Council work session agenda

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

Tuesday, October 25, 2022 **10:30 AM** **https://zoom.us/j/615079992 (Webinar ID: 615079992) or 929-205-6099 (toll free)**

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10:30 Call to Order and Roll Call

Work Session Topics

10:35 RTP Needs Assessment and Performance Measures 22-5780

Presenter(s): Elliot Rose (he/him), Metro

Attachments: Staff Report
Attachment 1

11:20 Chief Operating Officer Communication

11:25 Councilor Communication

11:30 Adjourn

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បើលោកអ្នកត្រូវការអ្នកបកប្រែកាសនៅពេលអង្គប្រជុំសាធារណៈ សូមទូរស័ព្ទមកលេខ 503-797-1700 (ម៉ោង 8 ព្រឹកដល់ម៉ោង 5 ល្ងាច ថ្ងៃធ្វើការ) ប្រាំពីរថ្ងៃថ្ងៃធ្វើការ មុនថ្ងៃប្រជុំដើម្បីអាចឲ្យគេសម្រួលតាមសំណើរបស់លោកអ្នក ។

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January 2021

RTP Needs Assessment and Performance Measures

Work Session Topic

Metro Council Work Session

Tuesday, October 25, 2022

[STAFF REPORT FOR USE FOR WORK SESSIONS AND COUNCIL MEETINGS]

DRAFT RTP NEEDS ASSESSMENT

Date: October 12, 2022
Department: Planning and Development
Meeting Date: October 25, 2022

Prepared by: Eliot Rose,
eliot.rose@oregonmetro.gov,
503.927.9685

Presenter(s): Margi Bradway, Deputy Director of Planning, Development, and Research; Eliot Rose, Senior Transportation Planner
Length: 30 minutes

ISSUE STATEMENT

A major update to the Regional Transportation Plan (RTP) is underway. The plan is a tool that guides investments in all forms of travel – motor vehicle, transit, bicycle and walking – and the movement of goods and freight throughout greater Portland. The current RTP establishes five overarching priorities – equity, safety, climate, mobility, and vibrant and prosperous communities – as the basis for a framework of goals, supporting objectives and policies that together guide planning and investment priorities to meet current and future needs of our growing and changing region. The Needs Assessment in Chapter 4 of the RTP provides a snapshot of current conditions and highlights key transportation needs for the plan to address in order to advance the priorities discussed above. Staff will present draft results from the Needs Assessment and discuss how these results should be addressed during the 2023 Regional Transportation Plan (RTP) update.

ACTION REQUESTED

No formal action requested.

Staff seek input from Metro Council at this meeting about how the results of the Needs Assessment should inform the future development of the RTP.

IDENTIFIED POLICY OUTCOMES

POLICY QUESTION(S)

- What changes to the RTP policies or process is Council interested in exploring in order to meet the needs that we discussed today?
- Does the information presented today capture the key regional needs with respect to the five RTP priorities (equity, safety, climate, mobility, and vibrant and prosperous communities)?

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STRATEGIC CONTEXT & FRAMING COUNCIL DISCUSSION

As the metropolitan planning organization for the Portland region, Metro is responsible for updating the RTP every five years. Transportation investments must be included in an up-to-date RTP in order to be eligible for state and federal funding. The RTP is also an important tool for implementing the Regional Growth Concept and the Climate Smart Strategy.

The Needs Assessment in Chapter 4 of the Regional Transportation Plan is a required element of the RTP. The the Federal regulations that govern the RTP process require metropolitan planning organizations to "confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends." Each update to the RTP begins with updating the goals and policies of the plan, followed by updating the Needs Assessment based on the latest data available. Once the Needs Assessment is finalized, jurisdictional partners will submit projects through the call for projects, and then Metro staff will evaluate how the transportation system performs in the future by using the regional travel model and other tools. The goal of this process is to have the final policies and investments in the RTP meet the needs identified in the Needs Assessment and thereby achieve the RTP vision, goals and objectives. Table 1 below summarizes this process, including the information used and key outputs produced at each stage of the RTP process.

Table 1: Summary of key results and information used, by RTP phase

RTP Phase	Key results of this phase	Information used during this phase
Update vision, goals, objectives and policies	• Updates to RTP vision, goals and policies	• Input from Metro Council, Metro policy/technical committees, agency partners, and community outreach • 2023 RTP scoping engagement • Background research and reports (Emerging Trends, Mobility Policy, Congestion Pricing Policy, Urban Arterials etc.) • Current transportation/land use data • Off-model analyses
Needs assessment	• Updated analyses of current regional transportation needs • Updated policy maps (e.g., equity focus areas, high injury corridors) • Identify performance measures and confirm targets	• Current transportation/land use data • Off-model analyses • Base-year travel model analysis • Results and feedback from the 2018 RTP • 2023 RTP scoping engagement • Federal performance reporting results • Input from Metro Council, Metro policy/technical committees, agency partners, and community outreach • Updated RTP vision, goals and policies

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		• Background research and reports (Emerging Trends, Mobility Policy, Congestion Pricing Policy, Urban Arterials etc.)
Call for projects	• Draft RTP project list	• Updated RTP vision, goals and policies • Needs Assessment • Project information submitted by leads • Metro staff analysis of projects • Input from Metro Council, Metro policy/technical committees, agency partners, and community outreach • Background research and reports
Evaluation	• Performance results • Refinements to RTP project list	• Updated RTP vision, goals and policies • Needs Assessment • Policy maps • Base- and future-year travel model analysis • Off-model analysis • Project information submitted by leads • Stakeholder and community outreach

BACKGROUND

Like most aspects of the RTP, updating the Needs Assessment is an iterative process. Throughout each RTP update, Metro engages elected officials, agency staff, business and community partners, and the public to hear about how transportation needs and priorities have changed since the last update. Metro also reviews results of projects that implemented the currently adopted RTP for relevant information on these changing needs and priorities. Through this process, the RTP Needs Assessment continues to evolve from an inventory of multimodal infrastructure needs to a broader focus on transportation's contribution to systemic issues like climate, equity, safety and mobility (i.e., the currently adopted RTP priorities). Metro staff also update the needs assessment to address stakeholder feedback on how to more effectively communicate what the region's needs are and how the RTP can best address those needs.

Throughout much of 2022, Metro staff have engaged Metro Council, policy and technical committees, and community partners in updating the RTP priorities and policies. These conversations have been informed by the results background research and technical work requested by Metro Council and JPACT on key issues including Emerging Transportation Trends, Safe and Healthy Urban Arterials, and Equitable Financing, Regional Congestion Pricing, and the Regional Mobility Policy Update. This has resulted in a draft update to the RTP policy language that puts more focus on the five regional priorities – equity, safety, climate, mobility, and vibrant and prosperous communities – by narrowing down the RTP goals from the eleven goals included in the 2018 RTP to five, each of which aligns with one of these priorities. The first four priorities listed above were also focal points during the 2018 RTP update.

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The draft Needs Assessment provides more information on the specific transportation needs that the RTP can address in order to advance regional priorities. This includes updated information from past RTPs to help stakeholders understand the region's progress in addressing longstanding equity, safety, climate, and mobility needs. It also includes updated information from the background research mentioned above and from other sources that describes how emerging issues and trends are shaping regional needs. There are ongoing updates to key Climate and Mobility policies that will shape how these priorities are addressed in the RTP; Metro staff will be providing additional information on Climate and Mobility needs as the relevant policies are finalized.

ATTACHMENTS
Technical Memorandum on the Draft Needs Assessment

[For work session:]

- Is legislation required for Council action? ☐ Yes ✓ No
- If yes, is draft legislation attached? ☐ Yes ✓ No
- What other materials are you presenting today? Powerpoint presentation

Date: October 25, 2022
To: Metro Council
From: Eliot Rose, Senior Transportation Planner
Subject: Draft 2023 RTP Transportation Needs Assessment

Purpose

This memorandum presents key draft information for the Needs Assessment for the 2023 Regional Transportation Plan for discussion by Metro Council and policy and technical committees. Metro staff will update the information presented here to address feedback received in October-November 2022. The assessment will be finalized by the end of 2022 and incorporated in Chapter 4 of the 2023 RTP. The maps and analyses will be made available as part of the RTP Call for Projects in January 2023, so that agencies submitting or updating RTP projects can consider these regional transportation needs and provide information about how their project priorities help advance achievement of the RTP goals and address these needs.

Introduction

A major update to the Regional Transportation Plan (RTP) is underway. The plan is a tool that guides investments in all forms of travel – motor vehicle, transit, bicycle and walking – and the movement of goods and freight throughout greater Portland. The RTP is a key tool for implementing the 2040 Growth Plan and Climate Smart Strategy and connecting people to their jobs, families, school and other important destinations in the region. The current RTP establishes four overarching priorities – equity, safety, climate and mobility – as the basis for a framework of goals, supporting objectives and policies that together guide planning and investment priorities to meet current and future needs of our growing and changing region.

The Needs Assessment in Chapter 4 of the Regional Transportation Plan provides a snapshot of current conditions and trends within the Greater Portland region and highlights key regional transportation challenges and needs for the plan to address. In July, Metro staff introduced the Needs Assessment for the 2023 RTP update to TPAC, including a summary of feedback on regional transportation needs received to date, and recommendations for how the Needs Assessment can reflect this feedback. These recommendations included:

- **Organize the needs assessment around the updated RTP goals and policy priorities** for safety, equity, climate, mobility and vibrant and prosperous communities. Stakeholders and policymakers have confirmed these as important priorities.
- **Present consistent information and analyses on different priorities**. Stakeholders understand that RTP priorities are interrelated and have expressed a desire to focus on projects and policies that achieve multiple outcomes. Using consistent information throughout the needs assessment and highlighting cases where information relates to more than one priority helps to identify cross-cutting needs and solutions.

- **Provide clear and actionable information** that doesn't just describe needs, but also how the RTP can address these needs. Stakeholders requested an update to the RTP goals and priorities in part to focus on the issues that are most urgent for the region to address. The information here is designed not just to describe needs, but also help decision-makers understand how the RTP can best address these needs. Where available, this memo includes information from prior plans and supporting RTP work on which strategies are effective in addressing needs, as well as base-year results for some RTP performance measures so that stakeholders can gauge the region's progress and set targets for future performance.

Draft maps and analyses from the 2023 RTP Needs Assessment

This memorandum presents key information from the draft 2023 RTP Needs Assessment for feedback from Metro technical and policy committees. Metro and its partner agencies are working to update the RTP by the federal deadline of December 6th, 2023 so that the projects in the RTP can be eligible for state and federal funds, while also addressing significant new state and regional policies and evolving transportation needs following the COVID-19 pandemic and other recent disruptions. This memorandum focuses on key maps and analyses that are:

- **Related to the four adopted RTP priorities that are carrying over from the 2018 RTP** (safety, equity, mobility and climate), consistent with input from stakeholders to focus on these priorities.
- **Potentially relevant to the RTP Call for Projects**, which will open in January 2023, so that project leads can describe how RTP projects address regional needs when entering or updating information.
- **Informed by fully-developed policies and guidance**. As described below, some of the key policies and regulations that will guide this RTP update – particularly the draft Regional Mobility Policy and implementation of the new State Climate-Friendly and Equitable Communities rules – are still in progress, and Metro staff are awaiting further guidance on how to assess key needs and performance measures in a manner consistent with these efforts.

It is important to note that, at a workshop in September 2022, JPACT and Council directed Metro to add a fifth RTP priority, Vibrant and Prosperous Communities, focused on coordinating transportation and land use planning to support development in regional centers and implement the 2040 growth concept. Metro staff are still working with TPAC and other stakeholders to define the specific elements of this policy and the regional needs that it is designed to address, so this memo does not discuss economic needs in detail. However, many of the maps and analyses presented here do highlight transportation needs in regional centers. The Economy section at the end of this memo summarizes these analyses to support TPAC members in understanding how aspects of the Economy priority are addressed in other areas of the RTP and identifying other analyses that can highlight regional economic needs.

Below we describe the key information about regional[1] needs that has been updated so far for each of the four 2018 RTP priorities.

Safety: draft needs assessment

The 2018 RTP established a Vision Zero goal for the Portland region to eliminate traffic-related deaths and severe injuries by 2035. Safety analysis for the draft needs assessment is based on the most recently available data. To track trends over time, most of the analysis uses a five-year average of crash data because of the random nature of crashes. Comprehensive, verified crash data is available through 2020, providing two years of new data since Metro last assessed regional transportation safety to assess progress toward the 2018 safety targets. More recent traffic fatality data is available, but it is preliminary, not geo-coded and subject to change. The time-lag in crash data poses challenges to providing up-to-date trends and performance of safety targets.

Key findings from the draft Safety needs assessment include:

- From 2016 through 2020, 2,814 people were killed or experienced a life-changing severe injury from a traffic crash in the greater Portland region, an average of 563 people per year.
- Traffic fatalities in the Portland region have been increasing for users of all modes, except for people bicycling. Severe injury crashes are also increasing, though not as dramatically as fatal crashes.
- Pedestrians experience a disproportionately high number of traffic deaths.
- Fatal and severe crashes are concentrated at a small number of corridors and intersections, which the RTP refers to as High Injury Corridors and High Injury Intersections.
- There is a high level of overlap between the updated 2023 High Injury Corridors and those identified in the 2018 RTP.
- About 40% of traffic fatalities occur on state owned highways.
- Black, American Indian and Alaska Native people experience a disproportionate number of traffic deaths.
- Three quarters of serious pedestrian and bicycle crashes, and 65% of all serious crashes, occur in areas identified as Equity Focus Areas.
- Safety issues are a concern for children walking and bicycling to school.

Since the 2018 RTP was adopted less than four years ago, city, county, regional and state partners been developing and implementing safety action plans. Metro's 2-Year Progress Report on the Regional Transportation Strategy[2] highlighted this work and identified actions for the next two years, including in the update of the 2023 RTP. While it is discouraging to see traffic fatalities and severe injuries increase as agencies and community partners work to address safety, it often takes a while for the impact of Vision

[1] This memorandum uses "Greater Portland region" or "region" to refer to the Metropolitan Planning Area (MPA) boundary, which is the area consisting of sections of Multnomah, Washington and Clackamas Counties that is covered by the RTP. The MPA boundary is shown in many of the maps below. Except where otherwise noted, charts and tables contain data for the MPA boundary.

[2] June 2021. https://www.oregonmetro.gov/sites/default/files/2021/08/03/RTSS-progress-report-20210603.pdf

Zero policies to become apparent. Countries and cities that have adopted the Safe System Approach and committed to achieving zero serious crashes typically begin to see substantial results in about 10 years, reducing traffic fatalities upwards of 40-60%.[3]

Historical crash analysis

The RTP includes ambitious targets to reduce fatal and serious injury crashes by 16 percent by 2020, by 50 percent by 2025, and to zero by 2035. Table 1 summarizes regional progress toward these performance measures.

Table 1: Federal Safety Performance Measures for Traffic Fatalities and Serious Injuries, 2016-2020 (Oregon Department of Transportation crash data analyzed by Metro)

	5-year rolling averages		
Performance Measure	**2011-2015 Baseline**	**2016-2020 Target**	**2016-2020 Actual**
Number of fatalities	62	52	93
Fatalities per 100 million vehicle miles traveled	0.6	0.5	0.9
Number of serious injuries	458	384	512
Serious injuries per 100 million vehicle miles traveled	4.5	3.6	4.8
Number of non-motorized fatalities and serious injuries	113	95	129

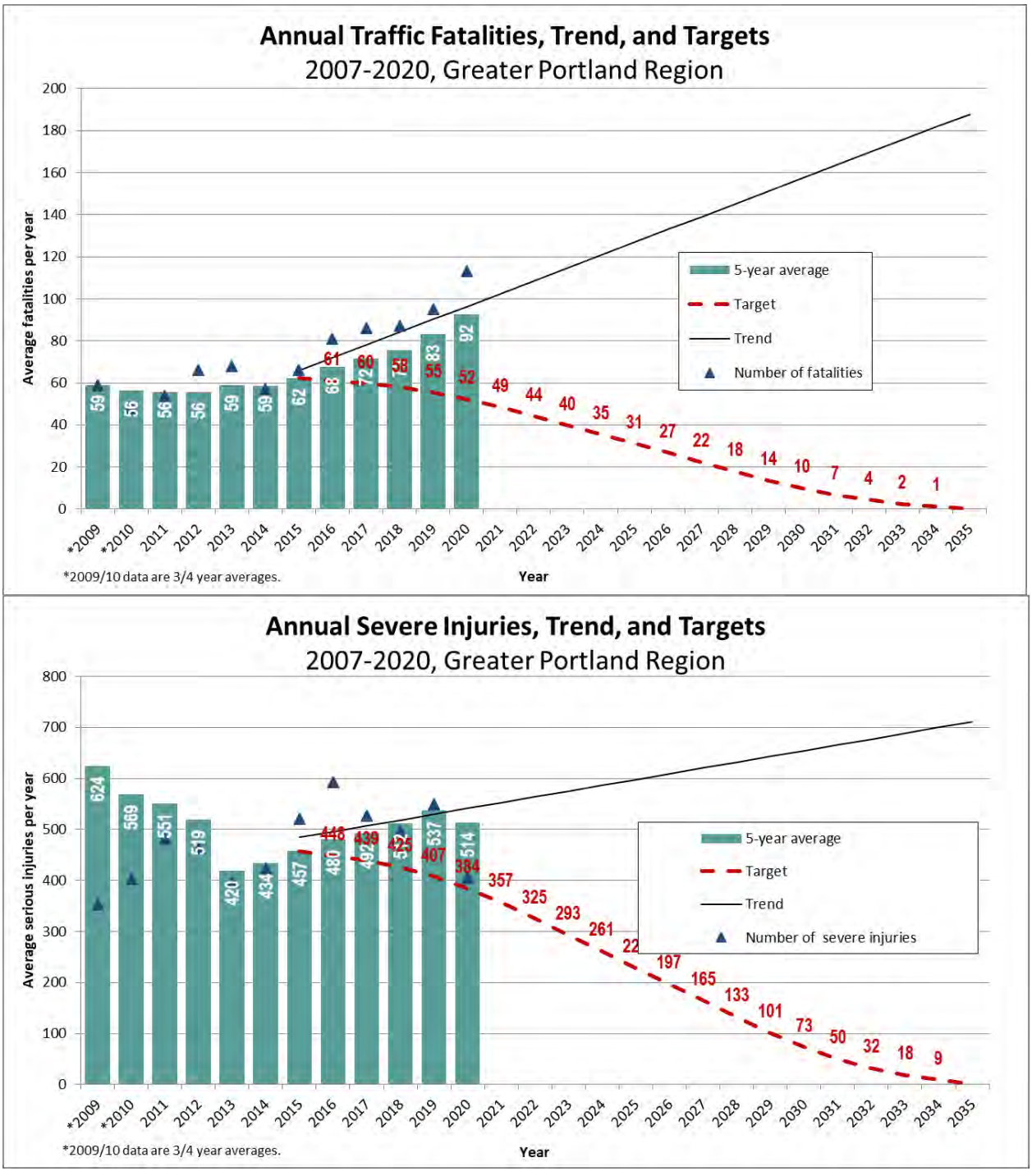
The region is not on track to meet its targets. In fact, across all the measures summarized in Table 1, the region's streets have gotten less safe since Metro established this goal and began collecting baseline data. These findings are consistent with an interim Safety Performance report that Metro published in 2021,[4] which was based on 2019 data.

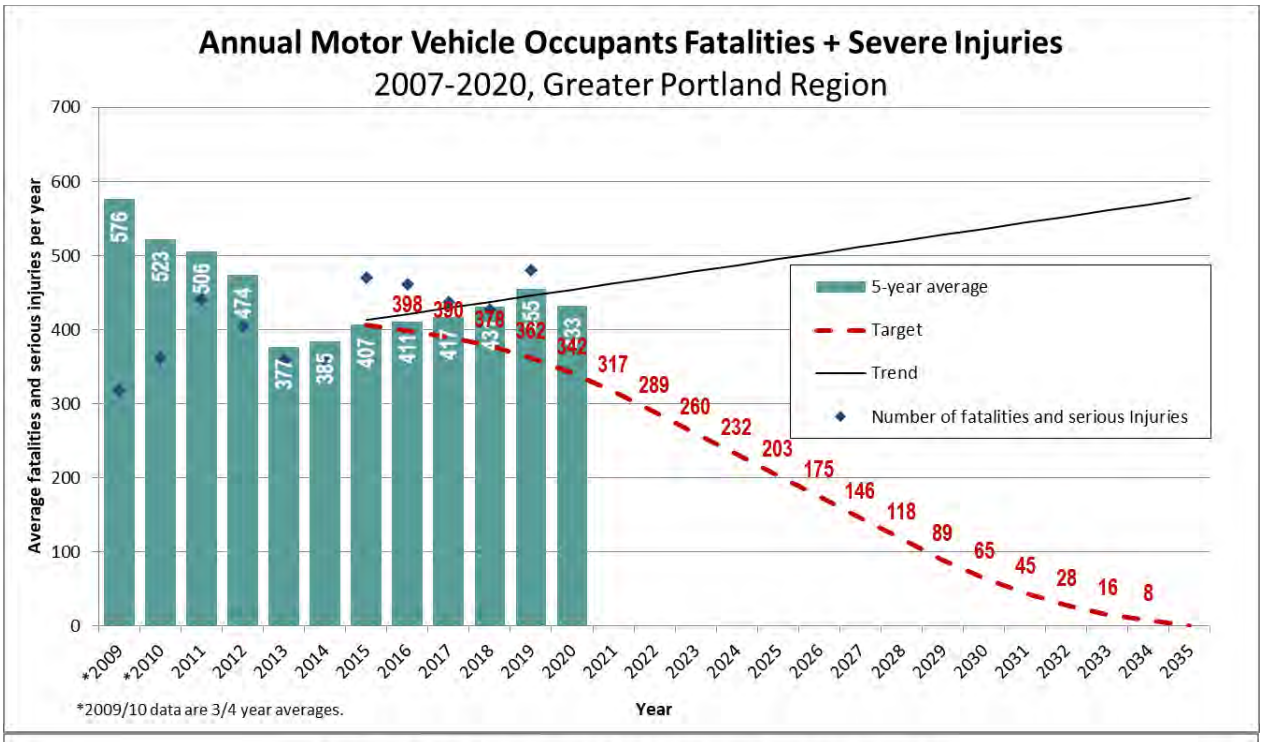
Figure 1 shows more detail on safety trends in the region, providing data by crash type (fatal vs. serious injury) and mode.

[3] Road Safety Annual Report 2020, International Transport Forum: https://www.itf-oecd.org/sites/default/files/docs/irtad-road-safety-annual-report-2020_0.pdf

[4] https://www.oregonmetro.gov/sites/default/files/2021/03/04/Metro-safety-annual-performance-report-2015-2019.pdf

Figure 1: Five-year average rates of fatal and severe crashes, 2009-2020, with trendlines and Vision Zero targets (ODOT crash data, analyzed by Metro staff)




Annual Motor Vehicle Occupants Fatalities + Severe Injuries
2007-2020, Greater Portland Region
Average fatalities and serious injuries per year
Year
*2009/10 data are 3/4 year averages.
5-year average
Target
Trend
Number of fatalities and serious Injuries
576
523
506
474
377
385
407
411
417
433
455
433
398
390
378
362
342
317
289
260
232
203
175
146
118
89
65
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28
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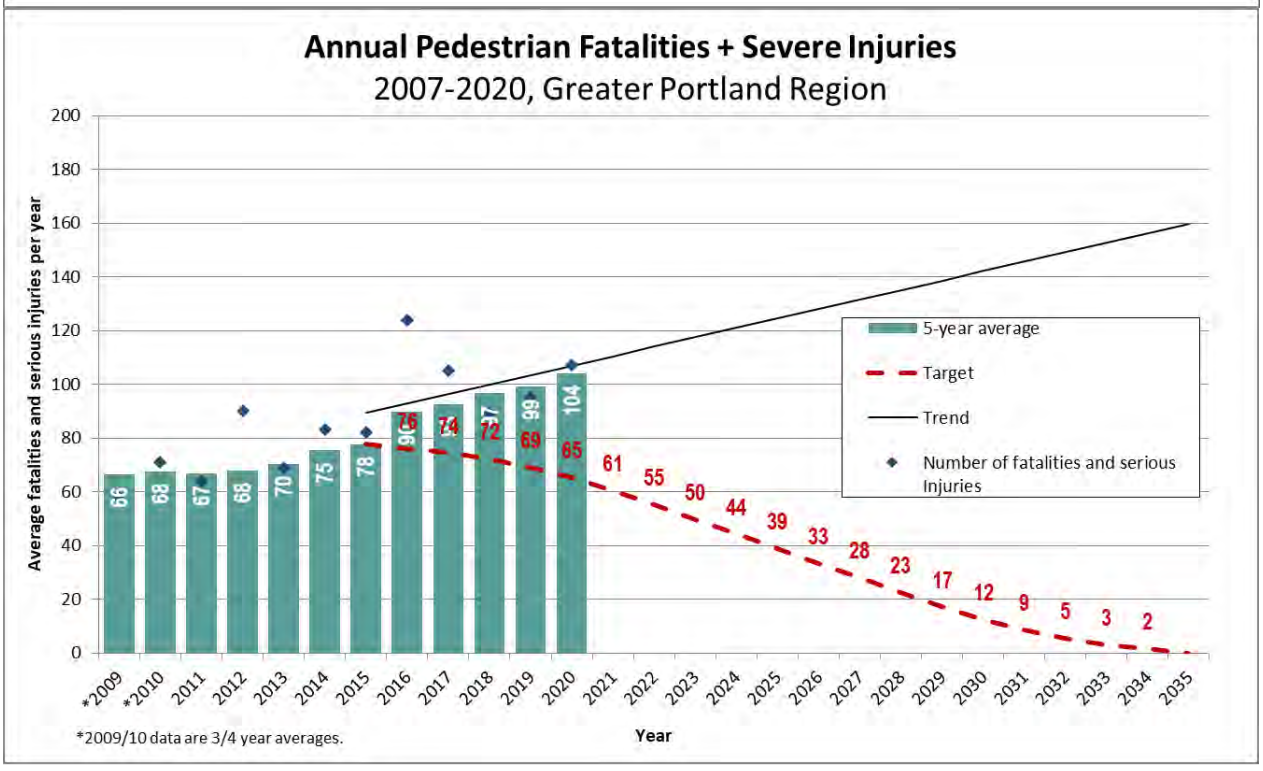
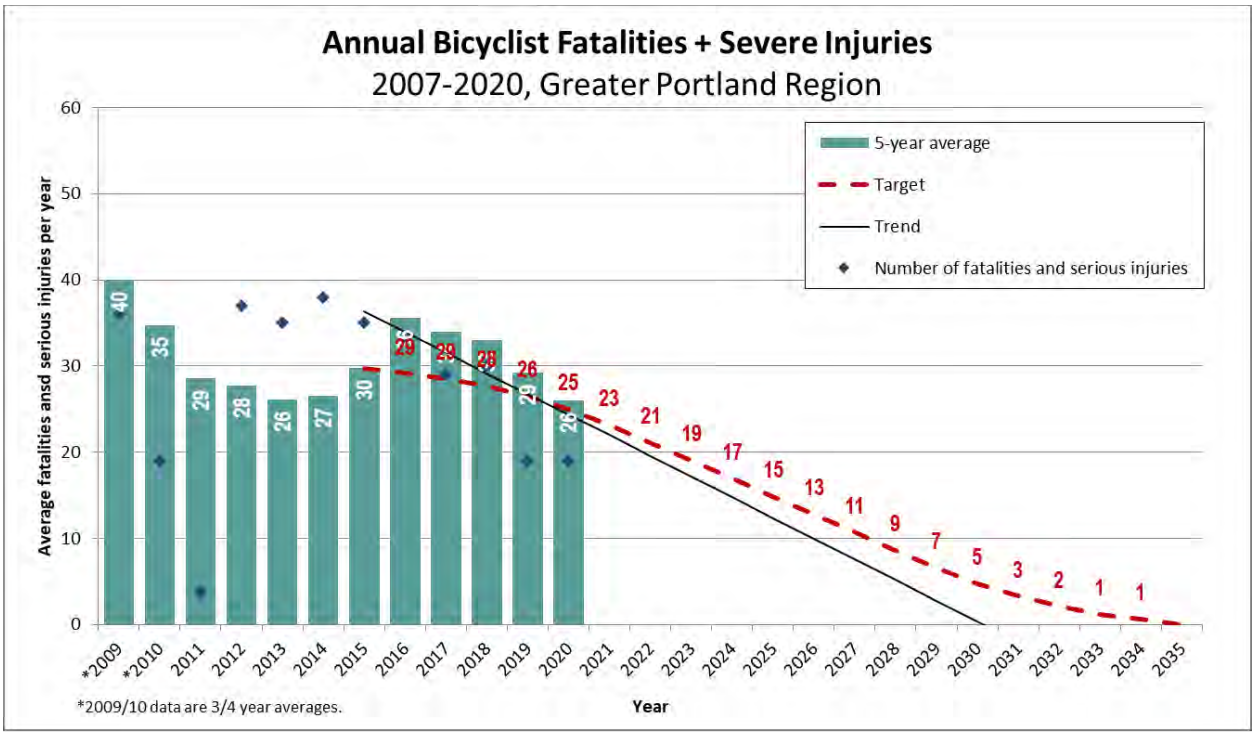
8

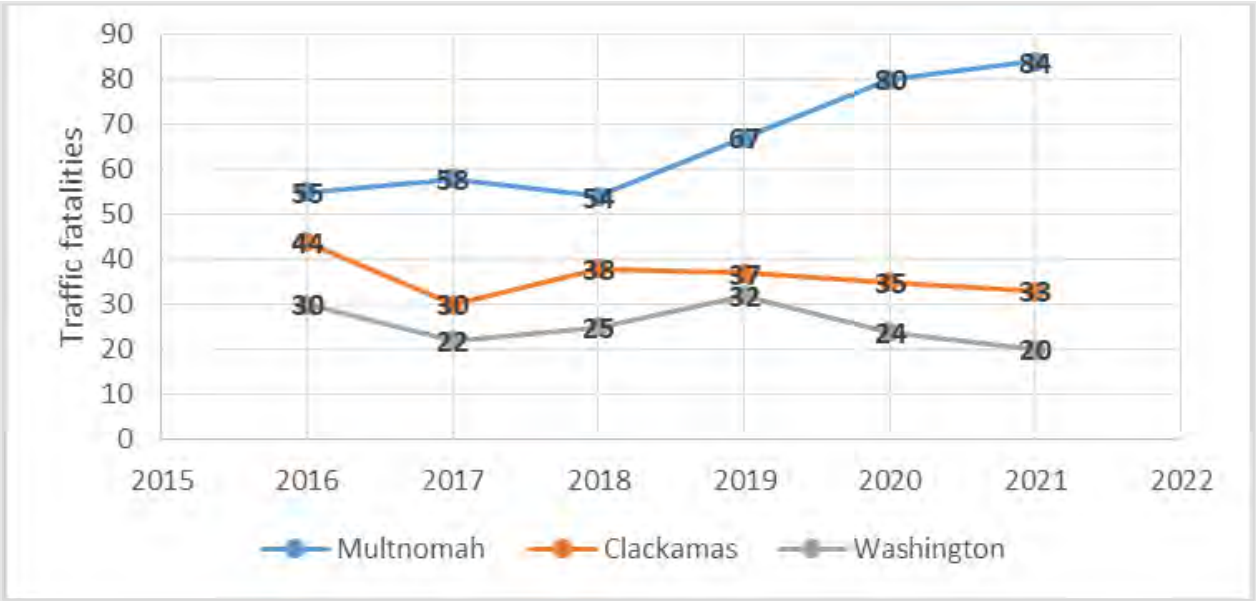

Annual Pedestrian Fatalities + Severe Injuries
2007-2020, Greater Portland Region
Average fatalities and serious injuries per year
Year
*2009/10 data are 3/4 year averages.
5-year average
Target
Trend
Number of fatalities and serious Injuries
66
68
67
68
70
75
78
90
74
72
69
65
61
55
50
44
39
33
28
23
17
12
9
5
3
2



Traffic fatalities in the Portland region have been increasing for users of all modes, except for people bicycling. Severe injury crashes are also increasing, though not as dramatically as fatal crashes.

As Figure 2 shows, the increase in regional fatalities is occurring in Multnomah County. Fatal crashes have remained relatively flat in Clackamas and Washington Counties. The fact that there are more crashes in Multnomah County than in Washington and Clackamas is not surprising; half of the passenger miles traveled in the region take place in Multnomah County, and higher travel volumes mean greater exposure to crashes, all other things being equal. However, the recent increase in fatalities in Multnomah County shown below is potentially concerning given that the proportion of travel occurring in Multnomah County does not appear to have increased during that same period. Local analysis is critical to understanding how local conditions, including traffic volumes, percent of people walking and bicycling, and other factors influence traffic safety.

Figure 2: Annual fatalities by county, 2016-2021 (ODOT preliminary fatal crash data)



Speed, alcohol, and/or drugs continue to be the most common contributing factors in severe and fatal crashes in the region. During 2016-2020, speed was involved in 35% of fatal and 16% of severe injury crashes, and alcohol or other drugs were involved in 38% of fatal and 14% of severe injury crashes. However, each crash captured in the data above is complex and involves multiple contributing factors and circumstances, including traffic exposure and built environment variables.

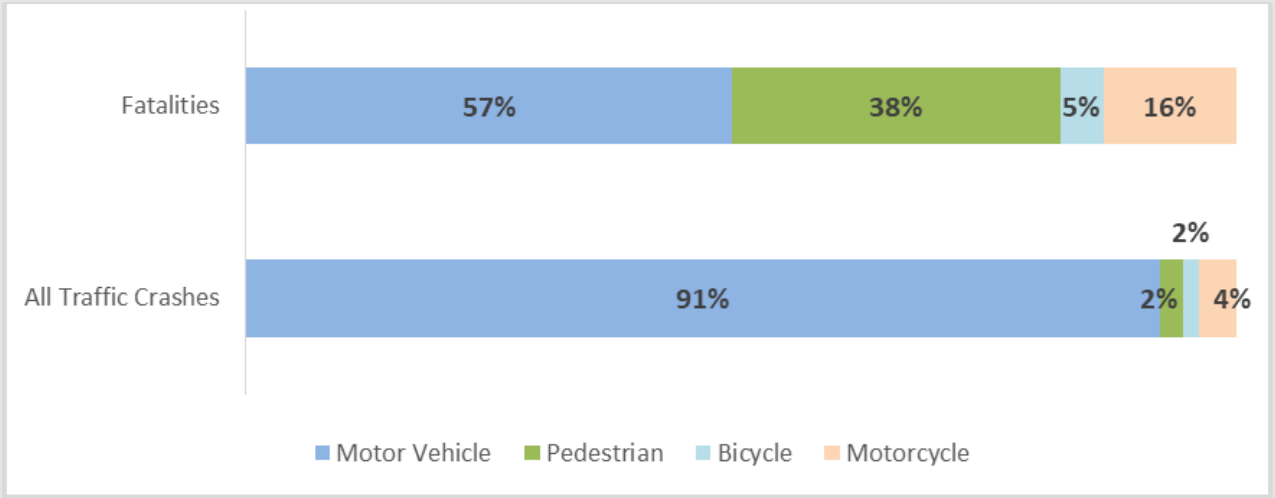
Preliminary analysis reveals many safety issues near the region's public elementary, middle and high schools. Within a mile buffer around the average school, there are 8.1 miles of dangerous streets and 38 of fatal, severe, or bicycle and pedestrian injury crashes. A quarter of the region's schools are surrounded by streets with mostly incomplete sidewalks.[5]

Analysis of crashes by mode

Crashes have different impacts on different users of the transportation system. In general, vehicle crashes are more frequent, because most people in the region drive for most of their trips, but crashes that involve people walking, and riding bicycles and motorcycles are more severe, because their bodies are more exposed. Figure 3 compares fatal crashes by mode to all crashes by mode.

[5] i.e., less than 50% of the sidewalks within one mile are complete. For the purposes of this analysis, a street with a sidewalk on either one or both sides counts as "complete."

Figure 3: All crashes and fatal crashes by mode, 2016-2020 (ODOT data, analyzed by Metro staff)



As this chart illustrates, traffic deaths disproportionately impact people who walk, bicycle and ride a motorcycle. Pedestrians experience the most disproportionate impact. Auto-only crashes comprise 91% of all crashes and 57% of all fatal crashes, whereas pedestrian crashes make up 2% of all crashes and 38% of all fatal crashes. In other words, pedestrians who are involved in a crash are much more likely to die – 26 times more likely – than non-pedestrians. Pedestrian traffic deaths are steadily increasing, are the most common type of fatal crash, and have the highest severity of any crash type. This trend is being seen across the country and is attributed in part to vehicles getting larger over the years. Designing safe streets, particularly on arterials, is critical to pedestrian safety. Seventy-seven percent of serious pedestrian crashes occur on arterials.

Analysis of crashes by Equity Focus Areas and race

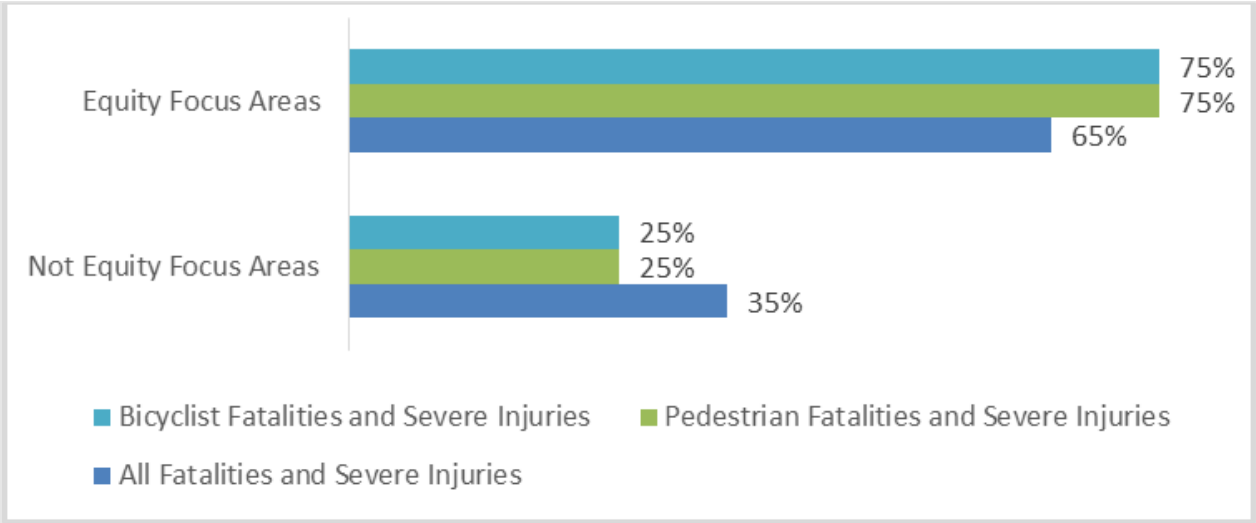
Metro analyzed crash data from the Fatality Analysis Reporting System (FARS), which includes race and ethnicity for traffic fatalities,[6] to assess the impact of fatal crashes on different populations in Multnomah, Washington, and Clackamas counties. Normalizing by population, Black, American Indian and Alaska Native people experience double or nearly double the number of traffic fatalities that other groups experience. This finding is consistent with analysis conducted by ODOT in 2019.[7]

[6] FARS is a nationwide census providing yearly data regarding fatal injuries suffered in motor vehicle traffic crashes. https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars

[7] Josh Roll, Nathan McNeil, Race and income disparities in pedestrian injuries: Factors influencing pedestrian safety inequity, Transportation Research Part D: Transport and Environment, Volume 107, 2022, 103294, ISSN 1361-9209, https://www.sciencedirect.com/science/article/pii/S1361920922001225. This study employs an ecological analysis to explore pedestrian safety disparities in Oregon, incorporating crash data, roadway and land use factors, and sociodemographic data. Lower median income and higher proportions of BIPOC residents are found to be associated with more pedestrian injuries. These variables may be proxies for other traffic exposure and deficient built environment variables, which may reflect a lack of historic investment in the neighborhoods where these populations are concentrated.

As Figure 4 shows, three quarters of serious pedestrian and bicycle crashes and 65% of all serious crashes occur in Equity Focus Areas (see the Equity section below for information on these areas). Addressing safety in these areas is critical to making the entire transportation system safer and more equitable.

Figure 4: Percent of average annual traffic fatalities and severe injuries in Equity Focus Areas, 2016-2021 (ODOT crash data, analyzed by Metro staff)



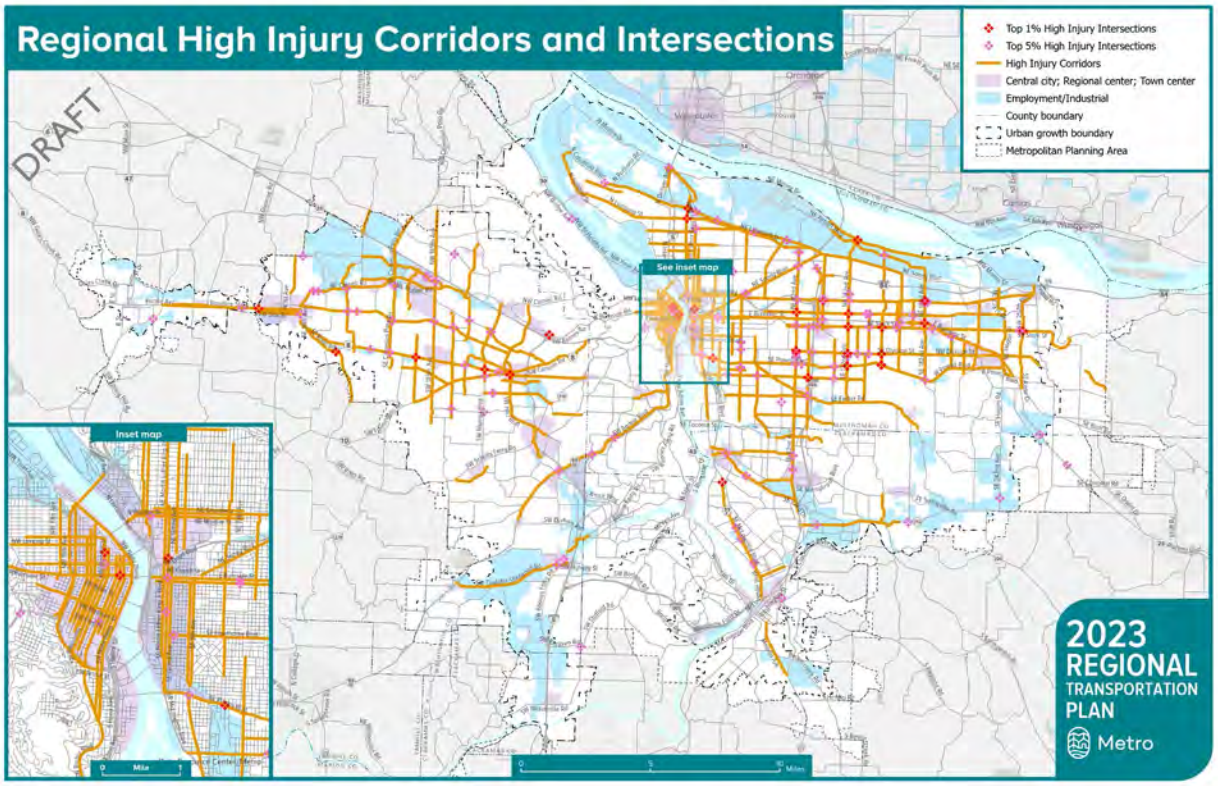
High Injury Corridors

A majority of the serious and fatal crashes in the region, as well as the crashes that involve vulnerable users, [8] consistently occur on a small number of roads. Metro focuses its analysis on High Injury Corridors, which are the corridors where 60 percent of these crashes occur, and High Injury Intersections, which are the five percent of intersections with the highest rates of these crashes.

Figure 5 shows an updated map of High Injury Corridors (orange lines) and Intersections (those that are in the top five percent for severe injury rates are marked in pink; those that are in the top one percent are marked in red). There is a high level of overlap between the updated High Injury Corridors and those identified in the 2018 RTP. This map can be accessed and explored online here: https://gis.oregonmetro.gov/high-injury-corridors.

[8] When defining High Injury Corridors and Intersections, Metro accounts for pedestrian and bicycle injuries, which are particularly likely to be severe because these travelers' bodies are exposed to traffic. Fatal and severe injury crashes are given a weight of ten and other injury crashes for pedestrians and bicyclists are given a weight of three. Pedestrian and bicycle involved crashes are less frequent, but compared to vehicular crashes, they are significantly more likely to result in death or serious injury (this is true for motorcycle crashes as well, hence the need for consideration of separating out these crashes in future analysis). This weighting factor reflects the higher degree of risk involved in bicycle and pedestrian crashes. Metro's methodology provides a high-level, planning level analysis that compares all roads in the region, appropriate for identifying and prioritizing needs at the regional scale. Supplemental local analysis, including identification of safety corridors at the county and city geography, should also be used to identify needs and priorities in the RTP.

Figure 5: 2023 RTP High Injury Corridors and Intersections, 2016-2020 (ODOT crash data analyzed by Metro staff)



The RTP recommends the use of proven safety countermeasures[9] to address High Injury Corridors and Intersections and locally identified safety needs. Local safety action plans describe in detail the projects that are needed to resolve safety issues at these locations and others identified by partner agencies.

Equity: draft needs assessment

The RTP directs Metro and its agency partners to "Prioritize transportation investments that eliminate transportation-related disparities and barriers for historically marginalized communities, with a focus on communities of color and people with low incomes." Through extensive outreach, Metro has heard that these communities need fast, frequent, affordable. and reliable transit connections to key destinations and safer walking and biking infrastructure. This memorandum evaluates equity through that lens and finds:

- The Portland region continues to grow more racially and ethnically diverse.
- The region is aging. The share of people 65 and older is growing while all other age groups are declining. However, people under 44 will continue to be in the majority.
- The COVID-19 impact had particularly severe and long-lasting impacts on people of color and workers with low incomes.
- Regional transportation agencies can advance equity by investing in transit service and safe biking and walking infrastructure in Equity Focus Areas (EFAs), which are

[9] The Safety Division of the FHWA provides information on proven safety countermeasures at https://safety.fhwa.dot.gov/provencountermeasures/

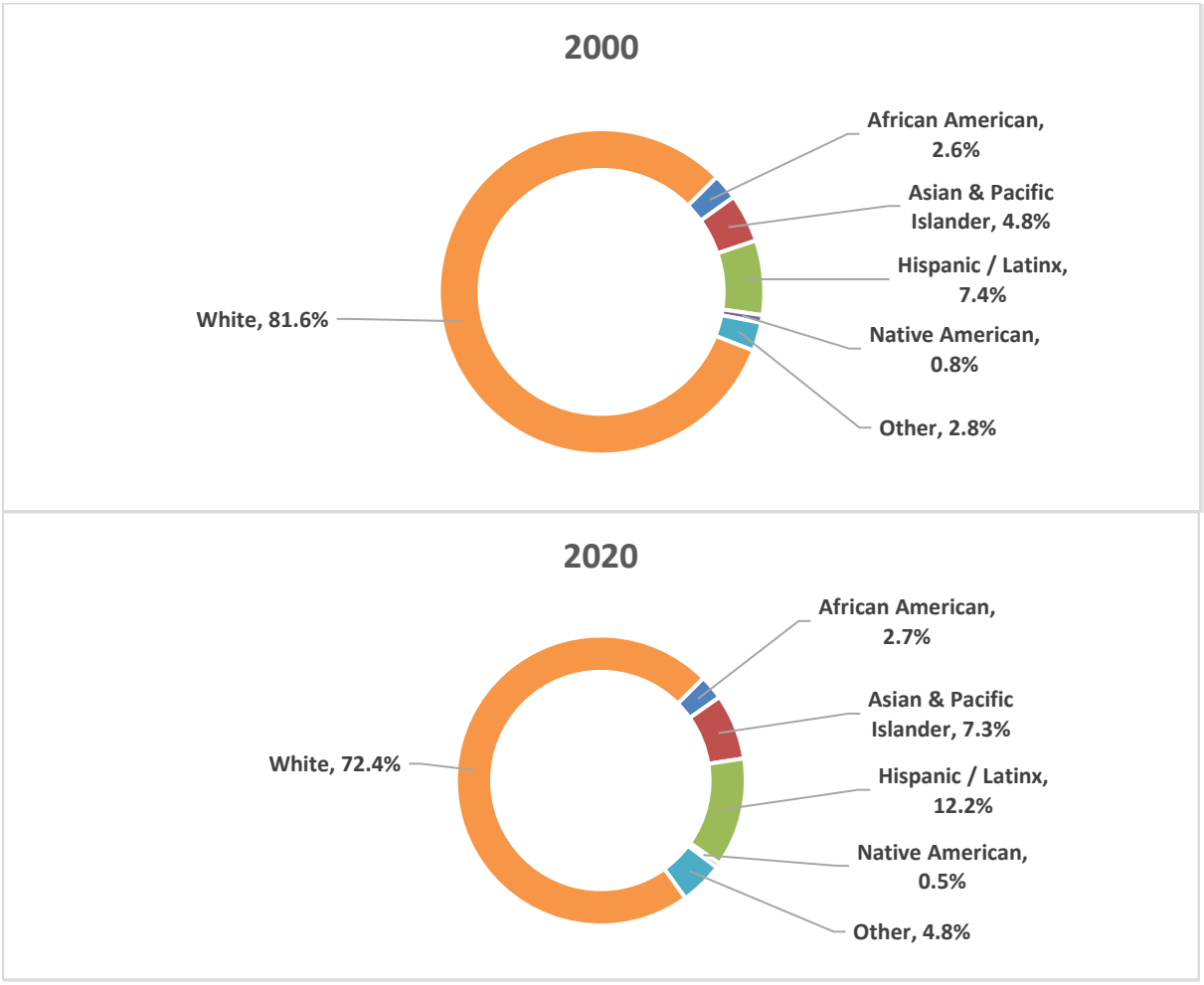
communities with concentrations of people of color, people with low incomes, and people with limited English proficiency.

- The region has made significant progress in improving transit service and bike/ped infrastructure in EFAs, but not enough to address deep-seated inequities. Transit still offers much less access to destinations than driving does, and serious crashes are still concentrated in EFAs.

Recent demographic and economic changes

People of color make up an increasing share of the regional population. The share of residents who identify as people of color has been increasing steadily over the past several decades; from under one percent in 1960 to 28 percent in 2020. Figure 6 shows how the racial and ethnic makeup of the region's population changed between 2000 and 2020.

Figure 6: Population by race and ethnicity in the Portland region and surrounding counties,[10] 2000 and 2020 (U.S. Census)

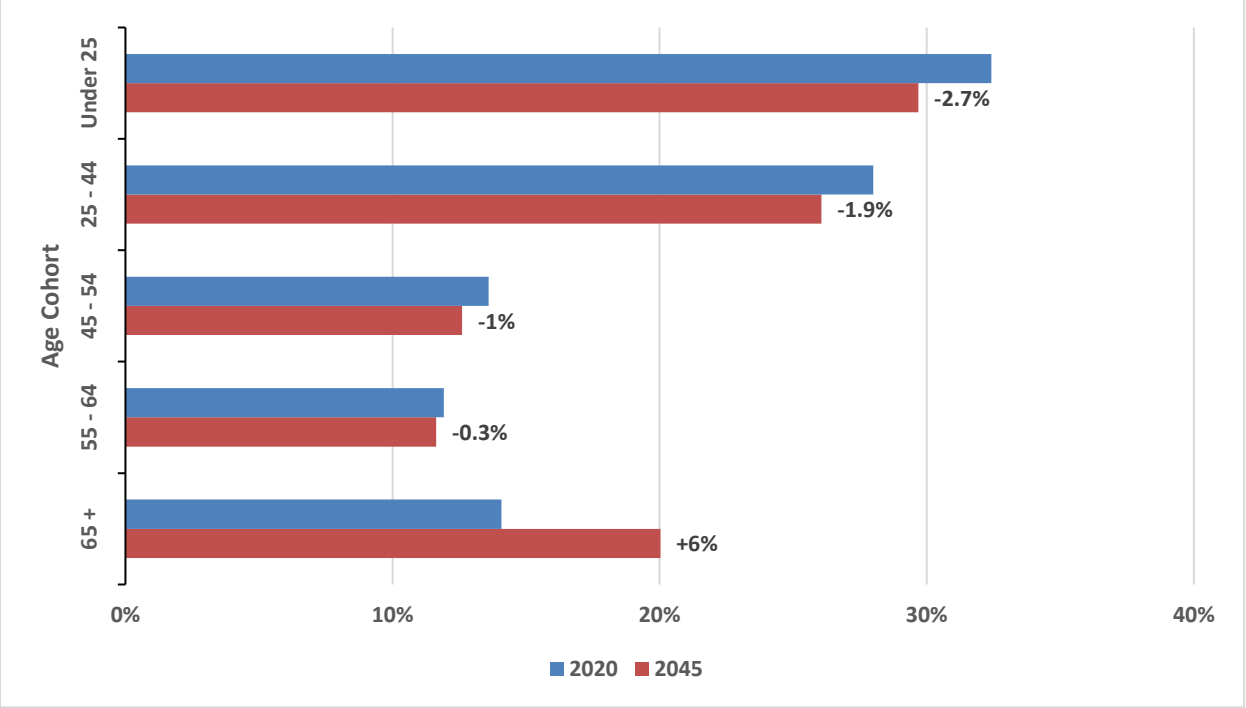


[10] For consistency with regional and state population forecasts, Metro uses a broader 7-county region (Clackamas, Clark, Columbia, Multnomah, Skamania, Washington, and Yamhill counties) in its demographic data.

Over the 20-year time span captured in the figure above, the share of regional residents who identify as people of color grew from 18 percent to percent. This change was driven primarily by growth among two groups: Hispanics / Latinos and Asian and Pacific Islanders, as well as an increasing number of people who identify as "other."[11]

Figure 7 shows Metro's forecasts for how the share of population in different age groups will change between 2020 and 2040.

Figure 7: Current and forecasted population by age cohort in the 7-county Greater Portland region, 2020 and 2045 (Metroscope)



Just like the national population, our region's population is aging, and the share of people over 65 is projected to grow by 5 percent, while shares of all other age groups are declining. However, the two youngest age groups – people under 25 and people 25 to 44 – are projected to remain the two largest age groups in the region. By 2040, close to 50% of the region's population will either be young adults under 25 and older adults over 65. Though these two groups have very different transportation needs, they also have some important similarities – lower rates of commuting by auto, high proportions of people who cannot drive due to age or disability, and lower participation in the labor force, which means that their travel patterns are less likely to be driven by the commute.[12]

[11] The Census Bureau, which collects this data, has been allowing an increasing number of options for people to classify themselves as members of two or more races, as well as to differentiate better among different races and ethnicities that the Census used to treat as a single category. For the purpose of comparing data from 2020 with data from 2000, we use similar race/ethnicity categories as were used in 2000 – combining Asian people and Pacific Islanders in spite of the fact that the Census Bureau now differentiates between the two, and including people who identify as being part of two or more races in the "other" category.
[12] https://www.census.gov/content/dam/Census/library/publications/2020/acs/acs-45.pdf

Underlying inequities in housing and employment

The 2018 RTP undertook a wide-ranging review of data and research on equity, both nationally and in the Portland region, and highlighted several inequities in different marginalized groups' access to housing, jobs, and other essential needs:

- People with low incomes and most people of color (with the exception of Asian people) and people with low incomes are significantly less likely to own a home than white people.
- People of color are being displaced to areas of the region that lack good access to transportation options, jobs, and other important destinations.
- People of color and people with low incomes can access fewer jobs within a typical commute distance than white people.

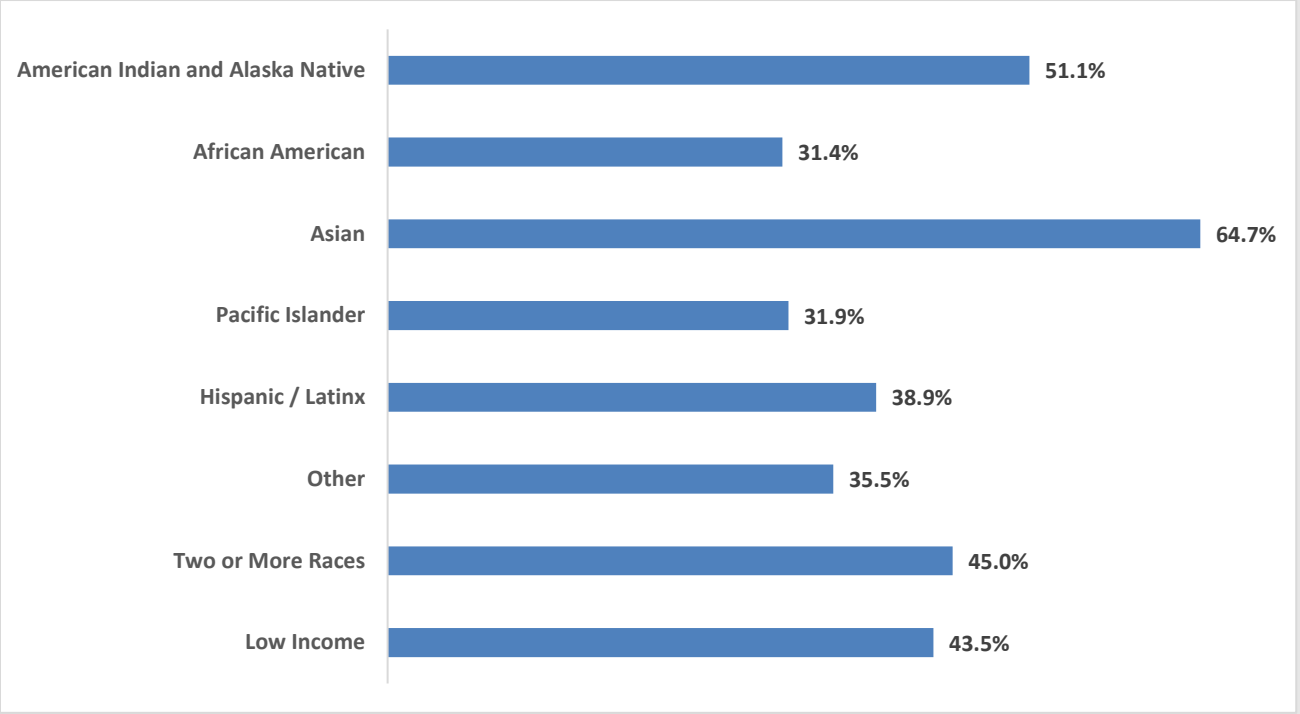
Metro's Emerging Trends Study[13] reviewed the equity impacts of the COVID-19 pandemic and other recent disruptions, and found evidence that recent events had exacerbated these inequities, as well as others having to do with education, personal safety and health, including the following:

- Black and Latino Americans were twice as likely to be hospitalized and thrice as likely to die due to COVID as White Americans.
- Latinos are 11% of the population in Multnomah, Washington, and Clackamas Counties, but accounted for 22% of COVID cases.
- Low-income students experienced 80% greater learning loss due to the pandemic than the average student.
- Only 44% of lower-income Americans say that they can work from home, vs. 76% of upper-income Americans.

Significant inequities in access to jobs and housing persist. For example, Figure 8, which shows homeownership by race and income in the Portland region, demonstrates that homeownership rates are still much lower for most non-White racial and ethnic groups and for households with low incomes than they are for White people.

[13] https://www.oregonmetro.gov/public-projects/2023-regional-transportation-plan/research

Figure 8: Homeownership rates by race and income for Multnomah, Washington and Clackamas Counties, 2020 (American Community Survey)



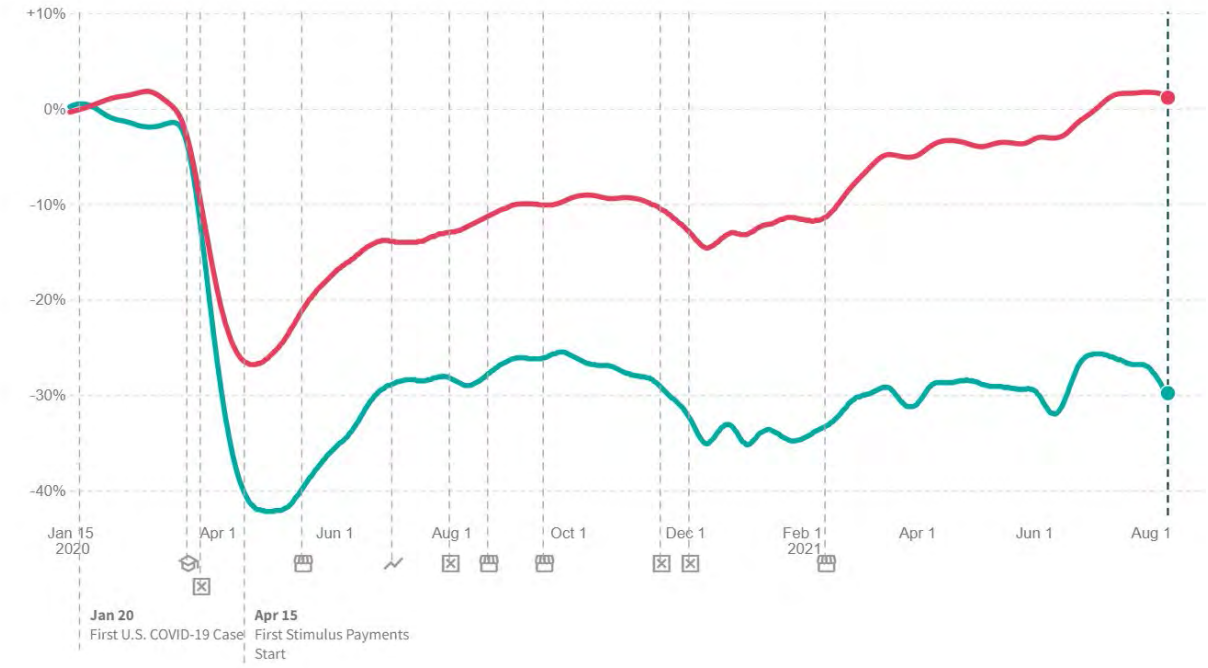
Public agencies are working to address these disparities by creating more affordable housing, supported by a regional affordable housing bond measure, which was passed by voters in 2018. The bond aims to fund the construction of 3,900 designated affordable housing units across the region, with a focus on providing homes for people of color. Though the bond measure represents significant progress in building affordable housing, it only provides a small portion of the roughly 48,000 units in the region that Metro estimates are necessary to meet the region's needs.

Homeownership rates can affect how communities respond to the transportation projects that are the focus of the RTP. Some transportation projects – in particular, new light rail lines and bicycle/pedestrian trails – can potentially increase the value of adjacent properties. This benefits homeowners who live nearby, but it can create higher housing costs and displacement risks for people who rent. This means the groups shown as having low homeownership rates in Figure 8 are more likely to see new transportation investments as threatening their ability to remain in their communities.

The inequities created by the COVID-19 pandemic become very visible when comparing employment patterns for low-income and high-income workers. Overall, the U.S. experienced historically high levels of unemployment in summer 2020, immediately following the onset of the COVID-19 pandemic. By Spring 2022, the overall unemployment rate had fallen to levels that could be considered low even by pre-pandemic standards. However, this broad trend masks significant differences in the employment rate between workers with lower incomes and those with higher incomes. Figure 9 shows

unemployment rates over the past three years for both workers who more than the median wage and workers who earn less.

Figure 9: Regional employment rates for workers earning above and below the median wage (indexed to January 2020) January 2020 – August 2021 (Earnin, Intuit, Kronos and Paychex data, analyzed by Cambridge Systematics for the Commodities Movement Study)



As of August 2021, the employment rate for workers in the Portland region who earned above the median wage had increased by 1.2 percent over pre-pandemic (January 2020) levels, whereas the employment rate for workers earning below the median wage fell by 29.8 percent. In other words, the pandemic opened up a 30-point employment gap between workers earning above the median and workers earning below the median wage (approximately $30 per hr, or $60,000 per year).

Equity Focus Areas

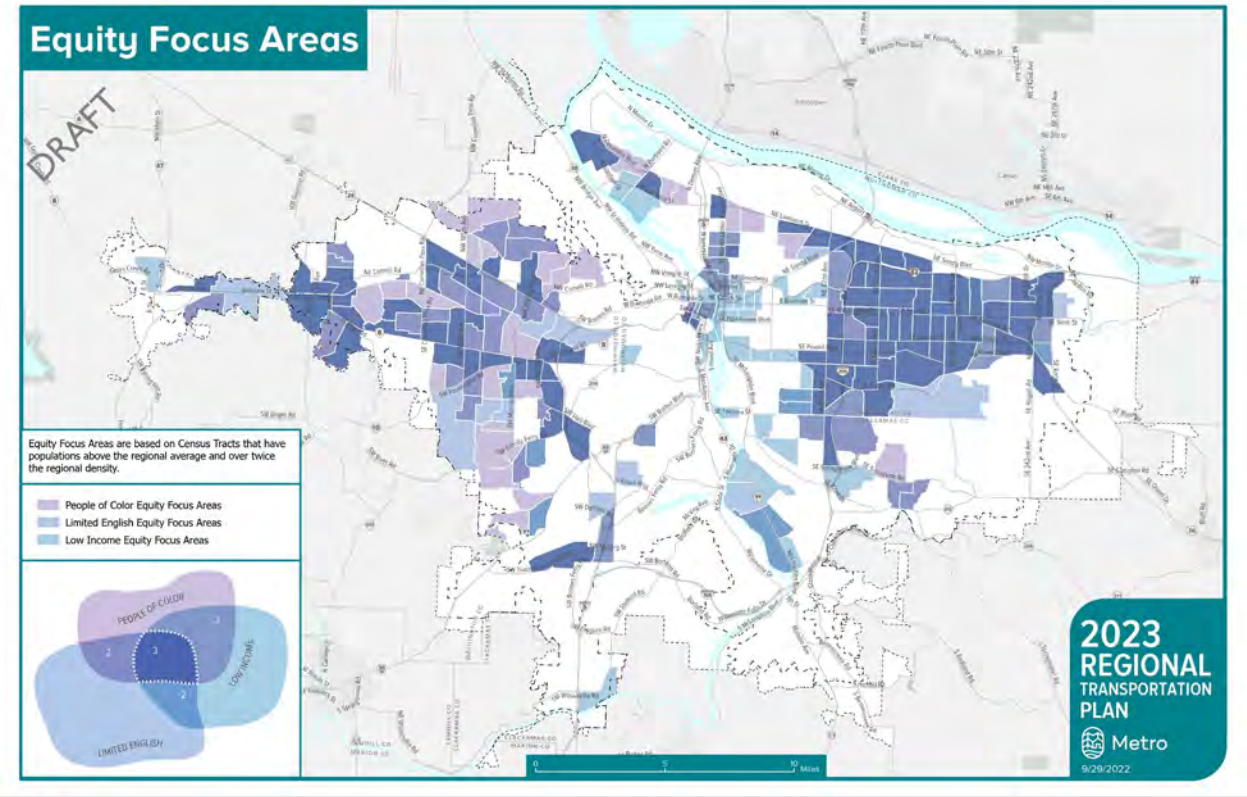
The currently adopted RTP policies direct Metro and its transportation agency partners to "Prioritize transportation investments that eliminate transportation-related disparities and barriers for historically marginalized communities, with a focus on communities of color and people with low incomes." The 2018 RTP update engaged a Transportation Equity Working Group to help Metro staff update the RTP equity analyses.[14] After testing different ways of mapping where marginalized communities in the region live based on a variety of different methods and data, this working group concluded that the RTP equity analyses should focus on the communities with the highest densities of people of color, people with low incomes, and people with limited English proficiency. Equity Focus Areas were designed to guide transportation plans toward focusing on communities with the greatest

[14] See Appendix E of the 2018 RTP: https://www.oregonmetro.gov/sites/default/files/2018/06/29/RTP-Appendix_E_2018_RTP_Transportation_Equity_Evaluation_with_attachments.pdf.

needs, and to benefit as many people in need as possible, while accounting for regional growth and change.

Figure 10 shows the draft update to the Equity Focus Areas for use in the 2023 RTP, including which of the three populations included in the definition of EFAs are concentrated within each EFA, and uses shading to illustrate how these different populations overlap with each other. These EFAs are based on 2016-20 American Community Survey data (for income and English proficiency) and 2020 Census data (for race). Appendix C provides more detail on the data sources and calculations used to create and update EFAs.

Figure 10: 2023 RTP Equity Focus Areas, (Census and American Community Survey data, 2016-2020)



EFAs are located throughout the region, and there are large concentrations of all three EFA populations in East Portland and Multnomah County and along Tualatin Valley Highway in Washington County. These are largely the same areas that were highlighted during the 2018 RTP equity analysis.[15] Directing transportation investments – particularly projects designed to meet the needs of the people they serve – toward the EFAs that are highlighted above helps to meet this goal.

[15] See the Needs Assessment memo that was shared with TPAC as part of the July 13 meeting packet (beginning p. 14) for further discussion of how and why Equity Focus Areas changed as they were updated.

Transportation Needs in Equity Focus Areas

The equity policies adopted in the 2018 RTP direct Metro and partner agencies to both learn more about marginalized people's transportation needs[16] and also to act on what they learn.[17] Since the 2018 RTP update, Metro has conducted extensive outreach to people of color, people with low incomes, and other marginalized people to better understand their transportation needs through the development of the 2020 regional transportation funding measure, the Regional Mobility Policy update, and other processes.[18] Metro has consistently heard that these communities need safer and more accessible travel options – specifically better transit service and safer streets for bicycling and walking, including:

- More fast, frequent and reliable transit service for all types of trips (including at off-peak travel times)
- More affordable transit that connects people to the places and things they need to thrive.
- Better conditions for walking and biking, including adequate street lighting, protected crossings and crossing signals, particularly to improve access to transit.
- Connected and separated walking and biking infrastructure.

Transit needs

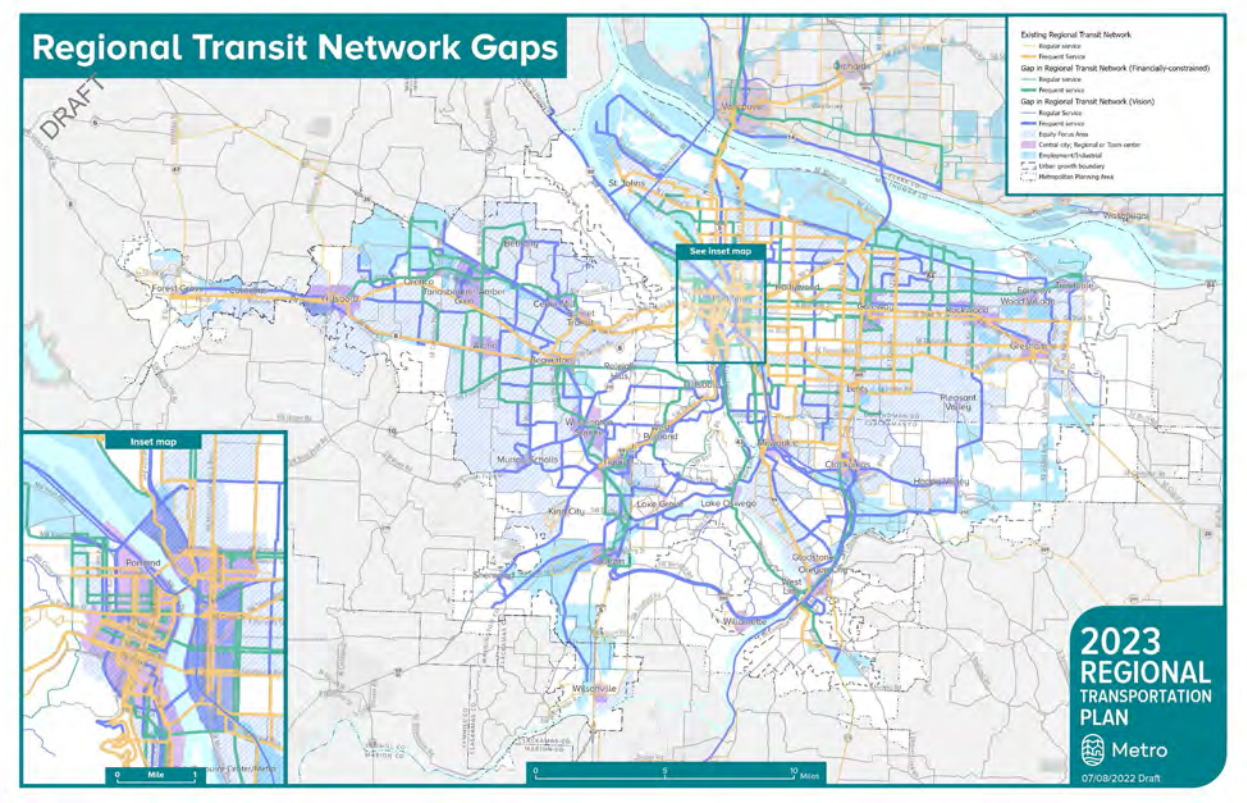
Figure 11, which is discussed in more detail in the following section on Mobility and Climate, shows where gaps in the regional transit network are located. These gaps show places where planned transit has not yet been built. The map differentiates between gaps in frequent (thick lines) and regular (thin lines) transit service, and between gaps in service that are based on the financially constrained network (i.e., gaps that the region currently has identified funding to complete, shown in green) and those that are based on the network vision (i.e., gaps that the region has not yet identified funding to complete, shown in purple). It overlays these gaps with Equity Focus Areas, which are shown in violet cross-hatching.

[16] Policy 5: "Use engagement and other methods to collect and assess data to understand the transportation-related disparities, barriers, needs and priorities of communities of color, people with low income and other historically marginalized communities."

[17] Policy 3: "Prioritize transportation investments that eliminate transportation-related disparities and barriers for historically marginalized communities, with a focus on communities of color and people with low income."

[18] https://www.oregonmetro.gov/sites/default/files/2020/11/10/Historically-marginalized-communities-transportation-priorities-summary.pdf

Figure 11: Regional transit network gaps (2018 RTP networks, partner agency data)

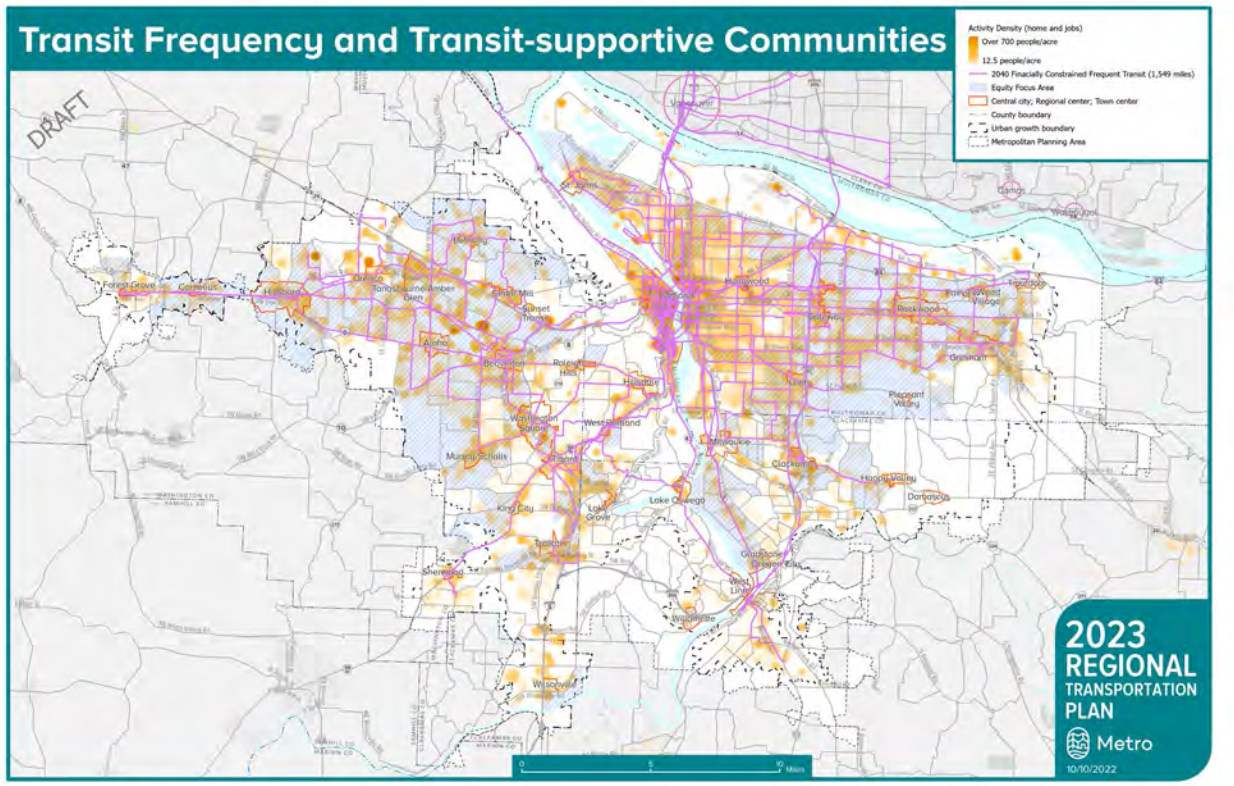


There are many places where transportation agencies have planned to deliver the frequent transit that EFA residents say they need, but where those projects are not being implemented – i.e., where the thick green and purple lines shown in the figure above overlap with the Equity Focus Areas. Completing these transit investments – particularly those shown in green, which can be built with available funds – would address pressing equity needs while also advancing mobility and climate outcomes.

Figure 12 below takes a different view of the transit system. Instead of using planned transit lines as a basis for identifying needs, Figure 12 highlights communities that have the densities necessary to support frequent transit[19] (orange) and compares their location with current frequent transit service (i.e., lines with peak headways of 15 minutes, shown in purple). It shows EFAs in light blue cross-hatching.

[19] The High Capacity Transit and Regional Transit Strategies specify a threshold of 5 households or 15 jobs per acre for communities served by frequent transit. In order to map both jobs and housing at the same scale, Figure 25 combines jobs and housing into a single measure of activity density (jobs plus residents per acre) and uses a threshold of 12.5 jobs and/or residents per acre to identify communities that support frequent transit. The average household in the region includes 2.5 people, so 5 households per acre is equivalent to 12.5 residents per acre.

Figure 12: Map of high-frequency transit (headways of less than 15 minutes) and transit-supportive communities (12.5 or more people and/or jobs per acre), 2020 (Metro travel model and distributed growth forecast)



People living within EFAs have said that they need better transit connections between their communities and their destinations. If these connections were in place, the map above would likely show purple lines connecting most of the orange/red clusters of high density within the light blue EFAs. This is the case in much of the east side of the region – though there are notable gaps on several north/south corridors – but not as much in EFAs on the west side of the region. This is in part because the built environment in East Portland and Multnomah County has many transit-supportive characteristics, such as a well-connected grid of arterials and relatively high-density residential areas. TriMet is currently working to reallocate service more equitably throughout the region. There may be further opportunities in the long term to better configure the transit network to benefit current and prospective transit riders who live in EFAs.

In addition to identifying where there are needs and opportunities to provide more equitable transit service, the RTP also examines whether the transit system provides the convenient and useful connections that EFA residents have asked for. During the 2018 RTP, the transportation equity working group identified access to jobs and community services as key transit equity performance measures, and community feedback received since then continues to emphasize the importance of improving transit connections between EFAs and residents' destinations. Measuring how many destinations a traveler can access within a given travel time via different modes has been established as a best practice for understanding and comparing how useful different modes are for different groups of

people. The RTP examines access to destinations in order to answer two questions about transit equity.

- **Does the transit system provide equitable service to marginalized people?** If so, people living in Equity Focus Areas should be able to reach the same number of other jobs (or more) as people living in other communities. This would mean that the transit system generally as useful (or more useful) for people living in EFAs than it is for other people.
- **Is transit a competitive alternative to driving?** The community feedback above clearly emphasizes the importance of transit to people of color and people with low incomes, and extensive research and data demonstrates that these people are generally more likely to rely on transit. It follows that an equitable transportation system is one in which people who travel by transit are not faced with longer, less convenient trips than people who drive – in other words, that people should be able to reach the same number of jobs (or more) via transit as they should via automobile in the same travel time. This is a more challenging goal to meet than simply providing equitable transit service to EFAs, because as described in the Mobility and Climate section, there has been significantly more progress in building out the motor vehicle network than in building out the transit network. Meeting this goal would also have far-reaching benefits – not just for equity, but for the region's mobility and climate goals, which depend on significantly increasing transit use.

Table 2 compares access to jobs between modes (transit versus auto), community types (EFAs vs. non-EFAs) and time periods (rush hour vs. non-rush-hour) for the RTP base year of 2020. Jobs are commonly used as a proxy for all destinations in regional-scale accessibility analyses. This is both because many common destinations such as grocery stores, medical offices, and schools are also places of employment, and because regional-scale analysis is often better suited to analyze large-scale trends and disparities in accessibility rather than examine access to specific destinations in detail.[20] This analysis uses a 45-minute travel time to measure transit access and 30-minute travel times to measure automobile access, which accounts for the time needed for people to walk between their origins/destination and their car/transit stop and transfer between different transit routes, etc. These travel times were recommended by the 2018 Transportation Equity Working Group to account for the fact that transit trips typically require more time transfer time and walking time to/from the vehicle than automobile trips do.

[20] https://ssti.us/wp-content/uploads/sites/1303/2020/12/Measuring-Accessibility-Final.pdf

Table 2: Percent of jobs accessible by driving and by transit, by community type and time of day, 2020 (Metro travel model and land use data)

	Percent of jobs accessible within…	
	… a 30-minute drive	**…a 45-minute transit trip**
During rush hour		
Average for EFAs	42%	8%
Average for non-EFAs	42%	6%
Average for the region	43%	7%
Outside of rush hour		
Average for EFAs	52%	7%
Average for non-EFAs	50%	5%
Average for the region	50%	6%

The results above show that people living in EFAs enjoy significantly better access to destinations via transit (and to a lesser extent, via driving) than people living in other communities. This is likely because many communities of color and of the region's naturally occurring affordable housing stock are located in regional centers that have long been key points in the transit network, but it also reflects more recent efforts by transit agencies to focus on serving marginalized communities even as these communities relocate within the region. Even though transit service appears to be equitably allocated between EFAs and other communities, Table 2 also shows the extent to which driving offers better access than taking transit does. Across all communities and all times of day, people can reach five to ten times as many destinations by auto as they can by driving. Though the Portland region has an extensive transit system relative to many other Metro areas, significant parts of the region are not served by transit and (as shown in Figure 12 above) do not have the land uses necessary to support frequent transit. Extending and improving transit service can help improve transit access to destinations, and land use changes that create clusters of activity that support high-quality transit can also make a big difference. Regional partners are currently working to update transit networks to better connect people with destinations, and partners will have the opportunity to make important land use changes when Metro works with stakeholders to update the 2040 Growth Concept after the RTP is adopted.

It is important to note that the results shown above do not reflect the service cuts that transit agencies made during the pandemic and that have continued due to challenges hiring drivers, nor do they reflect ongoing efforts to update the transit network to better serve the region.[21] Given that agencies made efforts to maintain service on routes that people of color and people with low incomes rely on, these cuts are not expected to deepen inequities in transit service for EFAs. However, these cuts do likely mean that Table 2 may overestimate the share of jobs that are currently accessible by transit in general. Transit agencies are working to restore service lost during the pandemic.

[21] https://trimet.org/forward/

During the 2018 RTP update, the transportation equity working group recommended focusing on analyzing access to specific types of destinations – jobs, particularly those that are well-suited for people of color and workers with low incomes, and community places such as grocery stores, libraries, schools, medical offices, and community services. Metro tested measures of access to jobs by income and to community places and found the same patterns in access to these destinations as for access to all destinations.

Bicycle and pedestrian needs

Other than the need for better transit service for EFAs, the main need that people of color and people with low incomes have expressed in Metro's outreach is the need for safer and more convenient walking and biking facilities, particularly near transit stations. Bicycle and pedestrian gaps are mapped in the following section on Mobility and Climate, and these maps show which gaps are located in EFAs. Table 3 summarizes how complete the bicycle, pedestrian and transit networks are (including bicycle and pedestrian facilities near transit) in EFAs versus in other areas.

Table 3: Pedestrian, bicycle and trail network completion for EFAs and non-EFAs (2018 RTP networks and current partner agency data)

	Percent of the network that is complete…		
Network	**In EFAs**	**In non-EFAs**	**Total**
Pedestrian network	72%	43%	58%
Pedestrian network near transit[22]	76%	53%	65%
Bicycle network	61%	49%	54%
Bicycle network near transit[22]	65%	56%	60%
Trail network	45%	42%	43%
Trail network near transit[22]	51%	50%	51%

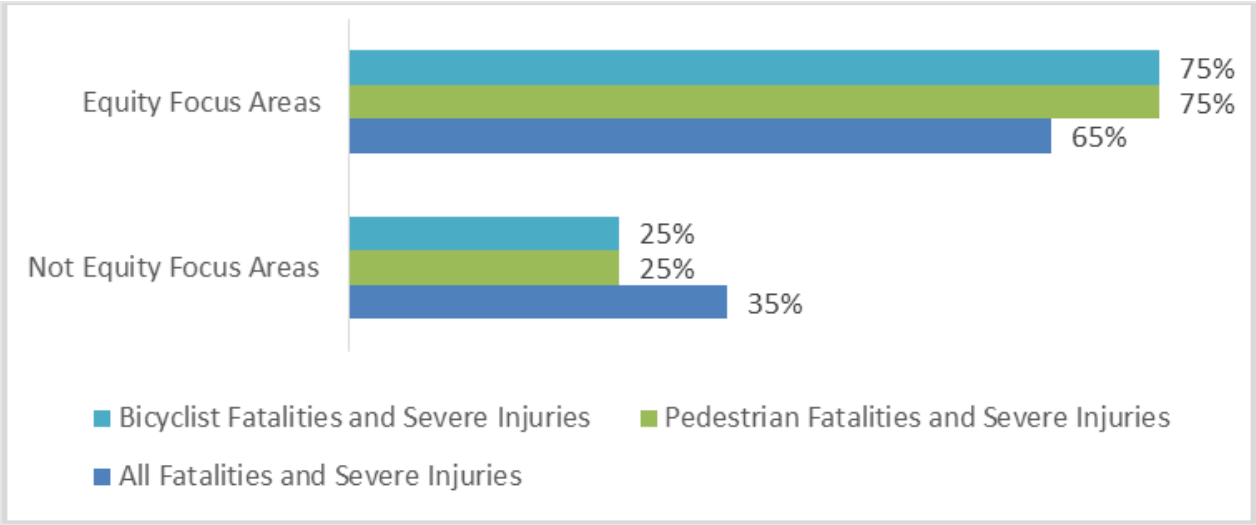
The region has made more progress completing the active transportation network, and also in providing bicycle and pedestrian connections to transit, in EFAs than in other communities. However, significant portions of the network still need to be completed for everyone in the region to benefit from high-quality walking and biking connections. The results above also reflect slow but steady progress in building out the region's active transportation network. The pedestrian and bicycle networks, both region-wide and in EFAs, are 3% more complete than they were when Metro last conducted for 2015, and the trail network is 6% more complete.

The RTP's goal is to eliminate severe and fatal crashes. As discussed in the Safety section above, most of these crashes – particularly those that involve pedestrians – have taken place in communities where people of color and low-income people are concentrated. Normalizing by population, Black, American Indian and Alaska Native people experience double or nearly double the number of traffic fatalities that other groups experience. And

[22] Research has shown that people are willing to travel further to access high-quality, frequent transit than they are normal bus service. The transit access analysis for the 2018 RTP used different travelsheds to examine access to different types of transit: ½ mile for light rail, 1/3 mile for streetcar, and ¼ mile for bus. This analysis uses these same travelsheds to identify bicycle and pedestrian facilities near transit.

as Figure 18 shows, three quarters of serious pedestrian and bicycle crashes and 65% of all serious crashes occur in Equity Focus Areas. Addressing safety in these areas is critical to making the entire transportation system safer and more equitable.

Figure 13: Percent of average annual traffic fatalities and severe injuries in Equity Focus Areas, 2016-2021 (ODOT crash data, analyzed by Metro staff)



Though bicycle and pedestrian infrastructure is generally equitably distributed – in fact, the region has a slightly better track record of completing planned infrastructure in EFAs than in other communities – a higher percent of pedestrian crashes are still occurring in EFAs. One explanation for this is that other factors besides the presence of bicycle and pedestrian infrastructure the presence of trails, sidewalks and bicycle infrastructure described above helps reduce crashes for vulnerable users, but other factors, such as the design and posted speed of travel lanes, also influence the overall safety of streets.

Mobility and Climate: draft needs assessment

The 2023 RTP update includes significant updates to both Mobility and Climate policies. The updated Regional Mobility Policy is a significant and long-awaited milestone for the RTP that will shape how Metro defines and measures mobility throughout the plan. New State climate rules adjust the region's greenhouse gas targets and clarify how the RTP needs to assess its progress and provide additional specificity on how regional and local agencies will account for GHG emissions in transportation projects and local plan updates. Both updates are still underway, and Metro staff will be providing additional information about how they will shape the development of the RTP. But these changes have already provided clear direction that achieving both the Mobility and Climate goals in the RTP relies upon completing the multimodal transportation system and reducing vehicle miles traveled (VMT) per capita. These two issues are the focus of this section, which finds that:

- Over 45 percent of workers in the 3 Metro-area counties work in a different county than where they live.
- Travel declined during the COVID pandemic. Between October 2019 and October 2021, daily throughway trips on a sample of regional mobility corridors decreased

by five percent, daily arterial trips decreased by 14 percent, and daily transit ridership decreased by 41 percent.

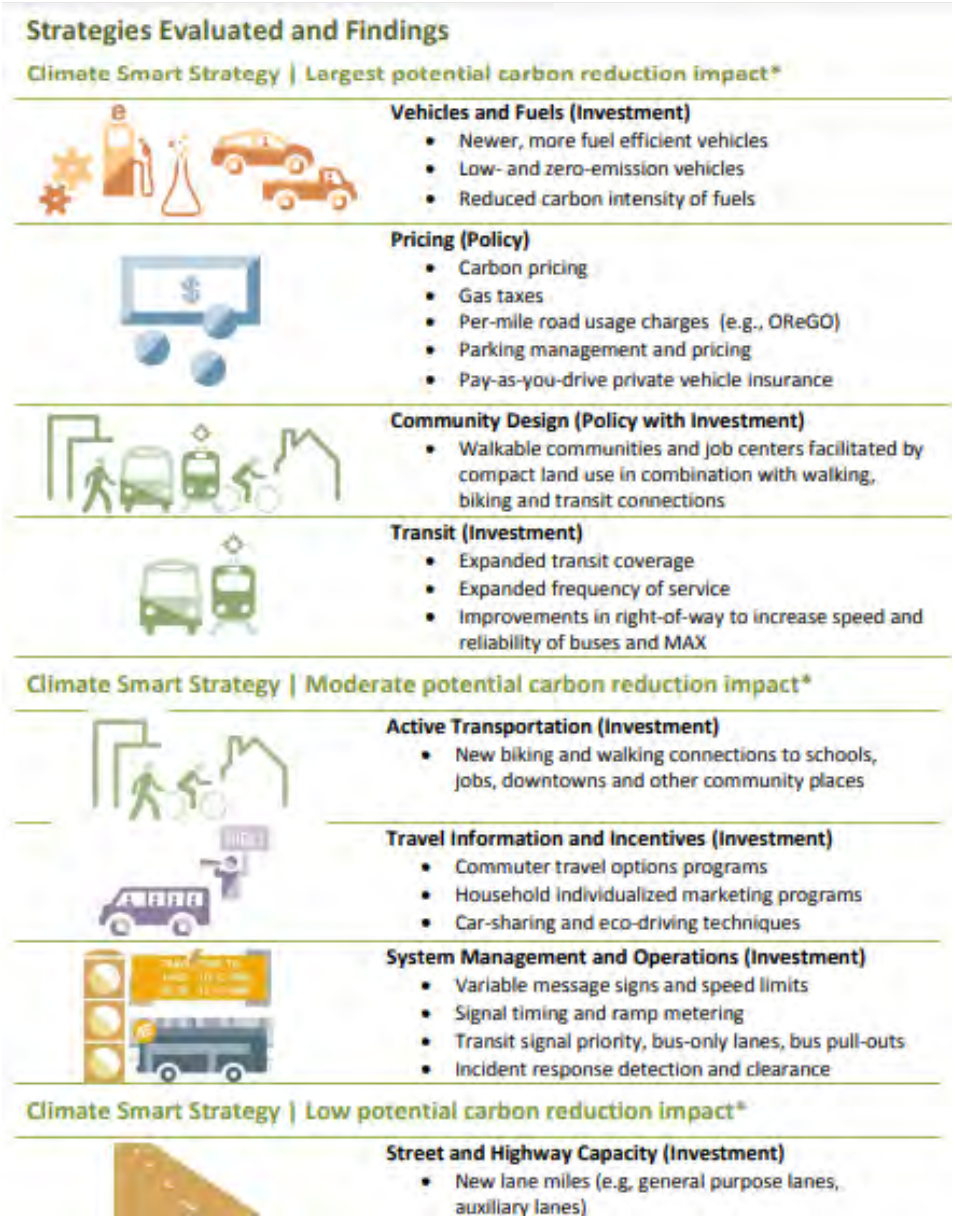
- Overall, the planned motor vehicle network is much more complete than the other modal networks.
- Active transportation networks are mostly complete within regional centers and near transit. However, even in these areas there are plenty of small gaps that hinder people's ability to walk and bike. There are larger bicycle and pedestrian gaps between urban centers and at the edges of the region, many of which are on the trail system.
- Per capita VMT in the Greater Portland region has been significantly lower than the national average since 1997 and has mostly been flat or declining. But in order to meet ambitious GHG and VMT reduction targets the region will likely need to take new approaches.
- During rush hour, the average traveler can reach 43% of jobs in the region by driving, and 7% by transit. Metro and partner agencies are working to increase ridership by better connecting activity centers – potentially including many developing suburban centers – with frequent transit.

Mobility and Climate policy framework

The draft Regional Mobility Policy replaces a 20-year-old interim mobility policy focused on addressing motor vehicle congestion and used motor vehicle volume-to-capacity ratios as its primary performance measure. During the 2018 RTP, Metro and partner agencies determined that there were not enough resources to meet the standards in the interim mobility policies, and that even if the resources were available to do so, there would be unacceptable impacts to other modes and other state, regional, and local goals. The updated Regional Mobility Policy aims to address a greater variety of modes (including transit, active transportation, and driving) and outcomes (including safety, equity, access, efficiency, reliability, and options), such that the mobility policy is better aligned with the overall strategic direction of the RTP – including the Climate Smart Strategy.

In 2010, the State directed Metro to create a strategy to meet regional greenhouse gas (GHG) reduction targets. The Climate Smart Strategy was adopted in 2014 and incorporated in the RTP in 2018. It identifies a wide range of GHG reduction strategies, which are summarized in Figure 14 below, and categorizes them by impact. The 2018 RTP relied on these strategies – in particular, expansion of the regional frequent transit network, to demonstrate that the RTP made sufficient progress toward meeting the region's GHG reduction targets. Metro was unable to directly compare the GHG reduction results from the 2018 RTP with the state targets because the RTP used different analytical tools to evaluate its performance than the State used to set targets.

Figure 14: Summary of greenhouse gas reduction strategies by level of impact (2018 RTP Appendix J, Climate Smart Strategy implementation and monitoring)



Since 2018, the State has updated the Portland region's greenhouse gas (GHG) reduction target such that the RTP is now required to demonstrate a 35 percent reduction in per capita GHG emissions by the year 2050. It clarified that regional GHG reduction targets are intended to be equivalent to household-based VMT per capita reduction targets, which will make it easier to compare the RTP results with State targets. The State also adopted new Friendly and Equitable Communities (CFEC) rules that require cities and counties in Oregon's metropolitan areas to designate higher density, mixed use communities that are served by transit and other sustainable transportation options, and to demonstrate that land use and transportation system plan updates reduce both VMT and GHG emissions. Metro will be working with RTP partner agencies and stakeholders to assess whether the

RTP is likely to achieve the updated targets and to identify any additional actions that are necessary to meet them, and to support partner agencies in implementing CFEC.

Due to both these developments, as well as to the longstanding relationship between mobility and climate in a state where the transportation sector accounts for a plurality of GHG emissions, there are some important similarities between how Climate and Mobility will be addressed in the 2023 RTP update:

- Achieving success on both Mobility and Climate goals depends on making transit and active transportation as efficient and useful as driving is so that people have multiple options for making trips.
- VMT per capita is an important performance measure for both Mobility and Climate and reducing VMT is critical to meeting regional goals.
- Both Mobility and Climate are shaped by ongoing processes – including the Regional Mobility Policy Update, the implementation of CFEC, state and regional updates to the assumptions underlying the Climate Smart Strategy, and the addition of congestion pricing to the RTP – that will continue to evolve currently with the RTP.

In this draft, we have combined the assessment of Mobility and Climate needs. In both cases, Metro and partners' understanding of regional needs will further evolve with the processes mentioned above, and the information that is currently available focuses on common outcomes like multimodal system completeness and VMT reduction. We will separate the Mobility and Climate sections of the Needs Assessment and add more detail to each as the RTP update progresses.

Regional travel patterns are evolving

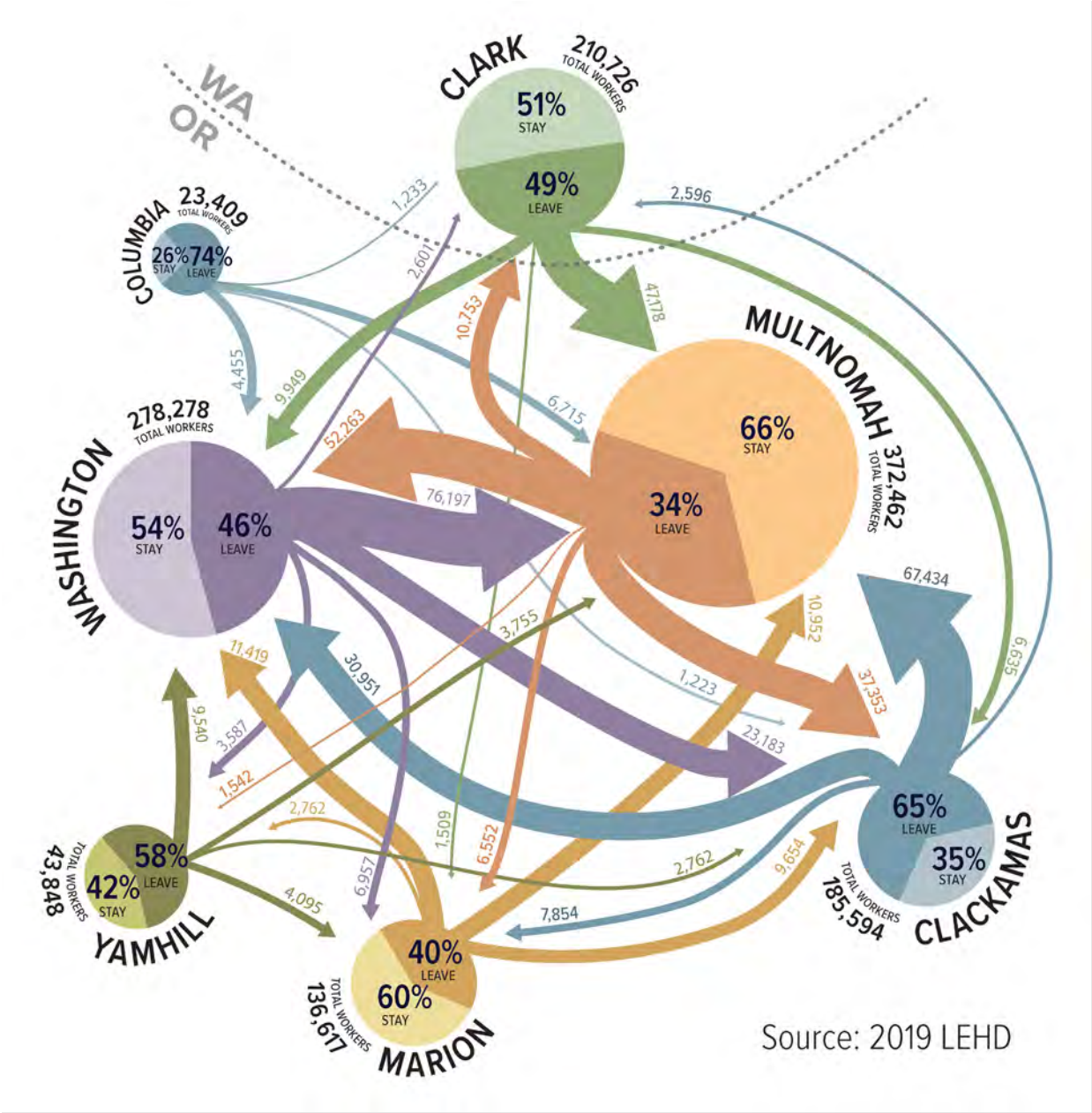
The 2018 RTP described a region that was growing rapidly into a major U.S. metropolitan area, with large numbers of people from other cities migrating to Greater Portland. It described some of the challenges associated with that growth, including growing congestion, rising housing costs, and increased displacement of people of color and people with low incomes to neighborhoods that are harder to serve with transit and other transportation options. The RTP also described some of the unique opportunities that the region can draw on when facing these challenges, including higher-than-average use of transit and other travel options than many other comparable metropolitan areas.

The data that Metro has collected during the 2023 RTP update confirm this story. Between 2015 (the base year for the 2018 RTP update) and 2020 (the base year for the 2023 RTP update, the region grew significantly – by 135,000 people (an 8.4% increase), 57,000 households (8.9%) and 90,000 jobs (10.1%)[23] – since the 2018 RTP, and this growth is projected to continue. As Figure 15 below illustrates, people in the region drive significantly less, on average, than the average American. As Greater Portland continues to grow into a major metropolitan area, with increasing housing prices and a more specialized economy, travel patterns are becoming more complex. Figure 15 below provides a window into this growing complexity; and shows how workers commute within and between counties in and around the region. It includes data for two counties that are outside the

[23] These figures are from Metro's travel model and are for the Metropolitan Planning Area. For more base-year data from Metro's travel model, see Appendix A.

region, Clark and Marion, that have significant amounts of workers commuting to or from the Metro region.

Figure 15: Where workers live and commute in the Greater Portland region and surrounding counties, 2019 (Census LEHD Origin-Destination Employment Statistics)



Over 45 percent of workers in the 3 Metro-area counties work in a different county than where they live. Most workers in Multnomah County work there too, two-thirds of workers who live in Clackamas County residents commute to other counties, and Washington County has an equal share of workers who stay and leave. Multnomah County, which has the most jobs of any county in the region, draws roughly 200,000 commuters from other counties, while Washington County draws about 100,000 and Clackamas County draws about 75,000. The 2018 RTP found similar patterns when it examined 2015 data. These

numbers help to contextualize some of the findings elsewhere in this report that show Multnomah County having more crashes, more congestion, and more transit service than other counties. This is partly because Multnomah County has more people commuting to, from, and through it. It is the only county in the region where the net worker population grows during the day; Washington and Clackamas Counties both have more workers who commute to other counties each day than they do inbound commuters.

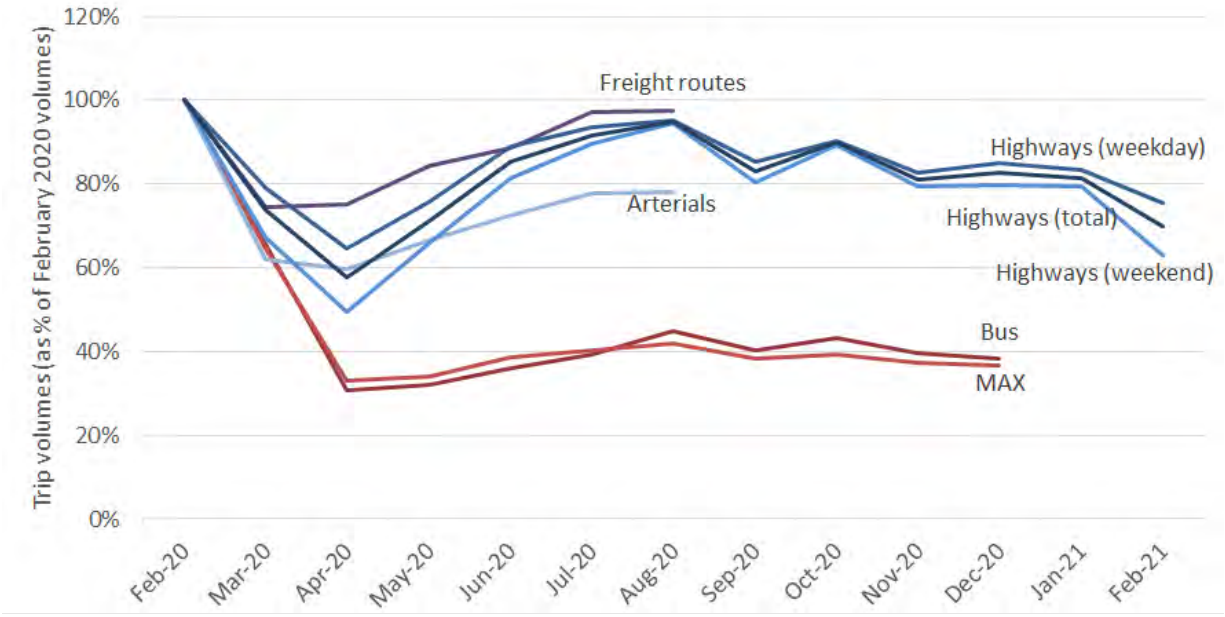
Though there are many reasons why workers might live far from their jobs, patterns like these are typical of major metropolitan areas with large populations, clusters of specialized jobs, and rising housing prices that limit many people from living close to jobs. Most of the longer-distance commute trips highlighted in Figure 15 are made by car; frequent and high-capacity transit routes are needed to provide affordable, congestion-free alternatives to driving for these trips as the region grows. The 2040 Growth Concept helps to identify the many different job and activity centers in the region that need to be included in this web of connections. At the same time, local pedestrian, bike and transit connections are necessary in and around these centers to give people safe, affordable and healthy options for shorter trips to shops, services, and other non-work destinations.

Most of the information presented in this memorandum is from early 2020, which is the base year for the 2023 RTP update and often the most recent year for which data are available. This is also the most recent period of "normal" travel behavior; beginning in March 2020 the COVID-19 pandemic and subsequent measures to protect public health led many workplaces, schools, and other destinations to close temporarily, which meant that people in the region were traveling less. Metro's Emerging Transportation Trends study[24] looked at a variety of data sources to understand how travel patterns continued to evolve during the pandemic.

[24] https://www.oregonmetro.gov/public-projects/2023-regional-transportation-plan/research

Figure 16 below shows how travel demand changed for transit and on different types of streets during the year following the pandemic.

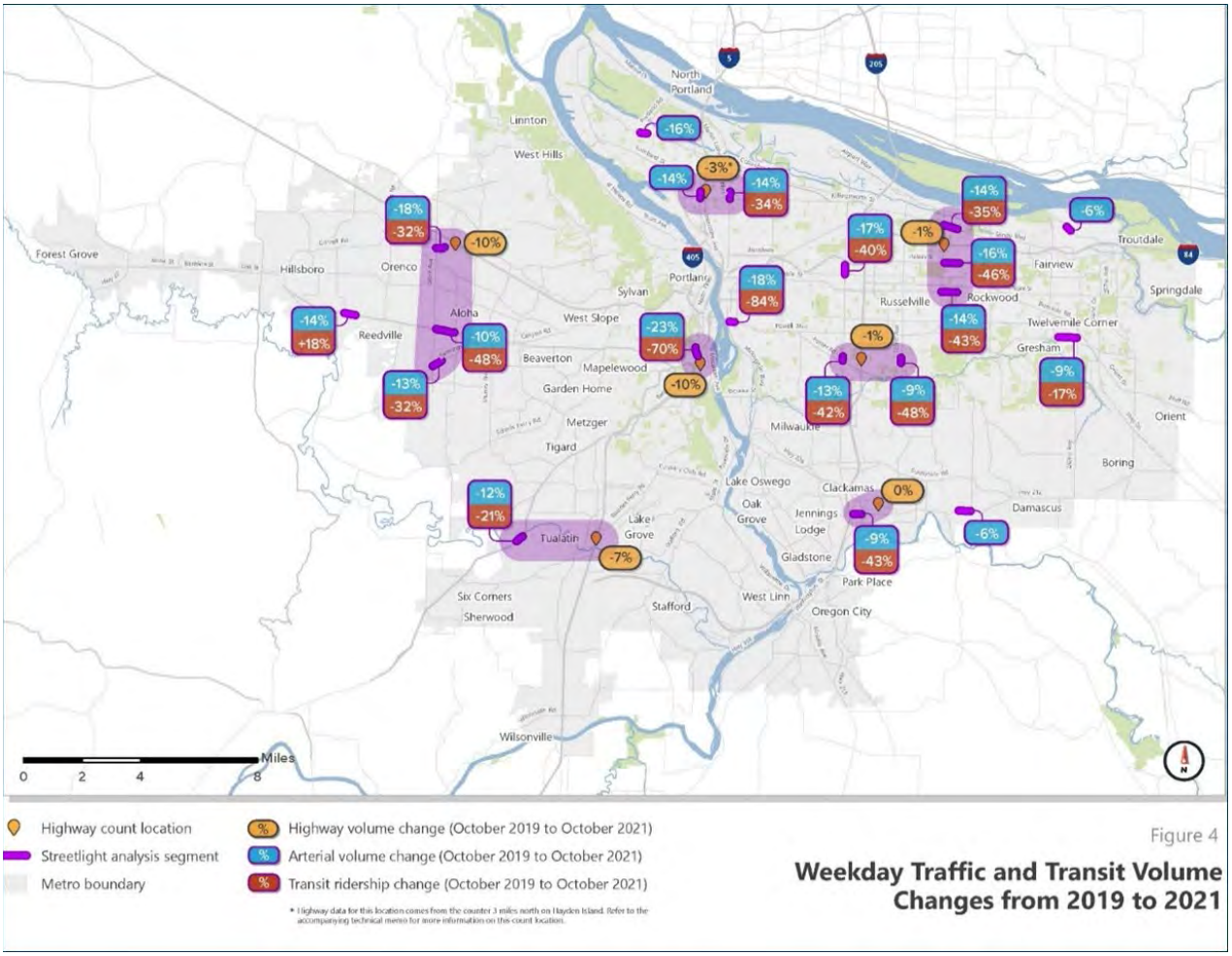
Figure 16: Trip volumes by mode and by facility type, indexed to February 2020 levels, February 2020-2021 (PBOT freight route and arterial count data; ODOT throughway count data; TriMet transit ridership performance reports; data were collected in April 2021 and reflect the availability of source data at that time)



All different types of travel shown fell during the initial months of the pandemic, but some fell more steeply and/or recovered more slowly than others. Trips on freight routes fell the least and recovered most quickly, potentially because goods kept moving during the pandemic and many freight routes also connect workers to jobs that remained in-person during the pandemic. Throughway trips recovered to 80 percent of pre-pandemic levels by May 2020, and then continued to fluctuate, which could reflect normal seasonal changes in travel demand, the impact of extreme weather events, and/or the spread of new COVID variants. Arterial travel appeared to be recovering less slowly.

The Emerging Transportation Trends study further examined changes on a set of throughways, arterials and transit routes that were chosen to allow for an "apples to apples" comparison across throughways, arterials, and transit routes along the same set of regional mobility corridors. Figure 17 below shows the results. Changes in throughway volumes are shown in yellow, changes in arterial volumes are shown in blue, and changes in transit ridership are shown in red.

Figure 17: Weekday vehicle and transit volume changes, October 2019-October 2021 (ODOT throughway count data; Streetlight arterial volume data; TriMet transit ridership by route data)



On average across the study locations, daily throughway trips decreased by five percent, daily arterial trips decreased by 14 percent, and daily transit ridership decreased by 41 percent between October 2019 and October 2021. In almost every location studied, arterial volumes decreased more significantly from pre-pandemic levels than throughway volumes did. This could reflect higher levels of freight trips (which held steady during the pandemic) and trips through the region (which have fallen less than trips within the region) on arterials, or lower levels of diversion from throughways to arterials due to less congestion along throughways. Transit volumes fell significantly in locations closer to the center of the region. This could reflect declining commutes to Downtown Portland, higher teleworking rates for affluent neighborhoods and workers, and/or lower levels of transit dependency among riders in the center of the region.

Since October 2021, the available evidence suggests that travel volumes have continued to increase as society continues to reopen following the pandemic. For example, transit ridership increased between October 2021 and July 2022, even though transit service remained constant. There is reason to believe that these increases will continue as COVID

becomes less of a health threat. However, the Emerging Trends study found evidence to suggest that the pandemic could lead to a long-term increase in teleworking rates and the use of online shopping, which would likely lead to slightly lower levels of VMT per capita and transit use than the region would otherwise experience, all other things being equal.

System completeness

Meeting Mobility and Climate goals depends on completing the multimodal transportation system so that people have multiple options for making trips. The Regional Mobility Policy has recommended three performance measures – vehicle miles traveled (VMT) per capita, system completeness, travel speed on throughways – to use in assessing mobility. Previous RTPs have compares the overall completeness of different modal networks and used "gap maps" to highlight opportunities to complete different travel networks.

Table 4 below summarizes the completeness of different regional modal networks. Since completing bicycle and pedestrian connections to transit, along arterials, and within 2040 centers is an RTP policy priority, the table also reports on bicycle/pedestrian completeness[25] for these two geographies. See Table 3 in the Equity section, above, for a comparison of active transportation system completeness between EFAs and non-EFAs.

Table 4: System completeness by modal network and location within the region (2018 RTP networks and current partner agency data)

Network	Total miles	Number of miles completed	Percent of miles completed
Region-wide			
Transit network[26]	1,460	788	54%
Pedestrian network	1,052	607	58%
Bicycle network	1,169	633	54%
Trail network	561	242	43%
Motor vehicle network	1,176	1,150	98%
Near transit			
Pedestrian network	843	549	65%
Bicycle network	896	541	60%
Along arterials			
Pedestrian network	737	419	57%
Bicycle network	627	415	66%
Within urban centers			
Pedestrian network	180	141	78%
Bicycle network	169	111	66%

[25] As discussed below, Metro distinguishes between on-street bicycle and pedestrian gaps in facilities like bike lanes and sidewalks and off-street bike/ped gaps in facilities like trails. On-street facilities are generally needed to provide good active transportation connections in centers, near transit, and in

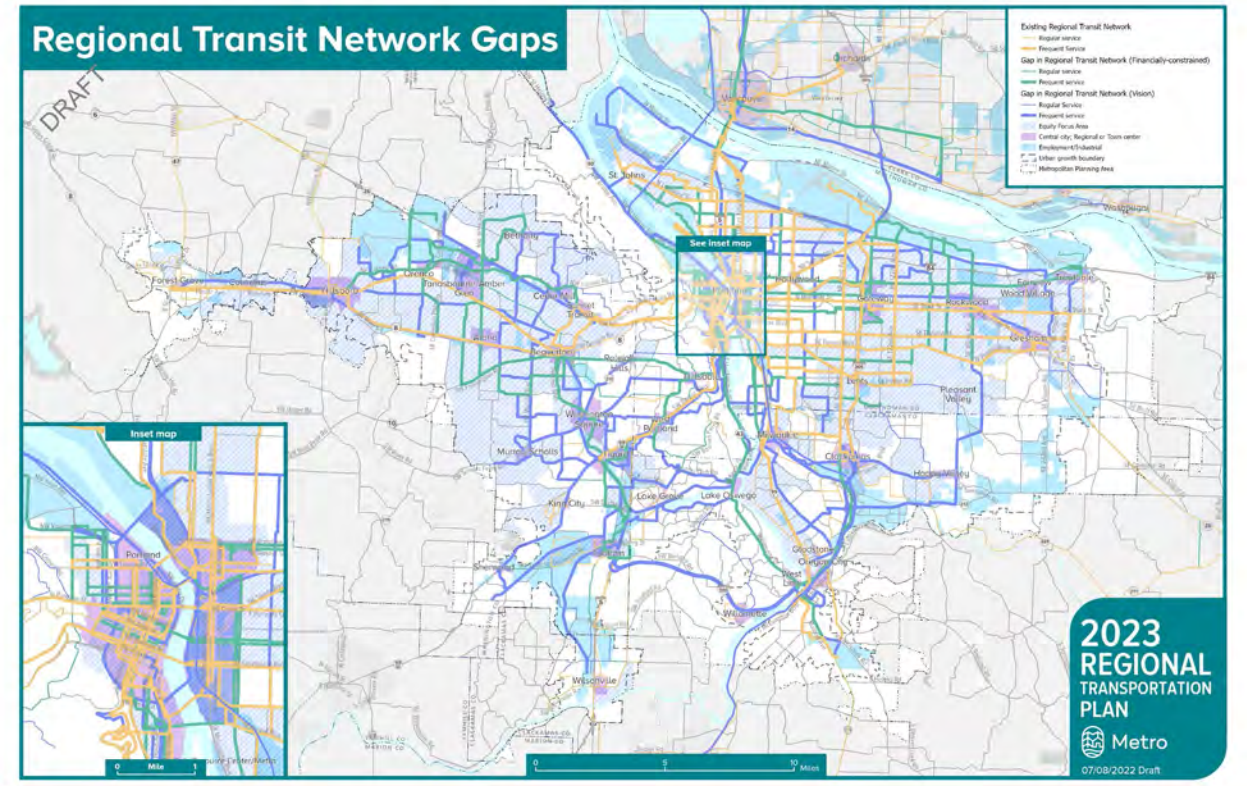
[26] Consistent with how completeness is analyzed for other modal networks, the assessment of transit system completeness is based on the financially constrained RTP, and excludes the strategic investments shown in Figure 19.

Network	Total miles	Number of miles completed	Percent of miles completed
Within station communities (excluding urban centers)			
Pedestrian network	110	75	68%
Bicycle network	126	70	56%
Within mixed-use zoning (excluding urban centers and station communities)			
Pedestrian network	137	107	78%
Bicycle network	115	74	64%

Overall, the planned motor vehicle network is much more complete than the other modal networks. Consistent with the 2040 Growth Concept, the active transportation networks are generally more complete within regional centers and near transit. However, several important gaps remain in these areas. The maps below identify these gaps by comparing the regional visions (i.e., planned systems) for these networks – which are based in extensive coordination with stakeholders and analysis of transportation and land use data – to the facilities that are on the ground today in order to identify gaps in the system.

Figure 18 below shows gaps in the transit network where planned transit has not yet been built. The map differentiates between gaps in frequent (thick lines) and regular (thin lines) transit service, and between gaps in the financially constrained network, which the region has identified funding to complete (green), and gaps in the strategic network, which the region has not yet identified funding to complete (purple). It also shows the location of existing regular and frequent service (orange lines). All of this information is overlaid with Equity Focus Areas (violet cross-hatching) to highlight how the current and planned network serves these communities that particularly need improved transit service (see the Equity section for more details on transit-related Equity needs).

Figure 18: Regional transit network gaps (2018 RTP networks and current partner agency data)



Filling the gaps in the frequent transit system (thick green lines) are particularly important to meeting the region's Climate goals. The 2018 RTP relied on a planned increase in frequent transit service to meet GHG reduction targets, and the thick green lines indicate routes where this transit has yet to be implemented. These gaps are distributed over most of the more populated parts of the region, and there are large concentrations of them in East Portland and the Orenco/Bethany/Aloha area.

Figure 19 and Figure 20 show gaps in the regional pedestrian and bicycle systems. Completed facilities are shown in purple or green; gaps are shown in red. The maps distinguish between gaps in on-street facilities like sidewalks and bike lanes (darker shades) and gaps in off-street facilities like trails (lighter shades). Both the pedestrian and bicycle networks are overlaid with urban centers identified in the 2040 growth concept since RTP policies direct pedestrian and bicycle investments toward centers of activity where short distances between destinations make it easy to travel on foot. As noted above, we encourage readers to look at these maps in detail. Pedestrians and bicyclists are vulnerable users of the transportation system, and even a small gap in the network can make an entire trip feel unsafe and/or inconvenient.

Figure 19: Regional pedestrian network gaps (2018 RTP networks and current partner agency data)

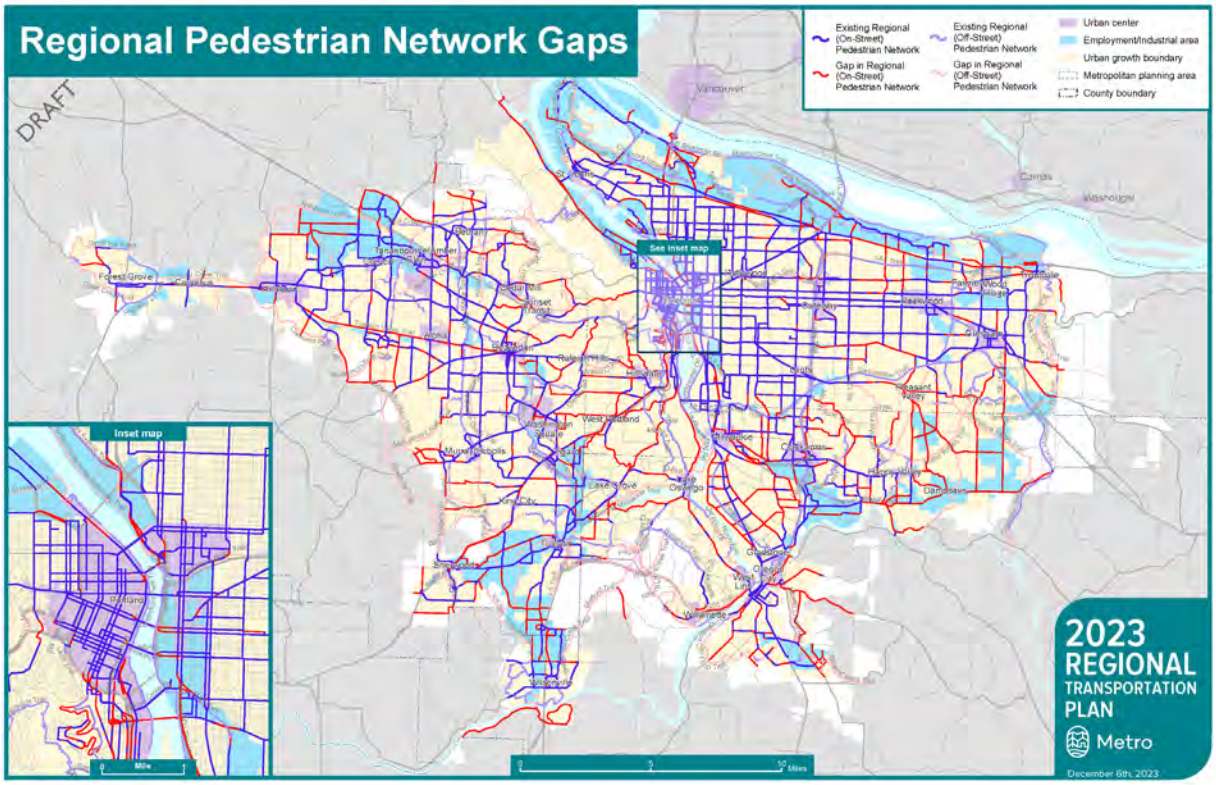
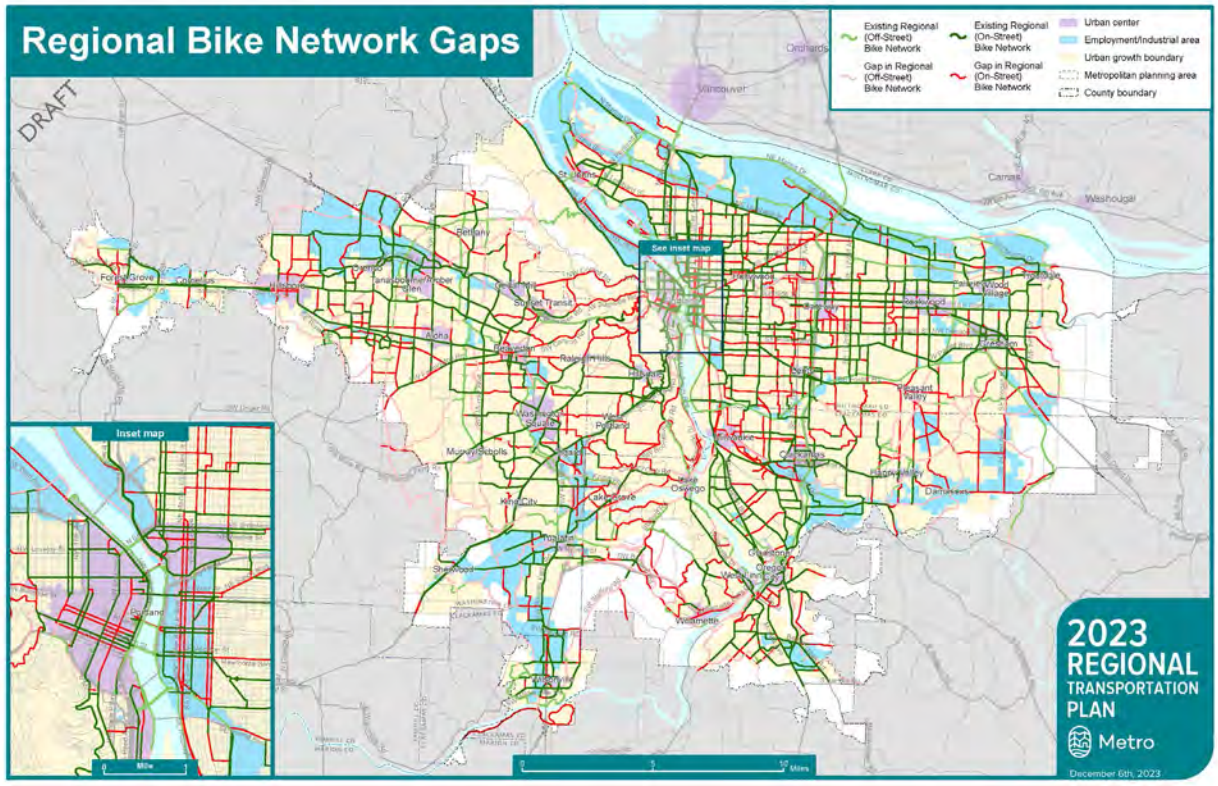


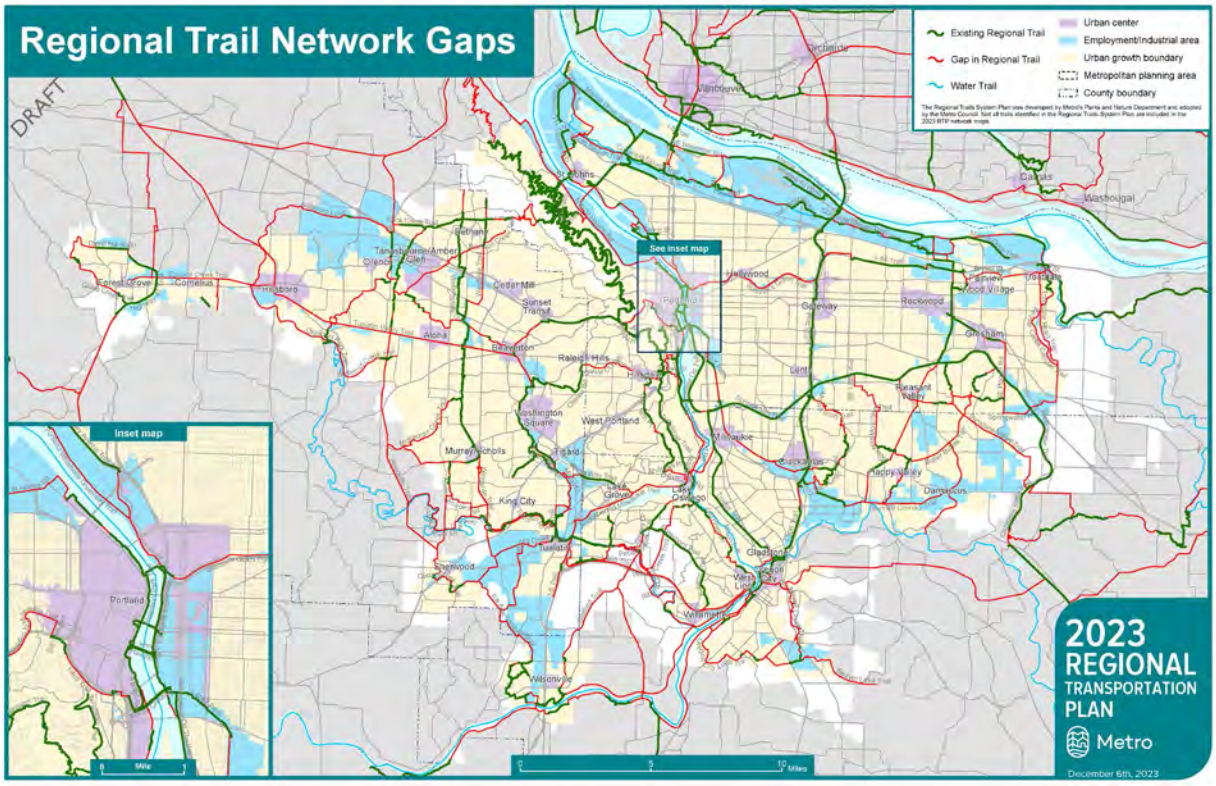
Figure 20: Regional bicycle network gaps (2018 RTP networks and current partner agency data)



Both the bicycle and pedestrian networks are generally more complete in the region's urban centers, which is consistent with RTP policies that direct transportation investments to support implementation of the 2040 growth concept. But even within those centers there are plenty of small gaps that hinder people's ability to walk and bike. Closing these gaps can be a relatively low-cost way to complete critical connections in areas that are already generally well-suited for walking and bicycling. There are larger bicycle and pedestrian gaps between urban centers and at the edges of the region, many of which are on the trail system. Closing these gaps has the potential to transform how people travel in communities where most trips are by car, especially when pedestrian projects are accompanied by complimentary investments in transit and community development.

Figure 21 below shows gaps in the regional trail network in red and completed trail segments in green, as well as the same urban centers that are included as overlays in the bicycle and pedestrian maps above. Trails are long-distance, high-quality bicycle and pedestrian facilities that provide connect regional centers, and they often pass through natural areas and/or include landscaping and natural features.

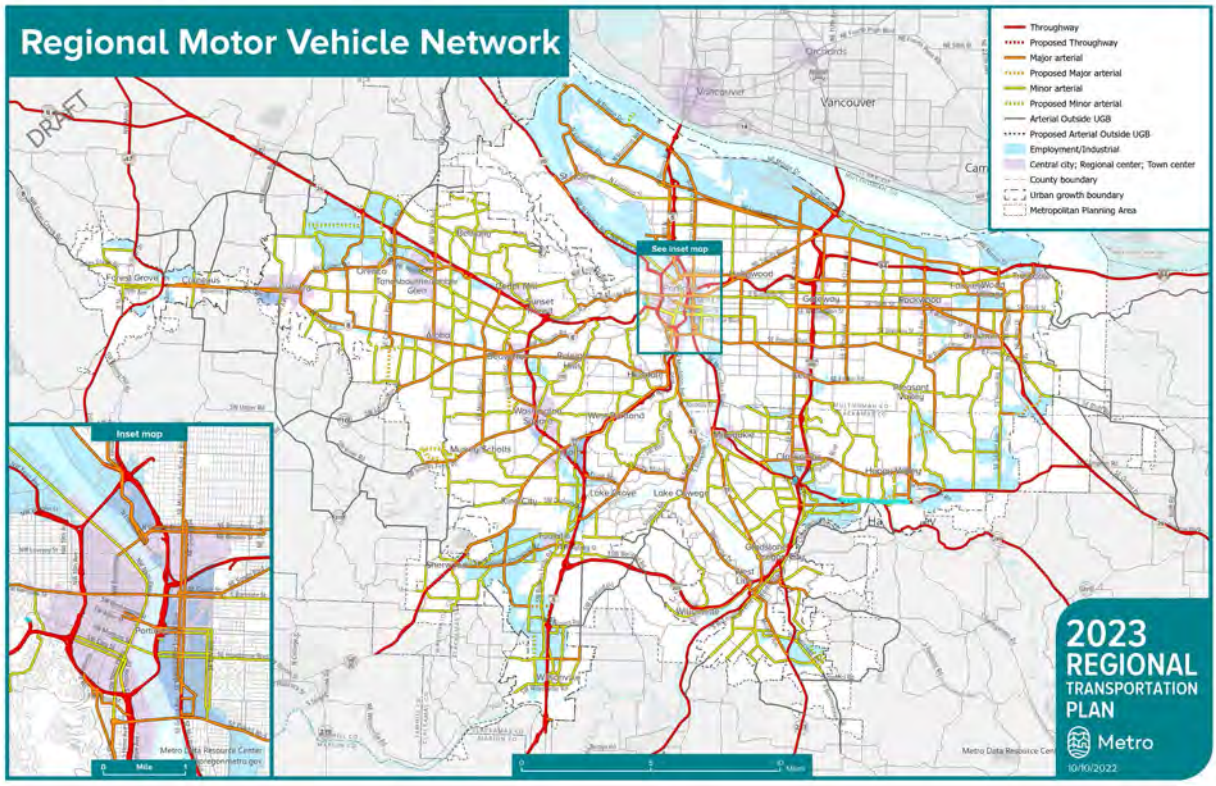
Figure 21: Regional trail network gaps (2018 RTP networks and current partner agency data)



Trails are also part of the bicycle and pedestrian networks shown above, and this map underscores how filling many of the longer-distance gaps shown above depends upon completing the regional trail system.

Figure 22 shows the planned motor vehicle network by facility type, including planned facilities that have not yet been built, which are shown in dashed lines. As the map below shows, the network is largely built out.

Figure 22: 2018 RTP regional motor vehicle network map ((2018 RTP networks and current partner agency data)



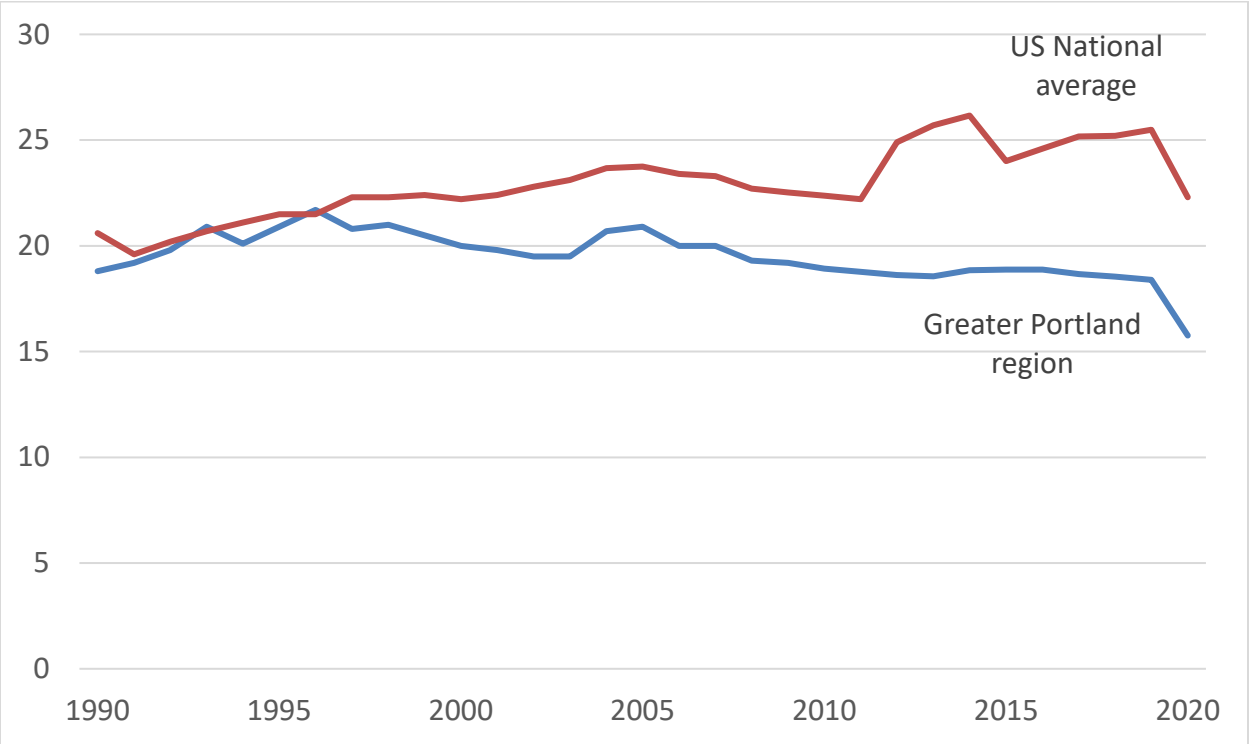
VMT per capita, mode share, and access to destinations

Vehicle miles traveled (VMT) per capita measures much the average person in the Portland region drives each day. Many transportation agencies in the region use VMT per capita to measure progress toward creating vibrant communities and providing multimodal travel options. All other things being equal, VMT per capita (as well as the average amount of GHG emissions people generate by driving) tends to be lower in compact communities with a mix of destinations and good access to transit and other options.[27] As discussed at the beginning of this section, a growing number of processes – including CFEC, the state rules that govern the RTP climate targets, and the Regional Mobility Policy – focus on VMT per capita as a critical performance measure for Mobility and Climate. The 2018 RTP was projected to reduce 2040 VMT per capita by four percent, which fell short of the region's target of ten percent.

Figure 23 below shows trends in observed VMT per capita between 1990 and 2020.

[27] https://nap.nationalacademies.org/catalog/12747/driving-and-the-built-environment-the-effects-of-compact-development

Figure 23: VMT per capita for the Greater Portland region and the U.S.

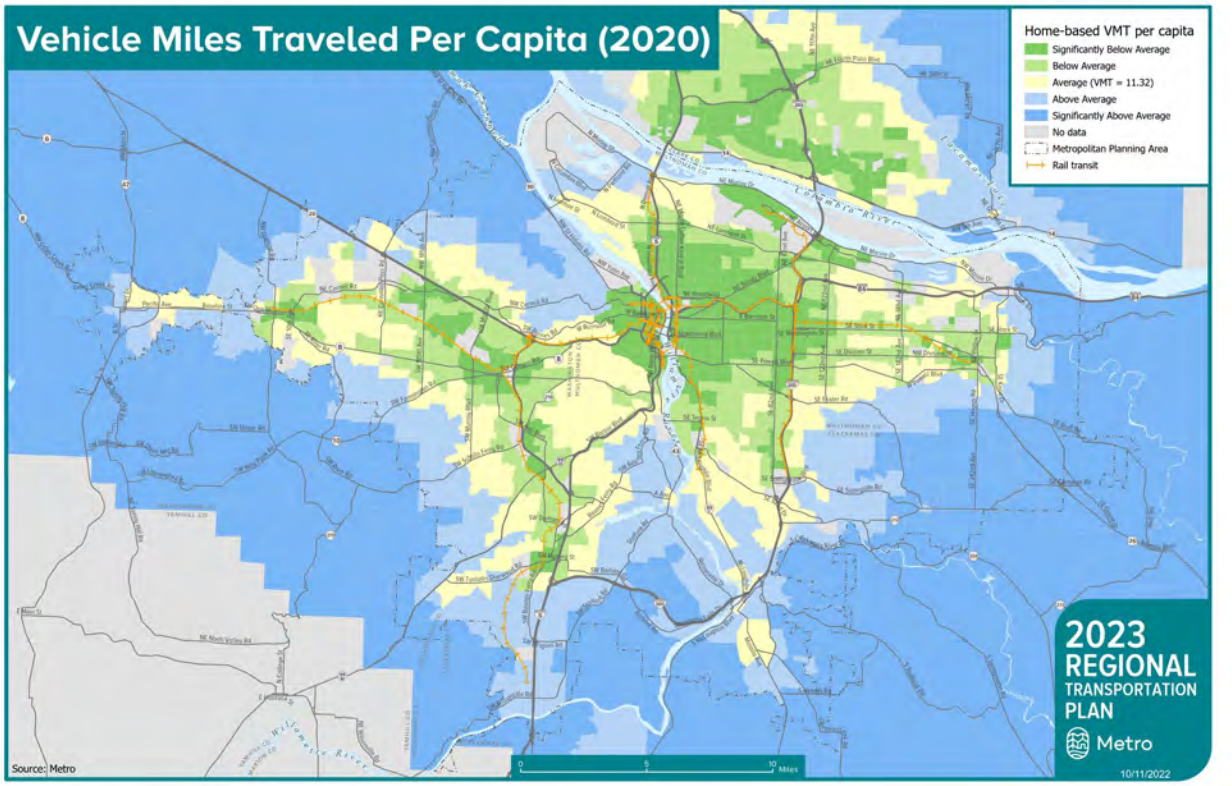


Per capita VMT in the Greater Portland region has been significantly lower than the national average since 1997. There has been a general downward trend, with a few exceptions during economic booms, over the past 25 years. However, between 2010 and early 2020[28] there was little or no decline in VMT per capita. The region's past successes in transportation and land use planning appear to have had a lasting impact on people's travel choices, and even during periods of growth they may have helped to keep VMT per capita from increasing. But in order to meet ambitious GHG and VMT reduction targets – especially in an era when high housing costs make it challenging for many people to live in neighborhoods with good access to travel options – the region will likely need to take new approaches, such as congestion pricing, or double down on high-impact strategies such as expanding frequent transit, creating affordable housing in regional centers, and managing or pricing parking.

Figure 24 shows how estimated household-based VMT per capita from Metro's travel model varies across the region. Though these are estimates, they highlight relative differences in VMT per capita based on nearby land uses and transportation options.

[28] Figure **Error! Main Document Only.** also shows a steep decline in both national and regional VMT per capita in 2020. This reflects the onset of the COVID-19 pandemic, which led many people to limit their travel as stay-at-home orders were carried out and many schools and workplaces closed. Metro's Emerging Transportation Trends study (https://www.oregonmetro.gov/public-projects/2023-regional-transportation-plan/research) estimated that the persistence of teleworking and other pandemic-era behaviors could reduce 2050 VMT per capita by three to eight percent, all other things being equal.

Figure 24: Home-based VMT per capita by Metro transportation analysis zone, 2020 (Metro travel model)



VMT per capita is lower in regional centers, along frequent transit lines, and in many of the region's older neighborhoods. This demonstrates the impact of sound land use planning and diverse travel options on VMT per capita. This map can also serve as a basis for setting regional VMT per capita targets under CFEC by helping stakeholders identify appropriate targets for communities in different areas of the region.

VMT per capita is determined in large part by the share of trips that people take by modes other than driving is a significant part of reducing VMT per capita. Table 5 below shows regional mode shares from Metro's travel model, both for commute and non-commute trips. Commute and non-commute trips have different mode shares. the former are typically longer-distance and people are more likely to drive alone or take transit when commuting. The table also shows observed commute mode shares for the Portland-Vancouver Urban Area from the American Community Survey (ACS). Though not directly comparable, these two data sources provide complimentary perspectives on regional mode shares. ACS data is probably the most widely used data on commute mode shares, and though the ACS only measures commutes, it captures teleworking, which Metro's model does not. ACS mode shares that both include and exclude teleworking are provided to enable comparisons between ACS and model data for those workers who do commute.

Table 5: Mode shares, 2020 (Metro travel model and 2016-2020 American Community Survey)

Mode	Modeled mode share (commute trips)	Modeled mode share (non-commute trips)	ACS mode share (commute trips, including telework)	ACS mode share (commute trips, excluding telework)
Walk	7%	7%	3%	3%
Bike	5%	3%	2%	2%
Transit	6%	2%	6%	7%
Private vehicle	83%	87%	79%	88%
Shared ride	12%	52%	9%	10%
Drive alone	71%	35%	70%	78%
Worked from home			10%	

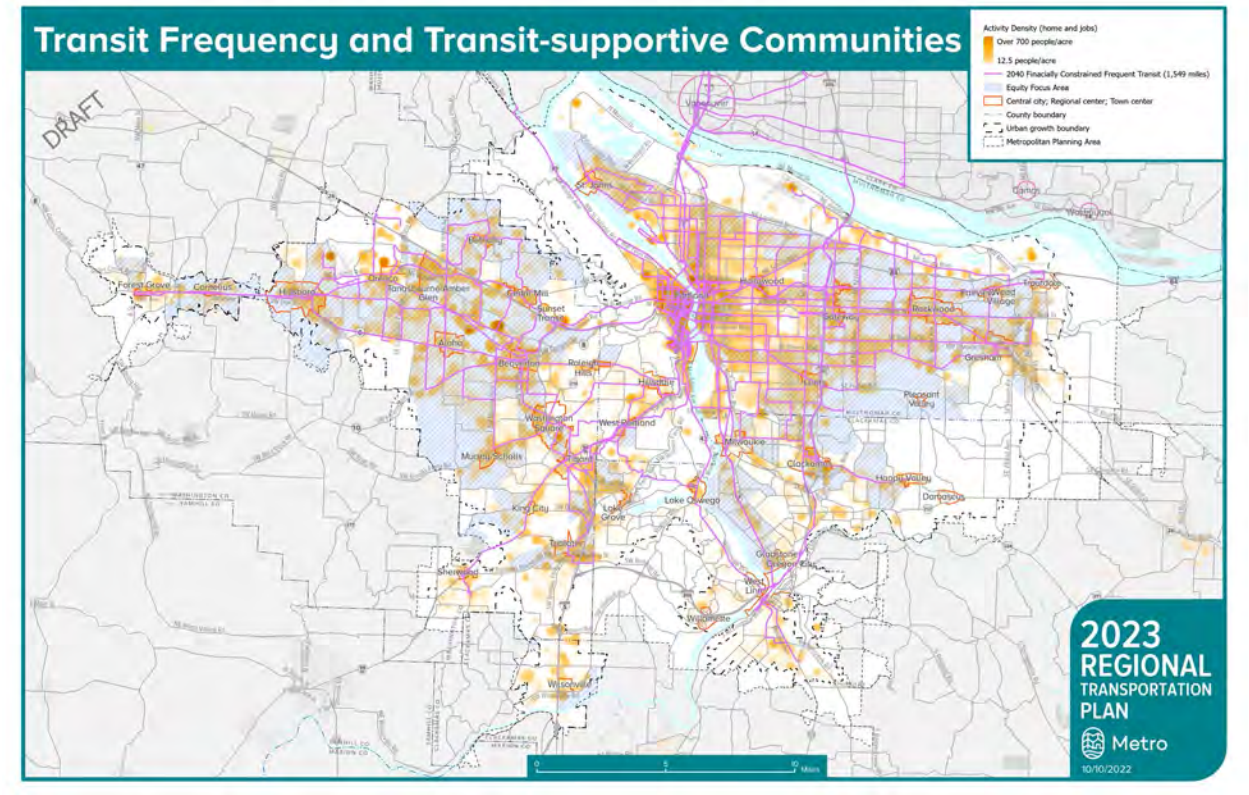
Transit frequency and access to destinations

Completing a high-quality transit network is critical to meeting regional Mobility and Climate goals. Half of all trips are over three miles, and these trips account for the majority of VMT.[29] Transit is the mode that is best-suited to provide a climate-friendly and affordable alternative to driving for these longer-distance trips. And transit is the most useful when it provides fast, convenient, and accessible transit connections between activity centers. Figure 25 below highlights communities that have the densities necessary to support frequent transit[30] (orange) and compares their location with current frequent transit service (i.e., lines with peak headways of 15 minutes, shown in purple). It also shows EFAs in light blue cross-hatching (see the Equity section for additional discussion of this map).

[29] https://www.bikeleague.org/content/national-household-travel-survey-short-trips-analysis

[30] The High Capacity Transit and Regional Transit Strategies specify a threshold of 5 households or 15 jobs per acre for communities served by frequent transit. In order to map both jobs and housing at the same scale, Figure 25 combines jobs and housing into a single measure of activity density (jobs plus residents per acre) and uses a threshold of 12.5 jobs and/or residents per acre to identify communities that support frequent transit. The average household in the region includes 2.5 people, so 5 households per acre is equivalent to 12.5 residents per acre.

Figure 25: Map of high-frequency transit (headways of less than 15 minutes) and transit-supportive communities (12.5 or more people and/or jobs per acre), 2020 (Metro travel model and distributed growth forecast)



The RTP's policy goal to coordinate transit and land use investments suggests that the map should show purple lines connecting most of the orange/red clusters of high density. This is the case in much, but not all, of the region, particularly in the south and west and on north/south corridors in the east side of the region.

Measuring how many destinations people can access via transit and automobile within a given travel time is a common way of comparing the overall utility of transit and driving. A truly multimodal transportation system is one in which people who travel by transit can reach the same number of jobs (or more) via transit within a given travel time as they can via automobile. Table 6 below compares accessibility via transit and automobile during peak hours and other times of the day. This analysis uses a 45-minute travel time to measure transit access and 30-minute travel times to measure automobile access,[31] which accounts for the time needed for people to walk between their origins/destination and their car/transit stop and transfer between different transit routes, etc.

[31] These travel times were recommended by the 2018 Transportation Equity Working Group to account for the fact that transit trips are typically longer than automobile trips.

Table 6: Percent of jobs accessible by driving and by transit, by community type and time of day, 2020 (Metro travel model and land use data)

	Percent of jobs accessible within…	
	… a 30-minute drive	**…a 45-minute transit trip**
During rush hour	43%	7%
Outside of rush hour	50%	6%

Table 6 shows the extent to which driving offers better access than taking transit does. Across all times of day, people can reach five to ten times as many destinations by auto as they can by driving.

Travel speeds and causes of congestion

The third performance measure recommended by the draft Regional Mobility Policy is travel speeds on throughways, which is defined in the draft as miles of the throughway system that operate with four or fewer hours of congestion per day based on a speed of 35 miles per hour. Metro is still working with stakeholders to determine how to best define and analyze this measure and will be reporting base year results in the coming months.

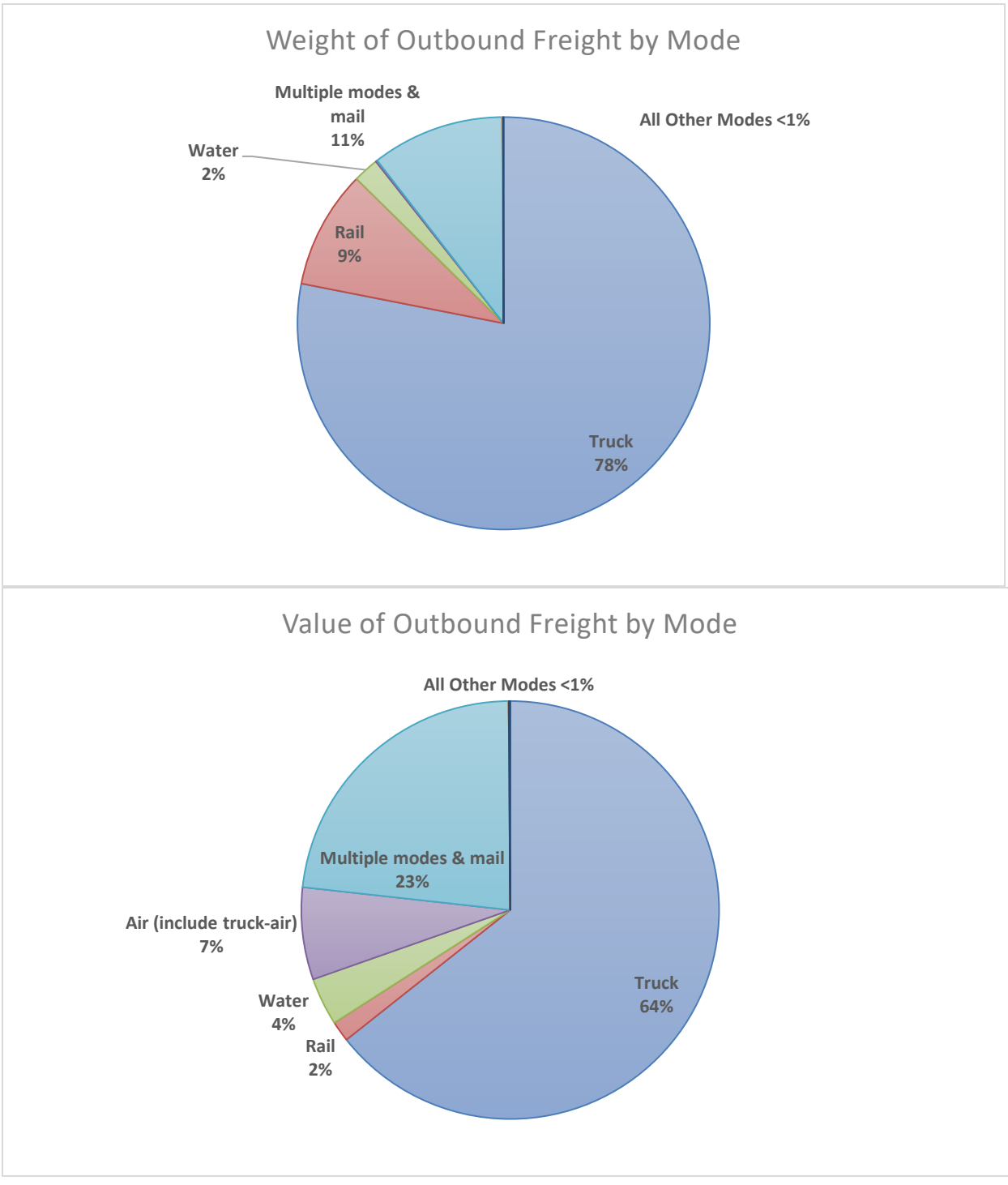
Freight needs

Keeping freight moving is a critical part of regional mobility. Metro is currently leading a Freight Delay and Commodities Movement study that will inform the RTP and its implementation. This memorandum presents some of the background information on how freight moves through the region that has been developed through that study.

Most of the products we buy come from someplace else, and many of the goods we produce in Oregon move on to markets in other states and countries. The global economy is expanding rapidly, and our region's ability to move products to far-flung markets depends on an efficient transportation system. With its location on Interstate 5, the West Coast artery of the Interstate Highway System, the greater Portland region is ideally situated to move freight by truck. But with Portland International Airport, two Class 1 railroads (mainline railroads Union Pacific and Burlington Northern/Santa Fe), the southern terminus of the 400-mile Olympic Pipeline, and a location at the confluence of two major rivers with ocean access and several marine terminals, the region's freight transportation system is a multimodal network.

Figure 26 summarizes both the value and the weight of the goods that move through the region by mode. High-value goods make up an increasing share of the freight that moves through the region, and they sometimes take different routes and modes than other goods in order to arrive at their destinations safely and on time. Distinguishing between value and weight helps to identify how goods of different value are moving through the transportation system.

Figure 26: Value and weight of outbound freight by mode in the Greater Portland Region, 2017 (Freight Analysis Framework data)



The majority of the region's freight, whether by value or weight, is moved by truck. High value freight is less likely to move by truck and rail, and more likely to use multiple modes, mail, water, and air. As Oregon's economy shifts from bulk products like farm exports and timber to lighter products like semiconductors, electronics and specialized machinery,

improving freight connectivity to the airport and other intermodal facilities will help keep goods moving through the region.

Vibrant and Prosperous Communities

At a workshop in September 2022, JPACT and Metro Council directed Metro to add a fifth priority and goal to the RTP, Vibrant and Prosperous Communities. This goal is focused on coordinating transportation and land use planning to support development in regional centers and implement the 2040 Growth Concept. The following figures and tables in this document describe how the transportation system supports and/or relates to 2040 Centers and associated land use strategies.

- Figure 5: 2023 RTP High Injury Corridors and Intersections, 2016-2020 (ODOT crash data analyzed by Metro staff)
- Figure 11: Regional transit network gaps (2018 RTP networks, partner agency data)
- Figure 18: Regional transit network gaps (2018 RTP networks and current partner agency data)
- Figure 19: Regional pedestrian network gaps (2018 RTP networks and current partner agency data)
- Figure 20: Regional bicycle network gaps (2018 RTP networks and current partner agency data)
- Figure 21: Regional trail network gaps (2018 RTP networks and current partner agency data)
- Table 3: Pedestrian, bicycle and trail network completion for EFAs and non-EFAs (2018 RTP networks and current partner agency data)
- Table 4: System completeness by modal network and location within the region (2018 RTP networks and current partner agency data)

Metro staff will continue to reach out to stakeholders to discuss how to define the needs and objectives associated with this goal. The figures above offer some examples that can support these conversations.

Next steps

Metro staff will discuss and receive feedback on this draft Needs Assessment from Metro technical and policy committees and other stakeholders. During the coming months, Metro staff will also share new information from the draft needs assessment, particularly still-developing information on Climate and Mobility highlighted above, with agency and community partners. Metro will also be sharing information about the RTP Call for Projects, which will be open in early 2023, with agency partners during late 2022. Staff will continue to refine and share information from the needs assessment in order to support project leads in describing how projects address regional needs when responding to the call for projects.

Appendix A: Base year transportation, employment, and population data for 2020

The table below shows selected information for the Metropolitan Planning Area from Metro's travel model, both for 2020 (the 2023 RTP base year) and 2015 (the 2018 RTP base year). Metro recalibrates its travel model with every RTP update based on updated data from agency partners and from national datasets. In many cases the 2020 estimates shown below are not directly comparable to the 2015 estimates because the changes shown reflect updated modeling assumptions that are based on limited observed data, and do not represent actual changes on the ground. However, the information shown below reflects how background assumptions about the amount and nature of travel in the region have changed since the RTP was last updated.

	2020 estimate	**2015 estimate**
Population		
Population	1,741,143	1,605,672
Households	693,192	636,467
Employment	985,385	895,094
Regional network road miles		
Total Road Miles	3,714	3,721
Freeway Miles	232	235
Arterial Miles	3,482	3,486
Regional network lane miles		
Total Lane Miles	5,490	5,489
Freeway Lane Miles	624	630
Arterial Lane Miles	4,866	4,859
Trips		
Total Person Trips	6,731,704	6,224,022
Total Work Trips	2,081,639	1,899,529
Total Non-Work Trips	4,650,065	4,324,493
Total Passenger Vehicle Person Trips	5,546,120	5,104,361
Total Passenger Vehicle Trips	4,080,107	3,755,542
Total Transit Trips (originating riders)	257,328	259,329
Total Walk Trips (does not include walk trips to transit)	504,991	461,271
Total Bike Trips	254,326	232,163
Vehicle miles traveled		
Total Passenger Vehicle VMT	22,219,698	20,799,027
Passenger Vehicle VMT/Capita	12.8	13.0
Passenger Vehicle VMT/Employee	22.5	23.2
Average Trip Length (miles)	4.8	4.9
Mode share		
Single Occupant Vehicle (SOV) Percent of Person Trips	45%	45%
Non-SOV Percent of Person Trips (shared ride, walk, bike, transit)	55%	55%

	2020 estimate	2015 estimate
Transit Percent of Person Trips	3.8%	4.2%
Walk Percent of Person Trips	7.5%	7.4%
Bike Percent of Person Trips	3.8%	3.7%