Clackamas County
Coordinating Committee

Agenda

Thursday, August 05, 2021
6:45 PM – 8:30 PM

Zoom Link:
https://clackamascounty.zoom.us/j/81156977638?pwd=cHBIMEE1bDVuQjFRQm1wbDVhQWR3Zz09
Telephone: 1 (408) 638-0968

AGENDA

6:45 p.m. **Pledge of Allegiance**

Welcome & Introductions
Chair Paul Savas & Mayor Brian Hodson, Co-Chairs

Housekeeping
- Approval of July 01, 2021 C4 Minutes **Page 03**

6:50 p.m. **Regional Mobility Pricing Project (RMPP) - ODOT**
Presenting: Della Mosier, Deputy Director Urban Mobility Office; Lucinda Broussard, Toll Program Director
- RMPP Problem Statement **Page 06**
- I-205 Corridor User Analysis **Page 11**

7:20 p.m. **2024-27 State Transportation Improvement Project (STIP) Update**
Presenting: Chris Ford, ODOT Region 1 Policy & Development Manager
- Region 1 STIP Webpage
- Region 1 STIP-Enhance Project Consideration List **Page 70**

8:10 p.m. **C4 Retreat Updates**
Introducing: Trent Wilson, Clackamas Government Affairs

8:15 p.m. **Updates/Other Business**
- JPACT/MPAC Updates
- Other Business

8:30 p.m. **Adjourn**

General Information

Clackamas County Coordinating Committee

Current Voting Membership

		C4 Exec	C4 Metro	C4 Rural	JPACT	MPAC	R1ACT
Clackamas County	Commissioner Paul Savas	●	●	●	●		●
Clackamas County	Commissioner Martha Schrader		●	●		●	
Canby	Mayor Brian Hodson	●		●			●
CPOs	Martin Meyers (Redland CPO)	●	●	●			
Estacada	Mayor Sean Drinkwine			●			
Fire Districts	Matthew Silva (Estacada Fire District)	●					
Gladstone	Mayor Tammy Stempel	●	●				
Hamlets	John Keith (Stafford Hamlet)			●			
Happy Valley	Council Brett Sherman		●			●	
Johnson City	Vacant						
Lake Oswego	Mayor Joe Buck		●			●	
Milwaukie	Councilor Kathy Hyzy		●		●	●	
Molalla	Mayor Scott Keyser			●			
Oregon City	Mayor Rachel Lyles Smith		●			●	
Portland	Vacant						
Rivergrove	Mayor Walt Williams		●				
Sandy	Mayor Stan Pulliam			●			
Sanitary Districts	Paul Gornick (Oak Lodge Water Services)	●					
Tualatin	Councilor Valerie Pratt		●				
Water Districts	Hugh Kalani (Clackamas River Water)						
West Linn	Mayor Jules Walters		●				
Wilsonville	Mayor Julie Fitzgerald		●				

Current Ex-Officio Membership

MPAC Citizen Rep	Ed Gronke
Metro Council	Councilor Christine Lewis
Port of Portland	Emerald Bogue
Rural Transit	Teresa Christopherson
Urban Transit	Dwight Brashear (SMART)

Frequently Referenced Committees:

CTAC: Clackamas Transportation Advisory Committee (C4 Transportation TAC)
JPACT: Joint Policy Advisory Committee on Transportation (Metro)
MPAC: Metro Policy Advisory Committee (Metro)
MTAC: Metro Technical Advisory Committee (MPAC TAC)
R1ACT: Region 1 Advisory Committee on Transportation (ODOT)
TPAC: Transportation Policy Advisory Committee (JPACT TAC)

Clackamas County
Coordinating
Committee

Draft Minutes

Thursday, July 01, 2021
Development Services Building
Main Floor Auditorium, Room 115
150 Beavercreek Road, Oregon City, OR 97045

Attendance:

Members: **Clackamas County:** Paul Savas; Martha Schrader; **CPOs:** Martin Meyers; Marge Stewart (Alt.); **Estacada:** Sean Drinkwine; **Fire District:** Matthew Silva; **Gladstone:** Tammy Stempel; **Hamlets:** John Keith; Rick Cook (Alt.); **Happy Valley:** Brett Sherman; **Lake Oswego:** Joe Buck; **Metro:** Christine Lewis; **Milwaukie:** Kathy Hyzy; **Molalla:** Scott Keyser: **MPAC Citizen:** Ed Gronke; **Oregon City;** Rachel Lyles Smith; **Sanitary Districts:** Paul Gornick; **Transit:** Dwight Brashear(SMART); Tom Markgraf (TriMet)(Alt.); Teresa Christopherson (Rural Transit); **Sandy:** Stan Pulliam; **Tualatin:** Valerie Pratt; **West Linn:** Jules Walters; **Wilsonville:** Julie Fitzgerald

Staff: Trent Wilson (PGA); Chris Lyons (PGA)

Guests: Daniel Nibouar (DM); Jaimie Huff (Happy Valley); Mark Ottenad (Wilsonville/SMART); Dayna Webb (Oregon City); Jeff Gudman (Community); Kenny Sernach (CPO); Chris Neamtzu (Wilsonville); Dan Blue (Metro); Estee Segal (Metro); Gloria Pinzon (Metro); Roy Brower (Metro); Mary Whitney (Community)

The C4 Meeting was recorded and the audio is available on the County's website at http://www.clackamas.us/c4/meetings.html . Minutes document action items approved at the meeting.

Agenda Item	Action
Approval of June 03, 2021 C4 Minutes	Approved.
Metro South Transfer Station	Metro staff presented on the potential purchase of a site to place a new self and commercial haul facility in the Clackamas Industrial Area. The current site – Metro South - is located in Oregon City and has outgrown its intended use and created unsafe traffic conditions. The presentation noted options of consideration to move some or all of the Metro South Station to a new site that can accommodate the growth. No decision.
Post Fire and Upcoming Fire Season Update	Daniel Nibouar, Interim Director of Disaster Manager for Clackamas County, provided a post-2021 fire briefing,

	noting the work is still ongoing and not ready for a final report. The 2022 fire season is underway, earlier than normal. The county is working with partners to take preventative measures. C4 Members noted the many jurisdictions that implemented fireworks bans for 4th of July celebrations.
Strategic Investment Fund	Mike Bezner, Assistant Director of Transportation, provided an update on the Strategic Investment Fund, part of the County's Vehicle Registration Fee that is set aside for collaborative decisions made by the C4 committee. Mr. Bezner outlined the 10 year project timeline. No decisions made.
Updates from the 2021 Legislative Session	Chris Lyons, Government Affairs Manager, updated C4 members on several outcomes from the 2021 State Legislative Session. Highlights included passage of HB 3055 (funding for I-205 and direction on the implementation of congestion pricing), funding and critical policy formation for the Willamette Falls Locks, funding to advance a visioning process in the Sunrise Gateway Corridor, and matching funds to advance the County's Courthouse replacement project.
C4 Retreat Updates, upcoming meetings	C4 members completed a doodle poll that identified October 1 and 2 and the preferred and best available dates for the C4 retreat.
Updates/Other Business • **JPACT/MPAC Updates** • **Response to C4 Letter re SMART/JPACT** • **I-205 Federal Funding Support Letter**	JPACT/MPAC: JPACT will be considering an MTIP amendment related to I-205 funding, and also consider adoption of the Metro regional congestion pricing study recommendations. MPAC discussed in June challenges to building affordable housing and discussed the need for an earthquake-ready runway at the airport. JPACT Chair submitted a letter to C4 members, responding to a letter sent by C4 in February. The letter acknowledges receipt of C4's letter, explains the resulting actions of the discussion related to C4's support for SMART's request to be added to the JPACT membership. That request did not advance. Staff shared the I-205 federal funding support letter, for which C4 is a logo supporter per a decision at their June meeting. In total, 41 partners signed the letter.

Adjourned at 8:39 p.m.

Oregon Toll Program

Problem Statement for Regional Mobility Pricing Project

To design a successful project, we need your help improving our "Problem Statement" that will guide future work. Read more and please share your thoughts by emailing the project team at OregonTolling@odot.state.or.us. Please put "Problem Statement" in the subject line and send us your comments by July 30, 2021.

PURPOSE OF THE "PROBLEM STATEMENT"

The purpose of this document is to outline the transportation problems that the Regional Mobility Pricing Project would address. The "Problem Statement" provides input for the important "Purpose and Need" statement, which will guide development of the project through the National Environmental Policy Act (NEPA) process.[1]

The Regional Mobility Pricing Project alone will not solve issues identified in the "Problem Statement," but it will inform how the project can be built to contribute to the solution.

PROBLEM STATEMENT FOR REGIONAL MOBILITY PRICING PROJECT

Daily traffic congestion and rerouting is negatively affecting the quality of life in a growing region.

Traffic congestion creates long vehicle backups traveling at slow speeds—a scenario that many people experience daily while traveling during the morning and evening rush hours. Four of the most significant bottlenecks in our region occur on northbound I-5 where overlapping queues that last more than 7 hours (Interstate Bridge, Rose Quarter, Marquam Bridge/I-84, and Terwilliger Curves). Between 2015 and 2017, these queues increased 1 hour (ODOT, 2018). Free-flow travel time is typically 25 minutes on the I-5 corridor. In 2017, PM peak travel time on southbound I-5 was 100 minutes—a four-fold increase versus free flow. In 2017, PM peak travel time on northbound I-205 was 80 minutes—a more than three-fold increase versus free flow (ODOT, 2018).

Congested conditions on I-5 and I-205 can result in traffic rerouting to other local and arterial streets. This rerouting results in additional traffic congestion and creates potential safety conflicts. The conditions caused by this traffic congestion and rerouting also make travel

[1] As defined by the Federal Highway Administration (FHWA, 1990): "A clear, well-justified purpose and need section explains to the public and decision-makers that the expenditure of funds is necessary and worthwhile and that the priority the project is being given relative to other needed highway projects is warranted."

unreliable such that drivers and transit riders can't predict how long it will take them to get to work, home, services, or childcare arrangements.

Forecasts for the Portland metro area show that population and employment will continue to steadily grow. The metro area population is expected to grow from approximately 2.5 million residents from 2018 to more than 3 million by 2040 (23%) and more than 3.5 million by 2060 (43%) (Census Reporter, 2018; Metro, 2016). Job growth continues to outpace the nation: Portland grew at an average annual rate of 2% compared to the U.S. average of 1.6% (Portland Business Alliance, 2020). By 2039, the number of vehicles travelling along the I-5 corridor is projected to be between 127,200 and 192,900, depending on the corridor segment (ODOT, 2020), which is an approximate increase of 18% from 2017 traffic counts. Planned roadway projects, improvements in transit, and increased use of active transportation modes across our region will not fully address the increase in daily trips and hours of traffic congestion (Metro, 2018).

Post-COVID-19 Pandemic
Traffic volumes decreased significantly during the early days of the COVID-19 pandemic and rush-hour traffic congestion has not been as severe as it was before the pandemic. With the economy reopening, vehicle numbers are increasing quickly and as of March 2021 are already near 90% of pre-pandemic levels. We anticipate traffic congestion to quickly return as people resume commuting to work and school.

Traffic congestion is hampering economic growth.

Traffic congestion affects the Portland metro region economy through slow and unpredictable travel times for freight, services, employers, and employees. From 2015 to 2017, drivers in the Portland metro region experienced an 18.5% increase in the hours of traffic congestion. In 2015, the daily cost of traffic congestion in the Portland metro region was $1.7 million, which increased to $2.0 million in 2017. These numbers reflect the economic burden of trucks and cars being delayed on the roadway but do not reflect the environmental and health costs related to motor vehicles, such as vehicle collisions, air pollution, and roadway noise (ODOT, 2018).

Our transportation system must become more efficient to reduce greenhouse gas emissions.

Climate change poses one of the most significant threats to Oregon's economy, environment, and way of life (Gov. Kate Brown, 2019). To reduce the negative effects of climate change, Oregon has committed to reducing greenhouse gas emissions by at least 45% below 1990 levels by the year 2035, and by 80% by 2050 (EO 20-04, 2020). The transportation sector—particularly personal cars and light trucks—creates approximately 36% of greenhouse gas emissions in Oregon (Oregon Global Warming Commission, 2020). To meet the state's goals for greenhouse gas reduction, numerous tools and solutions are needed. For transportation sector emissions, total tailpipe emissions must be reduced by decreasing the number of hours that vehicles spend stuck in traffic and the number of miles traveled by motor vehicles in the state.

The gas tax and other traditional revenue sources are not sufficient to fund transportation infrastructure needs.

Available funding for transportation has not kept pace with the costs of maintaining Oregon's transportation system or constructing new transportation and traffic congestion relief projects. ODOT revenue comes from a mix of federal and state sources. The Federal Highway Trust Fund provides states with roughly 25% of public spending for federal highway and transit projects and is funded primarily by the federal fuel taxes (Sargent, 2015). The federal gas tax has not been adjusted since October 1993, and the share of federal contributions to state transportation projects has greatly decreased resulting in near- and long-term funding constraints. On the state level, escalating expenditures to maintain aging infrastructure, the need to perform seismic upgrades for the state's bridges, and rising construction costs have greatly increased financial needs.

Compounding this problem is a substantial increase in travel demand as the state experiences strong population growth, particularly in the Portland metro region. ODOT must explore every possible method for getting the most out of its existing infrastructure, funding traffic congestion relief projects to ease traffic congestion, and planning for increased earthquake resiliency.

The Portland metro region's transportation networks have resulted in inequitable outcomes for historically and currently excluded and underserved communities.

Many urban interstate highways and major civic centers were deliberately built through Black neighborhoods, often requiring the destruction of housing and other local institutions (Federal Register, 2021). In Central Portland during the 1950s and 1960s, construction of I-5, the Veterans Memorial Coliseum, Emanuel Legacy Hospital, the Portland Public School Blanchard site, and urban renewal programs divided and displaced communities in North and Northeast Portland, affecting and burdening communities of color, especially African American communities, in the historic Albina neighborhood (Gibson, 2007). In the eastern Portland metro region, the construction of I-205 exemplifies these outcomes as well where the route of the highway alignment was changed due to political motivation and public protest (Fackler, 2009). The alignment was moved away from Lake Oswego, farther east and south into Clackamas County and farther east in Portland, away from majority white and wealthier cities, reinforcing social and economic inequity (Invisible Walls, 2019).

Because of these discriminatory transportation policies and politics, a geographic mismatch exists between job locations, essential resources, community services, and housing that is affordable (Oregonian, 2012). This disproportionality affects communities of color, immigrant communities, people experiencing low income, lesbian, gay, bisexual, transgender, gender non-conforming, and queer (LGBTQ+) individuals and people living with a disability (Federal Register, 2021). Members of these communities have fewer transportation options and travel farther between destinations, which increases transportation costs, dependence on unreliable travel options, and adds significantly more time in traffic congestion. Collectively, these transportation and land use decisions have resulted in discrimination, leading to trauma and continued effects of inequitable public planning practices for these historically and currently excluded and underserved individuals and communities.

Consistent with the requirements of 23 U.S.C. 168, the information in this document, and the public and agency input received, may be adopted or incorporated by reference into a future environmental review process to meet the requirements of the National Environmental Policy Act.

Americans with Disabilities Act and Title VI of the Civil Rights Act of 1964

Si desea obtener información sobre este proyecto traducida al español, sírvase llamar al 503-731-4128.

Nếu quý vị muốn thông tin về dự án này được dịch sang tiếng Việt, xin gọi 503-731-4128.

Если вы хотите чтобы информация об этом проекте была переведена на русский язык, пожалуйста, звоните по телефону 503-731-4128.

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如果您想了解这个项目，我们有提供简体中文翻译，请致电：503-731-4128。

For Americans with Disabilities Act or Title VI of the Civil Rights Act of 1964 accommodations, translation/interpretation services, or more information call 503-731-4128, TTY (800) 735-2900 or Oregon Relay Service 7-1-1.

References

Census Reporter. 2018. Portland-Vancouver-Hillsboro, OR-WA Metro Area. https://censusreporter.org/profiles/31000US38900-portland-vancouver-hillsboro-or-wa-metro-area/. Accessed February 4, 2020.

Elliot Henry Fackler. June 2009. Protesting Portland's Freeways: Highway Engineering And Citizen Activism In The Interstate ERA.

Executive Order (EO) 20-04, "Directing State Agencies to Take Actions to Reduce and Regulate Greenhouse Gas Emissions." March 10, 2020. https://www.oregon.gov/gov/Documents/executive_orders/eo_20-04.pdf

Federal Highway Administration (FHWA). "NEPA Implementation: The Importance of Purpose and Need in Environmental Documents." September 18, 1990. https://www.environment.fhwa.dot.gov/legislation/nepa/guidance_purpose_need.aspx

Federal Register. January 29, 2021. Redressing Our Nation's and the Federal Government's History of Discriminatory Housing Practices and Policies; Executive Office of the President, 86 Fed. Reg. 7487.

https://www.federalregister.gov/documents/2021/01/29/2021-02074/redressing-our-nations-and-the-federal-governments-history-of-discriminatory-housing-practices-and

Governor Kate Brown. "Policy Offices: Energy and Climate Change." Accessed March 2019. https://www.oregon.gov/gov/policy/Pages/energy_climatechange.aspx.

Invisible Walls: Housing Discrimination in Clackamas County. 2019. HST 4/595, Public History Seminar: Understanding Residential Segregation in Oregon, Portland State University

Karen J. Gibson. 2007. Bleeding Albina: A History of Community Divestment, 1940-2000.

Metro. 2016. "Population Forecast to 2060." Accessed February 4, 2020. https://www.oregonmetro.gov/2060-growth-forecast.

Metro. December 6, 2018. 2018 Regional Transportation Plan, "Section 8.2.3, Regional-Wide Planning." https://www.oregonmetro.gov/sites/default/files/2020/07/29/Adopted-2018-RTP-all-chapters.pdf

Michael Sargent. 2015. Highway Trust Fund Basics: A Primer on Federal Surface Transportation Spending.

Oregon Department of Transportation (ODOT). 2018. Portland Region 2018 Traffic Performance Report. Accessed March 15, 2021. https://www.oregon.gov/ODOT/Projects/Project%20Documents/2018TrafficPerformanceReport.pdf.

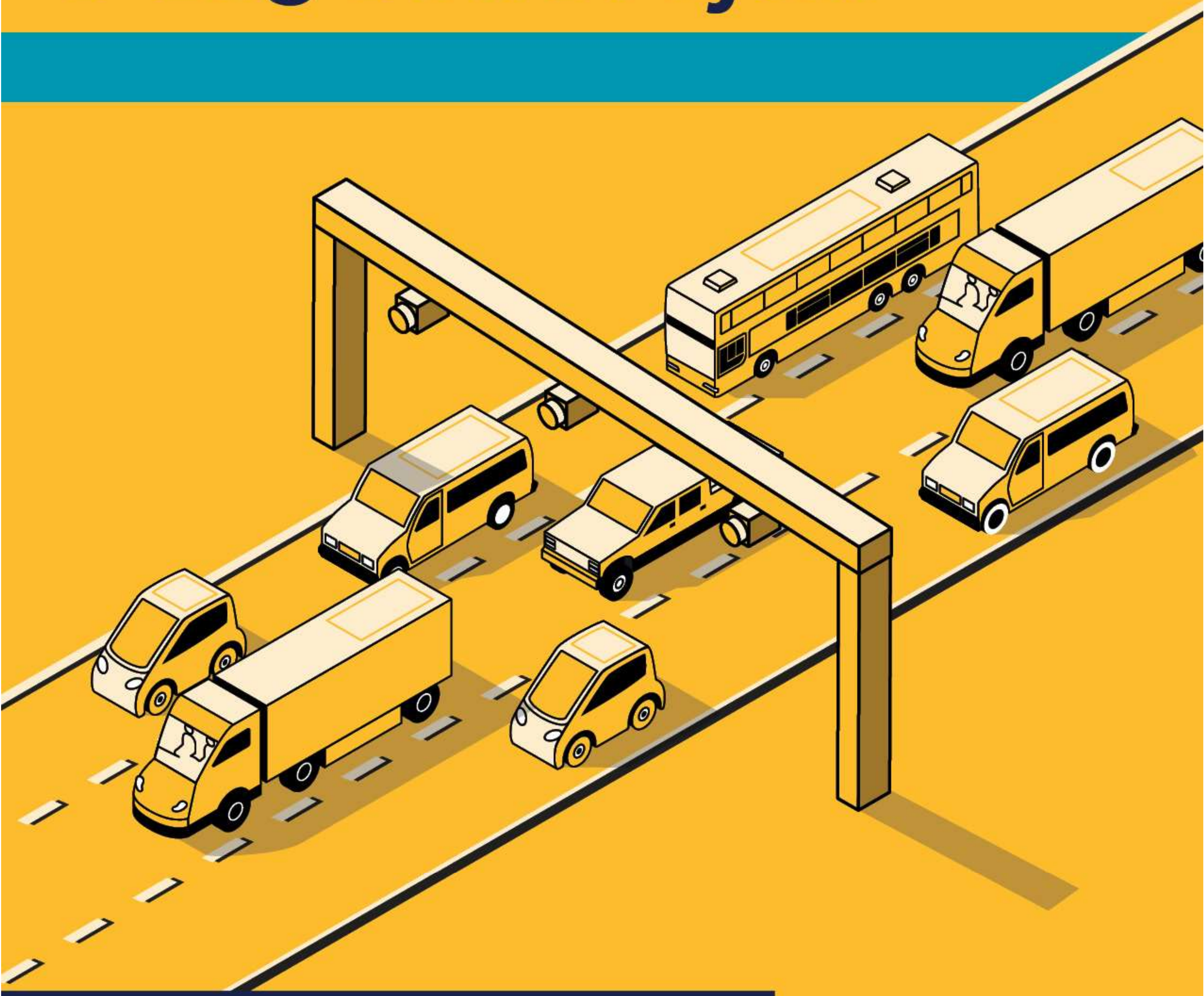
Oregon Department of Transportation (ODOT). 2020. Future Highway Volume Table. Accessed March 16, 2021. https://www.oregon.gov/odot/Planning/Pages/APM.aspx.

Oregon Global Warming Commission. 2020. Biennial Report to the Oregon Legislature. Accessed March 16, 2021. https://www.keeporegoncool.org/reports/

Portland Business Alliance. 2020. Value of Jobs State of the Economy. Accessed March 15, 2021. https://portlandalliance.com/assets/pdfs/economic-reports/2020-VOJ-State-of-Economy-WEB.pdf.

The Oregonian. June 2, 2012. "Low-cost housing shut out amid riches of Lake Oswego and West Linn: Locked Out, Part 3."

I-205 Toll Project

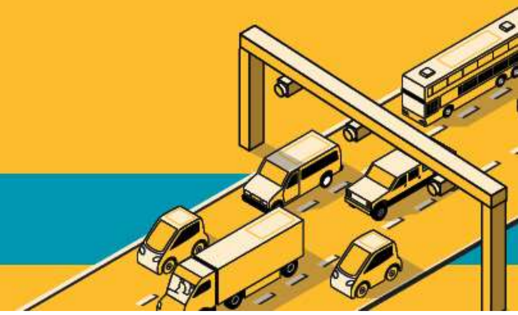


I-205 Corridor User Analysis

February 2021

Oregon Department of Transportation

I-205 Toll Project



I-205 Corridor User Analysis

Prepared for:

Oregon Department of Transportation

Prepared by:

WSP

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Americans with Disabilities Act and Title VI of the Civil Rights Act of 1964

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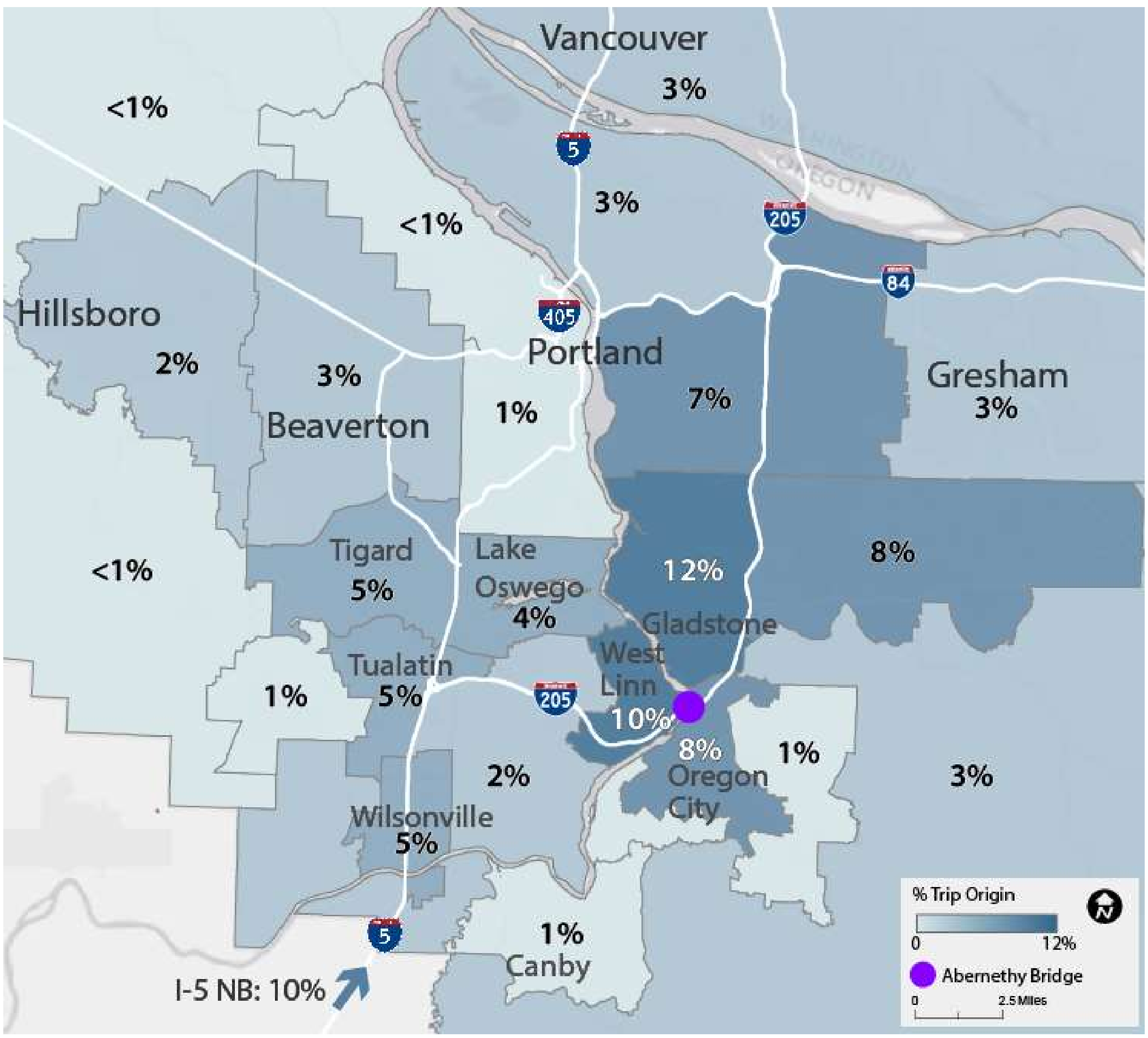
EXECUTIVE SUMMARY

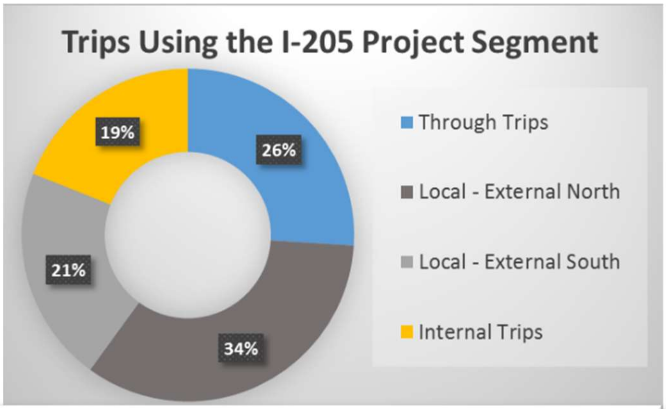
The I-205 Corridor User Analysis was undertaken to better understand travel characteristics of current users of the I-205 corridor currently being considered for tolling. The Oregon Department of Transportation (ODOT) will use this information to inform the development, screening, and analysis of alternatives for the I-205 Toll Project. The Executive summary presents a summary of the key findings from the analysis.

Where do users of the I-205 corridor travel to and from?

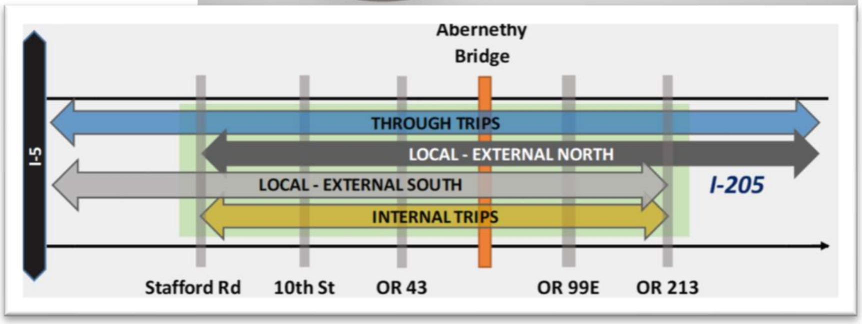
While trips using the I-205 corridor come from throughout the Portland metropolitan region and beyond, a large share of them originate locally within the corridor. The map below shows the origins of travelers using the I-205 Abernethy Bridge. Darker blue shading of zones indicates a higher percentage of trips from those zones. Higher percentages of users come from nearby areas such as West Linn, Oregon City, Gladstone, and Clackamas. Fewer travelers come from areas farther away, including approximately 3% from Clark County, Washington.



What percentage of trips are through trips?

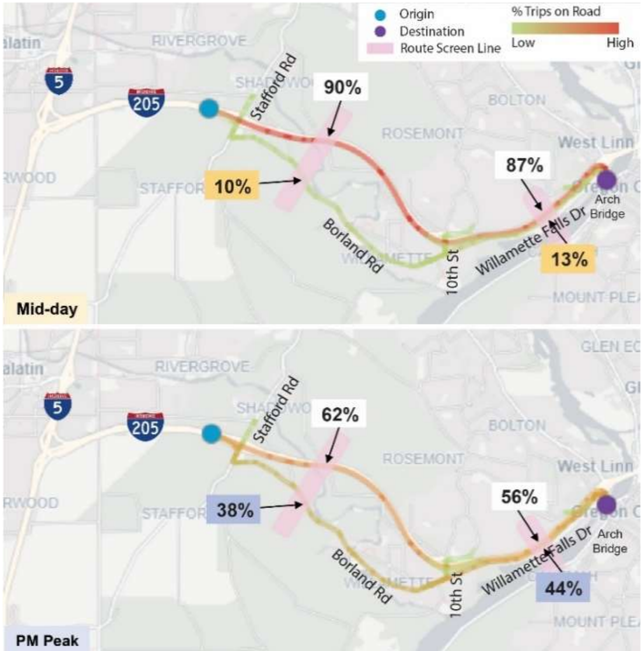


The segment of I-205 that ODOT is considering for tolling stretches between the Stafford Road and OR 213 interchanges. Through trips comprise only about one-quarter of the trips on this Project segment. The remaining three-quarters of users acess I-205 locally in the Project segment—meaning that they enter or exit I-205 at one of the five interchanges in this segment of I-205 (see diagram below). This includes 19% “internal” trips—which both enter and exit I-205 within the Project segment interchanges.



I-205 Toll “Project Segment” is indicated in green shading

Do users reroute off I-205 during times of congestion?



Source: StreetLight Insight Platform

Example Rerouting Pattern

Our analysis shows vehicles rerouting off of I-205 during higher demand periods when traffic congestion is present. For example, for northbound I-205 travelers to the Oregon City Arch Bridge, an estimated 10% to 15% of trips exit I-205 and take alternative roads (Borland Road and/or Willamette Falls Drive) during the midday when there is little congestion. During the PM peak period, however, the proportion of travelers choosing these alternative routes to the Arch Bridge increases to 35% to 45%. This difference indicates that during the PM peak period 20% to 30% of these travelers may be rerouting away from I-205 to local routes to avoid traffic congestion. The Project team conducted rerouting analyses for other origin/destination pairs as well. Results indicate shifts in traffic routing away from I-205 to local routes during peak travel times may be above 50% for some travel patterns. Borland Road, Willamette Falls Drive, OR 99E, Stafford Road and Schaeffer Road were identified as alternative routes that experience the greatest amount of rerouting.

1 INTRODUCTION

1.1 Purpose

This memorandum summarizes an assessment of corridor user travel characteristics undertaken for the Interstate 205 (I-205) Toll Project (Project). The objective of the analysis is to inform the alternatives development, screening, and analysis through enhanced understanding of travel behavior and characteristics of existing and potential users of the Project corridor. The Project team used the StreetLight Data, Inc. (StreetLight) mobility platform as the primary tool for the analysis, with available information from the Metro Regional Travel Demand Model (RTDM) and the Oregon Statewide Integrated Model also used to cross-check key findings, fill in gaps in information, or identify potential uncertainties.

1.2 Organization

The remainder of this memorandum is structured into the following sections:

- ***Methodology*** describes tools and data sources used for the analysis.
- ***Corridor User Travel Patterns*** summarizes origins/destination patterns and other travel characteristics of corridor users.
- ***Existing Rerouting Patterns*** uses StreetLight to assess the likelihood of trips rerouting from I-205 due to current congestion levels.
- ***Corridor User Demographics*** provides estimated demographic breakdowns of corridor users and compares them to the regional averages.
- ***Appendices***

2 METHODOLOGY

2.1 Overview

The corridor user analysis focuses on trips and users of the I-205 corridor encompassing segments being evaluated for tolling between the Stafford Road and OR 213 interchanges (Project segment), including the I-205 Abernethy Bridge over the Wilamette River. The analyzed geographic area included the Project segment—the I-205 mainline between Stafford Road and OR 213—as well as other facilities throughout the region that these trips use to get to/from the Project segment. The Project team also analyzed travel on local roads that serve as alternative routing options to I-205.

The majority of this corridor user analysis is based on findings from analyzing data provided through StreetLight with additional information and comparisons provided via Metro's RTDM and the Oregon Statewide Integrated Model which can be found in Appendix B.

2.2 Background Information on StreetLight Data

StreetLight is a web-based, on-demand mobility data analytics platform. This service uses anonymized, personal cellular-device location data (location-based services data) and navigation GPS data that is processed into origin/destination matrices, travel time, and routing information. This corridor user analysis used location-based services data. The raw location-based services data were processed into probable trips, with adjustments to trip data made based on sampled devices compared to the population at the level of the census block.

The Streetlight tool provides access to a larger scale of transportation data to support better understanding of transportation patterns and behavior in the study area than would be available through more traditional data collection techniques.

For more details on StreetLight's methodology and data sources, refer to Appendix A, which include *StreetLight Insight Metrics: Our Methodology and Data Sources* (updated July 2019) and "*StreetLight Volume and Methodology & Validation White Paper* (updated August 2019).

2.3 Analysis Parameters and Sample Size

This analysis used location-based services data from 2019. The Project team used StreetLight location-based services dataset for 2019 weekday travel (Monday to Thursday, January through December) for all analyses. The project team also performed comparisons using average weekday daily travel data from Metro's RTDM from the 2015 baseline model.

Depending on the geographies selected for a particular analysis, the sample size ranged from around 10,000 devices (for a specific origin-destination pattern) to 100,000 or more devices (for a regionwide analysis of trips crossing the Abernethy Bridge).

In the six counties in the vicinity of the Project segment—Multnomah, Clackamas, Washington, Marion, Yamhill and Clark Counties—StreetLight provided the number of devices captured in each county in March 2019 (Table 1). The number of devices in relation to the total population of each county indicates a relatively robust sample size.

Table 1. StreetLight's Device Sample Size in Project Area

County	Number of Devices (March 2019)	Total Population
Multnomah County	155,616	804,606
Washington County	92,000	589,481
Clark County	74,832	473,252
Clackamas County	65,500	410,463
Marion County	57,000	339,641
Yamhill County	16,000	104,831

Data source: American Community Survey 2019 5-Year Estimate, StreetLight

StreetLight has published a case study of device sample share in Florida at the census tract level. Device sample share is defined as number of devices captured over total population. StreetLight calculated the number of devices in one census block during nighttime and then aggregated that to the census tract level. The assumption is that if a device stays overnight in one census block, then this census block is most likely its home location. The study found the average device sample share to be about 13% of the population; however, the exact percentage of trips captured through these devices is unclear.*

2.4 Data Limitations

The methods by which StreetLight gathers, transforms, analyzes, and models data are fundamentally insufficient to portray reality with 100% certainty. Any presentation of data, metrics, or statistics should be viewed with a discerning eye. While StreetLight bases its data on actual, historical information collected from travelers, it 1) provides only a sample of the total trips being made, and 2) requires algorithms to normalize and expand location-based data. As such, its accuracy can be questioned and uncertainty in any findings should be reconized.

Additionally, because StreetLight's data depends on smart device tracking, some inherent biases in the sample base could occur because a higher proportion of members of certain demographic groups may not use smart devices; therefore, these groups could be underrepresented in StreetLight data. The Project team does not know the identity of individual drivers or smart devices, as the data is anonymized.

Despite the limitations noted above, this data source provides useful indicators for understanding travel patterns and user characteristics on the I-205 Project segment. Research to-date shows that the accuracy of StreetLight's data for analysis of trip origins and destinations and other travel pattern information increases as the sample size increases.[1] Furthermore, the information presented was cross-checked against other available sources where available, including the Metro RTDM and the Oregon Statewide Integrated Model (Appendix B), and was found to be consistent.

[1] *Guidelines for Using StreetLight Data for Planning Tasks*, Yang, et.al., Virginia Transportation Research Council, March 2020.

3 CORRIDOR USER TRAVEL PATTERNS

This section discusses the Project corridor's existing use patterns. The Project team addressed the following questions related to travel patterns:

- **Origin/Destination Analysis:** Where do trips using the I-205 Project segment come from and go to?
- **Travel Shed Analysis:** How far off of I-205 do Project segment trips typically travel, and what routes are used most often?
- **I-205 Mainline Travel Patterns:** Which ramp interchanges are used most frequently to access I-205, and what share of trips are passing all the way through the corridor?

3.1 Origin/Destination Analysis

KEY FINDINGS

- A relatively high share of Abernethy Bridge trips are local access trips from/to nearby areas such as West Linn, Oregon City, Gladstone and Clackamas
- Broad regional coverage of trip origins/destinations beyond the Project segment, including urban areas in Washington County
- About 10 to 15% of Abernethy Bridge trips have an origin or destination outside of the Portland metro region
- Less than 5% of Abernethy Bridge trips are from/to Clark County, Washington

This analysis examined origins and destinations of I-205 trips crossing the Abernethy Bridge. The Project team divided the region into 23 geographic areas designed to provide an overview of potential usage patterns, with smaller areas identified near the Project segment allowing for a finer level of analysis. The Project team also identified external gateways representing the primary roadways travelers take into and out of the region including I-5, US 26, I-84 and OR 99W. All geographic areas correspond to the RTDM areas (aggregations of the model's transportation analysis zone system). Appendix B includes a map of the geographic areas and external gateways.

Figure 1 and Figure 2 identify the percentage of Abernethy Bridge trips coming from and going to each geographic area, respectively. The StreetLight dataset sampled approximately 101,000 total unique devices and approximately 467,000 trips. The distribution of trip origins (Figure 1) is similar to that of trip destinations (Figure 2) over the course of the day.

The origin/destination analysis indicates that a relatively high share of trips on this segment of I-205 originate locally, in nearby areas such as West Linn, Oregon City, Gladstone, and Clackamas. However, there is also broad regional use of the corridor, including trips originating in or destined to urban areas in Washington County such as Tualatin, Tigard, and Beaverton.

Approximately 3% of all Abernethy Bridge trips are from/to Clark County, Washington. While most Abernethy Bridge trips begin and end in the Portland metro area, roughly 12% of trips travel to or from outside of the region. Among these external trips, the majority are via I-5 to/from the south, accounting for about 9% of all trips over Abernethy Bridge.

Figure 1. Regional Origins of I-205 Trips Crossing the Abernethy Bridge

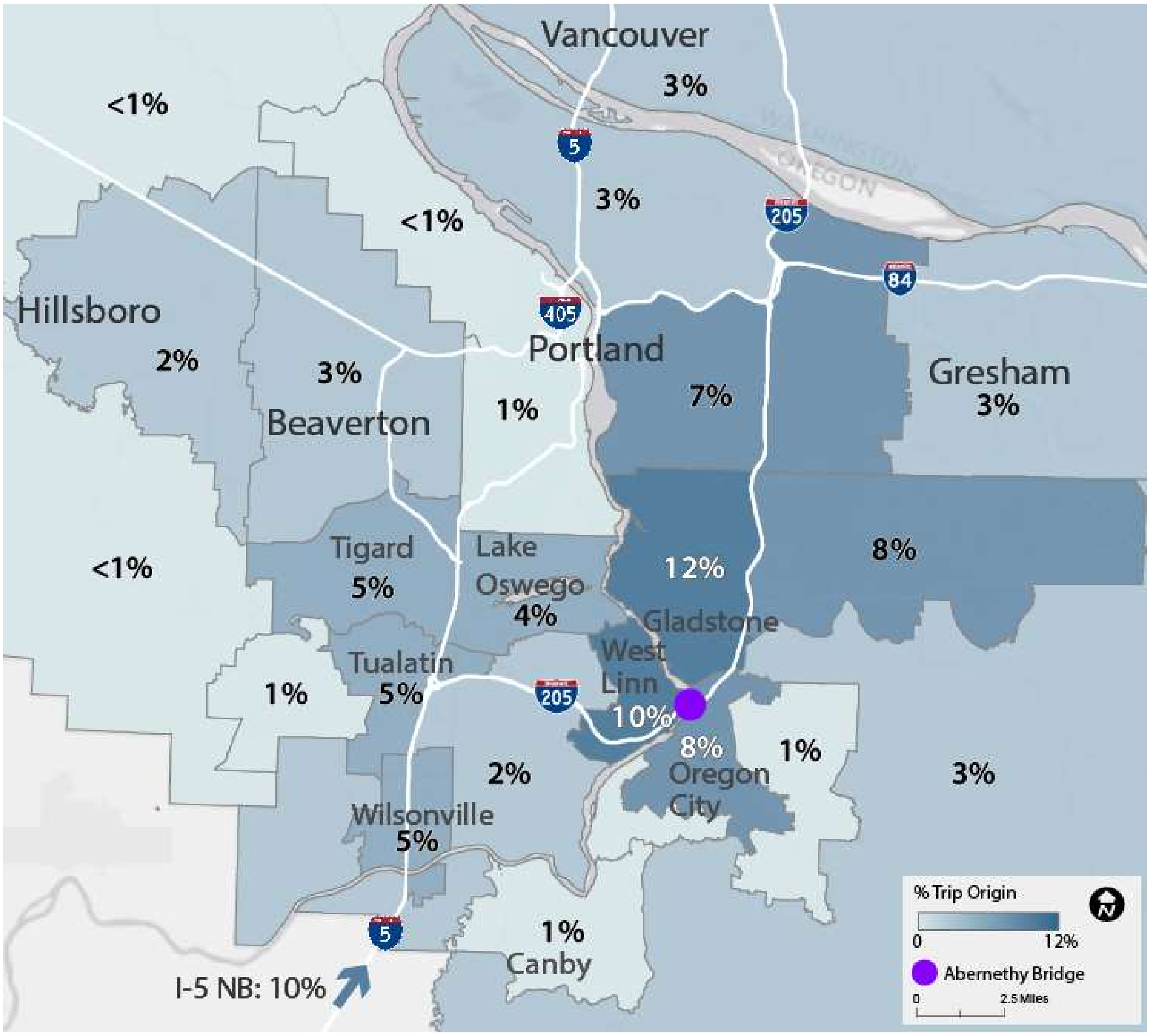
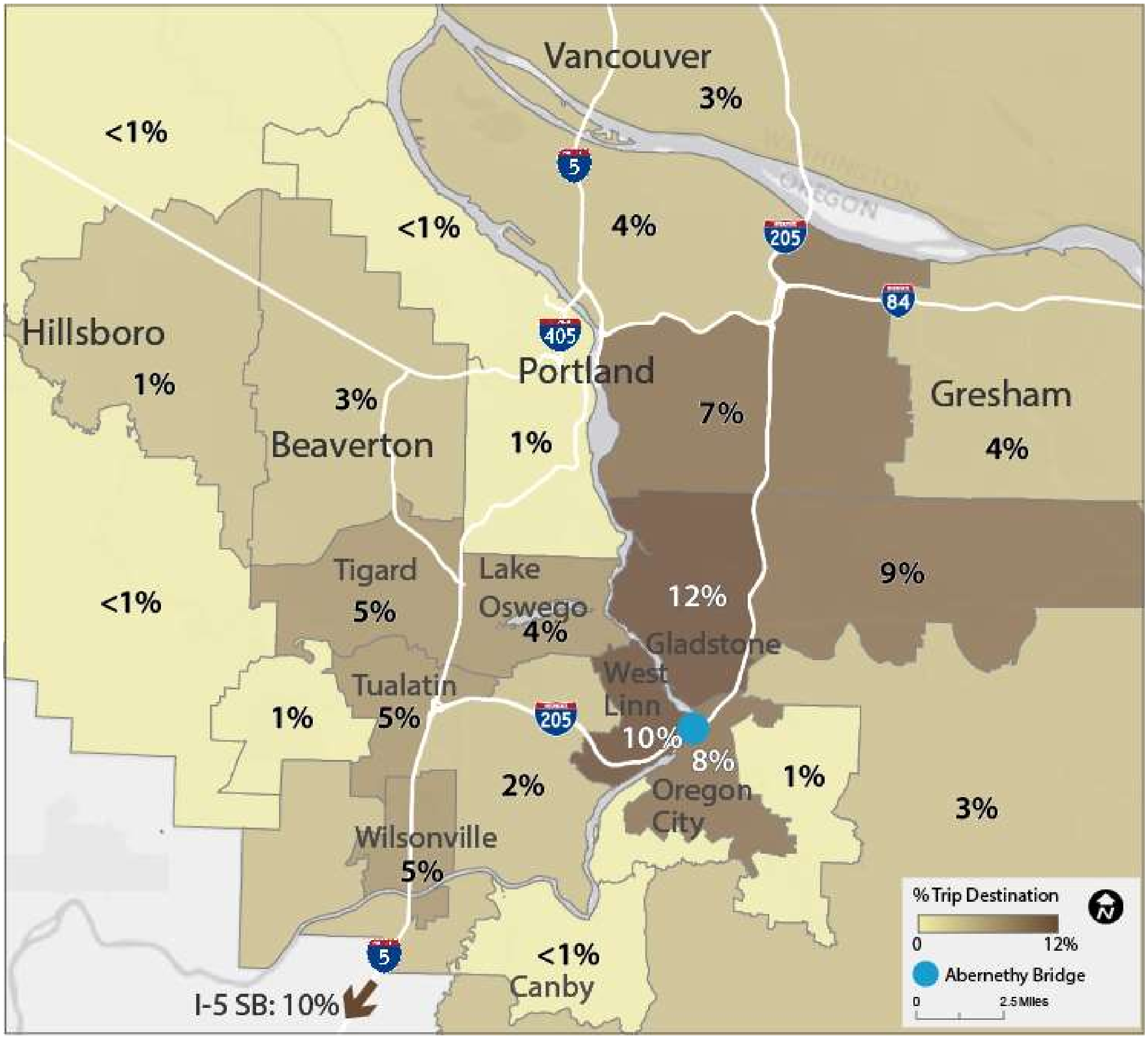


Figure 2. Regional Destinations of I-205 Trips Crossing the Abernethy Bridge



Data Validation with the Regional Travel Demand Model

The Project team compared StreetLight origin/destination analysis results with a similar analysis of Abernethy Bridge origin/destination patterns performed using the RTDM (2015 model base year). The results show a high degree of consistency in daily travel patterns between the StreetLight and RTDM-based analyses. Most zones are within 1% of total demand, though one notable difference in trip percentage was identified in the North Portland zone (3% with StreetLight, compared to 1% with the RTDM). This area includes the Portland International Airport and could reflect challenges in capturing airport activities using these tools. Comparison with ODOT's Statewide Integrated Model also showed consistency with the StreetLight results. Appendix B includes a table comparing origin/destination results from the RTDM, the Statewide Integrated Model, and StreetLight.

3.2 Travel Shed for Abernethy Bridge Users

KEY FINDINGS

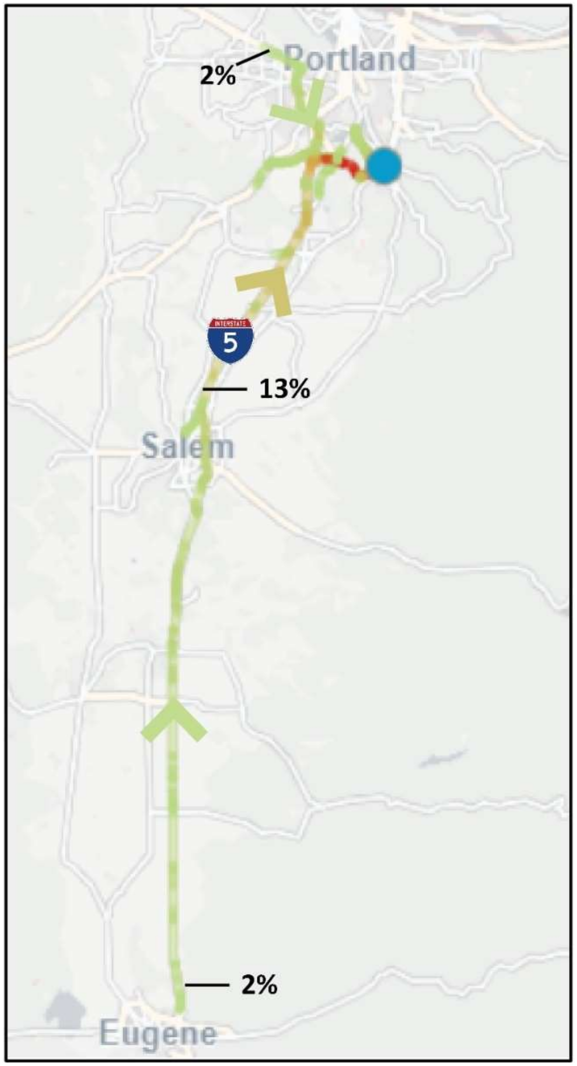
- More than half of trips traveling northbound across the Abernethy Bridge come from I-5
- More than 80% of northbound trips across the Abernethy Bridge exit I-205 before the I-84 interchange
- Trips patterns crossing the Abernethy Bridge southbound mirror the northbound patterns

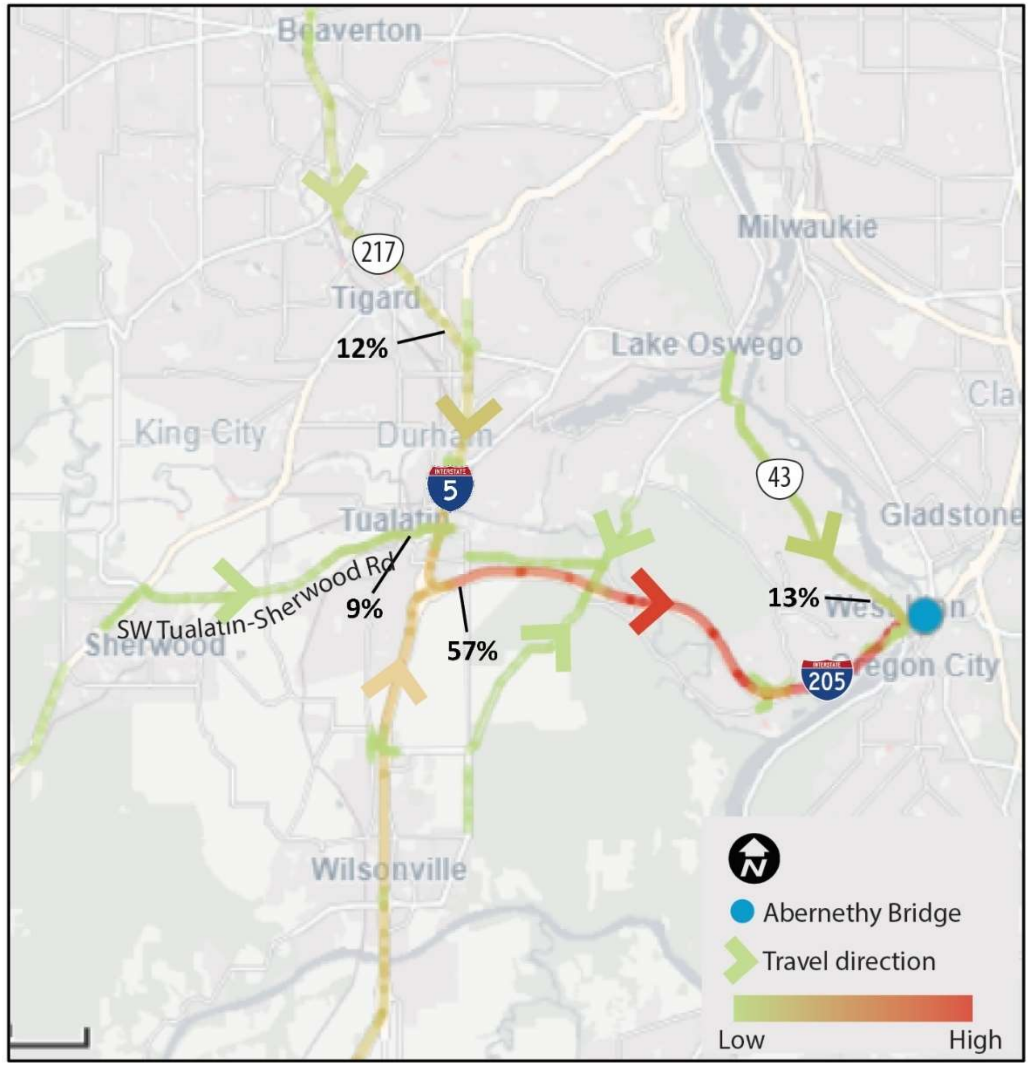
This analysis shows the commonly used routes to get to and from the Abernethy Bridge. Otherwise known as the "travel shed," the graphic depicts the concentration and distribution of trips throughout the roadway network over the day. The travel shed analysis is consistent with the origin/destination analysis results in that it indicates a relatively high percentage of bridge trips coming from areas near the Project segment.

Figure 3 shows the daily travel shed for trips traveling to the Abernethy Bridge from their points of origin. Figure 4 shows the travel shed for northbound travel from the Abernethy Bridge to destinations to the north. The colored routes indicate intensity of routing choices to or from the Bridge. StreetLight's data used in this analysis for both northbound and southbound directions sampled approximately 209,000 unique devices and 1,445,000 trips.

I-5 to I-205 is the most used route to access Abernethy Bridge northbound, accounting for more than half of all northbound trips on the Bridge. The travel shed shown in Figure 3 illustrates a long tail to the south and a relatively short tail to the north, which reflects longer distance trips coming from areas south of the metro region. Other significant connections for northbound travel across the Bridge include OR 43 connecting with Lake Oswego and West Linn, and SW Tualatin-Sherwood Road connecting with the communities of Newberg, Sherwood, and Tualatin.

Figure 3. Trips To Abernethy Bridge Northbound





Regional View

Source: StreetLight Insight Platform

Corridor View

Most northbound Abernethy Bridge trips traveled only a relatively short distance farther on I-205. Most exited at nearby interchanges connecting to Gladstone, Oregon City, and other areas of Clackamas County. Figure 4 shows that OR 213 (connecting with the southern part of Oregon City), OR 99E (connecting with Gladstone and Milwaukie), and OR 212 (connecting to Happy Valley and beyond) were the most common routes. Only about 30% of trips remained on I-205 past Johnson Creek Boulevard and fewer than 20% continued beyond the I-84 interchange. Approximately 5%[2] of northbound trips traveled across the Glenn Jackson Bridge into Washington.

Analysis of southbound Abernethy Bridge trips showed similar travel shed patterns as northbound travel. Appendix C contains maps showing the southbound results.

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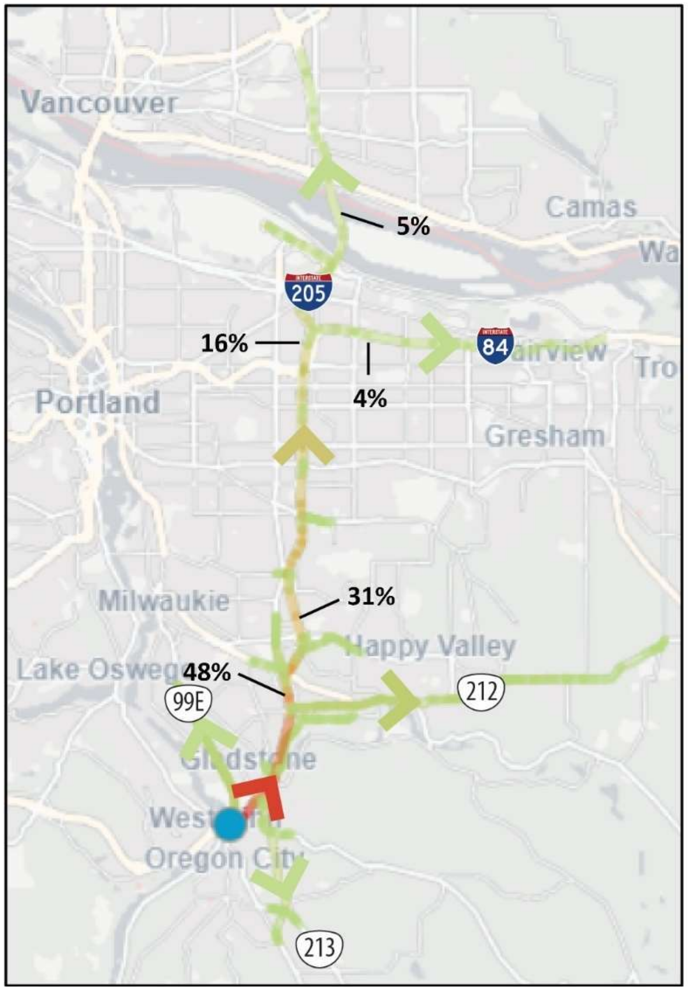
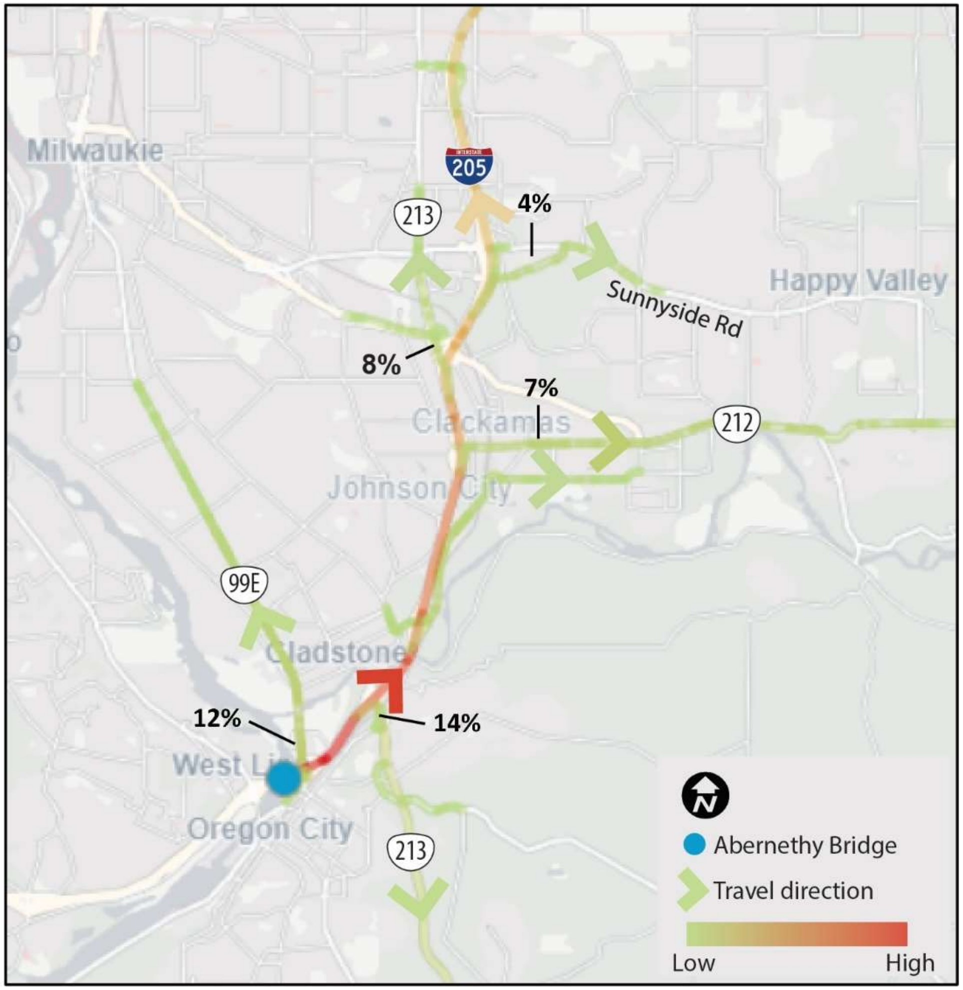
[2] The Abernethy Bridge user destination analysis (Figure 2) shows 3% of trips end in Clark County, Washington, while this analysis shows 5% traveling across the Glenn Jackson Bridge into Washington. The discrepancy is due to slight differences in methodologies such as including Washington trips outside of Clark County and the direction of the analysis being northbound as opposed to bidirectional.

Figure 4. Trips From Abernethy Bridge Northbound



Regional View

Source: StreetLight Insight Platform



Corridor View

3.3 I-205 Mainline Travel Patterns

KEY FINDINGS

- Through trips make up about one-quarter of the I-205 trips between Stafford Road and OR 213.
- The remaining three-quarters of trips enter and/or exit I-205 at one of the five local interchanges.
- About 15 to 20% of trips are internal to the Project segment, entering and exiting within the five local interchanges.

To understand I-205 mainline travel patterns on the Project segment between Stafford Road and OR 213, the Project team conducted an assessment of where these vehicle trips entered and exited I-205. These trips were classified as follows:

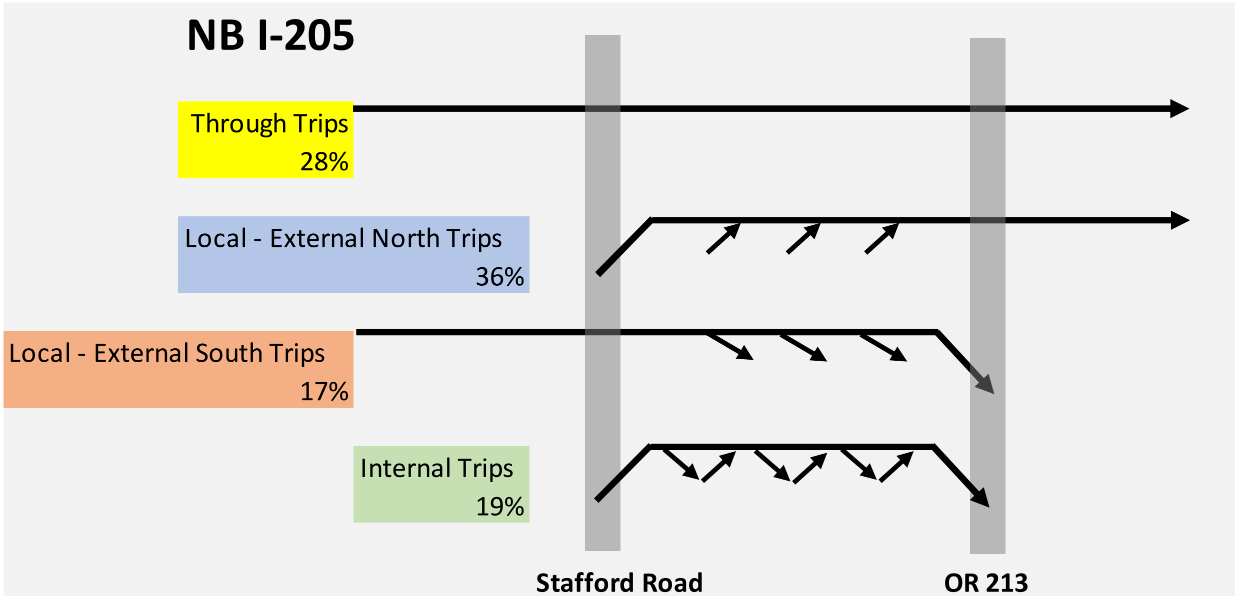
- *Through trips*: trips that travel on I-205 all the way between Stafford Road and OR 213 without using any local entrance or exit ramps.
- *Local – External South trips*: northbound trips that enter I-205 south of the Project segment and exit I-205 at one of the ramps within the Project segment; and southbound trips that enter I-205 at one of the ramps within the Project segment and exit I-205 south of the Project segment.
- *Local – External North trips*: northbound trips that enter I-205 at one of the ramps within the Project segment, and exit I-205 north of the Project segment; and southbound trips that enter I-205 north of the Project segment and exit I-205 at one of the ramps within the Project segment.
- *Internal trips*: trips that both enter and exit I-205 within the Project segment.

The analysis showed that through trips made up approximately 25% of travel on the Project segment. Approximately 75% of vehicles entered or exited I-205 locally (including Local External – South, Local – External North, and Internal trips). A significant portion, around 15 to 20% of all corridor trips, were internal users who traveled only a short distance on I-205—both entering and exiting within the Project segment.

Figure 5 and Figure 6 illustrate the breakdown of trip categories in the northbound and southbound directions, respectively. For the northbound direction, the analysis sampled approximately 166,000 devices and 1,003,000 trips. For the southbound direction, the analysis sampled approximately 175,000 devices and 1,052,000 trips.

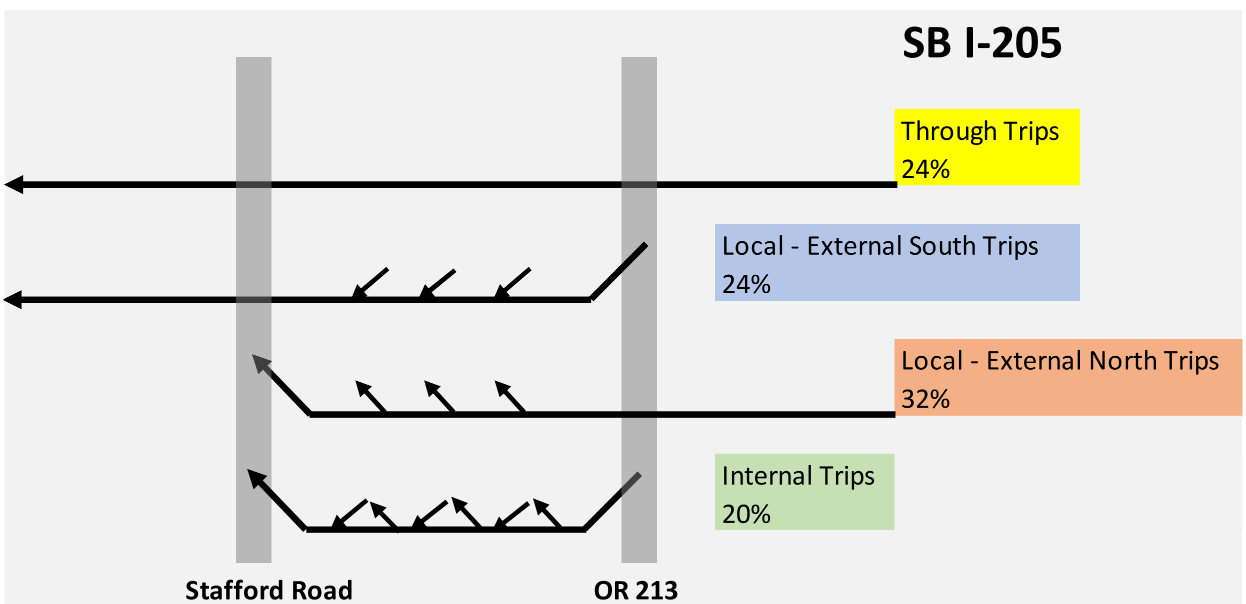
The northbound and southbound directions show similar travel patterns and are combined to assess the patterns on the Project segment as a whole. The directional analysis of Local – External North and Local – External South trips over the course of the day indicates that there were more corridor trips traveling from/to the north (approximately 30 to 35%) as compared to the south (approximately 20 to 25%).

Figure 5. I-205 Project Corridor Trip Classification for Northbound Travel



Source: StreetLight Insight Platform

Figure 6. I-205 Project Corridor Trip Classification for Southbound Travel



Source: StreetLight Insight Platform

Data Validation with the RTDM

A similar analysis was conducted for mainline travel patterns using the RTDM to compare with the results from StreetLight. The directional and bi-directional comparisons in **Error! Reference source not found.** indicate a high degree of similarity between these two tools. The RTDM shows slightly lower shares of internal travel and slightly more Local-External travel to/from the south, but the overall results indicate that the general travel patterns in the data represented in StreetLight are similar to those modeled in the RTDM.

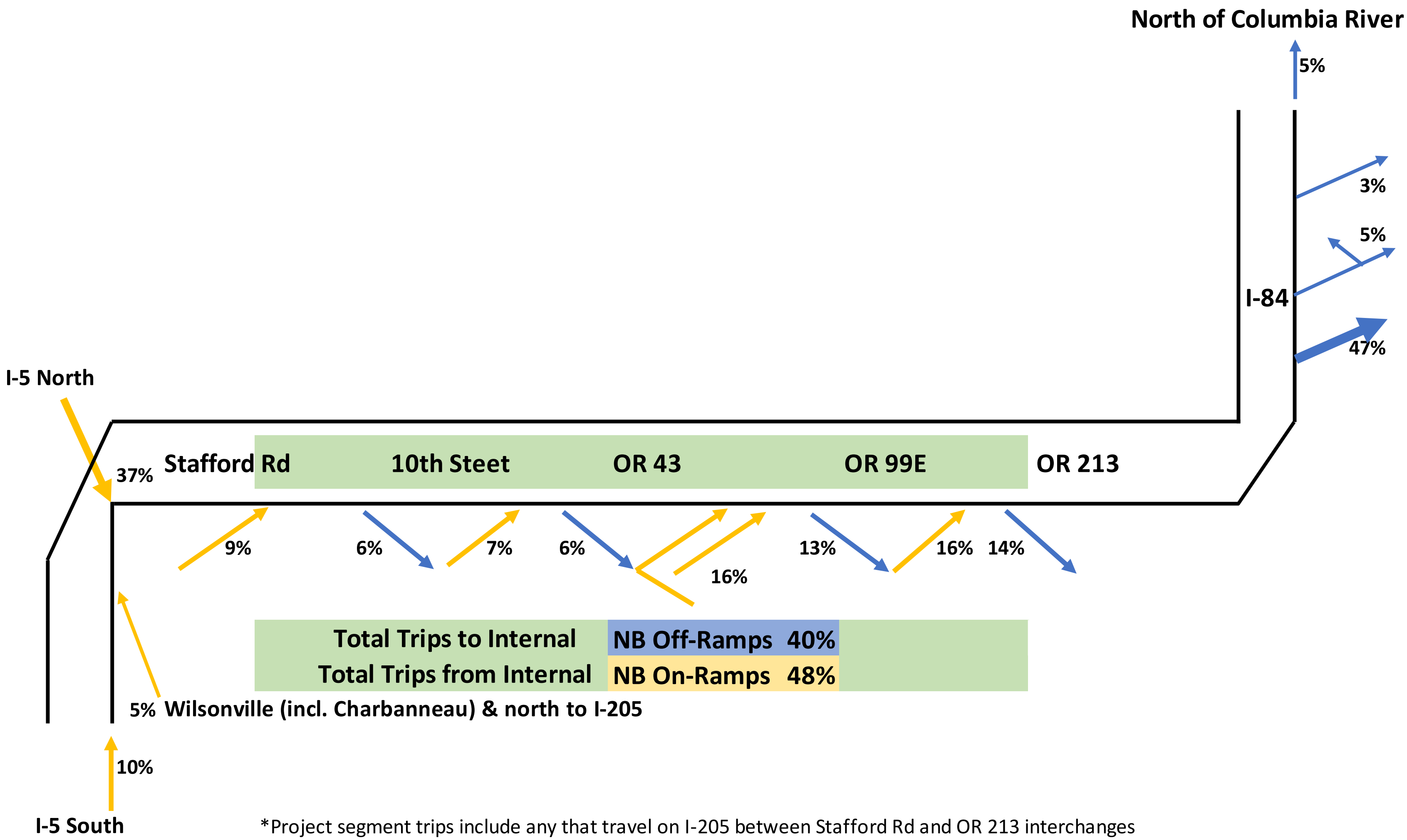
Table 2. I-205 Project Corridor Trip Classification Comparison (Bi-Directional)

Type of Trip	StreetLight Results			Regional Travel Demand Model Results		
	Northbound	Southbound	Bi-Directional	Northbound	Southbound	Bi-Directional
Through Trips	28%	24%	26%	27%	27%	27%
Local - External North	36%	32%	34%	33%	33%	33%
Local - External South	17%	24%	21%	25%	25%	25%
Internal Trips	19%	20%	19%	15%	15%	15%

Using the RTDM, the Project team conducted a more extensive assessment of I-205 mainline travel patterns beyond the Project segment, as summarized in Figure 7 and Figure 8. The two figures represent northbound and southbound I-205 trips that traveled on any portion of the Project segment between the Stafford Road and OR 213 interchanges. The analysis used the RTDM (2015 baseline model scenario) to estimate the ramp-to-ramp flows on the I-205 mainline for average weekday conditions. The figures show the percentage of total I-205 corridor trips using interchange ramps (both entrances and exits) for northbound and southbound travel on I-205.

The RTDM indicates that 45% to 50% of the project segment trips begin or end between the OR 213 and I-84 interchanges. Similar to previous analysis of Abernethy Bridge trips, the Project segment trips show 5% or less of trips crossing the Glenn Jackson Bridge to/from Washington. At the southern end of the corridor, about 10% of the trips come from/go to the south beyond the Portland metro area via I-5.

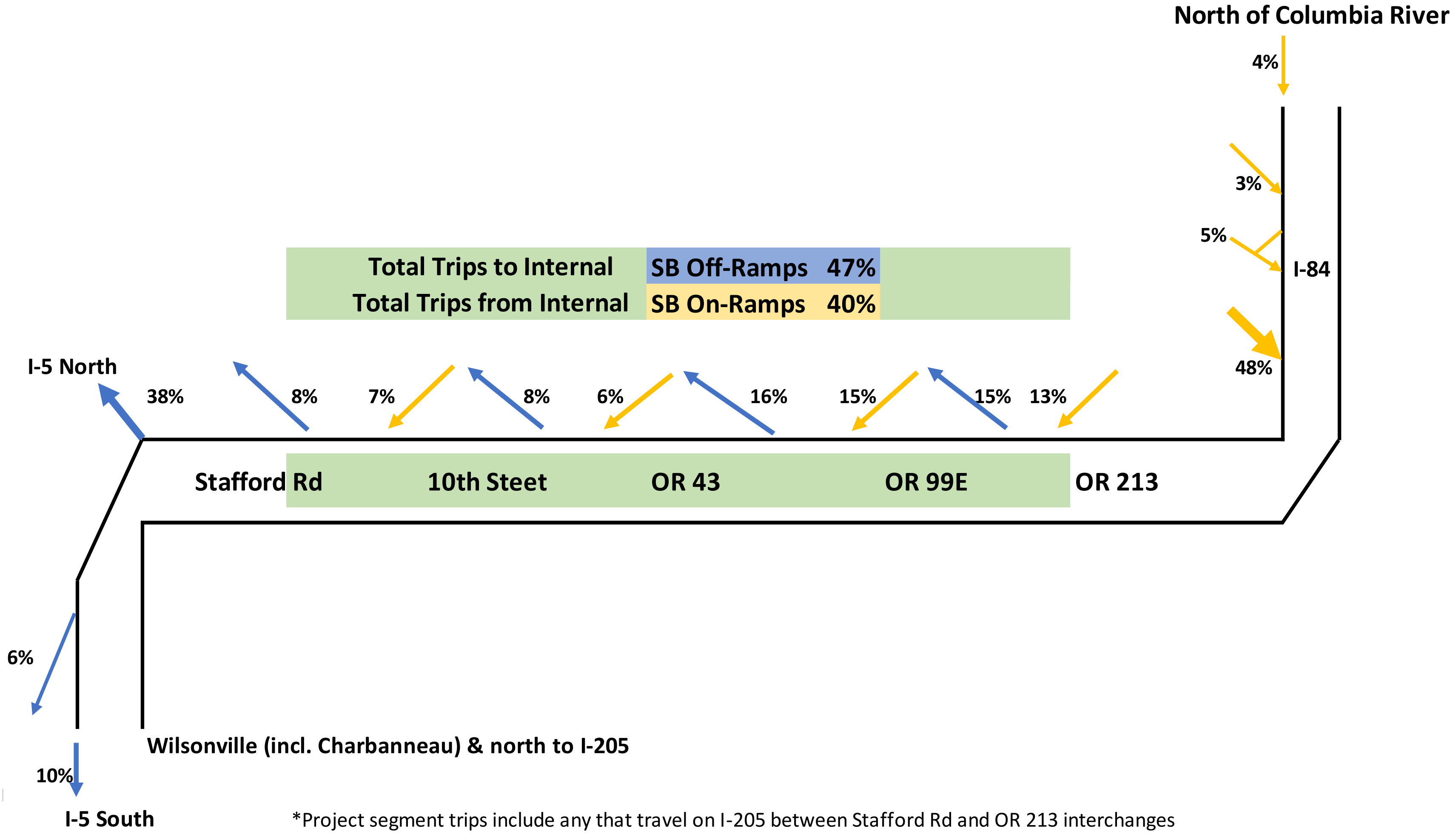
Figure 7. Ramp-to-Ramp Traffic Diagram for Northbound Trips on the Project Segment (Regional Travel Demand Model)



*Project segment trips include any that travel on I-205 between Stafford Rd and OR 213 interchanges

Source: Metro RTDM

Figure 8. Ramp-to-Ramp Traffic Diagram for Southbound Trips on the Project Segment (Regional Travel Demand Model)



Source: Metro RTDM

4 EXISTING REROUTING PATTERNS

4.1 Rerouting Overview

The Project team analyzed travel patterns within the I-205 corridor to provide evidence of, and insight into, current rerouting trends. Rerouting, sometimes called diversion, refers to changes in routing for trips that could or would use I-205 but instead choose to take another alternative route, typically to save time by avoiding congestion delays experienced on I-205 during peak demand periods.

The rerouting analysis investigated a variety of origin/destination pairs with reasonable routing alternatives that could include I-205 mainline, parallel roadway alternatives to the I-205 mainline, or a combination of both. By identifying differences in routing choices between peak and off-peak travelers, the analysis indicates the degree to which peak-period congestion on I-205 could be causing travelers to reroute away from I-205 and onto other roadways.

Although differences in travel patterns by time of day could reflect other differences in travel characteristics (such as trip purpose), the shifts in traveler routing away from I-205 across many origin/destination pairs in the area appear strongly related to the time and direction of recurring congestion on I-205.

4.2 Rerouting Summary

KEY FINDINGS

- Consistent evidence of rerouting off of I-205 and onto local streets during peak periods across a range of origin/destination travel patterns
- Rerouting takes place in both directions and often corresponds to heavier traffic congestion (delays) on I-205 in the southbound direction during the AM peak period and in the northbound direction during the PM peak period
- The magnitude of rerouting varied across different origin/destination pairs
- Local travel patterns generally showed a higher liklihood of rerouting than longer-distance regional trips.
- Borland Road, Willamette Falls Drive, OR 99E, Stafford Road and Schaeffer Road were identified as alternative routes that experience the greatest amount of rerouting.

The Project team identified and further evaluated vehicle trip patterns between 21 distinct origin/destination pairs. For each, the Project team identified two or three potential routes—one route being via the I-205 mainline and the other(s) being other parallel roadways that can be used as local alternatives to travel on I-205. The relative share of trips using each route were evaluated and compared for off-peak (midday from 10 a.m. to 3 p.m.) and peak periods (either from 7 to 9 a.m. or from 4 to 6 p.m.).

The difference between percentage traffic share for I-205 versus an alternative route by time of day indicates the magnitude of rerouting, also known as the percentage shift of travel onto local roadways for trips between a given origin/destination pair. Appendix E includes a detailed breakdown for percentage share using each origin/destination pair route by time of day (AM peak, midday, and PM peak). Appendix E also includes a table summarizing the amount of existing rerouting estimated (i.e., changes between peak and off-peak percentage share of trips utilizing the identified local routes).

For example, in Figure 9—excerpted from the table in Appendix E—the call-out box identifies the origin/destination pair for travel between the West Linn area and the Arch Bridge. For this origin/destination pair, the Project team compared trips on the segment of I-205 between 10th Street and OR 43 with an alternative routing option along Willamette Falls Drive, the parallel local route alternative. The analysis results indicate that 15% more travelers chose to travel via Willamette Falls Drive during the peak period compared to midday in both the northbound and southbound directions—indicating 15% of these trips may be rerouting off I-205 during the peak periods.

Figure 9. Example Excerpt from Rerouting Analysis Summary Table

Origin-Destination Pairs	# of Routes	Rerouting Street Segments	D.	Local Route Utilization % Change (Increase from Mid-Day to Peak)
West Linn & Willamette Area -- Arch Bridge	2	Willamette Falls Dr	NB	15%
			SB	15%
Tualatin Area East of I-5 -- West Linn Area	3	Borland Rd (S. of I-205)	NB	26%
		Rosemont Rd		9%
		Borland Rd (S. of I-205)	SB	33%
		Rosemont Rd		14%
	2	Willamette Falls Dr	NB	24%

The analysis found consistent evidence of rerouting onto local streets during peak periods, though the magnitude of shift varied across different origin/destination pairs. Rerouting takes place in both northbound and southbound directions on weekdays, and often corresponds to heavier traffic congestion (delays) on I-205 in the southbound direction during the AM peak period and in the northbound direction during the PM peak period.

The shifts away from I-205 during peak hours were shown in longer-distance regional trips as well as more local trips. However, the more local trips generally showed a higher share of rerouting than longer-distance regional trips. This may reflect a greater willingness for local travelers to use local roadways as compared to longer-distance travelers who may be less comfortable with travel off of the I-205 mainline due to lack of familiarity or desire to avoid out-of-direction travel.

4.3 Example Rerouting Patterns

This section contains examples that illustrate existing routing patterns for travel between specific origin/destination pairs in the area, and how they can vary by time of day. The change in routing between different times of day, in peak and off-peak travel conditions, indicates a tendency for rerouting. Each analysis contains two maps, one for midday and one for a peak period, that illustrate the primary and alternative routes used.

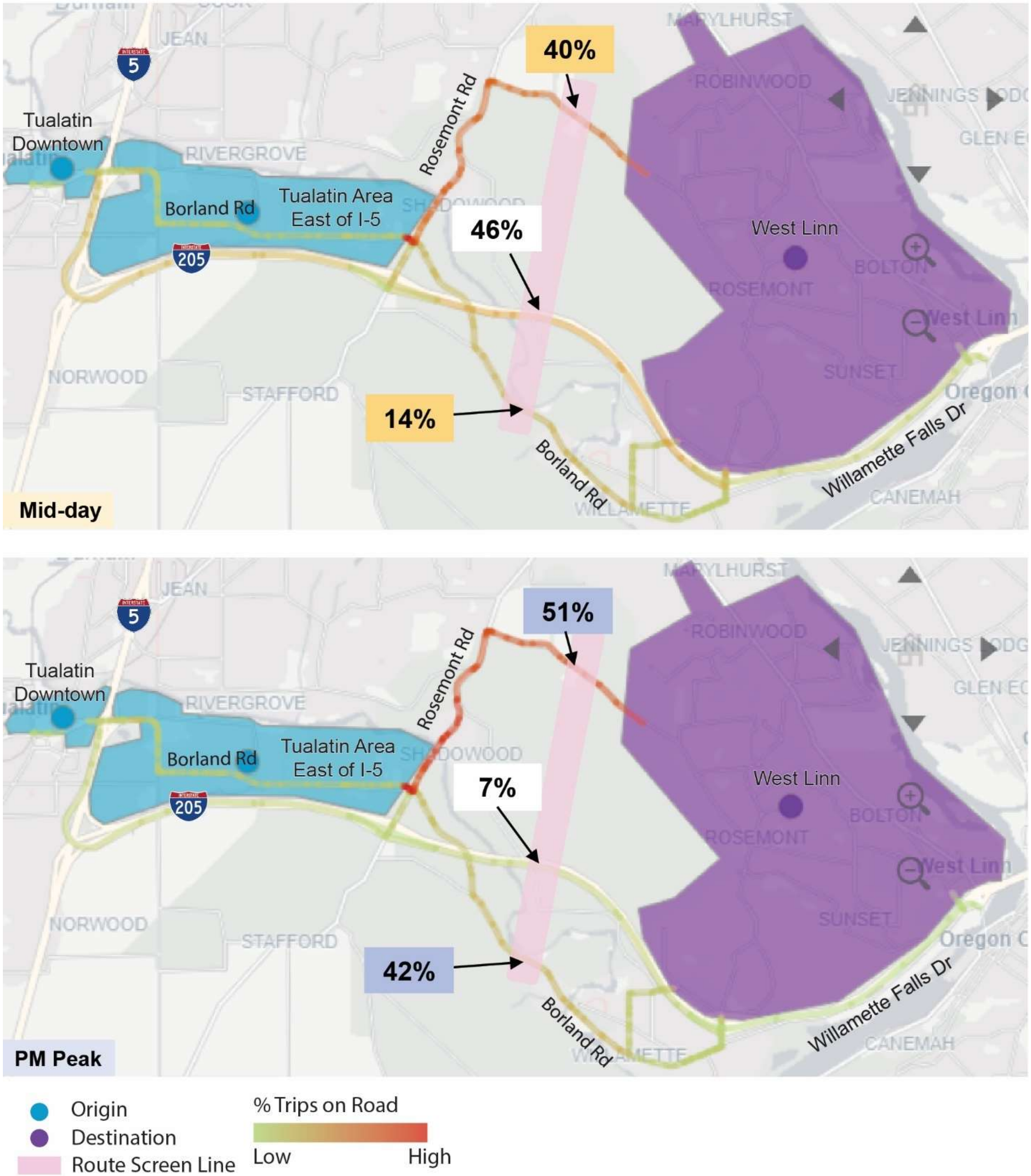
The examples are intended represent existing rerouting patterns in the corridor and were selected based on the magnitude of traffic shift onto local alternative routes between non-peak and peak periods. Rerouting patterns are often more prominent in the northbound direction and during the PM peak period, so more of these examples are included. Appendix E includes the full list of analyzed travel patterns and level of indicated rerouting.

4.3.1 Tualatin Downtown & Area East of I-5 to West Linn Area

Trips from downtown Tualatin and the area east of I-5 to West Linn (Figure 10) showed a pattern of rerouting during the PM peak period. During the midday period when I-205 was generally uncongested, the primary routes were via I-205 (46%) and Rosemont Road (40%). In the PM peak period, a large share of trips shifted off I-205 (only 7% remaining), with a corresponding increase in routing via Borland Road (increasing from 14% to 42% in the peak period). Routing via Rosemont Road also moderately increased from 40% to 51% in the PM peak. These results indicate a shift in travel patterns away from I-205 during the PM peak period when recurring congestion occurs on I-205 in the northbound direction.

While the shift of travel patterns between midday and PM peak period could be attributed to other changes in travel behavior that vary by time of day, the routing shift away from northbound I-205 occurred when congestion was most prevalent. The travel pattern during the AM peak period shows a much smaller shift away from I-205 as about 42% of trips used I-205 northbound compared to the 46% usage in midday. This difference between AM and PM peak periods aligns with directional traffic conditions near the Project segment, as I-205 is generally not severely congested northbound in the AM peak period. This reinforces the idea that congestion is likely an important contributing factor in the travel pattern shifts shown for the PM peak period.

Figure 10. Tualatin Downtown and Area East of I-5 to West Linn Area Routing Patterns

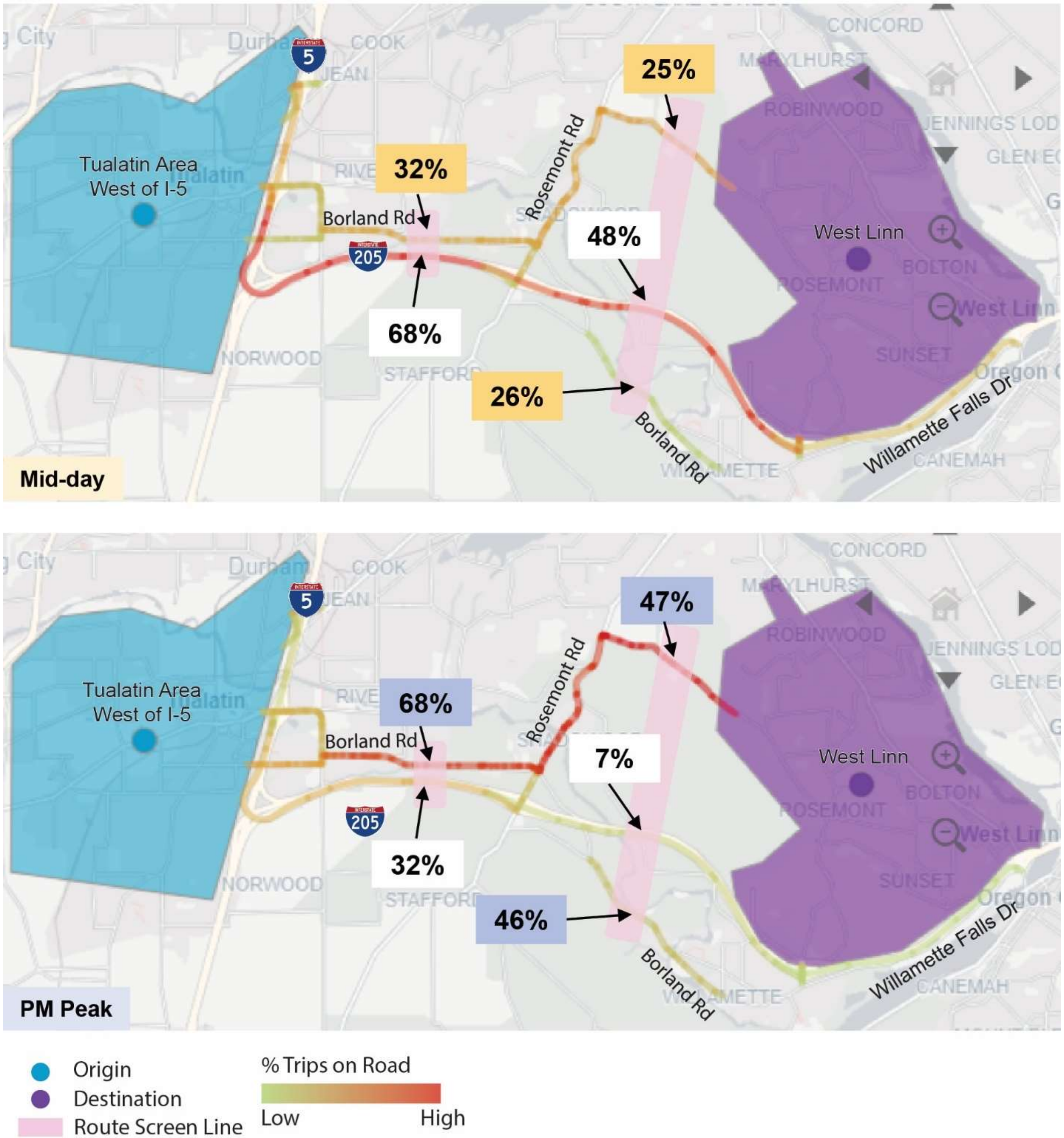


Source: StreetLight Insight Platform

4.3.2 Tualatin Area West of I-5 to West Linn Area

For trips from the Tualatin area west of I-5 to the West Linn Area (Figure 11), the analysis indicated a notable shift of traffic away from I-205 onto local alternative routes via Borland Road and Rosemont Road during the PM peak. During midday, 68% of these trips traveled via I-205, whereas Borland Road north of I-205 had 32% of trip routing. During the PM peak period, the share reversed and Borland Road saw the most trips between this origin/destination pair. This shift in routing indicates that users tend to choose local streets over I-205 during the peak period.

Figure 11. Tualatin Area West of I-5 to West Linn Area Routing Patterns



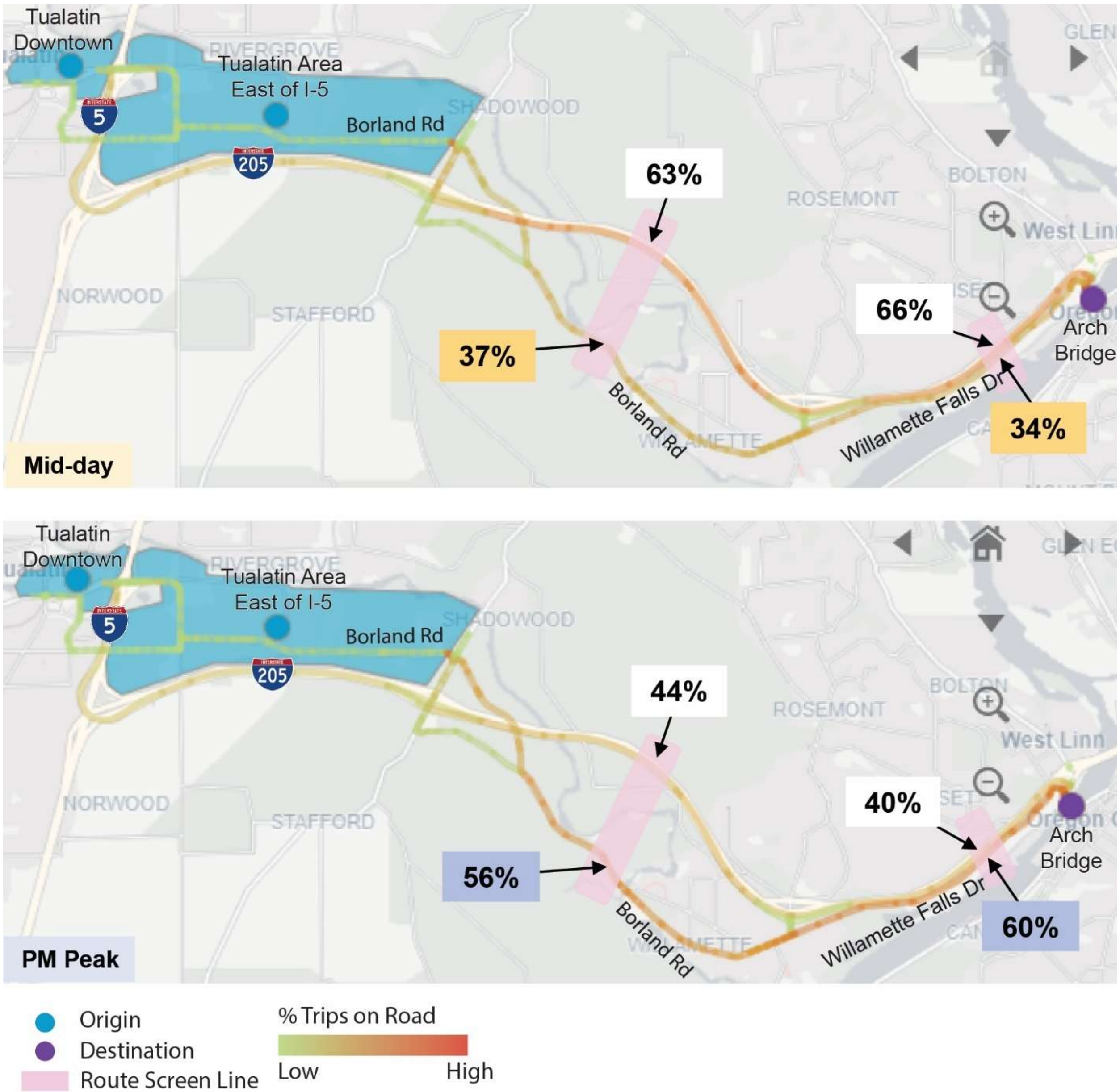
Source: StreetLight Insight Platform

4.3.3 Tualatin Downtown and Area East of I-5 to Arch Bridge

Similar to the previous analysis for Tualatin Downtown and area east of I-5, the travel pattern to the Arch Bridge (Figure 12) indicates that more than half of all travelers chose Borland Road and/or Willamette Falls Drive over I-205 during the PM peak period, whereas the majority used I-205 during midday. The analysis also suggests that during peak periods, users tended to exit I-

205 one or two interchanges prior to the nearest interchange (OR 43) that provides access to the Arch Bridge.

Figure 12. Tualatin Downtown and Area East of I-5 to Arch Bridge Routing Patterns



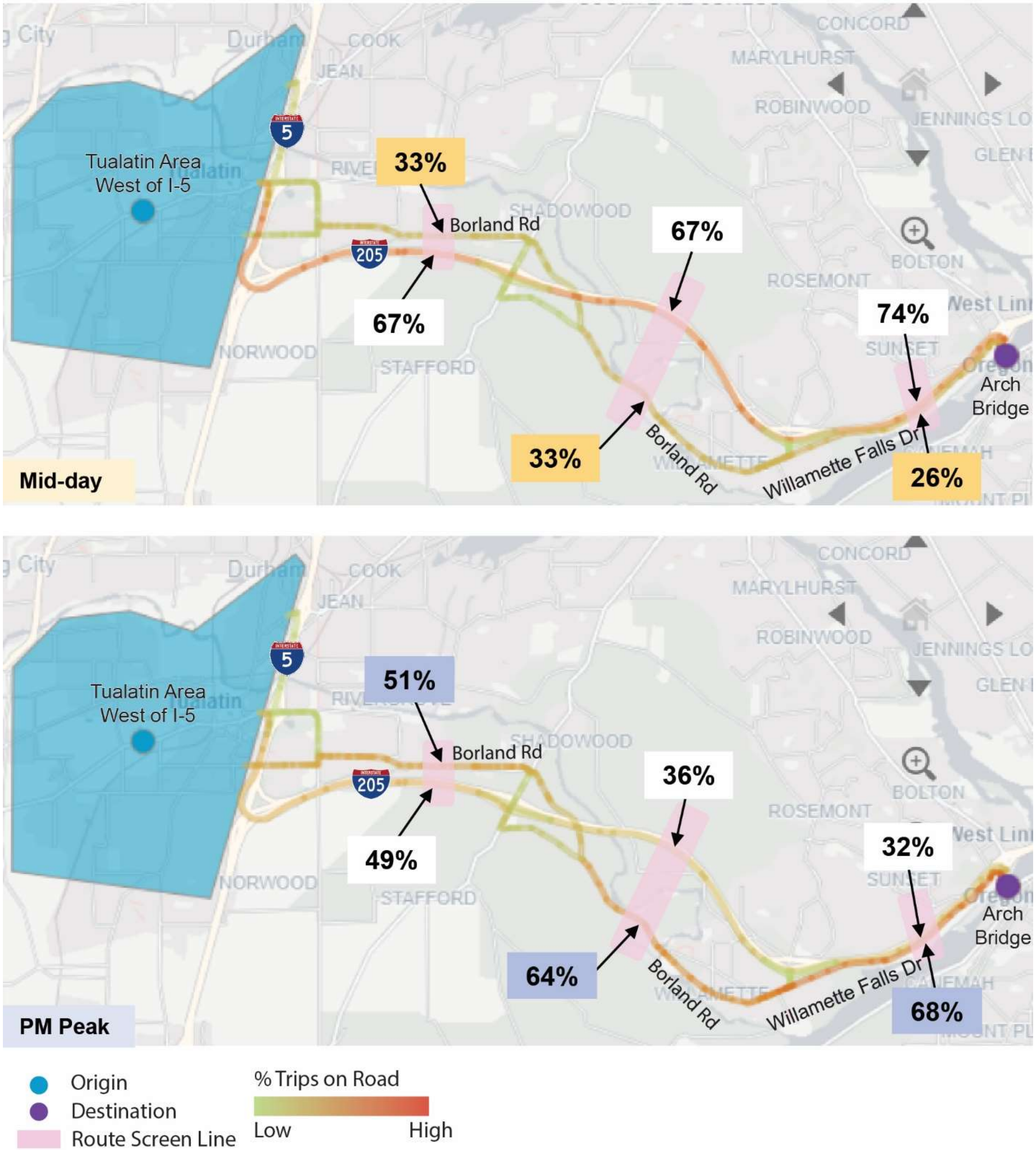
Source: StreetLight Insight Platform

Due to the relatively short trip distance, some users may avoid I-205 completely and use local streets as their main route, regardless of time of day or level of congestion, which is indicated by the notable share of routing via Borland Road (37%) seen even during midday. This is likely because travelers between this origin/destination pair have a choice of routes and use I-205 during non-peak periods to shorten travel time but readily shift when the travel time benefit is not present on the I-205 mainline.

4.3.4 Tualatin Area West of I-5 to Arch Bridge

For trips from the Tualatin area west of I-5 to the Arch Bridge (**Error! Not a valid bookmark self-reference.**), travel patterns shifted significantly onto local streets during the PM peak compared to midday patterns. About two-thirds of these trips chose I-205 over local street routing alternatives during the midday, whereas the majority chose local street route alternatives during the PM peak period, when recurring congestion is experienced along I-205. Closer to the Abernethy Bridge, the shift in routing to local street alternatives was more pronounced during the PM peak, potentially indicating avoidance of congestion in the area.

Figure 13. Tualatin Area West of I-5 to Arch Bridge Routing Patterns

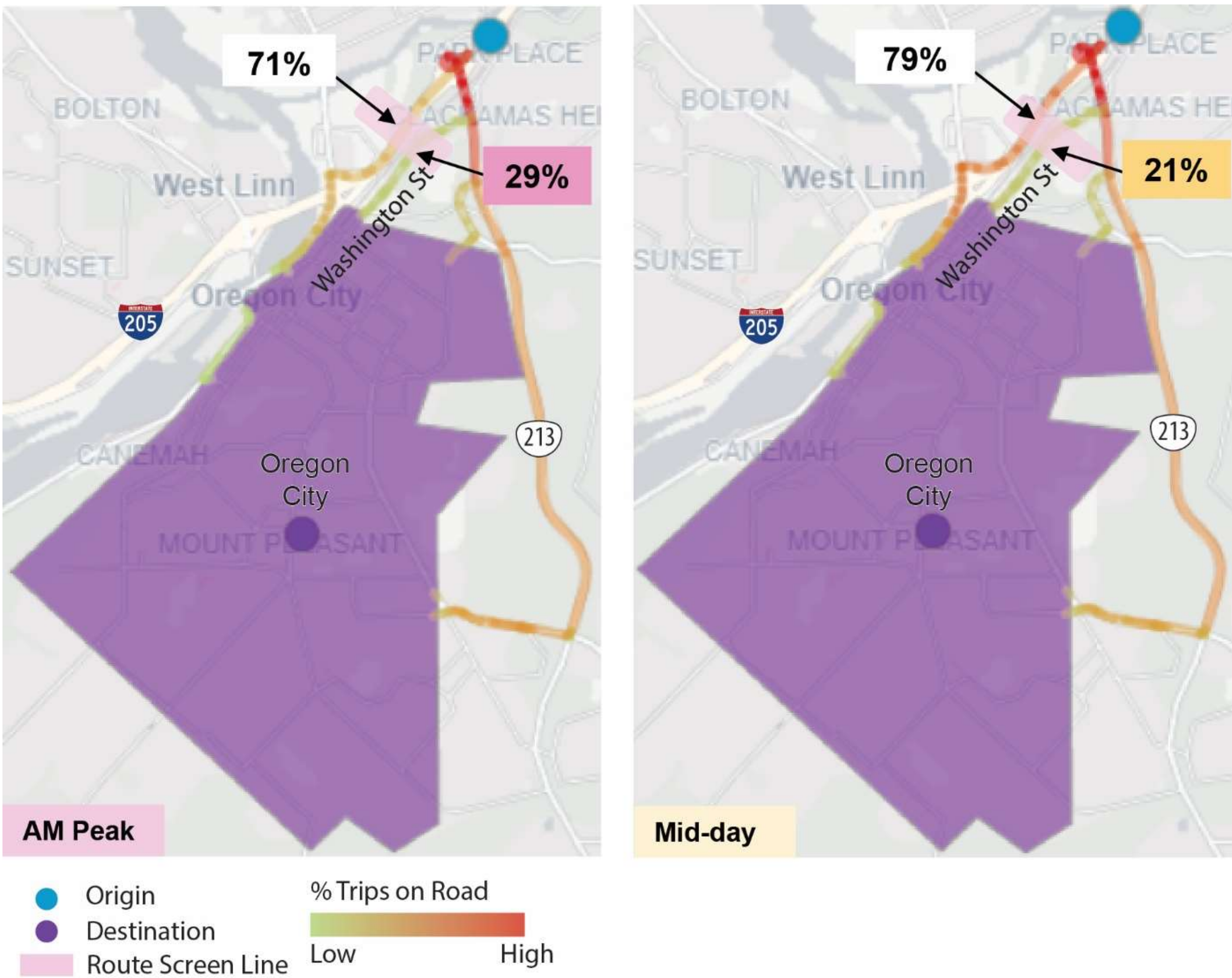


Source: StreetLight Insight Platform

4.3.5 Southbound I-205 to Oregon City Area

Examining the travel pattern on I-205 north of OR 213 interchange heading southbound to the Oregon City area (Figure 14), most trips (79%) used the OR 99E interchange during the midday. However, a moderate shift of about 8% to travel via OR 213 and Washington Street was evident during the AM peak. This may reflect some travelers exiting I-205 one interchange earlier to avoid congestion on southbound I-205 during the AM peak period.

Figure 14. Southbound I-205 to Oregon City Area Routing Patterns

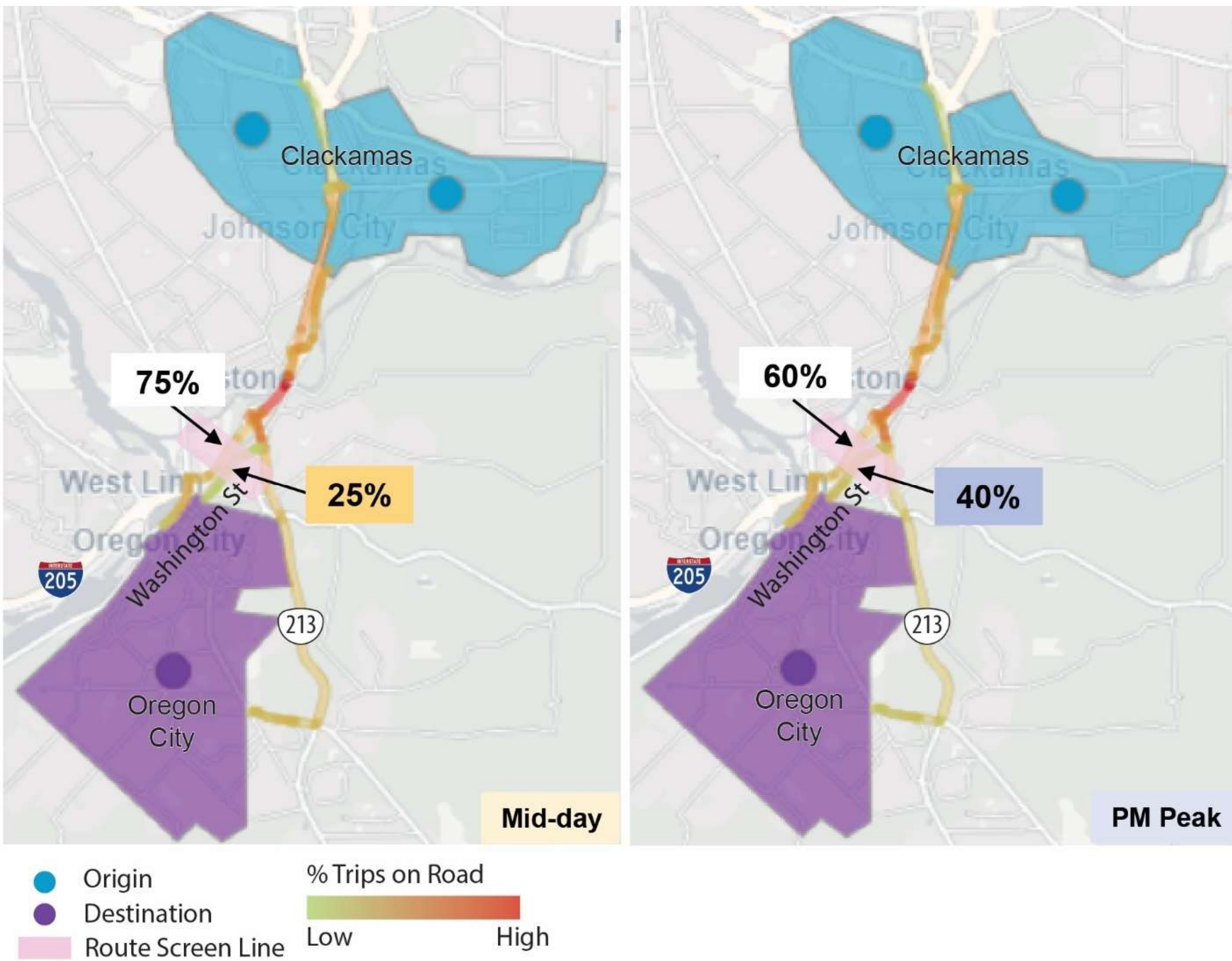


Source: StreetLight Insight Platform

4.3.6 Clackamas Area to Oregon City Area west of OR 213

Similar to the rerouting noted in Figure 15, the share of southbound trips from the Clackamas area to the Oregon City area that route via Washington Street increased from about 25% during the midday period to 34% and 40% during the AM and PM peak periods, respectively. This suggests that congestion on Abernethy Bridge southbound likely caused some rerouting during the AM and PM peaks, though this rerouting pattern appears less dramatic than some of the previous travel patterns noted in the northbound direction during the PM peak period.

Figure 15. Clackamas Area to Oregon City Area west of OR 213 Routing Patterns



Source: StreetLight Insight Platform

4.3.7 I-5 to Salamo Road

Analysis of travel from I-5 (via northbound I-205) to Salamo Road in West Linn indicated that a large change in routing occurred between the midday and PM peak periods. As shown in Figure 16, I-205 mainline users (west of Stafford Road) going to Salamo Road were almost all (96%) traveling via the 10th Street interchange off-ramp during the AM peak and midday periods. However, during the PM peak period, about one-third of these travelers exited I-205 one interchange earlier at Stafford Road and rerouted via Borland Road to get to Salamo Road.

This shift in travel pattern was not evident in the southbound direction where I-205 mainline traffic congestion was less of an issue. Almost all southbound trips (99%) used the I-205 mainline during both peak and non-peak periods.

Figure 16. I-5 to Salamo Road Routing Patterns

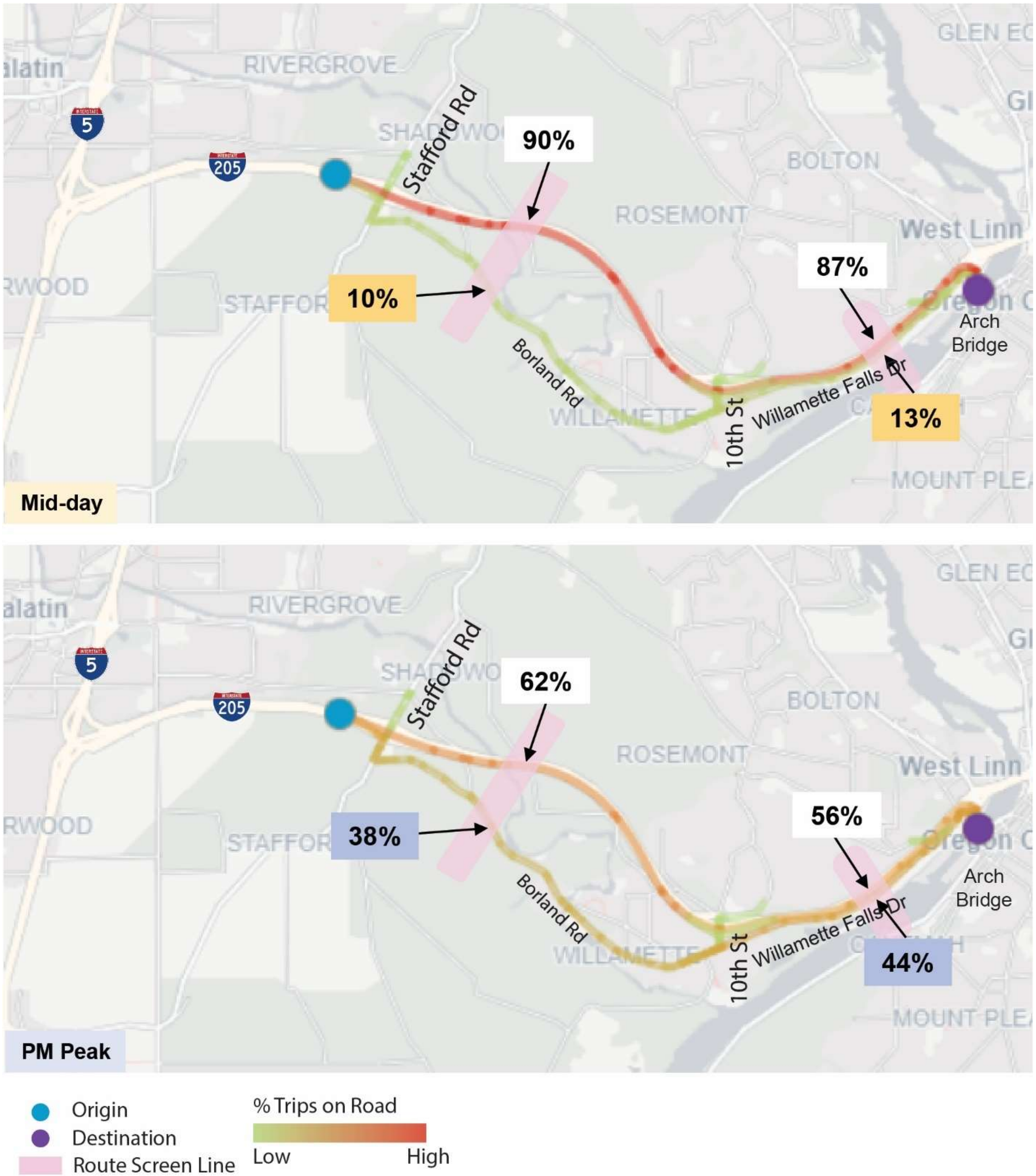
Source: StreetLight Insight Platform

4.3.8 I-5 to Arch Bridge

For travelers from I-5 traveling on northbound I-205 west of Stafford Road going to the Arch Bridge (Figure 17), a notable indication of rerouting onto Borland Road and Willamette Falls Drive during the PM peak was observed. For this travel pattern, an estimated 35% to 45% of PM peak trips appeared to route via Borland Road and/or Willamette Falls Drive to access the Arch Bridge. During the midday (off-peak period) this routing represented only 10% to 15% of these trips.

Compared to the localized rerouting patterns from Tualatin to the Arch Bridge described previously, this travel pattern—which is more regional in nature due to connecting to I-5 —showed less propensity for rerouting onto local street alternatives. However, the shift to Borland Road routes during the PM peak remained notable (from 10% to 38%), indicating that these potentially longer-distance travel patterns are also sensitive to congestion.

Figure 17. I-5 to Arch Bridge Routing Patterns

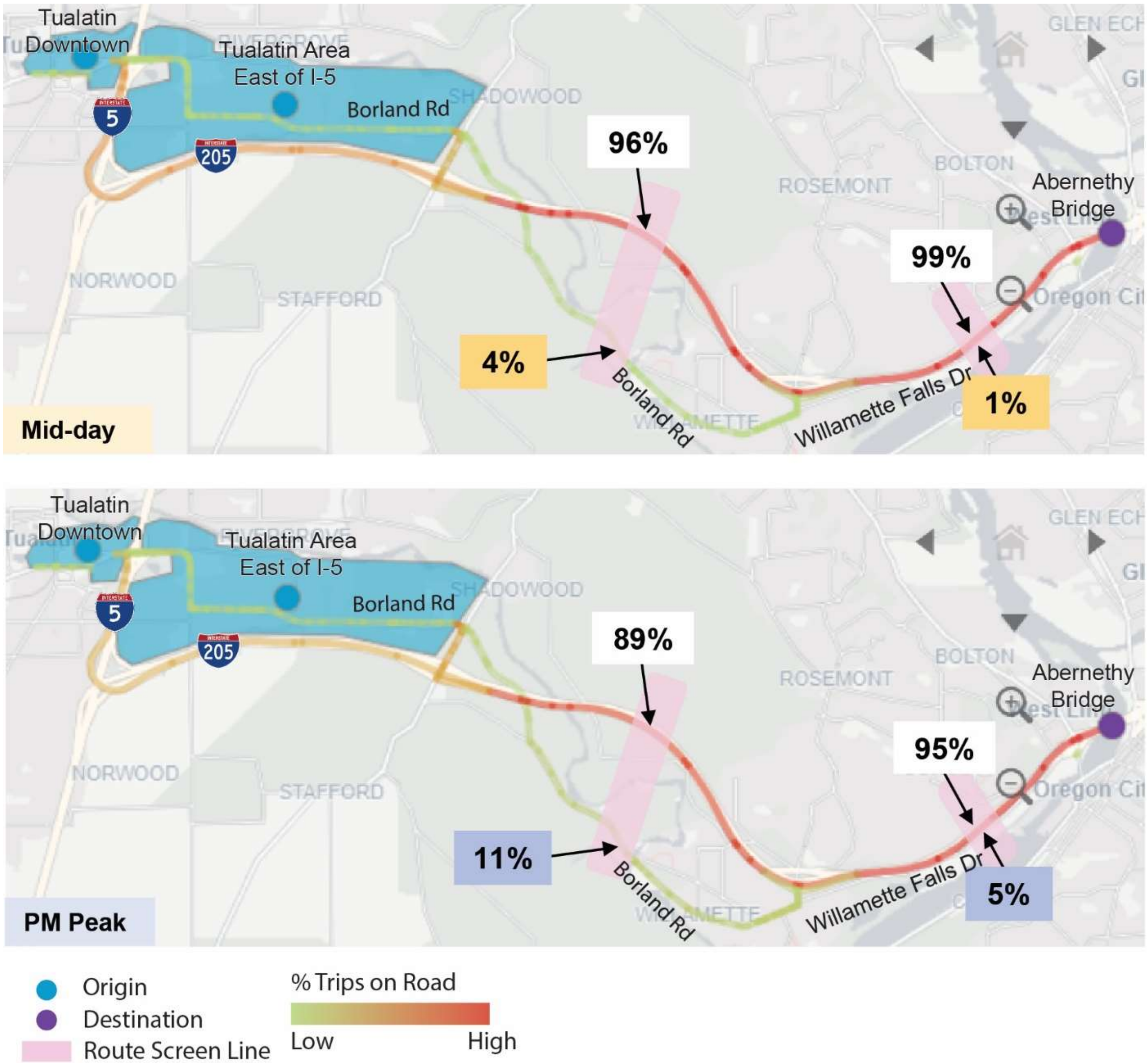


Source: StreetLight Insight Platform

4.3.9 Tualatin Downtown and Area East of I-5 to Abernethy Bridge

For trips from the Tualatin Downtown and area east of I-5 across the Abernethy Bridge (Figure 18), about 11% used Borland Road instead of I-205 between Stafford Road and 10th Street during the PM peak. This compared to only 2% and 4% in the AM and midday periods, respectively, indicating some rerouting was likely caused by congestion on I-205 northbound during the PM peak period.

Figure 18. Tualatin Downtown and Area East of I-5 to Abernethy Bridge Routing Patterns



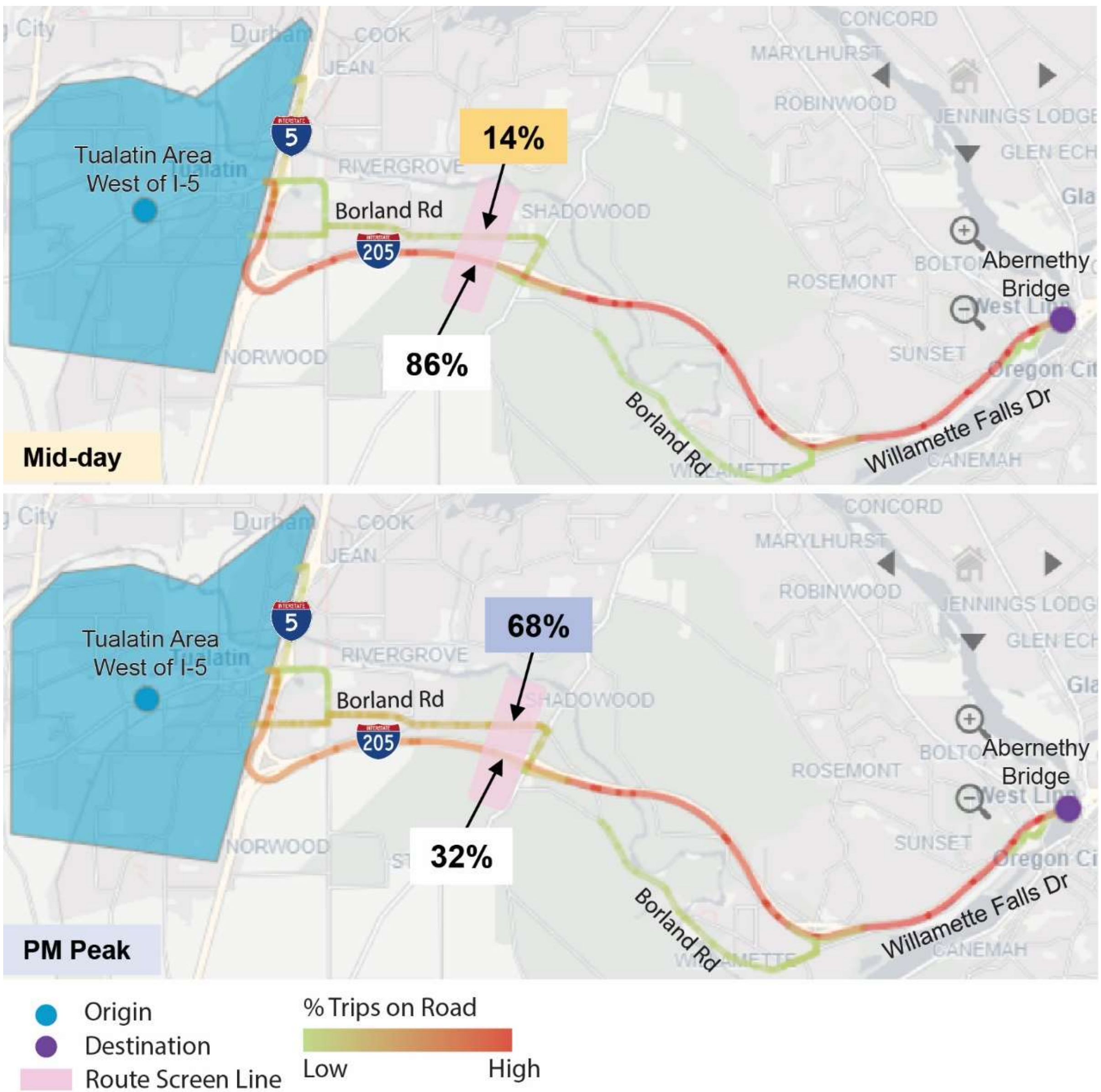
Source: StreetLight Insight Platform

The relatively low percentage of trips on Borland Road and Willamette Falls Drive routes compared to the similar travel pattern to the Arch Bridge (identified in Figure 12) could be attributed to the need to get back onto I-205 to cross the Abernethy Bridge. To do so requires making left turns from Borland Road at 10th Street or from Willamette Falls Drive at OR 43 to access the I-205 interchanges at those locations. These left turns could be onerous during congested periods and could result in longer travel time on the local street routing alternatives for this travel pattern.

4.3.10 Tualatin Area West of I-5 to Abernethy Bridge

While most trips between the Tualatin area west of I-5 and the Abernethy Bridge routed via I-205 during both the midday and PM peak periods, substantially more travelers chose to travel via Borland Road during the PM peak period (32%) as compared to during the midday (14%) as shown in Figure 19. This result is similar to those for other trip patterns in indicating that when there is congestion, users are more likely to choose local routes. Congestion on I-5 may also contribute to this rerouting pattern.

Figure 19. Tualatin Area West of I-5 to Abernethy Bridge Routing Patterns

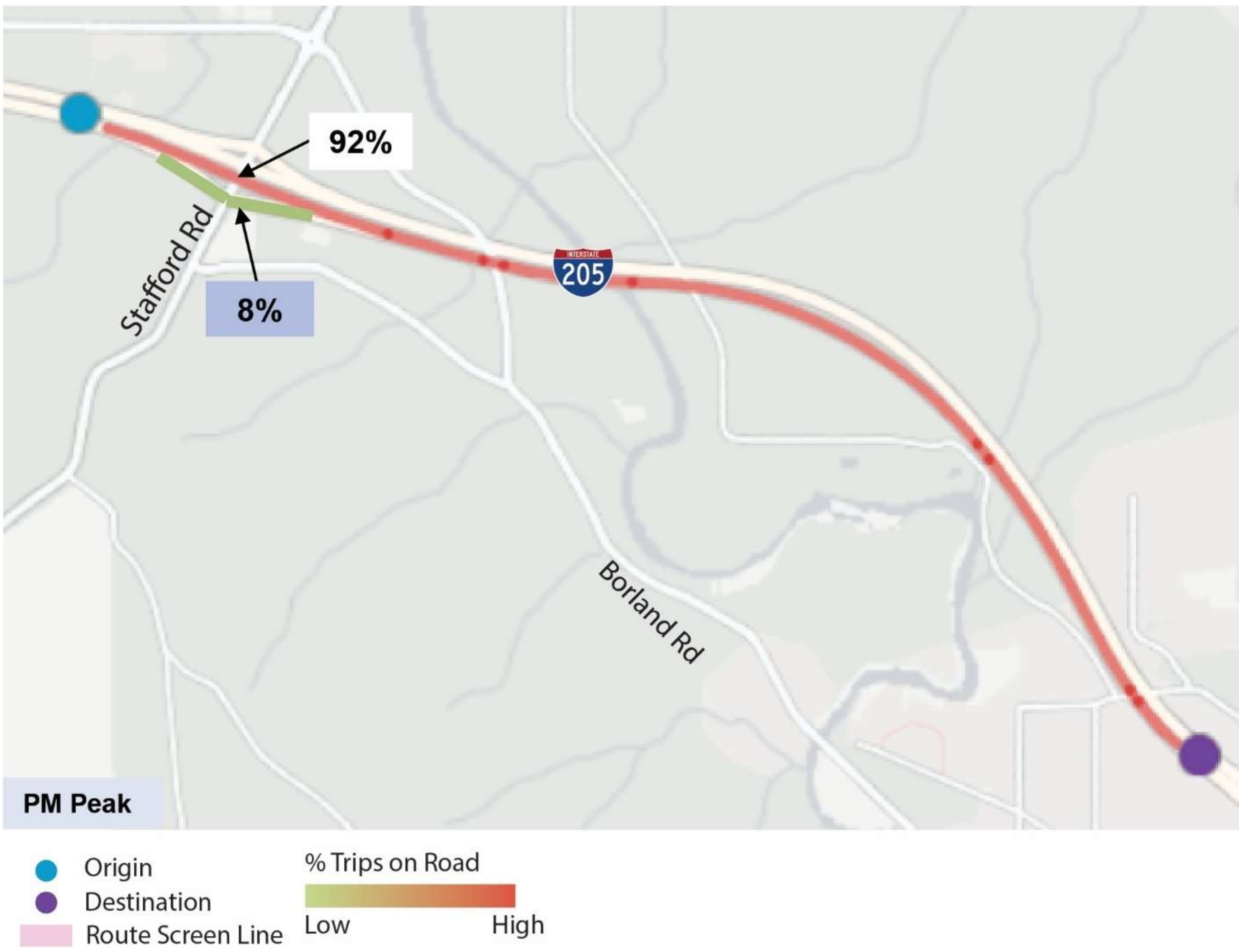


Source: StreetLight Insight Platform

4.3.11 I-205 Northbound Ramp-to-Ramp Traffic at Stafford Road Interchange

The vast majority of users already on I-205 and traveling through the Stafford Road interchange stay on I-205. However, the analysis indicates that 8% of northbound I-205 PM peak period trips took the Stafford Road off-ramp and then got right back on via the on-ramp to reroute around the (likely congested) I-205 mainline (Figure 20). During the midday and AM peak periods when congestion is generally not an issue, less than 1% of the northbound I-205 traffic used this route. This added traffic volume at the ramp terminals during the PM peak period can contribute significantly to traffic congestion at the interchange.

Figure 20. I-205 Northbound Ramp-to-Ramp Traffic at Stafford Road Interchange Routing Patterns

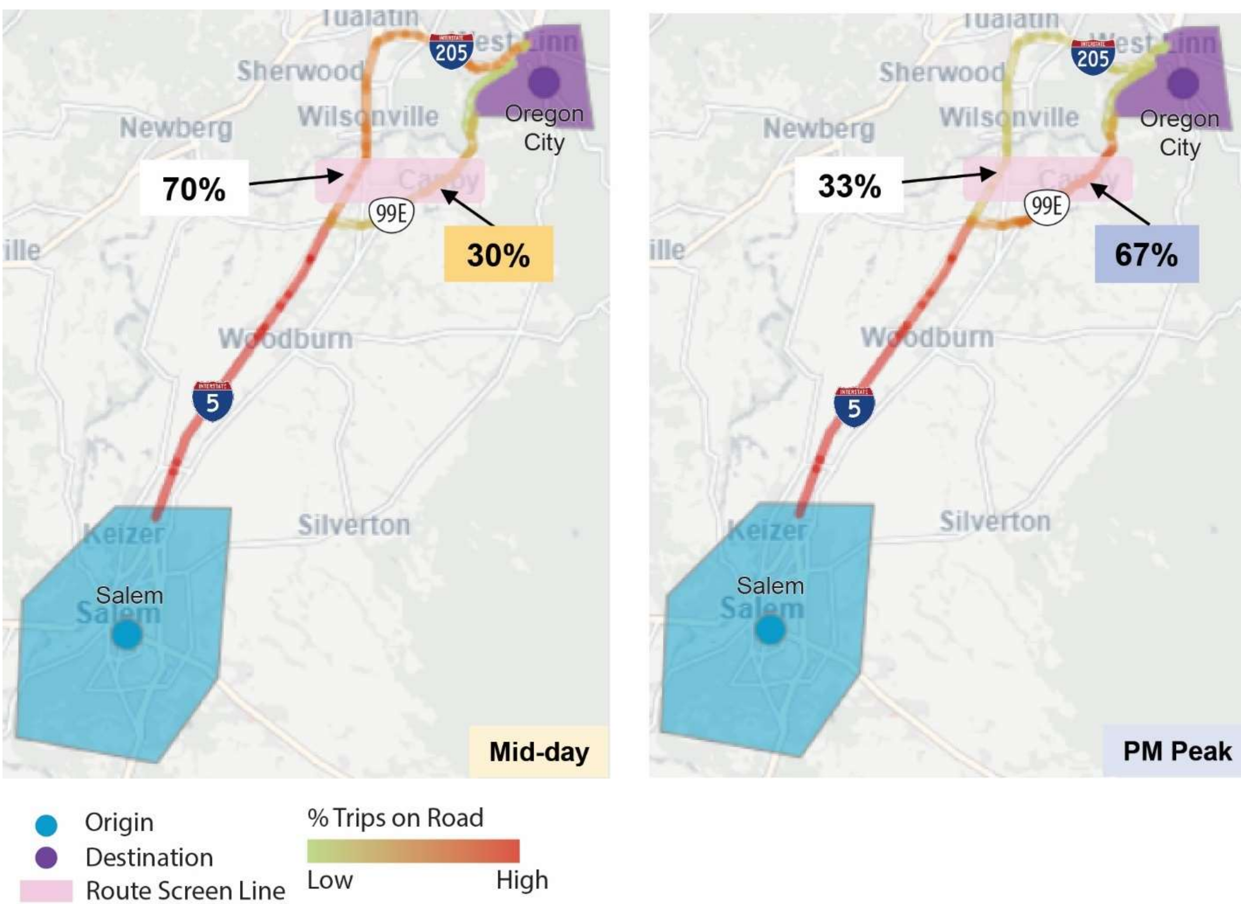


Source: StreetLight Insight Platform

4.3.12 Salem Area to Oregon City Area

For regional trips traveling northbound on I-5 from the Salem area to the Oregon City area (Figure 21), the traffic travel patterns shifted from I-205 to OR 99E via Canby during the PM peak period. While I-5 to I-205 was the preferred route (70%) from Salem to Oregon City during the midday, about two-thirds of these trips chose OR 99E during both the AM and PM peak periods. Most other rerouting patterns tended to occur during just one of the two peak periods. However, the combined congestion patterns on I-5 and I-205 appear to make this route alternative attractive during both peak periods. Most trips routing onto OR 99E during the peak periods exited I-5 at the Ehlen Road interchange west of Canby and continued north on OR 99E through downtown Canby.

Figure 21. Salem Area to Oregon City Area Routing Patterns

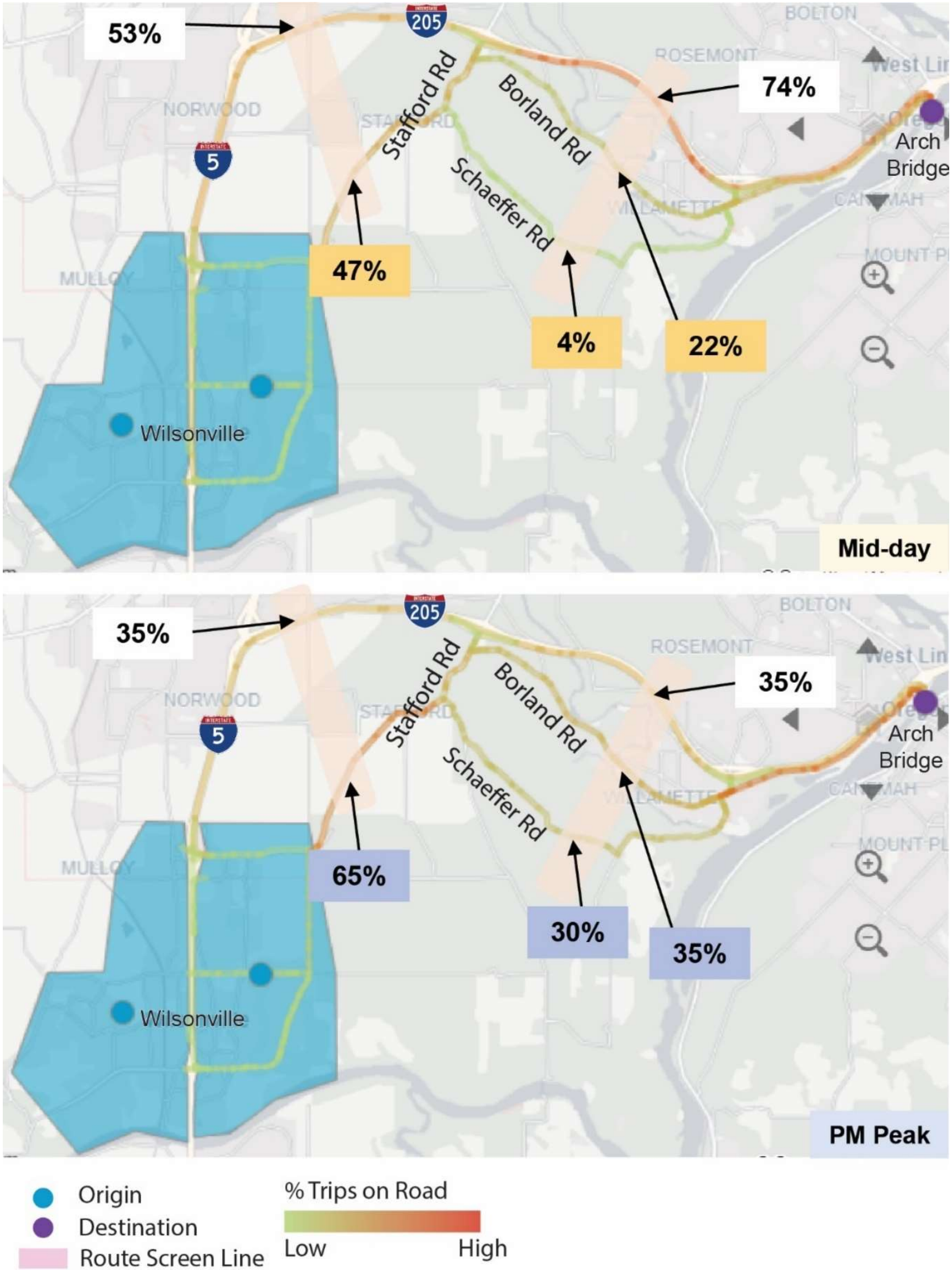


Source: StreetLight Insight Platform

4.3.13 Wilsonville Area to Arch Bridge

Trips from the Wilsonville area to the Arch Bridge have multiple potential routing alternatives (Figure 22). Travelers can use I-5 or Stafford Road to get to I-205 or travel farther east via Borland Road, Schaeffer Road, and Willamette Falls Drive as alternatives to I-205 east of Stafford Road. Travelers used these alternative routes more heavily during the PM peak period than during off-peak hours. The share of these trips using I-205 east of Stafford Road decreased from 74% in the midday to 35% in the PM peak periods.

Figure 22. Wilsonville Area to Arch Bridge Routing Patterns



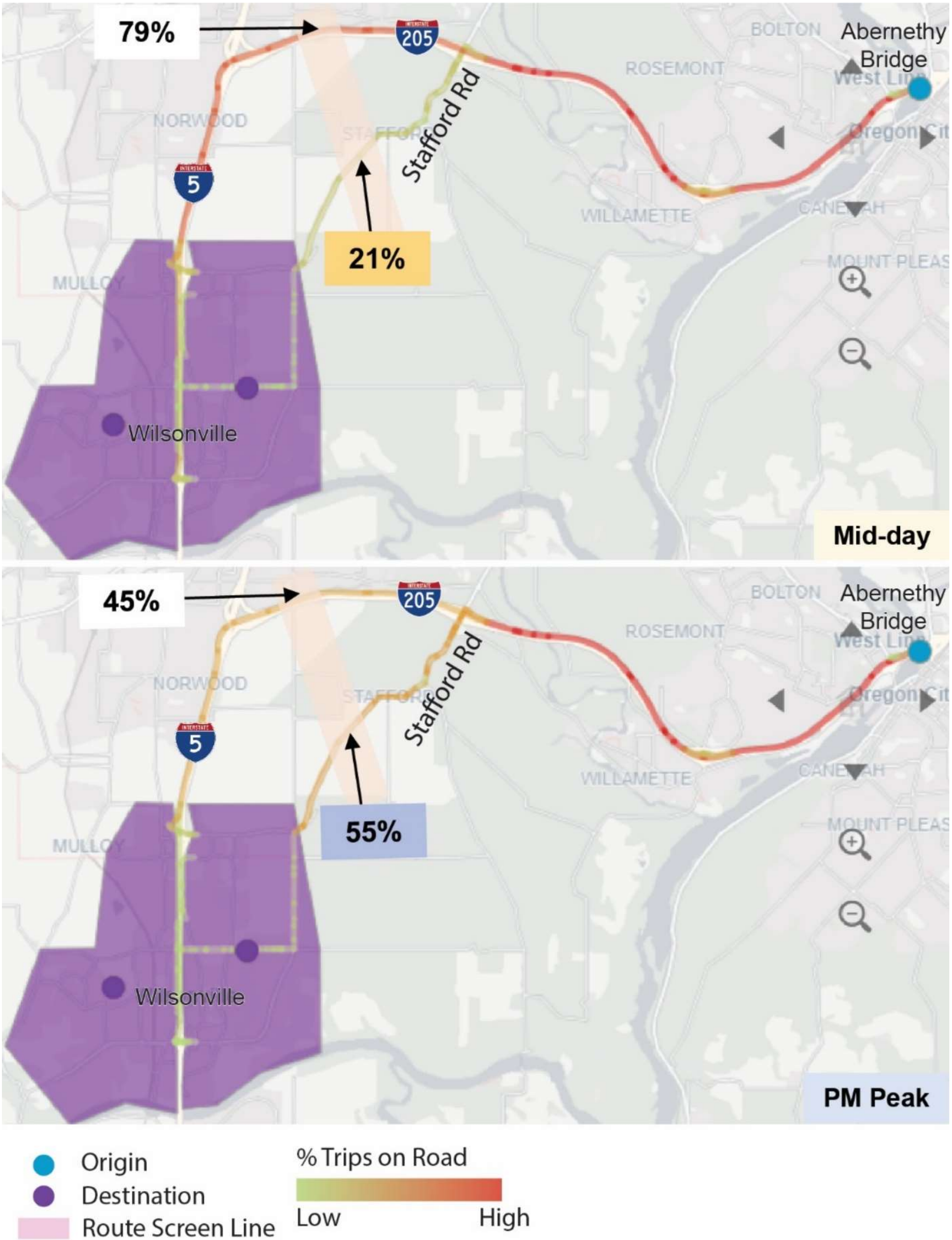
Source: StreetLight Insight Platform

4.3.14 Abernethy Bridge to Wilsonville Area

Southbound (Figure 23) and northbound (not pictured) travel patterns between Abernethy Bridge (I-205) and the Wilsonville area heavily favored the I-5/I-205 route over Stafford Road during the AM peak and midday periods. This routing pattern changed in the PM peak period as Stafford Road experienced a surge in the share of these trips from approximately 21 to 55%. This shift was likely due to an overall increase in demand for I-5 southbound for the PM peak, including trips leaving Portland in the afternoon, causing those traveling to Wilsonville from I-205 to reroute onto Stafford Road. The northbound travel pattern showed a similar but smaller shift during the PM peak.

Unlike the travel pattern between Wilsonville and the Arch Bridge, the Project team identified no significant shift away from I-205 to Borland Road or Schaeffer Road for this travel pattern.

Figure 23. Abernethy Bridge to Wilsonville Area Routing Patterns



Source: StreetLight Insight Platform

5 CORRIDOR USER DEMOGRAPHICS

The StreetLight platform does not collect device-user demographic information but instead estimates user demographics based on assigning a given device a "likely home location."[3] Because this information is based on estimates and does not contain device-user data, this analysis only considered whether user demographics for I-205 Abernethy Bridge trips appeared to be similar to demographic percentages for the region as whole, and for Clackamas County specifically (since a large share of the trips using the bridge are local). StreetLight did not collect or model individual demographic information, and used this information only to determine if there were potentially different user patterns of note for different demographic groups.

KEY FINDINGS:

- The StreetLight demographic estimates do not indicate a disproportionate use of the I-205 Abernethy Bridge by persons of color or low income users. Bridge users appear to largely mirror the demographic characteristics of the region as a whole and for Clackamas County specifically.

Table 3. Race and Ethnicity - Comparison of I-205 Users to Portland Metro Area

	White	Black	American Indian/ Alaska Native	Asian	Native Hawaiian/ Pacific Islander	Other Race	Multiple Races	Hispanic*
I-205 Users	84%	2%	1%	5%	Less than 1%	4%	4%	10%
Clackamas County	88%	1%	1%	4%	Less than 1%	3%	3%	8%
Portland Metro**	81%	3%	1%	6%	Less than 1%	5%	4%	11%

Source: StreetLight, U.S. Census Bureau, 2010
* Hispanic is an ethnicity, and people who identify as Hispanic can be of any race.
** Portland Metro refers to the census Portland-Vancouver-Hillsboro, OR-WA Metropolitan Statistical Area.

Table 4. Income Level - Comparison of I-205 Users to Portland Metro Area

	Less than $50K	$50K to $125K	More than $125K
I-205 Users	41%	43%	16%
Clackamas County	40%	44%	16%
Portland Metro*	44%	42%	14%

Source: StreetLight, American Community Survey 2010 5-Year Estimates
* Portland Metro refers to the Census Portland-Vancouver-Hillsboro, OR-WA Metropolitan Statistical Area.

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[3] The demographic information provided by StreetLight is derived based on an estimate for the "likely home location" of smart devices. If a device regularly pings overnight within a residential area, StreetLight considers the block as a likely home location of the device owner. The device is hence assigned the distribution of race, income, and other demographic information from the U.S. Census Bureau and American Community Survey of the likely home block or block group. The device then "carries" the demographic distribution to all its trips. The demographics data is linked to smart devices that generate location-based data and not directly linked to individual trips.

Appendix A StreetLight Methodology References

A.1 DATA SOURCE, METHODOLOGY AND VALIDATION DOCUMENTATIONS FROM STREETLIGHT

StreetLight's data source, data processing methodology and validation can be found in the following white papers:

- *StreetLight Insight Metrics: Our Methodology and Data Sources*, StreetLight Data, Inc., July 2019
- *StreetLight Volume Methodology & Validation White Paper*, StreetLight Data, Inc., August 2019

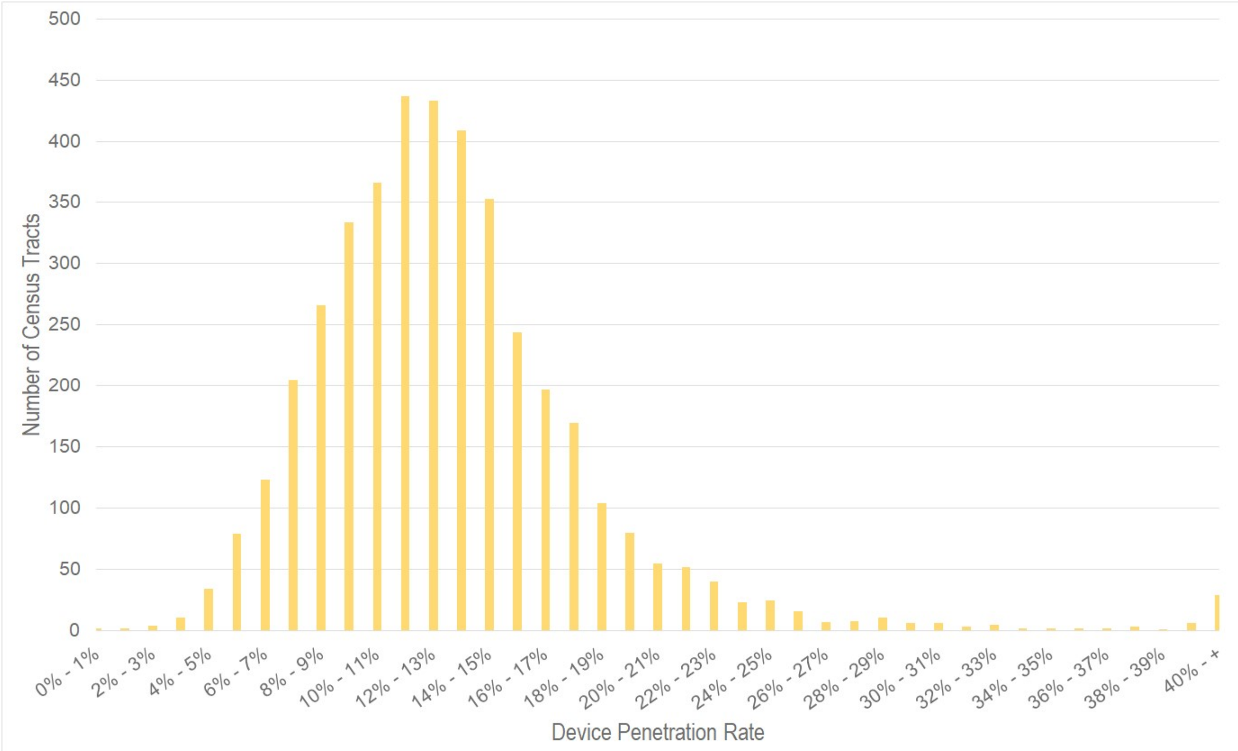
A.2 DEVICE SAMPLE SHARE

How Big Data Supports Environmental Justice in Transportation, StreetLight Data, Inc. August 2020: https://www.streetlightdata.com/big-data-supports-environmental-justice-in-transportation/

In this article, StreetLight published a case study of device sample share in Florida at the census tract level. Device sample share is defined as number of devices captured over total population. StreetLight calculated the number of devices in one census block based on the device "home location," which is defined as the location of the device during nighttime. The assumption is that if a device stays overnight in one census block, then this census block is most likely its home location. The device sample is then aggregated to the census tract level. As shown in Figure A-1, the study found 90% of census tracts have 6 to 20% device sample share. The average device sample share across all census tracts are about 13%, meaning that the sample reflects devices that belong to about 13% of the population.[4]

[4] "How Big Data Supports Environmental Justice in Transportation," StreetLight Data, Aug. 3, 2020. https://www.streetlightdata.com/big-data-supports-environmental-justice-in-transportation/

Figure A-1. Device Sample Share in Census Tracts in Florida



Source: *How Big Data Supports Environmental Justice in Transportation, StreetLight Data*, Inc., August 3, 2020

Appendix B Regional Travel Demand Model Zones and Results Comparison to StreetLight

In this Appendix, origin/destination analysis results of Abernethy Bridge trips from RTDM is shown in Figure B-1. Figure B-2 shows the aggregated transit analysis zones (TAZs) or Districts used in the RTDM origin/destination analysis. Table C-1 compares origin/destination analysis results from the Oregon Statewide Integrated Model, Metro's Regional Travel Demand Model (RTDM) and StreetLight, showing that the origin/destination trip share is relatively consistent across the three data sources.

Figure B-1. Regional Origins of I-205 Trips Crossing the Abernethy Bridge from Regional Travel Demand Model

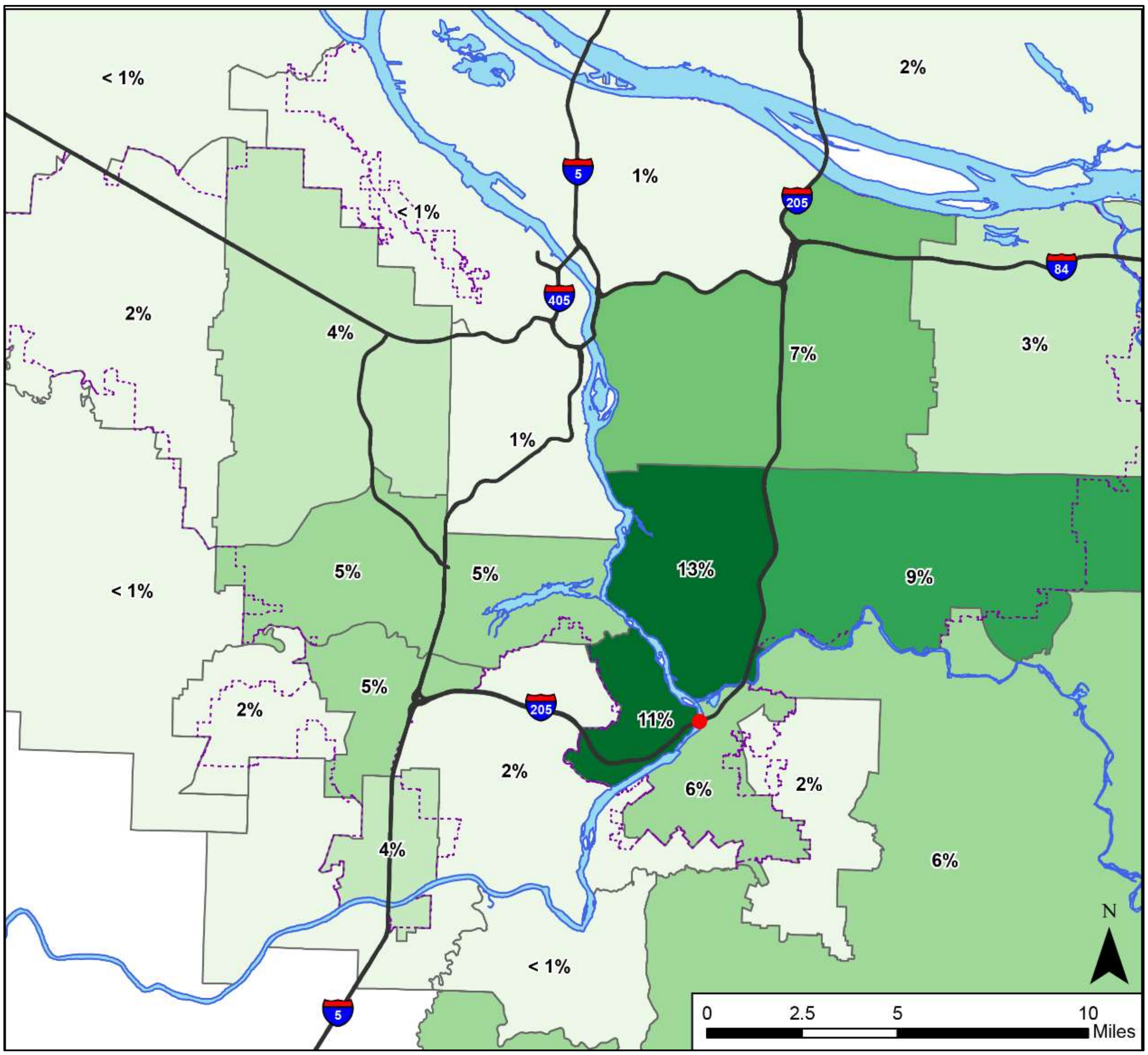
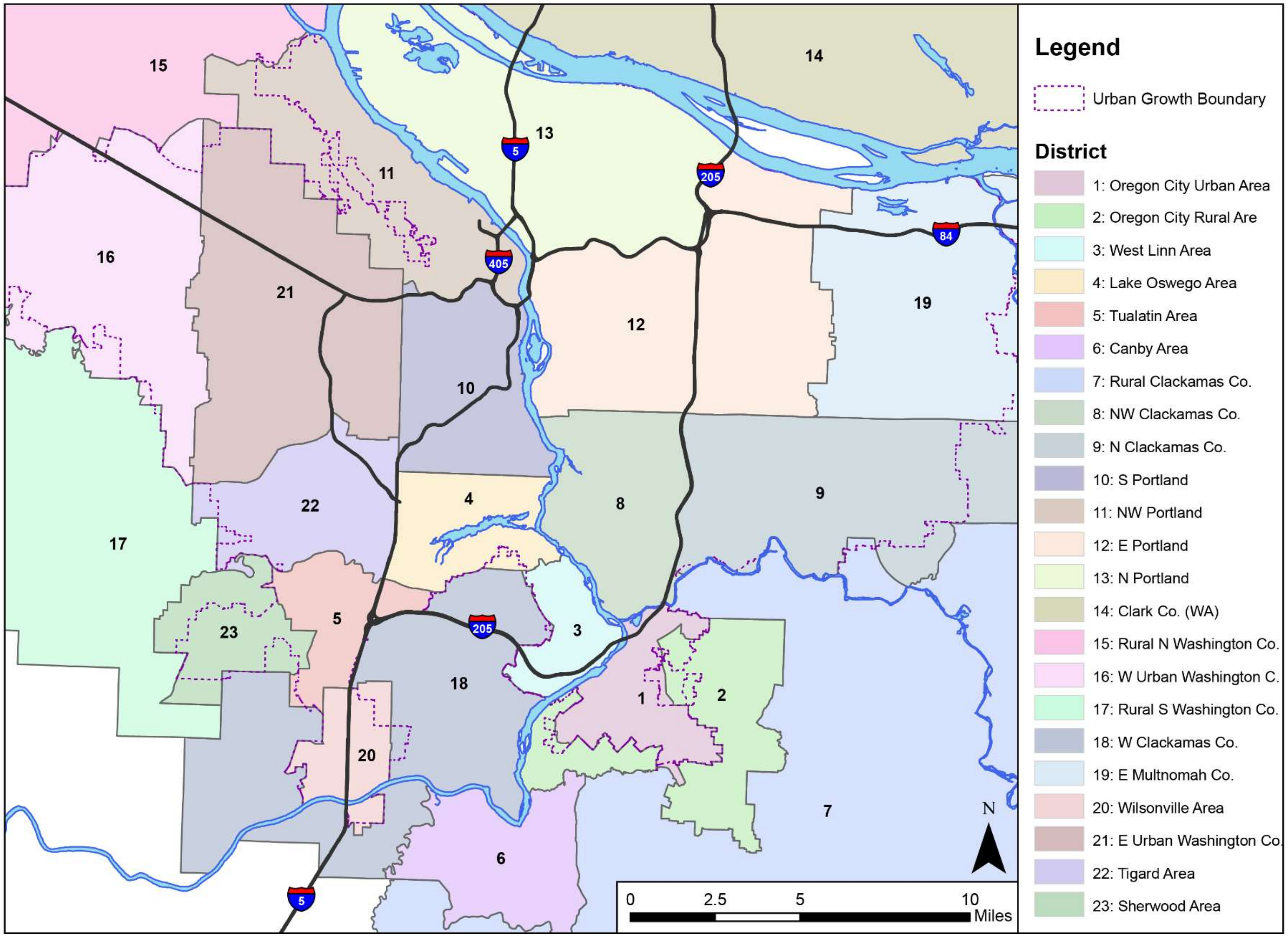
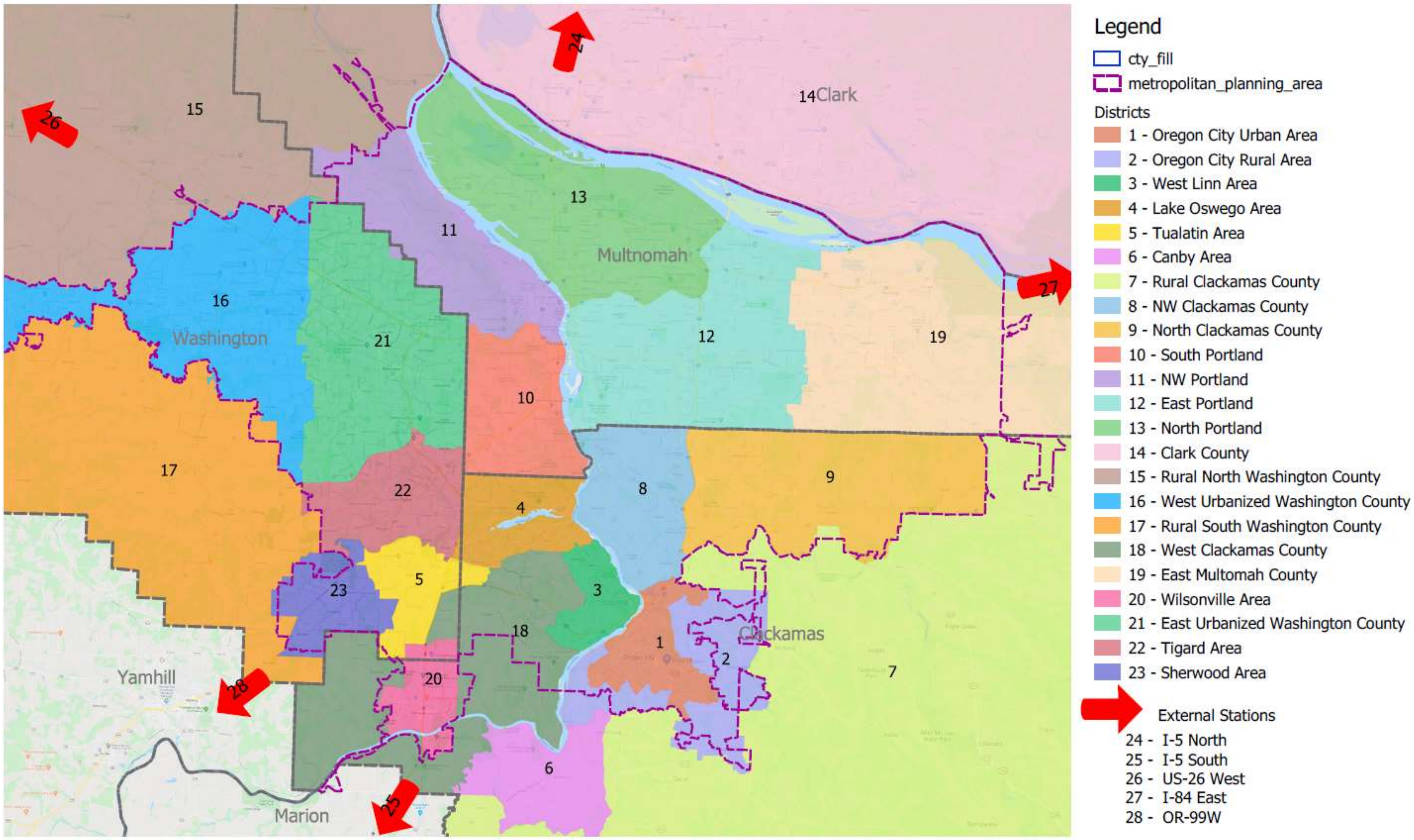


Figure B-2. Regional Travel Demand Model Aggregated Zones/Districts





Legend
cty_fill
metropolitan_planning_area
Districts
1 - Oregon City Urban Area
2 - Oregon City Rural Area
3 - West Linn Area
4 - Lake Oswego Area
5 - Tualatin Area
6 - Canby Area
7 - Rural Clackamas County
8 - NW Clackamas County
9 - North Clackamas County
10 - South Portland
11 - NW Portland
12 - East Portland
13 - North Portland
14 - Clark County
15 - Rural North Washington County
16 - West Urbanized Washington County
17 - Rural South Washington County
18 - West Clackamas County
19 - East Multomah County
20 - Wilsonville Area
21 - East Urbanized Washington County
22 - Tigard Area
23 - Sherwood Area
External Stations
24 - I-5 North
25 - I-5 South
26 - US-26 West
27 - I-84 East
28 - OR-99W
Clark
Multnomah
Washington
Clackamas
Yamhill
Marion

Appendix C Origin/Destination Comparison between Tools

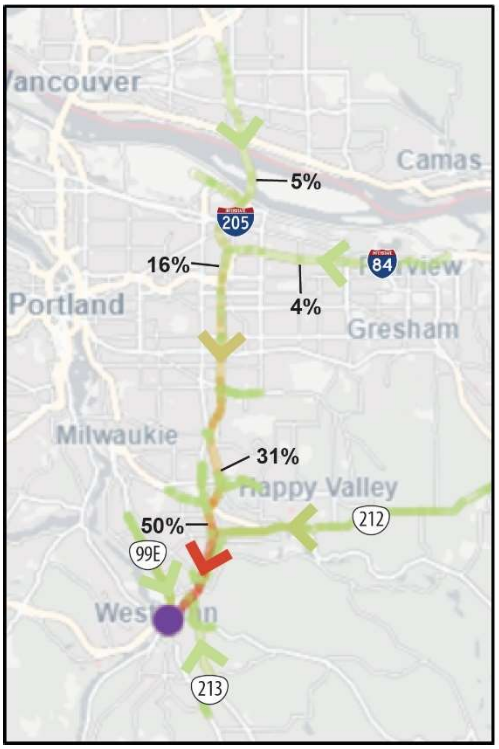
Table C-1. Trip Origin/Destination Share - Comparison Between StreetLight, Regional Travel Demand Model, and Oregon Statewide Integrated Model

	Trip Origin/Destination Share					
	SWIM Origin	SWIM Destination	Metro RTDM Origin	Metro RTDM Destination	StreetLight Origin	StreetLight Destination
External	14%	14%	10%	9%	12%	12%
Oregon City Urban Area	6%	6%	6%	6%	8%	8%
Oregon City Rural Area	2%	2%	2%	2%	1%	1%
West Linn Area	16%	16%	11%	11%	10%	10%
Lake Oswego Area	5%	5%	5%	5%	4%	4%
Tualatin Area	4%	4%	5%	5%	5%	5%
Canby Area	2%	0%	0%	0%	1%	0%
Rural Clackamas County	3%	4%	6%	5%	3%	3%
NW Clackamas County	15%	16%	13%	13%	12%	12%
North Clackamas County	9%	10%	9%	9%	9%	9%
South Portland	1%	1%	1%	1%	1%	1%
NW Portland	0%	0%	0%	0%	0%	0%
East Portland	6%	6%	7%	7%	7%	7%
North Portland	1%	1%	1%	1%	3%	4%
Clark County	2%	2%	2%	2%	3%	3%
Rural North Washington County	0%	0%	0%	0%	0%	0%
West Urbanized Washington County	0%	0%	2%	2%	2%	1%
Rural South Washington County	0%	0%	0%	0%	0%	0%
West Clackamas County	3%	3%	2%	2%	2%	2%
East Multomah County	3%	3%	3%	3%	3%	4%
Wilsonville Area	2%	2%	4%	5%	5%	5%
East Urbanized Washington County	1%	1%	4%	4%	3%	3%
Tigard Area	3%	3%	5%	6%	5%	5%
Sherwood Area	1%	1%	2%	1%	1%	1%

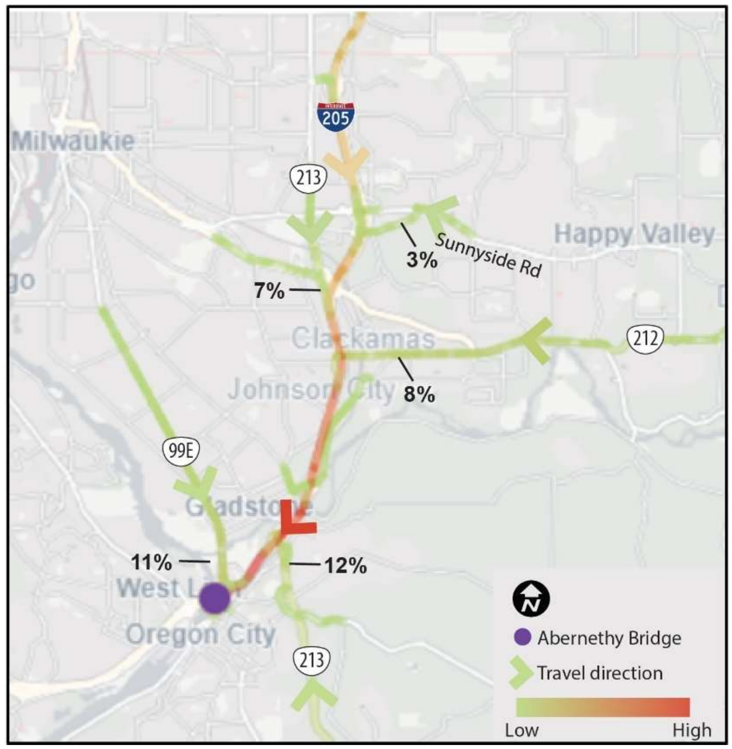
Appendix D Travel Shed Analysis for Abernethy Bridge Users, Southbound Trips To/From Abernethy Bridge

Figure D-1 and D-2 show the travel shed analysis of southbound trips going across Abernethy Bridge. Figure D-1 shows inbound trips going to Abernethy Bridge southbound, and Figure D-2 shows outbound trips leaving from Abernethy Bridge southbound. The results are similar to those of the northbound direction shown in Figure 3 and 4 in the travel shed for Abernethy Bridge users section.

Figure D-1. Trips to Abernethy Bridge Southbound based on StreetLight's Data



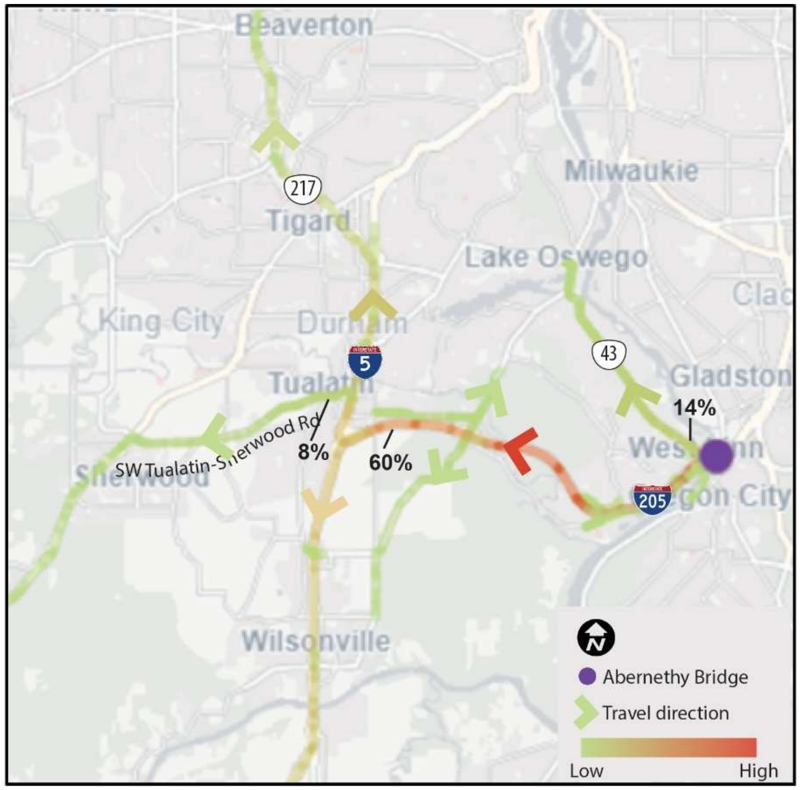
Regional View



Corridor View

Figure D-2. Trips from Abernethy Bridge Southbound based on StreetLight's Data

Regional View



Corridor View

Appendix E Complete List of Rerouting Analyses

Table E-1 contains a summary displaying the routing choice travel patterns between identified origin/destination pairs near the I-205 corridor, highlighting the trend of existing rerouting onto local alternative streets. The columns Origin-Destination Pairs and Rerouting Street Segments indicate which O-D pair the trips were recorded for and what the local alternative street was, respectively. The column Local Route Utilization % Change shows the percentage increase in trips on the local alternative street from midday to peak period (either AM peak from 7 – 9 AM or PM peak from 4 – 6 PM), which indicates the percent shift of traffic onto local streets. Route utilization is indicated by the color bar with brighter yellow indicating a higher percent of traffic preferring a given route over the other option and white indicating a lower percentage.

The geographies used in the rerouting analyses represent the area of the municipalities, but the boundaries may not align exactly with municipal or county boundary. Most of the geographies in the analyses are included in the examples in the section Current Tendency for Rerouting except for Willamette, which is part of the City of West Linn. The Willamette area used in this analysis is shown in Figure E-1.

Figure E-1. Willamette Area used in Rerouting Analysis

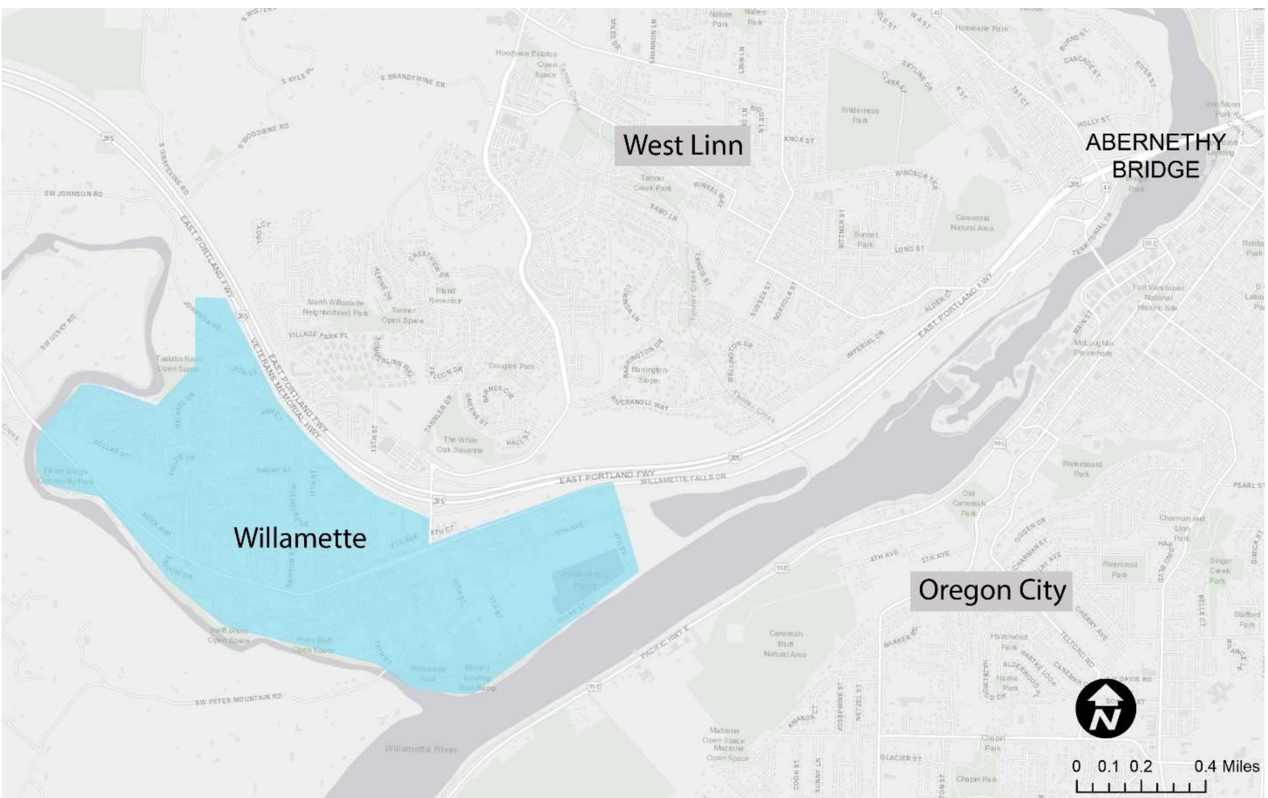


Table E-1. Complete List of Rerouting Analysis Results

	Origin-Destination Pairs	# of Routes	Rerouting Street Segments	D.	Route Utilization % – Mainline AM	Mainline MD	Mainline PM	Alternate AM	Alternate MD	Alternate PM	Local Route Utilization % Change (Increase from Mid-Day to Peak)
Local Trips	West Linn & Willamette -- Arch Bridge	2	Willamette Falls Dr	NB	33%	37%	22%	67%	63%	78%	15%
				SB	16%	31%	21%	84%	69%	79%	15%
	Tualatin E. of I-5 -- West Linn	3	Borland Rd (S. of I-205)	NB	40%	38%	6%	25%	18%	44%	26%
			Rosemont Rd		-	-	-	35%	44%	50%	9%
			Borland Rd (S. of I-205)	SB	28%	47%	41%	41%	8%	10%	33%
			Rosemont Rd		-	-	-	31%	44%	49%	14%
		2	Willamette Falls Dr	NB	70%	48%	24%	30%	52%	76%	24%
				SB	47%	61%	77%	53%	39%	23%	16%
	Tualatin Downtown & E. of I-5 -- West Linn	3	Borland Rd (S. of I-205)	NB	42%	46%	7%	24%	14%	42%	27%
			Rosemont Rd		-	-	-	34%	40%	51%	11%
			Borland Rd (S. of I-205)	SB	30%	53%	47%	38%	7%	10%	32%
			Rosemont Rd		-	-	-	31%	40%	44%	9%
		2	Willamette Falls Dr	NB	69%	57%	35%	31%	43%	65%	22%
				SB	45%	68%	77%	55%	32%	23%	23%
	Tualatin W. of I-5 to West Linn	2	Borland (N. of I-205)	NB	59%	68%	32%	41%	32%	68%	36%
				SB	52%	70%	68%	48%	30%	32%	18%
		3	Borland Rd (S. of I-205)	NB	42%	48%	7%	31%	26%	46%	20%
			Rosemont Rd		-	-	-	28%	25%	47%	22%
			Borland Rd (S. of I-205)	SB	56%	64%	65%	5%	5%	4%	0%
			Rosemont Rd		-	-	-	39%	32%	30%	8%
	Tualatin E. of I-5 -- Arch Bridge	2	Borland Rd (S. of I-205)	NB	82%	58%	37%	18%	42%	63%	22%
				SB	39%	65%	69%	61%	35%	31%	26%
		2	Willamette Falls Dr	NB	89%	62%	35%	11%	38%	65%	27%
				SB	36%	65%	62%	64%	35%	38%	29%
	Tualatin Downtown & East of I-5 -- Arch Bridge	2	Borland (S. of I-205)	NB	85%	63%	44%	15%	37%	56%	22%
				SB	47%	72%	71%	53%	28%	29%	25%
		2	Willamette Falls Dr	NB	90%	66%	40%	10%	34%	60%	25%
				SB	44%	70%	64%	56%	30%	36%	26%

	Tualatin (W. of I5) -- Arch Bridge	2	Borland Rd (N. of I-205)	NB	65%	67%	49%	35%	33%	51%	18%
				SB	47%	74%	71%	53%	26%	29%	28%
		2	Borland Rd (S. of I-205)	NB	78%	67%	36%	22%	33%	64%	31%
				SB	51%	87%	84%	49%	13%	16%	36%
		2	Willamette Falls Dr	NB	74%	74%	32%	26%	26%	68%	41%
				SB	55%	82%	82%	45%	18%	18%	27%
	Clackamas -- Oregon City (west of OR213)	2	Washington St	SB	66%	75%	60%	34%	25%	40%	15%
				NB	89%	90%	93%	11%	10%	7%	3%
	Wilsonville -- Arch Bridge	3	Borland Rd (S. of I-205)	NB	91%	74%	35%	9%	22%	35%	13%
			SW Schaeffer		-	-	-	0%	4%	30%	26%
			Borland Rd (S. of I-205)	SB	67%	77%	75%	24%	22%	25%	4%
			SW Schaeffer		-	-	-	9%	1%	0%	8%
		2	Stafford Rd	NB	34%	53%	35%	66%	47%	65%	18%
				SB	48%	61%	29%	52%	39%	71%	32%
		2	Willamette Falls Dr	NB	83%	72%	38%	17%	28%	62%	34%
				SB	53%	69%	69%	47%	31%	31%	17%
	Wilsonville -- Stafford Gate	2	Stafford Rd	NB	19%	33%	26%	81%	67%	74%	14%
				SB	27%	36%	12%	73%	64%	88%	25%
	Wilsonville -- Willamette Downtown	3	Borland Rd (S. of I-205)	NB	23%	26%	6%	68%	71%	71%	3%
			SW Schaeffer		-	-	-	9%	3%	23%	20%
			Borland Rd (S. of I-205)	SB	18%	26%	7%	64%	71%	78%	7%
			SW Schaeffer		-	-	-	18%	3%	15%	15%
		2	Stafford Rd	NB	25%	22%	15%	75%	78%	85%	7%
				SB	23%	24%	5%	77%	76%	95%	19%
	Wilsonville -- Salamo Gate	2	Stafford Rd	NB	50%	73%	40%	50%	27%	60%	32%
				SB	86%	78%	39%	14%	22%	61%	39%
		3	Borland (S. of I-205)	NB	100%	90%	32%	0%	9%	43%	34%
			SW Schaeffer		-	-	-	0%	1%	25%	24%
			Borland (S. of I-205)	SB	90%	92%	85%	10%	8%	15%	8%
			SW Schaeffer		-	-	-	0%	0%	0%	0%
Regional Trips	I-205 (W. of Stafford Rd) -- Arch Bridge	2	Borland Rd (S. of I-205)	NB	97%	90%	62%	3%	10%	38%	28%
				SB	98%	99%	99%	2%	1%	1%	2%
		2	Willamette Falls Dr	NB	90%	87%	56%	10%	13%	44%	31%
				SB	83%	93%	90%	17%	7%	10%	9%

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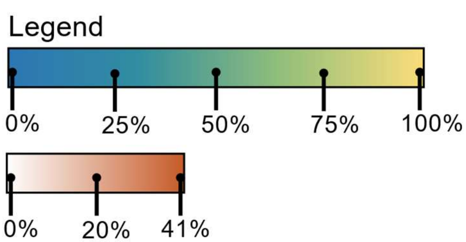
	I-205 (W. of Stafford) -- Salamo gate	2	Borland (S. of I-205)	NB	98%	96%	66%	2%	4%	34%	30%
				SB	99%	100%	99%	1%	0%	1%	1%
	I-205 N. of OR213 -- Oregon City	2	Washington St	NB	93%	95%	93%	7%	5%	7%	2%
				SB	71%	79%	73%	29%	21%	27%	9%
	Tualatin (downtown & E. of I5) -- Abernethy Bridge	2	Borland (S. of I-205)	NB	98%	96%	89%	2%	4%	11%	8%
				SB	97%	99%	99%	3%	1%	1%	1%
		2	Willamette Falls Dr	NB	99%	99%	95%	1%	1%	5%	4%
				SB	98%	99%	99%	2%	1%	1%	1%
	Tualatin (W. of I-5) -- Abernethy Bridge	2	Borland (N. of I-205)	NB	88%	86%	68%	12%	14%	32%	18%
				SB	82%	87%	81%	18%	13%	19%	6%
	West Linn & Willamette -- Abernathy Bridge	2	Willamette Falls Dr	NB	97%	94%	88%	3%	6%	12%	6%
				SB	85%	92%	94%	15%	8%	6%	7%
	Wilsonville -- Abernathy Bridge	2	Stafford Rd	NB	61%	78%	56%	39%	22%	44%	22%
				SB	82%	79%	45%	18%	21%	55%	34%
		3	Borland (S. of I-205	NB	98%	99%	83%	1%	1%	6%	4%
			SW Schaeffer		-	-	-	0%	0%	11%	11%
			Borland (S. of I-205	SB	97%	99%	97%	2%	1%	3%	2%
			SW Schaeffer		-	-	-	1%	0%	0%	1%
		2	Willamette Falls Dr	NB	98%	99%	94%	2%	1%	6%	5%
				SB	97%	99%	99%	3%	1%	1%	2%
	Oregon City -- Salem	2	OR 99E (at Canby)	NB	38%	70%	33%	62%	30%	67%	37%
				SB	59%	58%	22%	41%	42%	78%	36%
Ramp Trips	I-205 & Stafford Rd Interchange	2	On- and off-ramps	NB	100%	99%	92%	0%	1%	8%	7%



2024 -2027 STIP Highway Enhance Program

The Enhance Highway Discretionary Program will make operational enhancements to state highways to improve the movement of people and goods in order to enhance the economy of Oregon. Projects will be proposed by regions and final project list will be determined in coordination with the Region 1 Area Commission on Transportation (R1 ACT) and the Oregon Transportation Commission (OTC).

Click here or scan QR Code to provide ODOT comments on the project list or to provide general Highway Enhance program feedback.

ODOT is in the process of consulting area commissions on transportation, metropolitan planning organizations, and other stakeholders about the best projects. Based on these conversations, ODOT staff will submit proposals for priority projects by the end of August. These proposals will be winnowed down to about $80 million in projects that will be scoped to further refine the conceptual project details and cost estimate. In December and January ODOT will again reach out to ACTs and MPOs for additional feedback on this draft list, which will then be narrowed to the final list of projects totaling $65 million by March of 2022.

Projects must provide benefits in one or more of the following outcome areas to be eligible for funding.

- Congestion relief—Reduce hours of delay on state highways
- Freight mobility—Reduce freight delay or remove barriers to movement on key freight corridors

Visit www.odotregion1stip.org for more information.

Links:
Enhance Highway Program
R1 ACT Presentation - June 7, 2021

The following projects are currently under consideration for Highway Enhance funding.

Program	Project Name/Location	Description	Highway or Local Road	City	County
Enhance Highway	OR224 (Westbound): I-205 to Rusk Rd.	Add a westbound third lane/right turn lane	OR224 - Milwaukie Expressway	Milwaukie	Clackamas
Enhance Highway	I-205 (Southbound): Johnson Creek Blvd. to OR212 Active Traffic Management/Intelligent Transportation Systems	Add variable message signs and variable advisory speed signs	I-205 - East Portland Freeway	Happy Valley	Clackamas
Enhance Highway	US26 (Westbound): Sylvan to Cornelius Pass Rd.	Add variable message signs and variable advisory speed signs	US26 - Mt Hood Hwy	Beaverton	Washington
Enhance Highway	I-5 (Northbound): OR 551 entrance to Boone Bridge	Auxiliary lane extension from Charbonneau entrance ramp back to OR 551 entrance ramp	I-5 - Pacific Freeway	Wilsonville	Clackamas
Enhance Highway	US26/Timberline Rd.	Intersection improvement	US26 - Mt Hood Hwy	Government Camp	Clackamas
Enhance Highway	Cascade Locks: WaNaPa/Toll Booth Rd.	Intersection improvements and new signalization	Wa Na Pa St Toll Booth Rd	Cascade Locks	Hood River
Enhance Highway	I-84 (Eastbound) Exit 62 to Mt. Adams Ave.	Add Eastbound right turn lane and channelized connection to Mt. Adams Ave. Add pedestrian improvements to connect with HCRH State Trail.	I-84 - Columbia River Hwy	Hood River	Hood River
Enhance Highway	I-5 (Northbound): Corbett Ave. Active Traffic Management	ATM signs - Advanced directional signage	I-5 - Pacific Freeway	Portland	Multnomah

Program	Project Name/Location	Description	Highway or Local Road	City	County
Enhance Highway	OR217 (Southbound): Walker Rd to Allen Blvd	Extend third lane between B-H Hwy entrance and Canyon Rd exit, aux lane from Walker Rd to Canyon Rd, and braided ramps at the southbound B-H Hwy entrance/Allen Blvd exit	OR217 - Beaverton/Tualatin Hwy	Beaverton	Washington
Enhance Highway	I-84 (Westbound): Troutdale to I-205 Active Traffic Management	Add queue warning, variable message and variable advisory speed signs	I-84 - Columbia River Hwy	Troutdale	Multnomah
Enhance Highway	Government Camp rest area development	Advance investigation	US26 - Mt Hood Hwy	Government Camp	Clackamas
Enhance Highway	I-5 Active Traffic Management/Intelligent Transportation Systems	Northbound (Boone Bridge to Marquam Bridge) and Southbound (OR 217 to Boone Bridge) add variable message signs and variable advisory speed signs	I-5 - Pacific Freeway	Tigard Tualatin Portland Wilsonville	Multnomah Washington Clackamas
Enhance Highway	I-205 (Northbound): 82nd Dr to Flavel St) Active Traffic Management/Intelligent Transportation Systems	Add variable message signs and variable advisory speed signs	I-205 - East Portland Freeway	Gladstone Happy Valley Portland	Multnomah Clackamas