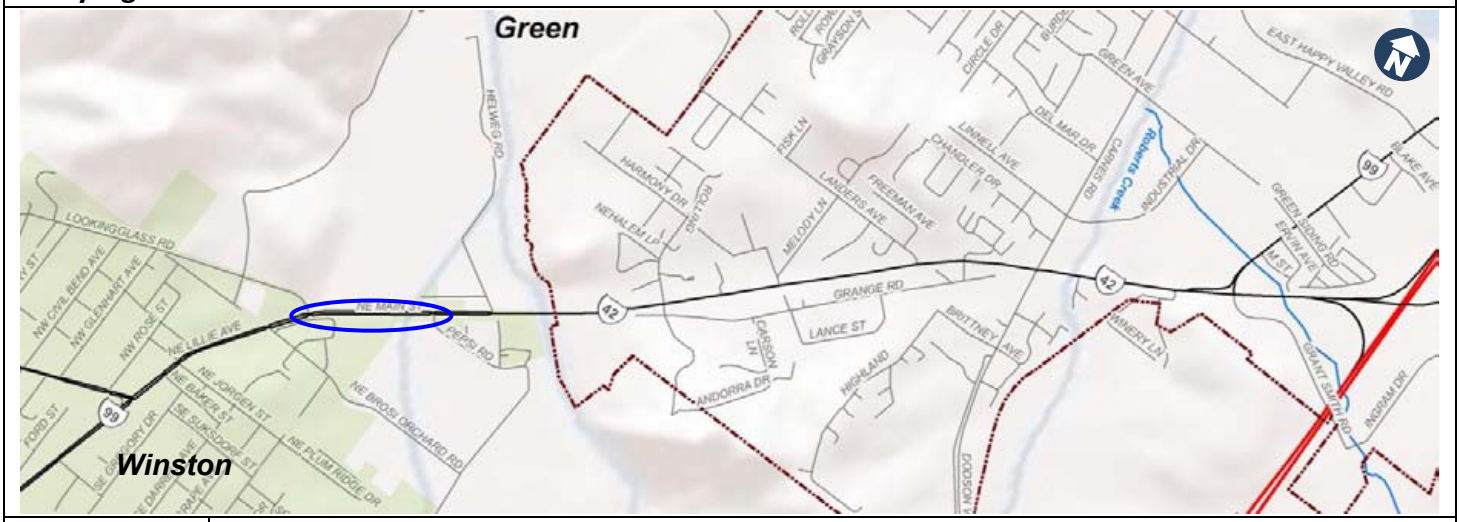


Location	OR 42/OR 99/Grant Smith Rd Intersection (MP 76.22)	
Description	Increase intersection capacity by installing dual left turns on the eastbound approach and modifying traffic signal to provide protected left turns on all approaches	
Purpose	▪ Improve traffic operations and safety	
Roadway Characteristics	▪ Intersection - Current total entering volume: 28,000 vpd; Forecast total entering volume: 38,000 vpd ▪ Top 5% of statewide Safety Priority Index System rankings (2012) ▪ 44 crashes including 1 fatal crash and 24 crashes resulting in injuries (2005-2010) ▪ Posted speed: 50 mph	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Current (2011) v/c ratio = 0.78 ▪ Future (2035) v/c ratio = 0.98 ▪ Would exceed OHP v/c ratio target of 0.80	▪ Future (2035) v/c ratio = 0.88 (assuming Rolling Hills Rd extension to Happy Valley Rd) ▪ Would meet OHP target v/c ratio of 0.80 but would exceed HDM v/c ratio standard of 0.70 ▪ Would reduce peak hour delay and queuing
Additional Considerations	▪ Would require a design exception to meet OHP target v/c ratio of 0.80 but exceed HDM v/c ratio standard of 0.70 ▪ Assumes Rolling Hills Rd extension occurs as identified in the Douglas County TSP ▪ Could impact adjacent properties but would not impact existing structures ▪ Widening could occur on each side of both facilities to minimize impacts	
Cost Estimate & Assumptions	▪ $1.0 million (not including ROW on OR 99) ▪ Improvement assumes OR 42 would be widened to add a second eastbound left-turn lane and OR 99 would be widened to add a second receiving lane	
Implementation	▪ Medium priority due to current congestion ▪ Should be considered when v/c ratio exceeds the OHP target v/c ratio of 0.80 ▪ Related projects include TSM2 (protected left-turn phasing on OR 99/Grant Smith Rd) and TSM4 (U-turns permitted) ▪ Consider combining as phase of current STIP project *(STIP Key 17918)*	

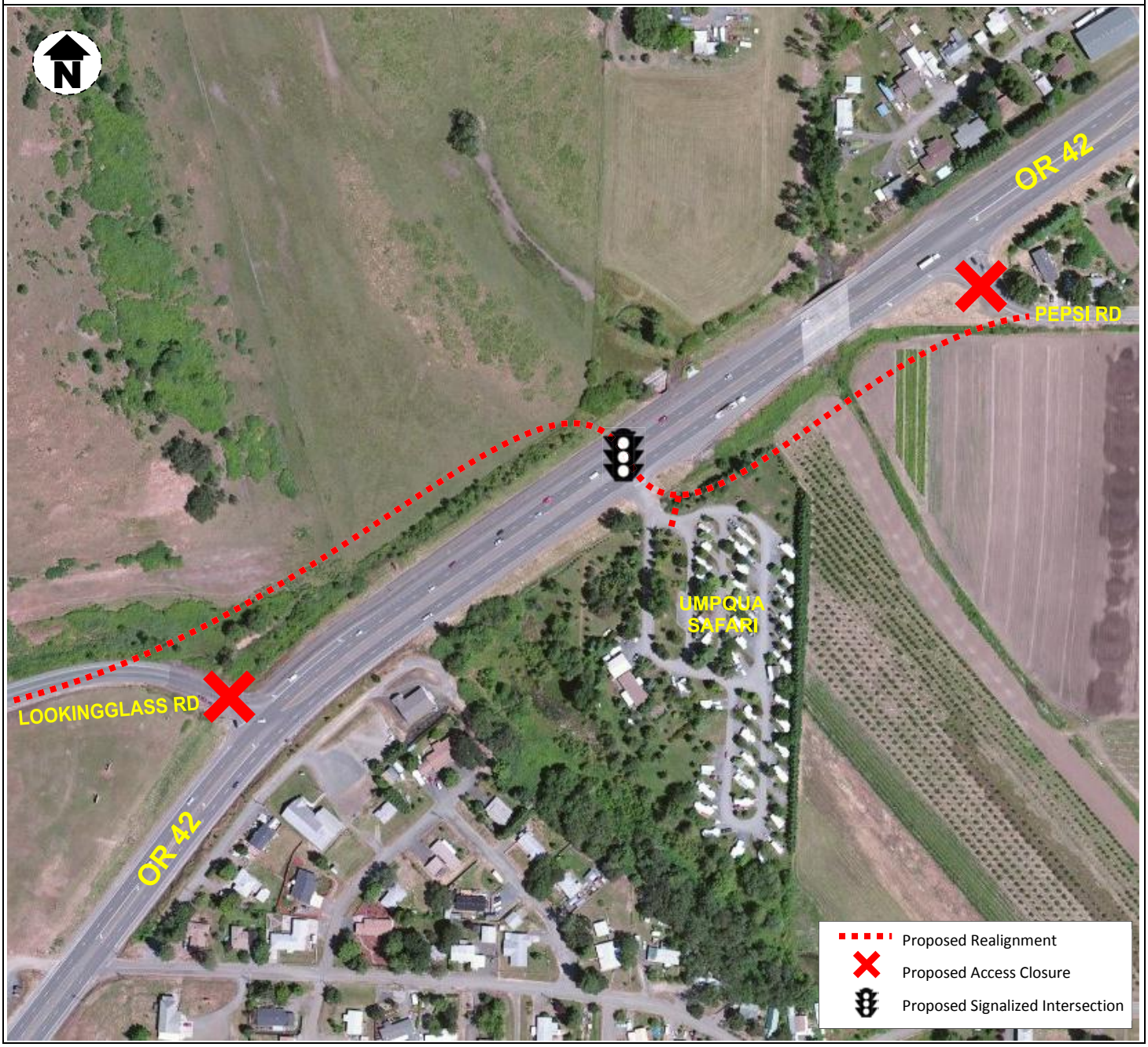
Project 13. OR 42/OR 99/Grant Smith Rd: Add Second Eastbound Left-Turn Lane

Preliminary Design Schematic



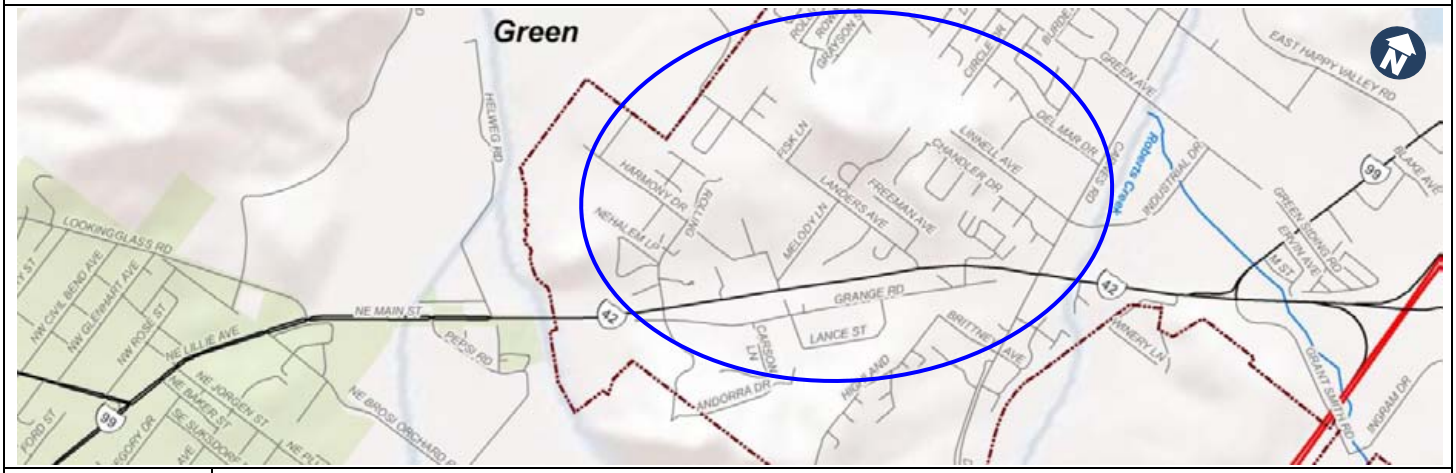
Project 14. Lookingglass Rd and Pepsi Rd: Realign to Create 4-way Signalized Intersection		***OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119***
		
Location	Lookingglass Rd and Pepsi Rd (MP 73.88 and 74.19)	
Description	Extend Lookingglass Rd eastward and Pepsi Rd westward to connect at 4-way intersection, close current connections to OR 42, connect other access points to extensions; and install traffic signal	
Purpose	▪ Improve operations and safety	
Roadway Characteristics	▪ OR 42 - Current ADT: 15,000 vpd; Forecast ADT: 22,000 vpd ▪ Lookingglass Rd - Current ADT: 2,500-3,000 vpd; Forecast ADT: 3,500-4,000 vpd ▪ Pepsi Rd - Current ADT: 1,000-1,200 vpd; Forecast ADT: 1,200-1,400 vpd ▪ Posted speed: 45 mph west of Lookingglass Rd and 55 mph east of Lookingglass Rd ▪ 8 crashes reported at Lookingglass Rd intersection and 3 crashes reported at Pepsi Rd intersection (2005-2010)	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Current (2011) v/c ratio = 0.37 on Lookingglass Rd; 0.09 on Pepsi Rd; 0.23-0.29 on OR 42 ▪ Future (2035) v/c ratio = 0.62 on Lookingglass Rd 0.10 on Pepsi Rd; 0.33-0.39 on OR 42 ▪ Delays for left turns from Lookingglass onto OR 42 expected to exceed 2 minutes in future ▪ 6 crashes on Lookingglass Rd and 2 crashes on Pepsi Rd were turning collisions ▪ Lookingglass Rd volumes meet ODOT preliminary signal warrants	▪ Future (2035) v/c ratio = 0.69 (intersection) ▪ Traffic signal would reduce delays and queues for Lookingglass Rd but increase delays on OR 42 ▪ Traffic signal would likely reduce the frequency and severity of the turning collisions but it may increase the number of rear-end collisions (generally less severe)
Additional Considerations	▪ Lookingglass Rd would extend to OR 42/Pepsi Rd at level location so truck traffic does not stop on an upgrade ▪ Pepsi Rd should extend to OR 42/ Lookingglass Rd at location that avoids impacts to homes north of OR 42 ▪ Pepsi Rd extension as shown would require a new crossing of the S Umpqua Overflow Channel ▪ Would cross lands outside of City of Winston UGB and Green UUA boundary that are zoned as Exclusive Farm Use; alternatives analysis to meet TPR requirements and a goal exception would likely be needed ▪ Proximity to S Umpqua River habitats, floodplain, and floodway would need to be addressed ▪ Potential for cultural resources especially due to proximity to the river ▪ Requires OTC amendment to OR 42 Corridor Plan for planned realignment of Pepsi Rd/Helwig Rd intersection	
Cost Estimate & Assumptions	▪ $6.0 million (Includes costs for bridge and culvert improvements) ▪ 1,000’ of new roadway for Lookingglass Rd extension and 1,100’ of new roadway for Pepsi Rd extension	
Implementation	▪ Low priority ▪ Should be considered when persistent congestion (delays > 1 minute for more than 2 hours/day) and queuing on side streets is present or an identified hazard that adversely affects public health, safety, or welfare prevails	

Project 14. Lookingglass Rd and Pepsi Rd: Realign to Create 4-way Signalized Intersection		***OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119***
	(i.e., continued pattern of turning and angle collisions or identified worst 10% in SPIS)	
Preliminary Alignment Concept		



Project 15. Local Network Connectivity (Douglas County TSP)

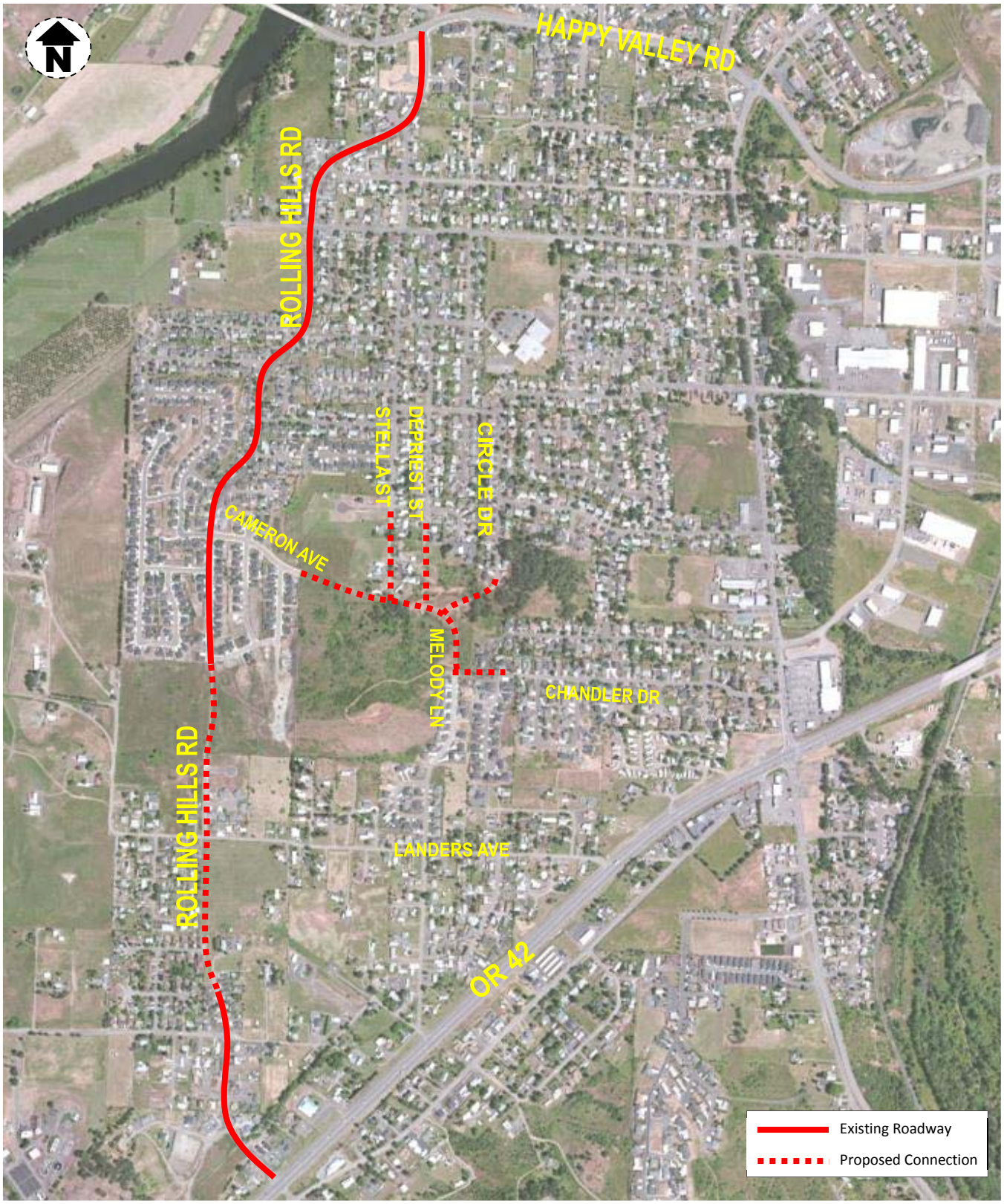
OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119

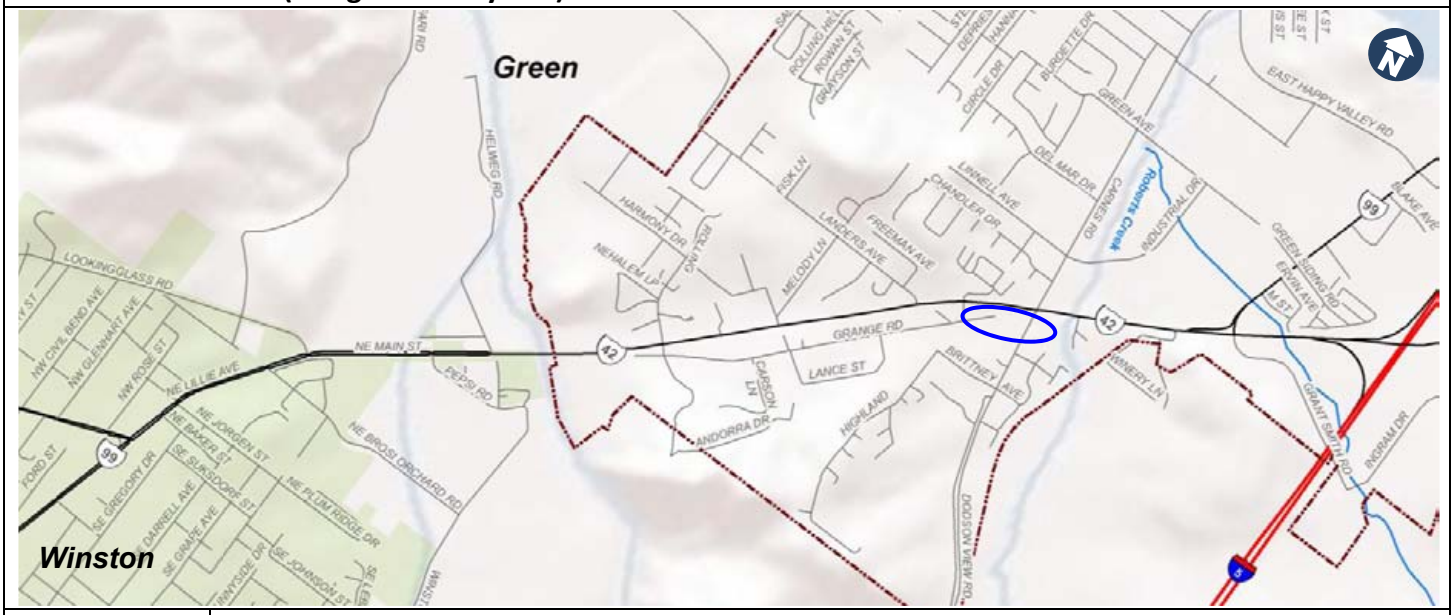


Location	Local Network Connectivity	
Description	Extend Rolling Hills Rd northward to Happy Valley Rd and improve connectivity between Cameron Ave, Melody Ln, Chandler Dr, Stella St and other local streets as identified in the Douglas County TSP	
Purpose	▪ Improve connectivity to enhance safety and operations on OR 42	
Roadway Characteristics	▪ Rolling Hills Rd, Cameron Ave, Chandler Dr, Melody Ln, and Stella Street identified as Minor Collector roads in the Douglas County TSP ▪ Rolling Hills Rd - Current ADT: 500 vpd; Forecast ADT with extension to Happy Valley Rd: 5,000 vpd	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvements**
	▪ Roadway system is missing links where land is currently undeveloped ▪ Without network connections, some neighborhoods must use OR 42 to serve their local access needs ▪ Traffic signal warrants not currently met	▪ Rolling Hills Rd connection would provide more direct route to OR 42 for many neighborhoods and reduce demand on Carnes Rd ▪ Increased demand on Rolling Hills Rd would help meet warrants for traffic signal at OR 42 ▪ Connected roadway system would allow neighborhood access to signalized intersections on OR 42 (Carnes Rd and Rolling Hills Rd) and would potentially improve safety for turning traffic
Additional Considerations	▪ All projects are identified in the Douglas County TSP (Transportation Element for Green, p.4-22) ▪ Some of these connections are in approved development plans but have not yet been constructed ▪ Traffic signal warrants will not likely be met without Rolling Hills Rd connection	
Cost Estimate & Assumptions	▪ Rolling Hills Rd: $3.5 million (not including ROW) ▪ Rolling Hills Rd would require approximately 2,400 feet of additional roadway primarily outside of existing ROW, and would include a 42-foot paved roadway with 6 foot sidewalks (Douglas County Urban Collector) ▪ Other Connections: Costs would be dependent upon chosen alignments and functional classification and should meet Douglas County road standards for urban areas	
Implementation	▪ Rolling Hills Rd Connection: High priority ▪ Other Connections: Medium to low priority ▪ Related to Project 3 (Rolling Hills Rd signalization and access control) and Project 5 (access control on OR 42 from east of Rolling Hills Rd through Landers Ave) ▪ Some connections must be constructed prior to or concurrently with Project 5 unless access restrictions are implemented because an identified hazard that adversely affects public health, safety, or welfare prevails (i.e., continued pattern of turning and angle collisions or identified worst 10% in SPIS)	

Project 15. Local Network Connectivity (Douglas County TSP)

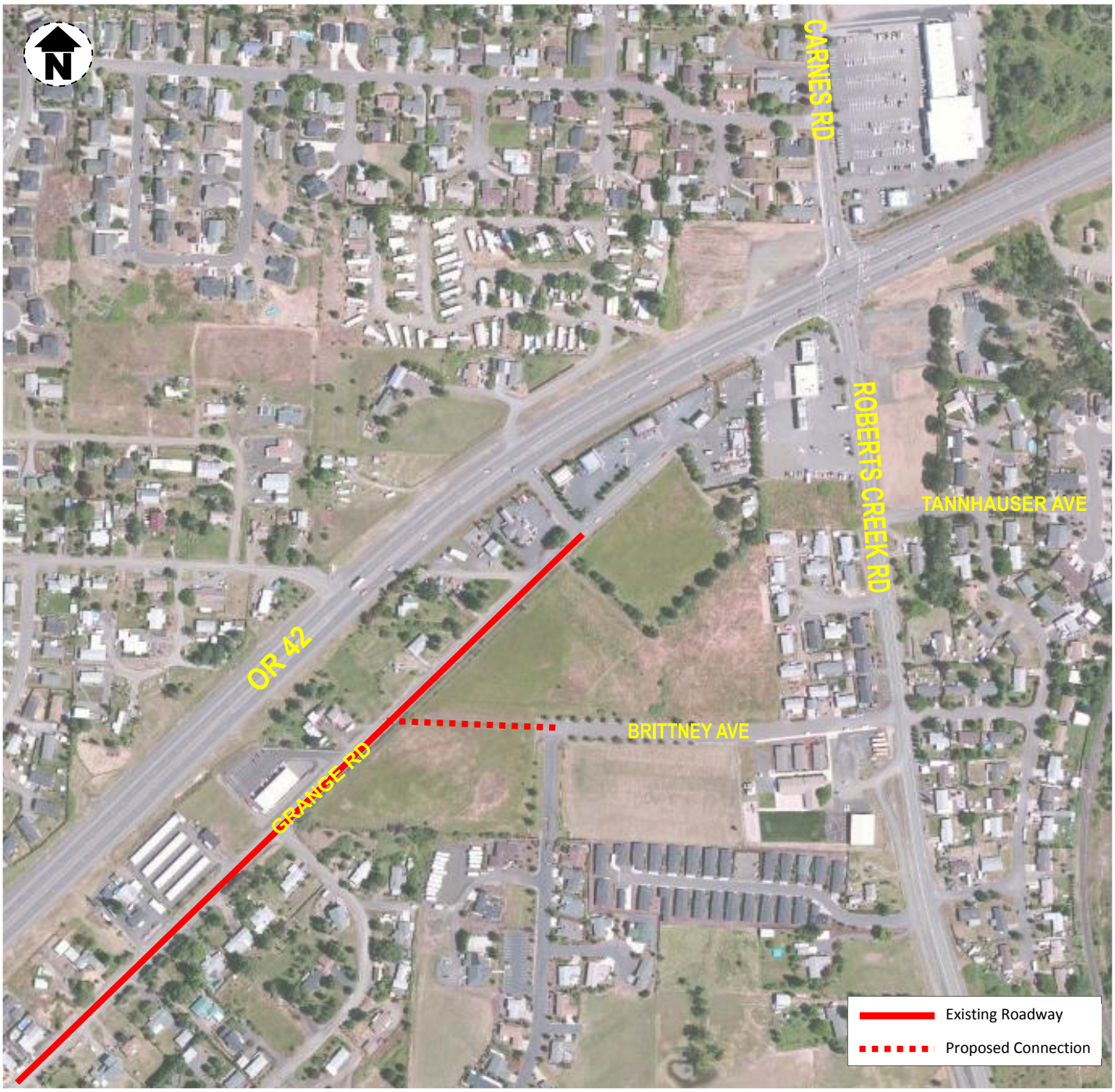
Preliminary Alignment Concept



Project 16. Grange Rd: Create New Connection from Grange Rd to Roberts Creek Rd (Douglas County TSP)		***OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119***
		
Location	Grange Rd	
Description	Connect Grange Rd to Brittney Ave as identified in the Douglas County TSP	
Purpose	▪ Improve connectivity to enhance safety on OR 42	
Roadway Characteristics	▪ Grange Rd - Current ADT: 2,500-3,000 vpd; Forecast ADT: 3,000-3,500 vpd ▪ Grange Rd and Brittney Ave identified as Minor Collector roads in the Douglas County TSP ▪ 13 crashes reported at Grange Rd/Emils Way/OR 42 Intersection including one fatality (2005-2010)	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency**	**With Improvement**
	▪ Left turns are permitted from Emils Way/Grange Rd onto OR 42 at this location within close proximity to Carnes Rd intersection ▪ Continued pattern of turning collisions (4 related to left turns from Grange Rd) ▪ Congestion and queuing occurs at this location due to vehicles waiting to make left turns onto OR 42	▪ Would provide connection between Grange Rd and Roberts Creek Rd allowing access to traffic signal on OR 42 ▪ Would provide alternative access for vehicles unable to turn left onto OR 42 from Grange Rd
Additional Considerations	▪ Should be ultimately considered in conjunction with Project 8 (raised median at OR 42/Emils Way/Grange Rd) ▪ Would include impacts to an existing structure, ▪ Would be in agreement with long-term Douglas County plans	
Cost Estimate & Assumptions	▪ $2.1M (Not including ROW) ▪ Assumes 1,200 feet of new (500 ft) or improved (700 ft) roadway that would meet Douglas County design standards for urban roadways (12-ft travel lanes, 8-ft shoulders, 6-ft sidewalks)	
Implementation	▪ High priority ▪ Must be constructed prior to or concurrently with Project 8 (raised median at OR 42/Emils Way/Grange Rd) unless access restrictions are implemented because an identified hazard that adversely affects public health, safety, or welfare prevails (i.e., continued pattern of turning and angle collisions or identified worst 10% in SPIS)	

Project 16. Grange Rd: Create New Connection from Grange Rd to Roberts Creek Rd (Douglas County TSP)

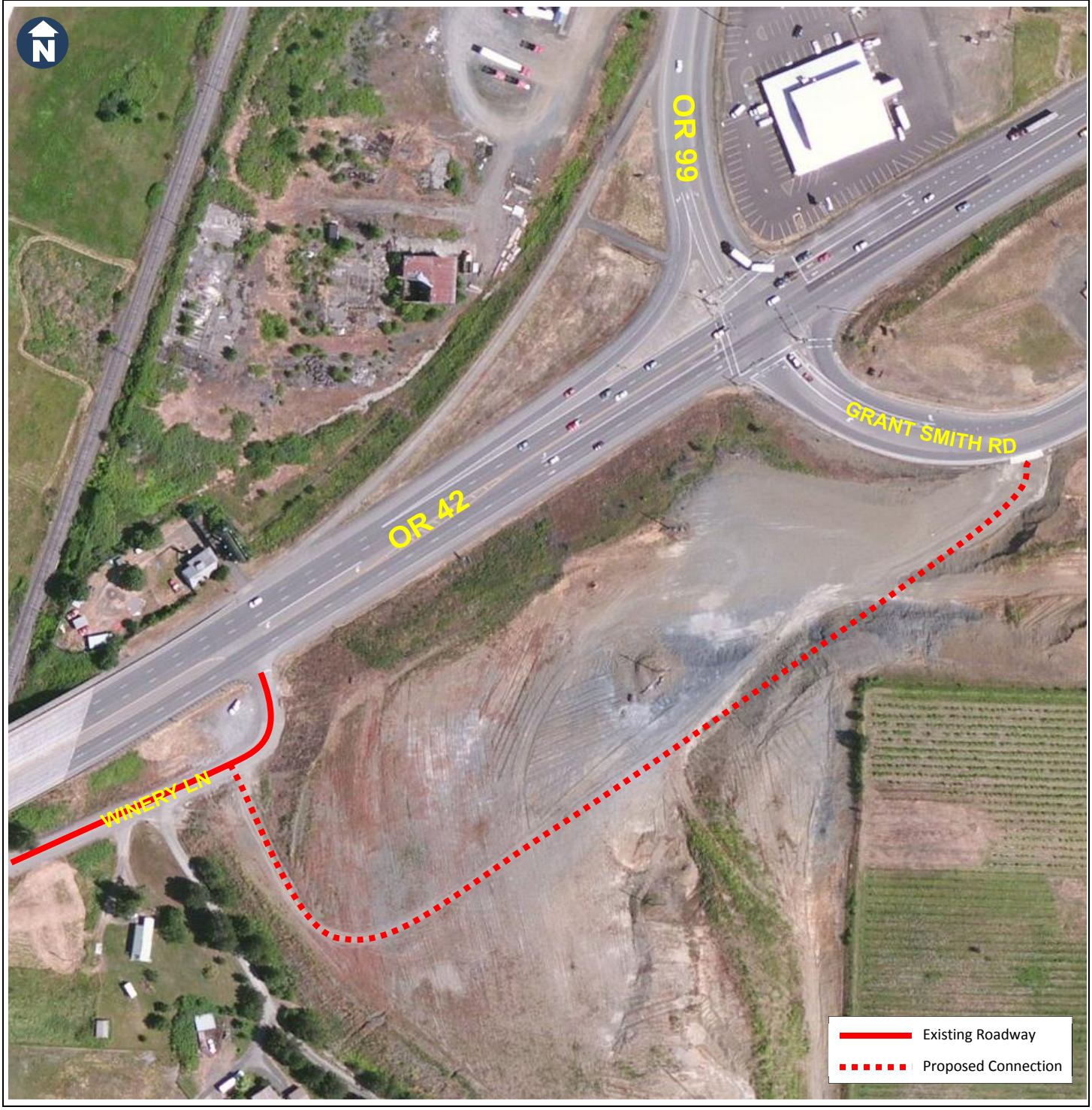
Preliminary Alignment Concept



Project 17. Winery Ln: Extend to Grant Smith Rd		*OR 42 Expressway Management Plan: Lookingglass Road to I-5 Exit 119*
		
Location	Winery Ln	
Description	Extend Winery Ln to Grant Smith Rd	
Purpose	Provide alternative access to improve safety and access management along OR 42	
Roadway Characteristics	▪ 9 crashes reported at/near Winery Ln (2005-2010) ▪ Posted speed: 50 mph	
How Improvement Addresses Deficiencies	**Existing/Future Deficiency** ▪ Does not meet expressway standards for access spacing (1/2 mile between access points) ▪ Pattern of turning (2) collisions at access point ▪ No alternate access available for land served by Winery Ln	**Existing/Future Deficiency** ▪ Diverts Winery Ln traffic to Grant Smith Rd and signalized intersection with OR 42 where turning movements can be accommodated with lower crash risk than unsignalized intersection ▪ Low demand on Winery Lane would result in limited impact on Grant Smith Rd intersection operations
Additional Considerations	▪ Not currently identified in Douglas County TSP ▪ ROW would need to be acquired for connection ▪ Roadway alignment would need to be coordinated with affected tax lots	
Cost Estimate & Assumptions	▪ $600k (Not including ROW) ▪ Assumes construction of Winery Ln connection to Douglas County local road standards (11-ft travel lanes and 3-ft shoulders)	
Implementation	▪ Low priority ▪ Must be constructed prior to or concurrently with Project 12 (raised barrier at OR 42/Winery Ln) unless access restrictions are implemented because an identified hazard that adversely affects public health, safety, or welfare prevails (i.e., continued pattern of turning and angle collisions or identified worst 10% in SPIS)	

Project 17. Winery Ln: Extend to Grant Smith Rd

Preliminary Alignment Concept



5 ACCESS MANAGEMENT PLAN

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5. ACCESS MANAGEMENT PLAN

The Access Management Plan represents actions that may be triggered as land use changes occur (new development or redevelopment), as future highway improvements are implemented, or as highway safety and operational issues arise.

5.1 Access Management Standards

The Access Management Plan governs ODOT's decisions of all future road approaches to OR 42 from the Lookingglass Road intersection to the I-5 Exit 119 ramps. The OHP also addresses access management with the most recent revisions adopted in March 2012.[13] **The OR 42 expressway corridor standard is 2,640 feet (½ mile) between intersections.**

Ideally, a project includes provisions by which access can be made fully compliant with the OR 42 expressway spacing standards. In many instances, access needed for existing development will not allow these standards to be met. When the requirements and standards cannot be met, progress toward meeting the applicable standards must be demonstrated or a deviation must be justified and approved by the Region Access Management Engineer.

5.2 Access Inventory

Access inventory data was obtained from ODOT and from field observations for OR 42 from Lookingglass Road to the I-5 Exit 119 ramps. These data include public street intersections and public/private approaches to OR 42. Twenty-two (22) accesses were identified (13 on the left side and 9 on the right side when traveling eastward). Table 8 summarizes the existing access inventory.

ODOT has almost continuous access control along the expressway. All of the existing access points are either public roads that have a break or opening in the access control line or the access point has an existing reservation of access. In addition, there are 10 additional reservations that do not currently have connections to the expressway.

A review of the existing access spacing Table 8 shows that only two sections of the expressway currently meet the access spacing standard of 2,640 feet.

[13] 1999 Oregon Highway Plan Revisions to Address Senate Bill 264 (2011) Policy 3A, website: http://www.oregon.gov/ODOT/TD/TP/docs/ohp_am/accessm.pdf

Table 8. Existing Access Inventory

Access ID	Milepoint	Distance to Next Access	Access Type	Reservation of Access	Purpose
ACCESS POINTS ON LEFT SIDE OF OR 42					
1	73.88	2,429 ft	Public	Open	Lookingglass Rd
4	74.34	1,478 ft	Public	Open	Helweg Rd
5	74.62	792 ft	Private	Yes	Residence
6	74.77	686 ft	Public	Yes	Rolling Hills Rd
8	74.90	53 ft	Private	Yes	New Hope Church Access
9	74.91	845 ft	Private	Yes	Heatherwood Ln
10	75.07	1,848 ft	Public	Open	Jackie Ave
11	75.42	581 ft	Public	Open	Landers Ave
13	75.53	739 ft	Public	Open	Emils Way
15	75.67	264 ft	Private	Yes	Vacant
17	75.72	1,901 ft	Public	Open	Carnes Rd
20	76.08	739 ft	Private	Yes	Residence
21	76.22	-	Public	Open	Old Highway 99
ACCESS POINTS ON RIGHT SIDE OF OR 42					
2	74.04	792 ft	Private	Yes	Umpqua Safari Rd
3	74.19	**3,062 ft**	Public	Open	Pepsi Rd
7	74.77	**4,013 ft**	Public	Open	Andorra Dr
12	75.53	739 ft	Public	Open	Grange Access Rd
14	75.67	422 ft	Private	Yes	Gas Station (RIRO)
16	75.75	422 ft	Public	Open	Roberts Creek Rd
18	75.83	1,267 ft	Public	Yes	Art Mill Ln
19	76.07	792 ft	Public	Open	Winery Ln
22	76.22	-	Public	Yes	Grant Smith Rd

SHADING indicates that expressway access spacing is met.

5.3 Key Principles of Access Management Plan

The Access Management Plan was developed balancing the key principles of safety and mobility for all users with regional and local economic vitality, which is consistent with the overarching EMP goals. These principles were applied in the following manner:

1. **Safety**: Crash data was evaluated to identify locations where turning or angle collisions have occurred at accesses along the expressway. These types of collisions generally result in more frequent and more severe injuries.
   - *Recommended Actions: Restrict some or all movements to/from OR 42 at selected access points. Provide alternate local system connections to signalized intersections and allow U-turns (autos only) at existing and future traffic signals.*

- *Triggers: Continued pattern of turning and angle collisions that can be reduced through access restrictions or location is identified in the worst 10% in SPIS.*
- *Economic Considerations: Access restrictions would not be implemented without construction of local network improvements that provide reasonable alternate access unless an identified hazard that adversely affects public health, safety, or welfare prevails. Less restrictive access control (median options that permit left-in movements to maintain business access) were incorporated into the plan in response to concerns raised by local property owners. Raised medians and barriers that would be used to enforce turning restrictions would not reduce the vehicle-carrying capacity of the expressway for regional freight movement.*

2. **Mobility**: Traffic operations on both OR 42 and the intersecting side streets were assessed to determine where long delays could affect mobility of either mainline or local traffic.
   - *Recommended Actions: Add a new traffic signal at the intersection of OR 42 and Rolling Hills Rd combined with access closures and local connections. Extend Lookingglass Rd and Pepsi Rd to connect at a single 4-way signalized intersection combined with access closures. Local network connections would provide additional access to signalized intersections.*
   - *Triggers: Meets traffic signal warrants based on traffic volumes or crash patterns.*
   - *Economic Considerations: While traffic signals may increase delay for through traffic, coordination between signals along the expressway could minimize those delays. The addition of signals would provide safer access to the expressway with less delay for side streets. Although the traffic signals would be combined with some direct access restrictions, reduced delays and improved safety provide both localized and regional economic benefits. Raised medians and barriers that would be used to enforce turning restrictions would not reduce the vehicle-carrying capacity of the expressway for regional freight movement.*

5.4 Access Management Actions

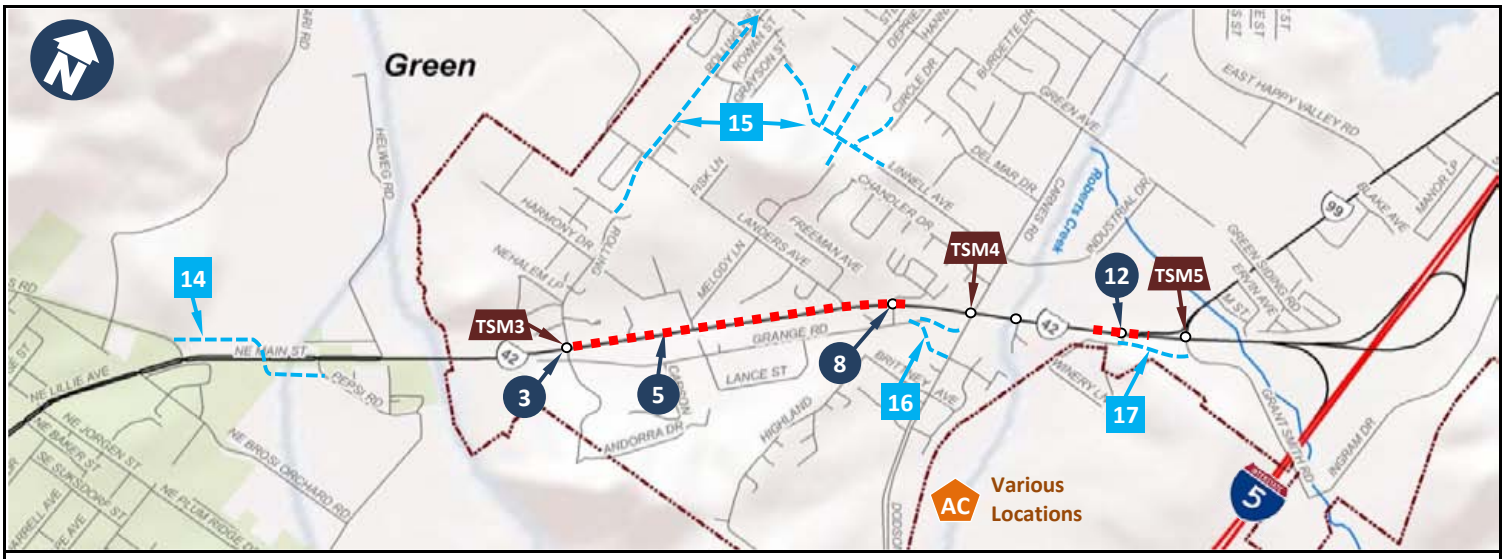
The recommended access management actions are illustrated in Figure 7 and summarized in Table 9. These actions include implementing four expressway projects partnered with local street network improvements, transportation system management measures, and private access control measures. Actions may be triggered as future EMP improvements are implemented, as safety and operational issues arise, or as land use changes occur (new development or redevelopment).

Table 9. Access Management Plan

ID	Description	Triggers	Priority
ACCESS MANAGEMENT MEASURES			
3	**OR 42/Rolling Hills Rd Intersection (74.77):** Install traffic signal at OR 42/Rolling Hills Rd, improve access road connections to Jackie Lane, and restrict access to OR 42 from west of Rolling Hills Rd through Jackie Lane	▪ Traffic signal warrants ▪ Continued pattern of turning and angle collisions ▪ Identified in worst 10% in SPIS	High
5	**OR 42 – East of Rolling Hills Rd through Landers Ave (74.88-75.46):** Add raised barrier to restrict turn movements to right-in/right-out	▪ Continued pattern of turning and angle collisions ▪ Identified in worst 10% in SPIS	Medium
8	**OR 42/Emils Way/Grange Road Intersection (74.46-75.60):** Add raised median to restrict turn movements to left-in/right-in/right-out	▪ Continued pattern of crashes related to left turns ▪ Identified in worst 10% in SPIS	High
12	**OR 42/Winery Ln Intersection (76.03-76.12):** Add raised barrier to restrict turn movements to right-in/right-out	▪ Continued pattern of turning and angle collisions ▪ Identified in worst 10% in SPIS	Medium
LOCAL NETWORK IMPROVEMENTS			
14	**Lookingglass Rd and Pepsi Rd:** Extend Lookingglass Rd eastward and Pepsi Rd westward to connect at 4-way intersection, close current connections to OR 42, connect other access points to extensions; and install traffic signal	▪ Traffic signal warrants ▪ Persistent congestion and queuing on side streets ▪ Crash pattern of turning and angle collisions	Low
15	**Local Network Connections:** Extend Rolling Hills Rd (RH) northward to Happy Valley Rd and improve connectivity between Cameron Ave, Melody Ln, Chandler Dr, Stella St and other local streets as identified in the Douglas County TSP	▪ Phased with development ▪ Access restrictions on OR 42 (Projects 3 and 5) ▪ Douglas County implements TSP project	RH: High Other: Medium to low
16	**Grange Rd:** Create a new connection from the east end of Grange Rd to Roberts Creek Rd via Brittney Ave as identified in the Douglas County TSP	▪ Access restrictions on OR 42 (Project 8) ▪ Douglas County implements TSP project	High
17	**Winery Lane:** Extend Winery Lane to Grant Smith Rd	▪ Phased with development ▪ Access restrictions on OR 42 (Project 12)	Low
TRANSPORTATION SYSTEM MANAGEMENT MEASURES			
TSM3	**OR 42/Rolling Hills Road Intersection (74.77):** Permit U-turns for passenger vehicles with protected left-turn arrow.	▪ Access restrictions on OR 42 (Projects 5 and 8) ▪ Concurrent with Project #3	NA
TSM4	**OR 42/Carnes Road/Roberts Creek Road Intersection (75.72):** Permit U-turns for passenger vehicles with protected left-turn arrow.	▪ Access restrictions on OR 42 (Projects 5, 8, and 12)	NA
TSM5	**OR 42/OR 99/Grant Smith Road Intersection (76.22):** Permit U-turns for passenger vehicles with protected left-turn arrow.	▪ Access restrictions on OR 42 (Project 12)	NA

Table 9. Access Management Plan

ID	Description	Triggers	Priority
PRIVATE ACCESS CONTROL MEASURES			
AC	**Private Accesses:** Consolidate or close driveways in an effort to move towards achieving applicable access spacing standards	▪ Property development or redevelopment ▪ Construction of EMP improvements	Ongoing
	Access Reservations: Purchase reservations of access when reasonable alternative access options are available	▪ Property development or redevelopment ▪ Construction of EMP improvements	Ongoing



Access Management Measures

3 **OR 42/Rolling Hills Rd Intersection (74.77):** *Install traffic signal at OR 42/Rolling Hills Rd, improve access road connecting to Jackie Ln and restrict access to OR 42 from west of Rolling Hills Rd through Jackie Ln (High Priority)*

5 **OR 42 – East of Rolling Hills Rd through Landers Ave (74.78-75.42):** *Add raised barrier to restrict turn movements to right-in/right-out (Medium Priority)*

8 **OR 42/Emils Way/Grange Road Intersection (75.53):** *Add raised median to restrict turn movements to left-in/right-in/right-out (High Priority)*

12 **OR 42/Winery Ln Intersection (76.07):** *Add raised barrier to restrict turn movements to right-in/right-out (Medium Priority)*

Local Network Improvements

14 **Lookingglass Rd and Pepsi Rd:** *Extend Lookingglass Rd eastward and Pepsi Rd westward to connect at a 4-way signalized intersection; close current connections to OR 42; and connect other access points to extensions (Low Priority)*

15 **Local Network Connections:** *Extend Rolling Hills Rd northward to Happy Valley Rd and improve connectivity between Melody Ln, Cameron Ave, Chandler Dr, Stella St, and other local streets in the Douglas County TSP (RH: High Priority; Other: Medium Priority)*

16 **Grange Rd:** *Create a new connection from the east end of Grange Rd to Roberts Creek Rd via Brittney Ave (High Priority)*

17 **Winery Ln:** *Extend Winery Lane to Grant Smith Rd (Medium Priority)*

Transportation System Management Measures

TSM3 **OR 42/Rolling Hills Rd Intersection (74.77):** *Permit U-turns for passenger vehicles with protected left-turn arrow.*

TSM4 **OR 42/Carnes Rd/Roberts Creek Rd Intersection (75.72):** *Permit U-turns for passenger vehicles with protected left-turn arrow.*

TSM5 **OR 42/OR 99/Grant Smith Rd Intersection (76.22):** *Permit U-turns for passenger vehicles with protected left-turn arrow.*

Private Access Control Measures

AC **Private Accesses:** *Consolidate or close driveways in an effort to move towards achieving applicable access spacing standards*

Access Reservations: *Purchase reservations of access when reasonable alternative access options are available*

OR 42 Expressway Management Plan

Legend

- Expressway Improvements
- Local System Improvements
- Transportation System Management Measures
- Private Access Control Measures
- Raised Median/Barrier
- Future Roadway Connection

Figure 7
Access Management Plan

6 OTHER MANAGEMENT ACTIONS

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6. OTHER MANAGEMENT ACTIONS

Other management actions are included to protect and extend the design life of the expressway and provide for all modes of travel in the OR 42 expressway corridor.

6.1 Transportation System Management Measures

Transportation system management (TSM) measures are designed to maximize the use of existing transportation facilities.

6.1.1 Traffic Signal Timing Modifications

To address existing safety issues at the two signalized intersections (Carnes Road/Roberts Creek Road and OR 99/Grant Smith Road) on the OR 42 expressway, the following signal timing modifications are recommended:

- Provide protected left-turn phases in the north-south direction
- Add clearance intervals for appropriate traffic phases in the north-south direction

Current signal timing provides for protected left-turn phasing in the east-west direction but only permitted (i.e., left-turns must look for breaks in the oncoming traffic) left-turn phasing in the north-south direction. The addition of protected left-turn phasing in the north-south direction would potentially decrease the number of turning collisions that are occurring at both intersections by allocating time for vehicles to turn left from the side streets to OR 42 without any conflicting vehicular movements.

Neither of the signals has north-south clearance time programmed into the signal phasing. The addition of “all-red” timing into the signal cycle would potentially decrease the number of angle collisions that are occurring at both intersections by allowing vehicles in the north-south direction to fully clear the intersection before east-west traffic flow begins.

6.1.2 Permitted U-Turns

In conjunction with the construction of medians to restrict turning movements, the following signal modifications are recommended at the Carnes Road/Roberts Creek Road and OR 99/ Grant Smith Road intersections:

- Permit U-turns for passenger vehicles with protected left-turn arrow

OR 42 currently has few turning movement restrictions, in part because there are limited local network options for some roadways. At locations where access will be restricted in the future, there are two key ways of maintaining all movements. Alternative access can be provided via local roads or left turns from side-streets can be replaced with right turns, with a U-turn

opportunity on the mainline roadway. For the access points which maintain right-in, right-out movements, U-turn opportunities are a simple way to safety accommodate passenger vehicles.

Turning or angle related crashes are the primary crash types that are prevented by access management that converts direct left turns to right turns with a U-turn. In fact, providing U-turns instead of direct left turns can reduce the frequency of all crashes by approximately 20 percent. As a result of the proposed modifications, delay will increase slightly for left-turns from side-streets as a result of out-of-direction travel.

6.2 Transportation Demand Management Measures

Transportation demand management (TDM) measures are designed to reduce vehicular demand, especially for commuter trips in the peak periods. Goals and policies of the State contain provisions that embrace TDM measures. TDM measures include strategies that shift modes away from the single-occupancy vehicle like carpooling, vanpooling, transit, bicycling, and walking programs; strategies that shift trips to non-peak periods, such as flexible work schedules and off-peak shifts; and telecommuting, which eliminates trips.

The OR 42 supports TDM efforts through improvements to the bicycle and pedestrian system and support for the transit system (through consideration of a park-and-ride facility).

6.3 Bicycle and Pedestrian Facilities

The additional bicycle and pedestrian facilities in the EMP improves connectivity and safety for these travel modes. More importantly, these facilities serve the portion of the population who, through economic conditions or choice, do not have access to a personal means of motorized transportation and rely on walking, bicycling, and transit for mobility.

6.4 Park-and-Ride Facility

In support of the existing Umpqua Transit bus service that travels along OR 42, this plan recommends that a location for a future park-and-ride facility be investigated at the intersection of OR 42 and Carnes Road/Robert Creek Road. The facility could take advantage of existing parking that is underutilized during the day, could be part of a future shared-use development, or could be a standalone parking lot. The image to the right shows several existing lots with low parking utilization as well as vacant lots that could be developed in the future. If a suitable site cannot not be located at this intersection, sites at the OR 99/Grant Smith Road intersection could be investigated.

OR 42/Carnes Rd/Roberts Creek Rd Potential Park-and-Ride Sites

7 PLAN MONITORING AND FUNDING

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7. PLAN MONITORING AND FUNDING

The OR 42 EMP relies on monitoring of traffic volumes, congestion, and crash history to identify when projects should be considered for implementation. When traffic conditions are within five (5) years of an identified threshold, funding opportunities for specific projects should be pursued. Project funding is briefly summarized in this section along with other opportunities that could be considered.

7.1 Traffic Conditions Monitoring

The projects in the EMP include triggers that identify when a project or a strategy may be warranted. Although some priority has been assigned to the projects, periodic monitoring should occur to identify when projects may be needed. In some cases priority may be elevated based on traffic volume trends or crash history while others may be delayed.

The monitoring program should include two elements:

1. **Periodic corridor monitoring** of traffic and crash data can be used to identify the need for capacity and safety improvements in the corridor. Table 10 summarizes the types of projects and data collection that should be monitored. Data collection should include:
    - *Intersection traffic volumes should be collected and analyzed every three (3) to five (5) years to identify the need for a traffic signal, left-turn lanes, right-turn lanes, and other capacity and safety improvements identified in the EMP.*
    - *Crash rates should be reviewed every two (2) to three (3) years and SPIS rankings should be reviewed annually to identify when safety improvements such as left-turn lanes, right-turn lanes, and access management measures may be necessary.*
2. **Developer Traffic impact studies** (TIS) for proposed development should be part of the monitoring process. Proposed developments that could generate a sufficient number of trips to impact the study corridor intersections or other public intersections along OR 42 should be required to prepare a TIS. Actions related to TIS preparation include:
    - *Minimum trip thresholds for when a TIS is required should be reviewed for consistency with monitoring needs of the OR 42 EMP.*
    - *Improvements that are triggered by development should be incorporated into the conditions of approval for the proposal.*

Table 10. Monitoring for System Improvements

Project Type	Potential Locations	Monitoring
Traffic Signal	▪ OR 42/Rolling Hills Road ▪ OR 42/Lookingglass Road/Pepsi Road	▪ Monitor intersection traffic volumes to determine if traffic signal warrants are met or will soon be met ▪ Monitor impacts of local system connectivity improvements
Other Capacity Improvements	▪ OR 42/Carnes Road/Roberts Creek Road Intersection ▪ OR 42/OR 99/Grant Smith Road Intersection	▪ Monitor v/c ratios to determine if additional travel lanes are warranted ▪ Monitor intersection traffic volumes to determine if additional left-turn lanes are warranted ▪ Monitor crash patterns for increased frequency of crashes related to permitted left-turn movements
Right-Turn Deceleration Lanes	▪ OR 42/Rolling Hills Road Intersection ▪ OR 42/Landers Avenue Intersection ▪ OR 42/Emils Way/Grange Road Intersection	▪ Monitor crash patterns for increased frequency of rear-end crashes related to right-turn movements ▪ Monitor intersection traffic volumes to determine if right-turn lane warrants are met or will soon be met
Access Management	▪ OR 42/Rolling Hills Road ▪ OR 42 – East of Rolling Hills Road through Landers Avenue ▪ OR 42/Emils Way/Grange Road ▪ OR 42/Art Mill Lane Intersection ▪ OR 42/Winery Lane Intersection	▪ Monitor for continued pattern of turning and angle related collisions ▪ Monitor ODOT SPIS database to identify segments with a rating in the top 10 percent. ▪ Monitor for development
Local System Improvements	▪ Lookingglass Road and Pepsi Road ▪ Rolling Hills Road Extension ▪ Melody Lane/Cameron Avenue/Chandler Drive/Stella Street ▪ Grange Road ▪ Winery Lane	▪ Monitor for persistent congestion and queuing on side streets ▪ Monitor appropriate coupling with access restrictions along OR 42
Bicycle/ Pedestrian Improvements	▪ OR 42 - Lookingglass Road to Winston Section Road ▪ OR 42/South Umpqua River Bridge/Winston Section Road	▪ Current deficiency ▪ Monitor for continued use of expressway shoulder for bicycle and pedestrian travel

7.2 Potential Funding Sources

None of the projects listed in Section 4. Expressway Management Plan Improvements currently have identified funding sources. Funding is anticipated to come from a variety of public and private sources as projects develop over time.

Note: Local governments and/or private developers cannot rely upon the highway improvement projects included in the OR 42 EMP to mitigate significant effects unless the specific project has been programmed in the STIP or a local Capital Improvement Program (CIP), or funded privately through a Cooperative Improvement Agreement (CIA) with ODOT.

7.2.1 STIP Funding

Beginning in 2012, funding in the STIP will be divided into two categories:

- **Enhance**: "Activities that enhance, expand, or improve the transportation system."
- **Fix-It**: "Activities that fix or preserve the transportation system."

According to a summary of the new program,[14] the **Enhance** portion of the program is expected to receive less than one-quarter of the STIP funding while the **Fix-It** portion would receive the more than three-quarters of the STIP funding. This allocation reflects an emphasis on preserving the existing system. Another aspect of the program revisions is the need to address a wide range of issues and fund multimodal solutions that best address system problems.

Projects that may be eligible for the **Enhance** category of funds include:

- Bicycle and/or pedestrian facilities on or off the highway right of way
- Development STIP projects (projects not ready for construction with 4-year cycle)
- Modernization projects that add capacity to the system (per ORS 366.507)
- Most projects previously eligible for Transportation Enhancement (TE) funds
- Projects previously eligible for Flex Funds (Bicycle and Pedestrian, Transit, and TDM projects, plans, programs, and services)
- Protective right-of-way purchases
- Public transportation (capital projects only, not operations)
- Safe Routes to School (infrastructure projects)
- Scenic Byways (construction projects)
- Transportation Alternatives (the federal transportation authorization, MAP-21)
- Transportation Demand Management

Project activities eligible for the **Fix-It** category of funds include:

- Bicycle and pedestrian facilities on state routes only
- Bridges (state owned)
- Culverts
- High risk rural roads
- Illumination, signs and signals
- Landslides and rockfalls
- Operations (includes ITS)
- Pavement preservation
- Rail-highway crossings
- Safety
- Salmon (fish passage)

[14] Introduction to *Enhance* and *Fix-It* for the 2015-2018 STIP, ODOT website: http://www.oregon.gov/ODOT/TD/TP/pages/stip_guide.aspx

- Site mitigation and repair
- Stormwater retrofit
- Transportation Demand Management (part of operations)
- Work zone safety (project specific)

Note: Table 7 (Summary of Expressway Management Plan Improvements) identifies the potential funding STIP category that may apply to each project based on this breakdown of eligibility.

7.2.2 Other Funding

Other funding may come from public or private sources. Public funding opportunities could include local government Capital Improvement Programs and possible partnerships with local agencies to combine resources for related projects. Private development could be another source for funding through required mitigation or a developer contribution to a larger improvement activity.

Note: None of the OR 42 EMP improvements are reasonably likely to be constructed and cannot be relied upon to mitigate significant effects unless they are funded by the State of Oregon, a local government, or a private entity.