

2018 Regional Transportation Plan



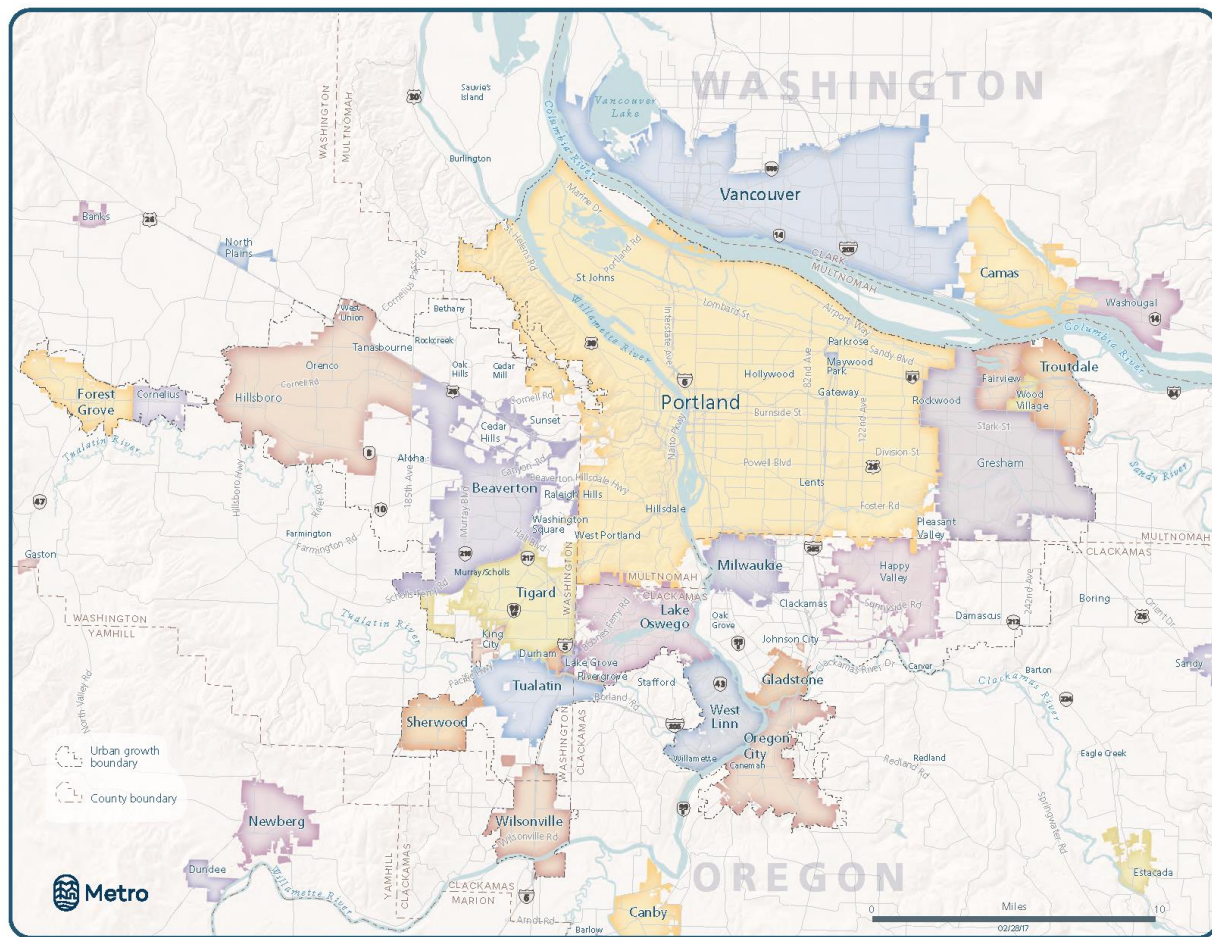
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2018 Regional Transportation Plan

Chapter 8

Moving Forward Together

December 6, 2018



Metro serves more than 1.5 million people in Clackamas, Multnomah and Washington counties. The agency's boundary encompasses 24 cities – from the Columbia River in the north to the bend of the Willamette River near Wilsonville, and from the foothills of the Coast Range near Forest Grove to the banks of the Sandy River at Troutdale.

Among its other responsibilities, Metro is authorized by Congress and the State of Oregon to coordinate and plan investments in the transportation system for the three-county area. Metro uses this authority to expand transportation options, make the most of existing streets and improve public transit service. As the designated metropolitan planning organization, Metro works collaboratively with cities, counties and transportation agencies to decide how to invest federal highway and public transit funds within its service area. It creates a long-range transportation plan, leads efforts to expand the public transit system and helps make strategic use of a small subset of transportation funding that Congress sends directly to metropolitan planning organizations.

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8.0 PURPOSE

Metro is the metropolitan planning organization (MPO) designated by Congress and the State of Oregon, for the Oregon portion of the Portland-Vancouver urbanized area, serving 1.5 million people living in the region's 24 cities and three counties. As the MPO, Metro formally updates the Regional Transportation Plan every five years in cooperation and coordination with the Oregon Department of Transportation and the region's cities, counties and transit agencies.

The Regional Transportation Plan is a blueprint to guide investments for all forms of travel – motor vehicle, transit, bicycle and walking – and the movement of goods and freight throughout the greater Portland region. The plan identifies current and future transportation needs, investments needed to meet those needs, and what funds the region expects to have available over the next 25 years to make those investments a reality.

Updates to the plan and subsequent implementation must meet the requirements of the federal Fixing America's Surface Transportation (FAST) Act, Oregon's Transportation Planning Rule (which implements Statewide Planning Goal 12), Oregon's Metropolitan Greenhouse Gas Emissions Reduction Targets Rule and Metro's Regional Framework Plan. In combination, these requirements call for development of a multimodal transportation system plan that is integrated with and supports implementation of local and regional land use plans and adopted Climate Smart Strategy, and meets federal, state and regional planning requirements.

Chapter organization

This chapter summarizes future work to implement the RTP, consistent with federal, state and regional requirements. The chapter is organized as follows:

- 8.1. Introduction:** This section summarizes the purpose and content of the chapter.
- 8.2. Planning and programs:** This section summarizes local, regional and state planning and programs that advance implementation of the plan.
- 8.3. Projects:** This section summarizes major project development activities in the region and the allocation of federal transportation funds to implement projects in the RTP.
- 8.4. Amending the plan:** This section summarizes the process for making revisions to the plan between scheduled updates.
- 8.5. Data and tools:** This section summarizes data and research activities to address existing and emerging planning and policy priorities and innovative practices in transportation planning and analysis and ensure that the region has the resources to fulfill its transportation performance measurement and reporting responsibilities.



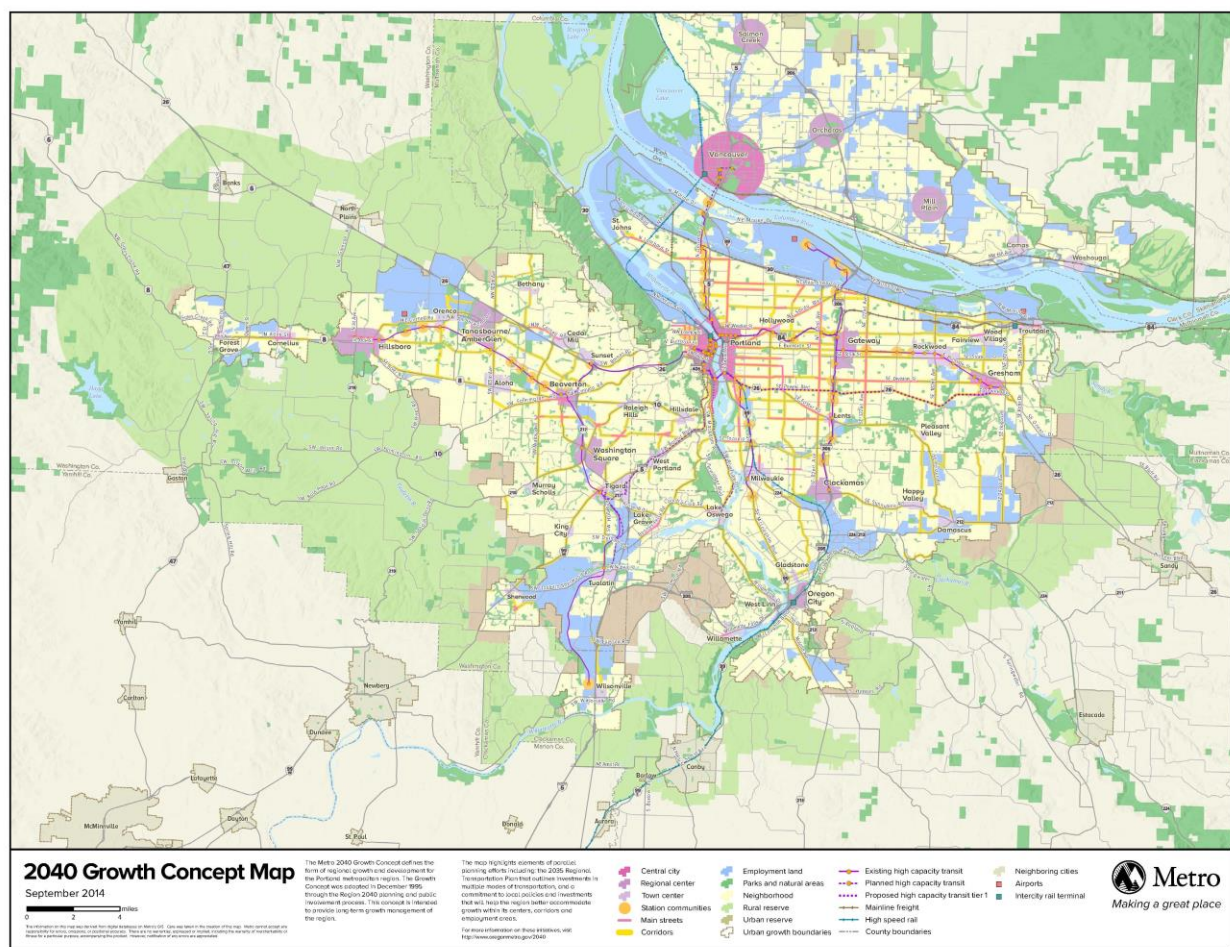
Learn more about the 2018
Regional Transportation Plan at
oregonmetro.gov/rtp

8.1 INTRODUCTION

Connecting Our Shared Values and Vision for the Future: Setting a Course for Transportation

Metro worked with federal, state and local government partners as well as residents, community groups, and businesses to develop the 2018 Regional Transportation Plan. The result of that work is a set of regionally identified goals and policies that guide our transportation planning and investment decisions overall, strategies to help meet those goals and policies, a shared understanding about existing financial resources, and a recommended set of projects that make progress addressing the region's significant and growing transportation needs and challenges. The goals, policies, projects and strategies in this plan also address federal, state and regional planning requirements based on our shared values and the outcomes we are trying to achieve as a region, including implementation of the 2040 Growth Concept.

Figure 8.1 2040 Growth Concept (2014)



The 2018 Regional Transportation Plan is a key tool for implementing the 2040 Growth Concept – our shared land use and transportation strategy for managing growth

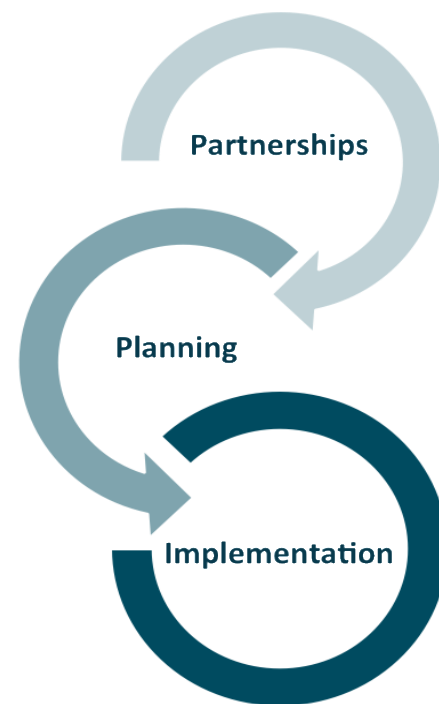
The plan sets an updated course for future transportation planning and investment decisions and continued implementation of the 2040 Growth Concept – the region’s adopted land use and transportation strategy for managing growth and building healthy, equitable communities and a strong economy.

The plan takes into account the changing circumstances and challenges we face and addresses them directly, adopting new approaches for addressing safety, accessibility, mobility, environmental health and transportation equity that distinguish this plan from past RTPs, and that align with existing funding challenges and opportunities.

Central to this plan are innovative approaches to connect community land use aspirations and transportation investments and use of regional mobility corridor strategies to comprehensively address our growing transportation needs while protecting public and environmental health. Each mobility corridor strategy is uniquely tailored by optimizing operations on existing throughways, and arterial streets that also serve as transit and freight routes, completing gaps in biking and walking connections and strategically expanding the transit and roadway system.

This RTP continues to broaden how performance of the system is measured to define system needs. This plan builds on the broader system completion policy adopted in 2010, adopting new accessibility, transportation equity and safety measures to evaluate performance of the investments recommended in this plan. These new measures will also be used to monitor how the transportation system is performing in between scheduled RTP updates.

Through its policies, projects and strategies, the RTP aims to attract jobs and diverse housing to our region’s downtown centers, main streets and employment areas. It seeks to increase the use of public transit, bicycling and walking, and reduce the amount of miles that our region’s residents, employers and visitors need to drive in order to get around. It also seeks to increase the safety, reliability and efficiency of the roadway and transit systems for all users. When we measure our performance, we find we have some successes, but overall the RTP falls short of meeting several performance targets set forth in Chapter 7.



The plan will be implemented through a variety of policies, projects, strategies and actions at the local, regional, state and federal levels.

To make more progress toward the goals and objectives of the plan, the region must take additional steps together and individually to address a wide range of planning, programmatic and project activities that will make it easier to implement adopted policies, projects and strategies. This chapter outlines those activities.

The plan will be implemented through a variety of strategies and actions at the local, regional, state and federal levels. The various jurisdictions in the region are expected to pursue policies, projects and strategies that contribute to meeting the agreed upon goals, objectives and policies of this RTP.

Implementation of this plan will require a cooperative effort by all jurisdictions responsible for transportation planning in the region, and will involve:

- Adoption of regional policies and strategies in local plans, including functional classifications for all modes and land use and transportation needs and agreed upon solutions identified in each mobility corridor strategy.
- A concerted regional effort to secure needed funding to build planned transportation investments needed to serve our growing and changing region.
- Focusing investments and system management strategies to support implementation of the 2040 Growth Concept and preserve the function of the region's mobility corridors in order to ensure that our land use and transportation policies are mutually supportive and make it easier for people to live and move around our region.
- Ongoing monitoring for consistency of changes to local transportation system plans (TSPs) and local Comprehensive Plans and land use designations with the RTP and other agency plans, including the Oregon Department of Transportation's Oregon Transportation Plan, Oregon Highway Plan and four-year State Transportation Improvement Program (STIP), the Oregon Department of Land Conservation and Development's Transportation Planning Rule (TPR), the Oregon Metropolitan Greenhouse Gas Emissions Reduction Rule and TriMet's Transit Implementation Plan (TIP).

The Regional Transportation Plan is a living document and will continue to evolve and be updated on a regular basis to address existing and emerging issues. Metro will continue to engage and collaborate with regional partners and stakeholders on all topics and provide support to ensure successful implementation of this plan.

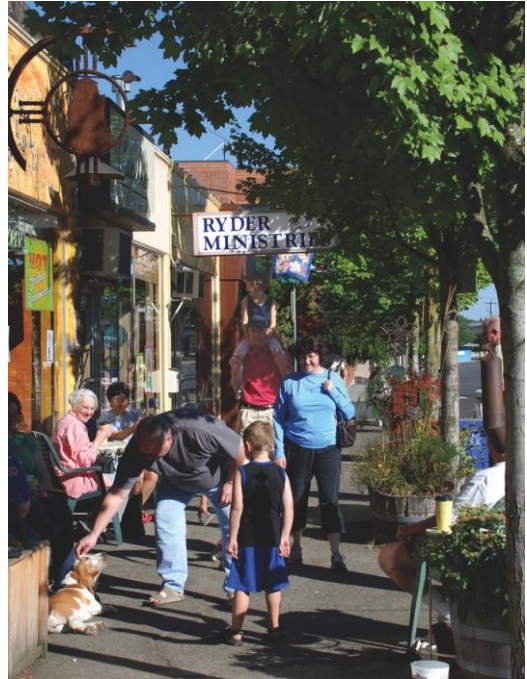
8.2 PLANNING AND PROGRAMS

This section summarizes local, regional and state planning and programs that advance implementation of the plan and 2040 Growth Concept.

8.2.1 Local Implementation

Local planning efforts which help implement the Regional Transportation Plan, include updates to the local transportation system plans, concept plans for designated urban reserves and topical, modal or subarea plans needed for consistency with the RTP or to address specific local or subarea transportation needs or emerging issues.

Local plans and projects are developed and updated to meet local transportation needs consistent with local land use plans and to implement the RTP and Regional Transportation Functional Plan (RTFP) as well as local needs and priorities. The RTFP directs how city and county plans will implement the RTP through their respective comprehensive plans, local transportation system plans (TSPs) and land use regulations. All of the actions included in the RTFP will help the region proactively address climate change, improve access and mobility and support other desired outcomes.



The TPR includes provisions for local TSPs to be updated within one year of adoption of the updated RTP, but allows for the RTP to determine a schedule for local plan compliance. A schedule for local transportation system plan updates is available at www.oregonmetro.gov/tsp. The local plan updates are phased appropriately to support local desires for completing plan updates in a timely manner, in coordination with other planning efforts and to take advantage of state and regional funding opportunities. The schedule will be updated following adoption of the Regional Transportation Plan.

In addition, the Portland metropolitan region has emerging communities- areas that have been brought into the urban growth boundary since 1998, that have 2040 land use designations, and that lack adequate transportation and transit infrastructure and financing mechanisms. Additional work is needed to define the needs of emerging communities and strategies needed to facilitate development in these areas, consistent with the 2040 Growth Concept.

8.2.1.1 Cooper Mountain Transportation Study

Washington County is conducting the Cooper Mountain Transportation Study to evaluate roadway network options to accommodate traffic through the Cooper Mountain area. Transportation in and around Cooper Mountain has long been a topic of discussion going back to the 1980s and 1990s with planning efforts around the Western Bypass and the Land Use, Transportation and Air Quality (LUTRAQ) studies. In more recent years, the Cooper Mountain transportation network has been an ongoing topic of discussion as part of the Washington County Transportation Futures Study, Concept Planning efforts of several cities, and anticipated development of other new urban growth areas (UGB additions since 2012 and Urban Reserves) on the western edge of the urban growth boundary. The Cooper Mountain area is experiencing increased traffic demand from regional growth and nearby developing areas.

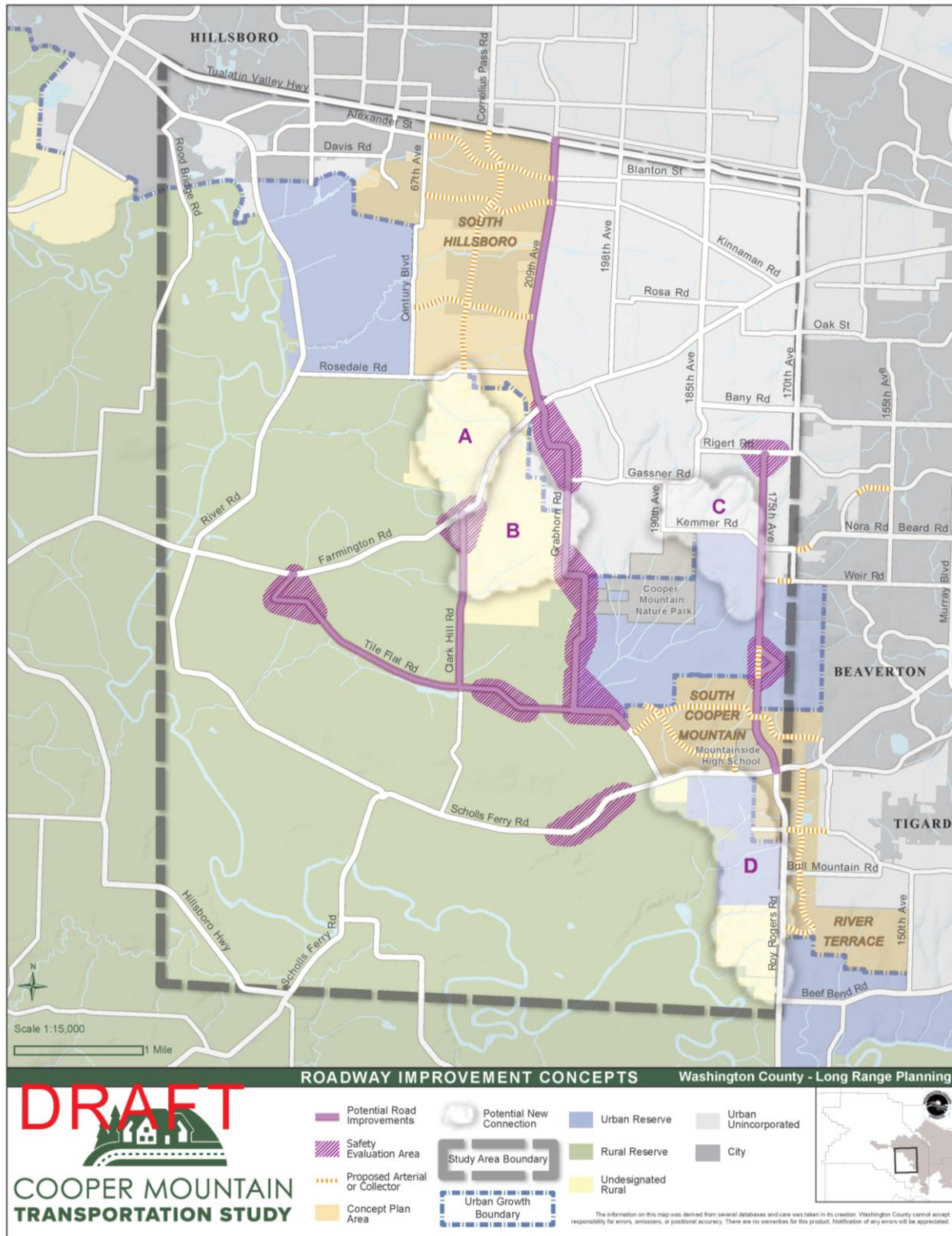
The Cooper Mountain study area is characterized by a mix of rural reserve, rural undesignated, urban reserve, and urban land. The developed areas are primarily residential and supportive uses. The existing rural roadway system was not intended to accommodate the current and projected levels of urban travelers using rural roads to go to and from urban destinations.

However, this trend is expected to continue with travelers moving between the communities of Sherwood, Tigard, Beaverton, Hillsboro and beyond on a regular basis. This study will take into account that the study area is part of a larger regional context and a multimodal transportation system is needed to connect several urban communities as well as provide accessibility to the rural community.

The Cooper Mountain Transportation Study began in fall 2017 and is expected to result in a number of Washington County Transportation System Plan and RTP amendments beginning in 2019 to add projects to the financially constrained project list and to update relevant RTP system maps.

Figure 8.2 illustrates the project study area. It includes areas of potential widening and/or safety improvements to existing roads, proposed roads that are already adopted into a local TSP or concept plan, concept plan areas, urban reserve areas, and clouded areas where additional new roadway connections could be made. The next steps in the study include refinement of the potential improvement concepts, alternatives and feasibility analysis, a final project list, and other action items for implementation.

Figure 8.2 Cooper Mountain Transportation Study Project Area



Source: Washington County Department of Land Use and Transportation

8.2.2 Metro's Regional Programs

Metro is responsible for several on-going regional programs that provide a combination of grants, technical assistance and planning to support local jurisdictions in implementing the 2040 Growth Concept and RTP. Modal experts provide expertise and support on freight, bicycle, pedestrian, motor vehicle, transit, Intelligent Transportation Systems (ITS) and operations planning, and topic experts provide support on climate change, equity, safety, emerging technology, shared mobility, connected and automated vehicles, street design, safe routes to school, resilience, transportation funding, brownfields, equitable housing and transit-oriented development. Metro's Regional Flexible Funds provide programmatic funding to help support that technical assistance, and capital funds to support implementation. The region's 2040 Grant Program supports planning processes to align land use and transportation goals, and the Equitable Housing grant program specifically focuses on supporting planning efforts to increase access to affordable housing across the region.

Regional programs identified in the Unified Planning Work Program, adopted annually by the Joint Policy Advisory Committee on Transportation (JPACT) and the Metro Council, are described below.

8.2.2.1 Civil Rights and Environmental Justice program

Metro's transportation planning policies and programs ensure compliance with Title VI of the 1964 Civil Rights Act; the Executive Order on Environmental Justice; Section 504 of the 1973 Rehabilitation Act and Title II of the 1990 Americans with Disabilities Act; Goal 1 of Oregon's Statewide Planning Goals and Guidelines; and Metro's organizational values of Respect and Public Service. The program is advancing methods on identifying potentially affected populations, engaging those populations in the development of policy and program decisions, and analyzing the effects of policies and programs for historically marginalized communities.

Metro's work to ensure compliance includes implementing outreach strategies that help marginalized populations overcome barriers to participation; demographic data collection and mapping; assessing outcomes of plans and programs on historically marginalized communities; and trainings provided to staff on Title VI compliance requirements and environmental outreach best practices.

Program work on compliance is found across many areas of transportation planning: developing the Regional Transportation Plan (RTP), the Metropolitan Transportation Improvement Program (MTIP), corridor planning projects that follow NEPA regulations and in the Regional Travel Options program, which conducts federally-funded outreach that promotes non-automobile transportation options. In 2012, Metro created a new public engagement review process designed to ensure that Metro's public involvement is effective, reaches diverse audiences and harnesses emerging best practices. One of the three criteria for selection of members of the Public Engagement Review Committee, an advisory committee to the Metro Council, is ability to represent diverse communities in the region. Other components of the public engagement review process that will contribute to more inclusive engagement and accountability include an annual

public survey, meetings of public involvement staff from around the region to address best practices, an annual community summit to gather input on priorities and engagement techniques, and an annual report.

Metro addresses compliance agency-wide as well as within transportation planning functions and program-by-program. A key way that Metro complies across the agency is with implementation of its Diversity Action Plan, updated and adopted by the Metro Council in May 2017. The plan identifies goals, strategies and actions to increase diversity and cultural competence at Metro in four key areas: internal awareness and diversity sensitivity, employee recruitment and retention, committee membership and public involvement, and procurement. Metro's Strategic Plan to Advance Racial Equity, Diversity and Inclusion was adopted by the Metro Council in June 2016 and identifies goals and actions under five goals: Metro convenes and supports regional partners to advance racial equity; Metro meaningfully engages communities of color; Metro hires, trains and promotes a racially diverse workforce; Metro creates safe and welcoming services, programs and destinations; and Metro's resource allocation advances racial equity. Through the 2017-18 fiscal year, four departments are developing racial equity plans to reach the goals of the racial equity strategy: Planning and Development, Parks and Nature, Property and Environmental Services and the Oregon Zoo.

8.2.2.2 Regional Transportation Safety Program

Metro is formalizing regional transportation safety activities in a new Regional Safety Program to support achieving the Vision Zero target and achieving federal, state, regional and local safety performance targets. The work program will be based on the strategies and actions identified in the 2018 Regional Transportation Safety Strategy and the Regional Safe Routes to School Program. Tasks in the Regional Transportation Safety Program work plan will have annual reporting of federally mandated safety performance targets, annual reports to the Metro Council and JPACT. The work plan will also include coordination with local, regional, state, and federal plans to ensure consistency in approach to safety needs and issues across the region, updates to regional plans and the Regional Transportation Functional Plan to reflect current policy direction. Other work program activities include safety data collection, maintenance, analysis and interpretation, activities to coordinate with partners and increase awareness of the Safe System approach and Safe Routes to School, encouraging best practices in transportation safety and roadway design with funding and programmatic support identifying legislative priorities, and collaborating on efforts to highlight safety in materials, messaging and campaigns. The program will be closely coordinated with other regional transportation programs and region-wide planning activities.

8.2.2.3 Regional Active Transportation Program

The Regional Active Transportation Program manages updates to and implementation of pedestrian, bicycle and access to transit in the Regional Transportation Plan (RTP) and the Regional Active Transportation Plan. The program provides guidance to jurisdictions in planning for safe, efficient and comfortable active transportation access and mobility on the regional transportation system (including regional trails and multi-use paths). The program is closely

coordinated with other regional transportation programs and region-wide planning activities, and with Metro's Parks and Nature Department. Additionally, the program supports coordination with local, regional, state, and federal plans to ensure consistency in approach to active travel needs and issues across the region. The program ensures that prioritized regional bicycle and pedestrian projects are competitively considered within federal, state, and regional funding programs. Ongoing data collection, analysis, education, and stakeholder coordination are also key elements of Metro's active transportation program.

8.2.2.4 Regional Freight Program

The Regional Freight Program manages updates to and implementation of multimodal freight elements in the Regional Transportation Plan (RTP) and supporting Regional Freight Strategy. The program provides guidance to jurisdictions in planning for freight movement on the regional transportation system. The program supports coordination with local, regional, state, and federal plans to ensure consistency in approach to freight-related needs and issues across the region. Metro's coordination activities include ongoing participation in the Oregon Freight Advisory Committee (OFAC), and Portland Freight Committee (PFC). The program ensures that prioritized freight projects are competitively considered within federal, state, and regional funding programs. Ongoing freight data collection, analysis, education, and stakeholder coordination are also key elements of Metro's freight program. The program is closely coordinated with other regional transportation programs and region-wide planning activities.

8.2.2.5 Transportation System Management and Operations (TSMO) Program

With the intent of supporting TSMO investments and activities in the greater Portland metropolitan region, the TSMO program encompasses three activity areas that include regional policy development and implementation, MTIP grant management and system performance management:

- **Regional policy development and implementation.** The program maintains and periodically updates the Transportation System Management and Operations Strategy. The program provides leadership on the Regional Intelligent Transportation System (ITS) Architecture in order to comply with the FHWA rule that requires federally funded transportation projects to be in compliance with the National ITS Architecture. The program also guides implementation of the region's ITS communications network under the Communications Master Plan. It will continue to seek and support opportunities for research, education, and training on TSMO.
- **MTIP Grant Management.** The program manages the allocation of Regional Flexible Funding dedicated to TSMO. The TSMO program coordinates projects that were prioritized for a sub-allocation of federal funds for 2016-2018 and 2018-2021, consistent with the adopted Regional TSMO strategy. The program will continue to coordinate and manage the allocation of TSMO-designated regional flexible funds to partner agencies. It will provide support for applying systems engineering to regionally-funded ITS projects.
- **Congestion Management Process Support.** The program supports the federal mandates to maintain a CMP and promote TSMO, including intelligent transportation systems (ITS). The

program implements actions identified in the Arterial Performance Management Regional Concept of Traffic Operations (RCTO) to advance the region's performance measurement capabilities on arterial streets. CMP performance monitoring will continue (e.g., Regional Mobility Corridor Atlas) in order to support development of the RTP, local TSPs and MTIP programming. The program will continue to enhance PORTAL, a regional archived data user service managed by Portland State University. PORTAL will continue to expand the collection, archiving, and uses of multimodal performance data in a way that will enhance the region's ability to diagnose and address congestion and support multimodal operations consistent with the region's CMP.

The program is closely coordinated with other regional transportation programs and region-wide planning activities.

8.2.2.6 Regional Travel Options (RTO) and Safe Routes to School Programs

The Regional Travel Options Program implements RTP policies and the Regional Travel Options Strategy to reduce drive-alone auto trips and personal vehicle miles of travel and to increase use of travel options. The program improves mobility and reduces greenhouse gas emissions and air pollution by carrying out the travel demand management components of the RTP. The program maximizes investments in the transportation system and eases traffic congestion by managing travel demand, particularly during peak commute hours. Specific RTO strategies include promoting transit, shared trips, bicycling, walking, telecommuting and the Regional Safe Routes to School Program. The program is closely coordinated with other regional transportation programs and region-wide planning activities. The program is closely coordinated with other regional transportation programs and region-wide planning activities.

8.2.2.7 Air Quality and Climate Change Monitoring

The Air Quality and Climate Change Monitoring Program ensures the RTP and the MTIP address state and federal regulations and are carrying out the commitments and rules set forth as part of the Portland Area State Implementation Plan (SIP), the Climate Smart Strategy and the Metropolitan Greenhouse Gas Emissions Reduction Target Rule. The program also coordinates with other air quality and climate change initiatives in the region and monitors federal and state rulemaking that may impact forecasted emissions profiles. Metro is participating in a work group of the Department of Environmental Quality (DEQ) to develop a regional clean air construction strategy for clean diesel equipment and vehicles on select public improvement projects. The DEQ air quality program changes are implemented through the State Implementation Plan as part of ongoing implementation of the Transportation Control Measures. The regional and RTP will adhere to the changes once adopted.

8.2.2.8 Complete Streets Program

Metro's Complete Streets Program was established to provide transportation design guidelines, regional arterial and throughway design classifications and other tools to support local jurisdictions to design streets that implement context-sensitive design solutions that support the

2040 Growth Concept and achieving regional goals, including the Vision Zero target, increased transportation options for people of all ages and abilities, efficient and reliable travel for all modes, healthy people and environment, security, reduced green house gas emissions, sustainable economic prosperity, racial and income equity, vibrant communities, resiliency and fiscal stewardship. Program elements include providing technical assistance to cities and counties as transportation projects go through project development and design, and convening workshops, forums and tours to increase understanding and utilization of best practices in transportation design. The program is closely coordinated with other regional transportation programs and region-wide planning activities, and with Metro's Parks and Nature Department.

Metro staff will work with cities, counties, ODOT, TriMet, the Audubon Society of Portland, Metro Parks and Natural Areas department, members of the Regional Conservation Strategy working group, the Street Trust, Oregon Walks and other interested parties to review and update the design policy section of the RTP prior to completion of the next RTP update (due in 2023). The focus of this work will be to reflect updates to the regional design guidelines that will be finalized in 2019 and to better integrate green infrastructure and natural resource protection. This work will result in a set of recommended design policies for consideration by JPACT, MPAC and the Metro Council prior to inclusion in the RTP.

8.2.2.9 Regional Transit-Oriented Development Program

Since 2001, Metro's Transit-Oriented Development (TOD) program has had a unique and critical role in implementing the 2040 Growth Concept vision for vibrant, walkable centers and station areas linked by transit. The program invests in compact mixed-use projects near light rail stations, along frequent service bus corridors and in regional and town centers throughout the region increasing opportunities for people live, work and shop in neighborhoods with easy access to high-quality transit. The program provides financial incentives for TOD projects to increase transit ridership, stimulate private development of mixed-use buildings that would otherwise not proceed, and increase affordable housing opportunities near transit in high cost and gentrifying neighborhoods through land acquisition and project investments. With an increased focus on affordable housing, the program supports construction of housing near transit and services that is more affordable for older adults and lower- income households compared to what would otherwise be built on a property. Related program activities include opportunity site acquisition, investment in urban living infrastructure, and technical assistance to communities and developers.

8.2.2.10 Investment Areas Program

Metro's Investment Areas program helps communities build their downtowns, main streets and corridors and leverage public and private investments that implement the region's 2040 Growth Concept. Projects include supporting compact, transit oriented development in the region's mixed use areas, evaluating high capacity transit and other transportation improvements that cross city and county lines, and integrating freight and active transportation projects into multimodal corridors.

Major public infrastructure investments do not stop at city or county lines. Our transportation system connects the communities within greater Portland with the rest of the state and the rest of the world. When our region spends billions of dollars on expanding our road, transit and highway system to keep up with the continued population and employment growth, those public investments can both benefit and burden nearby communities. Over time, the region has become more strategic at linking together our transportation, housing, economic, racial equity and environmental goals, policies, and investments so that we can intentionally preserve and create great places that serve all people throughout the region, even as change and growth occurs.

The Investment Areas program completes system planning and develops multimodal projects in transportation corridor refinement plans identified in the Regional Transportation Plan. It also works on finance plans to align public investments in areas that support the region's growth economy. It includes ongoing involvement in local and regional transit and roadway project conception, funding, and design. Metro provides assistance to local jurisdictions for the development of specific projects as well as corridor-based programs identified in the RTP.

Metro's Investment Areas program has been connecting planning for major transportation projects with the community's broader goals and needs. While each area's conditions and needs are different, the approach of bringing together government, community, and business partners provides a framework to produce a shared plan of action to guide the investments and decisions of multiple agencies. Including a broader set of stakeholders in a collaborative decision making process allows for decisions that once seemed unclear or unfair to stakeholders to be more transparent. This approach improves our ability to involve and include those who are affected by these decisions and investments.

Investment areas can set the stage for a range of major capital investments beyond high capacity transit. Other Metro investment areas have focused on freight routes connecting major highways through small communities, redevelopment of brownfields in employment areas, and leveraging the opportunities of a regionally significant riverfront destination. The program is closely coordinated with other regional transportation programs and region-wide planning activities, including corridor refinement planning activities.

8.2.2.11 Emerging Technology Program

Metro's Emerging Technology program is new and will be guided by the Regional Emerging Technology Strategy. The Emerging Technology Strategy identifies steps that Metro and our partners can take to harness new developments in transportation technology—including automated, connected and electric vehicles; new mobility services like car share, bike share and ride-hailing services (for example, Uber and Lyft); and the increasing amount of data available to both travelers and planners—to create a more equitable and livable greater Portland region and meet the goals in the 2018 Regional Transportation Plan.

The Strategy forecasts how technology is likely to impact transportation over the coming decades, discusses how transportation agencies can respond in an era of increasingly rapid change and

identifies policies and actions that Metro and partners can take to stay on track to achieve our regional goals as technology continues to develop.

Metro has identified four **next steps** to take in the next two years that will advance the region's work on emerging technology and support local partners in implementing the policies in the Strategy:

- Fund **technology pilot projects** to test new approaches to connecting people to transit, promoting shared and active trips and providing more equitable transportation options.
- Convene partners to establish **new mobility policies** that are consistent across the region and aligned with this strategy to ensure new travel options operate safely, equitably and transparently.
- Develop **better data and tools** so that we can account for the impacts of emerging technology in transportation planning efforts.
- Advocate for **state and federal technology policy that supports our regional goals** and preserves local and regional authority to manage the transportation system.

8.2.3 Region-wide Planning

This section summarizes near-term planning at the regional-scale to advance implementation of the plan. Each planning effort is needed to address regional transportation policy or planning issues that could not be resolved during the plan update.

Table 8.1 Overview of Region-wide Planning Activities

	Lead Agency	Proposed timing
Regional Mobility Policy Update	Metro, ODOT	2019-21
Regional Congestion Pricing Technical Analysis	Metro, ODOT	2019-TBD
Transportation System Management and Operations Strategy Update	Metro	2019-20
Jurisdictional Transfer Assessment Program	Metro, ODOT	2019-20
Transit planning	TriMet, SMART	Annually
Enhanced Transit Concept Pilot Program	Metro, TriMet	2018-22
Central City Transit Capacity and Steel Bridge Analysis	Metro, TriMet	2019
Transportation Equity Analysis and Monitoring	Metro	2019-23
Funding Strategy for Regional Bridges	Counties	2019-21
Emergency Transportation Routes Project	Metro, RPDO	2019-20
Regional Freight Delay and Commodities Movement Study	Metro, ODOT	2022
Regional Freight Rail Study	Metro, Port	2023
Regional Transportation Functional Plan Update	Metro	TBD
Parking Management Policy Update	Metro	TBD
Green Corridor Implementation	Metro	TBD
Frog Ferry Passenger River Taxi Service Study	Friends of Frog Ferry	TBD

These efforts will be completed consistent with the RTP goals, policies and strategies. A lead agency, project partners and proposed timing for completion is identified for each planning effort along with a description of the issues to be addressed and expected outcomes from the work. This work will be completed by multiple partners as resources are available and pending future Metro Council and JPACT policy direction and will be coordinated through the development and approval of the annual Unified Planning Work Program (UPWP).

8.2.3.1 Regional Mobility Policy Update

Lead agency	Partners	Proposed timing
Metro and ODOT	ODOT, cities, counties, TriMet, SMART, FHWA, SW RTC	2019-21

As part of adopting the 2000 RTP, the first transportation plan to fully implement the Region 2040 Growth Concept, Metro developed a new approach to managing mobility. The new policy came from an extensive conversation with regional elected officials and policy makers over a two-year period, including an alternatives analysis to help officials better understand the tradeoffs with making mobility investments.

Originally adopted by JPACT and the Metro Council in 2000 and amended into the Oregon Highway Plan (OHP) by the Oregon Transportation Commission (OTC) in 2002, the interim regional mobility policy reflects a level of motor vehicle performance in the region that JPACT, the Metro Council and the OTC deemed acceptable at the time of its adoption. Policymakers recognized the policy as an incremental step toward a more comprehensive set of measures that consider system performance for all modes, as well as financial, social equity, environmental and community impacts. This RTP continues that evolution and has defined a broader set of performance measures that can provide a more comprehensive assessment of transportation system performance as reflected in the performance measures identified for each RTP goal and the regional performance targets, including the interim regional mobility policy, contained in Chapter 2 and Chapter 3.

The interim regional mobility policy reflects volume-to-capacity targets adopted in the RTP for facilities designated on the Regional Motor Vehicle Network as well as volume-to-capacity targets adopted in the Oregon Highway Plan for state-owned facilities in the urban growth boundary. In effect, the policy is used to evaluate current and future performance of the motor vehicle network, using the ratio of traffic volume (or forecasted demand) to planned capacity of a given roadway, referred to as the volume-to-capacity ratio (v/c ratio) or level-of-service (LOS).

Traditionally, motor vehicle LOS has been used in transportation system planning, project development and design as well as in operational analyses and traffic analysis conducted during the development review process. As a system plan, the RTP uses the interim regional policy to diagnose the extent of motor vehicle congestion on throughways and arterials during different times of the day and to determine adequacy in meeting the region's needs. LOS is also used to determine consistency of the RTP with the OHP for state-owned facilities.

The interim mobility policy broke from the historic practice of "one size fits all" congestion standards for roads and freeways to a more tailored approach that coordinates our region's land use goals with the role of our major streets, focuses auto and freight mobility expectations on the freeway system and emphasizes the role of transportation choices in moving people throughout the region. The policy allows for more congestion during the peak period in locations that have good travel options available, such as high capacity transit, while aiming to protect the off-peak period for freight mobility. This new emphasis on a tailored mobility policy and multimodal solutions was also incorporated into the Oregon Transportation Plan (OTP) in 2006, the policy document that frames and organizes all of the state's modal plans for transportation.

The policy also recognizes that past practice of "building our way out" of peak-hour highway congestion is not only fiscally and technically unattainable, but also has unintended impacts that are inconsistent with the adopted 2040 Growth Concept vision, including encouraging development on rural lands outside the urban growth boundary and undermining the broader public and private investments being made in centers and transit corridors. The policy prioritizes investment in a multimodal transportation system in order to make sure that our transportation investments also help us meet our economic development, public health, climate change and fiscal responsibility goals.

In the 2010 RTP, Metro expanded on the concept with the development of a series of regional mobility corridors that provide the geography for monitoring and reporting on mobility. Twenty-four mobility corridors, encompassing the entirety of the region's transportation system, were developed, with each corridor framed by Region 2040 land use outcomes, and bundling throughways, transit, arterial streets and bikeways in each mobility corridor as complementary parts of an integrated system. Metro publishes a periodic Regional Mobility Atlas to provide ongoing tracking performance of these corridors as a foundation for planning and project development work in the region.



Regional Mobility Policy Update

There has been increasing discussion of the role of motor vehicle LOS as a performance metric. The region and local communities across the region have adopted goals such as improving safety for all roadway users (e.g., pedestrians, bicyclists, freight and transit users) and encouraging infill development to implement the 2040 Growth Concept, which often conflict with meeting LOS thresholds.

The region has committed to updating the interim regional mobility policy to better align with the comprehensive set of goals and desired outcomes identified in the RTP. This section describes a proposed work plan for considering measures aimed at system efficiency, including people-moving capacity, person throughput and system completeness.

In 2013, ODOT published the Corridor Bottleneck Operations Study (CBOS), another tool for understanding and responding to congestion bottlenecks on throughways within the regional mobility corridors. This tool has since been used to prioritize system management and operational investments on the region's throughways system with an eye toward fine-tuning a mature throughway system with strategic capacity improvements. The few major throughway projects envisioned in the RTP are focused on bottlenecks that are part of this shift toward maintaining, managing and operating a mature system.

Despite these efforts to keep pace with traffic growth in the region, congestion has continued to grow since the 2000 RTP mobility policy was adopted. During this time, the region has experienced significant population and employment growth, straining all parts of our transportation system. During the same period, state investments in the region's freeway system continued to decline from historic levels due to slowing state and federal transportation funding.

Congestion and its impacts on mobility and the region's economic prosperity and quality of life are a top public concern. The update identified current traffic congestion on many of the region's throughways and arterials, and predicts that many of these facilities are unlikely to meet the adopted interim mobility policy targets in the future, including I-5, I-205, I-84, OR 217 and US 26.

ODOT's 2016 Traffic Performance Report¹ shows what many of us have experienced: traffic congestion in the greater Portland region today can occur at any time of the day or week, and is no longer only a weekday peak hour problem. In 2013, about 11 percent of all travel in the greater Portland region occurred during congested periods. This increased to nearly 14 percent in 2015. This increase in congestion is a reflection of the both the region's continued growth, including our substantial economic rebound from the Great Recession that began in 2008.

More recently, the U.S. Department of Transportation issued new regulations (through MAP-21 and the FAST Act) for states and MPOs that will require greater monitoring of mobility on our throughway system and other facilities designated on the National Highway System and setting targets for system performance. While these new requirements differ somewhat from the current mobility policy for the region, the approach is similar.

ODOT and Metro propose to work in partnership on a refinement plan to update the regional mobility policy adopted in the RTP and the OHP Policy IF3 (Highway Mobility Policy) upon completion of the 2018 RTP. The process must comply with the provision of OHP Policy 1F3 and associated Operational Notice PB-02, and must include findings to demonstrate compliance. That means the project will set forth a Portland area-specific process(es) and documentation requirements and identify measures and targets for identifying needs and for demonstrating the adequacy of regional and local actions and projects in transportation system plans, and of mitigation measures for plan amendments during development review.

¹ The 2016 Traffic Performance Report establishes a baseline for long-term monitoring that will help Metro and ODOT better understand the performance of the region's freeway system and supports the region's Congestion Management Process.

Proposed measures and targets will generally be taken from existing measures and past research efforts, including the RTP, Climate Smart Strategy, ODOT Key Performance Measures, Federal performance measures and targets, Washington County TGM project on performance measures and standards, and the ODOT Region 1 Highway Performance Project and Traffic Performance Report. A targeted review of best practices from California, Washington, Florida, and other states and MPOs will be conducted. Measures to explore may include motor vehicle, freight and transit travel time and reliability, active transportation network completeness, street connectivity, transit coverage and frequency, mode share, accessibility, trip length, vehicle miles traveled, and mobility corridor person and goods movement capacity and throughput.

Metro and ODOT will engage TPAC, JPACT and other interested stakeholders in development of the scope of work (and desired outcomes) beginning in early 2019, after adoption of the 2018 RTP. The agreed upon scope of work and budget will also be reflected in the 2019-20 Unified Planning Work Program (UPWP). This work is expected to take two years and result in amendments to the RTP and regional functional plans and OHP Policy 1F3 for consideration by JPACT, the Metro Council and the Oregon Transportation Commission prior to the 2023 RTP update.

Expected outcomes of the update include:

- A mobility policy framework will be developed for the regional throughways, which generally correspond with expressways designated in the Oregon Highway Plan (OHP). This policy will be incorporated into the RTP, Regional Transportation Functional Plan (RTFP) and OHP Policy 1F3 for the purpose of evaluating the performance of throughways.
- A mobility policy framework will be developed for arterial streets. This policy will be incorporated into the RTP and RTFP for the purpose of evaluating the performance of county and city-owned arterials, and in OHP Policy 1F3 for the purpose of evaluating the performance of state-owned arterials.

Together, these new policy frameworks will guide transportation system planning as part of future RTP and local TSP updates and monitoring activities in support of the region's ongoing Congestion Management Process (CMP). The policy frameworks will also be applied to the evaluation of transportation impacts of plan amendments during development review, and will provide guidance for operational decisions.

The City of Oregon City has locally adopted the Highway 213 Corridor Alternative Mobility Targets plan, which includes alternative mobility targets at the intersection of Highway 213 and Beavercreek Road. The Highway 213 Corridor Alternative Mobility Targets were approved by the OTC as an amendment to the OHP in October 2018. It will be imperative that any planning work done regionally related to the regional mobility policy update, shall either create a condition where the Oregon City amendment to the Metro area mobility targets in the OHP is no longer necessary, or shall explicitly state that the Oregon City amendment to the OHP shall remain in effect even when an updated regional policy is adopted.

8.2.3.2 Regional Congestion Pricing Technical Analysis

Lead agency	Partners	Proposed timing
Metro and ODOT	Cities, counties, FHWA	2019-TBD

Growing congestion on the greater Portland area's throughways is increasing travel delays and unpredictability. This congestion affects quality of life as travelers sit in cars or on the bus, and impacts the economy through delayed movement of merchandise and lost productivity.

Ongoing efforts to address congestion in the region include investments in system and demand management strategies, improving transit service and reliability, increasing bicycle and pedestrian access and adding highway capacity in targeted ways. But it is clear that these strategies are not sufficient and will result in continued congestion in our region. We cannot address congestion through supply alone; we must also manage demand.

Through the end of 2018, ODOT is conducting a feasibility analysis to explore the options available and determine how congestion pricing, also known as value pricing, could help ease congestion in the greater Portland area.

Oregon's House Bill 2017, also known as Keep Oregon Moving, directs the OTC to develop a proposal for congestion pricing on I-5 and I-205 from the state line to the junction of the two freeways just south of Tualatin, to reduce congestion. The State Legislature directed the OTC to seek approval from the Federal Highway Administration no later than December 31, 2018. If FHWA approves the proposal, the OTC is required to implement congestion pricing.

The OTC formed a policy advisory committee in fall 2017 to provide a recommendation after considering technical findings, likely effects (traffic operations, diversion, equity, environmental and air quality, and others), mitigation opportunities and public input. This work is focused on identifying potential strategies to manage demand on I-205 and I-5. In its early stages, it has focused attention on the need to price comprehensively, rather than High Occupancy Toll lanes and to identify key mitigation strategies, such as increased transit service.

The project's limited scope has raised larger questions about how demand management pricing strategies could be implemented throughout the region; further study is needed in this area and should be undertaken to better understand different ways that pricing could work regionally and the different policy outcomes that various pricing programs, including cordon pricing, VMT-based pricing and network-based pricing might have. In addition, the study should evaluate issues and outcomes related to equity, safety and alternative investments, including the interaction between pricing and increased transit access. A comprehensive, regional study should be undertaken before the next update to the RTP in order to provide policy guidance as to how different types of pricing programs might impact traffic congestion, people and vehicle throughput, freight mobility, greenhouse gas emissions, air pollution, outcomes for under-served communities, mode share and overall traffic volumes and whether they improve the regional transportation system.

8.2.3.3 Transportation System Management and Operations Strategy Update

Lead agency	Partners	Proposed timing
Metro	Cities, counties, ODOT, TriMet, SMART, C-TRAN, RTC, FHWA	2019-20

The region's Transportation System Management and Operations (TSMO) program follows a 10-year plan that ends in 2020. Consequently, the Metro will update the TSMO Strategy before it expires, and to reflect the changing transportation technology-driven infrastructure and system needs.

The strategy will be considered for adoption by JPACT and the Metro Council when the update is complete. The TSMO Strategy will guide program investments using federal funding allocated by Metro through the Regional Flexible Fund Allocation process, state funding, additional federal grant funds and local funds, building on investments to increase transportation system efficiency and support innovative ways to use technology to actively manage demand, manage the system and to improve operations, such as building on the foundation of the region's Intelligent Transportation Systems (ITS) investments. The TSMO Strategy will include key components of the system monitoring, performance measurement and the federally-required Congestion Management Process (CMP) defined in the RTP. Most of the required CMP activities are related to performance measurement and monitoring.

While the current TSMO plan continues to serve the region, an update is needed to formalize new concepts among regional TSMO partners, including systems, operations and infrastructure for connected and automated vehicles following policy defined in the region's Emerging Technology Strategy. TSMO planning and systems support smarter operations through integrated corridor management, decision support systems, cloud-based applications and "Smart City" urban applications of the Internet-of-Things (IoT) in service of sensing real-time demand to improve operations.

The update will engage a broad range of stakeholders to understand issues and needs from operators and the traveling public. It will focus on empowering local and regional jurisdictions to analyze multimodal performance data to advance the region's ability to diagnose and manage congestion, support multimodal operations, reduce climate and other emissions and improve safety to achieve Vision Zero. The update will also include planning for next generation transit signal priority to improve transit travel time reliability and speeds system-wide. The update will result in an updated set of policies, projects and specific actions to guide TSMO investments and activities in the greater Portland region and further implement the Regional Transportation Plan.

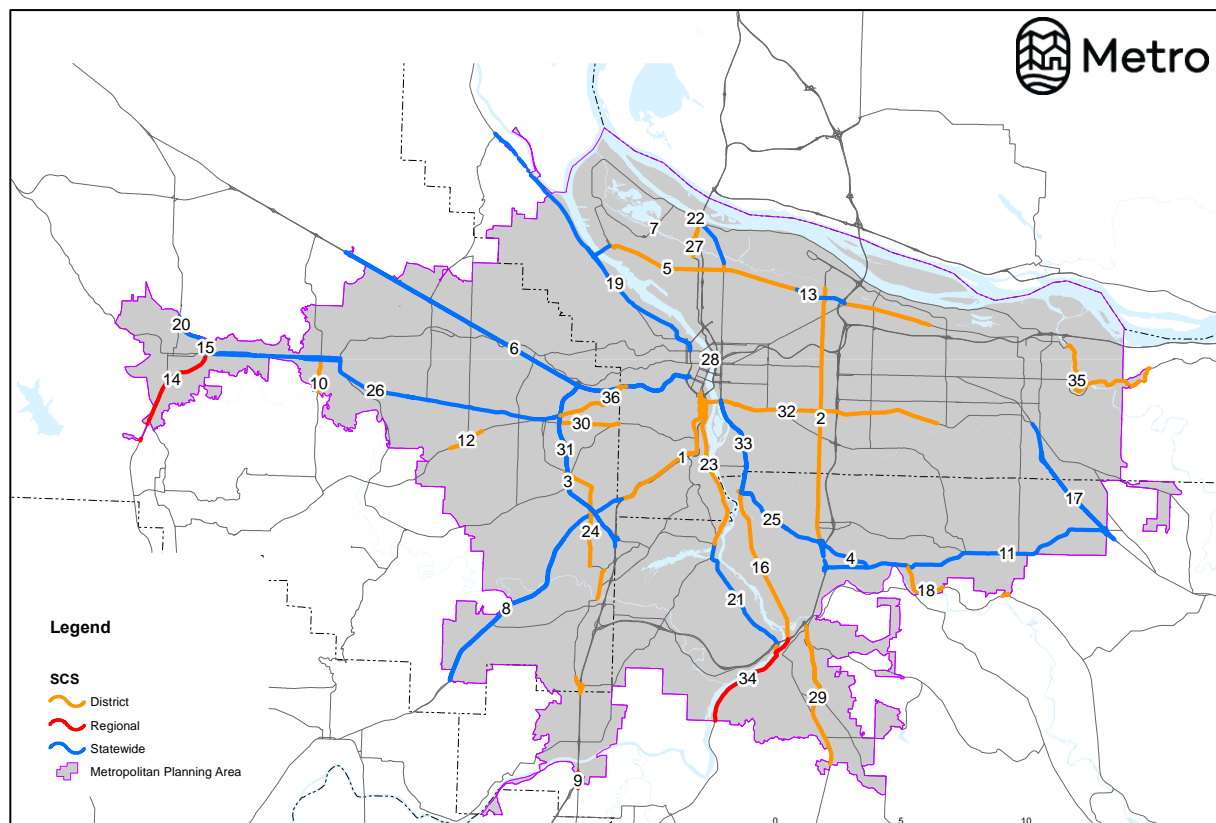
8.2.3.4 Jurisdictional Transfer Assessment Program

Lead agency	Partners	Proposed timing
Metro and ODOT	Cities, counties, TriMet, FHWA	2019-20

Purpose

The purpose of a jurisdictional highway transfer assessment program is to ensure that roadways in the Portland metropolitan region are owned by the agency best positioned to ensure the transportation infrastructure supports the land use and improves safety for all users. This means identifying which state-owned routes in the region should be evaluated and considered for a jurisdictional transfer; gaps and deficiencies on those routes; priorities among the routes; and barriers and opportunities to transfer the prioritized routes from state to local ownership.

Figure 8.3 Oregon Highway Plan State Highway Classifications



Problem Statement

In Oregon, and specifically in the Portland metropolitan region, ownership patterns of streets, roads and highways reflect historical patterns but do not necessarily reflect current transportation uses, land use and development patterns. While many of the state-owned roads with an arterial classification carry freight, they also serve short distance local vehicle trips, transit, bicycle, and pedestrian travel. A road under ODOT jurisdiction that no longer fulfills its

original role in the context of the larger state highway system may be a very important route to the city or county where it is located in the context of the local and regional system. These roadways can be found throughout the region: from Hall Boulevard to the west, McLoughlin Boulevard to the south, Powell Boulevard to the east and Lombard Street to the north.

The history of each road also provides important context for decision-making. Sometimes called an "orphan highway," many roadways in the Portland metropolitan region were originally constructed as rural or farm-to-market roads. But as city limits expanded many of these roads became surrounded by increasingly dense urban environments that put pressure on them to function more as city streets. Due to increased commercial activity and access over time, these arterial highways now serve more of an accessibility than a mobility function, and often carry multiple modes of transportation each day. For example, 82nd Avenue is a major transit and pedestrian corridor. In 1983, Interstate 205 opened just 10 blocks east, creating a new north-south throughway. At this point, 82nd Avenue was no longer needed for long-distance travel.

In the RTP, these roadways are often identified as key travel corridors for freight, transit, vehicle, bicycle and pedestrian trips. There is a strong correlation between the 2018 RTP High Injury Network, where road users face higher than average probability of being killed or seriously injured, and arterial highways. It is a regionally recognized issue: how to balance mobility and reliability for all modes with accessibility, safety and livability. Maintaining these roads and implementing capital improvements is further complicated when local expectations and needs do not match state investment priorities.

According to the OHP Policy 2C (Interjurisdictional Transfers), it is the policy of the State of Oregon to consider jurisdictional transfers that rationalize and simplify management responsibilities, reflect the appropriate functional classification, and lead to increased efficiencies in the operation and maintenance of a particular roadway segment or corridor. ODOT's *A Handbook for Making Jurisdictional Transfers* reiterates that it is in ODOT's interest to concentrate state responsibility for the road system on highways with statewide or inter-regional significance and to increase the efficiency of operation and maintenance of the highway system.²

Most of these roadways have a backlog of pavement maintenance as well as gaps or deficiencies in basic urban pedestrian and bicycle facilities. Funding for near- or long-term investments has not been identified by the state or local jurisdictions. Furthermore, there is no agreement in the region on which roads are the highest priorities when it comes to what to transfer, when, and at what cost.

² Transferring Roads: A Handbook for Making Jurisdictional Transfers (2003) can be accessed online at: <https://digital.osl.state.or.us/islandora/object/osl%3A9571/datastream/OBJ/view>

Process

Metro will work with ODOT to lead a collaborative and inclusive process for decision-making to prioritize highways and address some of the next steps for transfer in the Portland region. Because Metro does not own any roadways, Metro will act as a facilitator and convener of partners to move the process forward.

While this process aims to assess and prioritize roadways for transfer in the Portland region, it is not intended to discourage any transfers or investments from occurring prior or during the assessment process. There are certain roadways and jurisdictions that may be ready for a transfer without going through this assessment process.

Jurisdictional Transfer Assessment Program Process

STEP 1: Identify roadways in the Portland region that might be candidates for jurisdictional transfer

STEP 2: Compile existing data

STEP 3: Evaluate costs and local readiness of corridors

STEP 4: Prioritize roadways for jurisdictional transfer in the Portland region

STEP 5: Identify risk issues and legal mechanisms for Tier 1 corridors

STEP 1: Identify roadways in the Portland region that might be candidates for jurisdictional transfer

The first step is a planning phase that necessitates Metro, ODOT and their partners to take a look at classifications in the context of today's transportation system, or what is planned in future investments.

Metro, ODOT and local jurisdictions (the project partners) will identify the state-owned roadways to be included in the study, including most arterials but excluding throughways. The map below displays the State Highway Classifications for all state-owned roads in the region. Action 2C.1 of the OHP suggests that potential candidates for jurisdictional transfer may include: urban arterials serving primarily local travel needs; urban streets that have remained state-owned after a parallel major improvement has been constructed; frontage roads; farm-to-market roads; other roads that function like county roads; and connector roadways between highways.

Road classifications will be used to determine the highways to review. The starting assumption is that:

- "Interstate Highways" will not be included.
- Roads owned by the state and classified as "Regional" or "District" will be included on the list of potential roadways for jurisdictional transfer.
- Roads owned by the state and classified as "Statewide" will be evaluated on a case-by-case basis according to existing and planned function, as defined in the OHP. In cases where a reclassification of the highway from Statewide to Regional or District is warranted, changes to the OHP may be sought before considering jurisdictional transfer.

The “Statewide” classification will likely require the most analysis and discussion. According to the OHP, the “Statewide” classification is defined as providing “inter-urban and inter-regional mobility and to provide connections... not served by Interstate Highways” and “the management objective is to provide a safe and efficient, high-speed, continuous-flow operation.” These criteria will be used for determining which Statewide Highways remain in the classification and which should be reclassified as District or Regional.

In addition, the designations of state classifications have not been updated since the adoption of the OHP in 1999. The process for reconsideration will take into account National Highway System (NHS) and other freight-related designations that have been updated more recently. More research is needed if and how NHS designations affect a potential transfer. The RTP also provides a means to revisit the Statewide Highway classification, as the RTP already differentiates facilities with the OHP classification and the regional functional classification system. Those facilities that are designed as (or planned to include) limited-access, high-speed routes (per the OHP definition of Statewide Highways) are part of the RTP Principal Arterial network. Examples include the Sunset Highway, Highway 217 and Highway 99E/224/Sunrise.

Once roadways are identified, partners will also assess whether the current conditions of the highway are consistent with the RTP and local TSP design and modal classifications, local land use plans, past planning efforts, and submittals of projects to the RTP project list.

The potential roadways vary in length and often cross multiple jurisdictions. Since local jurisdictions are the likely recipients of the transferred highway, it is proposed to define segments, and beginning and end points based on jurisdictional boundaries.

If a jurisdictional transfer is not viable or appropriate, jurisdictions may pursue a potential Special Transportation Area designation in collaboration with ODOT.

STEP 2: Compile existing data

In the second step, data sources will be identified and cataloged at the corridor segment level to identify infrastructure gaps and deficiencies.

Below is a list of potential criteria and data sources that could inform this step in the process:

- **Safety score**
 - Evaluation of crash data and relation to the High Injury Network/High Crash Network identified in the RTP and/or ODOT’s SPIS process.
 - Resources: ODOT crash data, Metro Regional Transportation Safety Strategy, Metro State of Transportation Safety Report, ODOT Region 1 SPIS Analysis
- **Asset score**
 - Evaluation of pavement conditions, may also take into account status of other assets on roadways, such as signals, bridges and culverts.
 - Resources: ODOT pavement rankings, TSMO/ITS evaluation

- **Pedestrian network completeness score**
 - Evaluation of gaps in the pedestrian network and ADA network. Analysis may include crossings.
 - Resources: ODOT Region 1 Active Transportation Needs Inventory and Metro Regional Active Transportation Network
- **Transit score**
 - Evaluate whether existing or planned frequent service route, Verify whether transit reliability is an issue. Determine whether it may be designated for Enhanced Transit.
 - Resources: Enhancement Plans from transit providers, and Metro Regional Transit Strategy

These scores will be used to assess deficiencies will be the starting point for the analysis in Step 4. In the next step, a consideration of equity could be used to further prioritize the roadways.

STEP 3: Evaluate costs and local readiness of corridors

Step 3 is a pivotal step to move toward improvements on identified roadways. The partners involved in a potential transfer must be ready for transfer and come to an agreement on how to assess the costs of transfer. Costs to bring the highway up to a state of good repair will be estimated for corridors, based on the analysis done in Step 2. The cost assessment will take into account maintenance needs, signals, bridges, culverts, stormwater management, pavement condition, pedestrian and transit needs and, if applicable, safety needs. Transfer recipients may want to develop cost estimate ranges for long term investments that would be implemented after a transfer is complete.

Second, partners will consider likely timeframes to complete repairs and transfers. It may not make sense for the state to upgrade a roadway if the recipient jurisdiction has near-term plans to make significant improvements that would result in rework.

STEP 4: Prioritize roadways for jurisdictional transfer in the Portland region

In Step 4, partners will prioritize the corridors for transfer, further narrowing the number of corridors to be considered for transfer.

Project partners will review the data compiled in Step 2 and the cost information in Step 3, and use that information to rank priority corridors in the region. For example, the safety score could be considered the most urgent factor. The pavement condition score is a strong indicator of how much repair needs to be done. Based on initial feedback from partners, the roads could be tiered based on safety and pavement ratings.

Based on the agreed-upon criteria, the roadway or roadway segments will be divided in three tiers:

- Tier 1: Highest priority roadways for transfer
- Tier 2: Medium priority roadways for transfer
- Tier 3: Lowest priority roadways for transfer

The roadways in Tier 1 will be further analyzed in Step 5. Equity is also a criterion that should be taken into account as applicable in the ranking process and could move a roadway up or down a tier. Equity focus areas are defined in the Regional Transportation Plan, reflecting areas of the region with the highest concentrations of people of color, people with low income and/or people with limited English proficiency.

STEP 5: Identify risk issues and legal mechanisms for Tier 1 corridors

The purpose of Step 5 is to identify and understand that liability and risk issues involved in a transfer, and learn from successful transfers. Project partners will consult with the Office of Metro Attorney, and solicit input from partner's attorneys, such as the DOJ, to document any liability and legal issues for consideration during a potential transfer.

Metro will summarize ODOT's requirements as set forth in the Handbook for making Jurisdictional Transfers, and document best practices from past transfers that have been successful. Examples include inner Sandy Blvd. MLK Blvd., and portions of Hall Blvd. and Farmington Road.

Expected outcomes

These steps will help prepare the region, local governments and the state to identify priorities and readiness. The process will not commit funding sources, but it will help project partners identify roadways that are good candidates for transfer, expected cost ranges to fund state of good repair improvements, cost ranges to fund additional improvements and potential funding sources and timelines for implementation.

Note: This process does not include decision-making on whether improvements on these roadways should be made before or after a jurisdictional transfer. Those decisions are context-sensitive and may be best determined based on the corridor and the partners involved.

8.2.3.5 Transit Planning

Lead agency	Partners	Timing
TriMet and SMART	Cities, counties, Ride Connection, other transit providers	Annually

The TriMet and SMART (South Metro Area Regional Transit) conduct annual transit service planning in coordination with Metro, cities, counties and other transit providers to implement the RTP, Regional Transit Strategy, Coordinated Transportation Plan for Seniors and People with Disabilities, TriMet Service Enhancement Plans and the SMART Master Plan. One of the key themes of this RTP is the need for more transit capital investment and service, in order to provide more of our region with safe, convenient, reliable, and affordable transit options and prioritize roadway capacity for freight mobility and trips that do not have functional alternatives.

In July 2017, the Oregon Legislature passed House Bill 2017, also known as the Keep Oregon Moving bill. This historic piece of legislation was the largest transportation bill passed by the Oregon Legislature in many years. Among the many transportation investments in the bill is a statewide investment in public transportation. This investment is funded by a 0.1% payroll tax on all employee salaries in the state. This will result in approximately \$50+ million in funds for TriMet in FY20. The bill requires TriMet to develop a plan in conjunction with a citizen's advisory committee for improving public transit. The legislation specifically calls out the following projects as examples of what could be funded:

- Expansion of transit service frequency, hours, and coverage, especially to low income communities;
- Implementation of a fare mitigation program for low income communities;
- Purchase of zero carbon emitting vehicles via compressed natural gas or electricity;
- Improved connections between communities inside and outside transit district boundaries;
- School transportation for grades 9-12 equaling 1 percent of total funding; and
- Light rail construction was called out as ineligible for HB 2017 funding.

TriMet's HB 2017 Transit Advisory Committee has been meeting to develop a plan for the funding since October 2017. TriMet and the committee have been engaged in an outreach process that has included an online survey and five public workshops throughout the region to better understand how the community would like to see the transit system improved. TriMet contracted with the Immigrant Refugee Community Organization (IRCO) to design, promote and facilitate the public workshops. Workshops are being held throughout the region, with extra outreach conducted to communities of color, youth, seniors, immigrants, and people with disabilities. TriMet and the advisory committee must complete their work in the fall of 2018.

8.2.3.6 Enhanced Transit Concept (ETC) Pilot Program

Lead agency	Partners	Proposed timing
Metro and TriMet	ODOT, cities, counties, SMART	2018-22

This is a critical time in our region to consider how transit fits into our larger regional goals. As our region deals with significant population and employment growth, we must turn to more efficient modes of moving people around in order to ensure that our freeway system meets a basic level of mobility necessary for freight movement. The Climate Smart Strategy, adopted by JPACT and the Metro Council in 2014, provided clear direction to invest more in our transit system in order to meet regional goals and objectives related to sustainability and carbon emissions.

Recent, current and future growth rates require us to expand transit service to provide people with attractive transportation options while minimizing congestion. Significant and coordinated investment is needed to continue providing today's level of transit service as our region grows. Increasing transit service will require dedicated funding, policies, and coordination from all jurisdictions. Improving transit also helps the region meet its equity and access goals as it is a primary mode of transportation for the elderly, people with disabilities and youth, providing them with a way to get to work, school, and attain access to daily needs. Transit will become even more critical as our region's population ages. In order to make transit a more attractive mode in a quick timeframe with limited financial resources, the region is rolling out a new tool box of "enhanced transit concepts" which are implemented quickly and lead to faster, more reliable transit service.

To meet the greater Portland region's environmental, economic, livability and equity goals today and as we grow over the next several decades, new partnerships are needed to deliver transit service that provides increased capacity and reliability yet is relatively low-cost to construct, context-sensitive, and able to be deployed quickly throughout the region where needed. Producing "Enhanced Transit," through the co-investment of multiple partners could be a major improvement over existing service such as our region's existing and future Frequent Service bus lines, but less capital-intensive and more quickly implemented than larger scale high capacity transit projects the region has built to date. Investments serve our many rapidly growing mixed-use centers and corridors and employment areas that demand a higher level of transit service but may not be good candidates for light rail, or bus rapid transit with fully dedicated lanes at this time.

Goals of the ETC pilot program are:

- Increase transit ridership to a level that will be sufficient to meet regional and local mode split goals by improving transit reliability, speed, and capacity through hotspot bottleneck locations in congested corridors and throughout the region. This will be accomplished through moderate capital and operational investments from both local jurisdictions and transit agencies.
- Identify, design and build a set of Enhanced Transit projects, either to relieve hotspot bottlenecks or across whole congested corridors or in partnership with local jurisdictions and

facility owners where improvements are most needed and can be deployed quickly to produce immediate results.

- Develop a pipeline of Enhanced Transit projects so they are ready to advance forward to construction as jurisdictions identify funding.

On October 2017, JPACT authorized utilization of bond proceed revenue of \$5 million to support the funding of the Enhanced Transit Concept Pilot Program. The program will support the development of ETC projects and build partnerships between transit agencies and jurisdictions to implement improvements quickly.

ETC can include regional scale, corridor scale, and/or spot-specific improvements that enhance the speed and reliability for buses or streetcar. A list of different types of ETC treatments by scale can be found in the Transit Policy section in Chapter 3.

Enhanced Transit Concept Workshops

The ETC Pilot Program is focusing on hotspot improvements that can be implemented quickly on frequent service lines that are experiencing the most reliability issues. As part of the pilot program, Metro and TriMet held a series of 14 workshops, between January and April 2018, to identify where and what kind of ETC treatments could be implemented. Each workshop looked at 3-5 roadway segments or hotspots across the region where existing and future frequent service bus lines have the highest ridership and are experiencing the most congestion and reliability issues. These hotspots were reviewed with local partners and potential ETC treatments were recommended to understand feasibility and project readiness based on context and local jurisdictional partner input.

Metro issued the Request for Interest (RFI) in May of 2018 and received a total of 38 ETC applications, demonstrating significant interest from regional partners. The applications built upon the series of workshops conducted with regional partners earlier in the year. Within the ETC applications, 49 individual projects were identified. While the pilot program has \$5 million to spend, the total value of requested design services is estimated to be between \$15 million and \$20 million.

Projects received through the RFI process will be evaluated based on their readiness, transit need and potential benefit. ETC projects will include concept design, traffic analysis and transit benefit depending on the transit need and potential improvement. A portion of these projects will continue through project development, design and construction.

8.2.3.7 Central City Transit Capacity and Steel Bridge Analysis

Lead agency	Partners	Proposed timing
Metro and TriMet	ODOT, city of Portland, Portland Streetcar, Inc., FTA	2019

This study would explore ways to alleviate transit operational issues caused by the Steel Bridge. The bridge is a critical link between downtown Portland and the east side of the greater Portland region for the Blue, Green, Red, and Yellow MAX Lines, as well as for several bus routes. The 106 year old bridge constrains light rail throughput, requires frequent maintenance that impacts system-wide light rail reliability and presents structural risks. The Steel Bridge with its current two-track configuration cannot reliably accommodate anticipated growth in service.

Preliminary analysis by TriMet identified more than 20 concepts that were consolidated into representative alternatives and evaluated to understand the potential benefits and drawbacks. While TriMet will consider a full range of options at the start of any formal project, initial study suggests that two concepts appear most promising:

- a new transit bridge south of and parallel to the Steel Bridge
- a transit tunnel between Lloyd Center station and Goose Hollow station

A project of this magnitude could take a decade or more to plan, design and construct, including the steps necessary to comply with the National Environmental Policy Act (NEPA) and the Federal Transit Administration's Project Development process. This study would begin a regional conversation about solutions, opportunities and funding strategies. It would build upon the preliminary analysis completed by TriMet in order to define a single preferred project and identify the scope and resources needed to complete the future environmental review process as well as the risks that could impact planning.

Current issues

Capacity and travel time

Today, transit on-time performance around the Steel Bridge does not meet TriMet's 90 percent target. TriMet is in the process of making a \$12 million investment in the Steel Bridge to improve travel times and address system reliability issues. Some projects have already been completed resulting in fewer delays for TriMet riders. However, with the tight headways required to accommodate additional trains, on-time performance could fall to 55 percent in 2040 and minor delays could impact the entire system.

Conflicting train and traffic movements

The ability to get trains across the Steel Bridge is about more than just capacity on the bridge itself. The traffic signal on the bridge's east side at North Interstate Avenue impacts light rail operations. Though light rail trains can preempt vehicular traffic at the signal, trains often must wait while the pedestrian cycle clears. At both the bridge's west and east approaches, signals are

located at the same place as track switches leading to delay from conflicting train movements as well as vehicles.

Operational and structural risks

Light rail operations on the Steel Bridge are complex and pose risks to TriMet. The bridge, built in 1912, would not likely survive a major earthquake. Even without a natural disaster, the bridge requires maintenance as it ages and bridge loads increase. The bridge is a unique link for all light rail lines and if the bridge is closed for any reason it would create system-wide operational challenges. Further, the bridge is owned by Union Pacific Railroad and any structural or seismic changes to the bridge would need to be approved by Union Pacific Railroad.

Long-Term Improvement Concepts

A new transit bridge option: A new transit bridge south of the Steel Bridge would include four light rail tracks. Station locations would remain as they are today. It would increase system ridership by 3,000 riders and decrease travel time by approximately two minutes. Planning of a new bridge would need to consider navigational clearance, structure type, and approach locations and bridge uses. The bridge would cost an estimated \$300-650 million (\$2017) without right-of-way or utility relocation.

A new tunnel option: A tunnel would extend from the vicinity of the Lloyd Center Station to the Goose Hollow Station, with approximately four underground stations in between. TriMet would retain some service on the existing surface alignment to continue to serve all stations. The tunnel would increase system ridership by 7,500 to 15,200 riders and decrease travel time by approximately 15 minutes between Lloyd Center and Goose Hollow, while improving system resiliency and redundancy. Planning of a tunnel would need to evaluate the locations of portals and determine the optimal number and locations of stations. Estimated cost is \$900 million to 1.94 billion (in 2017 dollars) without right-of-way or utility relocation.

With either project, reconfiguration at the Rose Quarter and the west approaches to the Steel Bridge could create opportunities to support redevelopment in concert with other anticipated projects in the area.

8.2.3.8 Transportation Equity Analysis and Monitoring

Lead agency	Partners	Proposed timing
Metro	Cities, counties, ODOT, TriMet, SMART, community organizations	2019-23

The 2018 RTP transportation equity analysis identified the need for improved data to inform future planning and decision-making. The improved data will help develop a disparities baseline of communities of color and lower-income communities in terms of access, affordability, safety, and environmental health outcomes. Information about the disparities these communities experience will help to facilitate ongoing monitoring and evaluation of how transportation

projects are making progress towards implementing regional goals and objectives regarding transportation equity, accessibility, affordability, and safety.

The disparities baseline should include an in-depth existing conditions analysis which would be disaggregated by demographic characteristics, with a particular focus on different dimensions of accessibility, affordability (see H + T expenditure tool described in section 5 – Data and Research), safety, and environmental health outcomes, such as localized air pollution exposure.

8.2.3.9 Funding Strategy for Regional Bridges

Lead agency	Partners	Proposed timing
Counties	Cities, Metro, ODOT, TriMet	2019-21

The region continues to struggle with a long-term strategy for maintaining major bridges that serve regional travel, particularly local bridges spanning the Willamette River. Currently, Multnomah County has primary responsibility for five of the ten bridges. Within 20 years, four of Multnomah County's five Willamette River Bridges will be 100 years old. The county's capital program for these bridges is estimated to cost \$450 million, yet only \$144 million in federal, state and county revenues has been identified. All the region's bridges face maintenance challenges that come from age and use.

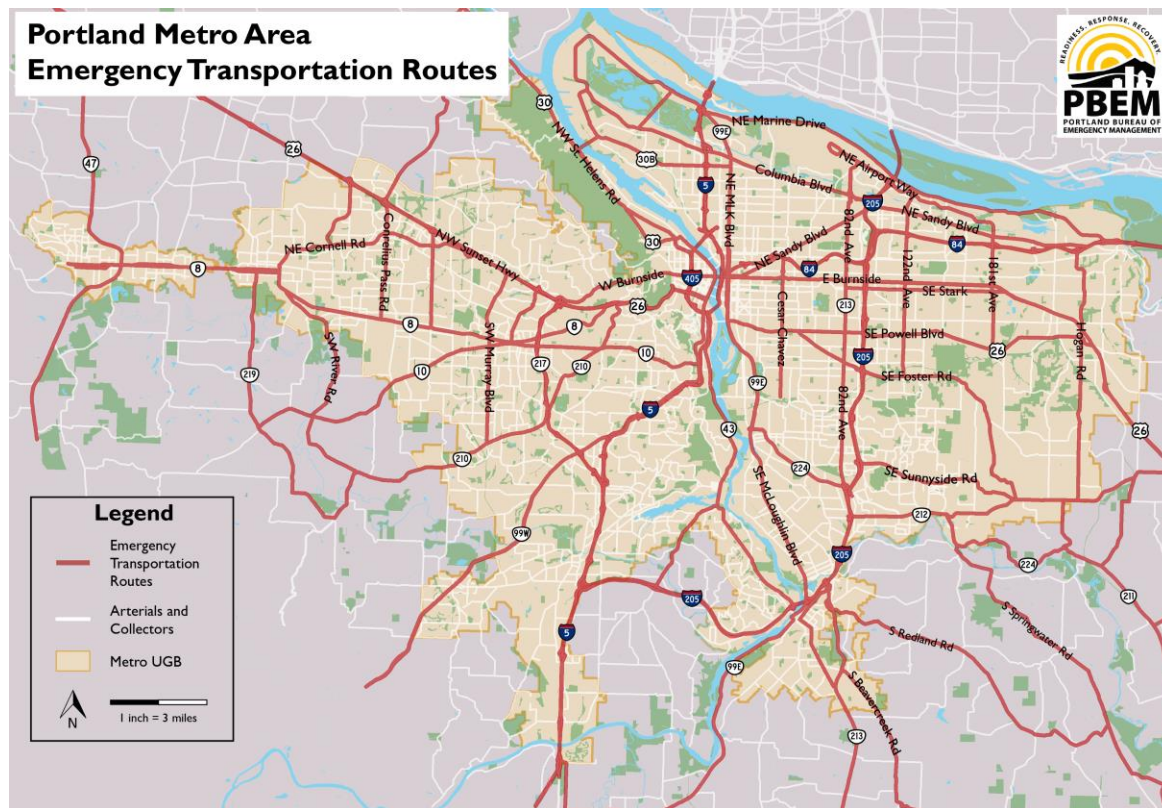
More collaboration and work is needed to identify a list of regional bridges and to develop a financial plan for ensuring ongoing operations and maintenance and other transportation needs of regional bridges, given the regional economic importance of keeping the Willamette River Bridges and other regional bridges fully functional in the long-term.

8.2.3.10 Emergency Transportation Routes Project

Lead agency	Partners	Proposed timing
Metro and Regional Disaster Preparedness Organization (RPDO)	Cities, counties, TriMet, SMART, ODOT, DOGAMI, WASHDOT, SW RTC, REMTEC	2019-20

Natural disasters can happen anytime, and the transportation system needs to be prepared to withstand them and to facilitate life-saving and life-sustaining activities, including the transport of first responders (e.g., police, fire and emergency medical services), fuel, essential supplies, and patients. The Emergency Transportation Routes (ETRs) project will aim to update the existing ETRs and MOU for the 5-county region in partnership with the [Regional Disaster Preparedness Organization](#) (RPDO). This project would apply a seismic resilience lens to update existing designated routes. The purpose of revisiting the existing ETR routes with a seismic lens is to evaluate whether the routes have a high likelihood of being damaged or cut-off during an earthquake and determine whether other routes may be better suited to prioritize as ETRs as a result.

Figure 8.4 Designated Regional Emergency Transportation Routes (2006)



First designated in 1996, regional ETRs are priority routes targeted during an emergency for debris-clearance and transportation corridors to facilitate life-saving and sustaining response activities. The current regional ETRs were established in a Memorandum of Understanding (MOU) between Oregon Department of Transportation (ODOT), Washington State Department of Transportation (WSDOT), Metro and local jurisdictions in the Portland-Vancouver metropolitan region in 2006. That MOU outlines responsibility for the Regional Disaster Preparedness Organization (RDPO) Emergency Management working group (REMTEC) to coordinate an update of the ETRs on a five-year cycle. However, no updates have been made since 2006.

Since 2006, our understanding of the seismic risks in our region has improved. Funded by the RDPO, the [2017 Oregon Department of Geology and Mineral Industries \(DOGAMI\) Enhanced Earthquake Impact Study](#) assessed seismic vulnerability of buildings and infrastructure in the region, outlining anticipated impacts of a 9.0 Cascadia Subduction Zone (CSZ) earthquake in the Portland-Vancouver region. The DOGAMI analysis shows that most of the existing designated ETRs (meant to facilitate post-earthquake life-safety response activities) in the region will experience significant liquefaction, ground deformation and landslide risks.

ODOT has evaluated the seismic resilience of the state-designated Lifeline Routes in the Oregon portion of the Portland-Vancouver region. Currently, ODOT is working with each county to assess the resiliency of locally designated ETRs and potential detour routes for the most vulnerable state bridges by using arterial streets and throughways. This effort includes an evaluation of the cost-

benefit of the investment on local transportation system compared to the retrofit cost of state-owned bridges bypassed by the proposed detours. In addition, each county in Oregon is recommending changes to the ETRs within their respective jurisdiction based on this analysis. Any updates in Clark County will be coordinated with Washington State.

In 2018, Clackamas County updated their routes while evaluating bridge and overpass facilities on the State Lifeline Routes for ODOT. In 2019, Washington County, Columbia County and Multnomah County will complete a similar analysis of their ETRs in partnership with ODOT. Independent of ODOT's work with the counties, the City of Portland conducted an update of their ETRs in 2018, which will be brought into this planning effort.

Given the above work, the designation of current ETRs need to be re-evaluated at a regional-scale to reflect updates recommended by the City of Portland and each of the five counties. This project will update existing designated regional routes using the latest DOGAMI seismic data, [ODOT Lifeline analysis](#) and subsequent county-level bridges and ETR analysis. This will also ensure the updated ETRs are responsive to local and state knowledge and priorities. Planning and updates to infrastructure within the region since 2006 will also inform the ETR update; particularly the now seismically-resilient Sellwood and Tillikum Crossing bridges owned by Multnomah County and TriMet within the City of Portland, and recommendations identified in the 2018 Earthquake Ready Burnside project Feasibility Report.

The 2006 ETR MOU calls for an update every five years; however, more than ten years have passed since the last update. The MOU also established that REMTEC (also known as Regional Emergency Management Work Group) will take the lead to convene stakeholders for the update. REMTEC, a work group of the RPDO, helps develop the region's disaster preparedness capabilities through coordinated planning, training and investment in technology, but does not have dedicated transportation-focused planners within their group.

Expected outcomes of the project include:

- Identification of criteria by which to evaluate and refine the existing ETRs and any alternates that are considered in this work. ODOT considered seismic resiliency in establishment of their lifeline routes to which the ETRs must connect.
- Recommendations for a new MOU or other agreement documenting the updated emergency transportation routes (ETR) on a map of the region. The recommendations will define a reasonable time frame for periodic updates (perhaps extending the update from 5 years to 10 years, per recent practice, and potential responsibilities of the agencies involved (i.e. Departments of Transportation, Metro, TriMet, C-Tran, SMART, RDPO, REMTEC, DOGAMI).
- Recommendations on the updated ETRs for consideration by JPACT and the Metro Council in the next update to the Regional Transportation Plan and other relevant regional plans, policies and strategies.
- Recommendations for future planning work related to regional transportation recovery, resiliency and emergency management in the Portland-Vancouver region for consideration by the region's policymakers.

- Information to support the critical facilities assessment and Regional Recovery Framework Project being developed by the RPDO and the Regional Debris Management Plan developed by Metro.

Given the time that has elapsed and given the advances in our understanding of seismic risks and resilience in our transportation infrastructure, the time is right to update the ETRs. Updating the ETRs is strategic since Oregon House Bill 2017 dedicates \$5.3 billion in seismic funding. The analysis from this project will support advocacy to direct transportation investments toward enhanced seismic resilience of our region's roads, bridges and transit and freight routes, increasing regional transportation resilience and security.

This work will be coordinated through the RPDO and appropriate RPDO work groups, emergency management staff from across the region, the Southwest Washington Regional Transportation Council and technical advisory committee, and the Metro Council and Metro's technical and policy advisory committees. The project will also provide opportunities for stakeholder input. In 2017, Metro partnered with the RPDO to submit a grant application to help fund this work, which, if awarded, would allow this work to begin in summer 2019 pending sufficient resources.

8.2.3.11 Regional Freight Delay and Commodities Movement Study

Lead agency	Partners	Proposed timing
Metro and ODOT	Cities, counties, Port of Portland, FHWA	2022

As a critical West Coast domestic hub and international gateway for commerce, the greater Portland area must maintain well-functioning river ports, rail connections and highways. ODOT completed the Freight Highway Bottlenecks Project in March of 2017, which identified locations on Oregon's highway network that are experiencing significant freight truck delay, unreliability, and increased transportation costs. The ODOT project showed that the greater Portland area has the bulk of the identified freight delay areas in Oregon. Based on ODOT's work, the Regional Transportation Plan and Regional Freight Strategy identify a small set of key highway bottlenecks on National Highway System facilities critical to state and regional truck mobility. The Regional Freight Strategy identified this study to address these truck bottlenecks and increase understanding of their economic importance to the region. The study would evaluate the level of commodity movement on the regional freight network within each of the mobility corridors identified in the Regional Mobility Corridor Atlas.

The study would use Metro's new freight model to evaluate the general types of commodities, the tonnage of the commodities and the value of the commodities that are using the regional freight network within each of region's mobility corridors. The study would also evaluate the need for improved access and mobility to and from regional industrial lands and intermodal facilities. The Regional Mobility Policy update described in Section 8.2.3.1 will establish a policy foundation for this work.

Potential outcomes of the study include:

- Developing a methodology for determining which freight facilities and mobility corridors are carrying the highest tonnage of goods and commodities, and the highest amount of value for those commodities.
- Based on the tonnage and value of the goods and commodities carried in each corridor, a measure could be developed for which corridors should be prioritized for transportation projects based on their importance for freight and economic value.
- Based on the congestion and unreliability found in each of the mobility corridors, transportation projects could be developed and prioritized for corridors that have the most importance for freight and economic value.

The study would likely utilize a new freight monitoring measure for reliability and the evaluation measures for cost of delay on the freight network, and freight access to industrial land and intermodal facilities (being developed as part of the current RTP update). The study would inform freight project priorities for the next RTP (due in 2023) and Regional Freight Strategy.

8.2.3.12 Regional Freight Rail Study

Lead agency	Partners	Proposed timing
Metro and Port of Portland	Cities, counties, ODOT	2023

Identified in the Regional Freight Strategy, this study would seek to identify and produce increases in rail capacity, safety, land use compatibility and operational efficiencies to support freight and goods movement in the region which is important to our long-term economic and environmental sustainability, and will help to maintain the region's competitive advantage in a global marketplace. The RTP and Regional Freight Strategy also note freight rail bottlenecks impacting critical access the region's ports and intermodal facilities, as well as the need for rail to efficiently carry its full share of existing and future commodities.

Potential outcomes of the study include:

- Identification of economically viable opportunities to develop short line intermodal hubs or logistics parks or other cargo-oriented development.
- A strategy to identify, develop and position top projects for confirmed and potential future federal and state funding, as appropriate, including:
 - An updated list of regional freight rail project priorities focused on improving capacity constraints and targeting industrial access to the rail networks.
 - A strategy to fund regional freight/passenger rail bottlenecks.
 - A strategy to fund needed grade separations.
 - A strategy to fund critical modernization projects on the short rail lines.

8.2.3.13 Regional Transportation Functional Plan Update

Lead agency	Partners	Proposed timing
Metro	Cities, counties, ODOT, DLCD, TriMet, SMART	TBD

Since the adoption of the 2040 Growth Concept in 1995, cities and counties across the region have updated their comprehensive plans, development regulations and transportation system plans to implement the 2040 Growth Concept in locally tailored ways. The RTP provides a long-range blueprint for implementing the transportation element of the 2040 Growth Concept and presents the overarching vision, policies and goals, system concepts for all modes of travel and strategies for funding and local implementation for the region. Projects submitted to the RTP are from adopted local, regional or state planning efforts that provided opportunities for public input. Cities and counties are responsible for creating transportation system plans that are periodically updated to stay consistent with the RTP and reflect local transportation priorities and needs. Each city and county develops its own process for engaging the public in the development of the plans.

Most communities throughout the region have an adopted transportation system plan that serves as the transportation element of a comprehensive plan consistent with the Regional Transportation Functional Plan (RTFP). The functional plan implements the goals, objectives and the policies of the RTP and its constituent strategies, including the Climate Smart Strategy and strategies for safety, freight, transit, transportation system management and operations, regional travel options and emerging technology.

Under state law, the RTFP directs cities and counties within the metropolitan planning area boundary as to how to implement the RTP through local transportation system plans and associated land use regulations and transportation project development. Local implementation of the RTP will result in a more comprehensive approach for implementing the 2040 Growth Concept, help communities achieve their aspirations for growth and support current and future efforts to achieve the goals and objectives of the RTP.

A targeted review and update is needed to:

- ensure the functional plan language and provisions are consistent with and adequately reflect new and updated goals, objectives and policies adopted in the 2018 RTP, with a focus on safety, equity, transit, and freight;
- make miscellaneous technical corrections and clarifications, such as outdated references to maps and figures in the 2010 RTP; and
- update the timeline for local TSPs updates.

8.2.3.14 Parking Management Policy Update

Lead agency	Partners	Proposed timing
Metro	Cities, counties, ODOT, TriMet, SMART	TBD

Parking management refers to various policies and programs that result in more efficient use of parking resources. Managing parking works best when used in a complementary fashion with other strategies; it is less effective in areas where transit or bicycle and pedestrian infrastructure is lacking. Parking management is implemented through locally-adopted zoning and development codes.

This update is needed because current regional parking requirements were adopted more than 20 years ago. Despite minor updates, the requirements are out of date in terms of where they are applied and the amount of parking to be provided. Some of the factors affecting parking include: presence of high capacity transit, presence (or absence) of frequent bus service as well as infrastructure supporting bicycling and walking in an area and population and employment density of an area.

The region needs to be prepared to consider parking management programs as a tool to meet greenhouse gas emissions reduction, transportation demand management and stormwater management goals. New parking management approaches may be required as a tool to effectively reduce greenhouse gas emissions. The region needs to know more about the effect of different approaches on emissions to inform policy development.

New 'smart' technologies and other approaches to financing and managing parking may be available. The region may be missing new applications or technologies that can facilitate parking management and would benefit from a quick survey of best practices.

8.2.3.15 Green Corridor Implementation

Lead agency	Partners	Proposed timing
Metro	Cities, counties, ODOT	TBD

Green corridors were adopted as part of the 2040 Growth Concept in 1995. The purpose of green corridors is to prevent unintended urban development along these often heavily traveled routes, and maintain the sense of separation that exists between neighbor cities and the greater Portland region. The green corridor concept calls for a combination of access management and physical improvements to limit the effects of urban travel on the routes on adjacent rural activities. Following adoption of the 2040 Growth Concept, Metro worked with the cities of North Plains, Canby and Sandy from 1998-2000 to develop intergovernmental agreements (IGAs) but did not formalize these agreements. This remains as an outstanding issue in fully implementing the Growth Concept.

In 2010 and 2011, the elected governing bodies of Clackamas, Multnomah and Washington counties and Metro entered into agreements that determine the location and scale of urban development for the future. These agreements were the result of a two-year region-wide planning

effort that identified areas for future urban use and other areas that should remain rural for the next 40 to 50 years. The urban and rural reserve decision provided a more certain framework for transportation improvements along the urban edge. Metro will work with interested local jurisdictions to complete IGAs for green corridors that reflect updated plans for urban and rural reserves.

In 2018, Metro's Chief Operating Officer recommended that Metro's Planning and Development staff return to the Metro Council in early 2019 with a proposed work program for updating the 2040 Growth Concept as part of the COO recommendation to the Metro Council on the 2018 Urban Growth Management Decision. Green corridor implementation will be forwarded for consideration as part of this future planning effort.

8.2.3.16 Frog Ferry Passenger River Taxi Service Study

Lead agency	Partners	Proposed timing
Friends of Frog Ferry	Cities, counties, Metro, Ports, TriMet, businesses	TBD

A non-profit group, Friends of Frog Ferry, is pursuing the study of a passenger river taxi service connecting Vancouver, WA with central Portland. Friends of Frog Ferry proposes a public / private partnership structure operating a 149 passenger ferry with room for bikes. Their proposal calls for two stops initially, with the potential for others. The ferry service could serve commuters as well as tourists, and provide a transportation option in case of a seismic event that impacts bridges. Increased regional congestion and improvements in boat technology suggest the current RTP cycle is an opportunity to again evaluate a ferry service. A study would analyze stops and travel times to model ridership and service patterns, as well as land development partnerships.



Source: Friends of Frog Ferry

8.2.4 Corridor Refinement Planning

This section identifies areas in the region – called mobility corridors - that are recommended for more detailed refinement planning to identify multimodal investment strategies adequate to serve regional transportation needs in the corridor.³

This RTP calls for an update to the region’s mobility policy and related performance targets beginning in 2019, and is expected to affect corridor refinement planning identified in this section. Many of the areas identified for refinement planning in the RTP are identified because they do not meet the adopted regional mobility policy. Individual corridor refinement planning descriptions have been updated to reflect work remaining and are being carried forward in this RTP pending recommendations and findings from the Regional Mobility Policy Update.

JPACT and the Metro Council will provide further policy direction on the scope and schedule for the Mobility Policy Update in 2019. Metro and ODOT will engage TPAC, JPACT and other interested stakeholders in development of the scope of work (and desired outcomes) for the Mobility policy Update beginning in early 2019, after adoption of the 2018 RTP. The agreed upon scope of work and budget will also be reflected in the 2019-20 UPWP approved by JPACT and the Metro Council. Subsequent corridor refinement planning prioritization and development of scopes of work will be determined in coordination with project partners through TPAC and JPACT after adoption of the RTP and completion of the mobility policy update.

Corridor Refinement Planning and the Transportation Planning Rule

Corridor refinement planning is a response to the Oregon Transportation Planning Rule (TPR). Section 660-012-0020 of the TPR requires that transportation system plans (TSPs) establish a coordinated network of planned transportation facilities adequate to serve regional transportation needs. The RTP is the region’s TSP. Section 660-012-0025 of the TPR allows jurisdictions to defer decisions regarding mode, function, and general location of improvements to address identified needs as long as it can be demonstrated that the refinement effort will be completed in the near future.

A corridor refinement plan must identify the capital and operational improvements that a mobility corridor needs consistent with the region’s congestion management process. This is particularly critical for planning efforts that may result in significant expansion of roadways beyond the planned system. A CMP analysis is required for capacity-increasing projects that go beyond the planned RTP system before federal funds may be applied. For such projects, the CMP looks at road expansions beyond the planned system as a last resort and, as appropriate, requires that they be coupled with complementary operational and travel demand management strategies.

³ Twenty-four subareas of the region – called mobility corridors - have been identified in the RTP. Each mobility corridor is defined by the designated 2040 Growth Concept land uses that are connected by an integrated system of throughways, arterial streets, transit and freight routes, and regional pedestrian and bike networks located within the subarea.

In the Portland region, in order to stay consistent with our regional transportation and land use goals, our corridor refinement process includes a multimodal look at transportation needs, as well as a review of existing and planned land use and projected growth. See Section 8.5.4 and Appendix L for more information about the region's CMP.

A corridor refinement plan includes the following steps:

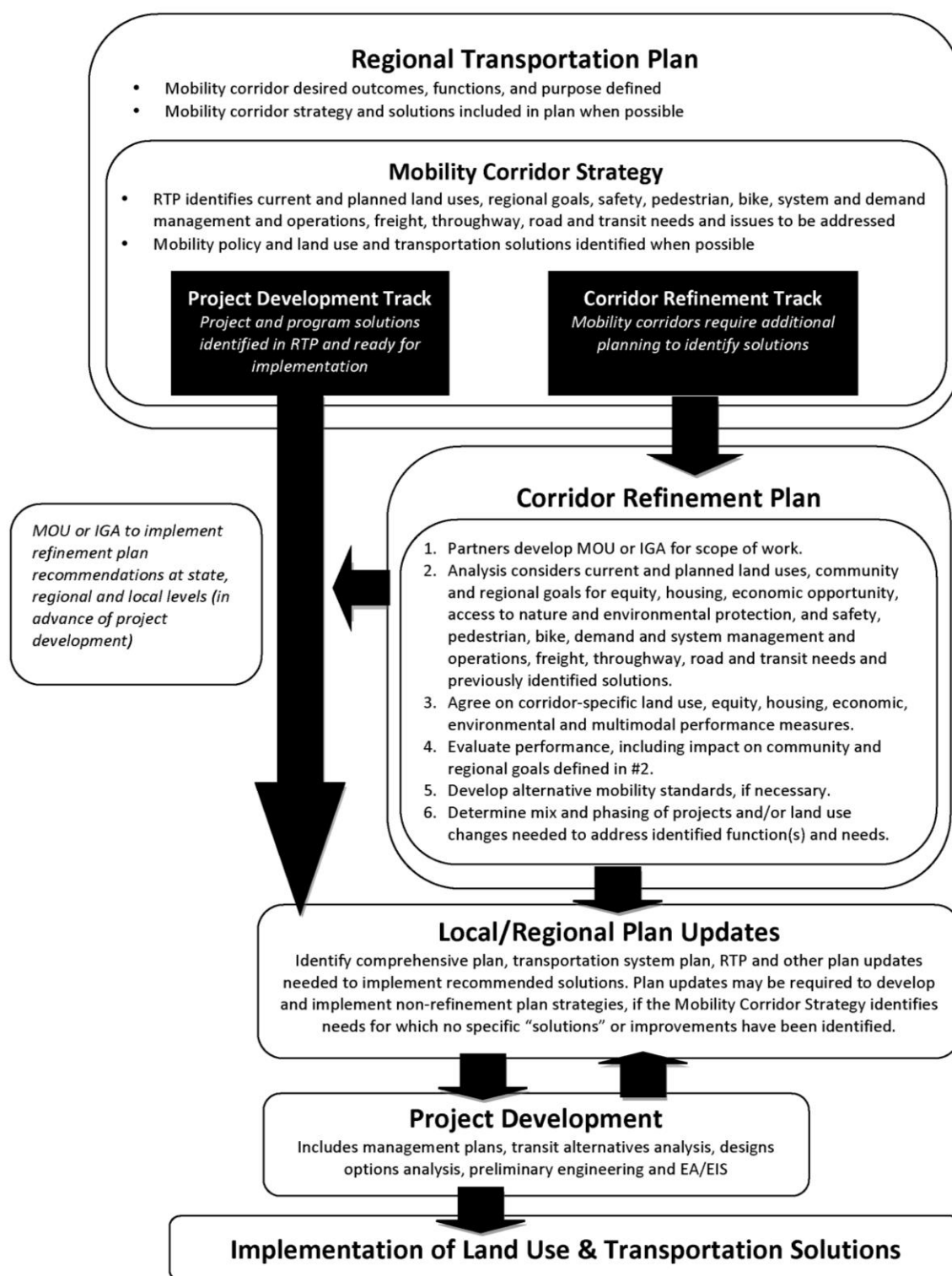
1. **Develop MOU or IGA** for refinement plan scope of work that includes identification of roles and responsibilities, methods of collaboration and consultation with Metro, if the refinement planning work is not led by Metro.
2. **Conduct analysis** that considers current and planned local land uses, regional and community goals for equity, housing, economic opportunity, environmental protection and stormwater management as well as safety, pedestrian, bike, system and demand management and operational strategies, freight, throughway, road and transit needs and previously identified solutions.
3. **Agree on corridor specific multimodal performance measures.**
4. **Evaluate multimodal performance** and potential impact on regional and community goals for equity, economic development and environmental protection and, if applicable, apply HCT system expansion assessment and readiness criteria.
5. **Develop alternative mobility or other performance standards**, if necessary.
6. **Determine mix and phasing of projects and/or land use changes** needed to address identified needs.
7. **Prepare local, regional and/or state plan amendments and MOU or IGA to implement** refinement plan recommendations at state, regional and local levels.

Consistent with the region's congestion management process, corridor refinement plans will provide decision-makers with more comprehensive information regarding safety, accessibility, environmental impact, mobility, reliability and congestion as they relate to the movement of persons and goods in the mobility corridor. They should also consider land use, economic opportunity, equity, travel demand and system management, street connectivity, walking and biking solutions in addition to increasing transit and road capacity. The corridor refinement plan will recommend a wide range of strategies and projects to be implemented at the local, regional and/or state levels.

Individual project and program solutions identified in the RTP may move forward to project development at the discretion of the facility owner/operator. Planning and project development efforts should be conducted with an understanding of the corridor refinement planning anticipated in the RTP and not preclude any strategies or potential solutions identified for consideration in the corridor refinement plan. The MOU or IGA from a corridor refinement plan is intended to provide more accountability and to formalize agreements across implementing jurisdictions on moving forward to implement the corridor refinement plan recommendations. This is particularly important in mobility corridors with multiple jurisdictions.

Figure 8.5 shows the framework for how the mobility corridor strategy will be incorporated into the RTP or developed through a corridor refinement plan.

Figure 8.5 How A Mobility Corridor Strategy Is Developed and Implemented



Mobility Corridors Recommended for Future Corridor Refinement Plans

The main objective of the RTP mobility corridor framework is to organize information needed to help define the need, mode, function, performance standards, and general location of facilities within each mobility corridor consistent with the Transportation Planning Rule to ensure land use and transportation planning and decision-making are integrated. The needs assessment was developed based on the RTP policy framework and guided the identification of projects and programs during development of the RTP.

Under the mobility corridor framework, when determinations of need(s), mode(s), function(s), and general location(s) of solutions cannot be made, the mobility corridor needs a refinement plan. Corridor refinement plans are intended to be multimodal evaluations of possible land use and transportation solutions to address identified needs and develop a shared investment strategy, consistent with RTP goals, objectives and policies. This includes conducting an evaluation that considers the potential impact on regional and community goals for equity, housing, economic development, environmental protection and access to nature.

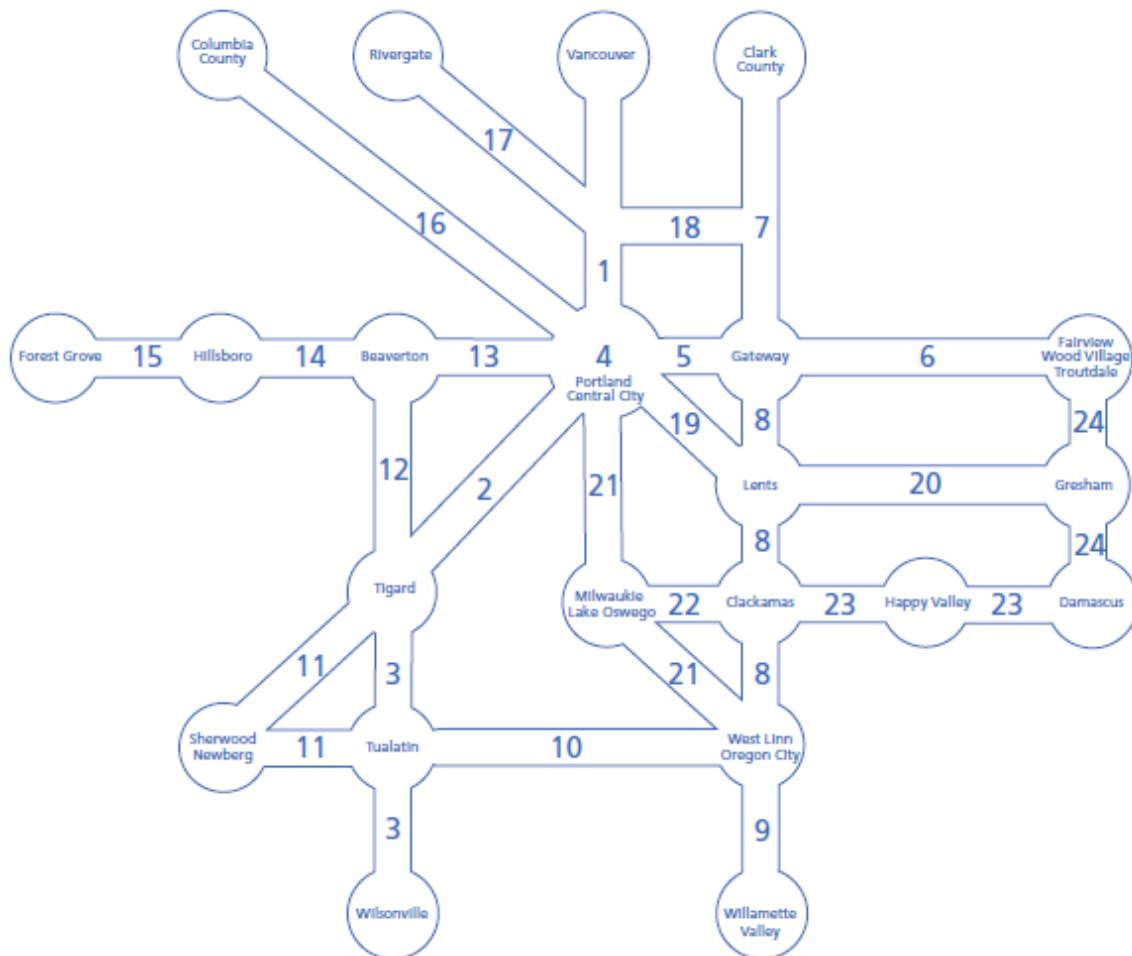
The RTP has identified a list of mobility corridors that do not meet the outcomes-based performance standards of the RTP and/or do not fully answer questions of mode, function and general location. These corridors need refinement planning and are listed in **Table 8.2**. The corridors are not listed in priority order. In addition, potential high capacity transit corridors identified in the Regional Transit Strategy are likely to require corridor refinement plans to develop shared land use and transportation investment strategies and determine transit mode, function, general location and any associated changes in road or freight rail functions and performance standards of existing transportation facilities. The Regional Mobility Policy update described in Section 8.2.3.1 will establish an updated policy foundation for this work.

Table 8.2 Mobility Corridors Recommended for Future Corridor Refinement Planning

Regional Mobility Corridor	General Geographic Scope of Mobility Corridor
Mobility Corridors #3	Tigard to Wilsonville which includes I-5 South ⁴
Mobility Corridor #4	Portland Central City Loop, which includes I-5/I-405 Loop
Mobility Corridors #7, #8 and #10	Clark County to I-5 via Gateway, Oregon City and Tualatin, which includes I-205
Mobility Corridor #14 and #15	Beaverton to Forest Grove, which includes Tualatin Valley Highway
Mobility Corridors #13, #14 and #16	Hillsboro to Portland, which includes US 26 and US 30
Mobility Corridors #19 and #20	Portland Central City to Lents and Lents to Gresham, which includes US 26/Powell Boulevard
Mobility Corridor #24	Clackamas to Fairview/Wood Village/Troutdale, which includes OR 212 and Sunrise Corridor

⁴ In coordination with project development activities for Mobility Corridor #10.

Figure 8.6 Illustrative Map of Mobility Corridors in the Portland Metropolitan Region



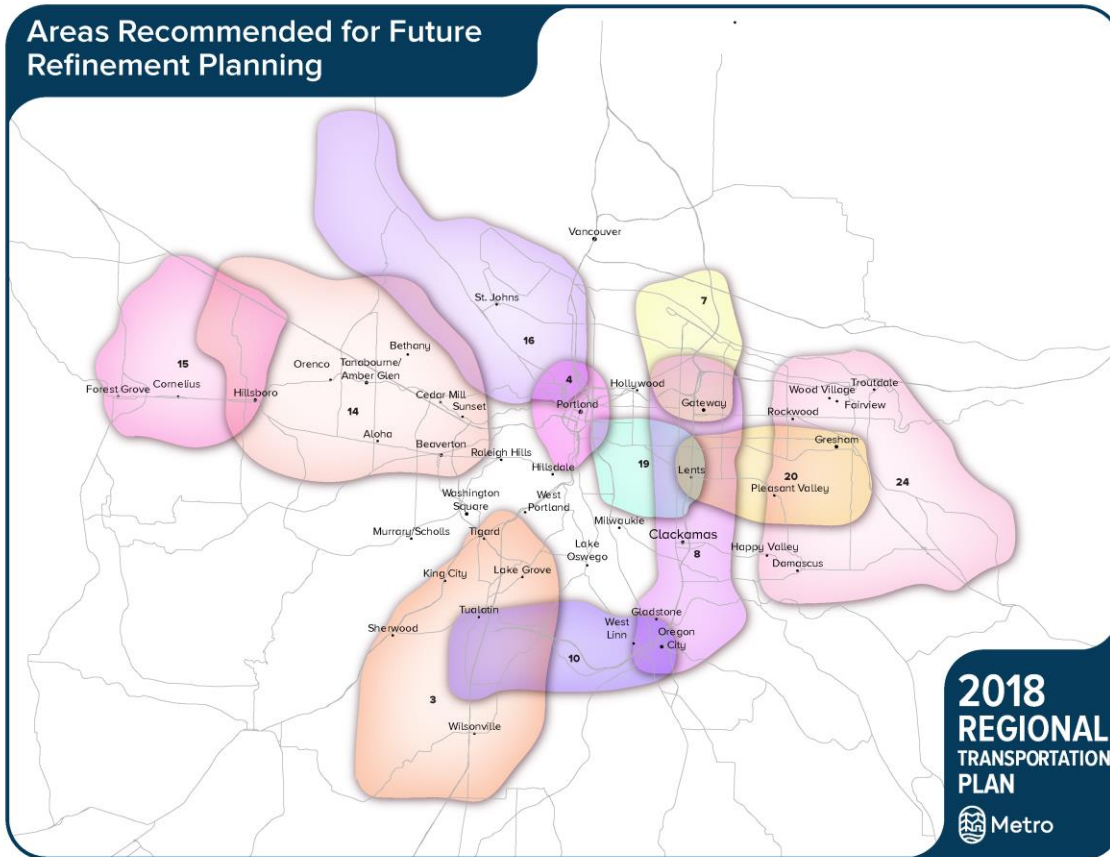
Corridor Refinement Plans that have been partially completed since 2014

- Portland Central City Loop (Mobility Corridor #4)
- Tualatin Valley Highway Corridor Plan (Beaverton to Forest Grove - Mobility Corridor #14 and #15)

Corridor refinement plans that have been completed since 2014

- Southwest Corridor Plan and Shared Investment Strategy (Portland central city/Southwest Portland, Tigard, Durham, King City, Tualatin, Sherwood, east Beaverton, small portion of west Lake Oswego – Mobility Corridor #2)
- East Metro Connections Plan (Gresham/Fairview/Wood Village/Troutdale to Damascus – Mobility Corridor #24)

Figure 8.7 Regional Mobility Corridors Recommended for Future Refinement Planning



8.2.4.1 Tigard to Wilsonville (Mobility Corridor 3)

This mobility corridor provides the major southern access to and from the central city. The corridor also provides important freight access, where Willamette Valley traffic enters the region at the Wilsonville “gateway,” and provides access to Washington County via OR 217.

In 2002, a joint ODOT and Wilsonville study⁵ concluded that in 2030 widening of I-5 to eight lanes would be required to meet Oregon Highway Plan and RTP mobility standards, and that freeway access capacity would not be adequate with an improved I-5/Wilsonville Road interchange. The appropriate improvements in this corridor are unclear at this time. However, I-5 serves as a critical gateway for regional travel and commerce, and an acceptable transportation strategy in this corridor has statewide significance. Projections for I-5 indicate that growth in traffic between the Metro region and the Willamette Valley will account for as much as 80 percent of the traffic volume along the southern portion of I-5, in the Tualatin and Wilsonville area.

In 2009, ODOT and the City collaborated to plan the reconstruction of the I-5: Wilsonville Road interchange, including infrastructure improvements and management strategies to better serve planned growth in the area. Since adoption of the interchange area management plan, ODOT completed the interchange reconstruction and implemented the bulk of the management plan’s recommendations. More recent projects include the City’s addition of a third lane to the Wilsonville Road southbound on-ramp and improvements at the Elligsen Road northbound on-ramp. In addition, ODOT is adding a single southbound auxiliary lane on I-5 from north of Lower Boones Ferry Road to I-205 and a second lane at the northbound exit ramp for Lower Boones Ferry Road to relieve congestion and reduce crashes. The auxiliary lane work includes on- and off-ramp lane modifications at Lower Boones Ferry Road and Nyberg Street, and extends the auxiliary lane from the OR 217 off-ramp to the Lower Boones Ferry Road off-ramp to I-205 on-ramp.

The Washington County Transportation Futures Study, completed in 2017, recommended completion of this corridor refinement plan to address growing transportation needs in the corridor. The Washington County Freight Study, also completed in 2017, identified the I-5 corridor as a key area of freight operational delay and unreliability and underscored the importance of developing and funding improvements in this area.

In 2017-2018, ODOT and the City of Wilsonville partnered on a Southbound I-5 Boone Bridge Congestion Study. They evaluated and developed solutions for a southbound bottleneck in the bridge area, in order to manage congestion and reliability for private vehicles, freight, and transit in the evening peak. This geographically focused study was timed to identify operational improvements in advance of upcoming seismic rehabilitation of the Boone Bridge, so that they could proceed as one project and allow the state to reduce total costs. The study led to the adoption of the I-5 Wilsonville Facility Plan, which documented a southbound auxiliary lane concept consistent with implementation recommendations for this corridor (see Project 11990 on the 2018 RTP Financially Constrained List). It did not preclude a larger I-5 south corridor

⁵ *I-5/ Wilsonville Freeway Access Study, DKS Associates, November 2002*

refinement plan, and many of the broader multimodal needs in this corridor still need to be addressed.

A corridor refinement plan is proposed to address the following in coordination with project development activities for Mobility Corridor #10:

- Effects of widening I-205 on the I-5 South corridor;
- Effects of the I-5 to 99W Connector study recommendations on I-5 and the N. Wilsonville interchange and the resultant need for increased freeway access to preserve local system performance and in-line capacity for I-5 mobility;
- Effects of peak period and mid-day congestion in this area and mitigation options for regional freight reliability, mobility and travel patterns;
- Ability of inter-city transit service, to/from neighboring cities in the Willamette Valley, including commuter rail, to slow traffic growth in the I-5 corridor;
- Ability to maintain off-peak freight mobility with capacity improvements;
- Potential for better coordination between the Metro region and Willamette Valley jurisdictions on land-use policies;
- Effects of a planned long-term strategy for managing increased travel along I-5 in the Willamette Valley;
- Effects of UGB expansion and Industrial Lands Evaluation studies on regional freight mobility;
- Effects on freight mobility and local circulation due to diminished freeway access capacity in the I-5/Wilsonville corridor;
- Identify and implement safety and modernization improvements to I-5 defined by the Tigard to Wilsonville Corridor Refinement Plan;
- I-5/OR217 Interchange Phase 2: SB OR217/Kruse Way Exit – Complete interchange reconstruction: Braid SB OR 217 exit to I-5 with Kruse Way exit;
- I-5/OR217 Interchange Phase 3: SB OR217 to I-5 NB Flyover Ramp – Complete interchange reconstruction with new SB OR217 to NB I-5 flyover ramp;
- Effects of the new and proposed auxiliary (ramp-to-ramp) lanes;
- Effects of future Southwest Corridor LRT;
- Identify and implement active transportation priorities that provide safe alternatives to vehicle travel; and
- Consideration of how land use interfaces with the transportation needs and impacts, local system enhancements and new connections, and improved transit network and service and potential outcomes.

In addition, the following design elements should be considered as part of the corridor refinement plan:

- Congestion pricing and HOV lanes for expanded capacity;
- Provide regional transit service, connecting Wilsonville and Tualatin to the central city;
- Increase WES service frequency and hours/days of operation;
- Provide additional freeway access improvements in the I-5/Wilsonville corridor to improve freight mobility and local circulation;
- Add capacity to parallel arterial routes, including 72nd Avenue, Boones Ferry, Lower Boones Ferry and Carman Drive;
- Add overcrossings in vicinity of Tigard Triangle, City of Tualatin and City of Wilsonville to improve local circulation;
- Extend commuter rail service from Salem to the Portland Central City, Tualatin transit center and Milwaukie, primarily along existing heavy rail tracks;
- Additional I-5 mainline capacity;
- Provision of auxiliary lanes between all I-5 freeway on- and off-ramps in Tualatin south of the I-5/I-205 split and in Wilsonville; and
- Complete gaps in the Fanno Creek and Ice Age Tonquin Regional Trails to provide a continuous off-street active transportation route through the length of the mobility corridor.

8.2.4.2 Portland Central City Loop (Mobility Corridor 4)

Context

In 2005, the I-5/405 Freeway Loop Advisory Group (FLAG) completed its review of the near- and long-term transportation, land use, and urban design issues regarding the I-5/405 Freeway Loop. Appointed by Mayor Vera Katz and the ODOT Director in 2003, the 24-member group developed and evaluated concepts to address identified transportation issues and needs. The concepts represented a range of options that included modest improvements within existing right-of-way, a One-Way Loop System, and a full tunnel that would connect the Freeway Loop to I-84 and Sunset Highway. The three concepts were evaluated against the region's proposed transportation system, along with projected employment and household growth, for the year 2030.

In completing its initial review, FLAG found that additional master planning work is needed to identify, prioritize and fund specific projects, and that short-term or interim investments should move forward while the master planning work is being completed. FLAG recommended that planning on I-84/I-5 interchange and the I-5 elements of South Portland Plan contemplated in the area of the interchange of I-405 and I-5 may proceed independent of the Master Plan with the understanding that the final plan for any such project would be consistent with the Master Plan. In addition, the study recommended advancing a corridor refinement plan to begin to identify short-term and long-term investments and a recommended scope, problem statement and set of principles:

Scope

- Develop an overall Freeway Loop Corridor Refinement Plan that will guide public investment for improvements to the I-5/405 Freeway Loop.
- Develop a phasing strategy for implementation of the Master Plan. Include the currently approved Regional Transportation Plan improvements as well as new elements.
- Identify and pursue a funding strategy.

As directed by the FLAG's recommendations, planning proceeded on the I-84/I-5 section of the Loop under the N/NE Quadrant and the I-5 Broadway-Weidler Interchange Improvement Planning process. The key recommendations from the adopted 2012 N/NE Quadrant Plan include:

- Preserving and enhancing Lower Albina by protecting the working harbor and increasing land use flexibility that promotes a mix of uses on historic Russell Street and greater employment densities;
- Protecting historic neighborhoods and cultural resources;
- Concentrating high density development in the Lloyd District, with a focus on new residential development that will add activity and vibrancy to the district;
- Providing amenities, such as parks, street improvements and green infrastructure to support and encourage new development;
- Improving regional access and local street safety and connectivity for all modes;

- Encouraging sustainable development that supports the Lloyd EcoDistrict and goals for improved environmental health;
- Future changes to zoning and building height regulations that implement the plan goals.

Key recommendations for the I-5 Broadway-Weidler Plan include:

- Adding auxiliary lanes and full-width shoulders to improve traffic weaves and allow disabled vehicles to move out of traffic lanes;
- Rebuilding structures at Broadway, Weidler, Vancouver and Williams and adding a lid over the freeway that will simplify construction, increase development potential and improve the urban environment;
- Moving the I-5 southbound on-ramp to Weidler to improve circulation and safety;
- Improving conditions for pedestrian and bicycle travel by adding new connections over the freeway and safer pedestrian and bicycle facilities in the interchange area.

The recommendations of the N/NE Quadrant Plan were incorporated in the recently adopted Central City 2035. In addition, as part of the plan, ODOT and the City worked to designate the Central City as a Multimodal Mixed-Use Area (MMA). MMAs are State designated high density, mixed use areas that are well served by multimodal transportation. MMA areas are exempt from mobility standards as part of land use amendments (safety and other State mandated policies remain in effect). As a condition of the MMA, the City and ODOT worked to identify safety improvements for the Loop (including the I-5 Broadway/Weidler Project), which were subsequently added to the City's list of TSP projects and submitted to Metro as part of the 2018 RTP.

Proposed Mobility Corridor Purpose Statement

The purpose of the study is to develop alternative design concepts for Portland Central City Loop. Improvements to the I-5/4-5 Freeway Loop must address long-term transportation and land use needs in a system-wide context. Because the movement of people and goods is a vital economic function, changes must be considered in relation to local, regional, and statewide geographies. Freeway Loop improvements should enhance, not inhibit, high-quality urban development, and should function as seamless and integral parts of the community.

Proposed Principles

These objectives will guide the selection and evaluation of options in the next phase:

- Maintain or enhance transportation performance, including safe and reliable highway operations and enhanced transit performance.
- Support a multi-modal strategy for automobiles, transit, trucks, bicycles, and pedestrians.
- Support the designation of the Central City as a Multimodal Mixed-Use Area (MMA).
- Support trade and freight movement to facilitate regional and state economic development.

- Support local, regional, and state land use plans.
- Ensure regional accessibility to and from the Central City to reinforce its significant statewide, regional, and national economic role.
- Support economic activities and new investments in the Central City and in adjacent industrial areas.
- Improve the quality of the built environment and multimodal connections across facilities.
- Avoid or minimize negative impacts on the natural and built environments.
- Evaluate facility improvement costs relative to the distribution of benefits and impacts.
- Develop strategies that can be implemented in phases, including consideration of value pricing.

8.2.4.3 Clark County to I-5 via Gateway, Oregon City and Tualatin (Mobility Corridors 7, 8 and 10)

Improvements are needed in this corridor to address existing deficiencies and expected growth in travel demand in Clark, Multnomah and Clackamas counties. Transportation solutions in this corridor should address the following needs and opportunities:

- Provide for some peak period and off-peak mobility and reliability for longer trips;
- Preserve freight mobility from I-5 to Clark County, with an emphasis on connections to Highway 213, Highway 224 and Sunrise Corridor;
- Maintain an acceptable level of access to the Oregon City, Clackamas and Gateway regional centers and Sunrise industrial area;
- Maintain acceptable levels of access to PDX, including air cargo access;
- Coordinate refinement planning activities with planning for the Stafford area;
- Adding general purpose lanes to I-205 should be considered to meet state and regional policies to bring the freeway up to three through lanes in each direction in the southern section from Oregon City to I-5 and to allow for potential of bus-on-shoulder operations for bypassing of traffic queues on I-205 during periods of congestion;
- Expanded transit service in the corridor including provision of I-205 express bus service between Clackamas regional center and Bridgeport in Tualatin, and frequent bus service between Clackamas regional center and Clackamas Community College via downtown Oregon City;
- Extend high capacity transit service from Milwaukie to Oregon City along McLoughlin Boulevard;
- Complete gaps in the I-205 Multi-use path - including southernmost segment from Oregon City to Tualatin - to provide a continuous off-street active transportation route through the length of the mobility corridor; and

- Interchange improvements, auxiliary lanes and other major operational improvements such as ramp improvements and other weaving area improvements in the corridor should also be considered. Specific projects to be considered to meet identified needs include:
 - Southbound truck climbing lanes from Willamette River to 10th St. interchange;
 - Interchange improvements at locations including: Division/Powell, Airport Way, OR213, OR 212/224, Sunrise, Johnson Creek Boulevard and others;
 - Auxiliary lanes, northbound and southbound in the following locations: Airport Way to Columbia Blvd., Columbia Blvd. to I-84, I-84 to Glisan, Glisan to Division/Powell, Division/Powell to Foster, Foster to Johnson Creek Boulevard, OR 212/224 to Gladstone, Gladstone to OR 99E;
 - Widen to 6 lanes from Stafford Interchange to Willamette River;
 - Widen Abernethy Bridge to 6 lanes plus auxiliary lanes;
 - Improvements needed on OR 213 (82nd Avenue) include bicycle/pedestrian and streetscape improvements.

Potential transportation and land use solutions in this corridor should evaluate the potential of the following design concepts:

- Auxiliary lanes added from Airport Way to I-84 East;
- Consider express, peak period pricing or HOV lanes as a strategy for expanding capacity;
- Relative value of specific ramp, overcrossing and parallel route improvements;
- Evaluate crash history of arterials and throughways in study area, with a focus on fatal and serious injury crashes, to inform potential transportation solutions and phasing;
- Eastbound HOV lane from I-5 to the Oregon City Bridge;
- Truck climbing lane south of Oregon City;
- Potential for inter-city transit service, vanpool services and other travel options, to/from rural areas and neighboring cities in Clackamas County, to expand travel options and slow traffic growth in the I-205 corridor;
- Potential for rapid bus transit service or light rail from Oregon City to Gateway;
- Potential for extension of rapid bus service or light rail north from Gateway into Clark County;
- Potential for refinements to 2040 land-use assumptions in this area to expand potential employment in the sub-area and improve jobs/housing imbalance;
- Potential for re-evaluating the suitability of the Beavercreek area for urban growth boundary expansion, based on ability to serve the area with adequate regional transportation infrastructure;
- Explore opportunities to support economic and land use goals with the Columbia Connections Strategy;

- Provide recommendations to the Bi-State Coordination Committee prior to JPACT and Metro Council consideration of projects that have bi-state significance.

8.2.4.4 Beaverton to Forest Grove (Mobility Corridors 14 and 15)

A number of improvements are needed in this corridor to address existing deficiencies and serve increased travel demand. One primary function of this route is to provide access to and between the Beaverton and Hillsboro regional centers. Tualatin Valley Highway also serves as an access route to Highway 217 from points west along the Tualatin Valley Highway corridor. As such, the corridor is defined as extending from Highway 217 on the east to Forest Grove to the west, and from Farmington Road on the south to Baseline Road to the north.

The Tualatin Valley Highway Corridor Plan (TVCP) is a “mobility corridor refinement” plan completed in June 2013. The TVCP studied the Beaverton to Hillsboro portion of the Beaverton to Forest Grove mobility corridor between Cedar Hills Boulevard (Beaverton Regional Center) and SE 10th Avenue/Maple Street (Hillsboro Regional Center). The northern boundary of the study area was Baseline Road/Jenkins road and the southern boundary was Farmington Road, Oak Street, Davis Street and Allen Boulevard. There are still two outstanding sections of the corridor left to be studied: within Beaverton (OR 217 to SW Cedar Hills Blvd) and from Hillsboro (west of SE 10th Avenue/Maple Street) to Forest Grove.

The TVCP was a joint effort between ODOT, Metro, the City of Hillsboro, the City of Beaverton and Washington County that focused an examination of the transportation system to identify needs and improvements for all modes of transportation. A number of improvements have been identified in this corridor to address existing deficiencies and safety concerns and serve increased travel demand.

A long-term transit solution for Tualatin Valley Highway has yet to be identified. In advance of this transit study additional land area is to be preserved for Business Access Transit (BAT) / High Capacity Transit (HCT) uses. This land area is not intended to be used for general purpose through lanes. Development along Tualatin Valley Highway shall consider opportunities so as to not preclude a future Business Access and Transit lane in the westbound direction, and to not preclude Bus pullouts in the eastbound direction.

RTP Design and Functional Classifications.

Early in the project, the TVCP PG gave policy direction to maintain the design and function of TV Hwy as an urban arterial that will not exceed motorized vehicle capacity of two through travel lanes in each direction. Consistent with this decision, proposed actions along TV Hwy will be developed during subsequent refinement planning and design work to maximize the use of the typical 100 feet to 107 feet of existing right-of-way (ROW) to serve multimodal travel. Additionally, the RTP Arterial & Throughway map and System Design Classification maps are amended. TV Highway will be changed from “Principal arterial” to “Major Arterial” on the Arterial & Throughway map. It will be changed from “Throughway” to “Regional Street” on the System Design map.

The TVCP recommendations fall into 3 categories: 1) Near Term Actions, 2) Opportunistic Actions, and 3) Longer Term Refinement Planning Needs.

Near Term Actions

The proposed improvements described below will address existing needs, including multimodal system completeness and safety, and can reasonably be expected to be completed within the next 15 years with a strong commitment from one or more of the partner agencies that have jurisdiction over subject transportation facilities, including:

- Complete detailed multi-agency study to determine future potential for high capacity transit solutions within the Tualatin Valley Highway corridor;
- The Moving Forward TV Highway Plan will be developed as a multi-agency study that determine nature and feasibility of HCT in the Tualatin Valley Highway corridor between SW 160th Ave and Cornelius Pass Road;
- Improve bus stops along Tualatin Valley Highway;
- More frequent bus service;
- Add street lighting on Tualatin Valley Highway;
- Improve Tualatin Valley Highway pedestrian crossings;
- Complete Planning and Conceptual design for a Multi-use path;
- Fill gaps in sidewalks and add landscape buffers along Tualatin Valley Highway;
- Add directional way finding signs;
- Complete the (currently discontinuous and narrow) bike lanes on Tualatin Valley Highway;
- Improve bike crossings of Tualatin Valley Highway;
- Develop continuous east-west parallel bike routes north and south of Tualatin Valley Highway;
- Public community rail safety education;
- Support and promote employer incentive programs to reduce driving;
- Improve signal timing, transit prioritization and traffic operations monitoring;
- Signal prioritization for transit;
- Adaptive signal control (“smart signals” that adjust timing to congestion levels);
- Improve operations at signalized intersections along Tualatin Valley Highway;
- Intersection modification to address safety and mobility; and
- Left-turn signal improvements.

Opportunistic Actions

Understanding that funding opportunities (whether public funding or public funding in combination with private sources) may arise for transportation improvements within the TVCP Project Area to work towards to meet the goals and objectives of the TVCP, while attempting to:

- Encourage private contributions by developers to implement the near term improvements, including reserving ROW for future transportation improvements (*City of Hillsboro, City of Beaverton, Washington County*).
- Acquire the ROW to develop a westbound business access transit (BAT) lane as redevelopment opportunities arise on Tualatin Valley Hwy. The City of Hillsboro may also require all half-street improvements be constructed to include the setback curb, planter strip, and sidewalk improvement to create an amenable environment for future transit solutions on Tualatin Valley Highway. This redevelopment should be consistent with ODOT standards. The City of Hillsboro has determined that a BAT lane would not provide the anticipated benefit for transit service and therefore the city isn't acquiring ROW to develop the BAT lane as redevelopment opportunities occur on TV Hwy check with Gregg Snyder about this. The Moving Forward TV Highway Enhanced Transit and Access Plan will look at whether there are benefits of using a BAT lane in part of the corridor from 160th to Cornelius Pass Road.
- As projects arise from appropriate categories examine whether opportunities are available to use other funds to leverage this funding (e.g., safety) (*ODOT, consulting with partners*).
- As land use and transportation system conditions change and near term improvements are completed, consider the opportunity to update this adaptive corridor management strategy (*all partners*).
- Improve existing north-south routes for all modes to reduce travel demand on Tualatin Valley Highway and congestion at intersections. Improvements to roadways such as Brookwood Avenue, Century Boulevard, Cornelius Pass Road, 209th Avenue, 198th Avenue, 185th Avenue, and 170th Avenue would provide the greatest benefit to the overall transportation system. Five improvements on 198th Avenue south of Tualatin Valley Highway are scheduled in the next five years through Washington County's Major Streets Transportation Improvement Program. The other three corridors will require a more opportunistic approach, including working with developers of South Hillsboro to help improve 209th Avenue (*City of Hillsboro, City of Beaverton, Washington County*).
- Improve east-west connectivity (such as those proposed in the upcoming South Hillsboro UGB development mitigation) in addition to the near term actions proposed in South Hillsboro such as the Kinnaman and Rosa Road extensions (*City of Hillsboro, City of Beaverton, Washington County*).
- Complete the bicycle and pedestrian system in the TVCP Project Area to increase connectivity and access.
- Examine transit service for enhancements and improvements in the near term improvements list to leverage added service or other capital enhancements. TriMet has been awarded two Statewide Transportation Improvement Program (STIP) projects (Highway 8 Corridor Safety

and Access to Transit) for improved safety, active transportation, access to transit and transit operations by improving bus stops, constructing landing pads, and enhancing crossings. ODOT will be enhancing two pedestrian crossings, infilling sidewalks, consolidating bus stops, providing transit queue jumps at one location and improving a bus stop. For the second application (between 110th Avenue and SW 209th Avenue on TV Hwy), the project will enhance four pedestrian crossing locations, install buffered bike lanes between 153rd and 182nd Aves, consolidate bus stops, install illumination, ped actuation and signal interconnect at 141st/142nd and 174th, install physically separated walkways and bike lanes on bridge sections between 153rd and 160th Ave and the between 30th and 40th Aves.

- Reduce vehicle turn movements to/from driveways on TV Highway. This would improve safety and mobility of pedestrians, bicyclists, and motorists on TV Hwy. Further access consolidations are recommended in conjunction with other property redevelopment.

Long Term Refinement Planning Needs

The refinement plan was unable to adequately address some longer term planning aspirations for the corridor. The following should be addressed as part of a future corridor refinement plan:

- The preferred location (e.g. on or adjacent to Tualatin Valley Highway) and most viable transit mode (e.g., bus rapid transit, express bus service, light rail, streetcar, or commuter rail) and amount of right-of-way needed for a long-term HCT solution for Tualatin Valley Highway. This transit alternative analysis study may explore enhanced signal operations for transit and/or the viability of a Business Access Transit (BAT) lane in appropriate locations. The Moving Forward TV Highway Enhanced Transit and Access Plan will determine the nature and feasibility of HCT in the corridor primarily between 160th and Cornelius Pass Rd.
- The location of a multi-use pathway parallel to Tualatin Valley Highway.
- The location of new local street connections, in concert with access management along Tualatin Valley Highway.
- While grade separated intersections are not included in the plan, it is recognized that in the long term, all tools should be considered to maintain acceptable intersection performance to serve future transportation and community needs.

8.2.4.5 Powell-Division Corridor: Portland Central City to Lents Town Center and Lents Town Center to Gresham Regional Center (Mobility Corridors 19 and 20)

The Powell-Division Corridor is included in Mobility Corridors #19 and #20. The Mobility Corridor Strategy identified in 2014 RTP Appendix 3.1 notes that both corridors are anticipated to experience high levels of growth in employment and population by the year 2040.

A number of investments are needed in these corridors to address existing deficiencies and serve increased travel demand.

The Powell-Division Transit and Development Plan alternative analysis identified a project – now called the Division Transit Project - that addresses some of the needs identified for the Powell-Division Corridor by improving transit and safety on Division Street with a bus rapid transit project. The Division Transit Project is a part of the financially constrained RTP project list. The Division Transit Project does not fully address the transit, safety, and mobility needs that remain on Powell Boulevard.

Project development analysis and public input has resulted in a Locally Preferred Alternative for a Division Transit Project that includes bus rapid transit running from downtown Portland to downtown Gresham on Division Street through southeast Portland. Project partners recognized that Powell Boulevard improvements are still needed to address safety and mobility needs for all modes and supply essential transit connections in this corridor. Also, a number of steering committee members qualified their votes of support for the Locally Preferred Alternative as contingent upon a commitment to further study Powell Boulevard to address safety and mobility needs moving forward. Based on community feedback and analysis during the Powell-Division Transit and Development project, the City of Portland included language documenting this recommendation in their LPA adopting resolution, as follows:

BE IT FURTHER RESOLVED, that Metro advance Powell Boulevard for regional consideration and prioritization within the High Capacity Transit planning process, and amend the Regional Transportation Plan to assert continued need for Powell Boulevard transit improvements.

This recommendation was codified by the City of Portland in its ordinances adopting the Locally Preferred Alternative and in the accompanying Powell-Division Transportation and Development Strategy (an attachment to the jurisdiction's LPA resolution).

The Powell-Division Corridor is included in Mobility Corridors #19 and #20. The Mobility Corridor Strategy identified in 2014 RTP Appendix 3.1 notes that both corridors are anticipated to see high levels of growth in employment and population by the year 2040.

Mobility Corridor #19 provides an important connection between the Portland Central City and the Lents Town Center and provides important freight access to rail facilities at Brooklyn Yard and access from Powell Boulevard and McLoughlin Boulevard to the Central Eastside Industrial District. This corridor also serves statewide and regional travel on Powell Boulevard (US 26), which serves as a statewide and regional freight route between I-5 and I-205.

The corridor does not meet regional performance thresholds (does not perform as it should) for its throughways (Powell Boulevard) and arterials (Division and Holgate streets) as defined in the RTP due to high volume to capacity ratios.

Strategies adopted in 2014 RTP Appendix 3.1 to improve the corridor include:

Near term:

- System and demand management along Powell Boulevard and parallel facilities for all modes of travel.
- Improved, safe pedestrian and bicycle crossings of Powell Boulevard.
- Modify existing signals, coordinate and optimize signal timing to improve traffic operations on Powell Boulevard.
- Prioritize and construct safety and streetscape improvements from SE 50th to SE 84th Avenue.

Medium term:

- Improve safety by all modes and enhance opportunities for use of bicycles, walking and transit on Powell Boulevard.
- Identify and implement potential changes to the cross section of Foster Road based on the Foster Streetscape Plan.

Mobility Corridor #20 provides an important connection between the Lents Town Center and the Gresham Regional Center. The corridor provides important freight access, connecting I-205 to Gresham and the Springwater Industrial Area. In addition, the corridor serves statewide travel, connecting to routes that lead to destinations outside the region such as the Mt Hood Recreational Area and Sandy Oregon.

Similar to Mobility Corridor #19, Mobility Corridor #20 is expected to experience high levels of employment and population growth by 2040 and does not meet regional performance thresholds for its throughways (Powell Boulevard) and arterials (Division and Foster streets) as defined in the Regional Transportation Plan due to high volume to capacity ratios.

Strategies adopted in 2014 RTP Appendix 3.1 to improve the corridor include:

- Near term: System and demand management along the Powell Boulevard and parallel facilities for all modes of travel.
- Medium term: Implement a three-lane cross-section on Powell Boulevard from I-205 to SE 174th Avenue with bicycle and pedestrian improvements.
- Long term: Implement additional capacity enhancements along Powell Boulevard from 162nd to 174th Avenue as needed. Additional enhancements may include intersecting north-south streets along Powell Boulevard.

Project development analysis and public input resulted in a Locally Preferred Alternative for a Division Transit Project that includes bus rapid transit running from downtown Portland to

downtown Gresham on Division Street through southeast Portland. The jurisdictions recognized that Powell Boulevard improvements are still needed to address safety and mobility needs for all modes and supply essential transit connections in this corridor. Also, a number of steering committee members qualified their votes of support for the Locally Preferred Alternative as contingent upon a commitment to further study Powell Boulevard to address safety and mobility needs moving forward. Based on this conclusion, the RTP was amended to include an additional, future corridor refinement plan for Powell Boulevard as part of the adoption.

In addition, during the Division Transit Project's LPA process, project partners (TriMet, Metro, City of Gresham, Multnomah County, and Mount Hood Community College) developed a Memorandum of Understanding (MOU), in which TriMet committed to improve service to Mount Hood Community College with more frequent service on the Line 20, which will connect the college to the new bus rapid transit line and neighborhoods, and new transit amenities added at the college. The MOU also included a commitment to engage with the college and other signatories to identify future transit improvements in the area, and to seek to identify potential improvements at the Gresham Transit Center in coordination with the City of Gresham. Likewise, a number of steering committee members shared their support for the LPA was contingent upon these actions.

8.2.4.6 Hillsboro to Portland (Mobility Corridors 13, 14 and 16)

Improvements are needed in this corridor to address existing deficiencies and future growth in freight, commuters, and commercial traffic between Hillsboro's Silicon Forest, Northern Washington County's agricultural freight, and the Portland Central City, the international freight distribution hub of I-5 and I-84, the Port of Portland marine terminals, rail facilities, and the Portland International Airport. This corridor is generally defined by US 26 (Sunset Highway), which extends from the Oregon Coast through the Vista Ridge Tunnel where it intersects with the I-405 loop accessing I-5, and I-84. The Sunset Highway Corridor Study is recommended to evaluate multi-modal improvement needs between I-405 and the US 26/Brookwood Parkway interchange.

Corridor Growth Demand

Corridor #13, which extends east to the Willamette River including the western portion of Portland's Central City and Corridor #14 extending west from Murray Boulevard to North Plains will account for 22 percent of the region's households, 20 percent of the region's population, and 31 percent of the region's employment by 2040.

Freight Mobility Challenges

Much of the existing and projected employment in Corridor #14 is traded-sector manufacturing employment, which places a high priority on its ability to import raw materials and export finished goods to the national and international market through Portland's air, water, rail, and trucking distribution infrastructure.

The 2013 *Westside Freight Access and Logistics Analysis* found that greater Portland's export economy relies on the computer and electronics industry, which accounts for over half the value

of the region's exports. This industry is primarily located in the region's Westside, sometimes called the "Silicon Forest," and depends on a tightly managed supply chain to efficiently bring products to markets that are mostly outside of the greater Portland area. Addressing freight mobility challenges experienced by the Westside computer and electronics industry will likely also benefit the footwear, apparel, medical/dental, biopharma and agriculture industries in Washington County.

Freight movement between the Westside industries and the PDX freight consolidation area and the Portland International Airport depends on two routes:

- US 26 eastbound to I-405 northbound to I-5 Northbound to Columbia Boulevard; and
- Cornelius Pass Road northbound to US 30 southbound to Columbia Boulevard via the St. Johns Bridge.

In interviews conducted for the *Westside Freight Access and Logistics Analysis* study, freight shippers of computer and electronics products reported afternoon congestion and reliability challenges within the US 26/I-405/I-5 corridor and that Cornelius Pass Road/US 30 becomes the de facto route in the afternoon. This was confirmed in travel time analysis conducted in conjunction with the study. In addition, ODOT Region 1's *Portland Region 2016 Traffic Performance Report* documented a further degradation of travel in the US 26 corridor since 2013 and identified that US 26 eastbound between Highway 217 and I-405 ranks in the top 10 of the region's bottlenecks in the region.

Safety and Reliability

With congestion becoming more pervasive on US 26 in the area of the Vista Ridge Tunnels and the I-405 interchange, traffic crashes have continued to increase. Cumulatively, there are 10 discreet locations on US 26 between I-405 and Highway 217 that rank in the state's top 10 percent of crash high-priority locations statewide.

Hazardous Materials and Natural Hazards

Sunset Highway at the Vista Ridge tunnels prohibits the hauling of hazardous materials. Petroleum products used to fuel vehicles in the Tualatin Valley and chemicals, including but not limited to industrial gases used in the manufacturing of silicon wafer products, commonly use Cornelius Pass Road with Highway 217 as the secondary route.

Both the Sunset Highway corridor and the secondary freight route of Cornelius Pass Road are susceptible to recurring incidents such as crashes, landslides, and trees blocking the roadways. In both cases, the regional transportation system lacks "redundancy" to accommodate any unforeseen impediments to travel. Similarly, both corridors (and their Willamette River bridges) are not likely to prove reliable and sustainable in the event of a Cascadia earthquake.

Commuter and Commercial Travel Demand

Corridor #13, which includes Sunset Highway and its array of complementary parallel arterial roadways (Cornelius Pass Road, Germantown Road, Cornell Road, Barnes/Burnside Road, and Beaverton-Hillsdale Highway), carry approximately 229,150 vehicles per day comprising roughly 390,000 person-trips per day. Of the total vehicle trips, Sunset Highway carries 160,000 vehicles per day, including 6,000 trucks, and Cornelius Pass Road serves approximately 11,000 vehicles per day.

At present, transit carries approximately 29,000 person-trips per day on the MAX Blue Line, the MAX Red Line, and multiple bus routes serving the parallel arterials in the corridor (23,600 on Blue/Red MAX). Together, transit is serving approximately more than 7 percent of the person-trips on the corridor connecting Portland's Central City to the northern Tualatin Valley, but about 17 percent of peak hour travel on the Sunset Highway corridor itself. The MAX Blue Line operates at near capacity presently during peak periods, prompting TriMet to plan the western extension of the MAX Red Line to Hillsboro's Airport/Fair Complex Station by approximately 2022.

Hillsboro has also been working with TriMet, Washington County, and the City of Portland to advance a potential new Sunset Highway Express Bus service which is envisioned to operate from Forest Grove through the north Hillsboro industrial area to Portland via US 26 with regional park-and-rides at Hillsboro Stadium and potentially near the US 26/ Cornell-Bethany interchange.

Potential Solutions

Potential transportation solutions in this corridor should evaluate the costs and benefits of the following range of investments intended to reduce congested hours of operations through the corridor, improve travel time reliability, reduce crash frequency, and improve transit utilization. The study would identify a set of potential improvements that would be subsequently advanced for further study and potential project development and funding. The following should be addressed as part of a future corridor refinement plan:

- Evaluate crash history of all commuter routes including arterials, collectors, and throughways in the study area, with a focus on fatal and serious injury crashes, to inform potential transportation solutions and phasing.
- Deploy Intelligent Transportation Systems infrastructure including variable speed signs, traveler information signs, corridor Bluetooth origin/destination tracking, and improved ramp meter algorithms.
- Evaluate potential ramp meter bypass(es) for freight and transit use along the Sunset Highway corridor.
- Operational improvements at the US 26 and I-405 bottleneck which may include modifications or full/part-time closures of I-405 ramps to NW Everett Street and from SW Montgomery Street and modifications to lane channelization on US 26 approaching the interchange.

- Evaluate system and demand management options to expand travel options over the west hills, including employer shuttle buses and carpools, on-demand ride sharing carpools, etc.
- Expanded transit service on the corridor including provision of a Sunset Highway express bus service between the Portland Central City via the SW Jefferson Street interchange and Hillsboro (or Forest Grove).
- Evaluate the potential for bus-on-shoulder operations for bypassing of traffic queues on US 26 during periods of congestion.
- Expand the Sunset Transit Center park-and-ride capacity.
- Extend high capacity transit service from Portland to north Hillsboro along Sunset Highway including additional park-and-ride locations west of Highway 217. This improvement could consider use of paid parking at park-and-ride locations as a potential public-private partnership funding opportunity.
- Increase the frequency of MAX Blue Line and MAX Red Line and extend the MAX Red Line west to the Hillsboro Airport/Fair Complex station.
- Develop a transit service route that connects US 26 from Powell Boulevard to Sunset Highway to better accommodate demand between SE Portland/Clackamas County and northern Washington County.
- Improved transit connections to MAX/HCT in the corridor, including Columbia County Rider connectivity and better local access to the Sunset Transit Center.
- Complete regional trail gaps - including Rock Creek Trail, Westside Trail and Saint Helens Road - to provide a continuous off-street active transportation route through the length of the mobility corridor.
- Evaluate potential benefits and burdens (adverse impacts) of congestion pricing on Portland area freeways, including I-5, I-405, US 26, and Highway 217.
- Evaluate widening of Barnes Road-Burnside Road to five lanes between NW 23rd Avenue and Highway 217.
- Evaluate widening improvements to Cornelius Pass Road between US 26 and US 30 to determine near-term and long-term needs (jurisdictional transfer from current Washington County/Multnomah County to ODOT is in process).
- Evaluate safety and congestion effects of proposed solutions on the St Johns Bridge and the communities of St Johns and Linnton.
- Evaluate a North Willamette Freight Bridge over the Willamette River north of the community of St. Johns extending from US 30 to the western terminus of Columbia Blvd and N. Lombard Street. This improvement could be a potential tolled facility and a public-private partnership opportunity.
- Evaluate freight-related improvements to address multi-modal conflicted corridors between the Willamette River and the PDX freight aggregation/air cargo areas along Columbia Boulevard and Marine Drive.

- Evaluate a potential improvement to Cornelius Pass Road, Germantown Road between Cornelius Pass Road and approximately Old Germantown Road, and a new multi-modal tunnel under Forest Park connecting to US 30 and the North Willamette Freight Bridge (the Northern Arterial or Northern Connector identified in the Washington County Futures Study). The evaluation should assess potential land use impacts in the area. This improvement could be a potential tolled facility and a Public-Private Partnership opportunity.
- Evaluate the effect of proposed solutions on wildlife habitat and connectivity and relative benefits of wildlife crossing infrastructure in proposed solutions to improve safety for people and wildlife and make habitats more connected.

8.2.4.7 Clackamas to Columbia (Mobility Corridor 24)

This effort will create a consistent, coordinated, multi-jurisdictional transportation plan that focuses on needed improvements for all modes along the 181st/182nd/190th/172nd corridor that connects I-84 in Multnomah County and Highway 212 in Clackamas County. The corridor crosses a wide variety of land uses, both existing and planned. The effort will use the results of the planning projects that have been initiated locally (e.g., Pleasant Valley TSP Refinement Project, Happy Valley Pleasant Valley/North Carver Comprehensive Plan, 172nd Avenue/190th Drive Corridor Management Plan and the Clackamas County TSP Update), and evaluate packages of multimodal improvements that will improve mobility and access along the corridor to jobs, housing and key commercial and industrial areas. This effort will identify a preferred package of transportation improvements and detail how they can be phased for implementation. This effort will also provide recommendations on urban street design as well as recommend amendments to local TSPs and the Regional Transportation Plan to implement the preferred multimodal package.

Potential Solutions

This effort will recommend a shared mobility corridor investment strategy, including long-term needs and improvements for auto, bicycle, freight, pedestrian, and transit mobility and connectivity. This effort will expand on already adopted planning efforts in the corridor to create a multi-jurisdictional implementation strategy that provides a clear path from existing conditions to desired transportation improvements that support community and regional goals for equity, housing, economic development, environmental protection and access to nature. The planning process will include extensive public involvement and identify a set of potential improvements that would be subsequently advanced for further study and potential project development and funding.

The study will include a needs assessment for auto, freight, transit, bicycle and pedestrian modes within the corridor to identify existing gaps and system deficiencies. The assessment and solutions will address completing regional trails gaps, including the Troutdale to Springwater Trail, the Sunrise Corridor Trail and the Butler Buttes Trail - to provide a continuous off-street active transportation route through the length of the mobility corridor. A full list of recommended projects from other related transportation planning efforts will be developed. Data for key performance metrics will be collected from the related transportation plans and analyzed. If necessary, additional projects will be identified and proposed if unmet needs are found. The

projects will then be evaluated, and recommended projects will be grouped into investment packages and grouped geographically. The preferred investment packages for all modes will then be fully documented in the final plan along with implementation strategies focusing on timelines and funding strategies.

More information is available at: <https://greshamoregon.gov/Clackamas-to-Columbia-Corridor>.

8.3 PROJECTS

8.3.1 Major Project Development

Transportation improvements where the need, mode, function and general location is identified in the RTP and local plans are expected to be further refined during detailed project development. For major projects, project development is generally completed jointly by affected or sponsoring agencies, in coordination and consultation with Metro. For purposes of the RTP, major projects are defined as large-scale, complex investments in the transportation system that typically cost \$500 million or more regardless of the source of funding for the total project and is likely to receive state or federal financial assistance. Projects with total costs between \$100 million and \$500 million may also be considered major projects. Major projects typically have a high level of public, legislative or congressional interest, may be constructed in multiple phases and are anticipated to go through one of the planning processes identified below.

The purpose of project development is to consider project design details and select a specific project alignment, as necessary, after evaluating engineering, management and design alternatives, potential environmental impacts and consistency with applicable comprehensive plans, the Oregon Transportation Plan and the RTP. The TPR defines project development as, “implementing the transportation system plan by determining the precise location, alignment and preliminary design of improvements included in the TSP based on site-specific engineering and environmental studies,” (660-012-005 (36)). The project need, mode, function and general location do not need to be addressed again at the project level, since these decisions have been previously documented in the adopted corridor refinement plan or RTP project list.

In the case of projects requiring an Environmental Impact Statement, Environmental Assessment, or Documented Categorical Exclusion for a project of regional significance with multiple jurisdictions, decisions are documented through adoption of a Locally Preferred Alternative. Project development decisions for projects that qualify for a Categorical Exclusion under NEPA are documented by other means in accordance with the responsible agency’s procedures.

Once the RTP or corridor refinement plans have established mode, function, general location, and identified solutions, project development may also result in recommended phasing of improvements.

A summary of completed and current major project development activities follows.

Table 8.3 Completed and Current Major Project Development

Project	Status
Interstate 5/Columbia River Crossing Project	LPA approved in July 2008. Record of decision signed by FHWA in December 2011. Project development work discontinued in 2013 in Washington and 2014 in Oregon. Joint Washington and Oregon Legislative Action Committee discussions begin in 2017.
Sunrise Project and Sunrise Jobs and Transportation Act Project	LPA approved in July 2009. Record of decision for Phase 1, Units 1, 2 and 3 signed by FHWA in February 2011. Phase 1 related projects were completed in June 2016. Environmental approval received for improvements on OR 224 at Rusk Road. Phase 2 and Phase 3 may require future NEPA reevaluation for improvements east of SE 122nd Ave, given changes in the built environment since 2010.
Division Transit Project	LPA approved in June 2017.
Southwest Corridor Project	LPA approved in Nov. 2018.
I-5 Rose Quarter Improvement Project	Environmental Assessment anticipated to be published in 2019. Design anticipated to begin in 2019.
MAX Red Line Improvements Project	LPA approval anticipated in January 2019. Documented Categorical Exclusion approval anticipated in 2019.
OR 217 Project	OR 217 Southbound: ▪ Categorical Exclusion anticipated by October 2019. OR 217 Northbound: ▪ Categorical Exclusion anticipated by April 2020.
I-205 South Corridor Widening and Seismic Improvements Project	Categorical Exclusion approved in December 2018.
Basalt Creek Parkway	IGA to plan for Basalt Creek signed by partners in 2011. Basalt Creek Transportation Refinement Study to define alignment completed in 2013 and adopted as an amendment to IGA. Categorical Exclusion anticipated in 2019.

8.3.1.1 Interstate 5 Corridor and Bridge Replacement Project (formally Interstate 5/Columbia River Crossing Project)

The proposed Interstate 5 (I-5) Corridor and Bridge Replacement Project (previously called the Columbia River Crossing (CRC) Project) is a major bi-state megaproject that would replace the I-5 bridges across the Columbia River and provide high capacity transit between Oregon and Washington. In July 2008, the Metro Council approved a Locally Preferred Alternative (LPA) for the prior CRC project. The prior CRC project completed the National Environmental Policy Act (NEPA) review process and received a federal Record of Decision (ROD) on a LPA in December 2011. The CRC project development work was discontinued in 2013 in Washington and in 2014 in Oregon. Transportation needs in the I-5 corridor remain.

The prior CRC NEPA effort was a collaboration of the Oregon Department of Transportation, Washington State Department of Transportation, Metro, Southwest Washington Regional Transportation Council, TriMet, C-TRAN and the cities of Portland and Vancouver. Each of these sponsoring agencies would be responsible for approving all or part of a future I-5 corridor and bridge replacement project.

The LPA for the prior CRC project included replacement bridges to the current I-5 bridges with three through lanes in each direction, reconstructed interchanges, tolls priced to manage travel demand as well as provide financing of the project construction, operation and maintenance, light rail transit to Vancouver, and bicycle and pedestrian investments. Elements were identified in the CRC FEIS to improve safety, travel reliability, freight mobility, and bridge structural stability and relieve congestion on Interstate 5 between Portland and Vancouver.

The project responded to six key problems identified in the project purpose and need: growing travel demand and congestion; impaired freight movement; limited public transportation operation, connectivity, and reliability; safety and vulnerability to incidents; substandard bicycle and pedestrian facilities; and seismic vulnerability.

The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) would be the lead federal agencies for the oversight and delivery of the federal permit compliance and funding. Both agencies must ensure that the NEPA process is properly conducted and completed before they provide funding or approval to construct a project.

Major milestones were achieved as part of the NEPA process for the prior CRC project including: National Marine Fisheries Service issuance of an Endangered Species Act Section 7 Biological Opinion (January 2011); publication of a Final Environmental Impact Statement (September 2011); FHWA/FTA issuance of a Record of Decision (December 2011); United States Coast Guard issuance of a Bridge Permit (Sept 2013); issuance of a Section 401 Water Quality Certification by the State of Washington Department of Ecology and Oregon Department of Environmental Quality (August 2013); and related consultation with regulatory and permitting agencies took place.

As directed by the Washington Legislature in SSB 5806, WSDOT prepared an inventory of all planning, environmental, permitting and engineering work that was previously performed related

to the construction of a new I-5 bridge over the Columbia River.⁶ Completed in December 2017, the report aimed to provide information to the Washington Legislature, to the public and to a joint Washington and Oregon Legislative Action Committee in potential efforts to begin a new project development process.

For purposes of the 2018 RTP, modeling and cost assumptions are based on the Final Environmental Impact Statement (September 2011) and cost estimating from prior studies. As a mega-project, it has been assumed to have its own financing plan. Funding for improvements is expected to require a combination of federal funds, tolling and state funds from Washington and Oregon. Refinements of the project scope, design, phasing, costs and finance plan may occur during the RTP horizon. Refinements will occur through a technical review and public process that includes relevant agency stakeholders in Washington and Oregon.

More generally in the I-5 corridor, the region should:

- Consider the potential adverse human health impacts related to the project and existing human health impacts in the project area, including community enhancement projects to address environmental justice.
- Consider managed lanes or pricing systems to help manage congestion.
- Maintain an acceptable level of access to the central city from Portland neighborhoods and Clark County.
- Address freight rail network needs and maintain off-peak freight mobility, especially to numerous marine, rail and truck terminals in the area.
- Ensure that there is safe, reliable, affordable, and efficient transit connections between the growing downtown of Vancouver and key job sites in the Portland metropolitan region, including downtown Portland and Washington County.
- Consider new arterial connections for freight access between Highway 30, port terminals in Portland and port facilities in Vancouver, Washington.
- Maintain an acceptable level of access to freight intermodal facilities and to the Northeast Portland Highway.
- Develop actions to reduce through-traffic on MLK and Interstate to allow main street redevelopment.
- Explore opportunities to support economic and land use goals with the Columbia Connections Strategy.
- Inform and coordinate with the Regional Transportation Council (RTC) and the Bi-State Coordination Committee prior to JPACT and Metro Council consideration of projects that have bi-state significance.

⁶ The report can be found at:

wsdot.wa.gov/accountability/ssb5806/docs/WSDOT_I5_Bridge_Inventory_Report.pdf

8.3.1.2 Sunrise Project and Sunrise Jobs and Transportation Act Project

The Sunrise Corridor is an essential freight route from I-5 and I-205 to U.S. 26 and central and eastern Oregon. In addition, the Clackamas Industrial Area is home to one of the state's busiest and most critical freight distribution centers. The OR 212/224 corridor is not capable of handling the expected increase in traffic resulting from significant community development and industrial expansion in the corridor.

In July 2009, the project's Policy Review Committee (PRC) selected the Preferred Alternative for the Sunrise Project. The Preferred Alternative is Alternative 2 as studied in the Supplemental Draft Environmental Impact Statement with Design Options C-2 and D-3 and a portion of Design Option A-2 (Tolbert Overcrossing). A detailed description and map of the Sunrise Project Preferred Alternative is included in Appendix Q.

FHWA, ODOT and Clackamas County completed the Final Environmental Impact Statement (FEIS) for the Sunrise Project and on February 22, 2011, the FHWA signed a Record of Decision (ROD) that approves the Sunrise Corridor Preferred Alternative. The Sunrise Project mainline is an approximately five-mile, east-west oriented, limited-access highway from I-205 to the Rock Creek Junction in Clackamas County.

The Sunrise Jobs and Transportation Act (JTA) Project constructed a new 2.5 mile road from I-205 to 122nd Avenue (as part of the larger Sunrise Project mainline). The Oregon Legislature approved \$100 million in JTA funding for this project, which was built to address congestion and safety problems in the OR 212/224 corridor and improve local roadway connections to the Lawnfield Industrial District. Construction for the JTA phase of the Sunrise Project was completed in June 2016 and opened for use on July 1, 2016.

Future phases of the Sunrise Project include the design and construction of improvements between SE 122nd Avenue and SE 172nd Avenue, consistent with the FEIS and ROD. ODOT, in coordination with local agencies, has initiated preliminary analysis to examine options for the Sunrise Project's connection with OR 212/224 towards the east end of the corridor.

The most recent ODOT cost estimate for the completion of Phase II (extends from the east end of the project at SE 122nd to SE 172nd) is \$250 million. This amount seems sufficiently high that it appears unlikely that all of Phase II can be completed in one project. At this point, the best strategy for moving the project forward could be to break Phase II of the Sunrise project into two or three sub-phases that each have independent utility and can be accomplished at a more reasonable cost. ODOT, in coordination with local agencies, has initiated preliminary analysis to examine options for the project's east end from the Rock Creek junction of OR 212 and OR 224 to the east end of the corridor.

8.3.1.3 Division Transit Project

The Division Transit Project is in the final stages of project development. Based on outreach and analysis, the Steering Committee recommended a LPA in November and the LPA was adopted by the local jurisdictions in December 2016. The Locally Preferred Alternative (LPA) for the transit project includes the transit mode (bus rapid transit), the route (from downtown Portland on the transit mall to Southeast Division Street to the Gresham Transit Center), and the general stop locations (approximately 1/3 mile apart). The project began the NEPA process by documenting potential impacts and benefits in accordance with federal requirements. With local adoption of the LPA, TriMet is leading the design, traffic analysis, and outreach with support from Metro and other project partners. In June 2017, the Metro Council adopted the LPA by Resolution No. 17-4776 at the same time the Metro Council amended the 2014 Regional Transportation Plan by Ordinance No. 17-1396 to include the LPA in the plan.

TriMet is working with partners to finalize the project's design, and Metro is leading the NEPA process by conducting a Documented Categorical Exclusion. The land use investment strategy pieces are being led by Portland and Gresham, moving forward on their locally adopted Local Action Plans. The Local Actions Plans outline their vision for implementing land use and economic development that complements the transit investment. Construction is anticipated to begin in 2019 with a targeted opening date of fall 2022.

Additional project information is available at: www.trimet.org/division/

8.3.1.4 Southwest Corridor Transit Project

The Southwest Corridor Plan is a comprehensive effort focused on supporting community-based development and placemaking that targets, coordinates and leverages public investments to make efficient use of public and private resources. The work has been guided by a Steering Committee comprised of representatives from the cities of Beaverton, Durham, King City, Portland, Sherwood, Tigard and Tualatin; Washington County; and TriMet, ODOT and Metro. Steering Committee members agreed to use a collaborative approach to develop the Southwest Corridor Plan and a Shared Implementation Strategy to align local, regional, and state policies and investments in the corridor. In August 2011, the Metro Council adopted Resolution No. 11-4278 that appointed the Southwest Corridor Steering Committee, and a charter defining how the partners will work together was adopted by the Steering Committee in December 2011.

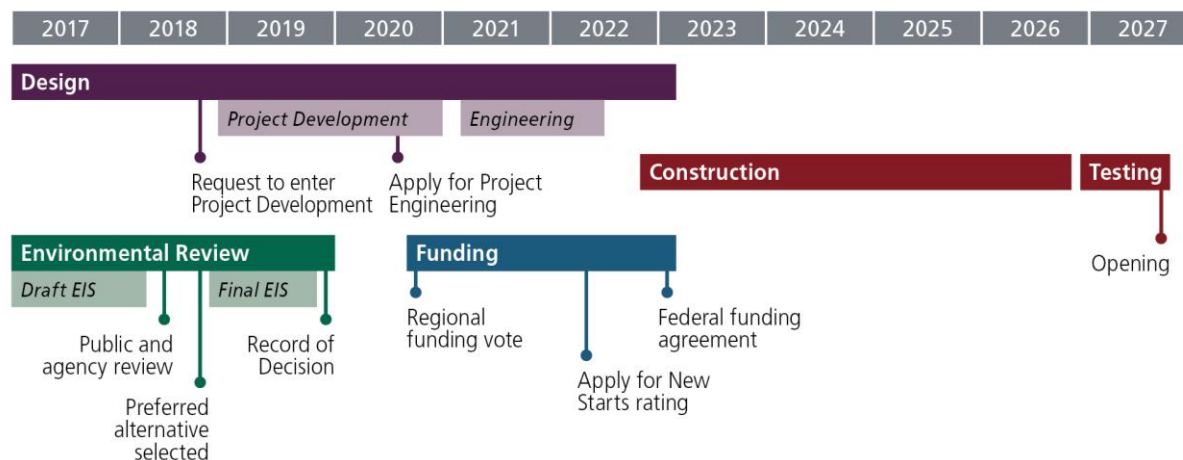
In October 2013, the Metro Council adopted Resolution No. 13-4468A, endorsing the Southwest Corridor Shared Investment Strategy and directing staff to coordinate and collaborate with project partners on refinement and analysis of high capacity transit (HCT) alternatives and local connections in the Southwest Corridor, along with associated roadway, active transportation and parks/natural resource projects that support the land use vision for the corridor. This resolution also directed staff to work with project partners to involve stakeholders at key points in the process and seek input from the public.

In June 2014, the Metro Council adopted Resolution No. 14-4540, which included direction to staff to study the Southwest Corridor Transit Design Options under NEPA in collaboration with the Southwest Corridor Plan project partners and with the involvement of stakeholders and public, pending Steering Committee direction on the results of the focused refinement analysis

The Southwest Corridor Light Rail Project has emerged as the preferred high capacity transit investment of the Southwest Corridor Shared Investment Strategy. The project is a proposed 12-mile MAX light rail line serving SW Portland, Tigard, Tualatin and the surrounding communities. The proposed project also includes bicycle, pedestrian and roadway projects to improve access to light rail stations. In compliance with NEPA, and at the direction of the Metro Council, an Environmental Impact Statement (EIS) will be prepared by Metro, TriMet and FTA to identify the significant positive and negative impacts the project could have on the built and natural environment and to determine options to avoid, minimize or mitigate those impacts. The Draft EIS, released in summer 2018, assessed the project alternatives remaining from over three years of analysis refinement and suggest ways to avoid, minimize or mitigate significant adverse impacts. The information disclosed in the Draft EIS, and public and agency comments on the Draft EIS, informed the Southwest Corridor Steering Committee in its recommendation of a LPA. In November 2018, the Metro Council adopted Resolution No. 18-4915 approving the Southwest Corridor LPA. The LPA is included in the RTP.

TriMet anticipates requesting entry in Project Development with FTA late in 2018. TriMet will be furthering the transit project design while Metro completes the final EIS. The final EIS will analyze and disclose the benefits and the adverse impacts of the preferred alternative, including the effects of mitigation measures identified in the Draft EIS and selected for inclusion in the project. Upon completion of the final EIS, TriMet will request a Record of Decision (ROD) from FTA, which authorizes the lead agencies to proceed with design, land acquisition, and construction based on the availability of funds. The general schedule for the Southwest Corridor Light Rail Project is shown below, with anticipated opening in fall 2027.

Figure 8.8 Southwest Corridor Project Schedule



More information is available at www.oregonmetro.gov/public-projects/southwest-corridor-plan.

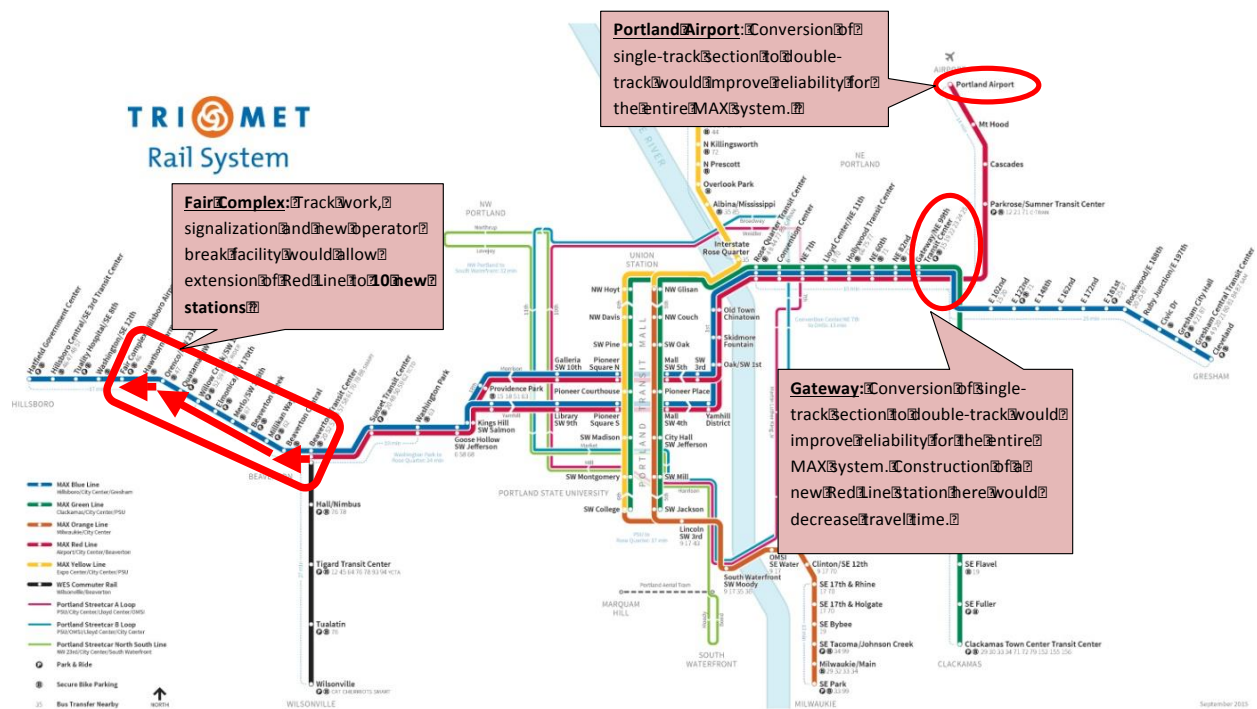
8.3.1.5 MAX Red Line Improvements Project

The MAX light rail system provides high capacity transit connecting the major centers of our region. The MAX Red Line has connected the City of Beaverton, downtown Portland, Gateway Regional Center, and Portland International Airport since 2001. Since its opening, there has been substantial growth in the corridor and more demand for reliable transit connecting these important centers. Currently, the Red Line has two single-track sections near Gateway/99th Ave and Portland International Airport, which result in inbound and outbound trains having to wait for each other. If a train is off schedule, these wait times can impact the entire MAX System as trains rely on the same tracks to serve different parts of the region. Adding a second set of tracks in these areas will reduce delays for riders on all five lines. In addition, MAX riders west of Beaverton Transit Center have been requesting Red Line service to better connect a growing part of the region.

The Red Line improvements west of the Beaverton Transit Center include improving track and switches and adding signals and a new operator break facility at the Fair complex/ Hillsboro Airport MAX Station allowing Red Line trains to serve ten more west side stations. These stations are currently served by the Blue Line, which is often overcrowded. Improvements will allow TriMet to increase train frequency to better meet rider demand. Improved transit will support anticipated redevelopment at the Port of Portland such as the expansion of the Portland International Airport and potential redevelopment at the Gateway Regional Center.

This project will complete a 2-year design process for the MAX Red Line double tracking and other improvements to increase light rail reliability on all five MAX lines and to improve carrying capacity to meet transit demand west of the Beaverton Transit Center. TriMet and Metro will work with the local jurisdictions and the Port of Portland to scope the project to improve access to major transit origins and destinations, improve reliability of the entire MAX system, and support future redevelopment at the Gateway Regional Center, the Port of Portland properties, and within Beaverton and Hillsboro. TriMet and Metro will also consult with the federal agencies during the scoping phase. TriMet is coordinating with local jurisdictions to avoid and minimize any potential impacts associated with improving the Red Line. NEPA is expected to be complete in 2019 with construction of improvements in the 2021-2022 timeframe. Opening is targeted for 2023. This work will improve mobility and transit performance throughout the region.

Figure 8.9 MAX Red Line Improvements Project Area Map



Source: TriMet

More information is available at: www.trimet.org/redlineimprovements.

8.3.1.6 I-5 Rose Quarter Improvement Project

ODOT and the City of Portland are ongoing partners on the I-5 Rose Quarter Improvement Project, which implements the recommendations of the I-5 Broadway-Weidler Facility Plan and the N/NE Quadrant Plan. The purpose of the I-5 Rose Quarter Improvement Project is to improve the safety and operations on I-5 between I-84 and I-405, the Broadway/Weidler interchanges, and adjacent surface streets in the vicinity of the interchange. In achieving the purpose, the Project also supports improved connectivity and multimodal access in the vicinity of the interchange.

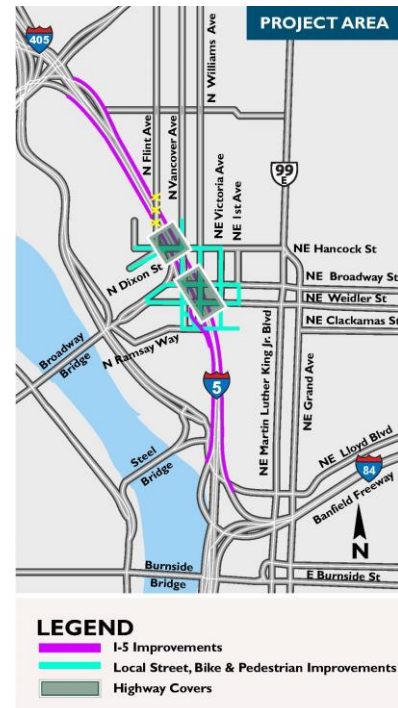
The I-5 Rose Quarter Improvement Project is intended to make travel more convenient, reliable, and safe for people driving on I-5, or biking, walking, or taking public transit in the Rose Quarter area. The Project will add:

- One new auxiliary lane in each direction on I-5 between I-84 and I-405 to improve traffic weaves and reduce frequent crashes;
- Full shoulders in each direction on I-5 between I-84 and I-405 to create space for disabled vehicles to move out of through traffic and allow emergency vehicles access;
- Relocating the I-5 southbound on-ramp from NE Wheeler to NE Weidler;
- Highway covers over I-5 at Broadway/Weidler and Vancouver/Hancock to provide space for wide sidewalks, separated bike lanes, roads, and new community spaces;
- Bicycle- and pedestrian-only bridge over I-5 from NE Clackamas Street to the Rose Quarter;
- New, direct road connection over I-5 between N Hancock Street and N Dixon Street;
- New, upgraded pedestrian and bicycle paths in the area of the Broadway/Weidler interchange; and
- Improved pedestrian and bicycle access to transit, including Portland Streetcar and TriMet bus and MAX lines.

Figure 8.10 shows the project location and **Figure 8.11** illustrates the project features.

More information is available at www.i5rosequarter.org.

Figure 8.10 I-5 Rose Quarter Improvement Project Area



Source: ODOT

Hancock-Dixon
Overcrossing

Local Street Bike and
Pedestrian Facilities

Highway Covers

I-5 Ramp-to-ramp
(Auxiliary) Lanes
and Shoulders

Clackamas Bicycle
and Pedestrian Bridge

I-5 Southbound
On-Ramp Relocation

ODOT initiated the federal environmental review process for the I-5 Rose Quarter Improvement Project in December 2016, with expected publication of an Environmental Assessment by the end of 2018. Project design is scheduled to begin in 2019, with construction beginning as early as 2023.

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8.3.1.7 OR 217 Project

OR 217 carries up to 120,000 vehicles a day and has 10 interchanges in just over seven miles of highway, with some of the shortest interchange spacing in the region. This causes significant bottlenecks, leading to high crash rates and unpredictable travel times. HB 2017 allocated a majority of funding needed to implement highway improvements on OR 217. ODOT is currently in the design phase and construction is slated to begin in 2020.

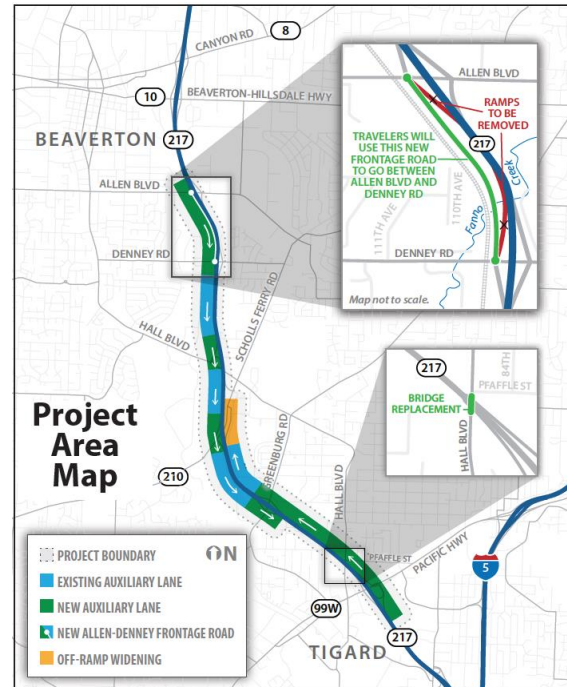
The primary project elements include:

- Build auxiliary lanes on OR 217 southbound from Beaverton-Hillsdale Highway to Greenburg Road and on OR 217 northbound from OR 99W to Scholls Ferry Road.
- Build a collector-distributor road between Allen Boulevard and Denney Road interchanges along OR 217 southbound that includes a new parallel multi-use path as designated in the Chapter 3 RTP bicycle and pedestrian system maps. The project removes the weaving section on southbound OR 217 between the Allen Boulevard and Denney Road interchanges by replacing the southbound entrance ramp from Allen Boulevard and the southbound exit ramp to Denney Road with a collector-distributor road connecting the Allen Boulevard and Denney Road southbound ramp terminals. Consolidation of these interchanges into a “split diamond interchange” configuration is consistent with previous corridor plan recommendations.

Replace one of the Hall Boulevard bridges over OR 217. This is the southernmost bridge at SW Pfaffle Street (near OR 99W in Tigard). The bridge replacement is needed to accommodate the new auxiliary lanes.

Anticipated Benefits

- Provide significant operations and safety improvements on OR 217 southbound;
- Improve safety on a hazardous cargo route; and
- Reduce congestion/delay for all southbound travelers.



Source: ODOT

Figure 8.12 OR 217 Project area

8.3.1.8 I-205 South Corridor Widening and Seismic Improvements Project

Preliminary design work is underway to widen I-205 between OR 213 and Stafford Road and improve the I-205/Abernethy Bridge to ensure it remains functional after a catastrophic earthquake. The design work was funded through HB 2017; however, construction funding for this project has not been identified.

The I-205 South project widens I-205 to add a third lane in each direction between Stafford Road and OR 213 and an auxiliary lane across the Abernethy Bridge in each direction. The I-205/Abernethy Bridge project provides for seismic upgrades of the Abernethy Bridge and includes seismic retrofit or replacement of eight additional bridges in the corridor. The project also adds Active Traffic Management System improvements, such as Traveler Information Signs, throughout the corridor and a new parallel multi-use path as designated in the Chapter 3 RTP bicycle and pedestrian system maps.

The Oregon Transportation Commission approved a Cost to Complete Report for the project that was shared with the Oregon Legislature in January 2018, as mandated by HB 2017. The Cost to Complete Report defines the project scope and recommends a project delivery method and phasing plan to complete the project by 2025. Read the report and find more project information at www.i205corridor.org.

Figure 8.13 I-205 South Widening and Seismic Improvements Project Area Map

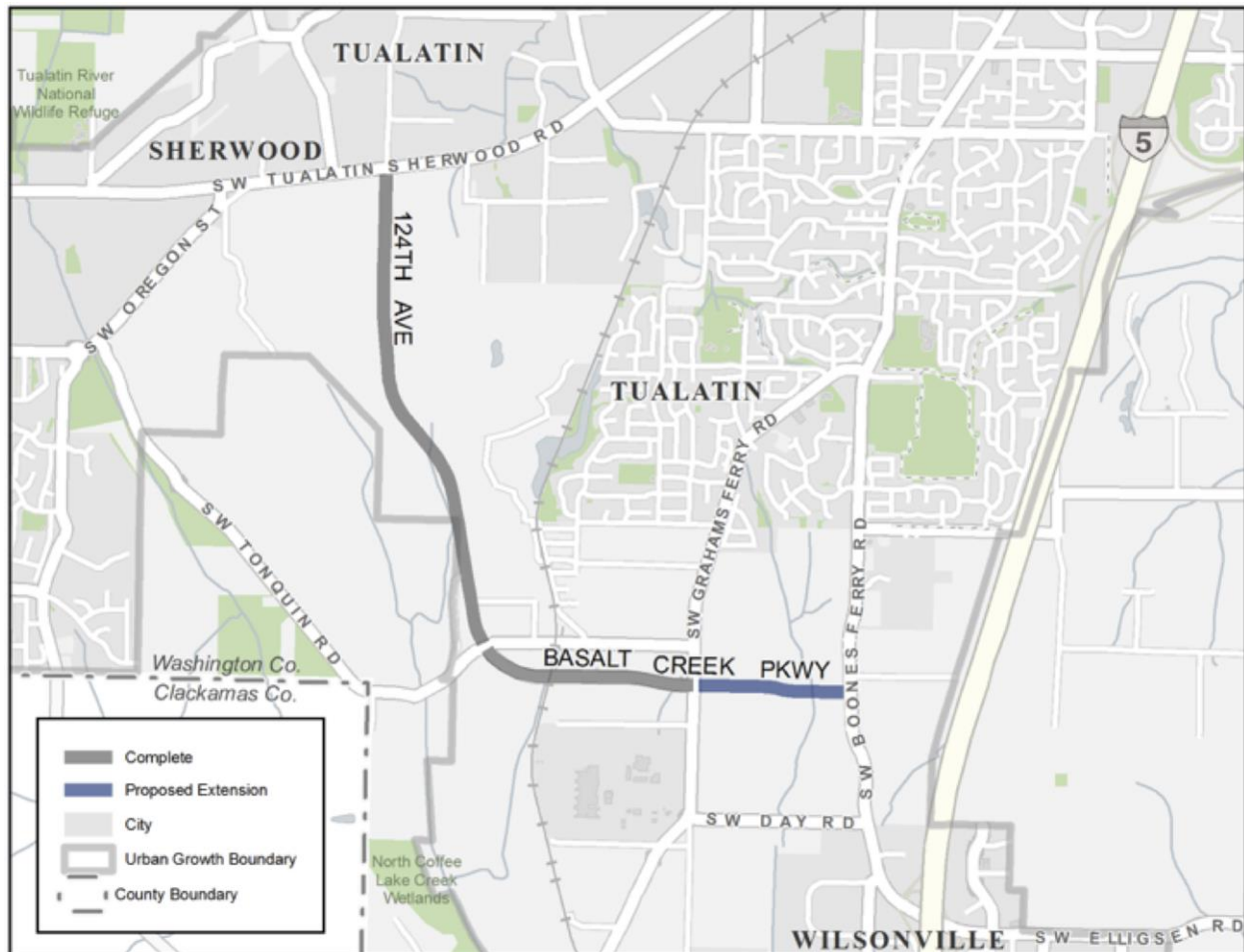


Source: ODOT

8.3.1.9 Basalt Creek Parkway

In 2002 and 2004, Metro added over 1900 acres of land to the UGB in south Washington County. Primarily intended for employment uses, the area is planned for development and growth of up to 14,000 jobs in the cities of Sherwood, Tualatin and Wilsonville when the area is annexed. The Basalt Creek Parkway, combined with the 124th Ave extension, will serve and catalyze development in this area. The new arterial is designated as a freight route in the Regional Transportation Plan. Figure 8.13 shows the new arterial.

Figure 8.14 Basalt Creek Parkway Project Area Map



Source: Washington County Department of Land use and Transportation

The Basalt Creek Parkway was recommended by the cities of Tualatin and Wilsonville, Metro and Washington County and Clackamas County as one of several arterials to support development of the South County area and replace what was once envisioned as a state route connection between 99W and I-5. Tualatin, Wilsonville, Metro and Washington County entered into an Intergovernmental Agreement for land use and transportation planning for the Basalt Creek subarea in 2011. In 2013 the partners endorsed the Basalt Creek Transportation Refinement Plan

and selected the general alignment for the Basalt Creek Parkway as part of a larger multi-modal transportation investment that includes the Tonquin Trail, bike lanes, collector roadways and upgrades to existing arterials.

The Basalt Creek Parkway is part of a multi-phase project with an existing investment of over \$100 million. Washington County completed the first phase with the extension of 124th Avenue from Tualatin Sherwood Road to Tonquin Road. Other roads in the area, including the Tualatin Sherwood Road, Grahams Ferry Road, Tonquin Road and Boones Ferry Road have been improved or have committed funding as part of the plan.

The next phase of the Basalt Creek Parkway is the east-west span between 124th and Boones Ferry Road. The county and its partners have secured Regional Flexible Funds from Metro to complete the design for the Parkway, the environmental assessment and purchase right of way. The County and its partners intend to seek the remaining approximately \$21 million for the roadway construction from federal, state or other sources.

8.3.2 Metropolitan Transportation Improvement Program

The Metropolitan Transportation Improvement Program (MTIP) documents how all federal transportation funding is spent in the greater Portland region for a four-year period as well as state- and locally-funded projects that may significantly affect the region's air quality. The MTIP serves multiple purposes – the document:

- lists all federally-funded transportation expenditures;
- identifies funding sources for transportation projects;
- provides project implementation details (e.g., in what year the preliminary engineering, right-of-way acquisition and construction phase is expected);
- demonstrates all federal requirements to expend federal funds have been met; and
- reports how adopted regional policies influenced the selection of these near-term investments as priorities to move forward.

This section describes the role of the MTIP as a key tool for implementing the RTP, and provides an outline of expectations of jurisdictional partners for demonstrating consistency with the RTP in order to be programmed in the MTIP for implementation. The MTIP document provides more specific description of how projects proposed to be included in the MTIP are expected to demonstrate consistency with the RTP.

8.3.2.1 MTIP responsibilities and oversight

Metro has the responsibility to prepare the MTIP, but it is done in collaboration and coordination with ODOT, and transit agencies, TriMet and SMART, as the region's four entities responsible for administering federal transportation funding. Additionally, cities, counties, the Port of Portland, other local agencies and the public participate in the development of the MTIP.

JPACT, the Metro Council and the Governor of the State of Oregon approve the MTIP. The MTIP is then incorporated, without change, into the State Transportation Improvement Program (STIP), which integrates regional and statewide improvement plans.

8.3.2.2 The role of the MTIP in regional planning

The RTP plays a significant guiding role for the MTIP as it sets the policy direction for what transportation investments are eligible for federal funding and the prioritization criteria for allocating federal funding. Through inter-regional coordination throughout the planning and programming process, the MTIP ensures that investments of federal funds are consistent with the RTP and makes progress in achieving performance targets established in the plan. The MTIP is updated every three years.

One of the primary purposes of the MTIP is to ensure scarce federal transportation funding and investments are making progress towards the regional vision set out for transportation system in the RTP. As a result, the greater Portland region's MTIP gives top priority to strategic transportation investments that leverage and reinforce the region's land use strategy envisioned in the 2040 Growth Concept and the supporting multimodal transportation investments in the RTP.

8.3.2.3 Demonstrating consistency prior to implementation

As the vehicle for implementing the RTP, the MTIP has two primary purposes:

1. ensure all federal requirements for expending federal transportation funds are being met; and
2. ensure the investments are making progress towards regional goals, objectives and implementing regional policies as part of performance-based programming.

Recognizing these two primary purposes of the MTIP, any investment requiring inclusion in the MTIP must demonstrate and justify how the investment implements the RTP and regional policy outcomes. This is necessary to meet federal eligibility and compliance purposes, provide the best transportation experience possible for the region's residents, businesses, employees and visitors and for good stewardship of scarce transportation resources.

The determination and demonstration of consistency with the RTP, done through the MTIP process, comprises quantitative and qualitative evidence that the investment advances implementation of the RTP investment strategy, financial constraint, project performance towards regional and federal performance targets, and public involvement and consultation. In general, there are two main avenues to demonstrate consistency with the RTP whether as an individual transportation investment or an entire package of transportation investments may be included in the MTIP. The two avenues include the following:

1. During the prioritization process to allocate federal transportation dollars to various transportation projects, including the identification of the criteria and the consideration of multimodal tradeoffs (prior to the submission to the MTIP); and

2. The process for amending the MTIP.

As each four-year MTIP is developed, determination of consistency is also conducted and demonstrated programmatically to show how the MTIP package is consistent with and advances the implementation of the Plan. Additionally, the programmatic evaluation serves as a monitoring tool for assessing progress in implementing the RTP.

The following sections describe the core areas that MTIP investments (at individual scale and during the funding allocation process) are required to demonstrate consistency with federal requirements and adopted regional transportation policy as expressed in the RTP goals, objectives and policies. Example questions are provided to illustrate what information is sought.

Regional significance

The adopted RTP represents the regional transportation system in the greater Portland region, which serve regional transportation needs and provides a specified level of seamless multimodal connectivity, accessibility, and management of people and goods traveling on the system. As a result, the limited amount of available federal funding must be allocated strategically to advance the operation or enhance the development of key facilities across the different modal systems (e.g., transit, bicycle and pedestrian active transportation, freight) to ensure an interconnectivity while supporting other desired regional outcomes (travel options, reduced greenhouse gas emission, etc.).

For the purposes of demonstrating consistency, the RTP has identified these key facilities, programs, and strategies in defining the regionally significant system. Additionally, other conditions and circumstances may qualify a transportation investment as regionally significant, as reflected in the RTP definition of regional significance and corresponding RTP network maps contained in Chapter 3.

Examples of questions asked for transportation investments to demonstrate Regional Significance:

- Is the transportation investment advancing a project on a facility designated in one or more of the RTP network maps?
- Does the transportation investment require permission or approval(s) from the U.S. DOT, regional transportation air quality conformity or project level NEPA review?

Regional goals and objectives

The adopted RTP demonstrates a significant need for investment in the transportation system to address many growing demands of the transportation system, including the growing backlog of maintenance, expansion of services, and increased connectivity and completeness of different modes. Recognizing the scarcity of funding while the need for investment is ever growing, each dollar invested in the regional transportation system must serve a regional purpose and advance the implementation of the region's transportation vision and supporting goals, objectives and policies.

To be included in the MTIP, investments must demonstrate how implementation will address one or more of the RTP's goals, objectives and policies, listed in Chapters 2 and 3. Moreover, the Metro Council identified these key regional policy priorities – transportation equity with a focus on race and income, safety, travel options, Climate Smart Strategy implementation, and managing congestion – to be the focus of this RTP. The RTP's goals serve as the broad direction and expectation of what each investment in the system should aim to achieve but additional focus and attention should be paid to the RTP policy priorities. These goals are consistent with the federal planning factors issued by U.S. DOT.

Examples of questions asked for investments to demonstrate consistency with Regional Goals and Objectives include:

- What regional goals and objectives are being addressed by this transportation investment?
- Is the project identified as part of the adopted RTP financially constrained project list?
- Is the project advancing one or more of the Climate Smart Strategy policies? If so, which policy(ies) and how?
- Is this project addressing and/or advancing a strategy or action within an adopted regional modal or topical strategy or plan, or shared strategy of the RTP? If so, which modal or topical strategy or plan? Which strategy (or strategies) and action(s)? How does it address or advance the modal or topical strategy or plan?

8.3.2.4 Demonstrating fiscal constraint

As a federal requirement, both the RTP and the MTIP are fiscally constrained. Project costs are not to exceed expected revenue sources. For the MTIP, transportation identified investments are only those projects for which resources are expected to be available, and funding identified for the first year must be committed by administering agencies to the project. The MTIP is not a comprehensive accounting of all transportation investments in the region; it only accounts for the funding of regionally significant projects and does not include projects on local streets and facilities. Projects that are 100 percent locally funded but of regional significance are included for informational and analysis purposes only.

Per federal regulations, transportation projects using federal funds are expected to demonstrate that revenues needed to deliver the project are available and the revenues were accounted for in long-range transportation plan revenue projections. Therefore, projects included in the MTIP must be included in the RTP financially constrained project list either as an identified individual project or through a programmatic category. Additionally, projects in the MTIP must be consistent in scope and financial scale as to what was reflected in the financially constrained RTP project list. The revenue assumptions used to develop the RTP financially constrained project are defined in Chapter 5. Projects included in the RTP financially constrained project list are identified in Appendix A (2018-2027 time period) and Appendix B (2028-2040 time period).

In the event that projects proposed for funding and inclusion within the MTIP were not included in the RTP financially constrained project list at time of adoption, the RTP must be amended to include the project or projects as a condition of being adopted in the MTIP.

To amend projects into the financially constrained project list continued fiscal constraint must be demonstrated by identifying additional revenues or removing other projects from the financially constrained project list. More information about the process and other requirements that must be met to amend the RTP will be provided in Section 8.4.

Examples of questions asked for transportation investments to demonstrate Fiscal Constraint:

- Is the transportation investment/project identified in the adopted RTP financially constrained project list?
- Is the project consistent in scope and cost as to what was accounted for in the RTP financially constrained project list and regional travel model?
- If this project is using federal dollars, how will the sponsoring agency adequately fund in perpetuity the operations and maintenance of the improvements being made?

8.3.2.5 Demonstrating support toward achievement of performance targets

Signed into law in 2012, the previous federal transportation reauthorization, known as Moving Ahead for Progress in the 21st Century (MAP-21), created the most significant federal transportation policy shift since the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA). A fundamental element of the legislation was its focus on performance-based planning and programming.

For the first time, MAP-21 established a federal performance management framework to improve transparency and hold state transportation departments, transit agencies and metropolitan planning organizations (MPOs) accountable for the effectiveness of their transportation planning and investment decisions. The objective of the performance management framework was to ensure states and MPOs invest federal resources in projects that collectively will make progress toward the achievement of the national goals. The required performance-based approach includes targets for measures specified by U.S. DOT and requirements to track and report progress toward meeting these targets. Twelve performance measures have been identified through MAP-21 and subsequent U.S. DOT rulemaking. These federal performance measures and targets address:

- Safety
- Infrastructure condition
- Congestion reduction
- System reliability
- Freight movement and economic vitality
- Environmental sustainability

Preceding the adoption of the MAP-21 performance-based planning requirements, the Metro Council and JPACT adoption of the 2010 RTP established an outcomes-focused performance-based planning process that continues to today. The RTP performance-based process centers on measuring the performance of the adopted RTP investment strategy and monitoring progress towards 10 transportation system performance targets identified in Chapter 2. The RTP performance targets address:

- Affordability
- Safety
- Vehicle miles traveled
- Mode share
- System Completion
- Congestion
- Freight delay
- Climate change and greenhouse gas emissions reduction
- Clean air

The RTP performance measures and targets contained in Chapter 2 and Appendix L support and are consistent with the MAP-21 measures and align to the federal planning factors required for MPOs to address and make progress towards. To be included in the MTIP, transportation investments planned for the region to meet growing demands, needs or deficiencies, must also demonstrate contribution to progress toward federal and RTP performance targets.

Examples of ways in which transportation investments can demonstrate consistency with performance targets:

- How does the transportation investment/project contribute one or more of the federal and/or regional performance targets for the transportation system?
- What evaluation was performed to compare candidate projects for making progress toward federal and regional performance targets? What results can be provided to demonstrate the investment is making progress towards the federal and/or regional performance targets?
- How did the funding allocation process consider federal and regional performance targets in its criteria in the selection and allocation of funds?

8.3.2.6 Public involvement expectations and process for demonstrating consistency

As part of federal guidance on public involvement and on Civil Rights laws and the Executive Order on Environmental Justice, it is expected that all transportation investments identified in the MTIP have provided, and will continue to provide opportunity for community input and comment until the investment is implemented and/or open for service. This means prior to an investment being identified in the MTIP, it must have emerged through planning process that was adopted or approved by a governing body and be included in the RTP investment strategy. The planning

process, and that process's community engagement effort, indicates the investment addresses an identified transportation deficiency and need in the local community and the community has had opportunity to inform the plan. The adoption or approval of the plan must also provide an opportunity for public testimony.

Commonly recognized planning processes from which projects emerge include local transportation system plans (TSPs), but other planning processes include corridor studies, facility plans and sub-area plans. Additionally, through the development of the RTP project list, local jurisdictions are asked to self-certify transportation investments being proposed for the long-range transportation plan have undergone or are currently undergoing public involvement efforts through an approved planning process.

Examples of ways in which transportation investments can demonstrate consistency with Public Involvement include:

- From which planning process does the transportation investment emerge from? What opportunities for public feedback were available as part of the process?
- How was feedback from the public incorporated into the development of the investment?
- What demographic assessment was done to identify communities of color, people with limited English proficiency, people with low income and other historically marginalized communities as stakeholders?
- Were all interested/affected stakeholders meaningfully engaged in the funding allocation prioritization and decision-making process?
- Were all interested/affected stakeholders meaningfully engaged prior to the request for programming a project into the MTIP? ⁷

8.3.2.7 Developing the MTIP

The MTIP development process is initiated by Metro with an update to the MTIP policies. The policies direct how JPACT and the Metro Council intend to coordinate the funding allocation processes administered by Metro through the Regional Flexible Funds Allocation (RFFA) process and for funds administered by ODOT and public transit agencies – TriMet and SMART. The policy document also describes how the funding allocation processes address federal regulations for the allocation of federal transportation funds.

Projects seeking funding through the RFFA process must be included in the financially constrained Regional Transportation Plan project list. JPACT and the Metro Council consider the MTIP for final approval. Upon adoption by the Metro Council, the MTIP is submitted to the Governor of Oregon for inclusion in the STIP.

⁷ Interested and affected stakeholders means those members of the public affected or interested in transportation investment (or package of investment), as well as formal entities, such as natural resource agencies, emergency management agencies, tribal entities, etc. which may have interests or be affected by the implementation of the proposed transportation investment.

8.4 AMENDING THE REGIONAL TRANSPORTATION PLAN

Metro updates the RTP every five years, as required by federal law for all MPO areas designated with air quality attainment status. However, between RTP updates, amendments to the RTP may be necessary. Amendments can be triggered by substantially modified project need, mode, function or general location or new regionally significant projects identified through plans or studies adopted through a public process, including local transportation system plan updates. A plan amendment could also be necessary if substantial changes in financial resources occur not anticipated during the 2018 RTP update process.

To initiate a plan amendment, a local agency, ODOT, TriMet or SMART provides information to Metro outlining the specific amendment request along with a clear justification for the amendment or the source of the new funding. Metro staff review each amendment request and determine how the request should be processed.

This section summarizes the types of amendments and process for making amendments to the plan between scheduled updates.

8.4.1 RTP Policy, System Map and Compliance Criteria Amendments

When Metro amends policies or system maps in Chapter 3 of this plan, it will evaluate and develop findings regarding consistency with the Regional Framework Plan and Statewide Planning Goals (and implementing rules). Decisions on amendments made at this level are land-use decisions for need, mode, function and general location of a proposed project. Subsequent decisions on final project design will be needed prior to construction. In some cases a corridor refinement plan may be recommended pending the scale and scope of the proposed project.

As such, amendments at this level shall be reviewed through the post-acknowledgement process. However, a decision on an amendment to the RTP should not foreclose or appear to foreclose full and fair consideration of all relevant statewide planning goal issues at such time that specific projects and programs are adopted by a local jurisdiction.

It is Metro's responsibility to adopt findings based on project need, mode, function and general location of projects proposed in the RTP. The affected jurisdiction is responsible for preparing the specific local plan amendments and scheduling them for a public hearing before the governing body for action by that body by the time required.

8.4.2 RTP Project Amendments

The RTP establishes a comprehensive policy direction for the regional transportation system and recommends a balanced program of transportation investments to implement that policy direction. However, the recommended investments do not address all of the region's identified transportation needs for the next 20+ years.

Rather, the RTP identifies the projects, programs or future planning and refinement work required to adequately meet regional transportation system needs during the planning period. Regional

system needs are those on the regional arterial and throughway, freight, transit, bicycle, and pedestrian networks as defined and mapped in Chapter 3 of the RTP. Local transportation needs and solutions are addressed through city and county Transportation System Plans (TSPs) and studies, and involve additional analysis and improvements to provide an adequate local transportation system. This section anticipates future local and regional planning and defines a process for making amendments to the RTP to address regional transportation needs. Similarly, revisions to the RTP may result from multimodal corridor refinement plans, NEPA studies or other area plans or studies adopted through a public process.

The following processes may be used to amend the RTP between scheduled updates to include these changes:

1. **Major project amendments:** These are amendments that come from NEPA processes, corridor refinement planning as defined by the Transportation Planning Rule or other studies and involve additions or deletions of RTP Financially Constrained projects or a significant change in the mode, function or general location of the project. Such amendments require adoption by JPACT and the Metro Council by Ordinance, accompanied by findings:
 - (a) demonstrating consistency with the RTP goals, objectives and policies and RTP modal function(s) of the facility as defined in Chapter 2 and 3;
 - (b) describing the consideration of transportation strategies as described in Metro Code section 3.08.220.A;
 - (c) demonstrating fiscal constraint; and
 - (d) demonstrating the public process used to define and adopt the project is consistent with Metro's adopted Public Engagement Guide and RTP amendment procedures.
2. **Project amendments resulting from adopted local TSPs, area plans, concept plans or studies adopted through a public process:** New roadway, transit, bikeway, pedestrian, freight and demand and system management projects on the regional system shall be adopted by JPACT and the Metro Council by Ordinance, accompanied by findings:
 - (a) demonstrating consistency with the RTP goals, objectives and policies and RTP modal function(s) of the facility as defined in Chapter 2 and 3;
 - (b) describing the consideration of transportation strategies as described in Metro Code section 3.08.220.A;
 - (c) demonstrating fiscal constraint; and
 - (d) demonstrating the public process used to define and adopt the project is consistent with Metro's adopted Public Engagement Guide and RTP amendment procedures.

Operations, maintenance and safety improvements are deemed consistent with the policy intent of the RTP if (a) they are needed to serve the travel demand associated with Metro's adopted population and employment forecasts, and (b) they are consistent with affected jurisdictional plans.

3. **Other amendments** resulting from updates to the Regional Framework Plan or related functional plans.

The process and information required for requesting amendments to the Regional Transportation Plan between scheduled updates will be reviewed and refined following adoption of the 2018 RTP.

8.5 DATA AND TOOLS

8.5.1 Performance-based planning and programming

Over the past two decades, Metro and other transportation agencies have increasingly been applying “performance management” – a strategic approach that uses performance data to support decisions to help achieve desired performance outcomes. Performance management is credited with improving project and program delivery, informing investment decision-making, focusing staff on leadership priorities and providing greater transparency and accountability to the public.

Performance-based planning and programming (PBPP) applies this strategic approach within the planning and programming processes of MPOs, like Metro, and other transportation agencies to achieve desired performance outcomes for the multimodal transportation system. This includes a range of activities and products undertaken by a MPO together with other agencies, stakeholders, and the public as part of a 3C (cooperative, continuing, and comprehensive) process. It includes development of: long-range regional transportation plans, the Congestion Management Process, other plans and processes developed by ODOT and transit providers, such as Strategic Highway Safety Plans, Asset Management Plans, Transit Agency Asset Management Plans and Transit Agency Safety Plans, and programming documents, including State and Metropolitan Transportation Improvement Programs (STIPs and MTIPs).

PBPP attempts to ensure that transportation investment decisions are made – both in long-term planning and short-term programming of projects – based on their ability to meet established goals.

This section summarizes data and research activities to address existing and emerging planning and policy priorities and innovative practices in transportation planning and analysis. These activities help ensure that the region has the resources to fulfill its state and federal transportation performance measurement, monitoring and reporting responsibilities.

8.5.2 Data Collection and Coordination

This section summarizes data collection and coordination to support regional transportation planning and analysis, including regional travel model calibration and validation, and federal congestion management process analysis and performance based planning target setting and monitoring. The majority of our data is maintained in Metro’s Regional Land Information System (RLIS). This database is comprised of over 150 different (primarily geospatial) data sets, and most of the data sets identified in the sections below are elements. Metro publishes RLIS on a quarterly basis, but many data sets are on different cycles and come from different sources. All data sets are available for review at <http://rlisdiscovery.oregonmetro.gov>, along with a date of last publication. The associated metadata should be consulted in advance to understand how the data were generated and to determine the appropriateness of its use.

8.5.2.1 Growth Data

Metro Research Center will continue to refine its recently developed Land Development Monitoring System (LDMS) as a component of RLIS. LDMS tracks the location and cost of residential and employment land utilization to inform regional growth and transport planning. Metro will work to enhance LDMS and RLIS with more equity-related data.

8.5.2.3 Travel Activity Data

Metro Research Center staff will lead coordination efforts for the next regional travel behavior survey (anticipated for 2022). Additional research will be necessary to ensure that the survey will capture traditionally relevant as well as emerging behavior (e.g., extent of Uber/Lyft utilization in place of other travel modes), and be conducted in a comprehensive and cost-effective manner.

New and emerging data collection methods (e.g., Sidewalk Labs Replica data, longitudinal or rolling surveys, mobile phone apps, personal GPS devices, etc.) will also be investigated to help ensure that the survey effort is well positioned to capture rapidly changing trends in personal travel behavior. Metro will partner with other Oregon modeling agencies (via the Oregon Modeling Steering Committee) as well as the Southwest Regional Transportation Council (SWRTC) to maximize the geographic span and cross agency utility of the data.

8.5.2.4 Transportation Safety Data

Metro staff will coordinate with federal, state, regional and local partners to acquire, collect and maintain the data currently used for transportation safety related analysis. This data includes, but is not limited to, crash data provided by ODOT and roadway network, traffic volume and vehicle mile traveled data. Additionally, new data required to provide more in-depth analysis will be pursued, including race and ethnicity of crash victims, posted speed data, and better bicycle and pedestrian count data.

8.5.2.5 Multi-Modal Network Data

Metro Research Center will continue to update multimodal data in RLIS. RLIS street centerlines and off-street trails networks are updated quarterly and comprise the basis of the multimodal network. Inventories of sidewalks and bike facilities are tied to these networks to allow for multimodal analysis. Sidewalks and bike facility inventories are updated as new data become available.

8.5.3 Analysis Tool Maintenance and Enhancement

This section summarizes planned maintenance and enhancement of the regional travel model, MetroScope and MOVES to address existing and emerging planning and policy priorities and innovative practices in regional transportation planning and analysis.

8.5.3.1 Growth Forecast

Metro Council has committed to making its next Urban Growth Boundary decision by the end of 2018. That decision will adopt a Regional Economic Forecast of total future jobs and employment. Upon adoption of those regional control totals Metro will work to create the next generation Distributed Forecast (the Traffic-Analysis-Zone-level growth forecasts used in transportation planning and forecasting). The distributed forecast (likely to be released in 2019) will be available to support future MTIP and RTP update cycles.

8.5.3.2 Growth Forecast Tools

Metro Research Center is working to scope and implement enhancements or replacements for the MetroScope land use allocation model in time for the anticipated 2024 Urban Growth Management cycle, and will consider a wide variety of traditional and next-generation tool options. This work will directly improve the means of producing future distributed forecasts.

8.5.3.3 Regional Transportation Model Tools

Metro staff will continue to maintain and enhance the current trip-based travel model. Future activities include: updating the simulation networks to reflect conditions for a 2020 base year, expanding the transit networks to cover the entire day, revisiting the bicycle assignment algorithm, revising the model that estimates external traffic and incorporating the new freight model. Metro staff will stay current with updated versions of the EPA's Motor Vehicle Emission Simulator (MOVES) for estimating criteria air pollutants, greenhouse gases and air toxics.

8.5.4 Analysis Tool Development

This section summarizes development of new analysis tools to address existing and emerging planning and policy priorities and innovative practices in regional transportation planning and analysis. It includes visualization tools, housing and transportation cost tool, project-level evaluation, piloting the multi-criteria evaluation (MCE) tool, and crash prediction modeling tools.

8.5.4.1 Regional Activity-Based Model

Key efforts during 2018-2019 will include the development of staff expertise, model validation and sensitivity testing, and the derivation/implementation of a tool acceptance program for the Activity-based Travel Demand Model. Given the rapidly changing personal travel landscape, it will be critical to ensure that the activity-based model framework is analytically positioned to overcome the methodological shortcomings of the current trip-based model and can be adapted to explicitly represent evolving travel behavior (e.g., travel via Uber/Lyft) or new near-horizon advances in technology (e.g., connected and automated vehicles). Research Center staff will coordinate closely with Metro planning to ensure that activity-based model framework is analytically aligned with anticipated policy questions.

8.5.4.2 Regional Freight Model

Development of the new freight model will be completed during the spring of 2018. Work will continue to integrate the model with the trip-based and activity-based passenger models. Modeling staff will continue to coordinate closely with Metro planning to ensure that new freight model is able to answer the analytical questions posed from the freight planning perspective (e.g., type and value of commodities by corridor and facility).

8.5.4.3 Multi-Criterion Evaluation Toolkit

Phase II of Multi-Criterion Evaluation (MCE) Toolkit development is anticipated to conclude by the end of 2018. Phase II scope will:

- add travel demand model and MCE toolkit workflow enhancements;
- test each benefit and test a bundle of benefits together in one scenario;
- improve methods for measures such as safety, physical activity and auto ownership benefits;
- incorporate stakeholder outreach support; and
- upgrade the visualizer to be fully-featured and web-accessible.

A key analytical feature of the MCE toolkit is its ability to identify potential benefits and/or impacts that have implications for equity considerations. Modeling staff will coordinate with Metro planning staff to ensure that the MCE continues to be fine-tuned and ready to address policy questions related to equity.

8.5.4.4 Housing and Transportation Expenditure Tool

In recent collaboration with the Planning Department, the Metro Research Center developed a prototype of a Housing and Transportation Expenditure tool. The prototype tool looks at out-of-pocket expenditure for housing and transportation and looks at the effects of future transportation investments and the housing and transportation expenditures that result. Both current and forecast states of the regional land markets and transport system will be represented. The prototype will undergo further development, testing and refinement in anticipation of application during the next MTIP process and RTP update.

8.5.4.5 Economic Value Atlas Decision-Support Mapping Tool

Development of the Economic Value Atlas (EVA) is establishing tools and analysis that align planning, infrastructure, and economic development to build agreement on investments to strengthen our economy. Phase III of the Economic Value Atlas decision-support mapping tool is anticipated to conclude by the end of 2018.

This work:

- Provides new mapping and discoveries about our regional economic landscape;
- Links investments to local and regional economic conditions and outcomes; and

- Informs policy and investment – providing a foundation for decision-makers to understand the impacts of investment choices to support growing industries and create access to family-wage jobs and opportunities for all.

The EVA will provide a solid data foundation for key regional activities such as:

- outlining a path to pursue policy, actions and investment that help secure these outcomes;
- defining potential areas for partners to collaborate and develop shared investment strategies;
- pinpointing areas of focus for regional investment to bridge local and regional economic development aspirations; and
- providing a data picture of the regional economy to align investments that achieve the coordinated vision of Greater Portland 2020, the 2040 Growth Concept and the Regional Transportation Plan.

This work will support regional transportation planning and investment decisions by:

- Highlighting key intersects between transportation + economic conditions that can guide project prioritization criteria incorporated into the next 3-year RFFA cycle.
- Building a granular understanding of relative economic strengths and challenges among communities in the region to inform local Transportation System Plans and area studies, regional investment areas and corridor refinement planning and planning studies, and advance more strategic transportation project prioritization and investment based on surrounding economic conditions.
- Supporting multiple applications by ongoing regional programs in Metro’s Planning and Development Department.

8.5.4.6 Displacement Monitoring Tool

Historically marginalized communities engaged in the 2018 RTP update raised involuntary displacement as a key priority for the 2018 RTP transportation equity system evaluation during the scoping process. Specifically, historically marginalized communities desired to understand the potential displacement impacts to result in investment as well as what proactive mitigation strategies may be put into effect in advance to address the displacement risk. Through the 2018 RTP transportation equity system evaluation method development, it was determined the investment scenario analysis would not be able to look at displacement risk due to the limitations of the forecasting tool.

Nonetheless, in an effort to honor the input and recognize the concern about displacement risk from public investment in the transportation system, a recommendation from the 2018 RTP transportation equity system evaluation emerged to develop a streamlined displacement risk tool, which can help inform plans, project designs, and other components of transportation investment. Through the Southwest Equitable Development Strategy (SWEDS), a displacement risk assessment is underway and the method developed for this assessment will inform development of a displacement risk monitoring tool in the future.

8.5.4.7 Crash Prediction Modeling Tool

Better understanding and evaluation of how projects, programs and strategies impact transportation safety system wide is a key element to effectively planning for safety and achieving safe system programs such as Vision Zero. Metro staff will coordinate with federal partners and other MPOs to develop and pilot the use of crash prediction modeling tools to assess safety performance system wide.

8.5.4.8 2018 RTP Project Evaluation Pilot

At the direction of the Metro Council, Metro staff worked with the Transportation Policy Alternatives Committee (TPAC), the Metro Technical Advisory Committee (MTAC), and other interested partners to develop project-level evaluation criteria and apply the criteria to projects submitted for consideration in the 2018 RTP as a pilot.

This pilot responded to feedback from stakeholders and policymakers that expressed a desire to better understand how individual projects contribute to achieving regional goals and objectives. To that end, the RTP goals and objectives guided development of the pilot criteria, resulting in eleven evaluation factors and corresponding criteria. The pilot was intended to complement the system performance and transportation equity analysis of the whole 2018 RTP investment strategy.

In response to concerns raised by partner agencies, Metro set forth that the project level criteria are intended as informational only. They are meant to inform decision-makers in a consistent, mode-neutral way and not be used to determine inclusion in the plan or funding timeframe. For the pilot, Metro set a threshold of projects estimated at \$10 million and above to comprise the pool of projects to evaluate.

Jurisdictional staff then applied the pilot criteria to 50 capital projects – essentially self-scoring projects using an MS excel workbook that automatically calculated scores as information was provided. The city of Portland, ODOT, TriMet, Port of Portland and each county applied the criteria to at least five of their respective project submittals. All other agencies applied the criteria to at least one of their respective project submittals.

2018 RTP Pilot Project Criteria

(The criteria are listed alphabetically)

- Air quality and climate change
- Congestion relief
- Environmental protection
- Equity and access to opportunity
- Freight and goods movement
- Jobs and economic development
- Placemaking and 2040 centers support
- Readiness and cost-effectiveness
- Transportation safety
- Travel options
- Bonus: Transportation resiliency

Scoring: A total of 105 points was available. Projects could receive up to ten points in each factor area, with an additional five points available for projects that addressed the transportation resiliency criteria.

Each factor area was equally weighted, but the measures associated with each factor area were weighted unequally in some cases.

In order to compare "apples to apples," Metro grouped similar project type submittals – bike projects were grouped with other bike projects, road projects were grouped with other road projects, etc. – for reporting purposes. A number of technical challenges emerged during the pilot, including:

- inconsistent application of criteria due to multiple scorers and complexity of some criteria;
- some data not readily available or in easy to use format;
- the number of factors considered in the criteria resulted in duplication of some criteria;
- the criteria did not account for negative adverse impact of projects;
- more GIS support needed from Metro;
- larger cost mega-projects most challenging to evaluate effectively; and
- insufficient time to apply and make necessary adjustments criteria within the planning process.

Recognizing the limited amount of time remaining in the RTP update schedule, the pilot was discontinued in 2017.

Metro remains committed to developing tools and methods to analyze transportation investments at the project-level to improve transparency and better demonstrate how investment priorities advance achievement of the desired outcomes reflected in the RTP goals and objectives. Staff identified several recommendations for further exploring methods for evaluating transportation investments at a project level, including:

- build more broad-based support for use of project evaluation to inform development and refinement of RTP project priorities;
- engage policymakers, technical staff and stakeholders in refining and further streamlining the criteria to address feedback received during 2018 RTP pilot;
- consider using updated criteria as a screening tool and starting point for future RTP updates, prior to initiating the RTP project solicitation;
- provide more Metro GIS support to complete an initial analysis instead of relying on self-scoring and build in feedback loop with jurisdictional partners on initial application of criteria and reporting of analysis;
- use the multi-criterion evaluation (MCE) tool to evaluate major projects (projects with a cost greater than \$400 million) to provide better cost-benefit information to decision-makers; and
- ensure adequate time and resources are available to support future efforts.

8.5.5 Monitoring and Reporting Tools

This section summarizes information systems and data resource coordination efforts that Metro is doing or will do to ensure that the region has the resources to fulfill its transportation performance-based planning, programming and reporting responsibilities.

8.5.5.1 Monitoring Data and Information Systems

Metro Research Center staff will continue to investigate new and emerging data sources and data collection methods (e.g., Sidewalk Labs Replica, HERE, longitudinal or rolling surveys, mobile phone apps, personal GPS devices, etc.) to help ensure that Metro is well positioned to capture rapidly changing trends in personal travel behavior in a timely fashion. Research Center staff anticipate participating in a pilot project along with other regional partners, to acquire and test Sidewalk Labs Replica data during FY 2018-19. The pilot will help determine the viability and versatility of “big” data sources for research, model development and monitoring activities. Research Center staff will also continue to collect and process HERE data for federally-required performance monitoring purposes.

8.5.5.2 Congestion Management Process Data Collection and Monitoring

This section summarizes the region’s approach to monitoring and reporting on the progress implementing the RTP through the regional Congestion Management Process (CMP).

The great challenge for establishing and maintaining a monitoring program has been the availability of data. Historically, collecting and managing data has been expensive and difficult. With advancements in Intelligent Transportation Systems (ITS) in the region, more and better data is available today and will continue to grow with implementation of data collection projects identified in the Regional Transportation System Management and Operations (TSMO) plan.

Starting in 2008, the region approved ongoing funding for implementation, including an annual allocation to fund Portal, the regional transportation data archived, housed and maintained by Portland State University. PSU, in partnership with ODOT, TriMet, Metro and other local agencies, provides data aggregation, maintenance and reporting on the region's roadways and transit systems. Metro will continue to work with ODOT and other regional partners to expand existing data collection and performance monitoring capabilities, in order to evaluate system performance for all modes of travel and support the region’s CMP.

This work includes supporting a data management system to facilitate data collection, maintenance and reporting to support on-going RTP and MTIP monitoring. The performance monitoring will be reported biennially as part of the Regional Mobility Program, consistent with the region’s federally approved congestion management process.

Table 8.4 lists where key elements of the region’s CMP are addressed in the RTP and Appendices to show how the region’s planning and investment activities implement the CMP.

Table 8.4. Key Elements of the Region’s Congestion Management Process (CMP)

Regional Congestion Management Process	Associated RTP/MTIP Activities
Develop congestion management objectives and policies	RTP Goals and Objectives (Chapter 2), RTP Policies (Chapter 3)
Define geographic area and network of interest	RTP (Appendix L – Figures 3 and 4)
Establish multimodal performance measures	RTP Performance Measures and Targets (Chapter 2), RTP Federal Performance Measures and Targets (Appendix L)
Collect data and monitor system performance	RTP Existing Conditions (Chapter 4), ODOT Traffic Performance Report (2016), ⁸ Mobility Corridor Atlas (2015)
Analyze congestion problems and needs	RTP Existing Conditions (Chapter 4), ODOT 2016 Traffic Performance Report, RTC CMP Monitoring Report (2017), RTP Performance Evaluation (Chapter 7)
Identify and evaluate effectiveness of strategies	RTP (Chapter 6), RTP (Chapter 7), RTP (Appendix E - Transportation Equity Evaluation), RTP (Appendix F – Environmental Analysis and Potential Mitigation Strategies), RTP (Appendix J – Climate Smart Strategy Implementation and Monitoring), corridor refinement planning, area studies, local transportation system plans
Implement selected strategies and manage transportation system	MTIP, local jurisdictions, ODOT, TriMet, SMART, TransPort, Regional Transportation Functional Plan, RTP (Chapter 8)
Monitor strategy effectiveness⁹	Scheduled RTP updates, CMAQ Performance Plan (2018), RTP (Appendix J – Climate Smart Strategy Implementation and Monitoring), RTC CMP Monitoring Report

More information about the region’s Congestion Management Process is provided in Appendix L.

After the 2018 RTP update, Metro, ODOT and other regional partners will work together to update the current regional mobility policy to better align with RTP outcomes, public expectations, and funding availability. This work will be informed by the ODOT value pricing study underway and help the region develop long-term strategies to address growing roadway congestion, given limited transportation funding and potential social equity, environmental and community impacts. The region’s CMP will inform this work and likely be updated as a result.

⁸ ODOT, “2016 Traffic Performance Report.” (June 2017). Summarized in Chapter 4 of the RTP and available on-line at http://www.oregon.gov/ODOT/Regions/Documents/Region1/2016_TPR_FinalReport.pdf

⁹ USDOT, “Guidebook on the Congestion Management Process in Metropolitan Transportation Planning.” Page 1-1 (April 2011).

8.5.5.3 Greater Portland Pulse and Regional Barometer

Metro has been and continues to be engaged in an effort with PSU's Institute of Metropolitan Studies to deliver a coordinated regional approach to generating performance indicators that can provide a shared lens for tracking how the region is doing socially, economically and environmentally. The mission of this partnership is to use data and dialogue to encourage coordinated action.

For the economy, education, health, safety, the arts, civic engagement, environment, housing and transportation, the Greater Portland Pulse data shows where the region is successful and where it's lagging. The performance indicators are also a road map for public and private action and can inform investment decisions, such as those made through the RTP and MTIP and activities to implement the RTP and other regional policies and programs. More information on this project can be found at www.portlandpulse.org

Metro is expanding on these capabilities by developing a "regional barometer." This effort embraces changes in technology and user expectations by providing interactive mapping and data visualizations focused on Metro's Six Desired Outcomes for the region. It will utilize RLIS, the regional database that Metro curates and updates on an ongoing basis, upon which our planning policies are based.

8.5.5.4 Performance monitoring measures and targets

Performance monitoring measures identified in Chapter 4, Appendix J and Appendix L are used to track changes in system performance and implementation progress over time and between scheduled updates to the RTP. Reporting these changes provides valuable information on trends and conditions using actual empirical or observed data to the extent possible in advance of RTP updates to assess how the transportation system is performing and identify possible policy or strategy adjustments that may be needed.

Appendix J contains a complementary set of performance measures and performance monitoring targets specific to tracking implementation of the Climate Smart Strategy adopted by JPACT and the Metro Council in 2014 and report on progress. The Climate Smart Strategy performance measures and targets are used to monitor and assess whether key elements or actions that make up the strategy are being implemented, and whether the strategy is achieving expected outcomes. The Climate Smart Strategy performance monitoring targets are not policy targets, but instead reflect a combination of the planning assumptions used to evaluate the Climate Smart Strategy and outputs from the evaluation of the adopted strategy.

Appendix L documents the region's approach to addressing the federal transportation performance-based planning and congestion management requirements contained in the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation (FAST) Act. The multimodal performance measures and near-term performance monitoring targets in Appendix L are used to monitor transportation system performance using empirical or observed data between scheduled updates.



Work continues to establish a coordinated program for data collection and system performance monitoring between scheduled updates to the Regional Transportation Plan to inform planning and investment decisions.

If you picnic at Blue Lake or take your kids to the Oregon Zoo, enjoy symphonies at the Schnitz or auto shows at the convention center, put out your trash or drive your car – we’ve already crossed paths.

So, hello. We’re Metro – nice to meet you.

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Bob Stacey, District 6

Auditor

Brian Evans

600 NE Grand Ave.
Portland, OR 97232-2736
503-797-1700

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