



## Metro | Agenda

Meeting: 2014 Regional Transportation Plan (RTP) Implementation workshop  
Date: September 29, 2014  
Time: 1 pm to 3:00 pm  
Place: Metro Council Chambers  
Purpose: Provide recap of what's new in the 2014 RTP to help guide future local transportation system plan (TSP) updates

---

<b>1 p.m.</b>	<b>Welcome</b> <ul style="list-style-type: none"><li>• Introduction and meeting purpose</li></ul>	John Mermin
<b>1:05pm</b>	<b>Recap of 2014 RTP foundational information with Q&amp;A</b> <ul style="list-style-type: none"><li>• Updated transportation model and land use forecast</li><li>• Economic/demographic/travel trends</li></ul>	John Mermin
<b>1:30pm</b>	<b>Recap of Regional Safety plan updates to the RTP with Q&amp;A</b>	Anthony Buczek
<b>2:00pm</b>	<b>Recap of Active Transportation Plan updates to RTP with Q&amp;A</b>	Lake McTighe
<b>2:30pm</b>	<b>RTP - TSP Consistency &amp; Next Steps with Q&amp;A</b>	Tom Kloster

### **Materials:**

- *RTP Fact Sheets – Bicycles, Pedestrians, Transit, Freight, Management & operations, Travel options, Building a complete street system*
- *Examples of 2014 RTP – TSP Consistency*
- *Schedule for compliance with Regional Transportation Functional Plan*

## TSP Consistency with the updated 2014 RTP

What is new in the 2014 RTP?	TSP consistency with the 2014 RTP
<p>1. Updated the typical number of lanes in Arterial and Throughway Design Concepts, recognizing that flexibility is needed to achieve street goals and achieve context-sensitive design: changed to allow for <u>less than four lanes</u> for arterials and allow for <u>up to four lanes</u> for collectors.</p>	<p><i>For consistency with the RTP, TSPs should consider and must allow for RTP design concepts.</i></p> <p>Example(s) from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• <u>2004 Hillsboro TSP (Chapter 2, Goals and Policies, p. 2-3):</u> "Goal 6 - Livability: Transportation facilities shall be designed and constructed in a manner which enhances the livability of Hillsboro. Policy 2. Relate the design of street capacity and improvements to their intended use."</li> </ul>
<p>2. Updated Arterial and Throughway Policies:</p> <ul style="list-style-type: none"> <li>• Updated complete streets policy to be consistent with national policy</li> <li>• Added recommendation for arterial calming strategies and medians/access management on streets with four or more lanes, countermeasures to improve safety, and objective performance measures for arterials</li> <li>• Added reference to the need to consider traffic speeds, volumes and volume of heavy trucks in pedestrian and bicycle design</li> <li>• Clarified that local and collector streets are part of the regional transportation system when they are identified on the Regional Pedestrian or Bicycle Networks</li> <li>• Added new data that demonstrates that auto mobility can be maintained or enhanced with complete streets designs.</li> </ul>	<p><i>For consistency with the RTP, TSPs should reflect the RTP Arterial and Throughway Policy elements.</i></p> <p>Example(s) from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• <u>2013 Oregon City TSP (Vol.2, Sec. C Street Network &amp; Connectivity, p.1)</u> "Oregon City recognizes that all roadways within the City should be multi-modal or complete streets, with each street serving the needs of the various travel modes. The City also realizes that not all streets should be designed the same."</li> <li>• <u>2013 City of Gresham TSP (Pedestrian policies, p.41-42):</u> "Improvements that enhance a pedestrian's experience while crossing intersections include refuge islands, curb extensions, reduced curb radii, crossings at right angles and slower traffic speeds....Providing adequate crossing opportunities is a high priority for the City because of the many arterials that traverse Gresham."</li> </ul>
<p>3. Updated Arterial and Throughway Network map and System Design map to reflect TV Highway Corridor Plan: TV Hwy now classified as "Major Arterial" instead of "Principal Arterial" and "Regional Street" instead of Throughway</p>	<p><i>For consistency with the RTP, TSPs should reflect the new functional classification for TV Hwy:</i></p> <p>Example from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• <u>2035 Washington County TSP (update underway)</u> classifies TV Highway as an "arterial" rather than a "principal arterial."</li> </ul>
<p>4. Added integrated active transportation concept that integrates transit, bike and pedestrian networks so all three work better for users; includes ten network guiding principles.</p>	<p><i>TSPs should include or reflect the active transportation network guiding principles and reference the inherent integrated nature of transit, walking and bicycling.</i></p> <p>Example(s) from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• Most TSPs include some elements of the guiding principles. All TSPs include plans for pedestrian and bicycle access to transit.</li> </ul>

What is new in the 2014 RTP?	TSP consistency with the 2014 RTP
<p>5. Updated Pedestrian and Bicycle Policies and Concepts:</p> <ul style="list-style-type: none"> <li>• Pedestrian Parkway concept – pedestrian oriented, accessible transit, destination-rich pedestrian corridors</li> <li>• Bicycle Parkway – seamless, connected network of comfortable and safe bikeways making bicycle travel convenient, efficient and enjoyable; forms spine of entire bikeway network</li> <li>• Bicycle Districts – areas with a concentration of destinations and high levels of current (or planned) bicycle activity</li> <li>• Emphasis on biking and walking connectivity and tightly spaced facilities</li> <li>• Added emphasis on making walking and bicycling not only safe, but enjoyable, convenient, comfortable, efficient for all ages and abilities</li> <li>• Policy to make walking and bicycling the most convenient travel choice for short trips</li> <li>• Identifies frequent safe street crossings as essential to pedestrian and bicycle connectivity and safety, especially on multi-lane arterials and at all transit stops</li> <li>• Emphasis on equity and access for all ages and abilities</li> <li>• Acknowledgement of the economic benefit of complete bike, pedestrian, and transit networks</li> </ul>	<p><i>For consistency with the RTP, TSPs should reflect the RTP Pedestrian and Bicycle Policies.</i></p> <p>Example(s) from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• Closely spaced facilities: <u>Wilsonville TSP (Ch.3 The Standards, P.3-6)</u>: “Bicyclists and pedestrians benefit the most from closely spaced facilities because they are the most affected by distance. By providing walking and biking facilities spaced less than 300 feet apart, Wilsonville will support walking and biking use within and between its neighborhoods. In addition, these connections can improve access to transit.”</li> <li>• Safe, convenient, comfortable, convenient...<u>Clackamas County Comprehensive Plan - Active Transportation Vision</u>: “Create an environment which encourages people to bicycle and walk on networked systems that facilitate and promote the enjoyment of bicycling and walking as safe and convenient transportation modes.”</li> <li>• Bike/walk as primary mode: <u>2007 Portland TSP (Pedestrian Modal Plan, p.5-82)</u>: “Objective A. Providing for pedestrians should be a primary mode of transportation throughout the City. Ensure that the safety and convenience of pedestrians are not compromised by transportation improvements aimed at motor vehicle traffic.” Updated TSP should acknowledge that bicycling is considered a primary mode of transportation.</li> <li>• Frequent safe crossings, especially on arterials and at all transit: <u>2010 Beaverton TSP (6.4 Developing a Financially Constrained Transportation Plan, p. VI-17)Pedestrian Improvements</u>: “...needs include safe, direct and convenient access to transit and crossings of large arterial streets which act as barriers to pedestrian movement, marked crossings at major transit stops...”</li> <li>• All ages and abilities: <u>2013 Tualatin TSP (Goals and Objectives, p. 7)</u>: “Safety: Improve safety for all users, all modes, all ages and all abilities within the City of Tualatin.” “Equity: Consider the distribution of benefits and impacts from potential transportation options, and work towards fair access to transportation facilities for all users, all ages, and all abilities.”</li> </ul>
<p>6. Updated and added Regional Bicycle and Pedestrian Functional Classifications, including the creation of regional bicycle districts</p>	<p><i>For consistency with the RTP, TSPs should reference regional functional classifications. TSP functional classification names can be different, but must be consistent in concept and reflect the same hierarchy. If TSPs do not assign functional classifications to bicycle and pedestrian facilities, existence of regional classifications should be acknowledged.</i></p> <p>Example(s) from recently adopted TSPs:</p>

What is new in the 2014 RTP?	TSP consistency with the 2014 RTP
	<ul style="list-style-type: none"> <li>• <u>Portland's TSP 2007</u> includes helpful comparison tables of modal classifications (Pedestrian, p. 5-73; Bicycle p.5-96). TSPs should be updated to include similar comparison tables for pedestrian and bicycle classifications, including districts.</li> <li>• <u>Portland Bicycle Plan for 2030 (will update Portland's TSP) (Part II. A framework for bicycling policy, p.28)</u> RTP Bicycle Parkways are identified as Major City Bikeways, an equivalent functional classification. There are a few RTP Bicycle Parkways (e.g. Foster Blvd) that are not identified as Major City Bikeways; these should be updated to reflect this classification in their current TSP update which will incorporate the City's Bicycle Plan.</li> </ul>
<p>7. Updated Pedestrian and Bicycle Network Maps – removed, added and/or updated status and/or alignment; updated functional classifications</p>	<p><i>For consistency with the RTP, TSP modal policy maps should include the same regional bicycle and pedestrian routes. A TSP can include a more network, but should not include fewer pedestrian and bicycle routes. Route alignments and functional classifications should be consistent. All TSP maps should be updated to be consistent with the regional maps.</i></p> <p>Example(s) from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• <u>2035 Washington County TSP (update underway)</u>: Bicycle and pedestrian maps are consistent with 2014 RTP network maps.</li> </ul>
<p>8. Added recommended design guidance for pedestrian and bicycle facilities to Regional System Design and Placemaking Concept including:</p> <ul style="list-style-type: none"> <li>• Emphasis on protected separation from autos</li> <li>• Emphasis on highest quality design to achieve transportation goals and targets</li> <li>• Wider standard bicycle lane: 6'</li> <li>• Acknowledgement of new facility designs such as buffered bike lanes and cycle tracks</li> <li>• Arterial traffic calming</li> <li>• Trail design guidance</li> </ul>	<p><i>For consistency with the RTP, TSPs should reference RTP design guidance.</i></p> <p>Example(s) from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• <u>2014 Clackamas County TSP (5.K. Design Policies, 5.K.2)</u>: "Seek out and implement innovative bicycle and pedestrian treatments that improve the convenience and safety of these facilities."</li> <li>• <u>2013 Oregon City TSP (Sect. G Future Needs Analysis, p.29)</u> The City identifies a "Menu of Potential Solutions" that are consistent with, but not as comprehensive as the RTP design guidance. For example, "cycle tracks" are not identified as a potential bicycle solution. This should be included in the next update.</li> <li>• <u>2013 Wilsonville TSP (Ch.3 The Standards, p.3-10)</u> Bike lanes are provided on arterial and collector streets throughout Wilsonville. They are usually 6 feet wide and adjacent to motor vehicle travel lanes (cross-section standards shown in Figures 3-6, 3-7, and 3-8).</li> <li>• <u>2013 Wilsonville TSP (Ch.3 The Standards, p.3-19)</u> City provides description with illustrations/cross-sections. "Buffered bike lanes (buffer between travel lane and bike</li> </ul>

What is new in the 2014 RTP?	TSP consistency with the 2014 RTP
	<p>lane) and cycle tracks (parking and/or other buffer between travel lane and one- or two-way bike facility) are two alternate bicycle facility options that are gaining popularity throughout the United States and have been implemented in other parts of the Portland Metro area. Therefore, the design options shown below have been provided to allow the City flexibility to consider these bicycle treatments on their arterial and collector streets in place of typical bike lanes.”</p>
<p>9. Updated Transit Policy: Expanded emphasis on pedestrian and bicycle access to transit</p>	<p><i>For consistency with the RTP, TSPs should reflect the RTP Transit Policy elements.</i></p> <p>Example(s) from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• <u>2013 Wilsonville TSP (Ch. 4 Needs, P.4-13 to 4-14)</u> “Pedestrian and bicycle access to transit can help improve transit service by providing safe and convenient connections at either end of transit trips. Pedestrian and bicycle networks that provide access to transit stops and good connectivity to all destinations throughout the city are important. They encourage increased use of transit, walking, and bicycling, which are complementary travel modes and often used as part of the same trip. Some of the most important locations for access improvements include the Town Center Loop area and the Barber Street connection between Villebois Village and the SMART Central transit center. Other needs throughout the city should be addressed on an ongoing basis.”</li> <li>• <u>2013 Wilsonville TSP (Ch.5 The Projects, p.5-14)</u> “TI-01 Pedestrian Access to Transit: Construct sidewalk and curb ramp improvements at SMART stops throughout the city to meet ADA requirements, create safe street crossings, and connect new development with transit (includes retrofits at substandard stops).”</li> </ul>
<p>10. Updated TSMO Policies: Identified improved roadway safety as a benefit of travel behavior changes</p>	<p><i>For consistency with the RTP, TSPs should reflect the RTP TSMO Policy elements.</i></p> <p>Example(s) from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• <u>2007 Portland TSP (Chapter 2a, Introduction, Policy 6.15 Transportation System Management, p.2-27):</u> “Objective B. Employ transportation system management measures, including coordinating and synchronizing signals and intersection redesign, to improve mobility and safety for all modes of travel.”</li> </ul>
<p>11. Updated Fiscal Stewardship Goal and Objectives: make decisions guided by data and analysis</p>	<p><i>For consistency with the RTP, TSPs should reference the importance of using data and analysis in decision making for all transportation modes .</i></p> <p>Example(s) from recently adopted TSPs:</p>

What is new in the 2014 RTP?	TSP consistency with the 2014 RTP
	<ul style="list-style-type: none"> <li>• <u>Clackamas County Comprehensive Plan (5.B Road Safety Policies)</u>: “5.B.5 Support programs that utilize data-driven approaches to improve safety of the transportation system.”</li> </ul>
<p>12. Performance measure baseline data updated to 2010 and forecast year updated to 2040; performance outcomes updated. Baseline Infrastructure Target measure updated</p>	<p><i>For consistency with the RTP, TSPs are encouraged to use the RTP base and forecast years. TSPs must include performance targets for safety, vehicle miles traveled per capita, freight reliability, congestion, and walking, bicycling and transit mode shares to evaluate and monitor performance of the TSP.</i></p> <p>Example(s) from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• <u>2013 Oregon TSP (Vol.2, Plans and Policies Framework, p.8)</u> “RTP Performance targets: The Metro RTP established new performance targets (see Table 2) for safety, congestion, freight reliability, climate change, active transportation, sidewalks/trail/transit infrastructure, clean air, travel, affordability, and access to daily needs. The performance targets are regional goals that Oregon City TSP should work toward achieving.”</li> <li>• <u>2013 Oregon City TSP (Vol.1, The Outcome, p.68)</u> Though the City does not have as many local targets, the ones it does have are consistent with RTP targets; additionally, all RTP targets are referenced (see above).</li> <li>• <u>2013 Wilsonville TSP (Ch. 7 The Performance, p.7-2)</u> The City includes a local performance target for safety that is consistent with and goes beyond the RTP target – “Maintain collision rates below the statewide average and maintain zero fatalities.”</li> </ul>
<p>13. Increased emphasis on the relationship between health, built environment and transportation</p>	<p><i>For consistency with the RTP, TSPs should reference the direct relationship between health, the built environment and transportation.</i></p> <p>Example(s) from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• <u>2013 Oregon City TSP (Vol.1, The Vision, p.13)</u> The City acknowledges the impact of transportation on health and includes a goal for safety and enhancing health.</li> <li>• <u>2013 City of Gresham TSP (Chapter 1, Goals, p.5)</u> “Healthy Equity Goal - promoting health with adequate biking and walking routes and trails among all transportation system users.” (Street System Policies, p.105) “Policy 4: Ensure a street system that is safe and supports healthy, active living.”</li> <li>• <u>2010 Beaverton TSP (Goals and Policies, p. VI-3)</u>: Goal 6.2.1 Transportation facilities designed and constructed in a manner to enhance Beaverton’s livability and meet federal, state, regional, and local requirements. Policy (g) “Provide</li> </ul>

What is new in the 2014 RTP?	TSP consistency with the 2014 RTP
	convenient direct pedestrian and bicycle facilities to promote the health and physical well being of Beaverton residents, to reduce traffic congestion, to provide commuting and recreational alternatives to the motor vehicle, and to support local commerce.”
<p>14. Updated language to better reflect policy direction:</p> <ul style="list-style-type: none"> <li>• Removed the words “amenities” and “alternative” when referring to pedestrian and bicycle elements</li> <li>• Used crash instead of accident</li> <li>• Used un-biased, objective language. Examples: instead of improved, use increase or decrease; when referring to mobility, do not assume auto mobility – all modes desire efficient mobility; when using the term traffic, preface with auto, pedestrian, bicycle, all modes.</li> <li>• Used multi-use path in addition to trail</li> </ul>	<p><i>For consistency with the RTP, TSPs should use objective language that is consistent with policies, goals and objectives.</i></p> <p>Example(s) from recently adopted TSPs:</p> <ul style="list-style-type: none"> <li>• <u>2014 Clackamas County TSP (Foundation and Framework, p. 5-6):</u> 5.B. Road Safety Policies, 5.B.1 “Update the Clackamas County Transportation Safety Action Plan (TSAP) every five years to include necessary changes and document the progress toward the plan’s goal of a 50 percent reduction in fatal and serious injury crashes by 2022.”</li> <li>• <u>2007 Portland TSP (p. 5-112):</u> “The bicycle is an essential component in our efforts to develop a multi-modal transportation system and reduce our reliance on the automobile. No longer considered an ‘alternative’ means of travel, it plays an important role as a legitimate transportation choice.”</li> </ul>
15. Project List	<i>RTP project screening criteria requires that any project submitted must come from an adopted local plan.</i>

**Regional Transportation Functional Plan (RTFP) Compliance Deadlines** (*as of Sept 2014*)

<b>Jurisdiction</b>	<b>Adoption year of last Transportation System Plan (TSP) update</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Beaverton	2010	City is in compliance with RTFP		
Clackamas County	2013	County is in compliance with RTFP		
Cornelius	2005			•
Damascus	n/a	•		
Durham	<i>unknown</i>	Metro has issued exemption from RTFP through 2022		
Fairview	2000		•	
Forest Grove	2014	City is in compliance with RTFP		
Gladstone	1995		•	
Gresham	2013	City is in compliance with RTFP		
Happy Valley	2009	•		
Hillsboro	2004		•	
Johnson City	<i>unknown</i>	Metro has issued exemption from RTFP through 2022		
King City	<i>unknown</i>	Metro has issued exemption from RTFP through 2022		
Lake Oswego	1997	•		
Maywood Park	<i>unknown</i>	Metro supports an exemption from RTFP		
Milwaukie	2013	City is in compliance with RTFP		
Multnomah County	2006	•		
Oregon City	2013	City is in compliance with RTFP		
Portland	2007	•		
Rivergrove	<i>unknown</i>	Metro has issued exemption from RTFP through 2022		
Sherwood	2005	•		
Tigard	2010	City is in compliance with RTFP		
Troutdale	2013	City is in compliance with RTFP		
Tualatin	2013	City is in compliance with RTFP		
West Linn	2008	•		
Wilsonville	2013	City is in compliance with RTFP		
Washington County	2002	•		
Wood Village	2012	•		

The Compliance deadline is December 31 for the year indicated.



# Building a complete street system

# 2014

REGIONAL TRANSPORTATION PLAN

[www.oregonmetro.gov/rtp](http://www.oregonmetro.gov/rtp)

## RTP FACT SHEETS: ONE IN A SERIES

The 2014 Regional Transportation Plan sets the course for using innovation and creativity to build a sustainable transportation system. It calls for making transportation investments that serve downtowns, main streets, job centers and other areas of urban activity. It sets out the importance of offering a range of affordable transportation options for everyone. It suggests that transportation investments should boost our economy, increase access and opportunity for underserved communities and clean our air. And it calls for on-going monitoring to ensure that as time goes on our investments are effectively coordinated across communities to make the most of past investments and keep this region a great place.



Metro crosses city limits and county lines to build a resilient economy, keep nature close by and respond to a changing climate. Representing a diverse population of 1.5 million people in 25 cities and three counties, Metro's directly elected council gives voters a voice in decisions about how the region grows and communities prosper.

## The region's inherited street legacy

Though the region has changed dramatically over the past century, the shape of the region's major street network has changed little. Most major streets were once farm-to-market roads, many established along donation land claim boundaries at half-mile or mile spacing.

The region's throughway system evolved from the mid-1930s, when the first expressway was built from Portland to Milwaukie, to the completion of I-205 in the early 1980s. Much of the throughway system was built along the same donation land claim grid that shapes the regional street system, with most throughways following older farm-to-market routes or replacing major streets.

This inherited network design has proven to be an adequate match for the changing travel demands of a growing region. The Regional Transportation Plan applies the principles of this proven network to developing and undeveloped areas in the region, while seeking opportunities to bring developed areas closer to this ideal when possible.

## Defining a complete system

The 2014 RTP redefines the function of the regional street and throughway system.



*1890 street network in Portland region*

### Three policies form the RTP complete system vision

1. Build a well-connected network of "complete" streets that provide safe and convenient automobile, transit, freight, pedestrian and bicycle access
2. Improve local and collector street connectivity to complement major streets
3. Streamline system operations to maximize existing capacity prior to building new motor vehicle capacity

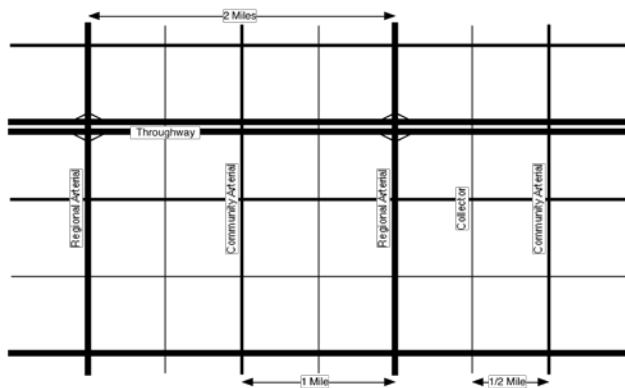
Rather than relying on levels of congestion to direct how and where to address motor vehicle capacity needs, the plan calls for creating a well-connected network that better serves all forms of travel.

In general, the roadway network should be designed to provide for trips through or across the region on throughways, shorter trips within communities on arterial streets and the shortest trips on collector and local streets.

This approach results in a traffic hierarchy of:

- *throughways (such as I-84, US 26, I-5 and I-205)*
- *arterial streets (e.g. Cornell Road, Powell Boulevard and Sunnyside Road)*
- *collector streets*
- *local streets.*

The RTP regional street and throughway network concept calls for one-mile spacing of major arterial streets, with minor arterial streets or collector streets at half-mile spacing, recognizing that existing development, streams and other natural features may limit the provision of these connections. The arterial street network is complemented by a well-connected system of collector and local streets.



This system of regional and local streets is multimodal in design, serving automobiles, motorcycles, trucks, transit, bicycles and pedestrians. The four-lane regional arterial street design reflects an optimal sizing for all of these modes, accommodating urban levels of traffic, while also allowing for safe and convenient bicycle and pedestrian travel and crossings at major intersections.

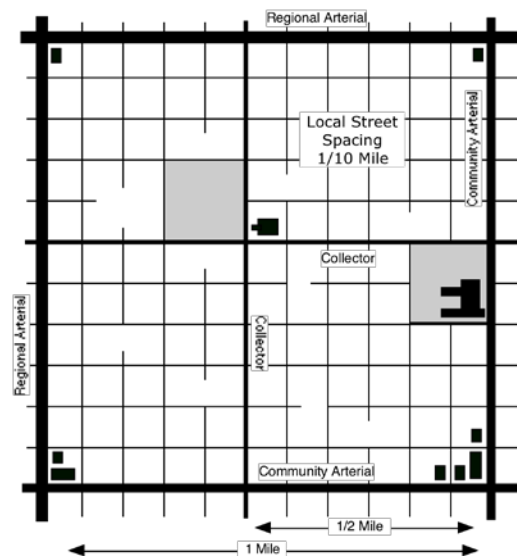
Under this construct, local streets and collectors are planned to consist of two lanes with turn lanes, major arterials are planned to consist of up to four lanes with turn lanes, and throughways are planned to consist of six lanes plus auxiliary lanes with grade separated interchanges or intersections. Therefore, before adding additional through lanes beyond the planned system, the 2035 RTP requires that plans and studies demonstrate the additional lanes do not compromise the function of the roadway for all travel modes.

**Throughways** usually span several jurisdictions and are of statewide importance linking the Metro area with points outside the region. Throughways typically consist of six through lanes, sometimes with auxiliary lanes, and grade-separated interchanges. These facilities serve as the workhorse for regional, statewide and interstate travel.

Throughways generally carry from 50,000 to 100,000 motor vehicles per day, providing for high-speed travel on longer motor vehicle trips and serving as the primary freight routes. Throughways connect major activity centers within the region, including the central city, regional centers, industrial areas and intermodal facilities.

**Arterials** provide for general mobility and connect major commercial, residential, industrial and institutional centers and link these areas to the throughway system. Arterial streets are usually spaced about one mile apart and are designed to accommodate trucks, automobiles, transit, bicycles and pedestrians. Arterial streets usually carry between 10,000 and 40,000 motor vehicles per day and allow higher speeds than collector and local streets.

**Local and collector street connectivity** provides community and neighborhood circulation. Although most local and collector are not part of the regional transportation system, they play an important supporting role. When local travel is restricted by a lack of connecting routes, local trips are forced onto regional facilities, impacting regional mobility.



Local jurisdictions are responsible for defining the network of local and collector streets within the mile-spacing grid of arterial streets. The RTP requires local street spacing of no more than 530 feet in new residential and mixed-use areas. Cul-de-sacs are limited to 200 feet in length to improve circulation. More frequent bike and pedestrian connections are required where collector and local streets are not possible.

# Regional street design and placemaking concept

Regional street design concepts are intended to support regional and local implementation of the 2040 Growth Concept. The 2040 Concept establishes guidelines for the physical design of the regional transportation system to foster livable communities throughout the region and encourage walking, bicycling and use of transit.

Streets perform many, often-conflicting functions. Conflicts among travel modes need to be reconciled for everyone's safety. The street design concepts promote community livability and mobility by balancing modes of travel and addressing the function and character of surrounding land uses. Linking land use and the physical design of transportation facilities is crucial to achieving state goals to limit reliance on any one mode of travel and to encourage walking, bicycling, carpooling, vanpooling, and use of transit.

The designs are based on Metro's Best Practices in Transportation Design handbooks, and vary depending on the intended function of the street and the land uses it serves. Consideration is given to various arterial designs, designs for pedestrians, bicyclists, transit, and trucks, and the link between street design and stormwater management.

## Regional design classifications

**Throughways** are limited-access facilities that serve longer-distance motor vehicle and freight trips, providing for interstate, intrastate and cross-regional travel. Throughways are classified as a principal arterial and connect major activity centers within the region to one another and to destinations outside the region.

**Regional boulevards** are facilities typically consisting of four or more vehicle travel lanes, balanced multimodal function and a broad right of way. Features highly desirable on regional boulevards include on-street parking, bicycle lanes, narrower travel lanes than throughways, more intensive land use oriented to the street and wide sidewalk features that may include a landscaped median. The right of way ranges from 80 to 120 feet or greater. These facilities are located within the most intensely developed activity centers with development oriented to the street. These are primarily central city, regional centers, station communities, town centers and some main streets.



*Metro's Best Practices in Transportation Design handbooks provide tools to integrate street designs with nearby land uses and the environment.*

**Regional streets** are facilities consisting of four or more vehicle travel lanes, balanced multimodal function, broad right of way, limited on-street parking, wider travel lanes than boulevards, corridor land uses set back from the street, sidewalks with pedestrian buffering from the street, and a raised landscaped median with turn pockets at intersections. The right of way ranges from 80 to 100 feet or greater. These facilities are located within low-density inner and outer residential neighborhoods to more densely developed commercial corridors and employment centers where development is set back from the street. They can be within main street districts where buildings are oriented toward the street at major intersections and transit stops.

**Community boulevards** are facilities that generally consist of two vehicle travel lanes, balanced multimodal functions, narrower right of ways than a regional boulevard, landscaped medians, on-street parking, narrower travel lanes than throughways, more intensive land use oriented to the street and wide sidewalks. The right of way ranges from 61 to 98 feet or greater. These facilities are located within the most intensely developed activity centers with development oriented to the street. These are primarily central city and regional centers, town centers, station communities and some main streets.

**Community streets** are facilities consisting of two to four travel lanes, a balanced multimodal function, narrower right of way than regional streets, on-street parking, narrower or fewer travel lanes than regional streets, and residential neighborhood and corridor land uses set back from the street. These facilities provide a higher level of local access and street connectivity than regional streets. They have the greatest flexibility in cross-sectional elements. The right of way ranges from 60 to 80 feet or greater.

## Designs for pedestrians, bicyclists and transit users

Street designs have a significant impact on people's ability to walk, bike and access public transit. Sidewalks and bikeways provide a route for non-motorized traffic and encourage walking and bicycling. Where appropriate, traffic calming measures such as narrower travel lanes, compact intersections and on-street parking can slow vehicle traffic and reduce traffic crashes for pedestrians, bicyclists, motorcyclists and motorists. The appropriate use of marked crosswalks, signs, signals and median islands make it easier for pedestrians and bicyclists to cross roads.

In addition, curb designs, ramps and crossing signals designed for the hearing and sight-impaired facilitate safe travel for people of all ages and abilities. Facilities and infrastructure such as street lighting, benches, waste containers, landscaped buffers that include trees, planters, lampposts and kiosks make the environment more attractive and create a sense of community and safety that encourages walking, bicycling and the use of transit. Well-designed sidewalks, benches, lighting, street trees and other urban design elements encourage more walking and provide for safe travel for people of all ages and abilities.

## Designs for stormwater management and natural resource protection

The public right-of-way has a well-documented effect on the health of the natural environment, particularly urban waterways. Streets, parking lots and driveways account for up to 65 percent of the total impervious surface area in the urban landscape. Street trees, vegetated swales and other green street treatments can intercept rainwater and convey stormwater in the public right-of-way adjacent to the region's streets. Refer to Metro's Green Streets handbook for more information on these designs.

It is especially challenging to address conflicts between transportation facilities and wildlife and riparian corridors, and to locate, design and construct transportation improvements to support riparian corridor and upland habitat protection plans. Infrastructure planning and design should first seek to avoid habitat conservation areas. Where that is not practicable, it should identify opportunities to mitigate the effects of transportation infrastructure. Where streets form barriers to wildlife movement, disruptions can be minimized through engineered solutions, such as wildlife-crossing devices and structures and the incorporation of corridor acquisition/restoration needs into transportation project development. Refer to Metro's Wildlife Crossings handbook for more information.

## Local street design regulations

According to the RTPF, city and county street design standards shall allow implementation of:

- Street designs consistent with Metro's Best Practices in Transportation Design guidelines
- Transit-supportive street designs that facilitate existing and planned transit service
- Pavement widths of less than 28 feet from curb to curb
- Sidewalk widths that include at least five feet of pedestrian through zones
- Landscaped pedestrian buffer strips, or paved furnishing zones of at least five feet, that include street trees
- Traffic calming devices, such as speed bumps and cushions, *woonerfs* and chicanes, to discourage traffic infiltration and excessive speeds
- Short and direct right-of-way routes and shared-use paths to connect residences with destinations
- Opportunities to extend streets in an incremental fashion, including posted notification on streets to be extended.

*\*For complete language, refer to the Regional Transportation Functional Plan (RTPF), section 3.08.110A & B.*

## Street connectivity regulations

To address arterial street connectivity standards, the RTPF states that each city and county shall incorporate into its transportation system plan:

- A network of major arterial streets at one-mile spacing and minor arterials/collectors at half-mile spacing, to the extent practicable.

To address local street connectivity standards, each city and county shall incorporate in its transportation system plan:

- A conceptual map of new streets for all contiguous areas of vacant and redevelopable lots and parcels of five acres or more that are zoned to allow residential or mixed-use development. If proposed residential or mixed-use development of five or more acres involves construction of a new street, the city and county shall require the applicant to provide a site plan that is consistent with regional connectivity standards (3.08.110 D,E)
- For redevelopment of contiguous lots and parcels less than five acres that require construction of new streets, cities and counties shall establish their own standards for local connectivity consistent with regional standards.

To protect capacity, function, and safety in the vicinity of state highway interchanges, cities and counties shall:

- Restrict driveway access to the extent feasible
- Encourage public streets, though access may be limited to right-in/right-out.

*\*For complete language, refer to the RTPF 3.08.110 C,D,E,F,G.*



# Planning for transit

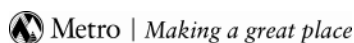
# 2014

REGIONAL TRANSPORTATION PLAN

[www.oregonmetro.gov/rtp](http://www.oregonmetro.gov/rtp)

## RTP FACT SHEETS: ONE IN A SERIES

The 2014 Regional Transportation Plan sets the course for using innovation and creativity to build a sustainable transportation system. It calls for making transportation investments that serve downtowns, main streets, job centers and other areas of urban activity. It sets out the importance of offering a range of affordable transportation options for everyone. It suggests that transportation investments should boost our economy, increase access and opportunity for underserved communities and clean our air. And it calls for on-going monitoring to ensure that as time goes on our investments are effectively coordinated across communities to make the most of past investments and keep this region a great place.



Metro crosses city limits and county lines to build a resilient economy, keep nature close by and respond to a changing climate. Representing a diverse population of 1.5 million people in 25 cities and three counties, Metro's directly elected council gives voters a voice in decisions about how the region grows and communities prosper.

## Growing transit in the future

Public transit has been an increasingly important part of the Portland region's transportation system over the past 25 years. The 2040 Growth Concept, which calls for focusing future growth in regional and town centers, station communities and corridors, depends on transit for its implementation. A regional public transit system, coupled with transit-supportive development patterns and policies that support taking transit, biking, and walking, help the region decrease dependence on automobiles, improve health, reduce overall transportation and housing costs, and reduce greenhouse gas emissions.

The 2040 Growth Concept sets forth a vision for connecting the central city to regional centers with high capacity transit. The Regional Transportation Plan expands this vision to include a complete network of regional transit along most arterial streets to better serve suburban communities. Existing land use mixes and future transit-oriented development potential should be considered and incorporated into service planning and station locations.



*At some point in their trip, all transit riders are pedestrians. High quality local and regional bicycle infrastructure extends the reach of the transit system, allowing more people to access transit from longer distances. The region prioritizes walking and biking to transit and deemphasizes driving to transit.*

### Six policies form the RTP transit network vision

1. Build the total system and transit-supportive land uses to leverage investments.
2. Expand high capacity transit.
3. Expand frequent service.
4. Improve local service.
5. Support expanded commuter rail and intercity transit service.
6. Improve pedestrian and bicycle access to transit.



*Investing in high capacity transit helps the region concentrate growth and development in its centers and corridors. This in turn minimizes the need to expand the urban growth boundary and supports the region's efforts to reduce greenhouse gas emissions.*

## Regional transit system functional classification

Chapter 2 of the 2014 RTP identifies nine functional classifications of the regional transit system.

**Light rail transit** in this region is TriMet's MAX service. It is a system of modern passenger rail cars operating on a fixed guideway within an exclusive right-of-way. Light rail transit serves the central city and regional centers as well as station communities and may also serve town centers and corridors. In addition, LRT serves regional public attractions such as the Washington County Fairgrounds, Providence Park, Oregon Convention Center, Oregon Zoo, Metropolitan Exposition Center and the Moda Center. Light rail transit service typically runs at least every 15 minutes throughout the day. It operates with limited stops and operates at higher speeds outside of downtown Portland. MAX is powered by overhead electric lines though some rail systems in other regions are powered by on-board diesel or electric motors. Main elements include rail vehicles, rail tracks, overhead electric lines, modern rail stations, signal priority at intersections, and integration with transit-oriented development strategies. A high level of passenger infrastructure is provided at transit stations and station communities, including schedule information, ticket machines, special lighting, benches, shelters, bicycle parking and commercial services. The speed and reliability of light rail transit can be maintained using transit signal priority at at-grade crossings and grade separation where possible.

**Streetcar services** are fixed guideway transit services mixed in traffic for locally-oriented trips within or between higher density mixed-use centers. Streetcar services provide local circulator service and can also serve as a potent incentive for denser development in centers. Service typically runs every 15 minutes or better. Streetcar routes can include transit preferential treatments, such as transit signal priority systems, and enhanced passenger infrastructure, such as covered real-time schedule information, bus shelters, curb extensions and special lighting. Streetcar services are distinguished from rapid streetcar services (defined below) by their operation in generally mixed-traffic lanes and with relatively short stop spacing.

**Rapid streetcar services** operate primarily in an exclusive right-of-way so that they are able to travel faster and more reliably than streetcars that operate primarily mixed in traffic.

**Intercity passenger rail** is part of the state transportation system and extends from the Willamette Valley north to British Columbia. Amtrak already provides service south to California, east to the rest of the continental United States and north to Canada. These systems can be integrated with other transit services within the Portland metropolitan region with connections at passenger intermodal facilities.

**Commuter rail services** provide short-haul rail passenger service operated within and between metropolitan areas and neighboring communities. This transit service operates in a separate right-of-way on standard railroad tracks, usually shared with freight use. The service is typically focused on peak commute periods but can be offered other times of the day and on weekends when demand exists and where rail capacity is available. The stations are typically located at least one mile apart, depending on the overall route length. Stations offer infrastructure for passengers, bus and light rail transit transfer opportunities, and parking as supported by adjacent land uses.

**Bus rapid transit** uses high capacity buses in their own guideway or mixed in with traffic, with limited stops and a range of transit priority treatments to provide speed, frequency, and comfort to users. This service typically runs at least every 15 minutes during the weekday and weekend mid-day base periods through frequencies may increase or decrease for individual applications based on demand. Stops are generally spaced one-quarter mile apart or more. Most stops have significant and easily identifiable passenger infrastructure, including waiting areas that are weather protected. Additional passenger amenities at stops may include real-time schedule information, trip planning kiosks,

ticket machines, special lighting, benches and bicycle parking.

**Frequent bus services** offer local and regional bus service with stops approximately every 750 to 1000 feet, providing corridor service rather than nodal service along selected arterial streets. These services typically run every 15 minutes or better throughout the day. Frequency may increase based on demand. Frequent bus services can include transit preferential treatments, such as reserved bus lanes and transit signal priority, and enhanced passenger infrastructure along the route and at major bus stops, such as covered bus shelters, curb extensions, special lighting and median stations.

**Regional bus services** operate on arterial streets with typical frequencies of 15 minutes during most of the day, though midday headways may drop to 30 minutes. Regional bus services may operate seven days per week, but not necessarily, based on demand or policy. Stops are generally spaced every 750 to 1000 feet. Transit preferential treatments and passenger infrastructure such as bus shelters, special lighting, transit signal priority and curb extensions are appropriate at some locations such as those with high ridership.

**Passenger intermodal facilities** accommodate or serve as transfer points to connect various transportation modes for the movement of people. Examples include Portland International Airport, Union Station, the Oregon City Amtrak station and intercity bus stations.

## HCT System expansion policy

High capacity transit is defined by its function: to carry high volumes of passengers quickly and efficiently from one place to another. Other defining characteristics of HCT service include the ability to bypass traffic and avoid delay by operating in exclusive or semi-exclusive rights of way, faster overall travel speeds due to wide station spacing, frequent service, transit priority street and signal treatments, and premium station and passenger amenities. The transit modes most commonly associated with high capacity transit include: light rail transit, bus rapid transit, rapid streetcar and commuter rail.

The high capacity transit system expansion policy emphasizes fiscal responsibility by ensuring that limited resources for new high capacity transit are spent where local jurisdictions have committed supportive land uses, high quality pedestrian and bicycle access, management of parking resources and demonstrated broad-based financial and political support.



*The regional transportation plan vision is to complete a network of regional transit along most arterial streets in the region to better serve suburban communities. Encouraging mixed-use development and providing sidewalk and bicycle connections to bus stops and transit stations are important local strategies that leverage existing transit services.*

Metro has provided guidance for the system expansion policy, available at [www.oregonmetro.gov/tsp](http://www.oregonmetro.gov/tsp). The purpose of the high capacity system expansion policy implementation guidance is to:

1. Clearly articulate the decision-making process by which future high capacity transit corridors will be advanced for regional investment.
2. Establish minimum requirements for corridor working groups to inform local jurisdictions as they work to advance their priorities for future high capacity transit.
3. Define quantitative and qualitative performance measures to guide local land use and transportation planning and investment decisions.
4. Outline the process for updating the Regional Transportation Plan, including potential future RTP amendments, for future high capacity transit investment decisions.

Following the high capacity transit system expansion policy guidelines will enhance support for transit investments, but does not guarantee a regional investment in high capacity transit. The ultimate decision rests with the Joint Policy Advisory Committee on Transportation (JPACT) and the Metro Council.



*Frequent transit service is important for attracting riders who take short and local trips.*

### **How do we track transit planning success with the RTP performance targets?**

By 2040:

- ✓ triple transit mode share compared to 2010
- ✓ increase by 50 percent the number of essential destination accessible within 30 minutes by public transportation compared to 2010

## **Local transit plans**

Prioritization of public transit projects to receive federal funding occurs through the regional decision-making process with participation of the public, cities, counties and transportation agencies of the region. Service providers such as TriMet and South Metro Area Regional Transit (SMART) may only apply to receive federal funds for projects that are included in the RTP. The RTP also requires service providers to consider those with special needs, such as the elderly and disabled, when undertaking annual service planning.

As described in the Regional Transportation Functional Plan, cities and counties are required to include the following in their transportation system plans:

- investments to provide pedestrian and bicycle connections to all existing transit stops and planned major transit stops shown in Figure 2.15 of the RTP
- improvements for transit access, transit stops and stations and transit service speed and reliability at light rail station areas and along rapid, frequent and regional bus corridors.

Local transportation system plans shall include a transit plan with the following actions:

- adopt a transit system map consistent with the RTP (see Figure 2.10, the regional transit network map in the RTP)
- amend development code regulations to require commercial development to locate buildings near major transit stops
- adopt site design standards for new retail, office, multifamily and institutional buildings located near or at major transit stops
- provide marked pedestrian crossings at major transit stops and direct and logical pedestrian crossings at other transit stops
- consider transit facility needs and Metro's *Creating Livable Streets* handbook when designing street improvements.

Providers of public transit service shall:

- consider and document the needs of youth, seniors, people with disabilities and environmental justice populations, including minorities and low-income families, when planning levels of service, transit facilities and hours of operation.

*\*For complete language, refer to the Regional Transportation Functional Plan, section 3.08.120 Transit System Design.*



# Planning for pedestrians

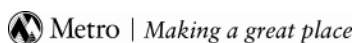
# 2014

REGIONAL TRANSPORTATION PLAN

[www.oregonmetro.gov/rtp](http://www.oregonmetro.gov/rtp)

## RTP FACT SHEETS: ONE IN A SERIES

The 2014 Regional Transportation Plan sets the course for using innovation and creativity to build a sustainable transportation system. It calls for making transportation investments that serve downtowns, main streets, job centers and other areas of urban activity. It sets out the importance of offering a range of affordable transportation options for everyone. It suggests that transportation investments should boost our economy, increase access and opportunity for underserved communities and clean our air. And it calls for on-going monitoring to ensure that as time goes on our investments are effectively coordinated across communities to make the most of past investments and keep this region a great place.



Metro crosses city limits and county lines to build a resilient economy, keep nature close by and respond to a changing climate. Representing a diverse population of 1.5 million people in 25 cities and three counties, Metro's directly elected council gives voters a voice in decisions about how the region grows and communities prosper.

## Walking – the primary transportation mode

Successful communities across America are increasingly defined by their walkability. Everyone is a pedestrian, but too often walking is not a safe and convenient option for getting to work or school or meeting daily travel needs. Walking, however, contributes to a healthy lifestyle and supports vibrant local economies.

As a primary mode of travel that serves short trips and supports other travel options, walking should be accessible, safe and enjoyable for everyone.

The combination of well-maintained and illuminated sidewalks of appropriate width, curb ramps, well-marked and protected street crossings, and streetscape amenities including benches, landscaping and wide planting strips make walking an appealing, convenient and safe mode of travel. On-street facilities can be supplemented with trails and separate sidewalk connections to provide direct and pleasant connections for pedestrians. A well-connected, high-quality pedestrian environment encourages walking by providing safe and convenient access to nearby destinations.

Regional pedestrian policies, network concepts, network maps and functional classifications were updated in the RTP through the development of the 2014 Regional Active Transportation Plan (ATP).



*A pedestrian crossing in downtown Milwaukie, Oregon, demonstrates a high quality pedestrian environment.*

### Five policies form the RTP pedestrian network vision

1. Make walking and bicycling the most convenient, safe and enjoyable transportation choices for short trips less than three miles.
2. Build a well-connected network of pedestrian routes, including safe street crossings, integrated with transit and nature that prioritize seamless, safe, convenient and comfortable access to urban centers and essential daily needs, including schools and jobs, for all ages and abilities.
3. Create walkable downtowns, centers, main streets and station communities that prioritize safe, convenient and comfortable pedestrian access for all ages and abilities
4. Improve pedestrian access to transit
5. Ensure that the regional pedestrian network equitably serves all people.

## Regional pedestrian classifications

The RTP identifies four regional pedestrian system functional classifications (Figure 2.20). These routes create the spine of the region's pedestrian network. The 2014 ATP provides recommended design guidance for developing the regional pedestrian network using a flexible toolbox based on adjacent auto traffic speeds and volumes. Chapter 9 of the 2014 ATP provides useful design guidance and lists nationally recognized resources for pedestrian facility design.

[oregonmetro.gov/activetransport](http://oregonmetro.gov/activetransport)

**Pedestrian Parkways** are the highest functional class for routes on the regional pedestrian network. They are high-quality and high-priority routes for pedestrian activity. Pedestrian Parkways are generally major urban streets that provide frequent and almost frequent transit service (existing or planned). They can also be regional trails. Adequate width and separation between pedestrians and bicyclists should be provided on parkways designed as multi-use trails.

**Regional Pedestrian Corridors** are the second highest functional class of the regional pedestrian network. On-street Regional Pedestrian Corridors are any major or minor arterial on the regional urban arterial network that is not a Pedestrian Parkway. Regional trails that are not Pedestrian Parkways are classified as Regional Pedestrian Corridors. These routes are also expected to see a high level of pedestrian activity.

**Pedestrian districts** are areas of high or potentially high pedestrian activity where the region has placed a priority on creating a walkable environment. These include the central city, regional and town centers, main streets and light rail station communities, where compact mixed-use, transit-oriented communities are planned. Pedestrian districts should be designed to reflect an urban development and design pattern where walking is safe and convenient.

**Local Pedestrian Connectors** are all streets and trails not included on the regional pedestrian network. Connectors, however, are an important element of the regional pedestrian network because they allow for door-to-door pedestrian travel.

## Connecting people to transit and everything beyond

Access to public transportation is enhanced by pedestrian improvements, especially those facilities that connect transit stations or bus stops to surrounding areas or that provide safe and attractive waiting areas. When people can walk and access reliable transit, they have better access to jobs, school, shopping and other essential destinations. For more information on good pedestrian planning and design, see TriMet's *Pedestrian Network Analysis* and Oregon Walks' *Getting Around on Foot Action Plan*.

## Local pedestrian plans

According to the Regional Transportation Functional Plan (RTFP), the following elements must be addressed in local plans:

- inventory of existing facilities that identifies gaps and deficiencies in the pedestrian system
- evaluation of needs for pedestrian access to transit and essential destinations for all mobility levels
- list of improvements to the pedestrian system that help the city or county achieve the regional non-single occupancy vehicle modal targets and other established targets
- provision for sidewalks along arterials, collectors and most local streets
- provision for the safe crossing of streets and controlled pedestrian crossings on major arterials
- provision for pedestrian districts within comprehensive plans or local land use regulations.

*\*For complete requirements, refer to the Regional Transportation Functional Plan, section 3.08.130 Pedestrian System Design.*

### How can we track pedestrian planning success with the RTP performance targets?

By 2040:

- ✓ reduce the number of fatal and severe injury crashes for pedestrians by 50 percent compared to 2007-2011 average
- ✓ triple pedestrian mode shares across the region compared to 2010
- ✓ increase by 50 percent the miles of sidewalks and trails compared to the regional network in 2010

*\*Essential destinations include hospitals, medical centers, grocery stores, schools and social service centers with more than 200 monthly LIFT pick-ups.*

# Planning for bicycles

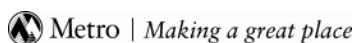
# 2014

REGIONAL TRANSPORTATION PLAN

[www.oregonmetro.gov/rtp](http://www.oregonmetro.gov/rtp)

## RTP FACT SHEETS: ONE IN A SERIES

The 2014 Regional Transportation Plan sets the course for using innovation and creativity to build a sustainable transportation system. It calls for making transportation investments that serve downtowns, main streets, job centers and other areas of urban activity. It sets out the importance of offering a range of affordable transportation options for everyone. It suggests that transportation investments should boost our economy, increase access and opportunity for underserved communities and clean our air. And it calls for on-going monitoring to ensure that as time goes on our investments are effectively coordinated across communities to make the most of past investments and keep this region a great place.



Metro crosses city limits and county lines to build a resilient economy, keep nature close by and respond to a changing climate. Representing a diverse population of 1.5 million people in 25 cities and three counties, Metro's directly elected council gives voters a voice in decisions about how the region grows and communities prosper.

## More bicycling in the future

Bicycling is a healthy, efficient, low-cost and sustainable way to get around the region, reducing air pollution and congestion while linking people to neighborhoods, parks, jobs and to other modes of transportation. The 2014 Regional Transportation Plan (RTP) provides a policy framework to guide development of a region-wide network of on-street and off-street bikeways, integrated with transit and supported by research, innovative design and educational programs to make bicycling safe, direct and enjoyable.

Regional bicycle policies, network concepts, network maps and functional classifications were updated in the RTP through the development of the 2014 Regional Active Transportation Plan (ATP).

New to the RTP is the Integrated Active Transportation Network Concept, which emphasizes the need to integrate walking, bicycling and transit to provide a variety of transportation options that work together. Ten Guiding Principles provide a framework for developing integrated active transportation with special attention to creating a network that is safe, comfortable, easy to use, and enjoyable. The network will provide access to destinations for all people, including people with low incomes, people of color, people with disabilities, people with low-English proficiency, youth and seniors.



*Regional trails, like the Springwater Corridor in Portland and Gresham, provide a safe and comfortable route for recreational and commuter bicyclists.*

### Five policies form the RTP bicycle network vision

1. Make walking and bicycling the most convenient, safe and enjoyable transportation choices for short trips less than three miles.
2. Build an interconnected regional network of bicycle routes and districts integrated with transit and nature that prioritizes seamless, safe, convenient and comfortable access to urban centers and essential daily needs, including schools and jobs, for all ages and abilities
3. Build a green ribbon of bicycle parkways as part of the region's integrated mobility strategy.
4. Improve bike-transit connections.
5. Ensure that the regional bicycle and pedestrian network equitably serves all people.

## Regional bicycle classifications

The RTP identifies five regional bicycle system functional classifications (Figure 2.18). These bikeways create the spine of regional and local bicycle networks. The 2014 ATP provides recommended design guidance for developing the regional bicycle network using a flexible toolbox based on adjacent auto traffic speeds and volumes. Chapter 9 of the 2014 ATP provides useful design guidance and lists nationally recognized resources for bicycle facility design. [oregonmetro.gov/activetransport](http://oregonmetro.gov/activetransport)

**Regional bicycle parkways** are the highest functional class for regional bikeways. Bicycle parkways are spaced approximately every two miles in a spiderweb-grid pattern across the region, and connect to and through every urban center, many regional destinations and to most employment and industrial land areas, regional parks and natural areas. Bicycle parkways can be any type of facility, such as trails, buffered bicycle lanes, cycletracks or bicycle boulevards. Bicycle parkways are on routes that currently serve or will serve higher volumes of bicyclists and provide important connections to destinations.

**Regional bikeways** are the second functional class for bikeways and complete the regional bicycle network. Like regional bicycle parkways, they provide for travel to and within urban centers. Regional bikeways can be any type of facility, such as trails, buffered bicycle lanes, cycletracks or bicycle boulevards.

**Bicycle districts** are areas with a concentration of transit, commercial, cultural, educational, institutional and/or recreational destinations where bicycle travel is intended to be attractive, comfortable and safe. Bicycle districts are also areas with current or planned high levels of bicycle activity. Urban centers and station communities are bicycle districts.

**Bike-transit facilities** provide secure, protected large-scale bike parking facilities. Some facilities may include additional features such as showers, lockers, trip planning resources and bicycle repair.

**Local bikeways** are not identified as regional routes. However, they are an important part of the network. They are typically shorter routes with less bicycle demand and use than regional routes. They provide for door to door bicycle travel.



*The Sunset Transit Center Bike & Ride provides a large, secure, indoor parking area that makes the bike-transit connection much easier.*

## Local bicycle plans

The following elements of the Regional Transportation Functional Plan (RTFP) must be addressed in local plans:

- inventory existing facilities and identify gaps and deficiencies in the bicycle system
- evaluate needs for bicycle access to transit and essential destinations, including direct, comfortable and safe bicycle routes and secure bicycle parking, considering TriMet Bicycle Parking Guidelines and SMART Transit Master Plan
- list improvements to the bicycle system that help the city or county achieve the regional non-single occupancy vehicle modal targets and other established targets
- provide bikeways along arterials, collectors and local streets, and bicycle parking in centers, at major transit stops, park-and-ride lots and associated with institutional uses
- provide safe street crossings and controlled bicycle crossings on major arterials
- establish bicycle parking minimums.

*\* For complete requirements, refer to the Regional Transportation Functional Plan Section 3.08.140 and 3.08.410H.*

### How can we track bicycle planning success with the RTP performance targets?

By 2040:

- ✓ reduce the number of fatal and severe injury crashes for bicyclists by 50 percent compared to 2007-2011 average
- ✓ triple bicycling mode shares across the region compared to 2010
- ✓ increase by 50 percent the miles of bikeways and trails compared to the regional network in 2010
- ✓ increase by 50 percent the number of essential destinations accessible within 30 minutes by bicycling compared to 2010.

*\*Essential destinations include hospitals, medical centers, grocery stores, schools, and social service centers with more than 200 monthly LIFT pick-ups.*



# Planning for freight

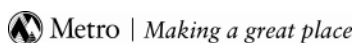
# 2014

REGIONAL TRANSPORTATION PLAN

[www.oregonmetro.gov/rtp](http://www.oregonmetro.gov/rtp)

## RTP FACT SHEETS: ONE IN A SERIES

The 2014 Regional Transportation Plan sets the course for using innovation and creativity to build a sustainable transportation system. It calls for making transportation investments that serve downtowns, main streets, job centers and other areas of urban activity. It sets out the importance of offering a range of affordable transportation options for everyone. It suggests that transportation investments should boost our economy, increase access and opportunity for underserved communities and clean our air. And it calls for on-going monitoring to ensure that as time goes on our investments are effectively coordinated across communities to make the most of past investments and keep this region a great place.



Metro crosses city limits and county lines to build a resilient economy, keep nature close by and respond to a changing climate. Representing a diverse population of 1.5 million people in 25 cities and three counties, Metro's directly elected council gives voters a voice in decisions about how the region grows and communities prosper.

## Better integration of freight issues in regional and local planning

The Portland – Vancouver region is a globally competitive international gateway and domestic hub for commerce. The freight transportation network is a foundation for the region's economic activities and must be strategically maintained, operated and expanded in a timely manner to ensure a vital and healthy economy.

Potential freight impacts should be considered in all modal planning and funding, policy and project development, implementation and monitoring.

A comprehensive systems approach is central to planning and managing the region's multimodal freight transportation infrastructure. This approach provides a strong foundation for addressing core throughway system bottlenecks, and recognizing and coordinating both regional and local decisions to maintain seamless flow and access for freight movement.

## Regional freight plan

The plan includes goals to guide freight investments and implementation:

*Goal 1 - System planning for efficient freight mobility and access*

*Goal 2 - System management to increase network efficiency*

*Goal 3 - Better public understanding of freight issues*



*The Port of Portland plays a major role in the region's freight network*

### Five policies form the RTP freight network vision

1. Use a system approach to plan for and manage the freight network.
2. Reduce delay and increase reliability.
3. Protect industrial lands and freight transportation investments.
4. Look beyond the roadway network to address critical marine and rail needs.
5. Pursue clean, green and smart technologies and practices.

*Goal 4 - Sustainable freight transportation system*

*Goal 5 - Freight sensitive land use planning*

*Goal 6 - Strategic transportation investments*

## Regional freight functional classification

Transport and distribution of freight occurs via a combination of publicly and privately owned networks and terminal facilities, connecting freight destinations within the region and linking the region to international and domestic markets and suppliers. The regional freight system in the RTP includes:

**Main roadway routes** connect major activity centers in the region to other areas in Oregon or the United States, Mexico and Canada. Main roadways in the region are I-5, I-84, I-205, US 26, and Hwy 217, 99E and 99W.

**Road connectors** connect freight facilities or freight generation areas to the main roadway routes, such as Columbia Boulevard or Marine Drive.

**Main railroad lines** are Class 1 rail lines including Union Pacific Railroad and BNSF Railway.

**Branch railroad lines** are non-Class 1 rail lines, including shortline or branch lines, such as the Portland and Western Railroad in Washington County.

**Marine facilities** are where freight is transferred between water-based and land-based modes, such as at the Port of Portland.

**Reload facilities** are the primary gateways for freight entering and leaving the region by truck. Many reload facilities are located in the Columbia Corridor near marine terminals.

**Air cargo facilities** direct access to an airport runway to transfer commodities between airplanes and land-based modes. The region's air cargo facility is located at Portland International Airport.

**Distribution facilities** are where freight is transferred from one land-based mode to another for further distribution, such as major distribution warehouses for grocery stores.

**Truck terminals** serve as a primary gateway for freight entering or leaving the region by truck. A truck terminal operates truck-to-truck transfers of commodities at various private transfer companies in the region.

**Intermodal rail yards** connect rail and truck transportation and serve the statewide, interstate and international movement of goods. Intermodal rail yards such as Brooklyn or Albina rail yards in Portland facilitate the transfer of containers or trailers.

### How can we track freight planning success with the RTP Performance targets?

- ✓ By 2040, reduce vehicle hours of delay for truck trips by 10 percent compared to 2010.

## Freight elements of local plans

Local plans can help design truck operations on truck routes or in industrial or commercial districts, and can also use zoning and development codes to avoid future conflicts between residents and freight operations (on high-traffic routes, at rail yards, ports, warehouses). According to the Regional Transportation Functional Plan (RTFP), city and county Transportation System Plans shall include a freight plan, with implementing land use regulations, for an interconnected system of freight networks within and through the city or county.

The plan shall include:

- an inventory of existing facilities that identifies gaps and deficiencies in the freight system
- an evaluation of freight access to freight intermodal facilities, employment and industrial areas and commercial districts
- a list of improvements to the freight system that help the city or county increase reliability of freight movement, reduce freight delay and achieve the targets established pursuant to section 3.08.230.

*\*For complete language, refer to the Regional Transportation Functional Plan Section 3.08.150 Freight System Design.*

Some considerations and resources to assist local jurisdictions in developing the freight element include:

- providing a way for freight and other stakeholders to meet and inform each other of needs and concerns, prior to planning or development decisions
- developing goals, objectives and policies to address goods movement and trade-related jobs
- consulting ODOT Region 1 to ensure compliance with ORS 366.215 if local public planning or private development actions might impact a state-owned roadway. This statute requires that the freight height/width/weight "envelope" for movement be maintained. Visit <http://www.oregon.gov/ODOT/TD/TP/ORS366.215.shtml>
- avoiding new and/or reduce existing entrances and exits onto roadways near major freight facilities or onto higher volume truck routes.

Consult <http://www.envisionfreight.com> for ideas and tools for freight planning in a multimodal environment.

# Planning for management and operations

# 2014

REGIONAL TRANSPORTATION PLAN

[www.oregonmetro.gov/rtp](http://www.oregonmetro.gov/rtp)

## RTP FACT SHEETS: ONE IN A SERIES

The 2014 Regional Transportation Plan sets the course for using innovation and creativity to build a sustainable transportation system. It calls for making transportation investments that serve downtowns, main streets, job centers and other areas of urban activity. It sets out the importance of offering a range of affordable transportation options for everyone. It suggests that transportation investments should boost our economy, increase access and opportunity for underserved communities and clean our air. And it calls for on-going monitoring to ensure that as time goes on our investments are effectively coordinated across communities to make the most of past investments and keep this region a great place.



Metro crosses city limits and county lines to build a resilient economy, keep nature close by and respond to a changing climate. Representing a diverse population of 1.5 million people in 25 cities and three counties, Metro's directly elected council gives voters a voice in decisions about how the region grows and communities prosper.

## Better management of the region's transportation system

Transportation System Management and Operations (TSMO) strategies provide money-saving, multimodal solutions that relieve congestion, optimize infrastructure investments, promote travel options and reduce greenhouse gas emissions.

### Making the most of transportation investments

TSMO investments include intelligent transportation system solutions such as traffic responsive signals, real-time traveler information, and services that respond quickly to traffic incidents or help people make informed travel choices.

The overarching theme of the TSMO concept is that the transportation infrastructure represents a significant public investment that must be well-managed. The RTP incorporates a more detailed modal plan that lays out a 10-year investment strategy for managing the performance of existing and future transportation infrastructure.

TSMO strategies support many regional transportation goals:

- improve travel time reliability
- reduce crashes
- improve transit on-time arrival
- reduce travel delay
- reduce fuel use
- reduce air pollution and greenhouse gas emissions

### Four policies form the RTP System Management and Operations vision

1. Use advanced technologies, pricing strategies and other tools to actively manage the transportation system.
2. Provide comprehensive multimodal travel information to people and businesses.
3. Improve incident detection and clearance times on the region's transit, arterial and throughway networks.
4. Implement incentives and programs to increase awareness of travel options and promote change.



*Bike signal eases  
travel at busy  
Portland intersection.*



*Motorist assistance  
clears incidents quickly  
to relieve congestion.*



*Real-time traveler  
information helps  
riders make informed  
decisions.*



*Collaborative  
marketing raises  
awareness about  
travel choices.*

# Regional TSMO plan

## Vision, goals, and principles

The regional TSMO plan presents a vision, goals and principles that guide TSMO investment and implementation.

*Goal 1 – Reliability*

*Goal 2 – Safety and Security*

*Goal 3 – Quality of Life*

*Goal 4 – Traveler Information*

*Guiding Principle 1* – Enhance regional partnerships that support collaborative investment and implementation of TSMO strategies that benefit the region.

*Guiding Principle 2* – Monitor transportation system performance and evaluate TSMO strategies to aid equitable policy and sustainable investment decisions.

*Guiding Principle 3* – Provide on-going maintenance and operations to support transportation network.

## Investment priorities

The Regional TSMO Plan identifies four areas where investment should be targeted:

**Multimodal traffic management** provides arterial and freeway multimodal traffic management and operations functions including advanced traffic signals, transit priority treatments, detection and countdown timers for pedestrians and bicyclists, pricing, access management and arterial performance monitoring and data collection.

**Traveler information** provides current and forecasted multimodal travel conditions reported via web site, smart phone apps, 511 phone system, en route signage, highway advisory radio or personal in-vehicle navigation systems to help people make better informed travel decisions, including travel mode, route and time of day.

**Traffic incident management** provides a coordinated, timely and efficient response to traffic incidents that block travel lanes, slow or stop travel and lead to unreliable travel times. Strategies include improved surveillance, expanded service, training and incident response teams.

**Transportation demand management** maximizes investments in the transportation system and relieves traffic congestion, particularly during peak commute hours. Strategies include collaborative and individualized marketing, employer outreach, and rideshare matching.

## How can we track the success of TSMO within the RTP Performance targets?

By 2040:

- ✓ Reduce the number of fatal and severe injury crashes for pedestrian, bicyclist and motor vehicle occupants each by 50 percent compared to the 2007-2011 average
- ✓ Reduce vehicle hours of delay per person and per truck trip by 10 percent compared to 2010
- ✓ Reduce transportation-related green house gas emissions per person below 2010 levels
- ✓ Ensure zero percent population exposure to at-risk levels of air pollution
- ✓ Reduce vehicle miles traveled per person by 10 percent compared to 2010.

## Local TSMO plans

The Regional Transportation Functional Plan (RTFP) includes requirements for incorporating TSMO into local transportation system plans. Cities and counties are required to include TSMO plans in their transportation system plans that:

- inventory and evaluate existing local and regional TSMO infrastructure, strategies and programs and identify needs, (i.e. gaps and opportunities) to expand existing infrastructure, strategies and programs
- list projects and strategies that are consistent with the regional TSMO plan and consider the four functional areas of multimodal traffic management, traveler information, traffic incident management and transportation management.

When defining transportation solutions, cities and counties are required to consider TSMO strategies, including localized transportation demand management, safety, operational and access management strategies first.

*\*For complete language, refer to the Regional Transportation Functional Plan, sections 3.08.160 Transportation System Management and Operations and 3.08.220 Transportation Solutions.*



# Planning for travel options

# 2014

REGIONAL TRANSPORTATION PLAN

[www.oregonmetro.gov/rtp](http://www.oregonmetro.gov/rtp)

## RTP FACT SHEETS: ONE IN A SERIES

The 2014 Regional Transportation Plan sets the course for using innovation and creativity to build a sustainable transportation system. It calls for making transportation investments that serve downtowns, main streets, job centers and other areas of urban activity. It sets out the importance of offering a range of affordable transportation options for everyone. It suggests that transportation investments should boost our economy, increase access and opportunity for underserved communities and clean our air. And it calls for on-going monitoring to ensure that as time goes on our investments are effectively coordinated across communities to make the most of past investments and keep this region a great place.



Metro crosses city limits and county lines to build a resilient economy, keep nature close by and respond to a changing climate. Representing a diverse population of 1.5 million people in 25 cities and three counties, Metro's directly elected council gives voters a voice in decisions about how the region grows and communities prosper.

## Managing transportation demand

Through providing information and encouragement, transportation demand management improves air quality and reduces car traffic by helping people drive less and choose travel options, such as walking, biking, taking transit or ridesharing.

Communities through the region have made significant investments in transit, bicycle and pedestrian facilities. The Regional Travel Options (RTO) program creates opportunities for cities and counties to improve the performance of this infrastructure.

### A regional program, carried out at the local level

Metro coordinates the marketing efforts of regional partners to ensure a consistent message is presented to the public. Metro measures and evaluates program investments and administers the regional rideshare program.

To invest in these activities, Metro manages a regional grant program to strategically allocate funds to public and private organizations across the region. A total of \$2.1 million is available biannually. Applications are now being accepted for the 2015-2017 RTO Grant Program. The deadline for submission of proposals is December 19, 2014.

The RTO program is guided by a five-year strategic plan, updated in 2012 in partnership with local governments, non-profits and other program

stakeholders, and adopted by the Joint Policy Advisory Committee on Transportation (JPACT) and the Metro Council. The Strategic Plan is available at [oregonmetro.gov/regional-travel-options-strategic-plan](http://oregonmetro.gov/regional-travel-options-strategic-plan)

### The Regional Travel Options program goals

1. Align the RTO program with regional economic development, growth management, and livability objectives.
2. Be a leader in developing local, regional, state, and national policies that promote walking, biking, transit, and high-occupancy vehicle travel
3. Support local partners to engage employers and commuters to increase the use of travel options for commute trips.
4. Develop tools to support the use of travel options to reduce drive-alone trips.



*Regional travel options programs and strategies help maximize use of cycling, walking and transit. This helps reduce auto trips and improve transportation system performance.*

## Regional Travel Options program priorities

The RTO strategic plan outlines several specific program funding target areas. These include:

**Employer outreach** Given that the greatest travel demand occurs during weekday commuting periods, travel demand management programs focus on increasing the share of trips that have a lower impact on the system. These strategies include rideshare matching, vanpooling, employer commuter services, expanded collaborative marketing campaigns for travel options, and employer or youth transit pass programs.

**Traveler information services** Improving the quality and availability of local information on various travel modes leads to more use of walking, cycling, transit and ridesharing. Successful strategies include bicycling and pedestrian wayfinding signage, and development and promotion of online tools such as transit and bicycle trip planners.

**Active transportation** Most of the growth in the number of trips across the region is for personal purposes, not commuting. Many personal trips are relatively short in distance (less than five miles) and can easily be completed by transit, walking or cycling. To support infrastructure investments in these active transportation modes, RTO programs provide information and encouragement to people interested in using these modes.

### How can we track the success of demand management with regional transportation plan performance targets?

By 2040:

- ✓ triple walking, biking and transit mode share compared to 2010
- ✓ reduce vehicle miles traveled per person by 10 percent compared to 2010
- ✓ reduce transportation-related carbon dioxide emissions per person below 1990 levels.

**Public-private partnerships** Stakeholders recognize the value of encouraging people to reduce auto trips to and within employment and commercial areas. Cities, and other organizations, including Transportation Management Associations, work with employees and visitors to bring about travel behavior change. Local jurisdictions are encouraged to work with these organizations to coordinate transportation demand management efforts.

**Individualized marketing** These are projects that focus on selected residential or employment areas, giving people information that encourages using active transportation modes, tailored to their unique trips and preferences.

**Regional marketing coordination** Ensuring that marketing messaging is consistent across the region increases public awareness of the availability and use of active transportation modes, and provides encouragement and incentives to help people choose these modes.

## Local demand management plan requirements

City and county transportation system plans shall include transportation system management and operations (TSMO) plans to improve the performance of existing transportation infrastructure within or through the city or county. According to the Regional Transportation Functional Plan, a TSMO plan shall include:

- an inventory and evaluation of existing local and regional TSMO infrastructure, strategies and programs that identify gaps and opportunities to expand infrastructure, strategies and programs
- a list of projects and strategies, consistent with the regional TSMO plan, based upon consideration of the following functional area:
  - transportation demand management investments, such as individualized marketing programs, rideshare programs and employer transportation programs.

*\*For complete language, refer to the Regional Transportation Functional Plan, section 3.08.160 Transportation System Management and Operations.*

## For further assistance

Need help developing RTO projects? Contact Metro RTO staff at [rto@oregonmetro.gov](mailto:rto@oregonmetro.gov).

[www.oregonmetro.gov/rtp](http://www.oregonmetro.gov/rtp)

**2014  
RTP  
UPDATE**



# **2014 Regional Transportation Plan Implementation Workshop**

**September 29, 2014**



**Metro** | *Making a great place*

# Today's Topics

1. Recap of 2014 RTP foundational info
2. Recap of Regional Safety Plan updates to RTP
3. Recap of Active Transportation Plan updates to RTP
4. RTP – TSP Consistency & Next Steps

# Materials

- RTP Fact sheets
- RTP – TSP consistency table
- Schedule for compliance with Regional Transportation Functional Plan





# **Recap of 2014 RTP**

## **Foundational information**

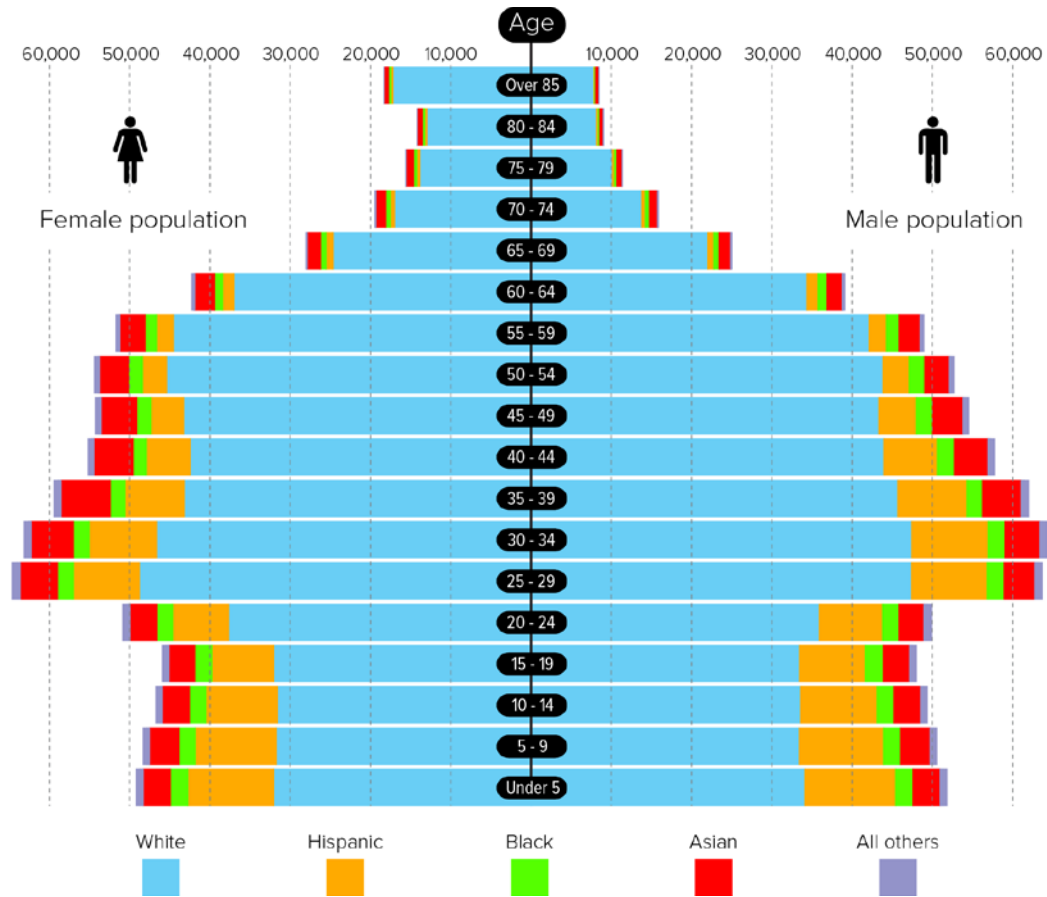
- Emerging demographic & economic trends
- Emerging travel trends
- Forecast / model implications for RTP

# Emerging demographic & economic trends

- Our region is growing and changing
- *Who we are*
  - Continued population growth
  - Entire region diversifying
  - Retiring baby boom generation
  - Burgeoning millennial generation
- *What we do*
  - Recovery from recession
  - Poverty as regional issue
- *Where we live*
  - Housing options needed



# Population pyramid



Source: 2010  
LEHD data



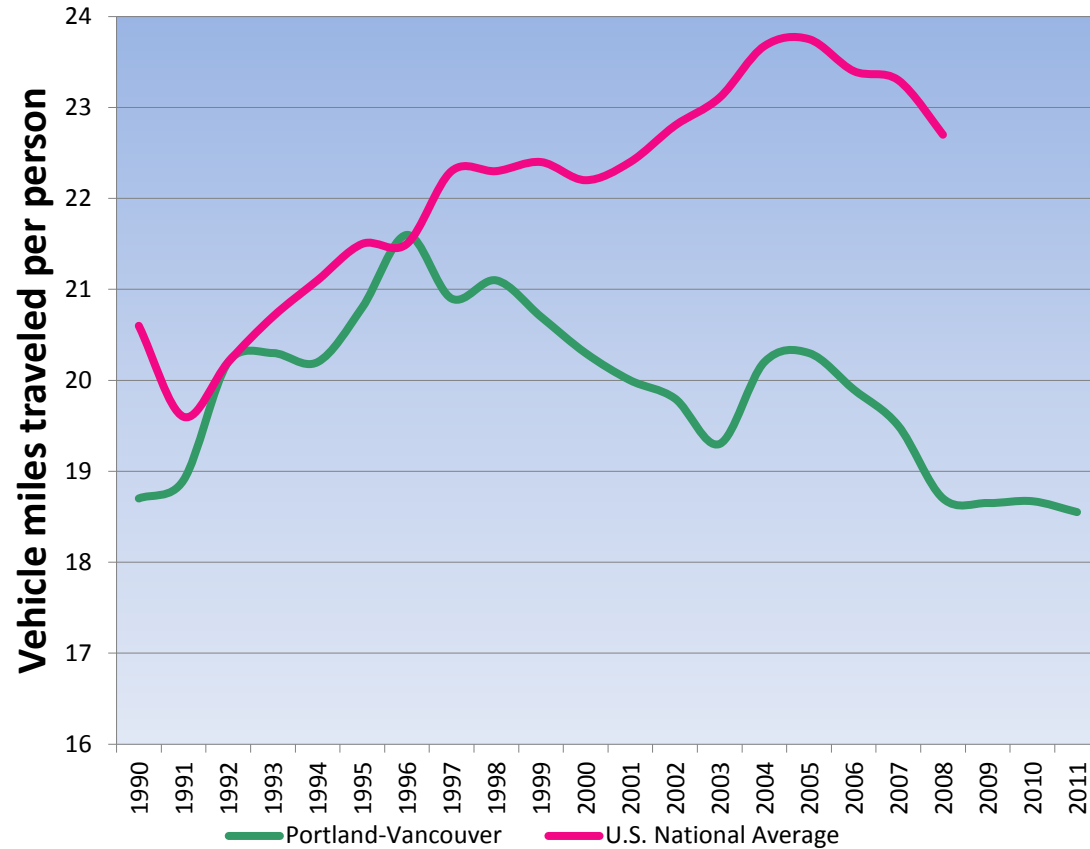
# Emerging travel trends

- Our travel habits are changing
- How we travel
  - Increased biking & transit, reduced driving
  - Differences by race and age
- Where we travel
  - Patterns vary across mobility corridors
- Safety, Health and Equity implications
  - Arterials have more crashes
  - Air toxics are an issue across region
  - Transportation & Housing cost burden

# We drive less than other regions

**Vehicle Miles Traveled Per Person (1990 - 2011)**

Source: FHWA, ODOT, WDOT

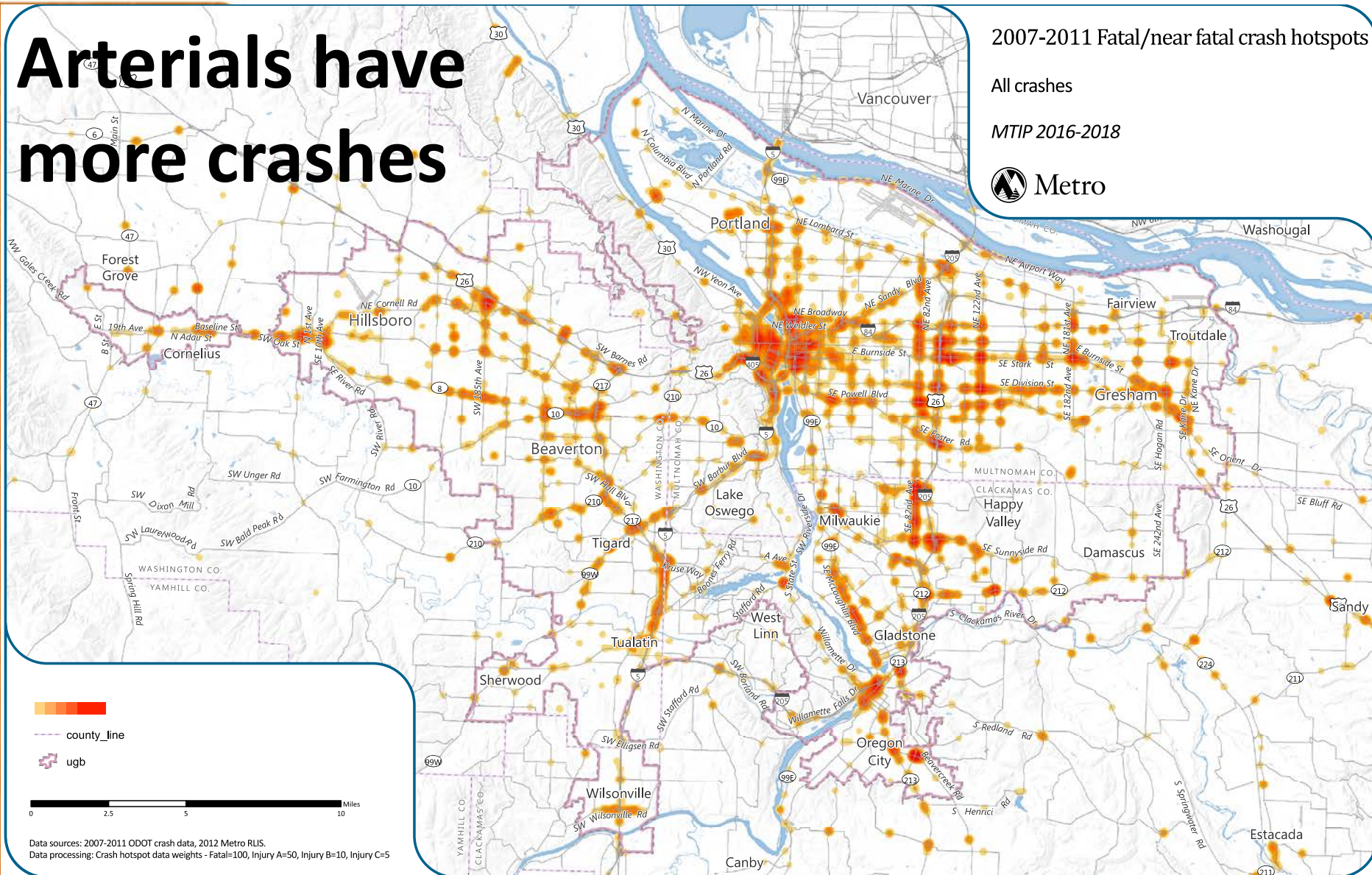


# Arterials have more crashes

2007-2011 Fatal/near fatal crash hotspots

All crashes

MTIP 2016-2018



Data sources: 2007-2011 ODOT crash data, 2012 Metro RLIS.  
Data processing: Crash hotspot data weights - Fatal=100, Injury A=50, Injury B=10, Injury C=5

# What's influencing the model

- Land use
  - Reduced number of jobs
  - Less wealth, smaller household size
- Model is reflecting current trends from new travel survey
  - Auto mode share reduced
  - Trip lengths are shortening



# Base HH and EMP assumptions in RTP

- Last RTP (2035 forecast year – 3 county)
  - Households: 946,600
  - Employment: 1,505,000
- 2014 RTP (2040 forecast year – 3 county)
  - Households: 992,200
  - Employment: 1,271,000
    - **Over 15% less than last RTP**



# New model outputs

- Model reflects current indicators
  - Auto-person mode share declines
  - Non-auto travel up – especially transit and bike
- Model has improved sensitivity to non-vehicle use
  - Transit time perceptions are dealt with more explicitly
  - Route experience is an integral part of the traveler's decision to bike

# Questions?



John Mermin

503-797-1747

[John.mermin@oregonmetro.gov](mailto:John.mermin@oregonmetro.gov)

[www.oregonmetro.gov/rtp](http://www.oregonmetro.gov/rtp)

**2014  
RTP  
UPDATE**



# RTP Safety Refinements



**2014 RTP Implementation Workshop  
September 29, 2014**

Anthony Buczek, PE, Metro Transportation  
Engineer



**Metro** | *Making a great place*

# RTP Performance Measure

Target	Performance	Finding
<b>Safety</b> – By 2035, reduce the number of fatal and severe injury crashes for pedestrians, bicyclists, and motor vehicle occupants each by 50% compared to 2007 – 2011 average.	Between –2007 - 2011: There were an annual average of:  63 fatal or severe injury pedestrian crashes  35 fatal or severe injury bike crashes  398 fatal or severe injury motor vehicle only crashes	Reducing the number of fatal and severe injury crashes by half would result in about 248 fewer people killed or severely injured, on average, in crashes in the Metro region each year.  The corresponding reduced societal cost of crashes would be approximately \$480 Million (2012 dollars) annually in the Metro region.

# RTSP Recommendations (2012)

Continue **data collection** and analysis of ODOT crash data.

Develop **performance measures** for identifying **high crash mobility corridors** and **high crash arterials** across the region.

Continued support of regional and state policies that seek to reduce VMT, including **multimodal facilities, transit, RTO, and TDM**.

Elevate safety to **equal importance as mobility** in regional policy.

Use strategies including Highway Safety Manual strategies to address safety on multi-lane roadways, such as **medians, speed management, access management, improved pedestrian crossings, roundabouts, and road diets**.

Develop **safe crosswalks** on arterials and multi-lane roads, generally adhering to the region's connectivity standard of 530 feet and at all transit stops.

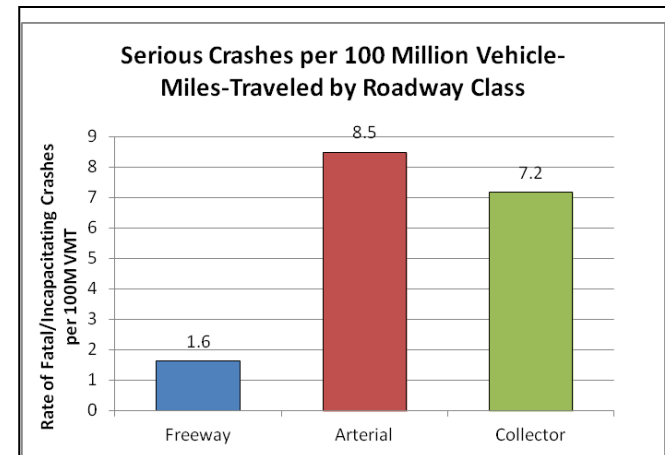
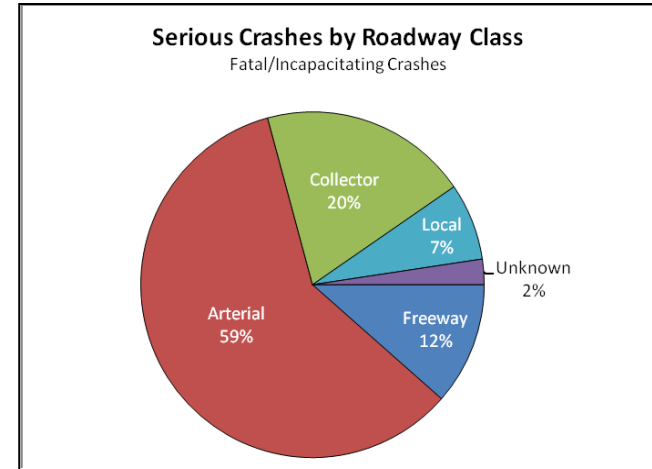
Ensure bike routes and crosswalks – marked and unmarked – are **adequately lit**.

Along high-volume and/or high-speed roadways, where feasible, provide **protected bicycle facilities** such as buffered bike lanes, cycle tracks, multi-use paths, or low-traffic alternative routes



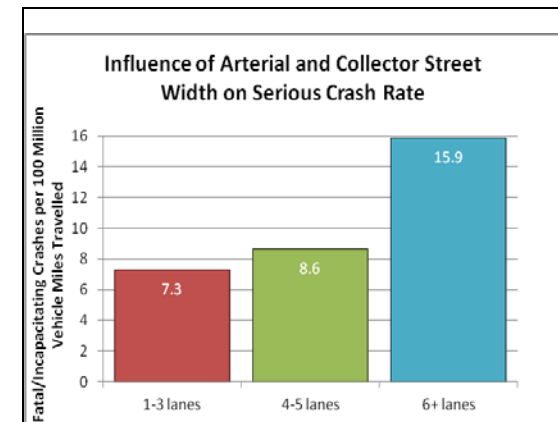
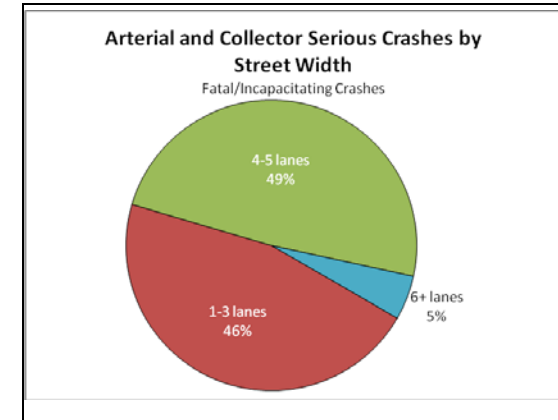
# Metro Regional Safety Data

- Arterials are the main problem
- 59% of all fatal/severe injury crashes
- Arterials include:
  - NE/SE 82<sup>nd</sup>
  - Foster
  - NE/SE 181<sup>st</sup>
  - NW/SW 185<sup>th</sup>
  - TV Hwy.
  - McLoughlin
  - etc.



# Metro Regional Safety Data

- Streets with more lanes have higher fatal/ severe injury crash rates
- Rate increases for 6+ lanes
- Consistent with AASHTO Highway Safety Manual



# Metro Regional Safety Data

Data indicates where we should focus effort for maximum safety benefit:

- Arterial roadways
- Multilane roadways

# 1. Performance Targets

Updated the performance measure based on the recommendations of the Regional Safety Workgroup:

- Reduce fatal and severe injury crashes by 50% for each mode (pedestrian, bicycle, motor vehicle) by 2035
- Set the baseline as the average between 2007 and 2011 (the first 5 years of Metro data available)

About 248 fewer people killed or severely injured in Metro region each year.

Reduced societal cost of approximately \$480M in the Metro region each year.

# Arterial Safety



## FHWA: 9 Proven Safety Countermeasures (2012)

Crash reduction

Safety Edge (non-curbed roads)	Rural treatment
Roundabouts	78% Fatal/Inj
Corridor Access Management	25-31% Fatal/Inj
Backplates with Retroreflective Borders	15% overall
Longitudinal Rumble Strips on 2-Lane Roads	Rural treatment
Enhanced Delineation/Friction for Curves F/I	16 – 43% overall
Medians & Pedestrian Crossing Islands	20-40% Fatal/Inj 46% pedestrians
Pedestrian Hybrid Beacon (HAWK signal)	29% overall 69% pedestrians
Road Diets (Roadway Reconfiguration)	29% overall



# Arterial Safety



## FHWA: 9 Proven Safety Countermeasures (2012)

Crash reduction

Safety Edge (non-curbed roads)	Rural treatment
Roundabouts	78% Fatal/Inj
Corridor Access Management	25-31% Fatal/Inj
Backplates with Retroreflective Borders	15% overall
Longitudinal Rumble Strips on 2-Lane Roads	Rural treatment
Enhanced Delineation/Friction for Curves F/I	16 – 43% overall
Medians & Pedestrian Crossing Islands	20-40% Fatal/Inj 46% pedestrians
Pedestrian Hybrid Beacon (HAWK signal)	29% overall 69% pedestrians
Road Diets (Roadway Reconfiguration)	29% overall

Urban/suburban measures

# Arterial Safety



## FHWA: 9 Proven Safety Countermeasures (2012)

Crash reduction

Safety Edge (non-curbed roads)	Rural treatment
Roundabouts	78% Fatal/Inj
Corridor Access Management	25-31% Fatal/Inj
Backplates with Retroreflective Borders	15% overall
Longitudinal Rumble Strips on 2-Lane Roads	Rural treatment
Enhanced Delineation/Friction for Curves F/I	16 – 43% overall
Medians & Pedestrian Crossing Islands	20-40% Fatal/Inj 46% pedestrians
Pedestrian Hybrid Beacon (HAWK signal)	29% overall 69% pedestrians
Road Diets (Roadway Reconfiguration)	29% overall

Urban/suburban measures relevant to RTP

## 2. Build a well-connected Network

Added text that medians and access management should be used on streets with 4 lanes or more where feasible. Medians would include openings for turn lanes and access points, as appropriate.

- Most of the region's fatal or severe injury crashes occur on roads with 4 or more lanes.
- Multilane roads have a higher rate of fatal and severe injury crashes, but medians and access management are some of the most effective safety countermeasures.
- 5-lane roads (with center turn lane) are the most hazardous road design we build.

## 2. Build a well-connected Network

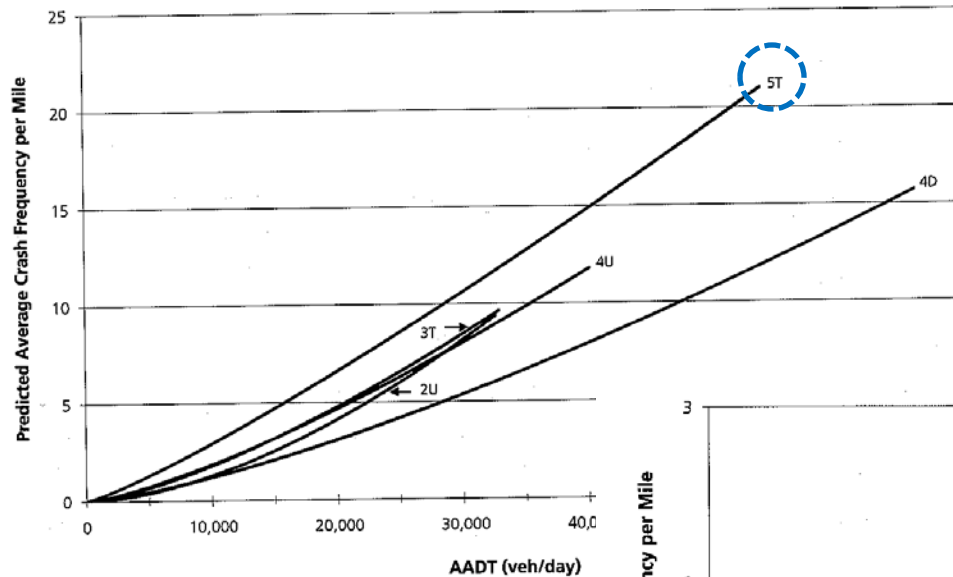


Figure 12-3. Graphical Form of the SPF for Multiple Vehicle Nondriven

5-lane roads with center turn lane have the highest crash rate across crash types

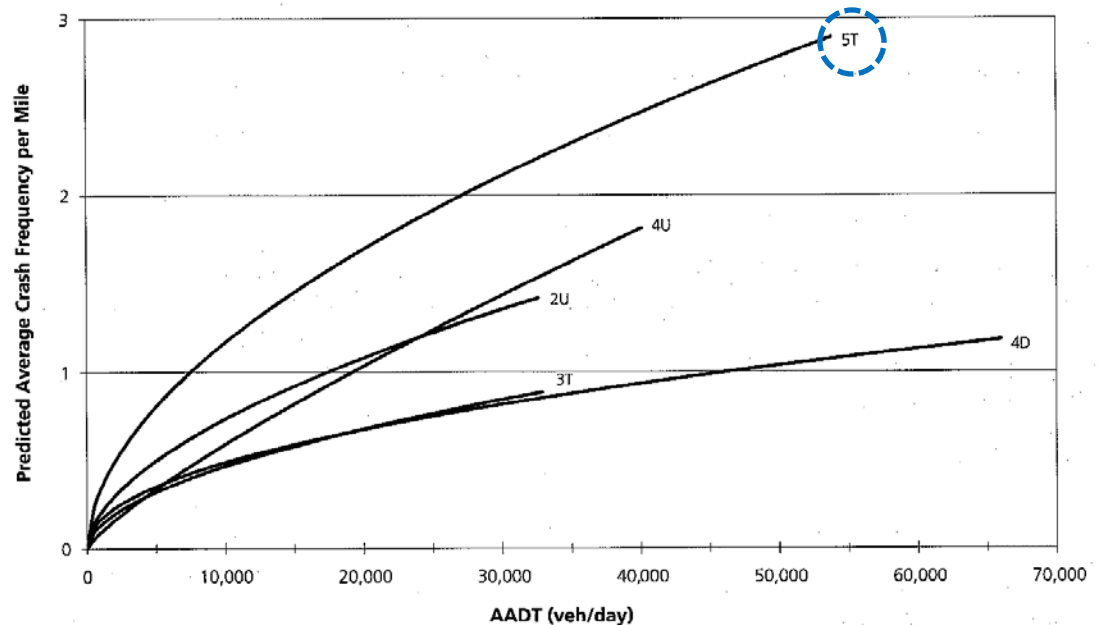


Figure 12-4. Graphical Form of the SPF for Single-Vehicle Crashes (from Equation 12-13 and Table 12-5)

Source:  
AASHTO Highway  
Safety Manual (2011)

## 2. Build a well-connected Network

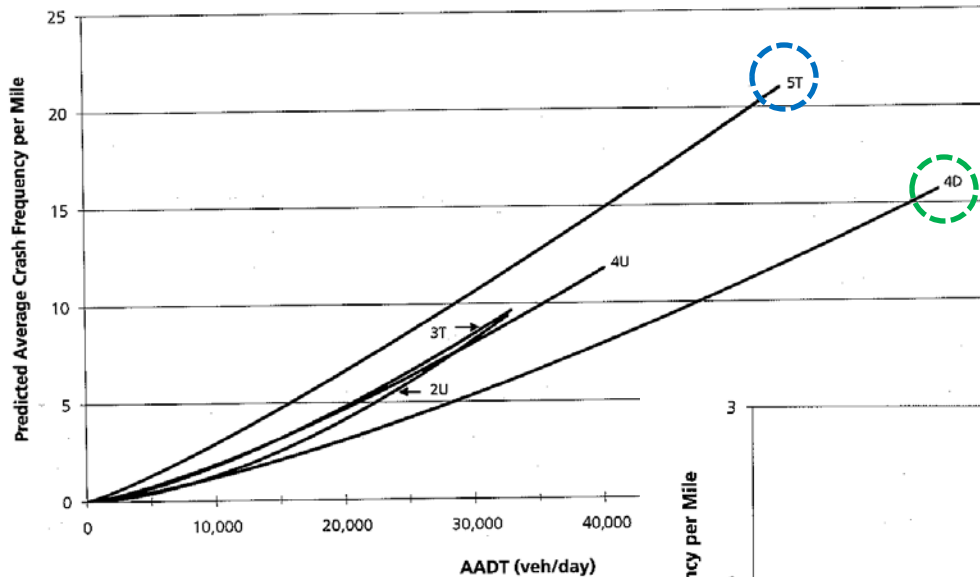


Figure 12-3. Graphical Form of the SPF for Multiple Vehicle Nondrivable

5-lane roads with center turn lane have the highest crash rate across crash types

4-lane divided roads are substantially more safe

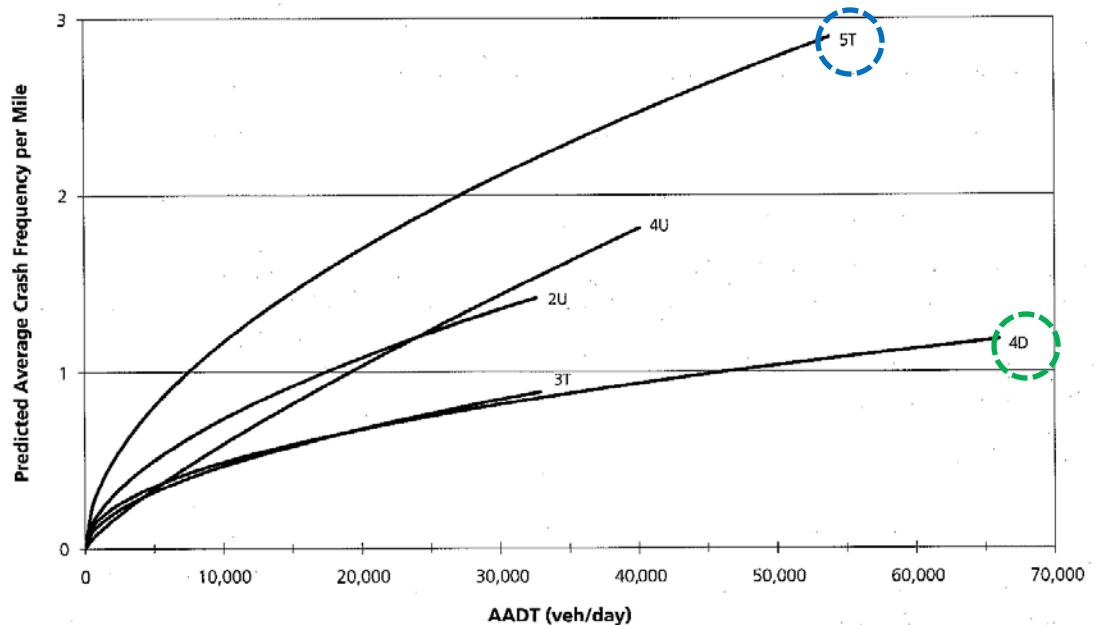


Figure 12-4. Graphical Form of the SPF for Single-Vehicle Crashes (from Equation 12-13 and Table 12-5)

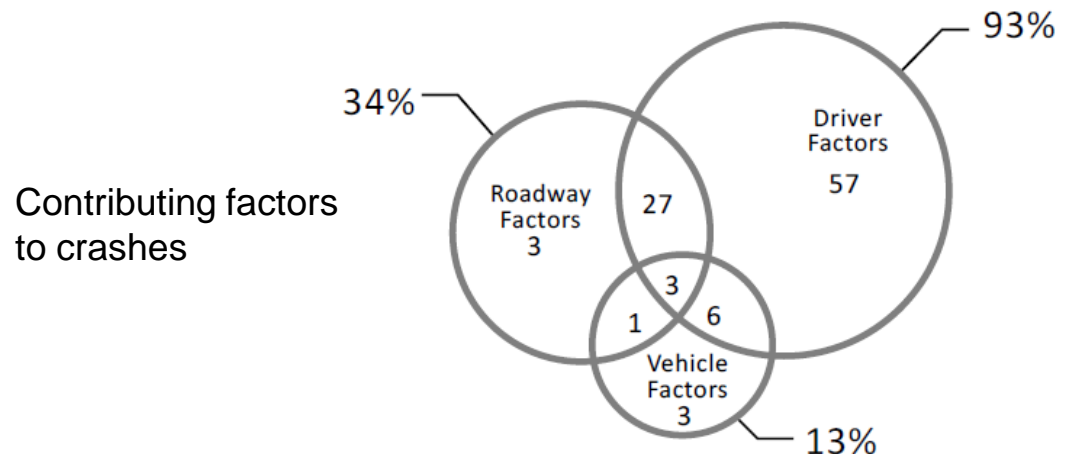
Source:  
AASHTO Highway  
Safety Manual (2011)



### 3. Arterial Streets section

Added text stressing the need for attention to safety on these facilities, and suggested proven countermeasures including engineering, enforcement, and education.

Also indicated need to develop objective performance measures for region's arterials.



## 4. Regional Ped Network vision

- Added text clarifying that a well-connected network of pedestrian facilities includes safe street crossings.
- Added a paragraph noting the importance of frequent well-designed pedestrian crossings, particularly on multi-lane arterials.



## 5. Ped access to transit section

- Added text noting importance of safe crossings at all transit stops.

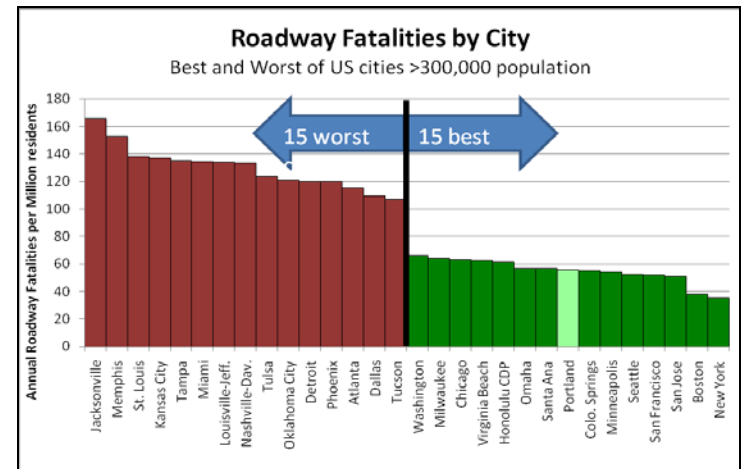
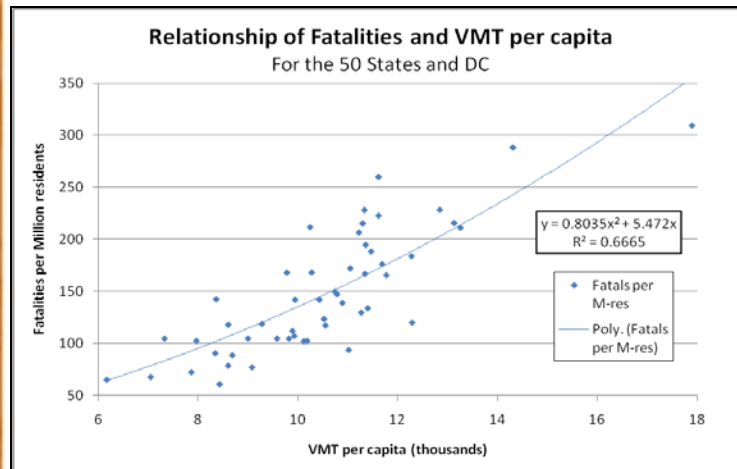


## 6. Travel options/TDM

Added text acknowledging improved roadway safety as a benefit of travel behavior changes.

Based on known direct correlation between VMT and roadway fatalities

- Reduced exposure = reduced risk
- Reduced vehicle mode share = reduced risk



# Questions?



Anthony Buczek

503-797-1674

[Anthony.Buczek@oregonmetro.gov](mailto:Anthony.Buczek@oregonmetro.gov)

[www.oregonmetro.gov/safety](http://www.oregonmetro.gov/safety)





[www.oregonmetro.gov/rtp](http://www.oregonmetro.gov/rtp)

**2014  
RTP  
UPDATE**

# **RTP Active Transportation Refinements**



**2014 RTP Implementation Workshop  
September 29, 2014**



Lake Strongheart McTighe,  
Senior Transportation Planner



**Metro** | *Making a great place*

RTP active  
transportation policy  
updates based on  
the Regional Active  
Transportation Plan  
to help achieve  
adopted  
transportation  
vision, goals and  
targets



[www.oregonmetro.gov/regional-active-transportation-plan](http://www.oregonmetro.gov/regional-active-transportation-plan)



# Integrated network concept and ten principles to guide network development (RTP, p.2-64)

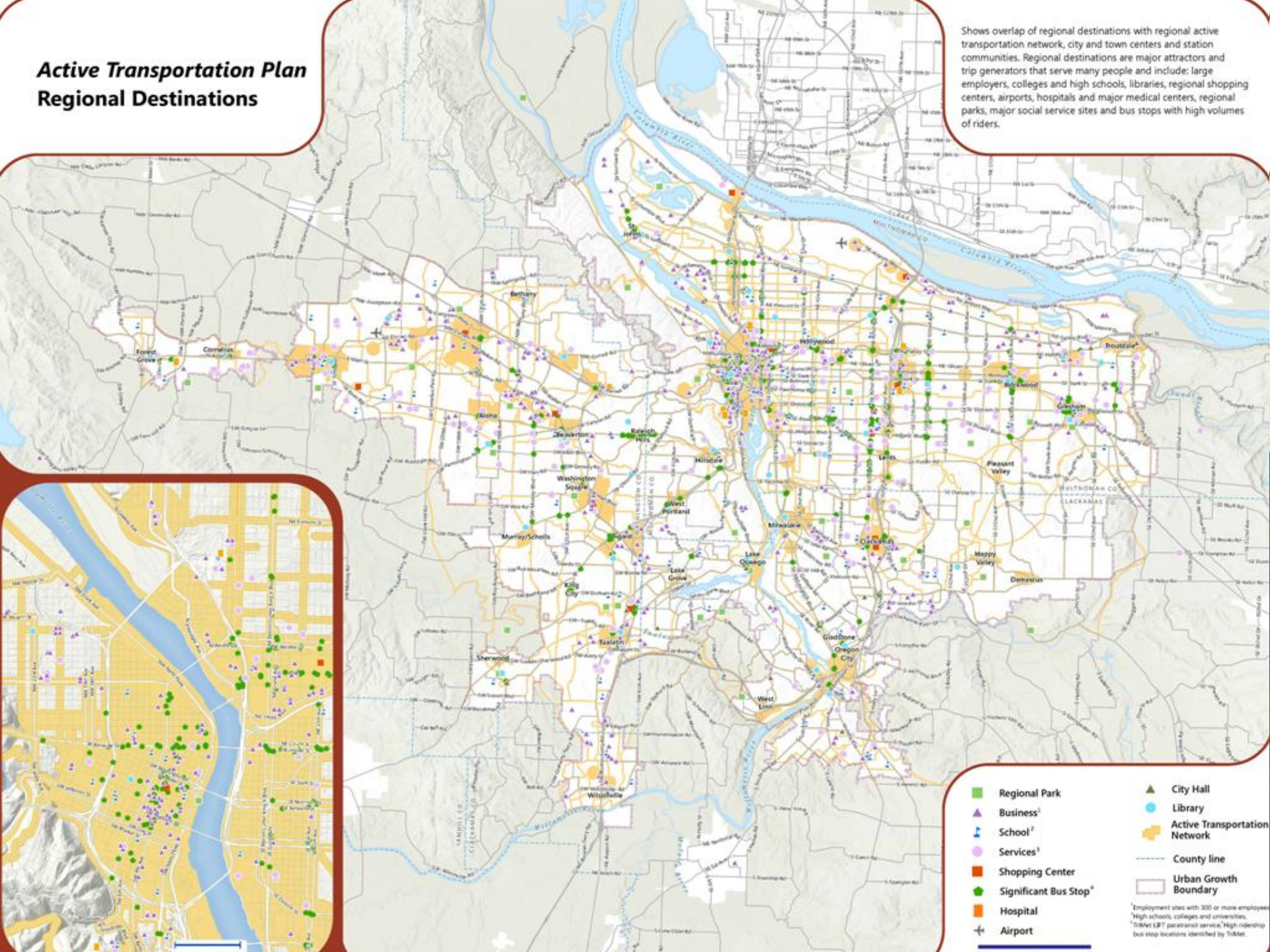


Concept image: AARP



# Active Transportation Plan Regional Destinations

Shows overlap of regional destinations with regional active transportation network, city and town centers and station communities. Regional destinations are major attractors and trip generators that serve many people and include: large employers, colleges and high schools, libraries, regional shopping centers, airports, hospitals and major medical centers, regional parks, major social service sites and bus stops with high volumes of riders.



- Regional Park
- ▲ Business<sup>2</sup>
- ▲ School<sup>2</sup>
- Services<sup>1</sup>
- Shopping Center
- Significant Bus Stop<sup>4</sup>
- Hospital
- ✈ Airport
- ▲ City Hall
- Library
- Active Transportation Network
- County line
- Urban Growth Boundary

<sup>1</sup>Employment sites with 300 or more employees  
<sup>2</sup>High schools, colleges and universities  
<sup>3</sup>Tidket LIFT paratransit service  
<sup>4</sup>High ridership bus stop locations identified by Tidket

# Pedestrian concept & policies refinement (RTP, p.2-75)



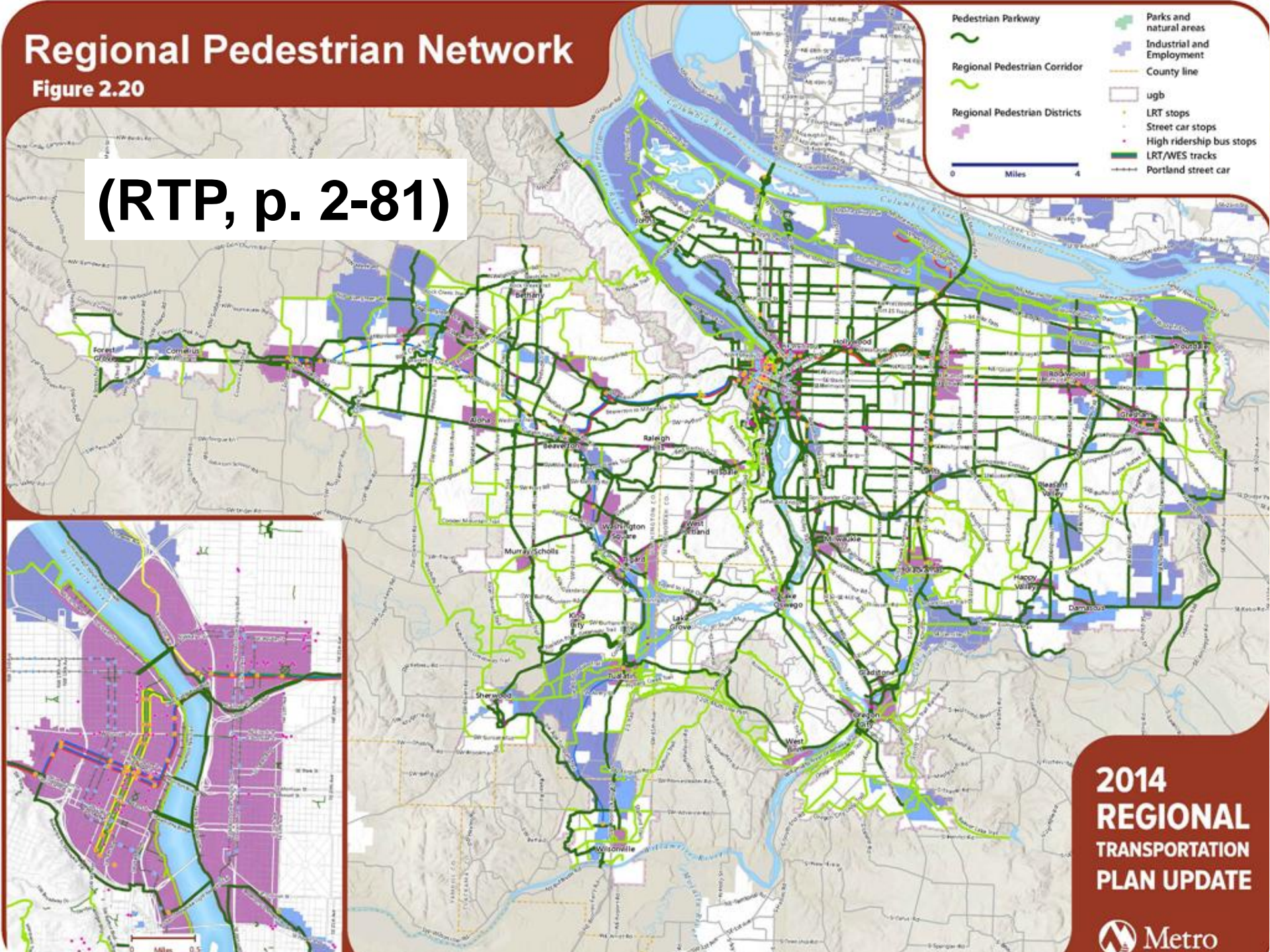
- Frequent, safe crossings, especially on multi-lane arterials
- Access to destinations
- Equity policy added
- Pedestrian Parkway – high level of design, access to transit and destinations
- Walking should not only be safe, but enjoyable
- Added transit policy



# Regional Pedestrian Network

Figure 2.20

(RTP, p. 2-81)



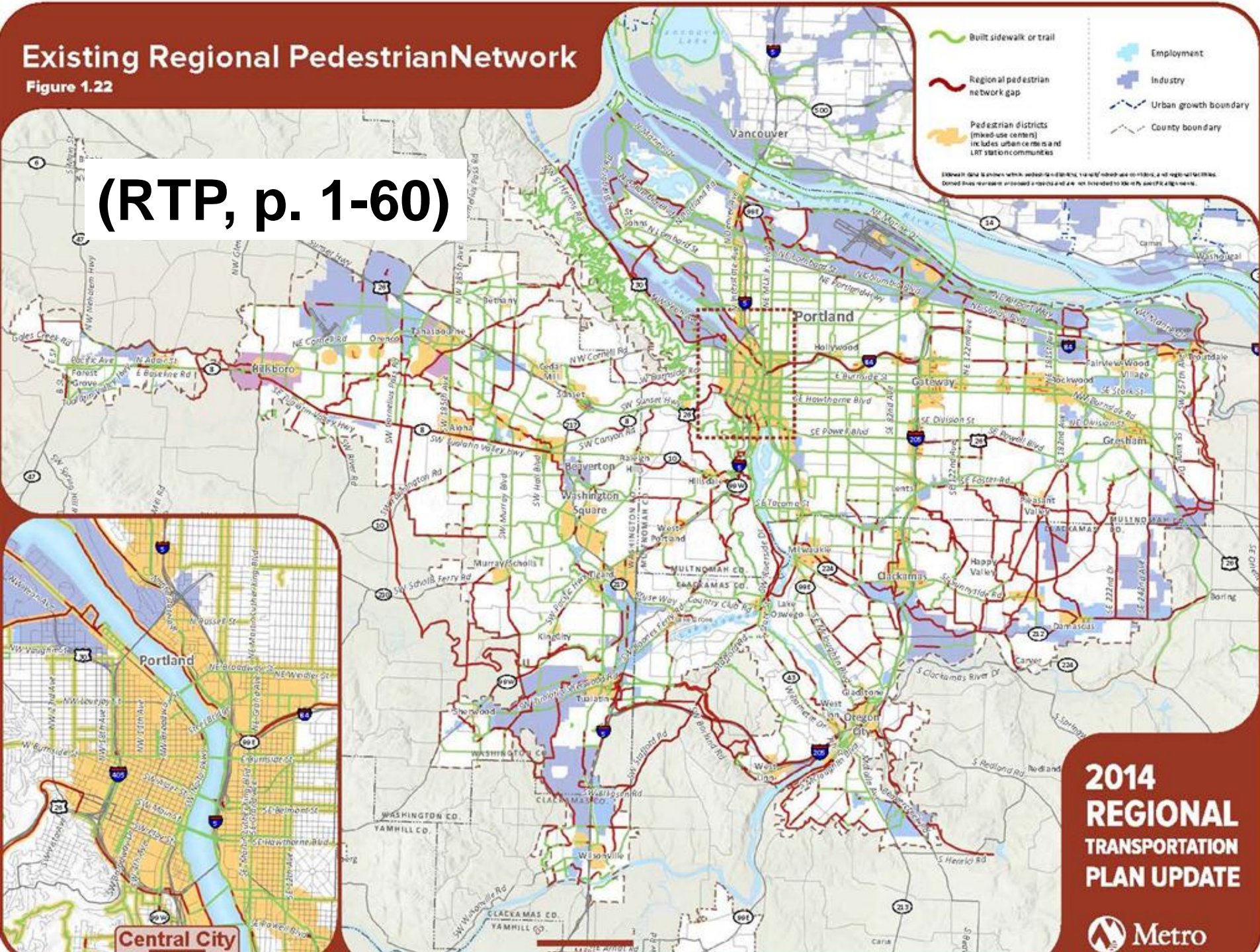
**2014  
REGIONAL  
TRANSPORTATION  
PLAN UPDATE**



# Existing Regional Pedestrian Network

Figure 1.22

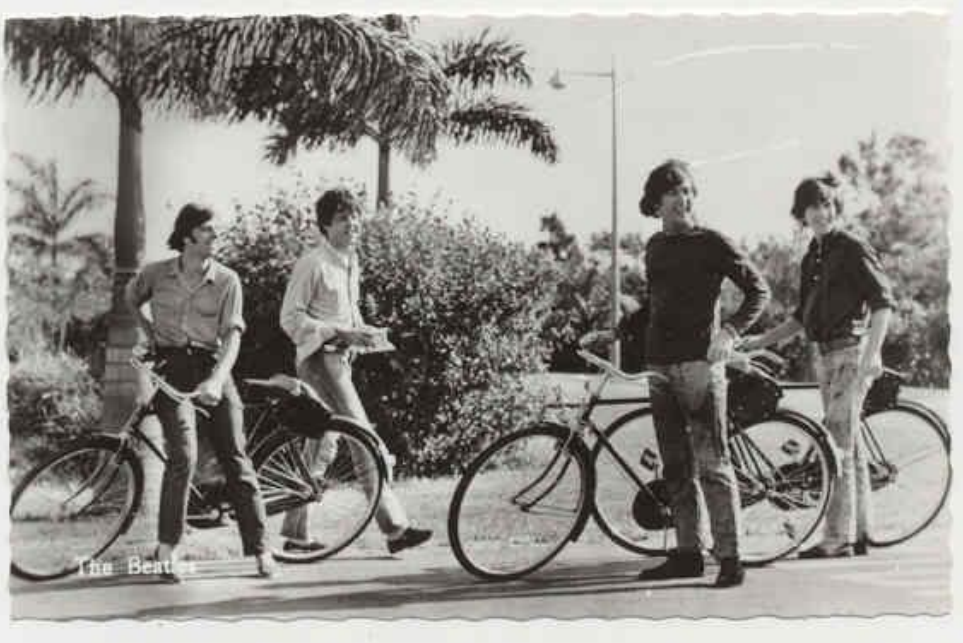
(RTP, p. 1-60)





# Bicycle concepts & policies (RTP, p.2-64)

- Along with walking, prioritize bicycling for short trips
- Safe & comfortable for all ages and abilities: closely spaced facilities, frequent, safe crossings, separation from autos
- Added equity policy
- Bicycle Parkway concept
- Bicycle Districts - new

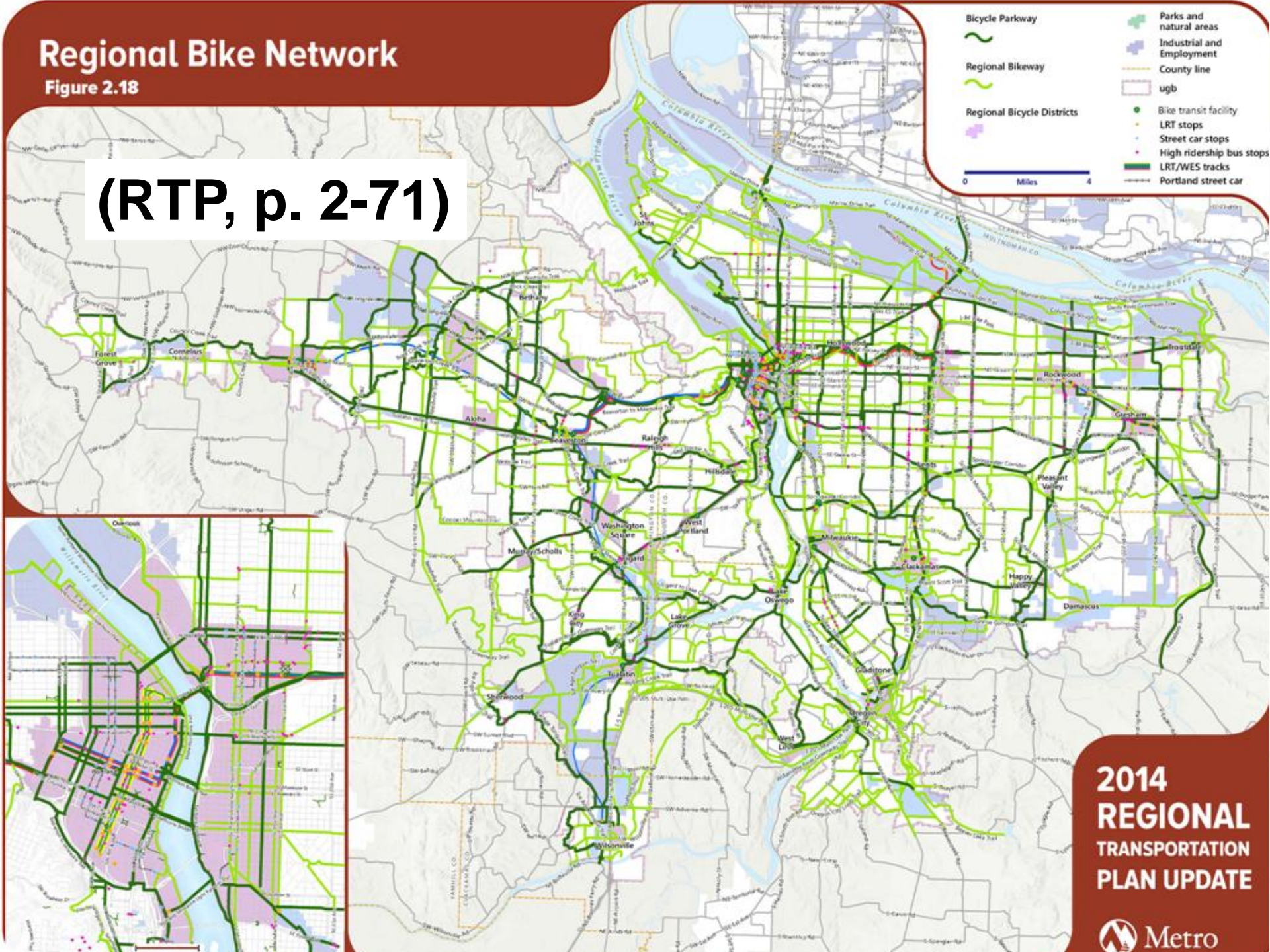




# Regional Bike Network

Figure 2.18

(RTP, p. 2-71)

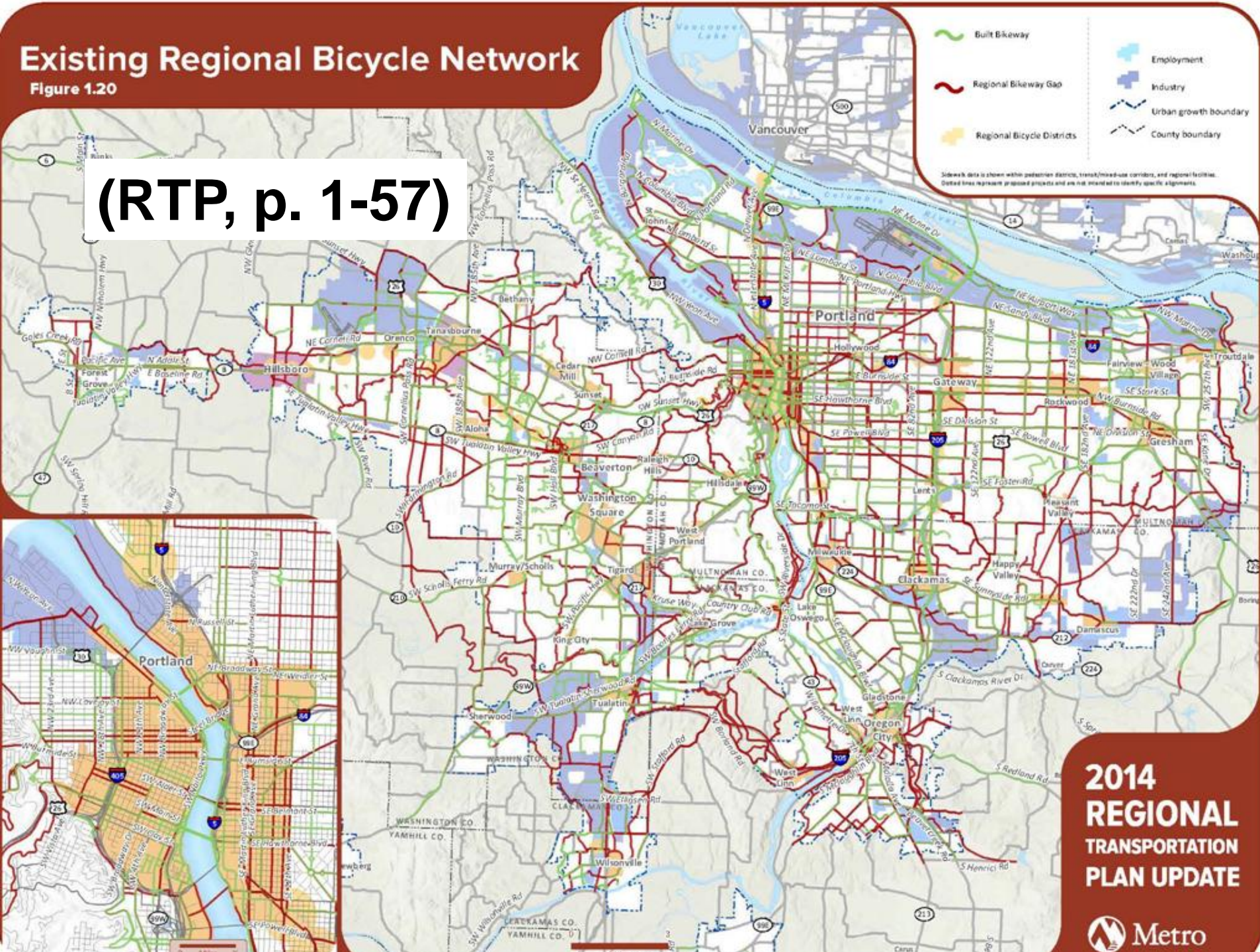




# Existing Regional Bicycle Network

Figure 1.20

(RTP, p. 1-57)



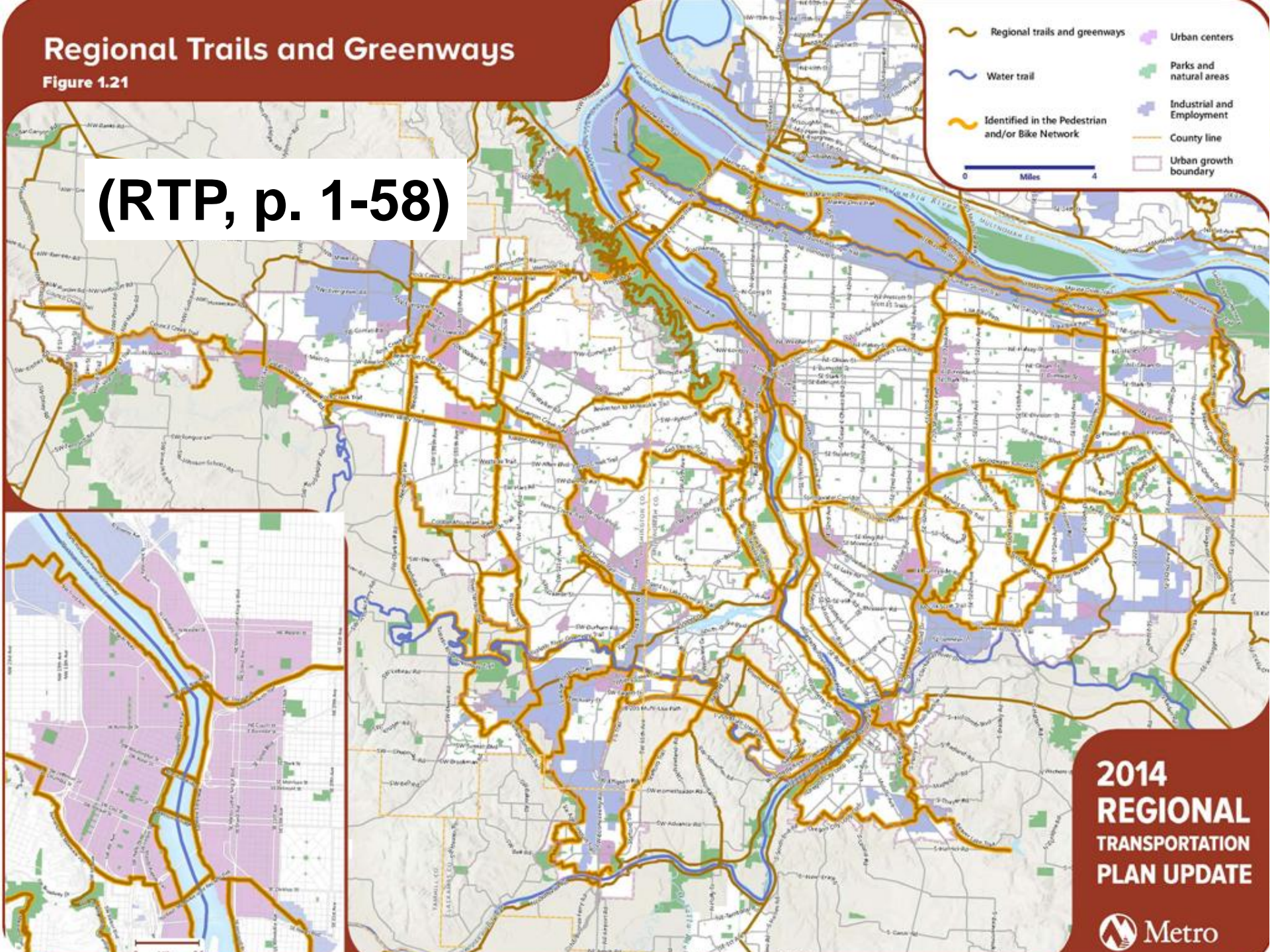
**2014  
REGIONAL  
TRANSPORTATION  
PLAN UPDATE**



# Regional Trails and Greenways

Figure 1.21

(RTP, p. 1-58)





# Emphasis on high level of design (RTP, p.2-28)



- Flexible, context sensitive
- Separation, safety, comfort, enjoyment
- The greater the speed/volume the greater the separation
- Make it easy to walk and bike

# RTP Performance Targets (RTP, p.2-17)

<p><b>Active transportation</b> – By 2040, triple walking, biking and transit mode shares compared to <u>2010 modeled mode shares</u>.</p>	<p>By 2040:</p> <p>Transit mode share increases to 7.8% compared to the target share of 13%</p> <p>Walking increases to 10.1% compared to the target share of 27%</p> <p>Biking increases to 3.8% compared to the target share of 11.1%.</p>	<p>Data shows that the region is making progress toward achieving the target.</p>
<p><b>Basic infrastructure</b> –</p> <p>By 2040, increase by 50% the miles of sidewalk, bikeways, and trails compared to the regional networks in 2010.</p>	<p>Miles of regional trails increase by 61% (from 229<sup>1</sup> to 369 miles)</p> <p>Miles of regional bikeways increase by 68% (from 623 to 1044 miles)</p>	<p>The region meets the performance target for adding trails and bikeways. Data under development for miles of sidewalks added through RTP projects by 2040. As of 2010, 55% of regional pedestrian network has sidewalks on both sides of street. 209 additional miles of sidewalks are needed by 2040 to meet the target.</p>

# Questions?



Concept for Monroe Street Greenway, courtesy BTA

Lake McTighe

503-797-1660

[Lake.McTighe@oregonmetro.gov](mailto:Lake.McTighe@oregonmetro.gov)

[www.oregonmetro.gov/activetransport](http://www.oregonmetro.gov/activetransport)