



Metro



APPENDIX L

2018 Regional Transportation Plan

Federal performance-based planning and congestion management process documentation

December 6, 2018

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Regional Transportation Plan website: [**oregonmetro.gov/rtp**](http://oregonmetro.gov/rtp)

The preparation of this strategy was financed in part by the U.S. Department of Transportation, Federal Highway Administration and Federal Transit Administration. The opinions, findings and conclusions expressed in this strategy are not necessarily those of the U.S. Department of Transportation, Federal Highway Administration and Federal Transit Administration.

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PURPOSE

Federal law requires Metro to develop a comprehensive performance-based planning process for metropolitan transportation planning and programming purposes. Performance based planning means that the region develops goals and policies and then identifies strategies to help meet those goals and policies. The region's long history and commitment to performance-based planning processes is evident in region's long-range transportation plan, the RTP, and its associated modal and topical plans and strategies. Together, the RTP and its supporting strategies guide transportation investments and decision-making in the region.

This appendix 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. This appendix also constitutes the region's official Congestion Management Process (CMP). The CMP has been updated to address recommendations from the 2017 Federal Certification Review and to incorporate federal transportation performance measures identified through MAP-21 rulemaking and targets.

The CMP network (see Figure 4) has also been scaled to a more manageable scope for data collection, management and reporting purposes, focusing on multimodal transportation facilities and services located on the National Highway System (NHS) and the region's high capacity transit network. The NHS includes the region's interstates and some state-owned arterials and frequent and enhanced transit corridors. The updated CMP also continues the region's transition to using observed data for performance monitoring consistent with federal requirements, and can be expanded in the future as data collection and resources allow.

Together, regional performance targets defined in Chapter 2 of RTP and this appendix reflect a comprehensive and multimodal performance-based planning approach to address growing congestion and improve mobility options for people and goods movement, while achieving a broader set of land use, economic, equity and environmental outcomes. This approach includes modeling tools, analysis and research combined with meaningful public engagement to help quantify and better understand the potential outcomes of policy decisions and investment actions. The framework also guides data collection, tool development and monitoring/reporting activities identified in Chapter 8 (Section 8.5) of the 2018 RTP.

This comprehensive performance-based planning process satisfies the requirements as described in federal regulations and will be re-evaluated as part of scheduled updates to the RTP to respond to new requirements, information learned through monitoring activities and changes in the availability of data and tools so that they can be refined as necessary.

INTRODUCTION

Our region's economic prosperity and quality of life depend on a transportation system that provides every person and business with access to safe, reliable, healthy and affordable ways to get around. The communities of the greater Portland region have embraced a collaborative approach to planning that has made our region one of the most livable in the country.

The Regional Transportation Plan provides a shared vision, goals, objectives, policies, and strategies that guide investments for all forms of travel to keep people connected and commerce moving throughout the region, while achieving a broader set of economic, equity and environmental outcomes. The plan is updated every five years to address trends and challenges facing the region and plan for future growth.

In the last two decades of the 20th century, the region joined together to address the challenges brought on by rapid population growth. In the 21st century, we are faced with a new set of challenges. In addition to traffic congestion resulting from continued population and economic growth, we also must address climate change, rising energy prices, aging infrastructure and limited funding for transportation. These new challenges are coming to the forefront as we also deal with decreased investment at the federal and local level.

First developed in the 1990s, the greater Portland region's Congestion Management Process (CMP) is designed with these challenges in mind. It represents a new way of thinking about integrated transportation networks and land use to manage mobility of people and goods movement. The CMP has been updated address recommendations from the 2017 Federal Certification Review and to also respond to new federal performance-based planning mandates that aim 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 choices.

Signed into law in 2012, the 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). Fixing America's Surface Transportation (FAST Act) was approved by the U.S. Congress in December 2015, replacing MAP-21, but did not make any major changes to the performance requirements and measures of MAP-21. The objective of the new framework is to ensure States and MPOs invest federal resources in projects that collectively make progress toward the achievement of seven national goals – safety, infrastructure condition, congestion, system reliability, freight reliability, environmental sustainability and project delivery.

This appendix lays out the framework of the region's CMP, which now includes federal MAP-21/FAST Act transportation performance measures and targets, and provides a road map for locating the elements of the CMP and federally required-performance measures and targets that have been woven into the 2018 RTP and supporting documents.

FEDERAL CONTEXT FOR PERFORMANCE-BASED PLANNING

Signed into law in 2012, MAP-21 established performance-based transportation planning and decision-making provisions that were carried into the current federal transportation act, the FAST Act, in 2015. The requirements are designed to create a national program for tracking seven national goals: safety, infrastructure condition, congestion, system reliability, freight reliability, environmental sustainability and project delivery.

Each state department of transportation (DOT), transit agency and metropolitan planning organization (MPO) are required to establish near-term (four-year and, for some measures, two-year) performance targets for each of the performance measures identified by the U.S. DOT and use observed data to measure and monitor progress. MPOs have up to 180 days to either set their own quantifiable targets or to adopt the state DOT and transit provider(s) targets and support the state and transit providers in attaining these targets. These performance measures and targets must be reflected in any RTP or Metropolitan Transportation Improvement Program adopted by Metro on or after October 1, 2018.

Table 1 illustrates the MAP-21 defined performance measures.

Table 1. MAP-21/FAST Act Goal Areas and Performance Measures

National Goal Areas	Federal Performance Measure(s)
Safety	Fatalities (number and rate per 100 million vehicle miles traveled) Serious injuries (number and rate per 100 million vehicle miles traveled) Non-motorized fatalities and serious injuries (number)
Infrastructure condition	Condition of pavements on the Interstate System and on the non-Interstate National Highway System Condition of bridges on the National Highway System State of good repair for public transit assets for rolling stock, equipment, facilities and infrastructure
Congestion reduction	Annual hours of peak hour ¹ excessive delay (PHED) per capita ² on the National Highway System Percent of Non-Single Occupancy Vehicle (SOV) travel ³

¹ The morning peak period is 6-10 a.m. local time on weekdays. The afternoon peak is 3-7 p.m. or 4-8 p.m. local time, providing flexibility to State DOTs and MPOs

² Excessive delay based on travel time at 20 miles per hour or 60 percent of the posted speed limit travel time, whichever is greater, in 15-minute intervals per vehicle. If an affected urbanized area overlaps with more than one State DOT or MPO, all parties must coordinate and report on a single, unified target.

³ A minimum option for measurement will be use of the American Community Survey (ACS) Journey to Work data from the U.S. Census Bureau. State DOTs and MPOs also may use localized survey or measurements. Finally, State DOTs and MPOs may use volume counts for each mode to determine the percent non-SOV travel, and will be encouraged to report any data not available in national sources today (such as bike counts) to FHWA. This measure may include travel avoided by teleworking.

National Goal Areas	Federal Performance Measure(s)
System reliability	Percent of reliable person-miles traveled ⁴ on Interstate System and on the non-Interstate National Highway System
Freight movement and economic vitality	Percent of Interstate System miles with reliable truck travel times ⁵
Environmental sustainability	Total emissions reduction for CMAQ funded projects by applicable pollutants ⁶

As the federally-designated metropolitan planning organization (MPO) for the greater Portland region, Metro is required to maintain the region’s congestion management process (CMP). A CMP has been a federal requirement since the passage of Safe Accountable Flexible Efficient Transportation Equity Act - A Legacy for the Users (SAFETEA-LU) in 2005. Subsequent federal transportation reauthorizations, including the FAST Act fully maintain the requirements of the CMP with additional strategies and options. The legislation and regulations are the basis for the federally required transportation performance targets and the CMP components that are incorporated in the 2018 RTP and supporting documents, including this appendix.

Typically, Metro reviews and updates the region’s CMP concurrent with updates to the RTP. A limited review and update of the region’s CMP was conducted during development of the 2018 RTP to:

- address recommendations made by the U.S. Department of Transportation as part of Metro’s 2017 Federal Certification Review

The 2017 Federal Certification Review recommended that Metro determine the basic requirements for CMP evaluation and monitoring and create a sustainable data collection approach that meets the requirements. The review also recommended that Metro develop a congestion management plan that documents the tools and data used and how they are applied to the RTP and MTIP to more effectively document the process.

- address changes to federal transportation planning requirements resulting from the passage of MAP-21 in 2012 and the FAST Act in 2015, and subsequent rulemaking completed in 2018⁷

⁴ Reliable defined as the ratio of the 80th percentile travel time of a reporting segment to a “normal” travel time (50th percentile), using data from FHWA’s free National Performance Management Research Data Set or equivalent. Data are collected in 15-minute segments during all time periods other than 8 p.m.-6 a.m. local time. The measures are the percent of person-miles traveled on the relevant NHS areas that are reliable

⁵ The ratio will be generated by dividing the 95th percentile time by the normal time (50th percentile) for each segment. Then, the Index will be generated by multiplying each segment’s largest ratio of the five periods by its length, then dividing the sum of all length-weighted segments by the total length of Interstate. Reporting is divided into five periods: morning peak (6-10 a.m.), midday (10 a.m.-4 p.m.) and afternoon peak (4-8 p.m.) Mondays through Fridays; weekends (6 a.m.-8 p.m.); and overnights for all days (8 p.m.-6 a.m.)

⁶ Applicable pollutants include: nitrogen oxide (NOx), volatile organic compounds (VOCs), carbon monoxide (CO), and particulate matter (PM10 and PM2.5)

⁷ For more information, see *2018 Regional Transportation Plan Update | Performance Measures Scoping Report* (November 2017).

MAP-21 and the FAST Act established a performance-based planning framework intended to improve transparency and decision-making to ensure DOTs and MPOs invest federal resources in projects that collectively make progress toward achievement of seven national goals identified in MAP-21. The legislation directed the U.S. DOT to develop performance measures for each goal area and related planning and target-setting requirements for state departments of transportation (DOTs) and MPOs to address within state transportation plans, like the Oregon Transportation Plan (OTP) and metropolitan transportation plans, like the 2018 RTP. The performance measures and target-setting largely focused on the National Highway System.

MAP-21 also mandated the Federal Transit Administration to conduct rulemaking to develop transit asset management (TAM) performance measures requiring transit agencies to maintain—and document—minimum TAM standards. Transit asset management is a data-driven decision-making approach that prioritizes funding based on the condition of transit assets, in order to achieve or maintain transit networks in a state of good repair (SGR) through their entire life cycle. The new requirements are intended to help transit agencies keep their systems operating smoothly and efficiently. Each transit provider must update State of Good Repair targets annually and the agency's Transit Asset Management (TAM) Plan must be updated at least every 4 years covering a horizon period of at least 4 years.

In addition, MAP-21 directed state transportation departments, transit agencies, and metropolitan planning organizations (MPOs) to incorporate a performance-based approach in their planning, including measures and targets, that are to be used in transportation decision-making. States, transit agencies and MPOs must set targets for measures specified by USDOT and track and report progress toward meeting these targets.

On May 17, 2018, the Oregon Transportation Commission amended the Oregon Transportation Plan to incorporate federal performance measures and statewide targets to satisfy the new federal requirements. The statewide measures and targets were coordinated with all of Oregon's MPOs, including Metro, and are for federal monitoring and reporting purposes. The transit asset management measures and targets for the Portland region are contained and reported in the TriMet Transit Asset Management Plan, the Group TAM Plan prepared by ODOT on behalf of SMART and the C-TRAN Transit Assessment Management Plan.

This appendix addresses the above recommendations from the 2017 Federal Certification Review and incorporates performance measures and targets necessary to meet new and updated federal performance-based planning requirements. Section 8.5 in Chapter 8 of the 2018 RTP describes data collection, tools and research activities necessary to support Metro's efforts to fulfill its transportation performance measurement and reporting responsibilities.

REGIONAL CONGESTION MANAGEMENT PROCESS (CMP)

Traffic congestion occurs when the number of users on a transportation facility exceeds or approaches the capacity of that facility. Congestion has many causes, but mostly results from too much traffic for the physical capacity of a road to handle (bottlenecks) or periodic events like crashes, vehicle breakdowns, road work zones, storms and special events (e.g., parades, major sporting events). For drivers, congestion falls into two buckets: routine congestion, which typically occurs daily, versus traffic incidents that are unexpected and difficult to predict. While many transportation agencies have traditionally only looked at roadway capacity, many agencies in larger metropolitan areas are now looking at the overall ability of a road to move people, whether in private vehicles, transit, or walking or biking, to better reflect the constrained nature of transportation in urban areas.

It is also important to note that high traffic volumes that may result in congestion can also be a sign of growth and economic vitality, as is the case in the greater Portland region. Drivers can usually plan their day around routine congestion and the typical bottlenecks. Much of the throughway system (our major highways and freeways) is routinely congested during the morning and evening rush hour, and drivers know their trip will be slower during this period. Transit service is also affected by congestion. Transit providers can adjust schedules, service frequencies and the number of buses available on a congested route to improve on-time performance. But the traffic incidents and other non-routine events are difficult to plan for, and make it more difficult for drivers to plan commutes, for businesses to plan shipments and for transit providers to plan for getting people to their destinations on time.

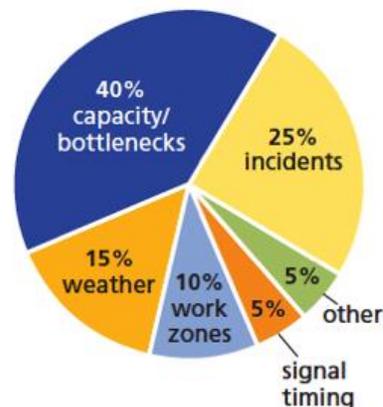
Focusing on system reliability

Efforts to address congestion in our growing region focus on improving reliability, or the degree to which congestion in a given travel corridor is affected by these non-routine events. Reliability is about predictability and dependability – and being able to count on knowing about how long it will take to get to school, work or activities. Improving reliability means that travelers don't have to budget as much extra time in order to arrive on time at their destinations, even when routine congestion exists on our major throughways.

While it is impossible to eliminate congestion, congestion needs to be actively managed in order to provide a reliable transportation system for users and better connect goods to market and support travel across the region. Because the addition of throughway and arterial capacity is constrained by financial resources as well as physical factors and environmental resources, strategies to manage capacity, such as travel demand reduction, increased transit access, making it easy for people to walk or bike instead of drive, and operational management of the existing and

Did you know?

Causes of congestion in the greater Portland region



More than half of all congestion is caused by crashes, breakdowns and other causes that can be addressed using system management and operational strategies.

- 2018 RTP Chapter 4

future transportation system, should be prime strategies to increase the capacity of a roadway, as they are often more effective in the long-term, and often less expensive to implement.

The next section describes the federally-required Congestion Management Process that has been cooperatively developed and implemented by Metro and regional partners since the 2000 RTP to:

- monitor, measure and diagnose the causes of congestion on the regional transportation system;
- evaluate and recommend cost-effective strategies to manage regional congestion; and
- evaluate and monitor the performance of strategies implemented to manage congestion.

Overview of Federal Requirements and Regional CMP Process

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) required metropolitan planning organizations (MPO) to develop a congestion management system (CMS) to integrate congestion management into the regional transportation planning process. The 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: a Legacy for Users (SAFETEA-LU), expanded the CMS requirements through the creation of the Congestion Management Process (CMP) in regions with more than 200,000 people. Subsequent federal transportation reauthorizations, including MAP-21 and the FAST Act, both reaffirmed the congestion management process and expanded strategies for managing travel demand.

First developed in the 1990s, Metro has maintained the CMP for the greater Portland region as required by federal law. The CMP is “a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies to alleviate congestion and enhance the mobility of persons and goods to levels that meet state and local needs.”⁸

Since the 2000 RTP, the region’s CMP has been an integral component of the RTP, helping to inform the planning and investment decisions embedded in the plan and subsequent implementation of the plan through the Metropolitan Transportation Improvement Program (MTIP), local transportation system plans, regional corridor refinement planning and other implementation activities.

Federal regulation 23 CFR 450.320(c)2 identifies the required components for a CMP:

1. Methods to monitor and evaluate the performance of the multimodal transportation system, identify the causes of recurring and non-recurring congestion, identify and evaluate alternative strategies, provide information supporting the implementation of actions and evaluate the effectiveness of implemented actions.
2. Definition of congestion management objectives and appropriate performance measures to assess the extent of congestion and support the evaluation of the effectiveness of

congestion reduction and mobility enhancement strategies for the movement of people and goods. Since levels of acceptable system performance may vary among local communities, performance measures should be tailored to the specific needs of the area and established cooperatively by the State(s), affect MPO(s), and local officials in consultation with the operators of major modes of transportation in the coverage area.

3. Establishment of a coordinated program for data collection and system performance monitoring to define the extent and duration of congestion, to contribute in determining the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions. To the extent possible, this data collection program should be coordinated with existing data sources (including archived operational/ITS data) and coordinated with operations managers in the metropolitan area.
4. Identification and evaluation of the anticipated performance and expected benefits of appropriate congestion management strategies that will contribute to the more effective use and improved safety of existing and future transportation systems based on the established performance measures. The following categories of strategies, or combination of strategies, are some examples of what should be appropriately considered for each area:
 - land use and growth management strategies
 - demand management strategies
 - traffic operational improvements
 - public transportation improvements
 - active transportation improvements
 - ITS technologies as related to the regional ITS architecture
 - street network connectivity improvements
 - where necessary, strategic widening of existing roads and throughways to add system capacity.
5. Identification of an implementation schedule, implementation responsibilities, and possible funding sources for each strategy (or combination of strategies) proposed for implementation.
6. Implementation of a process for periodic assessment of the effectiveness of implemented strategies, in terms of the area's established performance measures. The results of this evaluation shall be provided to decision-makers and the public to provide guidance on selection of effective strategies for future implementation.

The CMP includes a performance monitoring system that informs needed capital investments, such as new or improved transit and road capacity as well as demand and system management strategies to actively manage and optimize performance of the existing infrastructure. The RTP calls for increasing street network connectivity, expanding travel options and using system and demand management strategies to help improve reliability and better connect goods to market and support travel across the region, before moving to strategic widening of existing roads and

throughways to address bottlenecks. This policy was implemented in recognition of limited financial resources, potential community and environmental impacts and research that demonstrated you cannot build your way out of congestion, as well as the expected ancillary benefits of supporting the region's land use, air quality, water quality, and greenhouse gas emissions goals.

In 23 CFR Part 450 Section 322(a) the Federal Highway Administration defines a CMP as:

"...a process that provides for safe and effective integrated management and operation of the multimodal transportation system, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing transportation facilities...through the use of travel demand reduction (including intercity bus operators, employer-based commuting programs such as a carpool program, vanpool program, transit benefit program, parking cash-out program, shuttle program, or telework program), job access projects and operational management strategies."

Further, 23 CFR Part 450 Section 322(h):

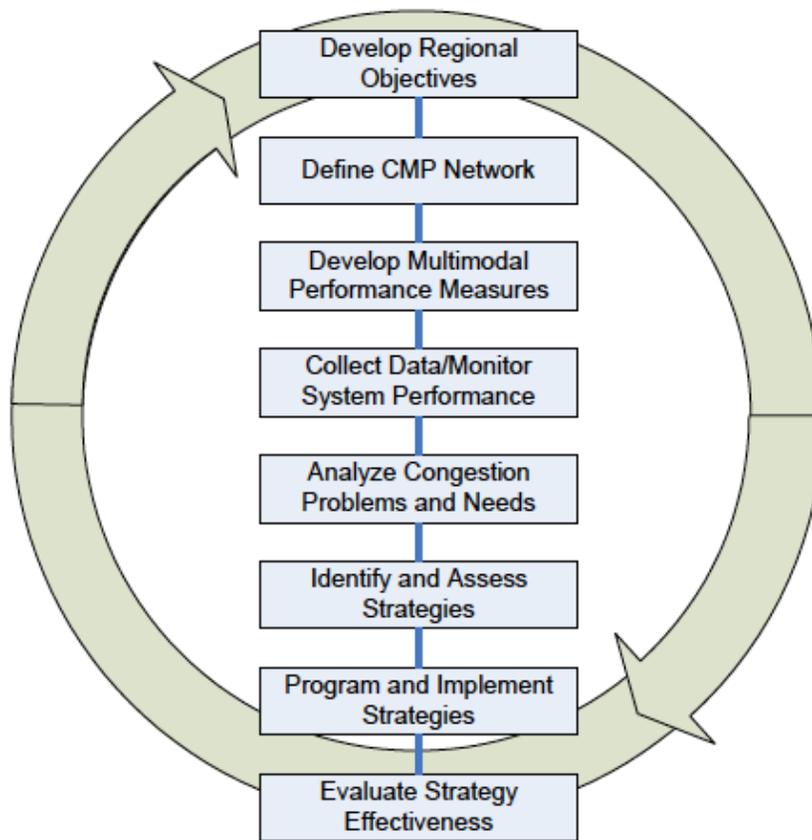
A MPO...may develop a [congestion management] plan that includes projects and strategies that will be considered in the TIP of such MPO.

(1) Such plan shall: (i) Develop regional goals to reduce vehicle miles traveled during peak commuting hours and improve transportation connections between areas with high job concentration and areas with high concentrations of low-income households; (ii) Identify existing public transportation services, employer based commuter programs, and other existing transportation services that support access to jobs in the region; and (iii) Identify proposed projects and programs to reduce congestion and increase job access opportunities.

(2) In developing the congestion management plan, an MPO shall consult with employers, private and nonprofit providers of public transportation, transportation management organizations, and organizations that provide job access reverse commute projects or job-related services to low-income individuals.

The framework shown in Figure 1 illustrates the overall CMP process used by Metro and regional partners through the metropolitan transportation planning process.

Figure 1. Elements of the Region’s Congestion Management Process



Source: FHWA [Congestion Management Process: A Guidebook](#) (2011).

The CMP process is not intended to be a step-by-step method, but is intended to convey the general approach that builds on the policy foundation of the RTP goals and objectives to monitor the system performance and identify, evaluate and implement strategies to manage congestion in the region.

In particular, Chapter 2 of the 2018 RTP establishes the vision, goals, objectives, performance measures and targets that define a comprehensive performance-based policy framework. The framework supports the region’s ability to identify strategies and investment priorities to help people and products get where they need to go as congestion, safety, maintenance, air quality and other issues increasingly impact our daily lives. Chapter 3 of the RTP defines specific policies for planning and investing in the region’s transportation system for all modes of travel as well as management and operations of the system. Chapter 6 describes the strategies (projects) recommended for implementation. Chapter 8 of the 2018 RTP defines how the plan will be implemented, including future planning and ongoing data collection and monitoring activities.

Table 2 documents where key elements of the region’s CMP are addressed in the RTP and/or this appendix, followed by a discussion of each element.

Table 2. 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), ⁹ 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 effectiveness¹⁰	Scheduled RTP updates, CMAQ Performance Plan (2018), RTP (Appendix J – Climate Smart Strategy Implementation and Monitoring), RTC CMP Monitoring Report

Develop Congestion Management Goals, Objectives and Policies

The 2018 RTP continues the region’s outcomes- and performance-based approach to regional transportation planning and investment decisions. Chapter 2 of the 2018 RTP outlines this approach through a series of eleven goals, objectives, performance measures and performance targets that describe the overall vision of the plan and direct future planning and investment decisions. Chapter 3 defines specific policies for planning and investment in the region’s transportation system for all modes of travel as well as management and operations of the system.

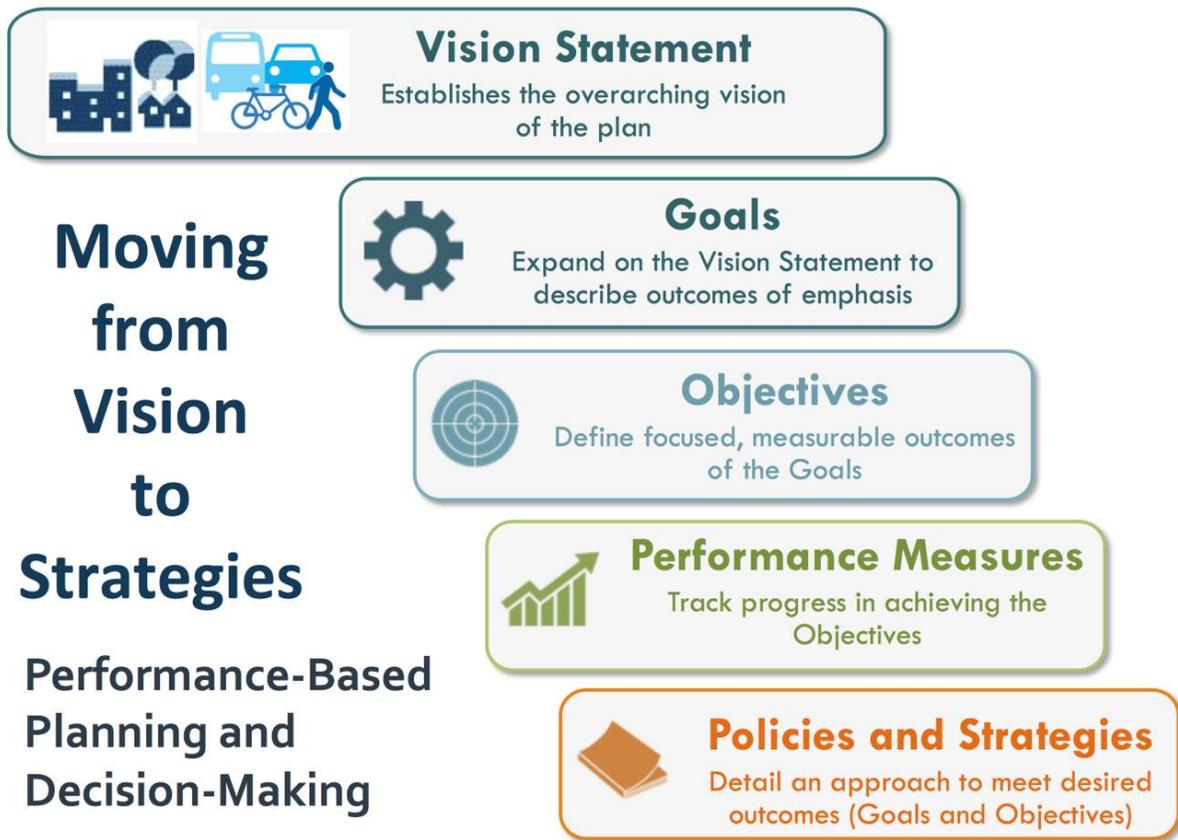
Together, the plan’s goals, objectives and policies provide an overarching policy framework for transportation planning and investment and the region’s CMP, while the performance measures

⁹ 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

¹⁰ USDOT, “Guidebook on the Congestion Management Process in Metropolitan Transportation Planning.” Pg. 1-1 (April 2011).

and targets in Chapter 2 of the RTP provide a method for expected performance of the plan in the long-term as shown in Figure 2. The measures and targets in this appendix will help track progress towards meeting the goals and objectives in the shorter-term, between and during scheduled updates to the RTP.

Figure 2. RTP Performance-Based Planning and Decision-making Framework



Source: 2018 Regional Transportation Plan (Chapter 2)

While all facets of regional transportation planning are covered in the RTP goals and objectives, the goals and objectives specific to the CMP are shown in Table 3.

Table 3. 2018 RTP Congestion Management Process Related Goals and Objectives

Goal 1. Vibrant Communities
Objective 1.2 Walkable Communities – Increase the share of households in walkable, mixed-use areas served by current and planned frequent transit service.
Goal 2. Shared Prosperity
Objective 2.1 Connected Region – Build an integrated system of throughways, arterial streets, freight routes and intermodal facilities, transit services and bicycle and pedestrian facilities, with efficient connections between modes that provide access to jobs, markets and community places within and beyond the region.
Objective 2.2 Access to Industry and Freight Intermodal Facilities – Increase access to industry and freight intermodal facilities by a reliable and seamless freight transportation system that includes air cargo, pipeline, trucking, rail, and marine services to facilitate efficient and competitive shipping choices for goods movement in, to and from the region.
Objective 2.3 Access to Jobs and Talent – Attract new businesses and family-wage jobs and retain those that are already located in the region while increasing the number and variety of jobs that households can reach within a reasonable travel time.
Goal 3. Transportation Choices
Objective 3.1 Travel Choices – Plan communities and design and manage the transportation system to increase the proportion of trips made by walking, bicycling, shared rides and use of transit and reduce vehicle miles traveled.
Objective 3.2 Active Transportation System Completion – Complete all gaps in regional bicycle and pedestrian networks.
Objective 3.3 Access to Transit – Increase household and job access to current and planned frequent transit service.
Objective 3.4 Access to Active Travel Options – Increase household and job access to planned regional bike and walk networks.
Goal 4. Reliability and Efficiency
Objective 4.1 Regional Mobility – Maintain reasonable person-trip and freight mobility and reliable travel times for all modes in the region’s mobility corridors, consistent with the designated modal functions of each facility and planned transit service within the corridor.
Objective 4.2 Travel Management – Increase the use of real-time data and decision-making systems to actively manage transit, freight, arterial and throughway corridors.
Objective 4.3 Travel Information – Increase the number of travelers, households and businesses with access to real-time comprehensive, integrated, and universally accessible travel information.
Objective 4.4 Incident Management – Reduce incident clearance times on the region’s transit, arterial and throughway networks through improved traffic incident detection and response.
Objective 4.5 Demand Management – Increase the number of households and businesses with access to outreach, education, incentives and other tools that increase shared trips and use of travel options.
Objective 4.6 Pricing – Expand the use of pricing strategies to manage vehicle congestion and encourage shared trips and use of transit.
Objective 4.7 Parking Management – Manage the supply and price of parking in order to increase shared trips and use of travel options and to support efficient use of urban land.
Goal 5. Safety and Security
Objective 5.1 Transportation Safety – Eliminate fatal and severe injury crashes for all modes of travel.
Goal 7. Healthy People
Objective 7.2 Clean Air – Reduce transportation-related air pollutants, including criteria pollutants and air toxics emissions.

Goal 8. Climate Leadership
Objective 8.3 Vehicle Miles Traveled – Reduce vehicle miles traveled per capita.
Objective 8.4 Low and Zero Emissions Vehicles – Support state efforts to transition Oregon to cleaner, low carbon fuels and increase the adoption of more fuel-efficient vehicles and alternative fuel vehicles, including electric and hydrogen vehicles.
Goal 10. Fiscal Stewardship
Objective 10.1 Infrastructure Condition – Plan, build and maintain regional transportation assets to maximize their useful life, minimize project construction and maintenance costs and eliminate maintenance backlogs.
Objective 10.2 Sustainable Funding – Develop new revenue sources to prepare for increased demand for travel on the transportation system as our region grows.
Goal 11. Transparency and Accountability
Objective 11.1 Meaningful Public and Stakeholder Engagement – Engage more and a wider diversity people in providing input at all levels of decision-making for developing and implementing the plan, particularly people of color, English language learners, people with low income and other historically marginalized communities.
Objective 11.2 Performance-Based Planning – Make transportation investment decisions using a performance-based planning approach that is aligned with the RTP goals and supported by meaningful public engagement, multimodal data and analysis.
Objective 11.3 Coordination and Cooperation – Improve coordination and cooperation among the owners and operators of the region’s transportation system.

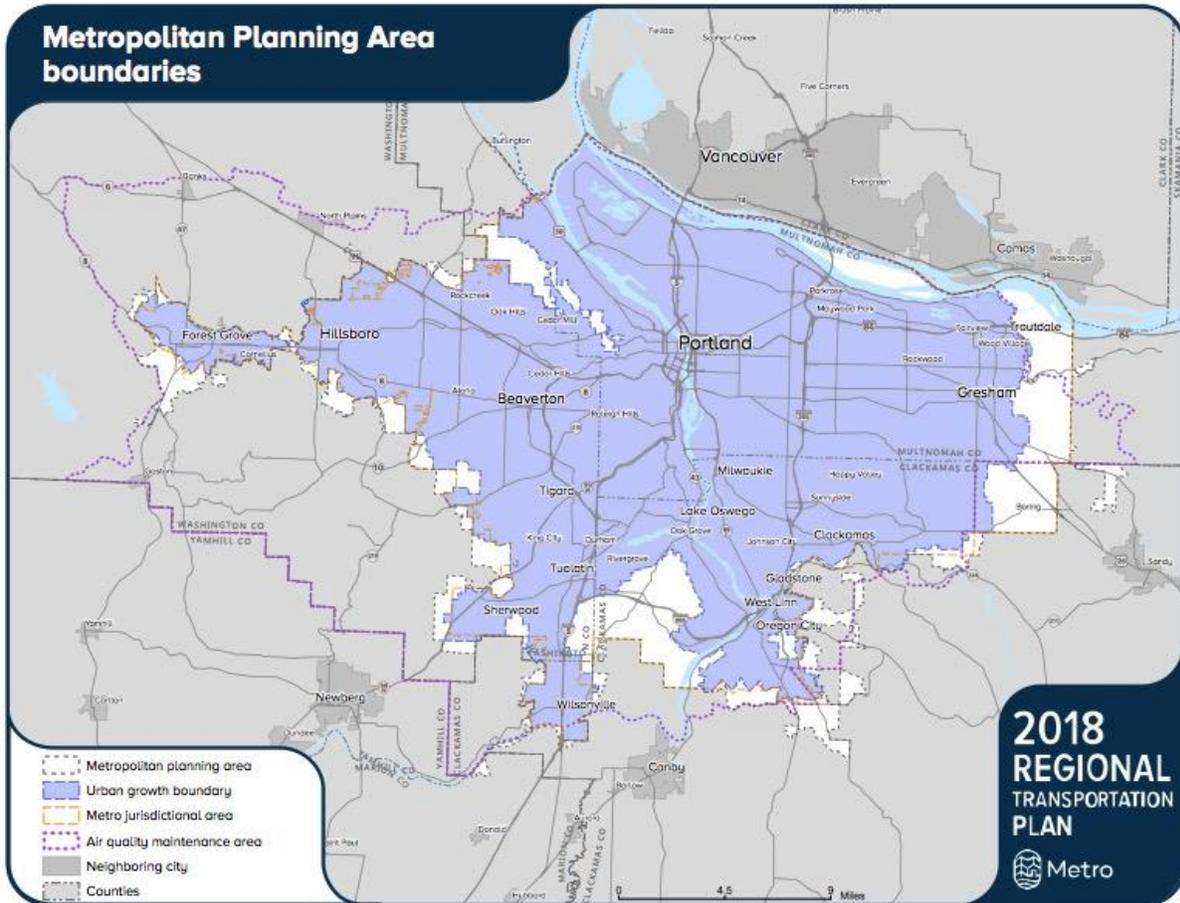
Source: 2018 Regional Transportation Plan (Chapter 2)

Identify Area of Application and Transportation Network of Interest

[CMP Geographic Area of Application](#)

The greater Portland region has several planning boundaries with different purposes. These boundaries are shown in Figure 3.

Figure 3. Metropolitan Planning Area boundary – the CMP Boundary



Source: 2018 Regional Transportation Plan (Chapter 1)

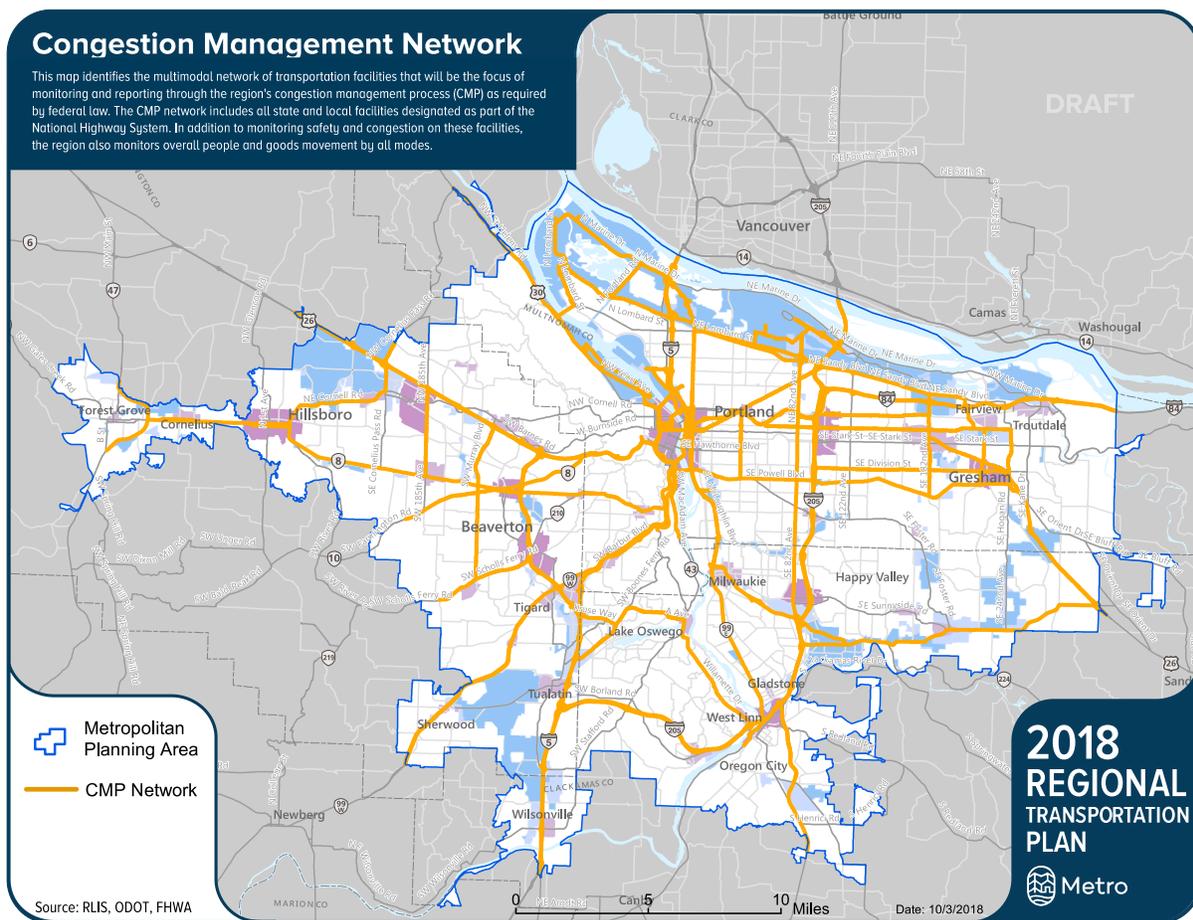
Metro’s jurisdictional boundary encompasses the urban portions of Multnomah, Washington and Clackamas counties. Under Oregon law, each city or metropolitan area in the state has an urban growth boundary that separates urban land from rural land. In addition, there is the federal Urbanized Area Boundary (UAB), which delineates areas that are urban in nature distinct from those areas that are largely rural in nature, and the Metropolitan Planning Area (MPA) boundary, which marks the geographic area to be covered by MPO transportation planning activities. At a minimum, the MPA boundary must include the urbanized area, areas expected to be urbanized within the next twenty years and areas within the Air Quality Maintenance Area Boundary (AQMA) – a fifth boundary. The region’s CMP applies to defined components of the regional

transportation network located within the MPA boundary for the Oregon portion of the Portland-Vancouver, Washington urbanized area.

Congestion Management Network

Figure 4 identifies the multimodal network of transportation facilities that will be the focus of monitoring and reporting through the region's CMP. The congestion management network includes all state and local facilities designated as part of the National Highway System and the high capacity transit routes designated in the RTP. The designated NHS includes most regional freight routes.

Figure 4. Congestion Management Network



Source: Metro

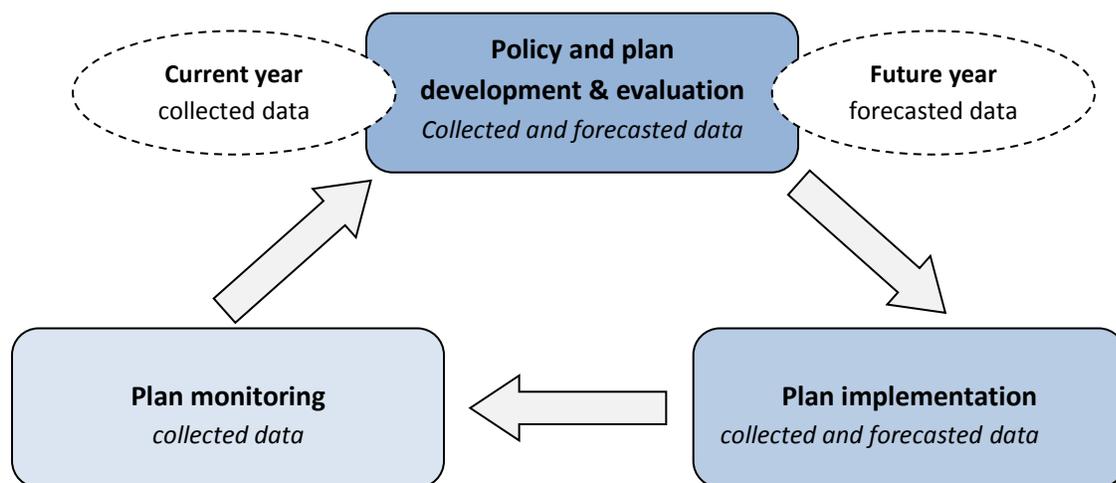
Performance of the CMP network and individual transportation components is evaluated and monitored using observed data from a variety of sources, including ODOT, TriMet and the National Performance Management Research Data Set (NPMRDS). In addition to monitoring safety and congestion, the region also monitors overall people and goods movement by all modes on these facilities. This includes vehicles miles traveled, transit ridership, regional active transportation system completion, non-drive alone mode share and freight reliability. As a result, throughways, arterials, high capacity transit routes, enhanced transit and frequent transit routes

and regional bicycle and pedestrian facilities are part of the data collection and monitoring for the region's CMP.

Establish Multimodal Performance Measures

First established in the 2010 RTP, the 2018 RTP continues to rely on the on-going performance evaluation and monitoring process shown in Figure 5. Performance measures serve as the dynamic link between RTP goals and plan implementation by formalizing the process of evaluation and monitoring to ensure investments and strategies in the RTP make adequate progress toward achievement of the region's transportation, land use, economic, equity, and environmental goals.

Figure 5. RTP Performance Measurement System



Source: 2018 Regional Transportation Plan (Chapter 7)

As noted previously, the CMP performance measures have been updated to incorporate the MAP-21/FAST Act measures and remove measures for which readily available observed data is currently lacking. The following multimodal performance measures provide Metro the ability to monitor transportation system performance specific to the CMP network using observed data. Data sources are identified. Federal MAP 21/FAST Act measures are noted with an asterisk (*).

System-wide performance monitoring measures (MPA boundary, CMP network)

1. Vehicle miles traveled (total and per capita)
2. Peak hours of excessive delay*
3. Fatal and serious injury crashes*
4. Person-miles traveled on the Interstate System and the non-Interstate NHS that are reliable*
5. Freight truck travel time reliability index*
6. Non-SOV mode share - Average daily shared ride, walking, bicycling, transit and carpool commute trips*
7. Transit ridership

8. Transit revenue hours and boarding rides per revenue hour
9. Regional active transportation network completion
10. Pavement and bridge condition*

Corridor-level performance monitoring measures (CMP network corridors)

11. Daily vehicle miles traveled (total)
12. Vehicle volumes, speeds, peak period travel times and hours of congestion
13. Fatal and serious injury crashes highlighting regional high injury corridors on the CMP network
14. Transit ridership
15. Household and job access to transit
16. Transit on-time performance
17. Regional active transportation network completion

Collect Data and Monitor System Performance

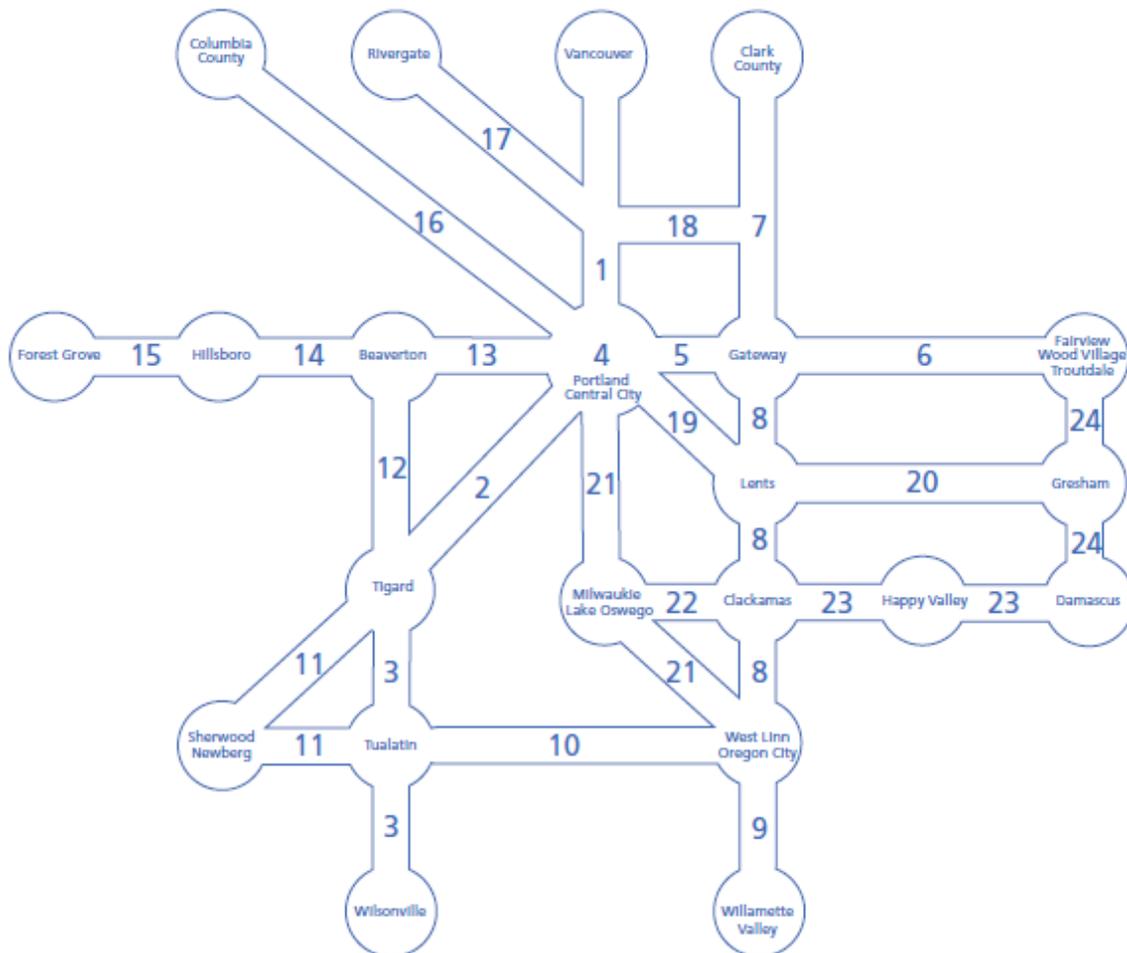
Reporting of data will be done using the regional mobility corridor framework defined in the RTP. The 24 regional mobility corridors identified in the RTP are overlapping subareas of the region. Each regional mobility corridor subarea includes existing and planned land uses and the existing and planned multimodal transportation system of arterial streets, throughways, high capacity transit, frequent bus routes, freight/passenger rail, and bicycle and pedestrian parkways.

The function of this network of integrated transportation corridors is metropolitan mobility – moving people and goods between different parts of the region and, in some corridors, connecting the region with the rest of the state and beyond. The regional mobility corridor concept calls for consideration of multiple facilities, modes and land uses when identifying needs and the most effective mix of land use and transportation solutions to improve mobility within a specific corridor.

In April 2009, Metro published the first [Mobility Corridors Atlas](#). The Atlas was conceived as a way to visualize current land use and multi-modal transportation data for each of the region's 24 mobility corridors in support of the region's CMP. For each corridor, the atlas presents a series of maps and charts showing demographic, land use and transportation network characteristics and "current" system performance, including gaps and deficiencies by travel mode. The information documents land use and transportation needs and help identify potential solutions for each corridor. The breadth of information is useful for understanding individual corridors on corridor-by-corridor basis as well as for making comparisons between corridors. The atlas is useful for identifying strategies and investment priorities, and provides a framework for tracking change over time. Recommended strategies and investment priorities are then documented in the RTP Regional Mobility Corridor Strategies Appendix. The atlas serves as a tool for monitoring system performance over time in support of the region's congestion management process and related performance-based planning efforts.

Figure 6 is a conceptual representation of the 24 mobility corridors and the locations they connect.

Figure 6. Regional Mobility Corridor Index Map



Source: 2018 Regional Transportation Plan (Chapter 3)

Both the 2009 Atlas of Mobility Corridors and an updated online [Atlas of Mobility Corridors](#) published on Metro’s website in 2015 have relied primarily on model data given a lack of readily available observed data that is maintained and updated on a regular basis and challenges with establishing adequate data collection and management systems. As a result, an update to the Atlas and 2014 RTP Regional Mobility Corridor Strategies was not completed during the 2018 RTP update. Instead, the Regional Mobility Corridor Strategies will be updated following adoption of the RTP as part of the Regional Mobility Policy update described in Chapter 8 of the 2018 RTP (See Section 8.2.2.1), and further updated as part of the next RTP update (due in 2023).

How we monitor performance

The CMP monitoring program will report out current conditions using observed data for the region, at a system-level, and as appropriate for each of the 24 mobility corridors. The system performance report will be part of the reporting that Metro, as the MPO, will do to meet federal

transportation performance management requirements. A system performance report will be developed at least every two years, aligned closely to federal transportation performance reporting and other MPO efforts, including the development of the metropolitan transportation improvement program and future updates to the RTP.

The report will also inform the existing conditions assessment that is prepared in advance of RTP updates to assess how the transportation system is performing and identify possible policy or strategy adjustments that may be needed.

Table 4 summarizes available transportation data to support ongoing CMP monitoring and reporting.

Table 4. Transportation Data to Support On-Going CMP Monitoring and Reporting

Measure	Data source(s)
Daily vehicle miles traveled	ODOT Highway Performance Monitoring System (HPMS)
System Reliability*	National Performance Management Research Data Set (NMPRDS)
Freight Reliability*	National Performance Management Research Data Set (NMPRDS)
Peak hours of excessive delay*	National Performance Management Research Data Set (NMPRDS)
Vehicle classification traffic count and speed data	ODOT Highway Performance Monitoring System (HPMS), PORTAL
Crash data*	ODOT Crash Data
Non-Single Occupancy Vehicle Mode Share*	American Community Survey Data on Journey to Work, Oregon Household Activity Survey (OHAS)
Transit ridership	TriMet, SMART and C-TRAN Transit Performance Reports
Transit revenue hours and boarding rides per revenue hour	TriMet, SMART and C-TRAN Transit Performance Reports
Household and job access to transit	Metro RLIS
Transit on-time performance	TriMet, SMART and C-TRAN Transit Performance Reports
Regional Bike and Pedestrian Network Completion	Metro RLIS
Pavement and Bridge Condition*	ODOT bridge and pavement programs
Transit assets State of Good Repair*	TriMet, SMART and C-TRAN Transit Asset Management Plans

* indicates a MAP-21/FAST Act required performance measure

Additionally, other system monitoring efforts and reporting undertaken by the region’s partners including ODOT, Port of Portland, and transit agencies (TriMet, SMART and C-TRAN) will help support expansion of the region’s performance monitoring to include more components of the regional transportation system as resources and data allow. For example, ODOT produced a

Region 1 traffic performance report (2016) that provided key congestion related information for the Portland metropolitan region's freeways and state highways. The report informed development of the 2018 RTP and will support the region's CMP performance monitoring in the future.

Metro's Research Center is currently evaluating new datasets (i.e., Replica and HERE) that could allow for the expansion of future monitoring activities to include the arterial system. In addition, the Metro Research Center is in the early stages of developing an agency-wide performance measurement system that will seek to incorporate and regularly update (with observed data from sources such as Replica and HERE) the key measures in the CMP.

Data Collection and Methodology

Metro's takes a coordinated approach to data collection to support regional transportation planning and analysis, including federal congestion management process analysis and performance based planning target setting and monitoring. The majority of Metro's data is maintained in Metro's Regional Land Information System (RLIS). This database is comprised of over 150 different (primarily geospatial) data sets. Nonetheless, the RLIS database is not comprehensive and requires coordination with various local governments and other regional partners in gathering different types of transportation data to monitor system performance.

The following agencies are principal partners in collecting and/or evaluating CMP data. These principal partners have developed data collection and management systems that Metro has utilized for the purposes of understanding current-day system performance. Other agencies are also involved in the system, with their efforts coordinated through various regional committees, including the Transportation Policy Alternatives Committee (TPAC) and TransPort, a sub-committee of TPAC that coordinates regional transportation system management and operations activities, including data collection.

- **Federal agencies** make available several transportation related data sources, including FHWA's National Performance Management Research Data Set (NPMRDS), Highway Performance Monitoring System data submitted by ODOT and other DOTs, and the U.S. Census and American Community Survey data.
- **ODOT** has installed a comprehensive data collection, management and monitoring system across the region and state. ODOT's [Transportation Operations Center \(TOC\)](#) collects ITS data using roadway sensors to conduct real-time management of the transportation system. The ongoing development of the system is overseen by TransPort, which monitors and updates the regional TSMO plan and ITS architecture. ODOT reports Highway Performance Monitoring System data to FHWA. ODOT makes use of FHWA's NPMRDS when reporting traffic performance on the region's state-owned facilities. ODOT also collects, geocodes and archives crash data that supports statewide, regional and local safety planning efforts and related monitoring and reporting activities.
- **Portland State University** collects, archives and visualizes transportation data for the Portland-Vancouver metropolitan area through PORTAL. Currently data available

from PORTAL includes: travel time reliability, travel speeds, travel volume, vehicle length (primarily used to identify freight vehicles), arterial signals, weigh-in motion, transit on-board capacity, transit reliability, weather and incidents. PORTAL is working to expand its capabilities to include data for more arterials, bicycles and pedestrians. Corridor ranking will be applied to highlight travel delay, providing input for discussion on areas of congestion.

- [TriMet reports ridership and performance statistics](#) on the agency's website and to the National Transit Database, including boardings and on-time performance for the high capacity transit network and other fixed-route transit service. TriMet also reports traffic operations data from its GPS-equipped bus fleet. TriMet is in the process of equipping light-rail vehicles with GPS.
- [Metro's Regional Travel Options \(RTO\) Program](#), the region's demand management program, conducts and funds marketing, education, outreach and demand management services throughout the region, including ongoing evaluation of the program's effectiveness. In this role, Metro evaluates commute options survey data, neighborhood-based residential travel diary data and other data sources to estimate changes in non-SOV travel, summarizing outcomes for program activities in the region every two years.
- [Metro's Research Center](#) conducts household activity surveys, freight counts and other surveys to monitor and model the region's transportation performance for all modes. The Research Center serves as the region's clearinghouse for forecast data and other data collected by federal, state, local and academic sources. Work is underway to streamline current and future data collection, maintenance and reporting in support of the CMP and other Metro programs.
- The **Southwest Washington Regional Transportation Council** (Vancouver, WA MPO) maintains a [CMP for the greater Vancouver area](#). Its efforts are coordinated with the Metro, using the same technical coordination that is employed in archiving data with PSU PORTAL, sharing travel forecasting and demographic data.

As noted previously, Metro's Research Center is currently evaluating new datasets and in the early stages of developing an agency-wide performance measurement system that will seek to incorporate and regularly update observed data in support of key elements of the CMP.

Identify and Evaluate Strategies

Metro works collaboratively with partner agencies to identify and evaluate appropriate strategies for managing congestion. This section describes the toolbox of strategies used in the region.

Objectives of Strategies

Reducing congestion in the region will require accomplishing the following objectives:

- Preservation and maintenance of the existing system
- Maintaining a compact urban form and focusing growth in areas that can be served by multiple travel options
- Reducing person trips or vehicle miles traveled
- Shifting automobile trips to other modes or off-peak travel periods
- Shifting drive alone trips to shared trips
- Improving roadway and transit operations through system management and operations
- Adding vehicle capacity at key bottlenecks

The identification and selection of strategies for a particular segment or corridor should be tied to the specific congestion issue, the travel options available in that corridor and land uses served.

CMP Toolbox of Strategies

One component of Metro's Congestion Management Process is a toolbox of congestion reduction and mobility strategies. This toolbox identifies a suite of strategies to manage congestion and address mobility needs prior to utilizing traditional roadway widening and other capacity projects. Prior to adding single occupant vehicle (SOV) capacity, agencies and jurisdictions should give consideration to the various strategies identified in this section, consistent with FHWA direction and RTP and OTP policies. Usually, multiple strategies are applicable within a corridor, while other strategies are intended to be applied region-wide.

The CMP toolbox strategies were assembled to provide a wide range of strategies that could be used to manage congestion region-wide or within congested mobility corridors. They are arranged so that the strategies are considered in order from first to last. Even with the addition of capacity, many of the strategies can be implemented with the project to ensure the long-term management of a capacity project.

Strategies are detailed in the CMP Toolbox of Strategies shown in Table 5.

Table 5. Toolbox of Strategies to Address Congestion in the Region

1		<p>Community design strategies</p> <ul style="list-style-type: none"> • Walkable communities and job centers facilitated by compact land use in combination with walking, biking and transit connections • Mixed-used areas and transit-oriented development • Parking management and pricing
2		<p>Travel Information and Incentives strategies</p> <ul style="list-style-type: none"> • Commuter travel options programs • Household individualized marketing programs • Car-sharing and eco-driving techniques • Safe Routes to School programs • Ridesharing (carpool, vanpool) services
3		<p>System management and operations strategies</p> <ul style="list-style-type: none"> • Real-time variable message signs and speed limits • Signal timing and ramp metering • Transit signal priority, bus-only lanes, bus pull-outs • Incident response detection and clearance • Access management (e.g., turn restrictions, medians)
Emerging		<p>Congestion pricing strategies</p> <ul style="list-style-type: none"> • Peak period pricing • Managed lanes • High occupancy toll (HOT) lanes
4		<p>Active Transportation strategies</p> <ul style="list-style-type: none"> • New biking and walking connections to schools, jobs, downtowns and other community places • Bicycle infrastructure (e.g., bicycle racks, lockers and other bicycle amenities at transit stations and other destinations) • Separated pathways and trails
5		<p>Transit strategies</p> <ul style="list-style-type: none"> • High capacity transit • Expanded transit coverage • Expanded frequency of service • Improvements in right-of-way to increase speed and reliability of buses and MAX • Community and job connector shuttles • Park-and-ride lots in combination with transit service
6		<p>Street and throughway capacity strategies</p> <ul style="list-style-type: none"> • Local and arterial street connectivity to spread out travel • Addition of turn lanes at intersections, driveway restrictions and other geometric designs such as roundabouts • Road widening to add new lane miles of capacity (e.g, adding auxiliary lanes, additional general purpose lanes); pricing is considered when adding new throughway capacity in the region

The intent of the CMP Toolbox follows FHWA’s direction to consider all available solutions before recommending additional roadway capacity in transportation system planning, corridor refinement planning and subarea studies. This direction is reflected in the RTP goals and policies (Chapters 2 and 3) and Regional Transportation Functional Plan (Section 3.08.220). It is also consistent with the Oregon Highway Plan Major Improvements Policy 1G.

RTP Mobility Corridor Strategies

The 2014 RTP Mobility Corridors Strategies identified system needs, function(s) and solutions for improved mobility for regional transportation facilities within each of the 24 mobility corridors. It also identified investments to work towards over life of the RTP. Each mobility corridor contains investment strategies broken into two time horizons: near term (1-10 years) and long term (10-25 years). The process of developing each corridor strategy included:

- Scoping analysis that identifies current and planned land uses, pedestrian, bike, management and operations, freight, highway, road and transit needs and issues.
- Integrated statement of mobility function defined at a corridor area level.
- Potential land use and transportation solutions identified.

Jurisdictional partners updated the investment priorities as part of the 2018 RTP update to reflect Oregon Legislative priorities, adopted local plan priorities and regional policy priorities identified during the 2018 RTP update for transportation equity, safety, Climate Smart Strategy implementation and congestion. The updated investment priorities were evaluated using Metro’s regional travel demand forecast model as documented in Chapter 7 of the 2018 RTP. CMP-related system-wide measures used to forecast potential effectiveness of the package of recommended investment strategies in 2040 are shown in Table 6.

Table 6. RTP Performance Measures Used to Forecast Potential Effectiveness of Strategies

RTP System-Level Performance Measures
Multi-modal travel (total and per capita) <ul style="list-style-type: none"> - person miles traveled - vehicle miles traveled - transit miles traveled - bicycle and miles traveled - pedestrian miles traveled - freight truck miles traveled
Mode Share (total and by subregion and 2040 design type) <ul style="list-style-type: none"> - walking trips and mode share - biking trips and mode share - transit trips and mode share - shared ride trips and mode share - drive alone trips mode share
Transit ridership (total and by service type)
Transit revenue hours and boarding rides per revenue hour (total and by service type)
Household and job access to transit (total by frequency of service)
Regional Bike and Pedestrian Network Completion (miles and share completed)
Congestion <ul style="list-style-type: none"> - miles and location of facilities not meeting Interim regional mobility policy - freight delay

Source: 2018 Regional Transportation Plan (Chapter 7)

Other CMP measures that cannot be forecasted at this time and, as a result, were not evaluated in the 2018 RTP system analysis, include:

- safety
- reliability
 - freight reliability
 - system reliability
 - transit on-time performance
- access to industry and freight intermodal facilities
- pavement and bridge condition
- transit assets state of good repair

As noted previously, the Atlas of Mobility Corridors could not be fully updated in 2015 due to a lack of readily available observed data and federal performance-based planning rulemaking that was not yet complete. While certain mobility corridors have seen a tremendous amount of work and progress towards implementation, others still need further analysis and investment.

In addition to the changing landscape and to meet the new federal mandates to better address growing congestion on the region's transportation system, ODOT and Metro propose to work in partnership on a refinement plan to update the regional mobility policy upon completion of the 2018 RTP. This will allow the refinement work to build on a rich data set and updated policy framework from the 2018 RTP, with the goal of better informing use of system management and operations strategies and strategies that manage travel demand and reduce single occupant vehicle travel in combination with capital investments to improve mobility for people and goods within each of the region's mobility corridors.

This work is expected to occur from early 2019 through June 2021, and will produce two major policy refinements for consideration by JPACT, the Metro Council and the Oregon Transportation Commission.

Expected outcomes of the update include:

- **A corridor-specific mobility policy framework will be developed for the National Highway System** for the purpose of meeting federal requirements, and because the NHS generally corresponds to the Interstate and Statewide highway system defined in the Oregon Highway Plan (OHP). This policy will be incorporated into the RTP and the Oregon Transportation Plan and modal plans (as appropriate).
- **A mobility corridor-based mobility policy framework will be developed for regional arterial streets** for the purpose of managing motor vehicle congestion while improving safety for all users, improving transit speed and reliability, completing gaps in the regional transit, pedestrian and bicycle networks and supporting regional and local land use plans. This policy will be incorporated into the RTP.

Together, these new policy frameworks will guide system planning as part of future RTP updates and the development of city and county Transportation System Plans (TSPs) 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, and will provide guidance for operational and investment decisions. The region will continue efforts to transition to an online atlas, as resources allow, that provides up-to-date information to inform transportation planning and decision-making in the region.

Implement Selected Strategies

Metro's congestion management process provides an important tool for monitoring and addressing the region's traffic congestion. The congestion management process provides information to help guide the investment of transportation funding toward addressing congestion. Information developed through the congestion management process is applied through the regional transportation planning process.

In coordination with ODOT, TriMet, SMART and local agencies, Metro uses the congestion management process as one tool to help identify regional transportation system needs. This effort is supported by regional studies, including corridor refinement plans, development of local transportation system plans and capital improvement plans, regional transportation modeling, and other planning and engagement efforts which all feed into the development of the RTP.

Needs are developed based on a system-planning level analysis that considers how various strategies can address congestion prior to adding capacity consistent with the Regional Transportation Functional Plan and Oregon Highway Plan Major investment Policy 1G, which states "It is the policy of the State of Oregon to maintain highway performance and improve safety by improving system efficiency and management before adding capacity." ODOT works in partnership with regional and local governments to address highway performance and safety needs. Identified congestion needs are then incorporated into RTP recommendations. Project sponsors then must give consideration to the various strategies from the CMP Toolbox as projects are identified for inclusion in the RTP and move forward to implementation.

Many locally-funded priorities move forward to implementation through local processes. ODOT administers its own prioritization and funding allocation processes and those priorities selected for funding are programmed in the State Transportation Improvement Program and in the Metropolitan Transportation Improvement Program (MTIP) if the priority is in the metropolitan area.

Local and state project priorities are also submitted to Metro and selected through the Regional Flexible Fund Allocation (RFFA) process and incorporated in the MTIP. The RFFA process selects priority projects for implementation based on criteria that support RTP goals and objectives and the region's CMP in combination with public and jurisdictional input on priorities. The 2019-21 RFFA cycle, for example, included criteria for projects to receive additional points for reducing freight delay, improving safety, reducing need for highway expansion, expanding travel options and use of system operations and demand management strategies.

Monitor Strategy Effectiveness

FHWA identifies congestion monitoring as just one of the several aspects of transportation system performance that leads to more effective investment decisions for transportation improvements. Safety, infrastructure condition, environmental quality, economic development, quality of life, and customer satisfaction are among the aspects of performance that also require monitoring.

The metropolitan transportation planning process is required to have “a coordinated program for data collection and system performance monitoring to assess the extent of congestion, to contribute in determining the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions.” In addition, it also indicates that “to the extent possible, this data collection program should be coordinated with existing data sources and coordinated with operations managers in the metropolitan area.”

As a result, the goal of the Metro’s CMP system monitoring plan is to develop an ongoing system of monitoring and reporting that relies primarily on data already collected or planned to be collected in the region. The components of the monitoring plan include roadways designated on the National Highway System. This includes throughways and arterial streets that also serve as regional freight and transit routes, and support bicycle and pedestrian travel.

- **Roadway performance** is monitored to collect traffic volumes, vehicle miles traveled, vehicle speed and other related data to identify extent of congestion and travel time reliability and safety issues.
- **Fatal and serious injury crashes** are monitored using ODOT crash data for all modes of travel to identify high injury corridors and potential areas of non-recurring congestion.
- **Freight truck travel time reliability** on regional freight routes that are on the Interstate System is evaluated to identify mobility needs of goods movement.
- **Transit performance** is monitored continuously by TriMet, SMART and C-TRAN through various operating and capital plans and federally-required reporting to the National Transit Database. This includes transit ridership as well as boarding rides per revenue hour to measure the efficiency and effectiveness of transit service.
- **Bicycle/pedestrian/trail facility inventory and count data** are monitored and updated in various databases (as resources are available). The regional trail inventory was updated in 2018. Updates to the regional bikeway and regional sidewalk inventories occurred in 2016 and 2012, respectively. This information is monitored to measure progress completing gaps in the RTP regional bike and pedestrian networks.
- **Mode share** in the region is monitored using U.S. Census data and periodic household travel behavior surveys conducted jointly by Metro, ODOT and other partners. This information is monitored to identify the extent to which people are using available travel options in the region. Measuring this over time can reveal whether the region is successfully managing travel demand and the transportation system.

The update to the Regional Mobility Policy as well as implementation of the federal transportation performance management program are anticipated to result in future updates to the region’s CMP

process and monitoring approach prior to the next RTP update (due in 2023). In order to meet federal performance management requirements, performance evaluations are expected to take place in two- and/or four-year cycles and be aligned closely with other key on-going MPO activities, including the development of the upcoming MTIP (2021-2024) and the subsequent RTP update (2023). The monitoring program will guide, inform, and help prioritize subsequent Metro funding allocations, including the Regional Flexible Fund Allocation process.

Metro is also in the process of looking for ways to streamline performance measure monitoring and reporting efforts agency-wide to improve transparency and support decision-making. This effort will also define longer-term measure ownership, collection standards, data maintenance and governance – key areas that will provide more clarity and certainty in support of Metro’s CMP and performance-based planning efforts.

MAP-21/FAST ACT PERFORMANCE MEASURES AND TARGETS

This section establishes the region's federal MAP-21 and FAST Act performance measures and targets for:

- Safety
- National Highway System Asset Management
- National Highway System Performance
- National Freight Movement on the Interstate System
- Congestion Mitigation and Air Quality Program
- Transit Asset Management

The performance targets in this section do not set regional policy for the RTP. Instead they are solely for the purpose of meeting MAP-21 and FAST Act requirements. They will provide useful system performance information to satisfy federal monitoring and reporting requirements and inform the next update to the RTP. The targets were developed in coordination with the Transportation Policy Alternatives Committee (TPAC), the Oregon Department of Transportation, TriMet, South Metro Area Regional Transit (SMART), C-TRAN and the SW Washington Regional Transportation Advisory Committee (RTAC). These measures and targets support the region's Congestion Management Process and are considered with a broader set of performance measures and targets contained in Chapter 2 of the 2018 RTP.

The safety measures and targets are also contained in the 2018 Regional Transportation Safety Strategy developed as a component of the [2018 RTP](#). The National Highway System Performance and Freight Movement on the Interstate System reliability measures and targets are contained in the 2018 Regional Freight Strategy, which is also a component of the 2018 RTP. The requirements and targets addressed in this appendix are not applicable for determining consistency with the Oregon Transportation Planning Rule.

On May 17, 2018, the Oregon Transportation Commission adopted performance measures and statewide targets for pavement and bridge condition and traffic congestion and on-road mobile source emissions for the Congestion Mitigation and Air Quality Program as an amendment to the Oregon Transportation Plan for federal monitoring and reporting purposes. ODOT's performance measures and targets addressing safety statewide are contained in the [Oregon Transportation Safety Action Plan](#). The transit asset management measures and targets are contained and reported in the TriMet Transit Asset Management (TAM) Plan, the C-TRAN TAM plan and [Group TAM Plan](#) prepared by ODOT on behalf of SMART.

Individual tables that follow (Tables 7- 14) further document the region's MAP-21/FAST individual performance targets. Statewide targets adopted by the Oregon Transportation Commission are provided for comparison purposes for individual measures, except for safety.

Table 7. Safety Targets – Fatalities and Serious Injuries

Safety – Fatalities and Serious Injuries (Regional Targets only)					
Reporting Year (based on a 5-year rolling average)	Fatalities (People)	Fatality Rate (People per 100 Million VMT)	Serious Injuries (People)	Serious Injury Rate (People per 100 Million VMT)	Non-motorized Fatalities and Serious Injuries (People)
2011-2015 (Base)	62	0.6	458	4.5	113
2014-2018**	58	0.5	426	4.0	105
2015-2019	55	0.5	407	3.8	101
2016-2020	52	0.5	384	3.6	95
2017-2021	49	0.4	357	3.3	88

**2014-2018 is the first period that targets must be established for the region. The 2018 Regional Transportation Plan and 2018 Regional Transportation Safety Strategy set a target of zero traffic deaths and serious injuries by 2035. Metro developed annual targets to reach the 2035 target using the same methodology used by the Oregon Department of Transportation in the Oregon Transportation Safety Action Plan. These measures reflect people killed or seriously injured rather than fatal or serious injury crashes. Serious injuries do not include fatalities.

* Source: Oregon Department of Transportation.

Table 8. Asset Management – Pavement Condition Targets

Asset management – Pavement Condition Targets				
Performance measure	Regional 2016 Baseline*	Regional 2020 Target	Regional 2022 Target	ODOT Statewide 2020/2022 Targets
Percent of pavement on the Interstate System in good condition	31%	None	35%	None/35%
Percent of pavement on the Interstate System in poor condition	0.4%	None	0.5%	None/0.5%
Percent of pavement on the non-Interstate NHS in good condition	32%	32%	32%	50%/50%
Percent of pavement on the non-Interstate NHS in poor condition	25%	25%	25%	10%/10%

* Source: Oregon Department of Transportation.

Table 9. Asset Management – Bridge Condition Targets

Asset management – Bridge Condition Targets				
Performance measure	Regional 2017 Baseline*	Regional 2020 Target	Regional 2022 Target	ODOT Statewide 2022 Target
Percent of NHS bridges classified in good condition	6%	None	5%	10%
Percent of NHS bridges classified in poor condition	1%	None	1%	3%

* Source: Oregon Department of Transportation.

Table 10. National Highway System Performance Targets

National Highway System Performance Targets				
Performance measure	Regional 2017 Baseline*	Regional 2020 Target	Regional 2022 Target	ODOT Statewide 2022 Target
Percent of person-miles traveled on the Interstate System that are reliable	43%	43%	43%	78%
Percent of person-miles traveled on the non-Interstate NHS that are reliable	66%	66%	66%	78%

* Source: National Performance Management Research Dataset (NPMRDS) for the period Jan. to Dec. 2017.

Table 11. Freight Movement on the Interstate System – Freight Reliability Targets

Freight Movement on the Interstate System – Freight Reliability Targets				
Performance measure	Regional 2017 Baseline*	Regional 2020 Target	Regional 2022 Target	ODOT Statewide 2022 Target
Truck Travel Time Reliability (TTTR) Index	3.17	3.10	3.10	1.45

* Source: National Performance Management Research Dataset (NPMRDS) for the period Jan. to Dec. 2017.

Table 12. Congestion Mitigation and Air Quality Program – Excessive Delay and Mode Share Targets

Congestion Mitigation and Air Quality Program – Excessive Delay and Mode Share Targets				
Performance measure	Regional 2017 Baseline	Regional 2020 Target	Regional 2022 Target	ODOT Statewide 2020/2022 Targets
Annual hours of peak hour excessive delay per capita	22.13*	24.34***	23.96	None/23.96
Percent of non-single occupancy vehicle (Non-SOV) travel	31.4%**	33.1%	33.5%	33.1%/33.5%

* Source: National Performance Management Research Dataset (NPMRDS) for the period Jan. to Dec. 2017.

** Source: U.S. Census Bureau American Community Survey – Journey to Work, 1-year estimates (2017).

*** Note: Two-year target required for MPOs and will be resubmitted to ODOT in the updated CMAQ Baseline Performance Report due in December 2018.

Table 13. Congestion Mitigation and Air Quality Program – On-Road Mobile Source Emissions Targets

Congestion Mitigation and Air Quality – On-Road Mobile Source Emissions Targets				
Performance measure	Regional 2014-2017 Baseline	Regional 2020 Target	Regional 2022 Target	ODOT Statewide 2020/2022 Targets
Annual average reduction emissions reduction per day (by pollutant) for all CMAQ-funded projects (Kg/day)				
Particulate matter less than 2.5 microns (PM _{2.5})	N/A	N/A	N/A	.12/.23
Particulate matter less than 10 microns (PM ₁₀)	N/A	N/A	N/A	363/726.4
Carbon monoxide (CO)	2476.73*	2000*	1840*	584/1168
Volatile organic compounds (VOC)	N/A	N/A	N/A	29.49/58.97
Nitrogen oxides(NO _x)	N/A	N/A	N/A	71.45/142.9
This measure is required for metropolitan areas designated as nonattainment or maintenance as of Oct. 1, 2017. While the region completed its second 10-year Maintenance Plan for Carbon Monoxide on Oct. 2, 2017, the RTP must include this target given the region’s status on Oct. 1, 2017. Monitoring and reporting of Portland area regional measures and targets will occur through the Metropolitan Transportation Improvement Program.				

* Source: Portland area CMAQ obligated projects for federal fiscal years 2014 through 2017.

Table 14. Transit Asset Management Targets

Transit Asset Management Targets		
Performance measure	2018 Baseline	2018 Target
TriMet Rolling Stock – Percent of revenue vehicles that have met or exceeded their useful life benchmark (ULB)		
BU – Bus	15.3%	0%
CU – Cutaway (used for LIFT paratransit)	9.02%	0%
LR – Light rail vehicles	0%	0%
RP – Commuter rail passenger coach	0%	0%
RS – Commuter rail self-propelled passenger car	0%	0%
VN – Van (used for LIFT paratransit)	0%	0%
TriMet Equipment – Percent of service vehicles that have met or exceeded their useful life benchmark (ULB)		
Automobiles	26%	0%
Trucks and other rubber tire vehicles	34%	0%
Steel wheel vehicles	30%	0%
TriMet Facilities – Percent of facilities rated below 3 on the condition scale (1=Poor to 5=Excellent)		
Passenger/Parking facilities	1.03%	10%
Administrative/Maintenance facilities	0%	10%
TriMet Infrastructure – Percent of track segments with performance restrictions		
LR – light rail	4.7%	0.2%
YR – Hybrid rail	3.0%	0.2%

Transit Asset Management Targets		
Performance measure	2018 Baseline	2018 Target
SMART Rolling Stock – Percent of revenue vehicles that have met or exceeded their useful life benchmark (ULB)	33%	33%
SMART Equipment – Percent of service vehicles that have met or exceeded their useful life benchmark (ULB)	20%	20%
SMART Facilities – Percent of facilities rated below 3 on the condition scale (1=Poor to 5=Excellent)	0%	0%
C-TRAN Rolling Stock – Percent of revenue vehicles that have met or exceeded their useful life benchmark (ULB)	14.5%	20%
C-TRAN Equipment – Percent of service vehicles that have met or exceeded their useful life benchmark (ULB)	17.1%	30%
C-TRAN Facilities – Percent of facilities rated below 2.5 on the condition scale (1=Poor to 5=Excellent)	0%	30%
Each transit provider must update State of Good Repair targets annually and the agency’s Transit Asset Management (TAM) Plan must be updated at least every 4 years covering a horizon period of at least 4 years. TriMet’s performance measures and targets are monitored and reported in TriMet’s TAM Plan. SMART’s performance measures and targets are monitored and reported in ODOT’s Group TAM Plan. C-TRAN’s performance measures and targets are monitored and reported in C-TRAN’s TAM Plan.		

Metro expects to review the regional targets for National Highway System Performance (Table 10), Freight Movement on the Interstate System (Table 11) and CMAQ – Excessive Delay and Mode Share (Table 12) as part of the Regional Mobility Policy update identified in Chapter 8 of the 2018 RTP. The review will determine whether adjustments to the 2022 regional targets are warranted. Metro and ODOT will initiate the Regional Mobility Policy update in 2019 in collaboration with other regional partners. The review of performance targets will be coordinated with the Transportation Policy Alternatives Committee (TPAC), ODOT, TriMet, SMART, C-TRAN and the SW Washington Regional Transportation Advisory Committee (RTAC).

IMPLEMENTATION STRATEGIES IN SUPPORT OF PERFORMANCE-BASED PLANNING

This section summarizes key regional implementation policies, programs and strategies that support Metro's performance-based planning and congestion management processes.

Policy

Land Use

2040 Growth Concept – In 1995, the Portland region adopted the 2040 Growth Concept, the long-range plan for managing growth that integrates land use and transportation planning to reinforce the objectives of both. The unifying theme of the 2040 Growth Concept is to preserve the region's economic health and livability and plan for growth in the region in an equitable, environmentally-sound and fiscally-responsible manner. The 2040 Growth Concept includes land-use and transportation building blocks of the 2018 RTP. The RTP implements the 2040 Growth Concept with an approach that views transportation as an integrated and interconnected system that must be completed over time to support planned land uses. The plan shifts the emphasis from moving vehicles to moving people and goods and connecting people and places. This integrated system provides for the movement of people by private vehicle, public transit, ridesharing, walking and biking as well as the movement of goods and services by roads, air, water and rail.

Urban Growth Boundary – Metro is responsible for managing the Portland metropolitan region's urban growth boundary required by Oregon state law. The boundary controls urban expansion onto farms and forests. Land inside the urban growth boundary supports urban services such as roads, water and sewer systems, parks, schools and fire and police protection that create thriving places to live, work and play. Metro is required by state law to have a 20-year supply of land for future residential development inside the boundary. Every five years, the Metro Council is required to conduct a review of the land supply and, if necessary, expand the boundary to meet that requirement.

Urban and Rural Reserves – In 2007, the Oregon Legislature approved Senate Bill 1011. This legislation enabled Metro to identify and designate areas outside the current urban growth boundary as urban and rural reserves. Urban reserves are lands currently outside the urban growth boundary that are suitable for accommodating urban development over the next 50 years. Rural reserves are lands outside the current urban growth boundary that are high value working farms and forests or have important natural features like rivers, wetlands, buttes and floodplains. These areas will be protected from urbanization for the next 50 years.

Transportation

2018 Regional Transportation Plan – Metro is responsible for updating and maintaining the region’s long-range transportation plan under federal and state law. In addition, Metro maintains several supporting mode and topic plans, which, together with the RTP, guide transportation planning, investments and decision-making. The RTP establishes goals, policies and strategies that address the key challenges and opportunities facing the region. The goals, policies and strategies of the RTP guide transportation decision making across the region and set the stage for performance management to occur in the specific mode and topic plans and programs associated with the RTP. The mode and topic plans associated with the RTP include:

- Regional Transportation Safety Strategy (2018)
- Regional Transit Strategy (2018)
- Regional Freight Strategy (2018)
- Emerging Technology Strategy (2018)
- Regional Travel Options Strategy (2018)
- Regional Active Transportation Plan (2014)
- Climate Smart Strategy (2014)
- Regional Transportation System Management and Operations (TSMO) Plan (2010)

Infrastructure and programs

Regional Active Transportation Program and Regional Active Transportation Plan

The Regional Active Transportation Program manages updates to and implementation of pedestrian, bicycle and access to transit in the 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.

Regional Transit Strategy and Enhanced Transit Concept Pilot

Over the last 30 years the greater Portland region has lead the way in providing a state-of-the-art transit system to the region. During that time more than 50 miles of light rail and 15 miles of commuter rail were constructed. These high capacity transit lines connect far reaching communities across the region. The 2018 Regional Transit Strategy defines a comprehensive

vision, policies and investments needed to help make the region's transit system frequent, convenient, accessible and affordable for everyone. The new strategy brings the visions of communities and multiple transit providers together, including TriMet, South Metro Area Regional Transit (SMART), C-TRAN, Salem-Keizer Transit, Canby Area Transit, Sandy Area Metro and Ride Connection, to provide important connections between urban centers, jobs, schools and other destinations.

In addition, the 2018 RTS strategy updated and replaced the regional High Capacity Transit System Plan vision adopted in 2009, looking beyond high capacity transit projects like light rail or bus rapid transit to expand the range of transit options available to meet travel needs throughout the region. New to the region's vision and policies for transit is the Enhanced Transit Concept. The Enhanced Transit Concept includes the implementation of small- to moderate-scale solutions, such as bus only lanes and transit priority signals at intersections, to improve speed and on-time performance in the region's most congested and unreliable frequent transit network segments. A pilot program is under way.

Transportation System Management and Operations Strategy

In recognition of the fact that the region cannot build its way out of congestion, Metro has increasingly looked to Transportation System Management & Operations (TSMO) as way to address congestion and improve reliability of the region's multimodal transportation system. The regional TSMO strategy provides a 10-year investment strategy for system management and operations projects. Investments identified in the TSMO plan focus on four areas:

- *Multimodal traffic management* – Provides arterial and freeway multimodal traffic management and operations functions including signal timing, access management, arterial performance monitoring and data collection, and active traffic management.
- *Traveler information* – Provides current and forecasted travel conditions information via a variety of sources including web site, mobile devices, phone systems, dynamic message signs, highway advisory radio and via private sources for in-vehicle navigation systems to help people make better informed travel decisions.
- *Traffic incident management* – Provides resources and builds partnerships to foster a coordinated, timely and efficient response to incidents. The strategies are aimed at reducing overall incident duration to restore capacity quickly and reduce secondary crashes.
- *Transportation demand management (through coordination with the Regional Travel Options program)* - Maximizes investments in the transportation system and relieves traffic congestion by managing travel demand, particularly during peak commute hours. Supports and leverages capital investments in transit, trails, and other infrastructure by marketing travel options to potential riders and users and increasing the share of trips made by transit, walking, cycling and other travel options.

Multimodal Integrated Corridor Management and Operations

To manage congestion in the region, Metro is looking at number of operational strategies that specifically target arterial and freeway operations. Currently, Metro led corridor partners to complete operations strategies for I-84 Multimodal Integrated Corridor Management (ICM). This plan takes the region's steady pace of advanced ITS deployments and active traffic management (ATM) and brings an integrated approach. Corridor partners work together to integrate operations, institutions and technologies. Multimodal ICM addresses recurring congestion (spikes in demand) and non-recurring congestion (crashes) by working across facilities (freeway and arterials) and multimodal operations (transit, bike sharing). ICM is a "system of systems" to better analyze and predict capacity to manage the transportation system. It is comprised of various elements, which work together in managing the transportation system including variable speed limits, lane control, managed detours with advanced traffic signal and ITS systems. Multimodal ICM makes it possible to connect traveler information to the public and freight with available capacity on freeways, on arterials, at park and rides and onboard transit vehicles. Regional TSMO funding was identified for an additional Multimodal ICM corridor in Clackamas County.

The planned update of the TSMO Strategy will identify a sequence for Multimodal ICM in priority corridors around the region. Much of the functionality developed for integrated operations will provide regional benefits, such as a predictive decision support system (DSS) allowing operators to see the results of potential operations scenarios in real-time and approve changes within minutes to lessen congestion impacts and support reliable travel by car, transit, freight vehicle, bike, etc.

Multimodal Traveler Information

There exists an ample amount of resources to help travelers in the Portland region decide when, where, and how they wish to travel. TripCheck, ODOT's online traveler information source (referred to nationally as 511), provides road conditions, weather alerts, camera images, camera video, parking capacity, trip planning, and travel updates via Twitter. In addition to its online trip planning tool, TriMet also provides bus arrival times through their pioneering transit tracker . Other traveler information sources in the region include variable message signs, highway advisory radio, and traffic cameras.

Metro aims to improve upon the region's traveler information resources by providing more accurate and comprehensive information by route, mode, and time of day. The information system stems from recent planning work toward Multimodal Integrated Corridor Management (ICM). Metro recognizes work ahead to share data, develop models and algorithms that help achieve policy outcomes for residents and the transportation system.

With the improved performance measurement capabilities noted above, not only will more information be disseminated to travelers, but it will be more accurate, reliable, and timely. TSMO investments are already being made to:

- Expand 24/7 travel time data for more arterials using bluetooth technology

- Enhance TripCheck to serve real-time data to Connected Vehicles starting with Signal Phasing and Timing (SPaT) and intersection lane designations (referred to as MAP).
- Improve transit data by updating light-rail vehicles with GPS and more advanced real-time estimates of on-board capacity for passengers
- Incorporate recent data sources such as transmissions to and from connected or automated vehicles using Dedicated Short-Range Communications (DSRC) and bike, walk and roll trip data generated by cameras that process video using artificial intelligence

Regional Travel Options (RTO) and Safe Routes to Schools Programs and Regional Travel Options Strategy

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.

Transportation System Management and Operations 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 monitoring to support the region's congestion management process:

- **Regional policy development and implementation.** The program maintains and periodically updates the Transportation System Management and Operations Strategy. The program provides leadership on regional Intelligent Transportation Systems (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 data communications network under the 2016 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) and Multimodal Integrated Corridor Management (ICM). 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 data collection and employ tools such as 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.

Regional Transportation Safety Program and Regional Transportation Safety Strategy

Metro is formalizing regional transportation safety activities in a new Regional Transportation Safety Program to support Vision Zero 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 include:

- annual reporting of federally-mandated safety performance targets;
- annual reports to the Metro Council and JPACT;
- 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;
- safety data collection, maintenance, analysis and interpretation;
- activities to coordinate with partners and increase awareness of Vision Zero 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.

Regional Freight Program and Regional Freight Strategy

The Regional Freight Program manages updates to and implementation of multimodal freight elements in the 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.

The freight strategy defines a vision, policies and investments that support the greater Portland region's role as the freight transportation and trade gateway for the state of Oregon and many southwest Washington businesses. A variety of products are exported from or travel to this region, like the crops shipped from Willamette Valley farms or microchips manufactured in Hillsboro. In addition, nearly all foods, clothing, construction materials, medical supplies, etc. that residents and businesses rely on daily come from outside the region. Forecasts predict twice as much freight will travel within and through the greater Portland region by 2040.

New freight policies seek to help improve safety and better manage roads that provide critical access to and connections between industrial centers, ports, rail yards, shipping facilities and the Interstate and state highway system. Implementation of freight projects and actions identified in the strategy will expand shipping choices, improve safety and reliability and reduce delays in the flow of goods and services throughout the region.

Performance Measurement and Monitoring

In order to monitor and evaluate the regional transportation system, Metro is working with regional partners to refine and implement future performance measurement systems. Expanded data collection is a critical part of this effort.

Metro's Research Center is currently evaluating new datasets (i.e., Replica and HERE) that could allow for the expansion of future monitoring activities to include the arterial system. In addition, the Metro Research Center is in the early stages of developing an agency-wide performance measurement system that will seek to incorporate and regularly update (with observed data from sources such as Replica and HERE) the key measures identified in the CMP.

Other work is happening to expand PORTAL, arterial data collection and the region ITS network to support the region's CMP.

PORTAL

PORTAL is a traffic information system developed by Portland State University's ITS Lab. The purpose of the system is to implement the U.S. National ITS Architecture's Archived Data User Service (ADUS) for the Portland Metro area. PORTAL shares U.S. Department of Transportation's vision to improve transportation decisions through the archiving and sharing of ITS generated data. As the regional traffic information data warehouse for the Portland Metro area, PORTAL requires continuous support, maintenance and upgrades. Currently PORTAL is integrated with Google maps and provides facility specific information on:

- Real time traffic speeds
- 15-minute average speeds of last five weekdays
- Live camera images
- Locations of incidents
- Total vehicle miles traveled
- Total vehicle hours traveled
- Average travel time
- Average traffic speed
- 95th percentile travel time
- 95th percentile traffic speed

The next stage in PORTAL development is to link GIS data with PORTAL to increase its capabilities. Future plans call for PORTAL reporting levels of congestion, travel time index, and additional freight, transit, and non-motorized data.

Arterial Performance Measurement

A substantial portion of the region's congestion is experienced on the regional arterial network. However, many of the region's arterials lack the traffic detection and communications infrastructure to adequately measure arterial system performance. As a result, Metro has made it a high priority goal to expand traffic monitoring and transportation system condition data collection capabilities on arterials throughout the region. Arterial performance measurement in the form of travel times, travel speeds, mode use, and potentially origin-destination data will support engineering and planning decision-makers, enabling more efficient investments of limited funds. Provision of this data in real-time or near real-time makes the data even more useful for transportation professionals and the traveling public.

Today, TSMO partners around the region make use of media access control (MAC) address reading technology at strategic locations to cover major arterials region wide. This data is stored and used in PORTAL. The arterial performance data, such as real-time speeds, is made available to the public. The data will be used to help predict travel times under recurring or non-recurring events.

Expanding ITS network to include Washington State

In a bi-state partnership effort, the regional ITS network includes Clark County, Washington DOT and soon will include C-Tran. The TSMO program funded a portion of a larger bi-state travel time signage project for investment on I-84 as it makes an east-west connection for travelers going north-south on I-205 and I-5. This bi-state travel time project allows cars and freight vehicles to increase travel time reliability for changing conditions as they navigate from Wilsonville, Oregon to Vancouver, Washington and back. Metro will continue to work in close partnership with agencies in Washington State to create additional strategic connections with ITS networks across the Columbia River. Current discussions have included representatives from state DOT's; transit agencies; and local, county, & regional governments from Oregon and Washington. As the Portland region is a part of the larger Portland-Vancouver Metropolitan area, this bi-state coordination will allow for more fluid management and assessment of the regional transportation system.

More activities that Metro is doing or will do to ensure that the region has the resources to fulfill its transportation performance measurement and reporting responsibilities are described in Chapter 8 of the RTP (see Section 8.5).

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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.

In a metropolitan area as big as Portland, we can do a lot of things better together. Join us to help the region prepare for a happy, healthy future.

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