BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF APPROVING THE FEDERAL COMPONENT OF THE 2035 REGIONAL TRANSPORTATION PLAN (RTP) UPDATE, PENDING AIR QUALITY CONFORMITY ANALYSIS	)))))	RESOLUTION NO. 07-3831B Introduced by Councilors Rex Burkholder and Rod Park

WHEREAS, the Metro Council and the Joint Policy Advisory Committee on Transportation (JPACT) approved Resolution No. 06-3661 (For the Purpose of Approving A Work Program For the 2035 Regional Transportation Plan (RTP) Update and Authorizing the Chief Operating Officer to Amend Contract No. 926975), on June 15, 2006; and

WHEREAS, Metro was awarded a Transportation & Growth Management Grant for the 2005 – 2007 Biennium to prepare a regional plan for freight and goods movement and recommendations from this planning effort will be forwarded for consideration as part of the 2035 RTP update; and

WHEREAS, the most recent update to the RTP was completed in March 2004 and the next federal update must be approved by the United States Department of Transportation in consultation with the Environmental Protection Agency by March 2008 to provide continued compliance with federal transportation and air quality regulations and ensure continued funding eligibility of projects and programs using federal transportation funds; and

WHEREAS, Phase 1 of the RTP focused on development of the federally recognized metropolitan transportation plan for the Portland metropolitan region that must be updated every four years and serves as the threshold for all federal transportation funding in the region; and

WHEREAS, Phase 2 of the RTP will fulfill statewide planning requirements to implement Goal 12 Transportation, as implemented through the Oregon Transportation Planning Rule (TPR); and

WHEREAS, the RTP is a central tool for implementing the Region 2040 Growth Concept, and constitutes a policy component of the Metro Regional Framework Plan; and

WHEREAS, it is Metro's intent to integrate this update to the RTP with the New Look process and consolidate periodic updates to the RTP to meet applicable federal, state and regional planning purposes; and

WHEREAS, the 2035 RTP update timeline and process was expanded by the Metro Council, at the recommendation of JPACT, to allow for completion of the federal component of the 2035 RTP before the current plan expires on March 5, 2008 and provide for additional technical analysis and policy development to address state and regional planning requirements by Fall 2008; and

WHEREAS, the Metro Council approved Resolution No. 07-3793 (For the Purpose of Accepting the Chapter 1 Regional Transportation Policy Framework as the Provisional Draft For the Purpose Of Completing Phase 3 of the 2035 Regional Transportation Plan (RTP) Update), on March 15, 2007; and

WHEREAS, the federal update requires the development of a "financially constrained" system of investments that address regional travel demand, yet are constrained to reasonably anticipated funding levels during the plan period; and

WHEREAS, the Collaborative Environmental Transportation Agreement for Streamlining (CETAS) work group, consisting of the Oregon Department of Transportation and ten state and federal transportation, natural resource, cultural resource and land-use planning agencies, was consulted on potential environmental impacts and mitigation strategies on October 16, 2007, and were provided an opportunity to comment on the federal component of the 2035 RTP; and

WHEREAS, the state component of the 2035 RTP will continue in 2008 to address outstanding issues identified during the federal component of the 2035 RTP, including development of performance measures, prioritization of investments, compliance with state planning requirements and development of a transportation finance strategy to fund needed investments; and

WHEREAS, the federal component of the 2035 RTP is set forth in "Exhibit A," attached hereto, and will be updated to reflect key findings and recommendations from additional technical and policy analysis to be conducted during the state component of the RTP update in 2008; and

WHEREAS, the federal component does not constitute a land use action applicable to local plans and all chapters of the RTP will be subject to refinement during the state component of the RTP update; and

WHEREAS, a 30-day public comment period was held on the federal component of the 2035 RTP from October 15 to November 15, 2007; and

WHEREAS, a summary of public comments received during the comment period and recommended amendments is set forth in "Exhibit B" and "Exhibit "C", attached hereto; and

WHEREAS, the Metro Council, JPACT, the Metro Policy Advisory Committee (MPAC), Metro Technical Advisory Committee (MTAC), Transportation Policy Advisory Committee (TPAC), the Regional Travel Options (RTO) Subcommittee of TPAC, the Regional Freight and Goods Movement Technical Advisory Committee, the Bi-State Coordination Committee, the Regional Freight and Goods Movement Task Force, Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) staff and other elected officials, city and county staff, and representatives from the business, environmental, and transportation organizations from the Portland-Vancouver metropolitan region assisted in the development of and were provided an opportunity to comment on the federal component of the 2035 RTP; and

WHEREAS, JPACT and MPAC have recommended that the federal component be approved by the Metro Council; now, therefore

BE IT RESOLVED BY THE METRO COUNCIL THAT:

1. The Metro Council approves the federal component of the 2035 Regional Transportation Plan update, attached and incorporated into this resolution as Exhibit "A", and as amended by Exhibit "B" and Exhibit "C", and directs staff to consolidate all three exhibits into a single document for submittal to FHWA and FTA for review.

2. Staff shall conduct the federally-required air quality conformity analysis, hold a 30-day public comment period on the results of the analysis and develop findings demonstrating compliance with federal planning requirements.

3. Staff shall initiate the state component of the RTP update. This component will result in amendments to Exhibit "A", as amended by Exhibits "B" and "C", to meet state planning

requirements, and updating all chapters of the federal component to be consistent with the state component.

ADOPTED by the Metro Council this 13th day of December 2007.

David Bragdon, Council President

Approved as to Form:

Daniel B. Cooper, Metro Attorney

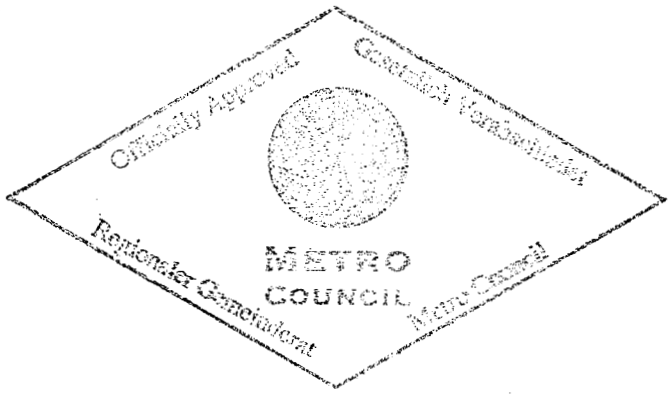

EXHIBIT A to Resolution No. 07-3831B
Available to download from Metro's website at
www.metro-region.org/rtp

New Look
The Regional Transportation Plan

Public Review Draft

2035 Regional Transportation Plan

Federal Component

October 15, 2007

METRO
PEOPLE PLACES
OPEN SPACES

Metro
People places • open spaces

Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and good transportation choices for people and businesses in our region. Voters have asked Metro to help with the challenges that cross those lines and affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to protecting open space, caring for parks, planning for the best use of land, managing garbage disposal and increasing recycling. Metro oversees world-class facilities such as the Oregon Zoo, which contributes to conservation and education, and the Oregon Convention Center, which benefits the region's economy.

Your Metro representatives

Metro Council President – David Bragdon
Metro Councilors – Rod Park, District 1; Brian Newman, District 2; Carl Hosticka, District 3; Kathryn Harrington, District 4; Rex Burkholder, District 5; Robert Liberty, District 6.
Auditor – Suzanne Flynn

Metro's web site: www.metro-region.org

Project web site: www.metro-region.org/rtp

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2035 Regional Transportation Plan

Thank you for taking the time to review the federal component of the 2035 Regional Transportation Plan (RTP).

Metro is required to complete an update to the federal component of the RTP by December 2007 in order to maintain continued compliance with the federal Clean Air Act and address new federal (SAFETEA-LU) planning requirements. The current plan expires on March 5, 2008, under federal planning regulations.

The new federal transportation law—SAFETEA-LU—made changes to requirements for transportation planning, including amending the formal update cycle to four years and making specific changes to requirements affecting planning for special needs, security, safety, system management and operations and environmental mitigation. The changes are addressed in the 2007 update to the plan.

In addition, the federal component of the update focused on:

1. updating regional policies that guide planning and investments in the regional transportation system to respond to key trends and issues facing the region and meet federal planning requirements;
2. incorporating projects that have been adopted in local and regional plans, and corridor studies through a public process since the last RTP update in 2004;
3. updating the transportation revenue forecast and regional investment priorities to match current funding sources and historic funding trends;
4. identifying additional issues to be addressed during the state component of the RTP update in 2008.

After the federal component of the 2035 RTP is submitted to federal agencies for review, the focus will shift to the state component of the RTP update. Additional opportunities for public comment on the state component will be provided in Fall 2008.

Timeline and Process for Development of Federal Component of 2035 RTP

The following section describes the RTP timeline and process for developing the federal component of the 2035 RTP.

June 2006-January 2007 – Research and Policy Development – Metro staff conducted background research on trends and issues affecting travel in the region, convened five stakeholder workshops on desired outcomes and needs for the region's transportation system and conducted scientific public opinion research on transportation needs and priorities. This information is available to download on Metro's website at www.metro-region.org/rtp.

January-March 2007 - Provisional Policy Framework Development – The background research in the previous phase guided development of a provisional draft policy framework that established goals and objectives for the regional transportation system. At the recommendation of the Metro Policy Advisory Committee (MPAC) and the Joint Policy Advisory Committee on Transportation (JPACT), the provisional draft policy framework (Chapter 1) was accepted by the Metro Council to guide identification of transportation needs and investment priorities.

April 2007 – Identification of Regional Mobility Corridor Priorities – In March and April 2007, the Regional Freight and Goods Movement Task Force, MPAC and JPACT participated in separate workshops to identify mobility issues and priorities for investments in the RTP. In April, Metro, TriMet and the Oregon Department of Transportation (ODOT) convened a technical workshop to build on the direction provided in the previous policy-level discussions. Nearly 60 participants attended this workshop, including Transportation Policy Alternatives Committee (TPAC) and Metro Technical Advisory Committee (MTAC) members and other local government staff.

Summer 2007 - RTP Project Solicitation and System Analysis - In June 2007, agencies submitted projects and programs that came from local and regional plans or studies that had been previously adopted through a public process. The investments submitted responded to the provisional policy framework. ODOT and TriMet collaborated with Metro and local agencies to identify investments that respond to mobility corridor priorities identified by the Freight Task Force, JPACT and MPAC in April. In addition, local agency TPAC representatives for each of the three counties worked with the cities within their respective county to identify other community-building investments to complement the regional mobility corridor investments. The result of this effort was the development of the 2035 RTP Investment Pool. Proposed investments were submitted in one of two complementary investment strategy tracks:

- **Track 1: State and Regional Mobility Corridor Investment Strategy** focuses on regional mobility corridor investments that leverage the 2040 Growth Concept and improve interstate, intrastate and cross-regional people and goods movement.

- **Track 2: Community-Building Investment Strategy** focuses on community-building investments that leverage 2040 Growth Concept through street and transit system improvements that provide for community access and mobility.

Metro conducted a technical analysis of the performance of the system projects and programs submitted. The results of the analysis are included in the draft document.

August – October 2007 – Development of RTP Financially Constrained System and Draft 2035 - Metro staff worked with local governments, ODOT, SMART and TriMet to narrow the 2035 RTP Investment Pool to match expected revenue that can "reasonably be expected to be available" during the plan period. This set of investments is also called the financially constrained system. In addition, staff further refined the policy framework to respond to key findings of the technical analysis, policy discussions at the Freight Regional and Goods Movement Task Force, MPAC, JPACT and the Metro Council and informal comments provided by local governments and interested stakeholders over the summer.

Public Comment Opportunities

The public comment period is scheduled to begin on October 15 and end on November 15, 2007 at the close of the final Metro Council public hearing. The public comment period will focus on a discussion draft "2035 Regional Transportation Plan Federal Component" that will serve as the public review document.

The public review document will be available for review on Metro's web site (http://www.metro-region.org/rtp), and as a printed document during the 30-day public comment period.

You may submit comments in the following ways:

- on-line from Metro's website: **www.metro-region.org/rtp**
- e-mail to rtp@metro-region.org
- mail to Metro Planning, 600 NE Grand Avenue, Portland, Oregon 97232 (attention: Pat Emmerson)
- fax to (503) 797-1911
- testify at a Metro Council public hearing.

During the comment period, a series of four open houses and public hearings will be held around the region in conjunction with Metro Council meetings:

Open house and public hearing	Date/Time	Location
#1	**Thursday, October 25** • Open house begins at 4 p.m. • Public hearing begins at 5 p.m.	Clackamas County Public Services Building 2051 Kaen Road Oregon City, OR 97045
#2	**Thursday, November 1** • Open house begins at 1 p.m. • Public hearing begins at 2 p.m.	Metro Regional Center Council Chambers 600 NE Grand Avenue Portland, OR 97232
#3	**Thursday, November 8** • Open house begins at 4 p.m. • Public hearing begins at 5 p.m.	Hillsboro Civic Center Auditorium 150 E. Main Street Hillsboro, OR 97123
#4	**Thursday, November 15** • Open house begins at 1 p.m. • Public hearing begins at 2 p.m.	Metro Regional Center Council Chambers 600 NE Grand Avenue Portland, OR 97232

Comments received will be entered into the public record and will be provided to staff and elected officials prior to final consideration and action on the federal component of the 2035 RTP. Final consideration by JPACT and the Metro Council is scheduled for December 13, 2007. This action is pending completion of the federally-required air quality conformity analysis.

For more information

For more information, call Regional Transportation Planning at (503) 797-1839, or send e-mail to rtp@metro-region.org. The hearing impaired can call (503) 797-1804.

Overview

Transportation shapes our communities and daily lives in profound and lasting ways. Transportation enables residents of the region to reach jobs and recreation, access goods and services, and meet daily needs. What we plan for and invest in today will affect the health of our economy, residents, communities and environment for generations to come.

Over the past 15 years growth has brought significant opportunity and prosperity to the Portland-Vancouver region. Growth, however, has also brought growing pains. Like many other metropolitan areas across the U.S., the region faces powerful trends that require new ways of thinking about our future. Globalization of the economy, limited funding, increasing transportation costs, aging baby boomers, climate change and other powerful trends must be addressed as we work to keep this region a great place to live and work for everyone.

By 2035, the region will grow by more than 1 million people and add more than 500,000 jobs, doubling trips on the transportation system each day. By 2035, freight transportation needs are expected to more than double the freight, goods and services that will travel to this region by air and over bridges, roads, water and rails.

The 2035 Regional Transportation Plan (RTP) provides an updated blueprint to guide transportation planning and investments in the tri-county Portland metropolitan region. This discussion draft document extends the planning horizon of the current plan through the year 2035 and was developed to meet new federal (SAFETEA-LU) planning requirements by the end of 2007.

The focus of this update is on Federal compliance elements, not the Oregon Transportation Planning Rule (TPR) or other regional requirements. The TPR and regional requirements will be the focus of the state component of the update in 2008. Additional opportunities for public comment on the state component will be provided in 2008.

To address current transportation needs and prepare for future growth, the region must invest in expanding the transportation system, improving safety and completing key missing links. The Regional Transportation Plan (RTP) must be bolder, smarter and more strategic with transportation investments, and better integrate the region's land use, economic, environmental and transportation objectives in its decision-making process.

This document represents the first major update to the RTP since 2000. The updated plan provides a blueprint for building a sustainable transportation future that allows the region to compete in the global economy and preserve the unique qualities and natural beauty that define our region. An overarching aim of the RTP is to move the region closer to the vision of the 2040 Growth Concept.

The plan expands personal choices for travel, providing safer and more reliable travel between home and school, work, shopping and recreation destinations. The updated RTP emphasizes reliability of the system, particularly for commuting and moving freight. Reliability and other performance measures will be evaluated and monitored through an integrated multi-modal corridor strategy and performance monitoring system. The performance monitoring system will be finalized during the state component of the RTP update in 2008.

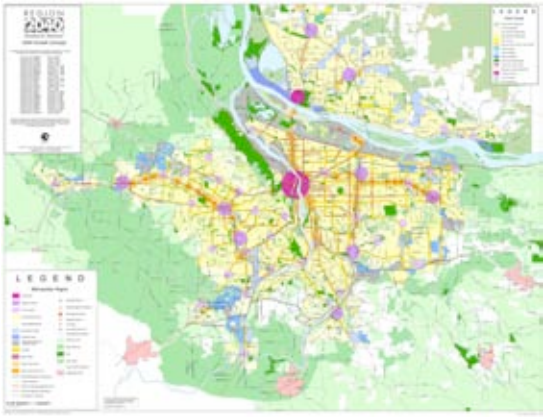
Implementation of the plan will be both challenging and exciting, demanding new levels of collaboration among the Metro Council, public and private sector leaders, community groups, businesses and the residents of the region. Our success in addressing the challenges will be measured in many ways and by many people, including future generations who will live and work in the region.

Executive Summary

Linking Transportation to Land Use, the Economy and the Environment

2040 Growth Concept
In the 1990s, the residents of the Portland metropolitan region developed Metro's 2040 Growth Concept through an extensive public process. Adopted in 1995, the concept represents a vision of shared community values and desired outcomes that continue to resonate throughout the region:

- Safe and stable neighborhoods for families
- Compact development that uses land, transportation infrastructure and money more efficiently
- A healthy economy that generates jobs and business opportunities
- Protection of farms, forests, rivers, streams and natural areas
- A balanced transportation system to move people and goods
- Housing for people of all incomes in every community



The Regional Transportation Plan
Metro's transportation planning activities are guided by a federally mandated decision-making framework, called the metropolitan transportation planning process. The Regional Transportation Plan (RTP), first adopted by the Metro Council in 1983, is a long-range blueprint for transportation in the Portland metropolitan region. The RTP is updated every four years to reflect changing conditions in the Portland metropolitan region. The purpose of the RTP is to:

- implement the Region 2040 vision ;
- identify transportation-related actions that respond most effectively to the trends and challenges facing the metropolitan region; and
- comply with federal, state and regional planning requirements.

As the federally designated Metropolitan Planning Organization (MPO), Metro is responsible for coordinating development of the RTP with the region's transportation providers— the 25 cities and three counties in the Metro boundary, the Oregon Department of Transportation, Oregon Department of Environmental Quality, Port of Portland, TriMet, South Metro Area Rapid Transit (SMART), Washington Regional Transportation Council, Washington Department of Transportation and other Clark County governments. Metro facilitates this consultation, coordination and decision-making through four advisory committee bodies –the Joint Policy Advisory Committee on Transportation (JPACT), the Metro Policy Advisory Committee (MPAC), the Transportation Policy Alternatives Committee (TPAC) and the Metro Technical Advisory Committee (MTAC). In addition, the Metro Committee for Citizen Involvement (MCCI) provides advice to the Metro Council on how to best engage residents in regional planning activities.

State law establishes a hierarchy of consistency of plans at the state, regional and local levels. The RTP must be consistent with the Oregon Transportation Plan and the Transportation Planning Rule (TPR). Local plans must be consistent with the RTP. The RTP also serves as the threshold for all federal

transportation funding in the Portland metropolitan region. Projects and programs must be included in the RTP financially constrained system to be eligible for federal and state funding.

Challenges and Opportunities Ahead – Five Things You Should Know

The Portland metropolitan region is at an important crossroads.

- **About a million more people are expected to live here in the next 25.** They will all need to get to work, school and stores on the region's transportation system. Growing congestion is expected to accompany this growth, affecting the economic competitiveness of our region and the State of Oregon, our environment and our quality of life.
- **The Portland-Vancouver metropolitan region is a global transportation gateway and West Coast domestic hub for commerce and tourism.** An international airport, river ports, rail connections and an interstate highway system make this region both a global transportation gateway and West Coast domestic hub for freight and goods movement and tourism-related activities. The 2005 study, *Cost of Congestion to the Economy of the Portland Region,* estimated potential losses in the region of $844 million annually in 2025 from increased freight costs and lost worker productivity due to increases in travel time if our investments do not keep pace with growth. Freight transportation needs are expected to more than double the amount of freight, goods and services that will travel to this region by air and over bridges, roads, water and rails. The economy of our region and state depends on our ability to support the transportation needs of these industries and provide reliable access to gateway facilities. The economic health of the region also depends on industries that are attracted to the region by our well-trained labor pool, relatively low cost of living and high quality of life.
- **Geopolitical instability and other trends will continue to drive up transportation costs, affecting project costs and household expenditures.** Rising prices for all petroleum products—not just fuel—are here to stay. For example, the price of liquid asphalt jumped 61 percent in Oregon during the first seven months of 2006—from $207 a ton to $333 a ton—doubling project costs in some cases. Due to the rising cost of gas and greater driving distances between destinations, transportation costs per household in the region are also increasing. Transportation is the second highest household expense after housing, with lower-income households spending a higher percentage of their income on transportation costs.
- **Federal and state transportation sources are not keeping up with growing needs.** At current spending levels and without new sources of funding, the federal highway trust fund will expend all available revenues projected to be collected by 2009. State and local government purchasing power is steadily declining because the gas tax has not increased since 1993. Reduced purchasing power of current revenues leads to increasing competition for transportation funds, and less capability to expand, improve and maintain the transportation infrastructure we currently have. Meanwhile, the region's transportation infrastructure continues to age, requiring increasing maintenance. Over the next two decades, the gap will grow between the revenues we have and the investments we need to make just to keep our throughway, street and transit systems in their current condition.
- **Climate change poses a serious and growing threat to Oregon's economy, natural resources, forests, rivers, agricultural lands, and coastline**. Transportation activities are the second largest source of greenhouse gas emissions in Oregon. Transportation accounts for and estimated 38 percent of the state's carbon dioxide emissions, and vehicle emissions are predicted to increase by 33 percent by 2025 because of increased driving. New regulations to reduce emissions associated with climate change are likely in the RTP's planning horizon, which would put more emphasis on less polluting transportation modes.

A Proposed Blueprint to Guide the Region's Response

The draft plan RTP updates the region's transportation blueprint through the year 2035, responding to the challenges and opportunities ahead. The plan includes:

1. **A renewed focus on protecting livability.** The RTP has a responsibility to serve the needs of residents in the region, protect our unique setting and landscape and leave a better place for future generations. The goals and objectives in Chapter 3 establish a vision of what we want the regional transportation system to look like and achieve in the future, shaping the actions the region will take to achieve that vision. The RTP emphasizes linking transportation planning to the region's long-range vision for vibrant communities, a healthy economy and environmental protection.

2. **A systems approach that emphasizes completing gaps in the regional transportation network and protecting regional mobility corridors to address safety and congestion deficiencies**. The plan views the transportation system as an integrated and interconnected whole that supports land use and all modes of travel for people and goods movement. This approach relies on a broader, multi-modal definition of transportation need, recognizing that the region's ability to physically expand right-of-way to increase capacity is limited by fiscal, environmental and land use constraints. This approach responds in part to recent policy direction from the federal and state levels to better link system management with planning for the region's transportation system and direction from the residents of the region to provide a balanced transportation system that expands transportation choices for everyone. Reliability of the system, particularly for commuting and freight, is emphasized and will be evaluated and monitored through an integrated multi-modal mobility corridor strategy. Completing gaps in pedestrian, bicycle and transit systems is also a critical part of this strategy.

   This approach requires more aggressive management of the transportation system and consideration of strategies such as value pricing to better manage capacity and peak use on the throughways in the region. To date, this tool has not been applied in the Portland metropolitan region despite successful application of this tool in other parts of the U.S. and internationally. Value pricing may generate revenues to help with needed transportation investments, however, more work is needed to gain public support for this tool.

Regional Transportation System Goals

- **Goal 1: Foster Vibrant Communities and Efficient Urban Form**
- **Goal 2: Sustain Economic Competitiveness and Prosperity**
- **Goal 3: Expand Transportation Choices**
- **Goal 4: Emphasize Effective and Efficient Management of the Transportation System**
- **Goal 5: Enhance Safety and Security**
- **Goal 6: Promote Environmental Stewardship**
- **Goal 7: Enhance Human Health**
- **Goal 8: Ensure Equity**
- **Goal 9: Ensure Sustainability**
- **Goal 10: Deliver Accountability**

Regional Transportation System Components

Regional multi-modal transportation facilities and services include the following eight components:

1. Regional Throughway and Street System, which includes the National Highway System (NHS) and State highways
2. Regional Transit System
3. Regional Bicycle System
4. Regional Pedestrian System
5. Regional Freight System
6. Regional Systems Design
7. System Management Strategies
8. Demand Management Strategies

3. **A new focus on stewardship and sustainability to preserve our existing transportation assets and achieve the best return on public investments.** Government must be a responsible steward of public

investment and the social, built and natural environments that shape our communities. Planning and investment decisions must consider the land use, economic, environmental and public impacts and benefits of actions as well as dollar costs. We must also prioritize maintaining and optimizing the infrastructure we have, because dollars are too limited to do everything we want. To maximize return on public dollars, the plan places the highest priority on cost-effective transportation investments that achieve multiple goals. The plan also directs future actions to stabilize transportation funding in this region. This includes raising new revenue for needed infrastructure, a crucial step to achieving the Region 2040 vision and specific goals described in Chapter 3.

The RTP recognizes the diversity of transportation needs throughout the Portland-Vancouver metropolitan region, and attempts to balance needs that often compete. While advocating for a transportation system that adequately serves all modes of travel, the plan recognizes that the automobile will likely continue to be chosen by people for most trips over the life of the plan. However, the RTP also recognizes the need for expanded transportation options for traveling to everyday destinations, and to provide access and mobility for those unable to travel by automobile. Even the occasional use of transit, walking, bicycling or sharing a ride can help the region maintain its clean air, conserve energy and efficiently accommodate more people within a compact urban form.

Finally, the RTP recognizes that the transportation system plays a crucial role in sustaining the economic health of the region and the state of Oregon. Many sectors of the regional economy heavily depend on the safe and efficient movement of goods and services by truck, rail, air and water. Additionally, the economic health of the region also depends on industries that have been attracted to the region because of our well-trained labor pool, relatively low cost of living and high quality of life.

Plan Organization

- **Chapter 1 – Regional Decision-Making and Regulatory Context:** This chapter describes Metro's role in transportation planning, the regional transportation decision-making process and the federal, state and regional regulatory context of the RTP.
- **Chapter 2 – Challenges and Opportunities**: This chapter describes key trends and issues affecting travel in the region and expected growth in population, the economy and travel for the year 2035.
- **Chapter 3 – Regional Policy:** This chapter presents the policy framework of goals, objectives and actions for the regional transportation system that best support the Region 2040 vision.
- **Chapter 4 – Investment Pool:** This chapter describes the projects and programs submitted by local, state and regional agencies responsible for providing transportation infrastructure and services.
- **Chapter 5 – Financial Plan:** This chapter documents a financial analysis of current funding sources and historic funding trends that serve as the basis for the financially constrained system of investments
- **Chapter 6 – Investment Priorities:** This chapter presents the proposed Financially Constrained System, which represents a statement of the highest priority need, given current transportation funding constraints.
- **Chapter 7 – Implementation:** This chapter describes the processes of plan implementation and issues that remain unresolved at the time the federal component of the RTP is adopted.
- **Glossary**: Definitions of transportation-related planning and engineering terms used throughout the document.

METRO

2035 Regional Transportation Plan
October 15, 2007 Public Review Draft

TABLE OF CONTENTS

Chapter 4 – Growth and the Regional Investment Pool

Chapter 5 – Financial Plan

Chapter 6 – Investment Priorities

Chapter 7 - Implementation

List of Figures and Tables

Chapter 1 - Regional Decision-Making and Regulatory Context

List of Figures

Chapter 2 – State of the Region and Effects on Transportation: Challenges and Opportunities

List of Figures

List of Tables

Chapter 3 - Transportation Vision: A Blueprint for the Future

List of Figures

List of Tables

Chapter 4 – Growth and the Regional Investment Pool

List of Figures

List of Tables

Chapter 5 – Financial Plan

List of Figures

List of Tables

Chapter 6 – Investment Priorities

List of Figures

List of Tables

Chapter 7 – Implementation

List of Figures

List of Tables

Chapter 1
Regional Decision-Making and Regulatory Context

The RTP serves as a long-range plan that will direct all transportation planning and project development activities in the Portland metropolitan region and guide the public and private expenditure of federal, state, regional and local revenue sources. This chapter describes Metro's role in transportation planning, the regional decision-making process and the federal, state and regional regulatory context the Regional Transportation Plan (RTP) must address. The plan identifies goals, objectives, transportation investments and actions needed throughout the region to implement the 2040 Growth Concept and address the impacts of future growth on our transportation system through the year 2035.

Chapter Organization:

State law directs a hierarchy of consistency between local, regional and state plans. The plan must be consistent with state plans and the statewide planning goals. The RTP must also meet federal requirements specific to the metropolitan transportation planning process. Local transportation plans are required to be consistent with the RTP under state law.

This chapter is organized into the following sub-sections.

1.1 Metro's Role in Transportation Planning: This section describes Metro's role in the transportation planning process and the regional transportation decision-making process coordinated by Metro to ensure the various requirements are met.

1.2 Federal Context: This section describes the federal regulatory context the RTP must address. Metro must coordinate transportation planning for the Portland metropolitan region, including distribution of federal transportation funds to this region through the RTP and the Metropolitan Transportation Improvement Program (MTIP).

1.3 State Context: This section describes the state regulatory context the RTP must address.

1.4 Regional Context: This section describes the regional regulatory context the RTP must address.

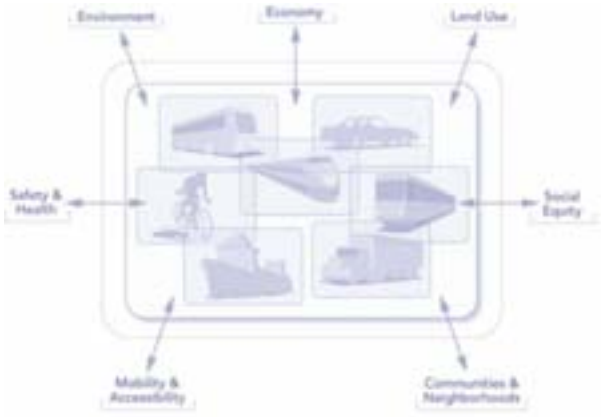
1.5: Public Process: This section summarizes stakeholder engagement and public participation activities used to develop the plan.

1.1 Metro's Role in Transportation Planning

Metro is the regional government responsible for regional land use and transportation planning under state law and the federally designated metropolitan planning organization (MPO) for the Portland metropolitan area. As the federally designated MPO, Metro is responsible for updating the metropolitan transportation plan every four years in coordination with the implementing agencies and jurisdictions that own and operate the region's transportation system. Metro is also responsible for developing a regional transportation system plan (TSP), consistent with Oregon Transportation Planning Rule (TPR) requirements.

Metro's jurisdictional boundary encompasses the urban portions of Multnomah, Washington and Clackamas counties. Today, Metro serves 1.3 million people who live in these three counties and the 25 cities in the Portland metropolitan area. Metro's planning partners include the 25 cities, three counties

and affected special districts of the region, Oregon Department of Transportation (ODOT), Oregon Department of Environmental Quality (DEQ), Port of Portland, South Metro Area Rapid Transit (SMART), TriMet and other interested community, business and advocacy groups as well as state and federal regulatory agencies such as the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA).



Key elements to be addressed in the regional transportation plan.

Source: FHWA and FTA. The Metropolitan Transportation Planning Process: Key Issues, p. 3.

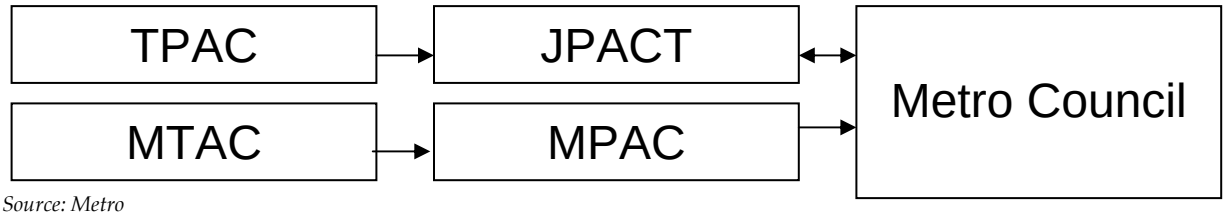
Metro also coordinates with the City of Vancouver, Clark County Washington, the Port of Vancouver, the Southwest Washington Regional Transportation Council (RTC), C-Tran, the Washington Department of Transportation, the Southwest Washington Air Pollution Control Authority and other Clark County governments on bi-state issues. The Southwest Washington Regional Transportation Council is the federally designated MPO for the Clark County portion of the Portland-Vancouver metropolitan region. Metro's transportation planning activities are guided by a federally-mandated decision-making framework, called the metropolitan transportation planning process. Metro leads this process in consultation and coordination with federal, state, regional and local governments, resource agencies and other stakeholders with an interest in or are affected by the planning process.

The process also includes opportunities for open, timely and meaningful involvement of the public and requires comprehensive consideration of the link between transportation and other regional goals for land use, the economy and the environment, including public health, safety, mobility, accessibility and equity.[1] Section 1.2 and Chapter 7 describe the federal requirements in more detail.

1.1.2 Regional Consultation, Coordination and Decision-Making Structure

Metro facilitates this consultation, coordination and decision-making through four advisory committee bodies –the Joint Policy Advisory Committee on Transportation (JPACT), the Metro Policy Advisory Committee (MPAC), the Transportation Policy Alternatives Committee (TPAC) and the Metro Technical Advisory Committee (MTAC). In addition, the Metro Committee for Citizen Involvement (MCCI) provides advice to the Metro Council on how to best engage residents in regional planning activities. **Figure 1.1** displays the regional transportation decision-making process.

Figure 1.1
Regional Transportation Decision-Making Process



Source: Metro

[1] For more information on the metropolitan transportation planning process and related federal transportation requirements, refer to http://www.planning.dot.gov/documents/BriefingBook/BBook.htm.

All transportation-related actions (including federal MPO actions) are recommended by JPACT to the Metro Council. The Metro Council can approve the recommendations or refer them back to JPACT with a specific concern for reconsideration. Final approval of each item, therefore, requires the concurrence of both bodies. Under state law, the RTP serves as the region's transportation system plan (TSP). As a result, the Metro Policy Advisory Committee (MPAC) also has a role in approving the regional transportation plan as a land use action, consistent with statewide planning goals and the Metro Charter.

The plan will be developed to include separate layers of planned projects and programs that respond to differing federal, state and regional planning mandates. These layers are:

- the **financially constrained system**, which is the system of investments that responds to federal planning requirements, and is based on the financial forecast described in Chapter 5.

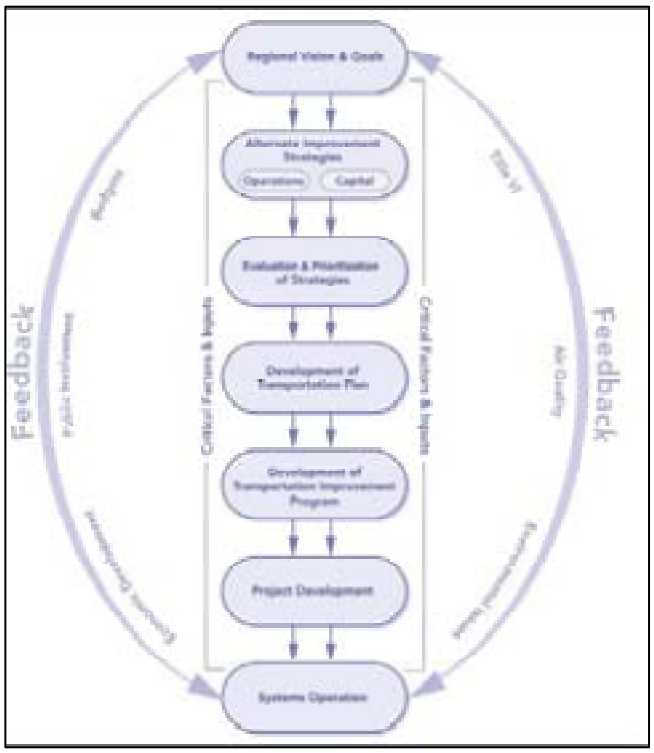
- the **illustrative system**, which is the system of investments that responds to regional and state planning requirements, and assumes that significant new revenue must be identified in order to provide an adequate transportation system over the plan period from 2008 to 2035.

Each of these distinct layers of transportation projects and programs are described in more detail below.

1.2 Federal Context

This section describes the federal regulatory context the RTP must address. The federal "metropolitan transportation plan" is contained in applicable provisions of Chapter 2, 3, 5, 6 and 7 of this RTP. The financial planning and analysis in Chapter 5 is for federal, not state, transportation planning requirements. As a federally designated MPO, Metro must coordinate transportation planning for the Portland metropolitan region, including distribution of federal transportation funds to this region through the RTP and the Metropolitan Transportation Improvement Program (MTIP).

SAFETEA-LU
On August 10, 2005, the federal surface transportation act Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law. SAFETEA-LU authorizes the Federal surface transportation programs for highways, transit, motor carrier, freight, safety and research for the 5-year period 2005-2009. The legislation revised the metropolitan and statewide transportation planning statutory requirements.



The metropolitan transportation planning process decision-making framework.

Source: FHWA and FTA. The Metropolitan Transportation Planning Process: Key Issues, p. 6.

Most of the new text mirrors previous law TEA-21 (1998) and ISTEA (1991), but there are a few key statutory changes that affecting metropolitan transportation planning, including: 4-year cycle for Metropolitan transportation plans, environmental mitigation, new consultation requirements, consistency with planned growth and development plans, security, operational and management strategies, development of a participation plan, use of visualization techniques, implementation of a congestion management process (CMP), and coordination with the public-transit human services plan. These requirements are summarized in Figure 1.2 and described in more detail in Chapter 7.

Figure 1.2 Summary of Federal Requirements and Planning Factors

Federal Requirements That Guide Development of Metropolitan Transportation Plans

- *Plans must be developed through an open and inclusive process that ensures public input and seeks out and considers the needs of those traditionally under-served by existing transportation systems.*
- *Plans must be for a period not less than 20 years into the future.*
- *Plans must reflect the most recent assumptions for population, travel, land use, congestion, employment and economic activity.*
- *Plans must be financially constrained, and revenue assumptions must be reasonable in that funds can be expected to be available during the time frame of the plan.*
- *Plans must conform to the Clean Air Act and its amendments, and to applicable State Implementation Plans for regional air quality.*

Eight Planning Factors Required By SAFETEA-LU

- *Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency.*
- *Increase the safety of the transportation system for motorized and non-motorized users.*
- *Increase the security of the transportation system for motorized and non-motorized users.*
- *Increase the accessibility and mobility of people and for freight.*
- *Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.*
- *Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.*
- *Promote efficient system management and operation.*
- *Emphasize the preservation of the existing transportation system.*

The centerpiece of the federal planning program is the development of a financially constrained transportation system. This system of projects and programs is limited to historic funding trends and current funding sources, and those new sources that can reasonably be expected to be available during the plan period. Chapter 5 describes the level of funding that is expected to be available from 2007 to 2035. As the federally recognized system, the financially constrained system is also the source of transportation projects that may be funded through the MTIP. The MTIP allocates federal funds in the region, and includes a rolling, four-year program of transportation improvements. The RTP provides an updated set of policies and financially constrained projects and programs for future MTIP updates.

In Oregon, transportation funding has not kept pace with inflation, limiting the region's ability to keep pace with maintenance of the existing system as well as the need for new infrastructure. This trend is expected to result in a decline in performance of the region's transportation system during the plan period, as limited funds are increasingly required to maintain and operate the system, leaving inadequate funds to keep pace with growth. The financially constrained system described in Chapter 5 describes such a scenario. While this system includes the region's highest priority projects and programs, the

overall system is not expected to be adequate to meet the goals established in Chapter 3 or fully implement the 2040 Growth Concept.
Several other federal transportation planning requirements also apply to Metro and the RTP.

National Environmental Policy Act (NEPA)

Passed in 1969, NEPA is the United States' basic national charter for protection of the environment. It establishes policy, sets goals and provides means for carrying out the policy. The law applies to federal agencies and any federally funded programs or projects. NEPA is best known for its provision requiring an environmental impact statement (EIS) to be written for "all major federal actions, which may have a significant impact on the environment." If a major federal action will not have a significant impact on the environment, the agency must prepare a shorter document called an Environmental Assessment (EA).

Federal Mandates:

- **SAFETEA-LU legislation**
- **National Environmental Policy Act (NEPA)**
- **Clean Air Act (CAA)**
- **Congestion Management Program (CMP)**
- **Endangered Species Act (ESA)**
- **Title VI of the Civil Rights Act**
- **Americans With Disabilities Act (ADA)**

Recent Federal guidance mandated greater integration of transportation planning and NEPA processes. Federal guidance has encouraged consideration of the environment earlier in the transportation planning process, such as during development of a long-range regional transportation plan. This allows future NEPA processes to use and build on the decisions made and information developed during the regional transportation plan development. Specifically, for system planning decisions to hold up in subsequent EIS/EA processes, NEPA requires: documentation of alternatives considered and rejected, documentation of public and stakeholder involvement and consultation with resource agencies.

Clean Air Act Amendments of 1990

Amended in 1990, the Clean Air Act establishes air quality standards for key air pollutants, including carbon monoxide, ozone and particulate matter. Areas that do not meet the standards are designated in varying degrees of non-attainment from "marginal" to "extreme." If a metropolitan area is designated non-attainment, the state in which the metropolitan area is located must submit an implementation plan that shows how the metropolitan area will meet the federal standards and maintain compliance over a 10-year period. Areas that do not meet the State Implementation Plan (SIP) requirements could face sanctions, including potential loss of federal highway funds and limits on industrial expansion.

In 1991, the Portland-Vancouver Interstate Air Quality Maintenance Area (AQMA) received a marginal non-attainment designation for ozone and moderate non-attainment designation for carbon monoxide. However, by the end of 1991, the area began to meet federal ozone and carbon monoxide standards on a consistent basis. As a result, this region began to work on 10-year maintenance plans and attainment designation requests for both pollutants. These plans were finalized in 1996 and submitted to the U.S. Environmental Protection Agency (EPA) as revisions to the Oregon SIP. EPA approved the maintenance plans and also designated the Portland-Vancouver Interstate AQMA to attainment status in 1997. As required in the federal planning regulations, the financially constrained system in the RT has been demonstrated to conform with the Clean Air Act.

Congestion management program

Transportation Management Areas are required to develop and utilize a Congestion Management Process (CMP), formerly Congestion Management Systems (CMS), in the development of their plans and

TIPs. In December 2005, Metro submitted a CMP roadmap to FHWA that has been accepted. The roadmap describes Metro's current efforts to meet the CMP requirements, its five-year vision and the steps necessary to achieve the vision. Metro's CMP roadmap is based on three phases: diagnostic, planning and monitoring. Collectively, the phases incorporate each of the five elements of the CMP:

- Measure transportation system performance
- Identify the causes of congestion
- Identify and evaluate alternative actions
- Implement cost-effective solutions
- Evaluate the efficiency and effectiveness of implemented actions

The overall CMP will be managed by Metro staff in coordination with FHWA and other stakeholders. Specific working groups will be utilized to actively implement and monitor the CMP for the region.

Endangered Species Act (ESA)

Another federal requirement that impacts regional transportation planning is the Endangered Species Act (ESA), a federal regulation that mandates protection and recovery for species in immediate and near-immediate danger of extinction. The 1998 and 1999 listing of Pacific Northwest steelhead, chinook and chum as threatened species under the ESA have placed an additional emphasis on protecting fish and wildlife habitat.

The National Marine Fisheries Service (NMFS) is the federal agency charged with the listing and recovery of anadromous fish. An anadromous fish reproduces in fresh water but spends part of the growth cycle in the ocean. Once a species is listed, no person or municipality may "take" individual fish or so disrupt habitat as to "take" an individual fish without a permit. A "take" is any action that harms, threatens, endangers or harasses a species or modifies or degrades that species' habitat. There are often conflicts between transportation design, planned urbanization and the need to protect streams and wildlife corridors from urban impacts. Metro and its local, regional, state, and federal partners are defining actions to protect these endangered species and mitigate impacts of transportation on other environmental resources.

Title VI and Environmental Justice

Title VI of the Civil Rights Act of 1964 mandates, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." As the designated MPO for the Portland metropolitan region, Metro is responsible for transportation planning and implementation of transportation projects, and is thus required to comply with this law.

In 1994, President Clinton enacted Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" to reinforce Title VI of the Civil Rights Act of 1964. The order states that the duty of each public agency is to identify and address "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

As an entity utilizing federal funds, Metro is responsible to successfully integrate environmental justice standards into its transportation program and planning activities. Any program or activity receiving federal financial assistance cannot discriminate against people based on race, color, national origin, age, sex, disability, religion or income status.

Americans With Disabilities Act

Additional federal transportation requirements include the 1990 Americans with Disabilities Act, which requires that transportation plans address equal access and opportunity for disabled people. The updated plan includes policy provisions that focus on the transportation needs of the elderly, disables and other special needs populations.

1.3 State Context

In 1991, the Land Conservation and Development Commission adopted the Oregon Transportation Planning Rule (TPR). The TPR implements State Land Use Planning Goal 12, Transportation, which was adopted by the Oregon Legislature in 1974. The TPR requires most cities and counties and the state's four MPOs to adopt transportation system plans that consider all modes of transportation, energy conservation and avoid principal reliance on any one mode to meet transportation needs. By state law, local plans in MPO areas must be consistent with the regional transportation system plan (TSP). In the Portland region, the RTP serves as the regional TSP. Likewise, the regional TSP must be consistent with the Oregon Transportation Plan, adopted in 1992, and amended in 2006, by the Oregon Transportation Commission.

The state TPR requires that transportation system plans provide an adequate system of improvements to serve expected growth in the region. Our success in satisfying this requirement is evaluated through our ability to meet adopted performance measures in the RTP. The illustrative system will be defined during the state component of the RTP update in 2008 and will serve as the statement of adequacy for the purpose of compliance with the state TPR. The illustrative system will draw from the 2035 RTP Investment Pool and will include a broad set of needed transportation projects and programs that generally keep pace with growth in the region, while implementing key elements of the 2040 Growth Concept. A funding strategy will also be developed to direct future efforts to secure new and expanded sources of funding for needed transportation investments.

The projects and programs that will be included in the illustrative system cannot be funded with federal earmarks or through the MTIP process unless they are also included in the smaller financially constrained system. Instead, these projects and programs will guide local transportation plans and land use actions, and serve as the source of future projects in the financially constrained system, either through amendments to the RTP, or through the regular updates that occur every four years.

This section will be expanded as part of the state component of the RTP update.

1.4 Regional Context

1.4.1. Metro Charter

In 1978, the voters within the metropolitan areas of Clackamas, Multnomah and Washington counties approved a ballot measure that made Metro the nation's first directly elected regional government. That vote gave Metro the responsibility for coordinating the land use plans of the 28 jurisdictions in the region as well as other issues of "regional significance."

In 1991, Metro adopted Regional Urban Growth Goals and Objectives (RUGGOs) in response to state planning requirements. The RUGGOs establish a process for coordinating planning in the metropolitan region in an effort to preserve regional livability. In 1992, the voters of the region approved a charter that gave Metro jurisdiction over matters of metropolitan concern and required the adoption of a Regional Framework Plan (RFP).

> *We, the people of the Portland area metropolitan service district, in order to establish an elected, visible and accountable regional government…that undertakes,* ***as its most important service, planning and policy making to preserve and enhance the quality of life and the environment for ourselves and future generations****...*[2] *(emphasis added)*

This preamble, especially the emphasized passage above, lays the groundwork for all of Metro's regional planning activities to directly address sustainability and the region's quality of life. Among these responsibilities, the charter directs Metro to provide transportation and land-use planning services, including development of the RTP. Other activities include oversight of regional solid waste, recycling and waste reduction programs, operation of a regional parks system and regional facilities such as the Oregon Zoo, the Oregon Convention Center and the Portland Metropolitan Exposition (Expo) Center.

1.4.2. Regional Framework Plan

The charter also directed Metro to develop a Regional Framework Plan that integrates land-use, transportation and other regional planning mandates. The framework plan is a comprehensive set of policies that integrate land-use, transportation, water, parks and open spaces and other important regional issues. The framework plan is the regional policy basis for Metro's planning to accommodate future population and employment growth and implement the 2040 Growth Concept. Revised in 1995 and acknowledged by the Land Conservation Development Commission in 1996, the RUGGOs, including the 2040 Growth Concept, were incorporated into the 1997 Regional Framework Plan (RFP) to provide the policy framework for guiding Metro's regional planning program, including development of functional plans and management of the region's urban growth boundary.

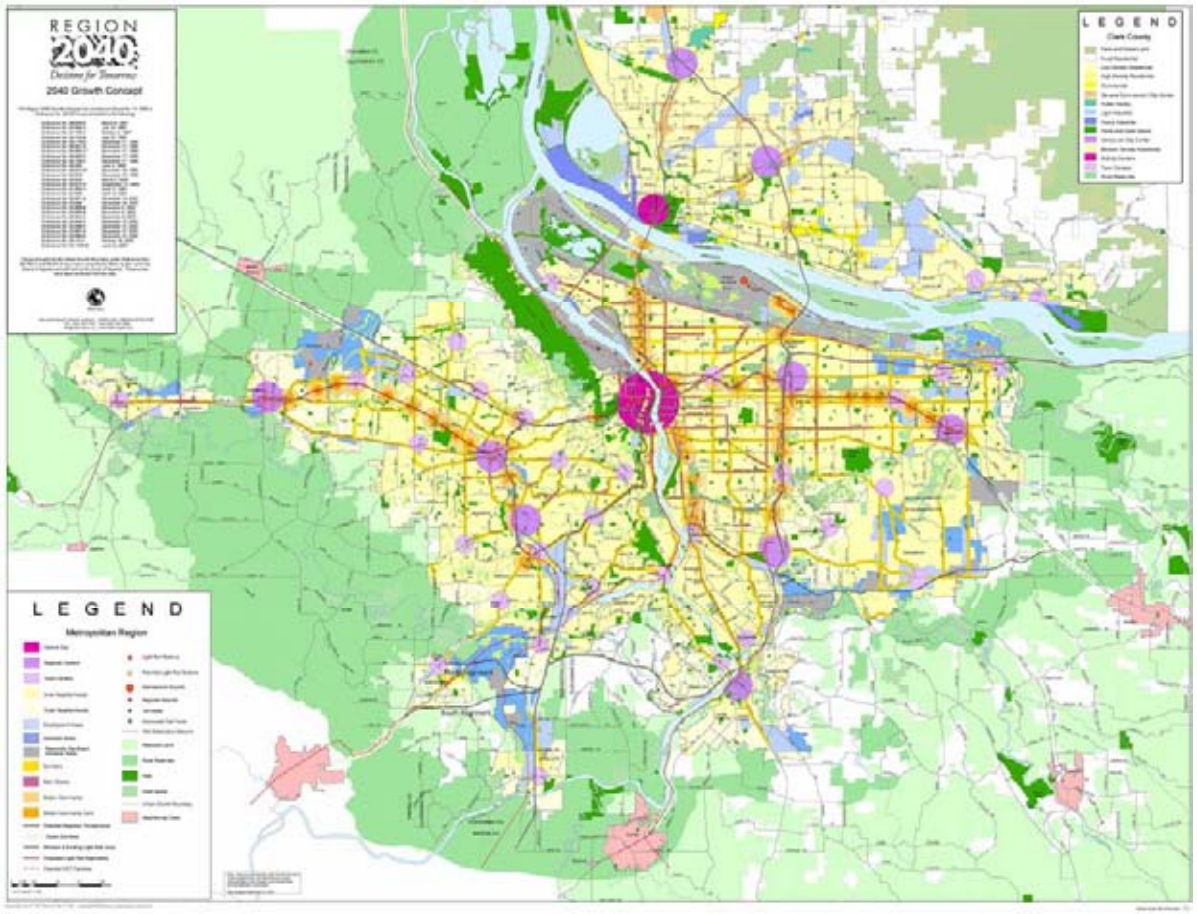
1.4.3. 2040 Growth Concept

In 1995, the Portland region adopted the 2040 Growth Concept, a long-range plan for managing growth for the next half-century. Responding to the mission called out in the Metro Charter, the plan established a new direction for planning in the Portland metropolitan region, linking transportation investments to desired outcomes for urban form, the economy and the environment. At the core of the vision are a set of commonly shared values that continue to resonate with residents throughout the Portland metropolitan region:

- Safe and stable neighborhoods for families
- Compact development that uses land, transportation infrastructure and money more efficiently
- A healthy economy that generates jobs and business opportunities
- Protection of farms, forests, rivers, streams and natural areas
- A balanced transportation system to move people and goods
- Housing for people of all incomes in every community

[2] Metro. *Preamble of Metro Charter as approved in 1992 and amended in 2000.*

Figure 1.3 2040 Growth Concept Map



The 2040 Growth Concept contains a series of land-use building blocks for the region as shown in **Figure 1.3**. The plan calls for a substantial portion of future growth to be accommodated through infill and redevelopment in nearly 40 designated urban centers throughout the region, as well as in designated key transportation corridors, industrial areas, and employment areas.

For purposes of the RTP, the 2040 Growth Concept land-uses, called 2040 Design Types, are grouped into a hierarchy of primary and secondary land uses that serves as a framework to prioritize RTP investments.

1.4.3.1 Primary Land Uses

The central city, regional centers, industrial areas and intermodal facilities are centerpieces of the 2040 Growth Concept, and form the geographic framework for more locally oriented components of the plan. Implementation of the overall growth concept is largely dependent on the success of these primary components. For this reason, these components are the primary focus of 2040 Growth Concept implementation policies and most infrastructure investments.

Terminal 6 in Rivergate industrial area

1.4.3.2 Secondary Land Uses

While more locally oriented than the primary components of the 2040 Growth Concept, town centers, station communities, main streets, employment areas and corridors are significant areas of urban activity. Because of their density and pedestrian-oriented design, they play a key role in promoting public transportation, bicycling and walking as viable travel alternatives to the automobile, as well as conveniently close services from surrounding neighborhoods. As such, these secondary components are an important part of the region's strategy for achieving state goals to limit reliance on any one mode of travel and increase walking, bicycling, carpooling, vanpooling and use of transit.

Hillsdale town center

1.4.3.3 2040 Growth Concept Implementation

Of the land uses described in the previous section, the central city, regional centers, industrial areas, intermodal facilities and station communities are most critical in terms of regional significance and their role in supporting implementation of the other growth concept design types. Substantial public and private investment will be needed in these areas over the long-term to realize the 2040 Growth Concept.

The 2040 Growth Concept relies on a balanced transportation system that adequately serves walking, bicycling, driving, transit and national and international freight movement. Building neighborhoods and communities to focus new jobs, housing and services in these centers and corridors provides many benefits and has important implications for the region's transportation system. The benefits of this approach include:

Portland central city

- More efficient provision of public infrastructure and services, which saves tax dollars
- Healthy long-term property values
- Protection of farmland and natural areas from unnecessary urban expansion
- Development and revitalization of economically vibrant, walkable mixed-use centers and main streets
- More transportation choices and shorter commutes
- Improved air and water quality

Technical analysis conducted during development of the 2040 Growth Concept showed that without implementation of this growth management strategy, the region's urban growth boundary would have needed to be expanded by about 50 percent to accommodate predicted housing and employment growth by the year 2040. This would have resulted in the need for more costly extensions of existing transportation and utility systems.

The 2040 Growth Concept supports other regional goals to provide jobs and shopping closer to where people live. A diverse and well-designed community provides access to a variety of jobs, shopping and other services from home and reduces the number of auto trips and the need to drive longer distances.

Metro's travel research shows that more people walk, take a bus or ride a bike if our transportation system provides safe and convenient opportunities to do so. Focusing new jobs and housing close to restaurants, stores and services makes walking, bicycling and using transit convenient. These travel options allow people who cannot drive, or who choose not to drive, to get where they need to go. Finally, more households may choose not to own a car, or decline a second car, if there are a number of travel options. Money could be saved that would otherwise be spent on car payments, fuel, insurance and maintenance.

The region's transportation system plays a critical role in the continued economic health and livability of this region. When planning for how and where development should occur in this region, consideration must be given to existing and future transportation needs. Experience has shown that economic vitality occurs in those areas with the best access. Therefore, it is important that the RTP strategically invest transportation funds to improve access to and through the areas that need it (e.g., central city, regional centers, industrial areas and facilities where goods move from one transportation mode to another). This means targeting investments in a manner that serves areas where the region has decided future development should occur as part of implementation of the 2040 Growth Concept.

The next chapter summarizes a number of key trends and issues affecting travel in the region and expected growth in population, the economy and travel for the year 2035. Our region is growing and changing, shaped by demographic fluctuations, local and global economic conditions, environmental pressures, safety and security issues, cultural trends, and land uses. The RTP must address these trends within the regulatory context described in this chapter. Federal and state findings will be developed documenting how the updated plan meets all of these requirements.

1.5 Public Process

The public participation plan for the 2035 RTP update was designed to meet regional and federal requirements for public participation and respond to the key issues raised during the scoping phase in 2006. This section describes the *stakeholder engagement and outreach* components that have informed development of the federal component of the 2035 RTP, and support the decision-making role of the Metro Council, JPACT and MPAC and the participatory role of public agencies, targeted stakeholder groups and the general public.

A variety of methods for engaging public agencies and targeted public and private sector stakeholder groups were used, including focused discussions at Regional Forums, Mayors'/Chair's Forums, stakeholder workshops, Metro Advisory Committees and established County Coordinating Committee's meetings, technical workshops and other methods of communication and engagement as described below. In September and October of 2006, Metro staff also met with several groups of citizens and planners to solicit input on the bicycle and pedestrian needs and issues background reports. The groups included local citizen bicycle and/ pedestrian citizen advisory groups, local bicycle and pedestrian planners/advocates and the Regional Trails working group. Metro held a separate bike and pedestrian workshop with local pedestrian and bike planners from local and state government, advocacy groups and the private sector. The participants provided information about trends and current research underway, barriers to developing the pedestrian and bicycle systems, and policy gaps at the regional level.

A second priority for outreach was the general public. The general public was engaged and provided opportunities to give input throughout the planning process. A significant element of this portion of the work program was a scientific public opinion survey that was conducted to solicit a statistically valid measure of public values and transportation needs. In addition, Metro's website hosted an interactive project website that included an on-line survey during the research phase of the update in 2006. The

project website was also to provide information about the update process, timeline with key decision points identified, fact sheets, newsletters and other pertinent information about the process. The transportation hotline included a 2035 RTP update message program that includes timely information about key decision points and provided an option for requesting additional information. In addition, feedback was solicited on a discussion draft 2035 RTP during the public comment period that was held from October 15 to November 15, 2007, through four Metro Council public hearings, Metro's website and four open houses held during the comment period.

Media outreach was also a significant element of the participation plan with the intent of using earned mass media to provide information to the general public and key stakeholders throughout the process. This included briefings of reporters and editorial boards, press releases, media packets and civic journalism. Several electronic-newsletters and fact sheets were developed throughout the process and at key decisions points. The newsletters and fact sheets were distributed through Metro's website, at events and upon request. Summary reports documenting the results and findings of major tasks were also developed and made available on Metro's website and through presentations at Metro's advisory committees.

Notices of key decisions were distributed through community newspapers, electronic newsletters, the transportation hotline and the Metro website. A formal 30-day public comment period was held to coincide with release of a discussion draft RTP in October 2007. Comments were collected through Metro's website, US mail, fax, email and testimony provided at four Metro Council public hearings during this period. Comments received were entered into the public record and provided to staff and elected officials prior to final consideration and action on the federal component of the 2035 RTP. Finally, the RTP and its attendant Air Quality Conformity Analysis will be made available for a formal 30-day public review period before final adoption in February 2008.

The 2035 RTP update process relied on the existing decision-making structure described in Section 1.1 for development, review and adoption of the plan. MPAC, JPACT and the Metro Council made recommendations at key decision points based on input from TPAC, MTAC, the Council-appointed Regional Freight Plan Task Force and the public participation process. SAFETEA-LU provisions for additional consultation with state and federal resource agencies, and tribal groups not represented on Metro's existing committee structure were met through a consultation meeting with the Collaborative Environmental Transportation Agreement for Streamlining (CETAS) work group, consisting of the ODOT and ten state and federal transportation, natural resource, cultural resource and land-use planning agencies.

Finally, the *Regional Freight and Goods Movement Plan* element of the RTP update was guided by a Council-appointed 33-member Task Force and a Technical Advisory Committee (TAC).[3] Recommendations from the Regional Freight TAC were forwarded to the Regional Freight and Goods Movement Plan Task Force. The Task Force recommendations to date have been forwarded to the 2035 Regional Transportation Plan process for adoption into the region's long-range transportation system plan.

[3] The Regional Freight and Goods Movement Task Force was comprised of 33 members from the community, private and public sectors, representing the many elements of the multimodal freight transportation system and community perspectives on freight. The Freight Technical Advisory Committee (TAC) wass comprised of public sector staff from the local, regional, and state agencies operating within Metro's jurisdictional boundaries. The TAC will provide input and review of technical work products.

Chapter 2

State of the Region and Effects on Transportation: Challenges and Opportunities

Our region is growing and changing, shaped by demographic fluctuations, local and global economic conditions, environmental pressures, safety and security issues, cultural trends, and land uses. As the region changes, we need to proactively plan to provide what people need, protect what they value, and invest in what makes our region successful, including providing and maintaining adequate transportation infrastructure, protecting the environment and preserving the quality of life that makes our region unique.

Chapter Organization:

This chapter summarizes a number of key trends and issues affecting travel in the region and expected growth in population, the economy and travel for the year 2035:

- Population and employment growth and demographic changes that affect transportation needs and commuting modes, times and patterns, especially in the suburban parts of the region.
- Decreased travel time reliability from predictable and unpredictable causes of congestion with economic consequences for everyone, but especially business and commerce in the region.
- Need to improve the safety and security of the transportation system and the region's emergency preparedness.
- Opportunities to improve public health through system designs that promote physical and social activity.
- Opportunities to restore and protect the natural environment and foster vibrant and sustainable communities that preserve the region's enviable quality of life.
- Aging infrastructure—roads and bridges—with growing maintenance needs combined with diminished amounts and purchasing power of state and federal revenue sources challenge us to optimize the existing transportation system and develop new, innovative funding strategies.

This chapter is organized as follows:

2.1 Demographic Trends: This section describes demographic trends in the Portland-Vancouver metropolitan region, including expected population growth and changes in the ethnic and cultural diversity of the region.

2.2 Employment and Economic Trends: This section describes employment trends in the Portland-Vancouver metropolitan region and expected growth in employment and the movement of freight and goods.

2.3 Transportation Trends: This section describes how travel behavior has been changing in the region, growth in travel on the region's transportation system, including growth in freight and goods movement and increasing congestion. Safety, security and transportation-related environmental issues are also highlighted.

2.4 Finance Trends: This section summarizes the state of transportation finance in the region, including the region's growing maintenance needs. Chapter 5 includes a more detailed discussion of transportation finance issues facing the region.

2.5 Where We Go From Here: This section summarizes steps needed to move forward to the address these issues.

More information about these trends can be found in a series of background reports in the Appendices or on Metro's website at www/metro-region.org/rtp.

2.1 Demographic Trends

Demographic trends influence the type, location and amount of demand on transportation facilities and services and pose potential equity considerations. Demographic trends in the greater Portland-Vancouver region have been marked by strong population growth, especially in Washington County and Clark County, an increase in ethnic and cultural diversity throughout the region and shifts in age distribution.

The table below shows population growth by county during the fast-growing decade between 1990 and 2000. Growth has slowed since then, but remains robust at about 1.58 percent per year.[1]

Table 2.1.

County Population and Households in 1990 and 2000

(County percent of regional total shown in parentheses.)

County	1990		2000		Increase 1990–2000	
	Population	Households	Population	Households	Population	Households
Multnomah	583,887 (41%)	242,140 (44%)	660,486 (37%)	272,098 (39%)	13.1%	12.4%
Clackamas	278,850 (20%)	103,530 (18%)	338,391 (19%)	128,201 (18%)	21.4%	23.8%
Washington	311,554 (22%)	118,997 (22%)	445,342 (25%)	169,162 (24%)	42.9%	42.2%
Clark (Wash.)	238,053 (17%)	88,440 (16%)	345,238 (19%)	127,208 (18%)	45.0%	43.8%
Total	1,412,344	553,107	1,789,457	696,669	26.7%	26.0%

Source: Census 2000, SF1, P1, P15; Census 1990, SF1, P001, P003

Table 2.2 shows Metro's growth forecast from 2005 to 2035. As the table shows, the Portland-Vancouver metropolitan region is expected to add approximately 1 million more people in the next 25 years[2]—the equivalent of adding two cities the size of Portland. A million more people means that more freight, goods and services will travel our waterways, rails, streets and throughways. More people will be using the region's transportation system to get to work, school, shopping and other daily activities

[1] Metro 2000–2030 Regional Forecast http:///.metro-region.org/library_docs/maps_data/2000_2030regionalforecasesept2002.pdf
[2] Metro 2000–2030 Regional Forecast http:///.metro-region.org/library_docs/maps_data/2000_2030regionalforecasesept2002.pdf

Table 2.2
2035 Population Forecast by County

County	2005	2035	Increase
Multnomah Sub-areas			
Portland Central City and Neighborhoods	538,078	679,782	141,704 (26%)
East Multnomah County	144,722	199,918	55,196 (38%)
Clackamas	373,400	743,000	369,600
Washington	501,400	756,300	254,900
Three-county Sub-total	**1,557,600**	**2,379,000**	**821,400**
Clark (Wash.)	403,504	718,402	314,898
Four-county Total	**1,961,104**	**3,097,402**	**1,136,298**

Source: Metro

The Portland-Vancouver minority population increased 119 percent between 1990 and 2000, growing from 140,000 to 307, 000 in that decade. Hispanic/Latino populations grew the fastest, increasing 181 percent from 1990 to 2000. According to U.S. Census estimates for 2005, the Hispanic/Latino population increased by an additional 36 percent, to 195,000.

Asian Americans comprised the second fastest-growing population in the region, posting an increase of 127 percent during that decade. Between 2000 and 2005, the region gained an additional 28,000 Asian Americans, a 24 percent increase.[3] During the 1990s, the Black/African American population grew from about 38,000 to 44,000, a 16 percent increase, then to 56,000 by 2005, an 18 percent increase.[4]

International migration since the year 2000 accounted for about 30 percent of the population growth in the region. The largest share has come from the former USSR (18 percent) and Mexico (17 percent). Other major countries of origin include Vietnam (8 percent), China (7 percent), India (5 percent), Korea (3 percent), and the Philippines (3 percent). Future population growth due to immigration and migration will depend on national and international conditions that are difficult to predict.

Among the immigrants were highly-educated professionals in high-paying jobs, and a large number of workers with limited education in low-paying jobs. Both immigrant professional families and families with low-income have tended to settle in or move to suburban communities, where housing prices are lower than in the Portland central city. However, in the suburbs and outlying areas transportation choices have been limited. Transit service, bicycle facilities and sidewalks commonly have gaps or may be missing altogether. Participants in a fall 2006 stakeholder workshop that included people who live on the western edge of the Metro urban growth boundary related personal experiences of their families, who must walk five miles or more on roads without sidewalks to reach the nearest transit stop. Participants also mentioned the lack of transit connections to other suburbs, where their jobs may be located. [5]

Age distributions are influenced by birth rates, death rates and migrations. The average age in the greater Portland-Vancouver region has dropped since the 2000 census, reflecting an influx of young adult workers and ethnic populations with high birth rates. The effect of this influx is expected to continue

[3] Hough, George C and Amy Koski, "Population Outlook for the Portland-Vancouver Metropolitan Region;" Portland State University, 2007
[4] Ibid.
[5] 2035 Regional Transportation Plan Update Stakeholder Engagement Report, Metropolitan Group, February 2007

until about 2011, after which the proportion of people over 65 is expected to increase in both the absolute numbers and percentage of the total population.[6] In 2000, about 10.5 percent of the population in the Portland-Vancouver area was over 65; by 2030, that number is forecasted to be 17 percent.[7] An aging population requires transportation facilities designed to serve people with a range of physical abilities.

2.2 Employment and Economic Trends

The region's economy has been marked by job growth, shifts in job types, and growth in traded sector businesses. Over the past 30 years, the area's job growth has doubled—from 500,000 jobs in 1975 to 1 million today.[8] About three-quarters of those jobs were added in non-traded sectors—businesses and organizations such as health care, beauty shops, retail stores and construction companies—that deliver goods and services locally. The remaining jobs were added in traded-sector industries—high technology, distribution and logistics, apparel manufacturers and other industries that distribute goods and services worldwide.[9]

Although the traded sector accounted for only one-quarter of area's new jobs, all jobs—and the area's economy—depend on this sector's ability to bring new money into the area.[10] The region's continued ability to bring new money into the area will depend on how well this sector's transportation needs are met.

Table 2.3.

2035 Employment Forecast by County[11]

County	2005	2035	Increase
Multnomah Sub-areas			
Portland Central City and Neighborhoods	440,825	637,064	196,239 (45%)
East Multnomah County	52,834	114,168	61,334 (116%)
Multnomah Sub-total	**493,659**	**751,232**	**257,573 (52%)**
Clackamas County	145,583	268,273	122,690 (84%)
Washington County	269,657	485,596	215,939 (80%)
Three-county Sub-total	**908,899**	**1,505,100**	**596,201 (66%)**
Clark County (Wash.)	123,352	294,143	170,791 (138%)
Four-county Total	**1,032,251**	**1,799,243**	**766,992 (74%)**

Source: Metro

[6] Hough, George C and Amy Koski, "Population Outlook for the Portland-Vancouver Metropolitan Region;" Portland State University, 2007
[7] Portland State University, "Age-Related Shifts in Housing and Transportation Demand", pgs. 6,8.
[8] The Regional Business Plan, January 2006, p. 4.
[9] Ibid. p. 9
[10] *Cost of Congestion to the Economy of the Region Study (2005)*
[11] The totals for each county include the area both inside and outside the urban growth boundary.

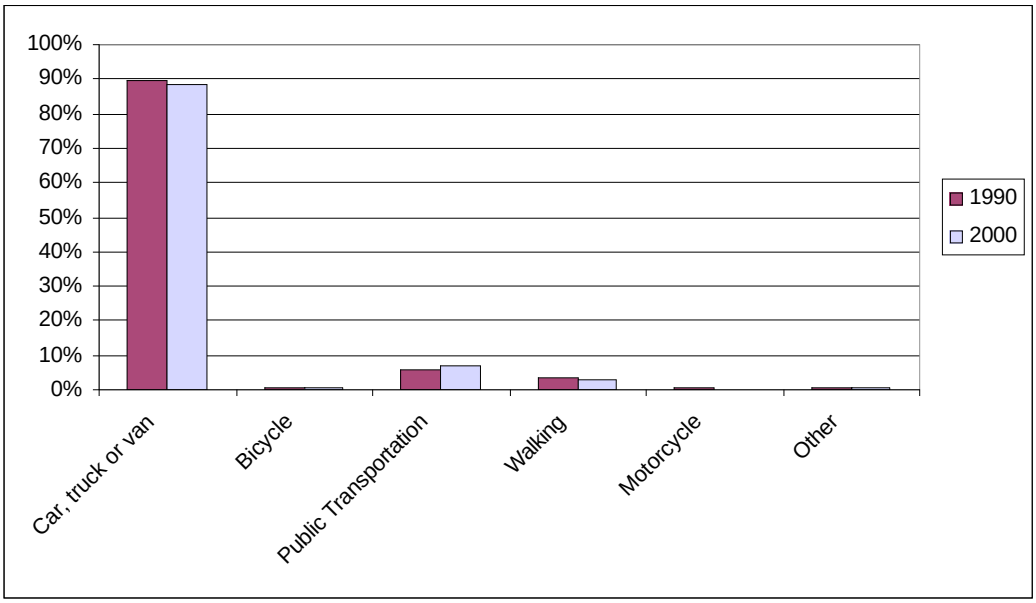
2.3 Travel Trends

Travel behavior—mode choice, commuting patterns, trip length and frequency—is influenced by demographics, land use, transportation costs, transportation access, the economy, employment locations and job types as well as social and environmental values.

2.3.1 Commuting

Figure 2.1 below compares worker mode choice for commuting to work or school in 1990 compared with 2000. The figure shows that most commuters in the region travel in private vehicles. However, note that private vehicle commuting decreased slightly in 2000 compared with 1990. This decrease contrasts sharply with commuting patterns in other metropolitan regions, where private vehicle commuting increased during the same period.[12]

Figure 2.1
Commuting Modes in the Portland-Vancouver Region: 1990 and 2000



Source: Census 2000: SF3, P30 and Census 1990: SF3, P049

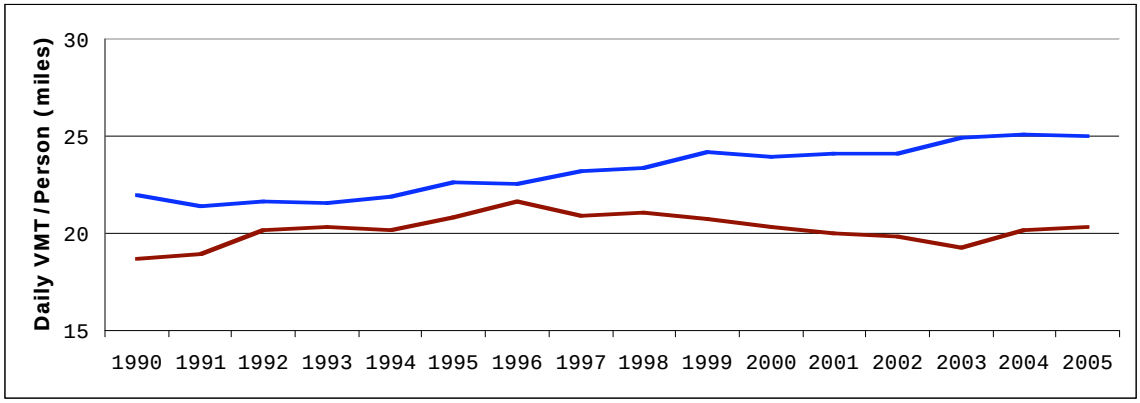
Measured in daily vehicle miles traveled (VMT) per person, the region registered an average 8 percent increase, from about 18.7 miles in 1990 to 20.2 miles in 2004.[13] This increase in per capita VMT was considerably lower in this region than in other large metropolitan areas. Figure 2.2 compares the increase in daily VMT per person in Portland-Vancouver with the average of 25 other large urban areas.[14]

Time spent commuting increased in the Portland-Vancouver region between 1990 and 2000. Although most commuters (68 percent) spent less than 30 minutes commuting to work, the share of people in the region who commute for more than 30 minutes one way increased, reflecting changes in congestion and/or changes in residence location compared with that of job or school.[15] However, the average commute time in the region grew by only tbd minutes between 1990 and 2000. This suggests that

[12] Census 2000: SF3, P30 and Census 1990: SF3, P049
[13] FHWA "Highway Statistics," Table HM-72
[14] Large Urban Areas are defined by the Texas Transportation Instiitute as areas with "over 1 million and less than 3 million population;" as per TTI's '2005 Urban Mobility Report.'Urban Areas Are Listed By 2005 Estimated Population - USDOT, FHWA, 'Highway Statistics' SeriesSource of Daily Vehicle Miles of Travel Data, US Dept. of Transp., FHWA's 'Highway Statistics,' 1990-2005 (& Internet) Table HM-72, 'Urbanized Areas - Selected Characteristics.'Portland,OR-WA population rank changed from #10 in 2004 to #12 in 2005, within this group of 'Large Urban Areas'.The internet website location of the 'Highway Statistics' series (as of December 21, 2006) is: http://www.fhwa.dot.gov/policy/ohpi/hss/index.htm
[15] Census 1990: SF3, P050 and Census 2000: SF3, P31

integrated transportation and .land use decisions supporting a compact urban form and focusing on connections to centers and other employment areas are making an impact on slowing the growth of the average commute time.

Figure 2.2
Daily VMT/Person, 1990–2005:
Portland-Vancouver Compared with 25 Large Urban Areas in the U.S. [16]



2.3.2 Bicycling

The city of Portland is known for its bicycle culture. Bicycles play an important and growing role in the regional transportation system and the region's economy. While this has traditionally been limited to inner-neighborhoods, interest in bicycling has expanded across the region in recent years, adding to the growing demand for improved bicycle facilities. Bicycle facilities boost economic activity by attracting bicycle-focused businesses and active tourism, and by and providing a venue suitable for large events. A study by the North Carolina Department of Transportation found that the availability of good bicycle facilities played an important role in tourist decisions, and that investments in bicycle facilities yielded an estimated nine-to-one return on investment in tourist dollar.[17] The bicycle-related industry in Portland is currently valued at $63 million and includes retail, tours, races, events, distribution and manufacturing, and professional services.[18]

Between 1991 and 2004, the City of Portland invested $12 million in the city's developed bikeway network, increasing the mileage from 78 to 256.[19] The network includes bike lanes and designated "bike boulevards"—low-traffic city streets suitable for bicycling. Bicycle counts released for 2006 show significant increases in bicycle traffic across the city, with bicycle traffic constituting 10 percent of the total trips across the bridges. [20] Counts taken across four central city bridges reported 12,000 daily trips—an 18 percent increase over 2005. Bicycle count data is currently limited to Portland, but anecdotal evidence suggests that bicycle ridership has increased throughout the region.

[16] 2006 data for Portland, OR, and Vancouver, WA were received from the respective DOT HPMS's offices, via email, in July 2007. National data will be available in December 2007.Sources: Portland, OR only and Portland-Vancouver, OR-WA data are both from the FHWA in Washington, DC and from ODOT's Highway Performance Monitoring System (HPMS)program in Salem, Oregon - 1990 through 2005. National DVMT/ Person data is from the FHWA booklet "Highway Statistics," 1990-2005; Table HM-72, 'Urbanized Areas - Selected Characteristics',Publication No. FHWA-PL-03-013 (for 2004 booklet). The national average of DVMT/ Person is calculated from 'Total DVMT' divided by 'Estimated Population,' as it appears on Sheet 9 of Table HM-72; which lists all the Federal-Aid Urbanized Areas in the U.S. "A 'Federal-Aid Urbanized Area' is an area with 50,000 or more persons that at a minimum encompasses the land area delineated as the urbanized area by the Bureau of the Census" (from Roadway Footnotes for HM-72, page V-85 of 'Highway Statistics 2004').

[17] *Pathways to Prosperity*, North Carolina Department of Transportation, 5/11/04

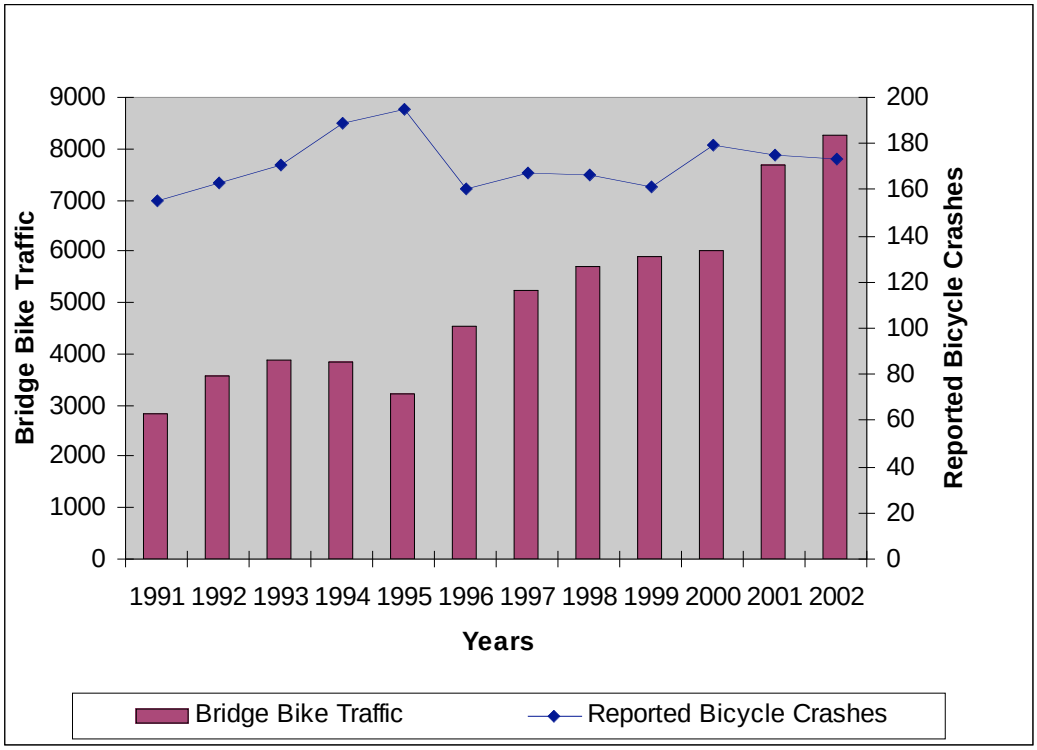
[18] Alta Planning, Bicycling-Related Industry Growth in Portland, 2006.

[19] Birk, Mia and Geller, Roger. Bridging the Gaps: How the Quality and Quantity of a Connected Bikeway Network Correlates with Increasing Bicycle Use, 2005, p. 14

[20] Portland Office of transportation, Bicycle Count Report, 2006.

Bicycle safety has improved with increased ridership. Figure 2.3 compares crash incidents with bicycle traffic increases (based on bridge counts) over a 10-year period. As the figure shows, despite increasing numbers of people bicycling in Portland, the number of bicycle crashes has held constant for a reduced crash rate. [21] However, the increase in bicycling has also brought new riders to the system who may not be aware of safety laws and practices, creating conflicts with motor vehicles and pedestrians. This highlights a need for an improved bicycle safety education strategy in the community that keeps pace with the growth in bicycling.

Figure 2.3
Bicycle Traffic on Willamette River Bridges and Reported Bicycle Crashes in City of Portland 1991-2002



2.3.3 Walking

Walking is the most widespread and universal form of transportation. Whether an entire trip is done on foot (or using a wheelchair or similar mobility device), people must walk for at least part of every trip, even when the rest of the trip takes place on transit, in a vehicle or on a bicycle.

Pedestrian activity indicates vitality in residential, commercial and mixed-use areas. Pedestrian activity thrives where the physical facilities are well connected, safe and attractive—well lit, free of debris and in good repair—and where intersections have crosswalks or signal lights. Audible signals at crosswalks and curb ramps at intersections improve the utility of pedestrian facilities for people with physical challenges.

Many parts of the region have well-connected pedestrian facilities. Based on data collected by TriMet and Metro in 2001, the region had 1,230 miles of potential pedestrian facilities in transit/mixed use corridors

[21] 2006 City of Portland Bicycle Count Report – Significant Findings & Analysis.

and pedestrian districts. However, only 821 miles of those 1,230 potential miles had sidewalks, for a pedestrian system that was only 66% complete.[22]

Although 90 percent of the region's population lives within a half-mile of a bus stop or light rail platform. However, sidewalks connect to only about 69 percent of the stops. TriMet is working with local jurisdictions to improve pedestrian access to transit, to not only support increased ridership, but also to enable more people to use fixed-route transit who would otherwise need door-to-door service.[23]

Pedestrians will be increasingly affected by the growth in motor vehicle and bicycle traffic on the major street systems. The expected growth in motor vehicles on the system will increase the need for more and better pedestrian facilities and crossings. The expected growth in bicycling will increase the need to educate both cyclists and pedestrians on the safe use of sidewalks, bikeways and shared multi-purposes routes that are designed to serve both cyclists and pedestrians.

2.3.4 Transit

Light rail, bus, park-and-ride lots, para-transit, and streetcars make up the current regional transit system, with commuter rail service under development. Ridership on bus and light-rail lines in the region increased by 58 percent between 1990 and 2000,[24], nearly double the percentage growth rate in population.

Forty-four miles of MAX light rail lines operated by TriMet currently run through Portland, connecting the Portland Expo center with downtown Portland, the Portland International Airport with downtown Beaverton, and downtown Gresham with downtown Hillsboro. Another 8.3-mile line from Clackamas town center to Portand State University in downtown Portland is under construction and expected to open in 2009. Two studies are underway for additional high capacity connections from downtown Portland to downtown Milwaukie and from downtown Portland to Vancouver, Washington, with recommendations from these studies anticipated in 2008.

Regional bus service is provided by TriMet and the South Metropolitan Area Rapid Transit (SMART). TriMet bus service includes 93 routes covering 892 miles, with 16 frequent bus routes that offer riders fifteen minute or better service seven days per week. SMART bus service in Wilsonville operates seven fixed-route buses five days a week, with two of the routes also operating on Saturday. SMART buses serve Wilsonville and also connect with bus services in Portland, Tualatin, Canby and Salem.

Streetcar lines currently serve only the west side of downtown Portland, with lines being considered for the east side of Portland and Lake Oswego. Streetcar service is managed by a non-profit that was organized by the City of Portland, but is operated by TriMet personnel through an agreement with the City. Both the City of Portland and TriMet share operating costs. Ridership has increased by an average of 17.4 percent since 2001.[25] Commuter rail service between Wilsonville and Beaverton in Washington County is expected to be in operation in 2008. Potential commuter rail connections have been identified for future study to connect the Portland metropolitan region to Salem and other neighboring communities.

The population of seniors is growing, particularly at the edges of the Metro region, and there are numerous human service transportation providers in the region, each offering similar transportation options. Providers range from transit agencies like TriMet and SMART to non-profit providers like Ride Connection, Inc. Each provides demand response services for seniors and people with disabilities.

[22] Metro. *A Profile of the Regional Pedestrian System in the Portland Metropolitan Region*, 2007, pg. 12.
[23] TriMet, *2007 Transit Investment Plan*. p. 10.
[24] TriMet, Transit Investment Plan. 2007. Pg. 6.
[25] Metro. *A Profile of the Regional Transit System in the Portland Metropolitan Region*, 2007, pg. 16.

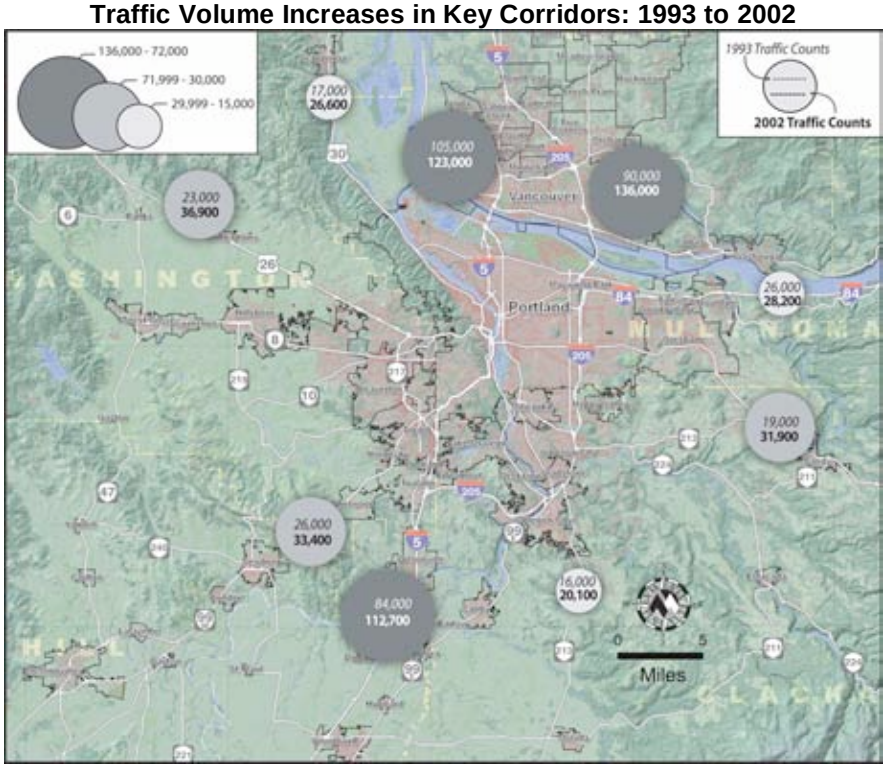
TriMet meets the needs of seniors and people with disabilities with the LIFT and Medical Transportation programs. TriMet operates 225 LIFT vehicles that provide door-to-door service, providing 958,000 million rides annually to seniors and people with disabilities.[26] LIFT ridership has averaged 7.1 percent annually for the last five years with the cost per one-way trip climbing to $22. Operating costs are increasing $1.5 million annually.[27]

Regional research shows that between 35 percent and 59 percent of LIFT riders could potentially walk and use existing fixed route transit. However, barriers exist like discontinuous sidewalk segments and a lack of transit stops/destinations within a quarter of a mile of where the elderly and disabled reside. The research suggests that a focus should be put on providing housing for the elderly and disabled along transit corridors. However, current zoning often precludes locating housing for the elderly or disabled in transit corridors. Additionally, an emphasis should be placed on addressing issues of sidewalk connectivity near existing bus stops and MAX light rail stations. Finally, with multiple providers and overlapping services within a region, there is a need for more coordination of services.

2.3.5. STREETS AND THROUGHWAYS

The region's streets and throughways reflect the effects of increasing traffic, increasing age and changing travel patterns based on economic and demographic changes throughout the region. Traffic volumes in the Portland-Vancouver region increased between 1993 and 2002 in several key transportation corridors as shown in Figure 2.3, reflecting population and job growth within and outside the urban growth boundary, longer commute distances and changing commute patterns with more suburb to suburb travel.

Figure 2.3
Traffic Volume Increases in Key Corridors: 1993 to 2002



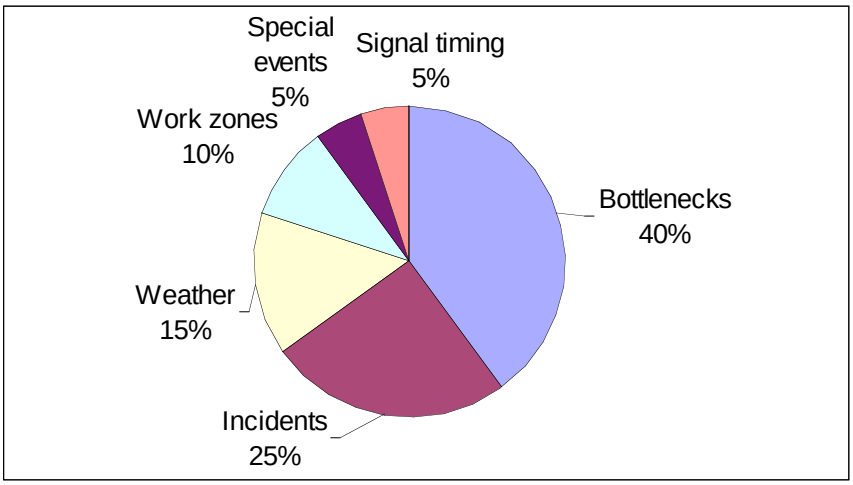
Source: Metro

[26] TriMet, Transit Investment Plan. 2007. Pg. 4.
[27] Metro. *A Profile of the Regional Transit System in the Portland Metropolitan Region*, 2007, pg. 16.

Congestion plagues all growing urban areas. Congestion growth manifests as greater severity, peak traffic periods that last longer and peak conditions that extend over a larger area. Congestion that arises from peak-hour volumes, known bottlenecks, and problematic interchanges are predictable. Although commute times due to predictable congestion may be long and frustrating, they are reliable. Congestion that arises from non-recurring incidents, such as crashes, breakdowns, construction, natural disasters and inclement weather, are unpredictable and negatively affect travel time reliability.[28] Travel time reliability is of growing interest to transportation practitioners as an important measure of mobility.

Figure 2.4 presents national data on the causes of congestion. As the figure shows, more than half of all congestion is caused by non-recurring incidents. In 2005 the region's freeway system averaged 1,000 such incidents a month (808 breakdowns and 249 crashes).

Figure 2.4
Causes of Congestion (national data)[29]



The 2005 study, *Cost of Congestion to the Economy of the Portland Region,* estimated potential losses in the region of $844 million annually in 2025 from increased freight costs and lost worker productivity from increases in travel time due to congestion.[30]

Historically, roadway congestion has been described in terms of volume-to-capacity (v/c) ratio and level of service (LOS) using Metro's travel demand model. More recently congestion has been assessed using average travel speeds and travel times drawing from an archive of real-time traffic monitors generated by the Oregon Department of Transportation and maintained by Portland State University (PSU). Currently these data are available only for the region's limited-access freeways. Efforts are underway to expand current data collection to include the regional arterial network.

Background research conducted for this RTP update found that congestion is greatest on the freeways and interstate highway system.[31] The more recent PSU data confirm—and drivers know—that the major physical bottlenecks in the region include:

- I-5 Interstate Bridge

[28] FHWA, 2006. Travel Time Reliability: Making it there on time, every time.
[29] Traffic Congestion and Reliability: Linking Solutions to Problems, prepared for the Federal Highway Administration by Cambridge Systematics, Inc., and the Texas Traffic Institute, 2004, accessed at www. ops.fhwa.dot.gov
[30] Metro. *Cost of Congestion to the Economy of the Portland Region* (2005).
[31] Ibid, p. 12-13.

- I-84/I-5 interchange area
- US 26/Vista Ridge Tunnel
- I-84/I-205 interchange area

2.3.6 CONGESTION MANAGEMENT STRATEGIES

Consistent with federal planning regulations, Metro maintains a Congestion Management Process (CMP) for the Portland metropolitan region. The CMP includes a performance monitoring program that informs needed capital investments, such as new or improved road capacity as well as demand and system management strategies to improve performance of the existing infrastructure.

In addition to traditional congestion management strategies, transportation practitioners in the region have developed non-traditional approaches to managing congestion to reduce the number of vehicles on roads and highways, improve traffic flow and improve travel-time reliability.

Among the most cost-effective and relatively simple approaches to managing congestions and improving travel time reliability involves applications of Intelligent Transportation Systems (ITS). Examples of ITS include street-light synchronization, ramp meters, weigh-in motion transponders for commercial truck traffic, real-time road condition data, and global positioning systems that coordinate signal timing for commercial traffic and transit vehicles.[32] ITS alone cannot solve congestion problems, but they can provide relatively low-cost support to other management strategies and capacity investments.[33]

Other approaches to addressing congestion include:

- Metro's support of transit-oriented development (TOD)—mixed-use developments near transit stations to encourage transit use.
- Metro's Regional Travel Options (RTO) program to reduce drive-alone travel. Over the past 10 years, the RTO program has worked with large employers in the region to help them comply with the Employee Commute Options (ECO) rule by implementing transportation demand management (TDM) strategies. The RTO program also provided technical assistance to Transportation Management Associations (TMAs) in the region, including the Lloyd District TMA, Westside Transportation Alliance and Swan Island TMA; operated the Metro VanPool program, and operated Carpool MatchNW.
- TriMet has an Employer Outreach program to encourage large employers to promote transit use in their workforce.
- In February 2006 the Oregon Department of Transportation (ODOT), Metro, TriMet, City of Vancouver and other public and private partners launched the Drive Less/Save More Campaign, to reduce drive-alone car trips that are not related to work. Such trips constitute more than two-thirds of drive-alone travel.[34]
- In 1999, the region studied options for peak-period pricing as a tool for managing congestion in the region's busiest travel corridors as part of the Traffic Relief Options project. The study led to new region policy in 2000 that requires that new highway capacity projects be evaluated for potential benefits of peak-period pricing as a tool for managing long-term mobility. Since the 2000 policy was adopted, several major cities around the world have adopted various forms of congestion pricing, raising the profile of this strategy as a long-term solution for protecting the function of mobility routes in growing regions.

[32] *Metro*, A Profile of Regional Roadway System in the Portland Metropolitan Region, 2007, p. 2.
[33] Ibid, p. 4.
[34] http://www.drivelesssavemore.com

2.3.8 REGIONAL TRANSPORTATION SYSTEM FUNCTIONS

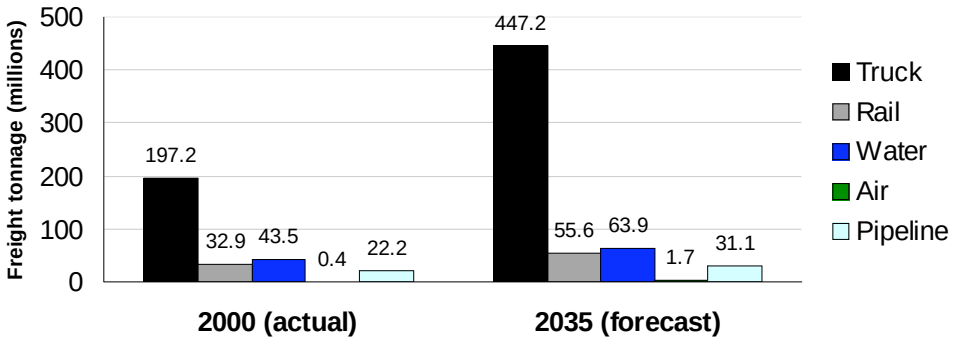
The regional transportation system provides mobility for people, goods and services, connecting regional centers with one another, the nation and the world. The system aims to support the region's economic vitality; foster healthy, active living; improve safety and security; and promote the health of the environment.

2.3.8.1 Movement of Freight and Goods

The Portland-Vancouver region is an international gateway for trade and tourism and a west-coast hub for domestic distribution of freight. An international airport brings tourists and cargo to the area, public and private marine ports connect water to roads and rails, and three interstate highways connect Oregon with the rest of the nation. The region's economy depends more heavily than many other regions its size on transportation.[35] Work, commerce, freight, and tourism—even home businesses—depend on an efficient, multi-modal transportation system that reliably moves freight, services, goods and people.

Freight moves into, out of and through the region by road, air, water, rail and pipeline. Figure 2.5 shows the mode breakdown of freight tonnage moved in 2000 compared with 2035 forecasts.

Figure 2.5
Portland Metropolitan Region Commodity Flows by Mode
(in millions of tons)



Source: Portland/Vancouver International and Domestic Trade Capacity Analysis, Port of Portland, 2006

As a percentage of total tonnage in 2000, trucks carried 67 percent of the commodities, rail (and intermodal) 11 percent, water (ocean and river barge) 15 percent, air 0.1 percent, and pipeline 7 percent. Trucks are forecast to increase their share to 75 percent by 2035, with major implications for highway traffic.[36]

Air cargo, although low in tonnage, carries high-value, time-sensitive goods—electronics, footwear and perishables—to international and domestic markets. Freight rail is currently at or near capacity, and so has little room to handle more traffic without additional rail lines.[37]

A significant trend that emphasizes the region's role in the national economy involves "pass through" traffic—freight and goods moving through the Portland-Vancouver metropolitan region, but not originating in the region or destined for it. The 1997 Commodity Flow Forecast for the Portland-

[35] Cost of Congestion Study
[36] *Portland/Vancouver International and Domestic Trade Capacity Analysis, Port of Portland, 2006.*
[37] Freight Rail and Oregon Economy: Final Report, 2004.

Vancouver region estimated that 450 million tons of commodities passed through the region over roads, rails, pipelines and waterways that year, and projects that the amount will double by 2035.[38]

2.3.8.2 Community Health and Active Living

Interest in the connection between urban planning and active living grew in the 1990s, an outcome of a growing interest in "smart growth," a movement to integrate land use, transportation and public health planning. Studies since then report positive effects on human health in built environments that encourage walking and biking.[39] While the Portland region has long embraced such policies, based on land use and transportation benefits, the introduction of health benefits is a new realm for the region.

Although Americans are considered healthier than ever before, we face a trend of rapidly rising rates of chronic disease associated with obesity, being overweight and sedentary lifestyles, conditions that public health officials now describe as epidemic. There is ample evidence that transportation and community design are critical factors in determining whether residents are able to be physically active enough to ensure their health. The region's transportation system is incomplete from the perspective of physical activity.

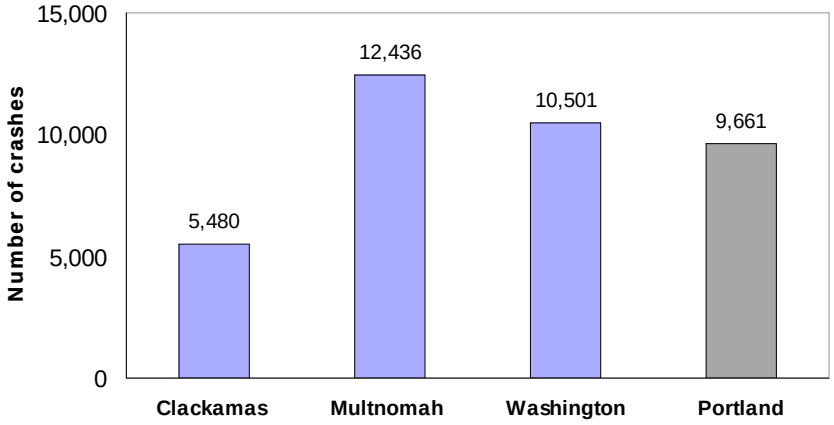
Built environments that promote active living include compact mixed-use developments and street designs that feature well-lit sidewalks and safe cycling facilities.[40] Efforts in the region to promote active living include the City of Portland's Office of Transportation "Safe Routes to School" program and the grant-funded "Active Living by Design" program administered by Portland State University.[41] The Active Living by Design is a multi-disciplinary approach to promoting community health. The program selects specific neighborhoods for concerted efforts to promote healthy eating and physical activity in daily living. Metro incorporated active living as a goal for this RTP update, and expects to expand the region's analytical capability to allow for transportation investments to be evaluated for both their land use and public health benefits.

2.3.8.3 Safety

Transportation safety is a critical priority for the residents of this region. It generally centers on preventing traffic crashes that cause congestion and delays, property damage, personal injury or death. Figure 2.6 below shows the number of crashes that occurred in 2005 in Multnomah (excluding Portland), Clackamas and Washington counties, and the city of Portland. Figure 2.7 on the following page shows crash data for the same year by road type.

[38] Freight in America, 2006.
[39] LD Frank, PO Engelke - Journal of Planning Literature, The Built Environment and Human Activity Patterns: Exploring the Impacts of Urban Form on Public Health Journal of Planning Literature, Vol. 16, No. 2, 202-218 (2001) DOI: 10.1177/08854120122093339, Sage Publications.
[40] "Four Model Ordinances to help Create Physically Active Communities. https://www.planning.org/smartgrowthcodes accessed 9/13/07
[41] Active Living By Design Website (Research Page, viewed on Oct. 5, 2006) www.activelivingbydesign.org.

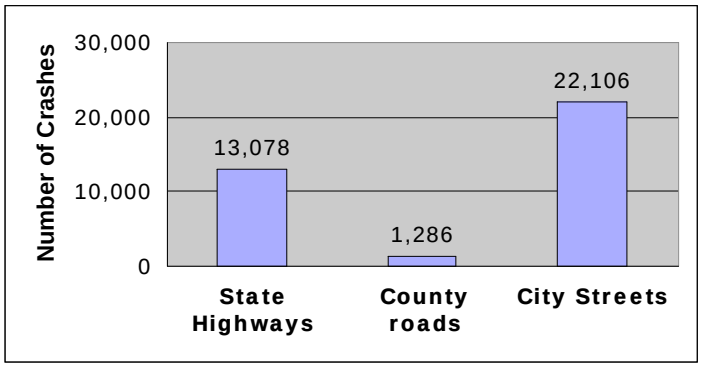
Figure 2.6.
2005 Crashes in the Region's Counties and the City of Portland (Multnomah County numbers do not include Portland)



Source: Oregon Department of Transportation's Crash Analysis Reporting Unit

Although fatalities were involved in less than 1 percent of those crashes, about a third resulted in non-fatal injuries. Crash prevention measures in the region include road improvements, stepped up enforcement and public education. Local streets designed with street trees and on-street parking have been shown to calm traffic and encourage drivers to proceed with caution, improving safety for other drivers, cyclists and pedestrians[42]

Figure 2.7
2005 Crash Location by Road Type



Source: Oregon Department of Transportation's Crash Analysis Reporting Unit

ITS applications have been implemented so that drivers can access information on road conditions and hazards. Signal timing that helps large trucks avoid running red lights has been installed where Columbia crosses Marquam in Portland, an intersection that sees heavy freight traffic. Preventing red-light running among trucks should reduce the likelihood of a crash with cars and bicycles.

To further improve safety in the region, more detailed data are needed on crash location, cause of crashes and crashes that involve less than the $1,500 reporting threshold.

[42] For more information on specific livable street improvements see Metro's "Creating Livable Streets: Street design guidelines for 2040." June 2002.

2.3.8.4 Security and Emergency Management

Security efforts in the region focus on emergency preparedness and management, security of the transit system, security of both marine and air port facilities, and safe movement of hazardous material through the region. The Regional Emergency Management Group (REMG) focuses on coordinating regional agencies to prepare for emergencies. This group, formed in 1993, is made up of emergency management professionals and elected officials in the region. The group's major efforts include creating Emergency Transportation Routes (ETRs) in case of an earthquake or other emergency and doing a Critical Infrastructure Analysis of the region, which will determine how the transportation and other infrastructure will hold up in the case of different disaster scenarios.

Portland has centralized the city's emergency management services into the Portland Office of Emergency Management (POEM), under supervision of the Mayor's office. POEM is responsible for emergency prevention, mitigation and recovery, and is also charged with addressing Community Preparedness, Homeland Security, Planning, Mitigation, Response, Recovery and Inter-bureau and Regional Collaboration for the city.[43] TriMet, the Port of Portland and ODOT each focus on transportation-related security measures for facilities under their management.

2.3.8.5 Environmental Restoration and Protection

Environmental restoration and preservation are important to people in this region. Recent public opinion research asked 600 residents of the region to rate issues they believe should be important for transportation planners to consider. Reducing air pollution topped the list, with protecting fish habitat not far behind.[44]

Transportation affects regional air quality, water quality, wildlife habitat, and noise in addition to the larger issue of global climate change. Currently, transportation accounts for an estimated 38 percent of the state's carbon dioxide emissions, with vehicle emissions predicted to increase by 33 percent by 2025 because of increased driving.[45]

Emissions from vehicle exhaust introduce particulates, irritants and toxins to the air; road runoff contributes to erosion and introduces oil and other chemicals into streams and groundwater. Roads can interrupt wildlife corridors and fish passageways. Although roads cover only about one percent of the country's land, they affect a disproportionate 15 to 20 percent of adjacent habitat.[46]

Regarding air quality, the region has met some goals and fallen short of others. Regional air quality has met the Environmental Protection Agency's air quality standards for six pollutants, sufficient to achieve "maintenance" status. However, levels of toxic emissions near downtown Portland—most notably benzene—have been measured at more than 8.5 times the federal standard.[47]Transportation activities are the second largest source of greenhouse gas emissions in Oregon.

Several Metro-initiated activities are aimed at restoring habitat or mitigating environmental damage from transportation facilities, including:

- The Livable Streets and Green Streets programs to encourage environmentally sensitive street design and minimize storm water runoff.

[43] Emergency Management, http://www.portlandonline.com/oem/
[44] Bob Moore, Inc. January 2007.
[45] *Oregon Transportation Plan.* Oregon Department of Transportation. September 2006. P. I-20.
[46] Forman, R.T.T. and Deblinger, R.D. The Ecological Road-Effect Zone for Transportation Planning and Massachusetts Highway Example. Proceedings of the International Conference on Wildlife Ecology and Transportation. (Florida Department of Transportation Publication FL-ER-69-98) 1998
[47] Oregon Department of Environmental Quality *Fact Sheet*, 11/15/06

- An inventory of regionally significant fish and wildlife habitat to identify and map ecologically sensitive areas.
- Development of a "Wildlife Crossings" handbook to minimize impacts of roadways on wildlife populations.
- A 2002 inventory of culverts in the region that needed repair or replacement to accommodate endangered or threatened fish species, and uses the inventory with rankings of applications for flexible funds to retrofit culverts.
- Metro is currently working with the Oregon Department of Fish and Wildlife to establish a statewide database of culverts that are barriers to fish passage.

2.4. FINANCE TRENDS

Federal, state and local funding for infrastructure investments is not keeping pace with needs, particularly for operations, maintenance and preservation of existing public assets but also needed expansion of the system.

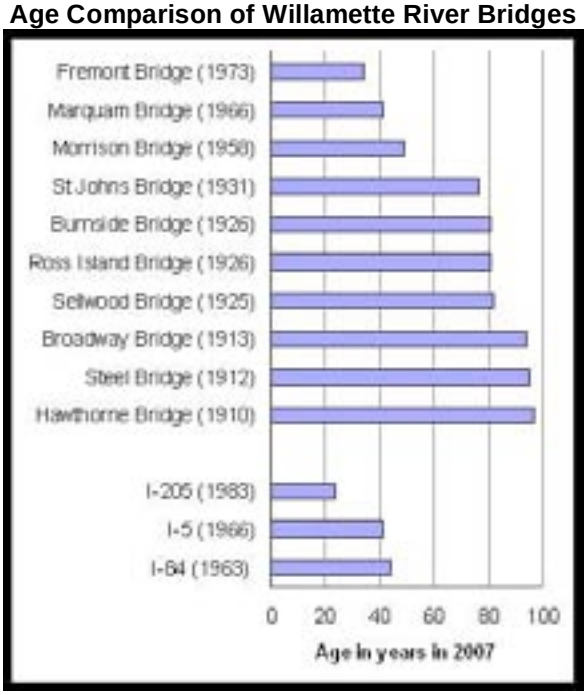
At current spending levels and without new sources of funding, the federal highway trust fund will exhaust projected revenues by 2009. State and local government purchasing power has steadily declined because the state gas tax has not increased since 1993. This shift in funding has been particularly acute in Oregon, as most states have turned to increased sales tax levies as a stop-gap for coping with the decrease in federal transportation funding. Lacking a sales tax, Oregon has focused on bonding strategies based on future gas tax receipts and lottery funds at the state level, but has not developed a long-term strategy. Local governments in Oregon have turned to increased property tax levies, road maintenance fees, system development charges and impact fees to attempt to keep pace.

According to the American Society of Civil Engineers, 38 percent of Oregon's major roads are in poor or mediocre condition. Comprehensive data of the Portland metropolitan region is not currently available. The city of Portland has documented a $422 million backlog of unmet maintenance needs for existing transportation facilities. Without new revenue, that backlog is expected to continue growing at a rate of $9 million per year. Increased traffic volume also increases the maintenance needs of regional streets and throughways. Maintenance needs of regional streets and throughways are compounded by the current age of most regional facilities. Compounding all of this, maintenance costs often compete with funding available for new or expanded facilities. [48]

All of the ten Willamette River bridges provide crucial regional connections across the Willamette River: St. Johns, Fremont, Broadway, Steel, Burnside, Morrison, Hawthorne, Marquam, Ross Island and Sellwood. The Oregon Department of Transportation is responsible for maintenance and operations of the St. Johns, Ross Island, Marquam and Fremont Bridges. Union Pacific Railroad owns the Steel Bridge, which also serves as a critical connection for the region's light rail transit system. Multnomah County is responsible for the remaining five bridges. Within 20 years, four of Multnomah County's five Willamette River Bridges will be 100 years old. The county's capital program for these bridges is estimates to cost $450 million, yet only $144 million in federal, state and county revenues has been identified. All the region's bridges face maintenance challenges that come from age and use. Figure 2.8 compares the age of each of the bridges that cross the Willamette River.

[48] *Metro*, A Profile of Regional Roadway System in the Portland Metropolitan Region, 2007, pgs. 2-3.

Figure 2.8
Age Comparison of Willamette River Bridges



The Marquam Bridge, a double deck cantilever truss bridge built in 1966, was ranked as the safest due to restraining devices that connect the decks to piers, which reduce the chance of the decks' collapsing. The Sellwood Bridge, a four-span continuous deck truss built in 1925, was ranked as the least safe bridge. Many parts of the Sellwood Bridge structure are in an advanced state of deterioration, which has forced heavier loads—including TriMet buses and heavy trucks—off of the bridge for the time being. A planning effort is underway to study potential solutions and determine how best to repair or replace the Sellwood Bridge. The estimated costs of bridge improvements range from $2 million to $237 million, depending on each bridge's maintenance and seismic retrofit needs.[49]

In addition, 30 percent of TriMet's bus fleet is older than standard replacement age of 15 years. The cost of replacing these buses is estimated to be $75 million. On average, TriMet needs to replace 41 buses per year, at an annual cost of $16.4 million. This is expected to grow to ____ by 2035. The purchase power of operating funds for the regional transit system are also declining, as they are affected by inflation and by the cost of expanding services to serve the fast-growing elderly population and people with disabilities. This is cost of LIFT service is expected to be $___ million by 2035, nearly ____ percent of TriMet's operating budget.

Diminished available resources mean increased competition for available transportation funds and reduced ability to expand, improve and maintain existing transportation infrastructure. New funding strategies, enhanced public and private collaborations and stronger public support for seeking new revenue sources must be developed to pay for major system investments, such as added roadway capacity and new bridges. Meanwhile, the following interim steps are crucial.

- Maximize operational efficiency of the current system

[49] Baker, Eric, Cowden, Steve, Mode, Michael, *The Oregonian*. Friday, August 3, 2007, p. A4. "Bridge Collapse".

- Prioritize less-expensive, short-term improvements that yield the maximum benefit in relation to the outcomes that they achieve – safety, congestion relief, community development, freight reliability, etc.
- Avoid the higher costs of deferred maintenance by making maintenance of existing infrastructure a priority.

Chapter 5 of this RTP presents more details about the current and future transportation needs and expected resources to pay for those needs.

2.5 Where We Go From Here

The Portland metropolitan region is at an important crossroads. Changes to how we plan for and investments in our transportation system are needed to respond to powerful trends and challenges so we can benefit from them and thrive. Many of these issues are not new or unique to transportation planning in this region or in other major cities across the country. However, the Portland metropolitan region has a history of innovation, and these challenges pose an opportunity for the region to continue this tradition and thrive—mainly because we already have such solid, well-integrated transportation and land use systems in place. If we adapt to the new fiscal, social and economic realities and develop a new approach to transportation that is consistent with the tools and aspirations of the 21st Century then our region is positioned to prosper.

This important work begins with updating the Regional Transportation Plan (RTP) to address forecasted population and employment growth and respond to the values held by the residents of this region:

- **The economic health and prosperity of our region and state are inextricably linked to our transportation system.** The economy of the region partially depends upon a set of primary industries that have been attracted to the area because of its gateway role of providing access between global markets and those of the Pacific Northwest, the Mountain states, and the Midwest. The economy of our region and state partially depends on our ability to support the transportation needs of these industries and provide reliable access to gateway facilities. Additionally, the economic health of the region is also dependent on industries that have been attracted to the region because of our well-trained labor pool, relatively low cost of living and high quality of life.
- **Land use choices and transportation planning are inextricably linked**. Transportation planning can be a powerful tool to promote efficient land use—and vice-versa. A carefully planned and wisely implemented transportation system can foster a higher quality of life and more efficient use of our transportation system.
- **Our region's environment and its economic health are inextricably linked**. Residents of the region tell us they want transportation plans to minimize environmental impacts. In recent public opinion research, nearly two-thirds of the region's respondents put protection of air and water quality at the top of their list of transportation planning priorities. Transportation plans, they said, must provide for the protection of fish habitat, our drinking water, the air we breathe and our great Northwest landscape. Protecting our natural resources not only gives us a higher quality of life in the present, but also reduces the long-term costs associated with cleanup and health problems. Furthermore, and the plan should support the growth of sustainable businesses and family-wage jobs upon which the region depends.
- **A balanced transportation system should serve everyone and support our goals for land use, economy, the environment and equity.** System balance is important because it provides all

residents of the region, regardless of age, income or abilities, the opportunity to choose safe, reliable, sustainable, and affordable ways to get around.

- **Land use and transportation planning impacts human health.** The design of our communities and transportation infrastructure can contribute to improved air quality and the choices residents of the region have about using active modes of transportation, such as walking, bicycling and transit. Considering the regional transportation system's impact on human health could help prevent lung illness and chronic disease linked to a lack of physical activity.
- **Residents of the region value a transportation system that is safe and that provides regional mobility.** In a recent community survey 66 percent of residents responded it was "very important" to design, build, and operate the transportation system to increase safety. Regional mobility is important because residents value their time and it provides all residents of the region with transportation opportunities and choices, encourages a strong economy and preserves the quality of life.
- **The plan should support and protect existing communities and residential neighborhoods.** Transportation investments help shape a community's design and sense of place. In a recent community survey, 39 percent of residents responded it was "very important" to minimize traffic noise in neighborhoods.
- **The RTP must aspire and inspire action, while also being pragmatic and responsible.** Federal regulations stipulate that we produce a "fiscally constrained" plan, meaning that the total cost of the projects in the plan must correspond with "reasonably available" funding projections. State regulations emphasize development of a strategy to finance needed investments, recognizing the "fiscally constrained plan" under federal regulations will not adequately serve current and future transportation needs. Furthermore, the public expects us to effectively manage what we have first, before building anything new. If we can achieve this efficiency, we can then develop a strategy for developing new funding sources in cooperation with the private sector. Without additional funding, the region simply will not have enough money to address all of the transportation needs. The region also needs to make choices about what types of investments are most important and strategically maximize the return on any public investments that are made.

The purpose of this plan is to identify and guide implementation of those transportation-related actions that respond most effectively to the powerful trends and challenges facing our region today, meeting federal and state planning requirements. Collectively, the plan honors the values that business and community stakeholders have expressed through comment cards, scientific public opinion research and numerous stakeholder workshops to address the trends, challenges and opportunities presented in this chapter.

Chapter 3
Transportation Vision: A Blueprint for the Future

This chapter presents the overall policy framework of goals and measurable objectives for the design, management and governance of the regional transportation system. The overarching vision for the RTP is to ensure:

> *Multi-modal transportation infrastructure and services provide a well-managed, adequately sized, seamless and well-connected system of throughways, arterial streets, freight systems, transit services and bicycle and pedestrian facilities to ensure reasonable mobility, accessibility and convenient, safe, reliable, and equitable travel choices for people and goods movement, consistent with the 2040 Growth Concept.*

Chapter Organization:

The vision reflects the public's desired outcomes for the region's transportation system. The goals, objectives and actions set transportation policy and priorities to guide decision-making for and implementation of the region's multi-modal transportation system. Implementation will occur through the future updates to local transportation system plans (TSPs), corridor refinement plans, the Metropolitan Transportation Improvement Program (MTIP), and future studies conducted in the region. The goals and objectives of the RTP form the basis for monitoring plan implementation over time.

This chapter is organized into the following subsections.

3.1 Regional Transportation Vision: This section establishes the basic mission of the plan a key tool for implementing the 2040 Growth Concept and a blueprint to ensure a sustainable future and effective stewardship of the regional transportation system.

3.2 Linking Transportation to Land Use, the Economy and the Environment: This section identifies the individual 2040 Growth Concept land use components and the relationship of each component to the rest of the region.

3.3 Goals, Objectives and Actions: This section describes the overarching policy framework of RTP goals and measurable objectives that guide the design, management and governance of the regional transportation system. Implementation of the potential actions will help the region achieve the goals and objectives.

3.4 Concepts for Systems Development, Design and Management: This section presents concepts to guide the development, design and management of different components of the regional transportation system. The system concepts represent "ideals" designed to achieve the plan goals, recognizing deviations may be needed during implementation.

Regional Transportation System Goals

- **Goal 1**: Foster Vibrant Communities and Efficient Urban Form
- **Goal 2:** Sustain Economic Competitiveness and Prosperity
- **Goal 3:** Expand Transportation Choices
- **Goal 4:** Emphasize Effective and Efficient Management of the Transportation System
- **Goal 5:** Enhance Safety and Security
- **Goal 6:** Promote Environmental Stewardship
- **Goal 7:** Enhance Human Health
- **Goal 8:** Ensure Equity
- **Goal 9:** Ensure Sustainability
- **Goal 10:** Deliver Accountability

3.5 Performance Management: This section describes how performance management links performance evaluation to policy development, evaluation and monitoring of the plan over time.

3.1 REGIONAL TRANSPORTATION VISION

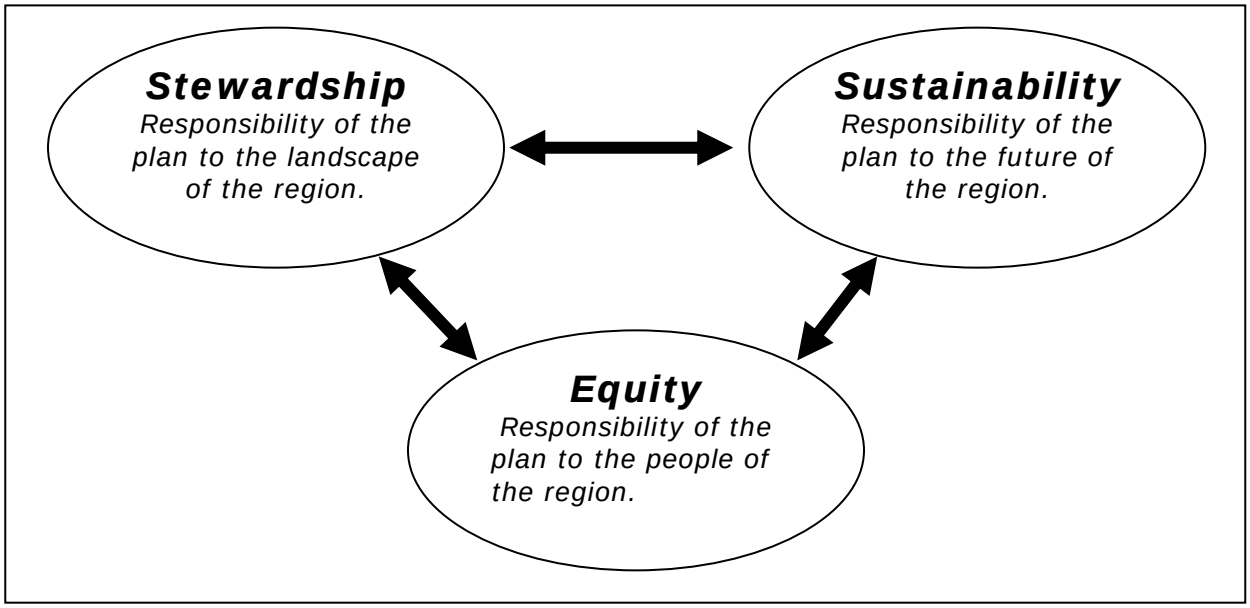
This RTP reflects the continued evolution of regional transportation planning from a project-driven endeavor to one that is framed by the larger set of outcomes that affect people's everyday lives. This outcomes-based plan will require careful monitoring to ensure that incremental decisions to implement the plan through corridor and project planning are consistent with the plan vision.

3.1.1 Equity, Stewardship and Sustainability

Government must be a responsible steward of public investment and the social, built and natural environments that shape our communities. This means local, regional and state governments must partner with the private sector to preserve and enhance the quality of life, our economy and the environment now and for future generations.

The RTP has a responsibility to serve the needs of residents in the region, protect our unique setting and landscape and leave a better place for future generations. To ensure consistency between project investments and this larger responsibility, the RTP principles identified in Figure 3.1 form the foundation for development of the RTP:

Figure 3.1
Principles to Guide Development of the Regional Transportation Plan



1. **Equity –***Responsibility of the plan to the people of the region.*

   The plan provides for a comprehensive system of multi-modal transportation infrastructure and services that provides safe and affordable travel choices, equal access to work, education and nature for the region's residents and sustained economic vitality and stability.

2. **Stewardship** - *Responsibility of the plan to the landscape of the region.*

   The plan ensures that multi-modal transportation infrastructure and services protect and enhance the region's unique setting and natural environment, planned urban form and cultural legacy.

3. **Sustainability** - *Responsibility of the plan to future of the region.*

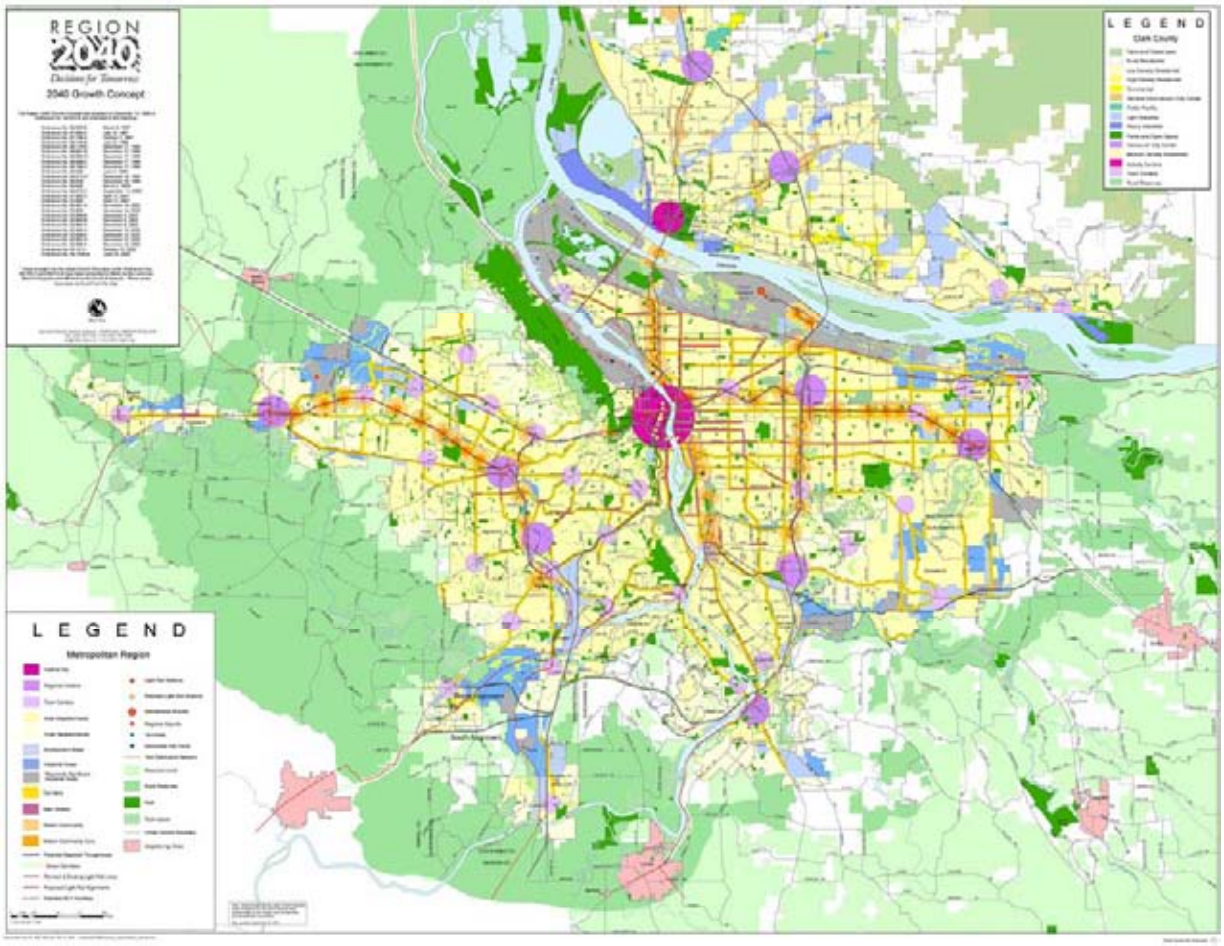
The plan provides for multi-modal transportation infrastructure and services that reflect the region's long-term vision for shaping growth, protecting our environment, and supporting a strong, sustainable regional economy.

3.2 Linking Transportation to Land Use, the Economy and the Environment

In 1995, the Portland region adopted the 2040 Growth Concept, a long-range plan for managing growth years ahead. The unifying theme of the 2040 Growth Concept is to preserve the region's economic health and livability and plan for growth in the region in an equitable, environmentally-sound and fiscally responsible manner. Transportation planning and investment decisions and the region's desired land use, economic and environmental outcomes are so interconnected that success of the 2040 Growth Concept hinges significantly on achieving the regional transportation goals presented in this plan.

The 2040 Growth Concept contains a series of land-use building blocks for the region as shown in **Figure 3.2**. The concept calls for a substantial portion of future growth to be accommodated through infill and redevelopment in nearly 40 designated urban centers throughout the region, as well as in designated key transportation corridors, industrial areas, and employment areas.

Figure 3.2
2040 Growth Concept Map



The RTP responds to the region's long-term vision through a systems approach that views the transportation system as an integrated and interconnected system, shifting the emphasis from moving vehicles to moving people and goods. This integrated system provides for the movement of people by private vehicle, public transit, ridesharing, walking and biking as well as the movement of freight by various modes.

2040 LAND-USE DESIGN TYPES

The 2040 Growth Concept land uses, called 2040 Design Types, are arranged in a hierarchy. The hierarchy serves as a framework for prioritizing RTP investments. **Table 3.1** lists the 2040 design types based on this hierarchy.[1] The hierarchy applies to developed and developing areas inside the urban growth boundary (UGB) and to undeveloped areas added to the UGB as of 2007. The primary and secondary land uses, referred to as 2040 Target Areas throughout this chapter, are the focus of RTP investments.

Table 3.1
2040 Target Areas and Hierarchy of Design Types

2040 Target Areas		
Primary land-uses	**Secondary land-uses**	**Other urban land-uses**
• Central city • Regional centers • Industrial areas • Freight and Passenger Intermodal facilities	• Employment areas • Town centers • Station Communities • Corridors • Main Streets	• Inner neighborhoods • Outer neighborhoods

The RTP recognizes that different parts of the region are at different stages of implementing the 2040 Growth Concept. As a result, different areas may have different transportation investment needs and priorities, requiring substantial public and private over the long-term.[2]

Table 3.2 summarizes infrastructure investment needs for each stage of 2040 implementation.

[1] More detailed descriptions of the land use and transportation elements of each 2040 Design Type can be found in the Regional Urban Growth Goals and Objectives and Regional Framework Plan.

[2] The New Look planning process may refine these priorities as it moves forward. Refinements will be addressed to the extent possible in this RTP, but may also be addressed during future updates to the RTP.

Table 3.2
2040 Implementation Infrastructure Investment Needs

Stage of Development	Developed Areas Built-out areas with most new housing and jobs accommodated through infill, redevelopment and brownfields development.	Developing Areas Redevelopable and developable areas, with most new housing and jobs being accommodated through infill, redevelopment, and greenfield development.	Undeveloped Areas More recent additions to the urban growth boundary, with most new housing and jobs accommodated through greenfield development.
Infrastructure Investment Needs	• Operations, maintenance and preservation of existing transportation assets. • Managing the existing transportation system to optimize performance for all modes of travel. • Leveraging infill, redevelopment and use of brownfields. • Addressing bottlenecks and improving system connectivity to address barriers and safety deficiencies. • Completing local street connections needed to complement the arterial street system.	• Operations, maintenance and preservation of existing transportation assets. • Preserving right-of-way for future transportation system. • Managing the existing transportation system to optimize performance for all modes of travel. • Providing a multi-modal urban transportation system. • Focusing on bottlenecks and improving system connectivity to address barriers and safety deficiencies. • Completing local street connections needed to complement the arterial system.	• Operations, maintenance and preservation of existing transportation assets. • Preserving right-of-way for future transportation system. • Providing a multi-modal urban transportation system. • Managing new transportation system investments to optimize performance for all modes of travel. • Focusing on bottlenecks and improving system connectivity to address barriers and safety deficiencies. • Completing local street connections needed to complement the arterial street system.

3.3 GOALS, OBJECTIVES AND ACTIONS

To achieve the 2040 Growth Concept and meet federal and state planning requirements, the RTP policy framework is organized into a series of goals, measurable objectives and actions to guide the design, management and governance of the region's transportation system and to monitor its performance. The goals, measurable objectives and actions together form the foundation for all planning activities governed by this RTP. This organization structure is summarized in Figure 3.3.

Figure 3.3
Organizational Structure for Regional Transportation Policy

Goals are broad statements of purpose that describe long-term desired results for the region's transportation system that extend beyond the plan period. The goals in this RTP fall into the two major categories:

- **System Development, Design and Management** – Goals that define desired outcomes for the development, design and management of the transportation system over time to best support the Region 2040 vision.
- **Governance** - Goals that define desired outcomes for jurisdictional and fiscal governance of the transportation system to ensure meaningful public involvement, maximization and equity of public investments and accountability to the public to build and maintain public trust in government.

Measurable objectives are near-term outcomes that serve as benchmarks in our efforts to implement the plan within the time frame of the RTP plan period. These objectives comprise four elements: (1) an objective statement, (2) an indicator, (3) a performance measure and (4) a benchmark.

- **Objective statements** describe an intermediate, shorter term result that must be realized to reach a longer-term goal.
- An **indicator** is a categorical term for a particular feature of the transportation system that is tracked over time. Indicators are conceptual and qualitative and are tied to the plans goals and objectives. The indicators need to be translated into specific performance measures to be meaningful in the planning and decision-making process. Indicators will be developed as part of the state component of the RTP update in 2008.
- **Performance measures** are indicators that describe how well the transportation system is performing. Measures are used to evaluate the success of the objective with quantitative or qualitative data and provide feedback in the plan's decision-making process. Measures will be developed as part of the state component of the RTP update in 2008. In the interim, potential performance measures are listed in Chapter 7 for reference.
- A **benchmark** is a numerical goal or stated direction to be achieved for which quantifiable or directional targets may be set, assigning a value to what the RTP is trying to achieve. Benchmarks (also known as targets) are expressed in quantitative terms. Benchmarks will be developed for the state component of the 2035 RTP in 2008. Monitoring of the benchmarks would occur through periodic updates to the RTP and Metro's biennial Performance Indicators reporting using observed, empirical data.

Potential Actions identify what is needed to achieve a particular goal. The actions will be further developed as part of the state component of the RTP update in 2008, including defining what actions are Metro's responsibility through the RTP or MTIP and what actions are the responsibility of local, regional and state governments.

This section presents ten goals for the regional transportation system. The goals are summarized in **Table 3.3** and detailed with their measurable objectives in Tables 3.4 through 3.12, along with potential actions needed to achieve the objectives. Additional actions will be identified as part of the state component of the RTP update to more specifically direct implementation of the plan through local transportation system plans (TSPs), corridor refinement plans, the Metropolitan Transportation Improvement Program (MTIP), and future studies conducted in the region.

An evaluation and continuous monitoring process with a set of performance measures will be established to ensure successful long-term implementation of the plan's goals, objectives and actions. Performance

measures will be developed as part of the state component of the RTP to determine whether the proposed transportation system adequately serves land uses anticipated during the plan period.[3]

Table 3.3
Regional Transportation Plan Goals

Our Vision for the System	**Goal 1: Foster Vibrant Communities and Efficient Urban Form** Land use and transportation decisions are linked to promote an efficient and compact urban form that fosters vibrant communities; optimizes public investments; and supports jobs, schools, shopping, services, recreational opportunities and housing proximity.
	Goal 2: Sustain Economic Competitiveness and Prosperity Multi-modal transportation infrastructure and services support the region's well-being and a diverse, innovative, sustainable and growing regional and state economy through the reliable and efficient movement of people, freight, goods, services and information within the region and to destinations outside the region.
	Goal 3: Expand Transportation Choices Multi-modal transportation infrastructure and services provide all residents of the region with affordable and equitable options for accessing housing, jobs, services, shopping, educational, cultural and recreational opportunities, and facilitate competitive choices for goods movement for all businesses in the region.
	Goal 4: Emphasize Effective and Efficient Management of the Transportation System Multi-modal transportation infrastructure and services are well-managed and optimized to improve travel conditions and operations, and maximize the multi-modal capacity and operating performance of existing and future transportation infrastructure and services.
	Goal 5: Enhance Safety and Security Multi-modal transportation infrastructure and services are safe and secure for the public and goods movement.
	Goal 6: Promote Environmental Stewardship Promote responsible stewardship of the region's natural, community, and cultural resources during planning, design, construction and management of multi-modal transportation infrastructure and services.
	Goal 7: Enhance Human Health Multi-modal transportation infrastructure and services enhance quality of human health by providing safe and convenient options that support active living and physical activity, and minimize transportation-related pollution that negatively impacts human health.
How We Get There	**Goal 8: Ensure Equity** Regional transportation planning and investment decisions ensure the benefits and impacts of investments are equitably distributed.
	Goal 9: Ensure Sustainability Regional transportation planning and investment decisions promote responsible fiscal, social and environmental stewardship by maximizing the return on public investments in infrastructure and placing the highest priority on investments that reinforce Region 2040 and achieve multiple goals.
	Goal 10: Deliver Accountability The region's government, business, institutional and community leaders work together in an open and transparent manner so the public experiences an integrated, comprehensive system of transportation facilities and services that bridge governance, institutional and fiscal barriers.

[3] The Oregon Transportation Planning Rule, subsection 060, requires the RTP to include performance measures that ensure the transportation system is adequate to serve planned land uses.

TABLE 3.4 GOAL 1— FOSTER VIBRANT COMMUNITIES AND EFFICIENT URBAN FORM

Goal Statement	Objectives
Goal 1: Foster Vibrant Communities and Efficient Urban Form Land use and transportation infrastructure decisions are linked to promote an efficient and compact urban form that fosters vibrant communities; optimizes public investments; and supports jobs, schools, shopping, services, recreational opportunities and housing proximity.	**Objective 1.1 Compact Urban Form and Design** - Leverage Region 2040 land uses to reinforce growth in, and multi-modal access to 2040 Target Areas. Potential Actions: *1.1.1. Place a priority on multi-modal transportation investments that address a system gap or deficiency to reinforce growth in and improve access to or within the primary 2040 target areas.* *1.1.2. Coordinate land use and transportation decisions to ensure the identified function, design and capacity of transportation facilities are consistent with applicable regional system concepts and support adjacent land use patterns.* *1.1.3. Locate housing, jobs, schools, parks and other destinations within ½ mile of each other.* *1.1.4. Support the development of tools aimed at reducing vehicle miles traveled per person, including transit-oriented development, car sharing, location efficient mortgage.* *1.1.5. Create incentives for development projects in 2040 target areas and promote transit-supportive design and infrastructure in 2040 target areas and along designated transit corridors.* *1.1.6. Provide landscaping, pedestrian-scale lighting, benches and shelters and other infrastructure to serve pedestrians and transit users in 2040 centers, station communities and main streets.* *1.1.7. Work with the private development community to coordinate transportation spending and land development investment decisions for projects in 2040 target areas.*
	Objective 1.2 Parking Management – Minimize the amount of land dedicated to vehicle parking. Potential Actions: *1.2.1. Place a priority on investments that reduce the need for land dedicated to vehicle parking.* *1.2.2. Promote the use of shared parking for commercial and retail land uses.* *1.2.3. Establish maximum parking ratios for off-street parking spaces.* *1.2.4. Manage and optimize the efficient use of public and commercial parking in 2040 target areas.*

TABLE 3.5 GOAL 2— SUSTAIN ECONOMIC COMPETITIVENESS AND PROSPERITY

Goal Statement	Objectives
Goal 2: Sustain Economic Competitiveness and Prosperity Multi-modal transportation infrastructure and services support the region's well-being and a diverse, innovative, sustainable and growing regional and state economy through the reliable and efficient movement of people, freight, goods, services and information within the region and to destinations outside the region.	**Objective 2.1 Reliable and Efficient Travel and Market Area Access -** Provide for reliable and efficient multi-modal local, regional, interstate and intrastate travel and market area access through a seamless and well-connected system of throughways, arterial streets, freight services, transit services and bicycle and pedestrian facilities, consistent with Regional System Concepts. Potential Actions: *2.1.1. Place a priority on investments that address multi-modal system gaps to improve reliability and access from labor markets and trade areas to the primary 2040 Target Area.* *2.1.2. Provide a network of limited-access throughways to primarily serve interstate, intercity and inter-regional people and goods movement, consistent with Regional Streets and Throughways System Map.* *2.1.3. Provide a network of arterial streets at one-mile spacing, with regional transit service on most regional arterial streets, consistent with Regional Streets and Throughways System Map.* *2.1.4. Provide an interconnected multi-modal freight transportation system that includes air cargo, pipeline, trucking, rail, and marine services and connects freight transportation corridors to the region's freight intermodal facilities and industrial sanctuaries, consistent with the Regional Freight System Map.* *2.1.5. Provide a network of high capacity transit service that connects the Central City, Regional Centers and passenger intermodal facilities, consistent with Regional Transit System Map.* *2.1.6. Provide a complementary network of community bus and streetcar service connections that serve 2040 Target Areas and provide access to the regional high capacity transit network, consistent with Regional Transit System Map.* *2.1.7. Provide a network of local and collector street systems to reduce dependence on regional arterial streets and throughways for local circulation, consistent with Local Street System Concept.* *2.1.8. Provide a continuous network of safe, convenient and attractive bikeways and pedestrian facilities on all arterial streets and improve access to transit facilities, consistent with Regional Bike and Pedestrian Systems Maps.* *2.1.9. Provide a continuous network of regional multi-use trails that connect priority 2040 land uses, on-street bikeways, pedestrian and transit facilities, consistent with the Regional Greenspaces Master Plan.* *2.1.10. Assist jurisdictions in developing local strategies that provide adequate freight loading and parking strategies in the central city, regional centers, town centers and main streets.* *2.1.11. Develop measures that address the economic value of freight and goods movement, 2040 centers and other priority land uses and bike tourism and other recreational uses.* **Objective 2.2 Regional Passenger Connectivity** – Ensure reliable and efficient connections between passenger intermodal facilities and destinations in, beyond and through the region to improve non-auto access to and from outside the region and promote the region's function as a gateway for tourism. Potential Action: *2.2.1. Place a priority on investments that benefit or connect two or more passenger modes.* *2.2.2. Identify possible passenger rail service corridors to neighboring cities, such as the Milwaukie-Lake Oswego-Tualatin-Sherwood-McMinnville service or an extension of Westside Commuter Rail to Salem.*
	Objective 2.3 Regional Mobility -Maintain sufficient total person-trip and freight capacity among the various modes operating in the Regional Mobility Corridors to allow reasonable and reliable travel times through those corridors. Potential Actions: *2.3.1. Place a priority on investments that implement the CMP by addressing a gap or deficiency, or implement TSMO strategies on an arterial within a regional mobility corridor.* *2.3.2. Implement a regional congestion management program, including coordinated regional bus service, traffic operations improvements, transit, ridesharing, telecommuting incentives, and pricing strategies.* *2.3.3. Consider a full range of options for meeting this objective, including different modal options, and policies for making more efficient use of existing capacity as well as small and larger scale multi-modal capacity investments.*

TABLE 3.5 GOAL 2— SUSTAIN ECONOMIC COMPETITIVENESS AND PROSPERITY

Goal Statement	Objectives
	2.3.4. Develop interchange area management plans (IAMPs) for all throughway access points that are approved by state, regional and local agencies. *2.3.5. Establish performance goals and benchmarks for mobility corridors and 2040 centers reflecting regional policy to increase proportional travel by transit, high-occupancy vehicle, and non-motorized travel modes to achieve reduced dependence on single-occupant vehicle travel* *2.3.6. Monitor performance of the regional transportation system in subareas and along regional mobility corridors throughout the region consistent with the CMP.*
	Objective 2.4 Freight Reliability –Maintain a reasonable and reliable travel time and access between freight intermodal facilities and destinations in, within and through the region to promote the region's function as a gateway for commerce, consistent with the Regional Freight System Map. Potential Actions: *2.4.1. Place a priority on transportation investments that maintain travel time reliability on the regional freight system and provide freight access to industrial areas and freight intermodal facilities.* *2.4.2. Consider the movement of freight when conducting transportation studies.* *2.4.3. Identify regional freight routes that ensure direct and convenient access from industrial and employment areas to the throughway network.* *2.4.4. Identify and correct existing safety deficiencies on regional freight routes relating to:* • *roadway geometry and traffic controls,* • *bridges and overpasses,* • *at-grade railroad crossings,* • *truck infiltration in neighborhoods,* • *congestion on interchanges and hill climbs* *2.4.5. Consider improvements that are dedicated to freight travel only.* *2.4.6. Work with the private transportation industry, Oregon Economic Development Department, Portland Development Commission, Port of Portland and others to identify and realize investment opportunities that enhance freight mobility and support the state and regional economy.* *2.4.7. Expand development and use of TSMO strategies that increase person-trip capacity on congested freight corridors, including traveler information tools and other management strategies to increase system reliability.*
	Objective 2.5 – Job Retention and Creation – Foster the growth of new businesses and retain those that are already located in the region. Potential Action: *2.5.1. Place a priority on transportation investments that support state and local government efforts to attract new industries to Oregon or that keeps and encourages expansion of existing industries.*

TABLE 3.6 GOAL 3—EXPAND TRANSPORTATION CHOICES

Goal Statement	Objectives
Goal 3: Expand Transportation Choices Multi-modal transportation infrastructure and services provide all residents of the region with affordable and equitable options for accessing housing, jobs, services, shopping, educational, cultural and recreational opportunities, and facilitate competitive choices for goods movement for all businesses in the region.	**Objective 3.1 Travel Choices** - Make progress toward Non-SOV modal targets for increased walking, bicycling, use of transit and shared ride and reduced reliance on the automobile and drive alone trips. Potential Actions: *3.1.1. Place a priority on investments that complete a system gap to improve bicycle, pedestrian or transit access, and connect two or more modes of travel.* *3.1.2. Consider land use and demand management strategies and bicycle, pedestrian and transit needs when conducting transportation studies.* *3.1.3. Research user preferences and behavioral responses on bikeways on low and high traffic streets.* *3.1.4. Consider bicycle boulevards part of the regional system when arterial right-of-way is constrained or when the regional street system does not meet arterial spacing standards.* *3.1.5. Develop travel-demand forecasting for bicycle use and integrate with regional transportation planning efforts.* *3.1.6. Coordinate with TriMet and large public and private facilities to improve pedestrian and bicycle access and secure bicycle long and short-term parking at existing and future regional activity centers, light rail stations, transit centers and park-and-ride lots, educational institutions and employer campuses.* *3.1.7. Form public/private partnerships such as Transportation Management Associations to increase education about transportation choices and support meeting non-SOV targets by land use type.* *3.1.8. Increase development and use of traveler information tools to inform choices.* *3.1.9. Incorporate car sharing into settings where the strategy is likely to reduce net vehicle miles traveled and provide an alternative to private car ownership.* *3.1.10. Identify possible passenger rail service corridors to neighboring cities, such as the Milwaukie-Lake Oswego-Tualatin-Sherwood-McMinnville service or an extension of Westside Commuter Rail to Salem.* *3.1.11. Design and implement a transportation system with street designs necessary to encourage and support non-auto travel.* *3.1.12. Provide transit service that is fast, reliable and has competitive travel times compared to the automobile.*
	Objective 3.2 Equitable Access and Barrier Free Transportation - Provide affordable and equitable access to travel choices and serve the needs of all people and businesses, including people with low income, children, elders and people with disabilities, to connect with jobs, educational, services, recreation, social and cultural activities. Potential Actions: *3.2.1. Place a priority on investments that remove barriers that prevent access to the transportation system.* *3.2.2. Provide transit service that is accessible to people with disabilities and provide para-transit to the portions of the region without adequate fixed-route service in compliance with the Americans with Disabilities Act of 1990.* *3.2.3. Provide transit connections between low-income residential areas and employment areas and related social services.* *3.2.4. Provide ADA compliant pedestrian facilities, including ramps on regional facilities.* *3.2.5. Provide for audible signals, curb cut tactile strips and appropriately timed signalized crosswalks at major retail centers, near bus stops on arterial streets, high volume neighborhood circulators or other major arterial streets near elderly or disabled facilities or in neighborhoods with significant elderly or disabled populations.* *3.2.6. Complete gaps in the bicycle and pedestrian networks.* *3.2.7. Provide short and direct pedestrian crossings at transit stops and marked crossings at regional transit stops.* *3.2.8. Provide crossings and continuous sidewalks along both sides of all arterial streets that connect to side streets, adjacent sidewalks, buildings and transit stops.* *3.2.9. Provide innovative, flexible, attractive and cost-effective alternatives to standard fixed route buses, rail and paratransit services to increase available options to elders and people with disabilities.* *3.2.10. Expand outreach and education on how to use multi-modal transportation services.*

TABLE 3.6 GOAL 3—EXPAND TRANSPORTATION CHOICES

Goal Statement	Objectives
	Objective 3.3 Shipping Choices – Support an intermodal freight transportation system that includes air cargo, pipeline, trucking, rail, and marine services to facilitate competitive choices for goods movement for all businesses of the region. Potential Actions: *3.3.1. Place a priority on investments that benefit or connect two or more freight modes.*

TABLE 3.7 GOAL 4—EMPHASIZE EFFECTIVE AND EFFICIENT MANAGEMENT OF THE TRANSPORTATION SYSTEM

Goal Statement	Objectives
Goal 4: Emphasize Effective and Efficient Management of the Transportation System Multi-modal transportation infrastructure and services are well-managed and optimized to improve travel conditions and operations, and maximize the total person-trip capacity and operating performance of existing and future transportation infrastructure and services.	**Objective 4.1 System Management** – Implement strategies that optimize the regional transportation system to enhance mobility, reliability and safety, consistent with the Transportation System Management and Operations Concept. Potential Actions: *4.1.1. Place a priority on investments that improve mobility, reliability and safety on an element of the regional mobility corridor system, consistent with the Transportation System Management and Operations (TSMO) Concept.* *4.1.2. Integrate TSMO strategies in transportation studies.* *4.1.3. Partner with PSU, ODOT, TriMet and SMART to implement a regional advanced traffic management system (ATMS) program to monitor 100 percent of the region's urban freeways and on-ramps, regional mobility corridor arterial streets and regional transit routes through use of automated data collection systems.* *4.1.4. Deploy technologically advanced systems to monitor and manage traffic, and to control and coordinate traffic control devices, such as traffic signals, including providing priority to transit vehicles where appropriate.* *4.1.5. Partner with ORTREC to conduct research and evaluate effectiveness of pilot TSMO projects and programs to increase awareness of and support for activities such as ramp metering, signalization improvements and transit priority treatments to maximize efficiency of the current system.* *4.1.6. Limit access to and minimize urban development pressure on rural land uses and resource lands by maintaining appropriate levels of access to support rural activities, while discouraging urban traffic.* *4.1.7. Manage the existing transportation system to protect throughway, street and transit capacity, optimize operating efficiency, enhance safety and manage congestion through the application of Intelligent Transportation Systems (ITS), incident response, high-occupancy vehicle lanes, and other system management and demand management strategies.* *4.1.8. Implement a congestion management program (CMP) and develop regional mobility corridor strategy plans as a primary tool of the CMP to identify and implement mobility solutions such as operational and small-scale physical improvements and demand management strategies for designated regional mobility corridors with long-term level-of-service deficiencies.* **Objective 4.2 Demand Management** – Implement services, incentives, supportive infrastructure and increase awareness of travel options to reduce drive alone trips and protect reliability, consistent with Transportation System Management and Operations Concept. Potential Actions: *4.2.1. Place a priority on investments that include services, incentives, and supportive infrastructure to increase awareness of travel options, consistent the Demand Management Concept.* *4.2.2. Promote private and public sector programs and services that encourage employees to use non-SOV modes or change commuting patterns, such as telecommuting, flexible work hours and/or compressed work weeks.* *4.2.3. Launch public-private partnerships in 2040 centers and corridors to encourage residents, employees and others to use non-SOV modes to foster increased economic activity in these areas.* *4.2.4. Continue rideshare tools and incentives from areas or at hours of the day under-served by transit.* *4.2.5. Consider vanpool strategy to incubate new transit service.* *4.2.6. Further study of market-based strategies, such as parking pricing, employer-based parking-cash outs and restructuring parking rates.* *4.2.7. Support ridesharing programs, park-and-ride programs, telecommuting programs, and transit benefit programs to increase peak-period travel options and reduce the rate of growth of vehicle miles traveled.*

TABLE 3.7 GOAL 4—EMPHASIZE EFFECTIVE AND EFFICIENT MANAGEMENT OF THE TRANSPORTATION SYSTEM

Goal Statement	Objectives
	Objective 4.3 Value Pricing - Consider value pricing as a feasible option when major, new throughway capacity is being added to the regional throughway system, using the criteria used in Working Paper 9 of the Traffic Relief Options study. Potential Actions: *4.3.1. Place a priority on investments that include value pricing.* *4.3.2. Identify a specific project for which value pricing is appropriate to serve as a pilot, demonstration project.* *4.3.3. Pursue Value Pricing Pilot Program funds from FHWA for development of detailed implementation plans and/or administration of pilot projects.*

TABLE 3.8 GOAL 5—ENHANCE SAFETY AND SECURITY

Goal Statement	Objectives
Goal 5: Enhance Safety and Security Multi-modal transportation infrastructure and services are safe and secure for the public and for goods movement.	**Objective 5.1 Operational Safety** - Reduce fatalities, serious injuries and crashes per capita for all modes of travel through investments that address safety-related deficiencies. Potential Actions: *5.1.1. Place a priority on investments that address recurring safety-related deficiencies on an element of the regional mobility corridor system.* *5.1.2. Place a priority on completing gaps in the regional bicycle and pedestrian systems.* *5.1.3. Promote safety in the design and operation of the transportation system.* *5.1.4. Minimize construction-related safety impacts.* *5.1.5. Promote safe use of the transportation system by motorists, bicyclists and pedestrians through a public awareness program and safety education programs* *5.1.6. Work with local jurisdictions, ODOT and other public agencies to collect and analyze data to identify high-frequency bicycle- and pedestrian-related crash locations and improvements to address safety-related deficiencies in these locations.*
	Objective 5.2 Crime - Reduce vulnerability of the public, goods movement and critical transportation infrastructure to crime. Potential Actions: *5.2.1. Place a priority on investments that increase system monitoring for operations, management and security of the regional mobility corridor system.* *5.2.2. Use security cameras and other means for monitoring regional transportation infrastructure and services.*
	Objective 5.3 Terrorism, Natural Disasters and Hazardous Material Incidents - Reduce vulnerability of the public, goods movement and critical transportation infrastructure to acts of terrorism, natural disasters, hazardous material spills or other hazardous incidents. Potential Actions: *5.3.1. Place a priority on investments that increase system monitoring for operations, management and security of the regional mobility corridor system.* *5.3.2. Work with local, state and regional agencies to identify critical infrastructure in the region and assess security vulnerabilities and threats.* *5.3.3. Work with local, state and regional agencies to create redundancies where applicable in all modes and develop coordinated regional emergency response and evacuation plans.* *5.3.4. Use security cameras and other means for monitoring regional transportation infrastructure and services.* *5.3.5. Minimize security risks at airports, water ports, rail stations, rest areas, roadways, bikeways, and public transportation facilities* *5.3.6. Improve the ability of transportation infrastructure to withstand natural disasters such as floods, earthquakes, land slides and windstorms.* *5.3.7. Continue to improve disaster, emergency, and incident response preparedness and recovery.*

TABLE 3.9 GOAL 6—PROMOTE ENVIRONMENTAL STEWARDSHIP

Goal Statement	Objectives
Goal 6: Promote Environmental Stewardship Promote responsible stewardship of the region's natural, community, and cultural resources during planning, design, construction and management of multi-modal transportation infrastructure and services.	**Objective 6.1 Natural Environment** – Avoid or minimize undesirable impacts on fish and wildlife habitat conservation areas, wildlife corridors, significant flora and open spaces. Potential Actions: *6.1.1. Place a priority on investments that improve fish or wildlife habitat or remove a blockage or barrier limiting fish or wildlife passage in a habitat conservation area and/or wildlife corridor.* *6.1.2. Consider protecting the natural environment in all aspects of the transportation planning process to reduce the environmental impacts associated with transportation system design, construction and maintenance activities.* *6.1.3. Locate new transportation and related utility projects to avoid fragmentation and degradation of components of regionally significant parks, habitat, wildlife corridors, natural areas, open spaces, trails and greenways.* *6.1.4. Implement a coordinated strategy to remove or retrofit culverts on the regional transportation system that block or restrict fish passage.* *6.1.5. Incorporate green street designs and green development practices into community design and infrastructure plans.* *6.1.6. Support the implementation of Green Streets practices through pilot projects and funding incentives.* *6.1.7. Design transportation facilities with consideration for wildlife movement where wildlife corridors cannot be avoided.*
	Objective 6.2 Clean Air – Reduce transportation-related vehicle emissions to improve air quality so that as growth occurs, the view of the Cascades and the Coast Range from within the region are maintained and greenhouse gas emissions are reduced. Potential Actions: *6.2.1. Place a priority on investments that reduce transportation-related vehicle emissions.* *6.2.2. Encourage use of all low- or zero-emission modes of travel (e.g., transit, telecommuting, zero-emissions vehicles, carpooling, vanpooling, bicycles and walking).* *6.2.3. Work with the state to include and implement strategies for planning and managing air quality in the regional airshed in the State Implementation Plan (SIP) for the Portland-Vancouver air quality maintenance areas (AQMA) as required by the federal Clean Air Act Amendments.* *6.2.4. Ensure timely implementation and adequate funding for transportation control measures, as identified in the SIP.* *6.2.5. Monitor air quality, greenhouse gas emissions and air toxics within the regional airshed.*
	Objective 6.3 Water Quality and Quantity – Protect the region's water quality and quantity. Potential Actions: *6.3.1. Place a priority on investments that reduce impervious surface coverage and stormwater run-off.* *6.3.2. Incorporate green street designs and green development practices into community design and infrastructure plans.*
	Objective 6.4 Energy and Land Consumption - Reduce transportation-related energy and land consumption and the region's dependence on unstable energy sources. Potential Actions: *6.4.1. Place a priority on investments that increase efficiency of the transportation network (e.g., reduce idling and corresponding fuel consumption) or supports efficient trip-making decisions in the region.* *6.4.2. Promote and implement strategies to increase use of alternative energy vehicles and non-SOV travel modes.*

TABLE 3.10 GOAL 7—ENHANCE HUMAN HEALTH

Goal Statement	Objectives
Goal 7: Enhance Human Health Multi-modal transportation infrastructure and services enhance quality of human health by providing safe and convenient options that support active living and physical activity, and minimize transportation-related pollution that negatively impacts human health.	**Objective 7.1 Active Living** – Provide safe and convenient transportation options that support active living and physical activity to meet daily needs and services. Potential Actions: *7.1.1. Place a priority on investments that increase opportunities for physical activity.* *7.1.2. Locate housing, jobs, schools, parks and other destinations within walking distance of each other when possible.* *7.1.3. Provide a continuous network of safe, convenient and attractive bikeways and pedestrian facilities.* *7.1.4. Remove barriers and reinforce compact development patterns to encourage walking and bicycling to basic services and nearby activities as a way to integrate exercise into daily activity.* *7.1.5. Design and manage the transportation system to minimize pedestrian, bicyclist and vehicular deaths and injuries.*
	Objective 7.2 Pollution Impacts – Minimize transportation-related pollution impacts on residents in the region to reduce negative health effects. Potential Actions: *7.2.1. Place a priority on investments that reduce or minimize transportation-related pollution.* *7.2.2. Design transportation system to minimize water and noise impacts through pavement techniques, traffic calming and other design features.* *7.2.3. Design transportations systems and implement strategies to encourage use of rail to move regional freight in order to reduce heavy vehicle traffic and the air and noise pollution associated with it.*

TABLE 3.11 GOAL 8—ENSURE EQUITY

Goal Statement	Objectives
Goal 8: Ensure Equity Regional transportation planning and investment decisions ensure the benefits and impacts of investments are equitably distributed.	**Objective 8.1 Environmental Justice** – Ensure benefits and impacts of investments are equitably distributed. Potential Actions: *8.1.1. Place a priority on investments that benefit environmental justice target areas or remove barriers to accessing the transportation system.* *8.1.2. Evaluate benefits and impacts of recommended investments on environmental justice target areas.* *8.1.3. When a major disparity exists, expand a project to include commensurate benefits for those significantly burdened by project.* **Objective 8.2 Coordinated Human Services Transportation Needs** - Ensure investments in the transportation system provide a full range of affordable options for people with low-income, elders and people with disabilities consistent with the Tri-County Coordinated Human Services Transportation Plan (CHSTP). Potential Actions: *8.2.1. Place a priority on investments that remove barriers to benefit special access needs.* *8.2.2. Provide an appropriate level, quality and range of transportation options to serve special access needs of individuals in this region, including people with low-income, children, elders and people with disabilities.* *8.2.3. Periodically update the Tri-County Coordinated Human Services Transportation Plan.* *8.2.4. Encourage the location of elderly and disabled facilities in areas with existing transportation services and pedestrian amenities.* *8.2.5. Continue to work with TriMet, SMART, private non-profit providers, social services staff, and local jurisdictions to provide a customer information system that improves community familiarity with, access to and understanding of the elderly and disabled transportation network.* *8.2.6. Employ technology to create a seamless, coordinated and single point of entry system for the user's ease that maximizes efficiency of operation, planning and administrative functions.* *8.2.7. Encourage new and existing development to create and enhance pedestrian facilities near elderly and disabled developments, including sidewalks, crosswalks, audible signals, etc. and provide incentives for the future pedestrian orientation in areas serving elderly and disabled individuals.* *8.2.8. Incorporate elderly and disabled housing into mixed use developments that includes public facilities such as senior centers, libraries and other public services as well as commercial and retail services such as stores, medical offices and other retail services.* *8.2.9. Provide for audible signals, curb cut tactile strips and appropriately timed signalized crosswalks at major retail centers or near bus stops for arterial street, high volume neighborhood circulators or other arterial streets near elderly or disabled facilities or in neighborhoods with significant elderly or disabled populations.* *8.2.10. Coordinate transit services and expand outreach programs to encourage and support fixed-route ridership by people with low-income, children, elders and people with disabilities.* *8.2.11. Improve the accountability of the special needs transportation network by enhancing customer input and feedback opportunities.*

TABLE 3.12 GOAL 9: ENSURE SUSTAINABILITY

Goal Statement	Objectives
Goal 9: Ensure Sustainability Regional transportation planning and investment decisions promote responsible fiscal, social and environmental stewardship by maximizing the return on public investments in infrastructure and placing the highest priority on investments that reinforce Region 2040 and achieve multiple goals.	**Objective 9.1 Asset Management**– Provide for the continuing preservation and maintenance needs of transportation facilities and services as needed to maintain their useful life and eliminate maintenance backlogs. Potential Actions: *9.1.1. Place a priority on investments that cost-effectively maintain and preserve existing transportation infrastructure and services.* *9.1.2. Develop cost-effective operation, maintenance and preservation strategies to extend life of existing roads, bridges, railroad crossings, public transportation facilities, and other transportation equipment and assets.* *9.1.3. Focus on extending the life of existing transportation infrastructure if this is more cost-effective than expanding or building new facilities.* *9.1.4. Develop methods to consider cost-effectiveness, least-cost solutions and life-cycle cost of facilities in the evaluation process.*
	Objective 9.2 Maximize Return on Public Investment - Make transportation investment decisions that use public resources effectively and efficiently, using performance-based planning. Potential Actions: *9.2.1. Place the highest priority on cost-effective investments that achieve multiple objectives and those investments that make the greatest contribution to the region's overall well-being.* *9.2.2. Update the Metropolitan Transportation Improvement Program (MTIP) policies and procedures to implement the policy direction of the RTP.* *9.2.3. Ensure that land use decisions protect public investments in infrastructure and encourage compact development patterns to reduce transportation infrastructure costs of serving development.* *9.2.4. Implement access management and other strategies to preserve the function of transportation facilities.* *9.2.5. Develop agreements between transit service providers and local jurisdictions on the provision of transit service and the build-out of priority 2040 land-use areas and related street infrastructure.* *9.2.6. Develop measures to evaluate the contribution of transportation investments and management strategies to the economic competitiveness of the region and the state.* *9.2.7. Identify, protect, and/or acquire future right-of-way as early as possible to minimize negative impacts on communities and the natural environment.*

TABLE 3.13 GOAL 10—DELIVER ACCOUNTABILITY

Goal Statement	Objectives
Goal 10: Deliver Accountability The region's government, business, institutional and community leaders work together in an open and transparent manner so the public experiences an integrated, comprehensive system of transportation facilities and services that bridge governance, institutional and fiscal barriers.	**Objective 10.1 Meaningful Input Opportunities** - Provide meaningful input opportunities for interested and affected stakeholders, including people who have traditionally been underrepresented, resource agencies, business, institutional and community stakeholders, and local, regional and state jurisdictions that own and operate the region's transportation system in plan development and review. Potential Actions: *10.1.1. Develop a detailed public involvement work plan consistent with the regional public involvement policy for each transportation plan, program or project that includes timelines, key decision points and opportunities for meaningful input throughout the decision-making process consistent with Metro's adopted public involvement policy for transportation planning.* *10.1.2. Ensure that all materials created for the public are easily understood and reasonable opportunities for public input is provided through a variety of methods.* *10.1.3. Create a record of formal public input on draft transportation plans and ensure input is fully responded to in a way that can provide direct feedback to submitters and the decision-makers.* *10.1.4. Ensure that stakeholder groups are equitably represented on advisory panels.* *10.1.5. Ensure transparency in decision-making by making all major decisions on the basis of substantiated findings that are grounded in meaningful involvement of the public.* *10.1.6. Monitor and report transportation system investment and performance to the public.*
	Objective 10.2 Stable and Innovative Funding – Stabilize existing transportation revenue while securing new and innovative long-term sources of funding adequate to build, operate and maintain the regional transportation system for all modes of travel at the federal, state, regional and local level. Potential Actions: *10.2.1. Place a priority on investments that leverage other investment from governments or private business.* *10.2.2. Develop innovative public and private partnerships to advance long-term Region 2040 vision and establish appropriate revenue sources and financing mechanisms.* *10.2.3. Develop regional finance strategy and seek opportunities at the state and federal levels to secure adequate and stable funding.* *10.2.4. Define roles and responsibilities for financing different components of the regional transportation system.* *10.2.5. Develop broad public support for needed investments in transportation infrastructure and resources for continuing operations, maintenance and preservation of transportation facilities.*
	Objective 10.3 Coordination and Cooperation - Ensure representation in regional transportation decision-making is equitable from among all affected jurisdictions and stakeholders and improve coordination and cooperation among the public and private owners and operators the region's transportation system so the system can function in a coordinated manner and better provide for state and regional transportation needs. Potential Actions: *10.3.1. Place a priority on investments that increase coordination and cooperation of transportation providers.* *10.3.2. Expand on current system and demand management coordination efforts at regional level.* *10.3.3. Explore possibility of a regional approach for managing and operating bridges of regional significance.* *10.3.4. Develop a regionally accepted document that clearly defines which agency is primarily responsible and principally accountable for planning, funding and managing different components of the transportation system. Different governments will be responsible for different components.*

3.4 CONCEPTS FOR DEVELOPMENT, DESIGN AND MANAGEMENT OF THE REGIONAL TRANSPORTATION SYSTEM

This section defines the components of the regional transportation system and presents idealized concepts to guide the development, design and management of that system.

These idealized system concepts form the bases for identifying system needs and the proposed investments in Chapter 4 and Chapter 6. The concepts recognize that each element of the transportation system may perform multiple functions, and that each will need to be tailored to fit local geography, respect existing communities and future development and protect the natural environment.

The concepts are organized into the three categories shown in Figure 3.4 and detailed in the following sub-sections:

- Section 3.4.2 - Systems Development Concept
- Section 3.4.3. - System Design and Place-making Concept
- Section 3.4.4 - Transportation Systems Management and Operations (TSMO) Concept

Regional Transportation System Components

Regional multi-modal transportation facilities and services include the following eight components:

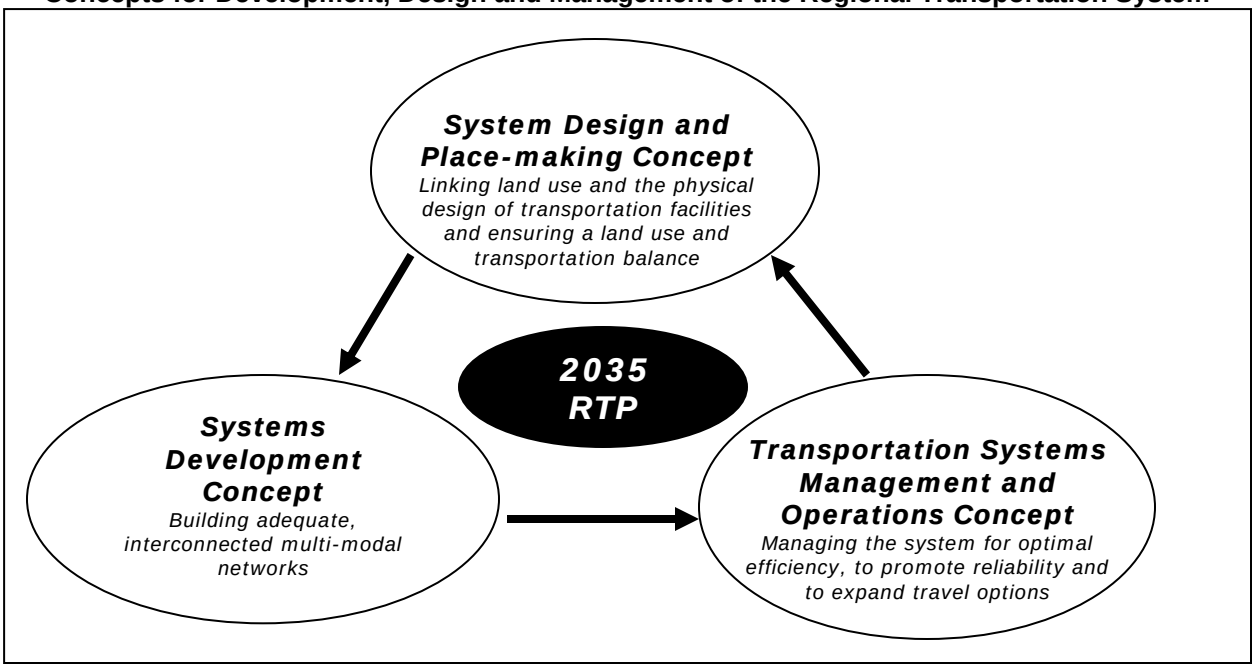
1. Regional Throughway and Street System, which includes the National Highway System (NHS) and State highways
2. Regional Transit System
3. Regional Bicycle System
4. Regional Pedestrian System
5. Regional Freight System
6. Regional Design System
7. System Management Strategies
8. Demand Management Strategies

3.4.1 Regional Transportation System Definition

Multi-modal regional transportation facilities and services are defined both functionally and geographically. A facility or service is part of the regional transportation system if it provides access to any activities crucial to the social or economic health of the Portland metropolitan region, including connecting the region to other parts of the state and Pacific Northwest, and providing access to and within 2040 Target areas.

Facilities that connect different parts of the region together by crossing county or city boundaries are crucial to the regional transportation system. Any link that provides access to or within a major regional activity center such as an airport or 2040 target area, is also a crucial element of the regional transportation system. Specific facilities or services are included in the RTP based on their function within the regional transportation system rather that their geometric design or physical characteristics.

Figure 3.4
Concepts for Development, Design and Management of the Regional Transportation System



3.4.2. SYSTEMS DEVELOPMENT CONCEPT

This establishes transportation planning and engineering principles for building a complete and well-connected multi-modal system of regional transportation facilities and services that supports all modes of travel and emphasizes safety, accessibility, mobility and reliability for people and goods. This section presents a framework within which to provide for local, regional, interstate and intrastate travel through a seamless and well-connected system of regional throughways and streets, local streets, freight systems, transit services and bicycle and pedestrian facilities.

3.4.2.1 REGIONAL STREET AND THROUGHWAY SYSTEM

The regional street and throughway system concept contains policy and strategy provisions that encourage developing system capacity, mobility, connectivity, and design attributes that support all modes of travel. The regional street and throughway system concept also establishes a number of priorities, including the need for efficient system operation, design attributes and standards, and the need to address concerns for the performance and management of the local street system.

The RTP calls for emphasizing system and demand management techniques before adding motor vehicle capacity where appropriate. The RTP presumes that building a regional street and throughway system to accommodate all motor vehicle traffic during peak travel periods may not be practical. Rather than relying principally on levels of congestion to direct how and where to address motor vehicle capacity needs, the RTP calls for implementing a well-connected network design that is tailored to fit local geography, respect existing communities and future development and protect the natural environment.

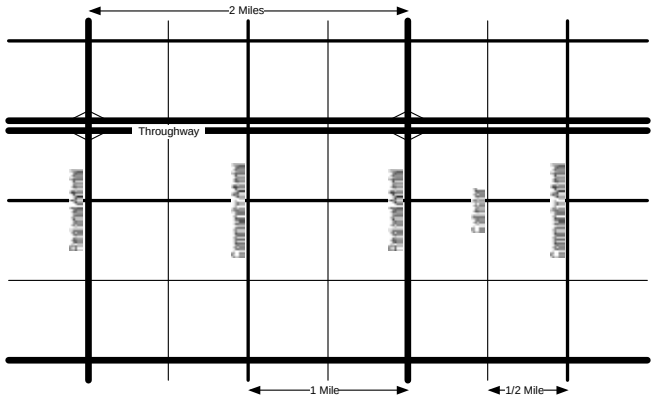
Regional Street and Throughway System Concept

Though our region has changed dramatically over the past century, the shape of the major street network serving our region has changed little. Most of our regional streets and throughways were once farm-to-market roads, many established along Donation Land Claim boundaries at half-mile or mile spacing. This inherited network design has proven to be an adequate match for accommodating the changing travel demands of our growing region. The regional street and throughway system concept seeks to apply this

proven network design to developing and undeveloped areas in the region, while seeking opportunities to bring existing urban areas closer to this ideal.

The regional street and throughway network concept calls for one-mile spacing of 4-lane regional arterial streets, with 2-lane community 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. Shown in **Figure 3.5**, the illustrative arterial street network is complemented by a well-connected system of collector and local streets. This system of regional and local streets is multi-modal in design, serving automobiles, motorcycles, trucks, transit, bicycles and pedestrians. The 4-lane regional arterial street design reflects an optimal compromise 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.

Figure 3.5
Regional Arterial and Throughway System Concept



Note: Conceptual model, illustrating multi-modal transportation corridors and showing ideal spacing of arterial streets. Most of the region's travel occurs off the throughway system, on a network of multi-modal arterial streets. The RTP policy places a new emphasis on ensuring that arterial networks are fully developed as the region grows, providing both local circulation and preserving highway capacity for cross-regional and statewide travel.

Collector streets are not part of the regional transportation system, but provide an important link between the local street and arterial street networks for all modes of travel.

The region's throughway system evolved from the mid-1930s, when the first highway was built from Portland to Milwaukie, to the completion of I-205 in the early 1980s. Most 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. Throughways are generally spaced at five to seven miles, and follow a modified concentric scheme radiating from the Portland Central City.

Regional Street and Throughway Functional Classification System

Regional streets and throughways are classified into a functional hierarchy that focuses on the relative role of individual facilities in serving traffic movement and providing vehicle access to surrounding properties. Throughways serve only as mobility routes, with little or no property access, and an emphasis on connecting major destinations across the region. Regional streets provide both mobility, moving traffic, goods, and people within the region, and access to property along the street. The degree to which one of these regional street purposes predominates over the other is determined by the functional classification. The Regional Street and Throughway System is shown in **Figure 3.6**.

Regional Street and Throughway Functional Classification System

The following elements are included in the regional street and throughway system shown in Figure 3.6. Definitions are provided in the glossary of terms.

- Throughways (Freeway and Highway)
- Major Arterials
- Minor Arterials

In general, the transportation system should be designed to provide for trips through or across the region on throughways, shorter trips through portions of the region on arterial streets and the shortest trips on collector and local streets. Traffic speeds, access and street level of connectivity vary depending on the function of the street. This approach results in a traffic hierarchy of:

- throughways (for example, limited-access facilities such as I-84, US 26, I-5, I-205 and I-405)
- arterial streets (for example, Cornell Road in Washington County, Halsey Street in the City of Portland and Sunnyside Road in Clackamas County).
- collector streets
- local streets

The traditional traffic classifications for throughways, arterial streets and other streets are a good starting point for distributing traffic in communities to avoid bottlenecks on overburdened routes or avoid the need to build overly wide streets as a community grows. The design of transportation facilities should consider the facility's traffic function, all modes of travel, and community development goals.

Throughways

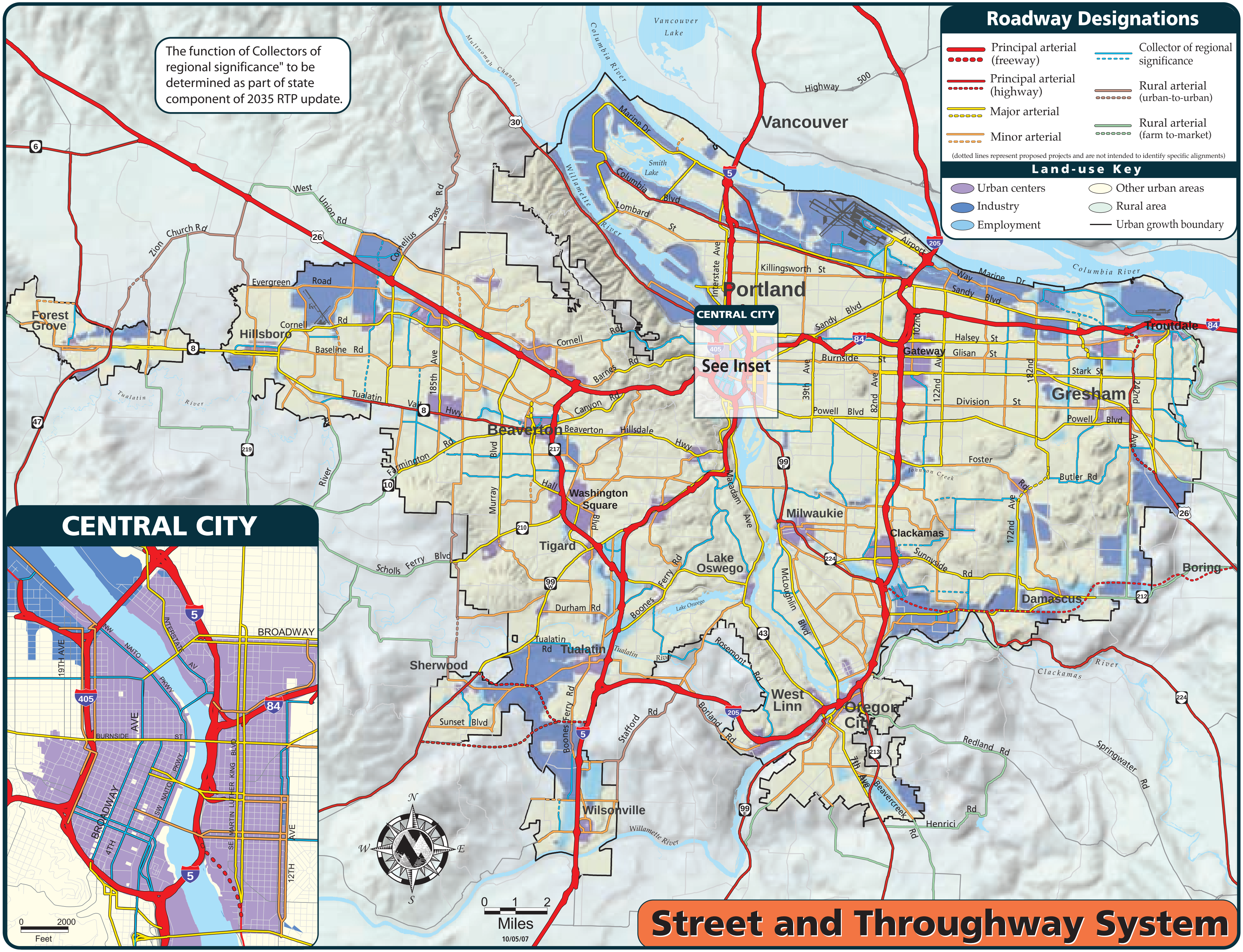
Throughways form the backbone of the regional system. Throughways connect over longer distances and are spaced less frequently than arterial streets and collectors. Throughways connect major activity centers within the region, including the central city, regional centers, industrial areas and intermodal facilities. Throughways generally span several jurisdictions and often are of statewide importance linking the Metro area with neighboring cities, other parts of the state, other states and Canada. The Oregon Highway Plan identifies three gaps to the region's throughway system that are needed to improve access from the Portland metropolitan region to the rest of the state and destinations beyond. These gaps are: a connection from I-5 to 99W, a connection from I-205 to US 26 and a connection from I-84 to US 26.

Throughways currently carry between 50,000 to 100,000 vehicles per day, providing for high-speed travel on longer motor vehicle trips and serving as the primary freight routes, with an emphasis on mobility. These routes are divided into limited-access freeway designs, where all access points are grade separated, and highways and parkways, which include a mix of separate and at-grade access points. Throughway interchanges are spaced no less than two miles apart.

Arterial streets

Arterial streets interconnect and support the throughway system. Arterial streets are intended to provide general mobility for travel within the region. Arterial streets serve as primary connections to throughways, and should also connect to other arterial streets, collectors and local streets where appropriate. Arterial streets connect major commercial, residential, industrial and institutional centers with each other and link these areas to the throughway system. Arterial streets usually carry between 10,000 and 40,000 vehicles per day and allow higher speeds than collector and local streets.

Major arterial streets accommodate longer-distance through trips and serve more of a regional traffic function. Minor arterial streets serve shorter trips that are localized within a community. As a result, major arterial streets usually carry more traffic than minor arterial streets. Arterial streets are usually spaced about one mile apart and are designed to accommodate motor vehicle, truck, bicycle, pedestrian, and transit travel.


Street and Throughway System
The function of Collectors of regional significance" to be determined as part of state component of 2035 RTP update.
Roadway Designations
Principal arterial (freeway)
Principal arterial (highway)
Major arterial
Minor arterial
Collector of regional significance
Rural arterial (urban-to-urban)
Rural arterial (farm to-market)
(dotted lines represent proposed projects and are not intended to identify specific alignments)
Land-use Key
Urban centers
Industry
Employment
Other urban areas
Rural area
Urban growth boundary
CENTRAL CITY
See Inset
Vancouver
Portland
Forest Grove
Hillsboro
Beaverton
Washington Square
Tigard
Lake Oswego
Milwaukie
Clackamas
Gateway
Gresham
Troutdale
Boring
Damascus
Tualatin
Sherwood
Wilsonville
West Linn
Oregon City
Columbia River
Willamette River
Tualatin River
Clackamas River
Vancouver Lake
Smith Lake
Multnomah Channel
BROADWAY
BURNSIDE
0 2000 Feet
0 1 2 Miles
10/05/07

Regional Mobility Corridors

METRO
PEOPLE PLACES • OPEN SPACES

Legend

1. Portland Central City to Clark County
2. Portland Central City to Highway 217
3. Highway 217 to Salem/Willamette Valley
4. Portland Central City Loop
5. Portland Central City to Gateway
6. Gateway to Troutdale
7. Tualatin to Oregon City
8. Oregon City to Gateway
9. Gateway to Clark County
10. Central City to Milwaukie
11. Milwaukie to Clackamas
12. I-205 to Rock Creek Junction (Highway 224)
13. Rock Creek Junction (Highway 224) to US 26
14. Oregon City to Carus
15. Wood Village/Troutdale/Fairview to Damascus/Boring
16. Rivergate to I-5
17. I-5 to I-205
18. Central City to St. Helens
19. I-5 to US 26
20. I-5 (Tualatin) to Sherwood and Sherwood to Newberg
21. Central City to Highway 217
22. Highway 217 to North Plains
23. Beaverton to Forest Grove
24. Forest Grove to US 26

2040 Growth Concept

City Center
Regional Center
Employment
Industrial
Regionally-Significant Industrial

Railroad
Regional Mobility Corridor

(dashed lines represent proposed projects and are not intended to identify specific alignments)

0 1 2 4 6 Miles

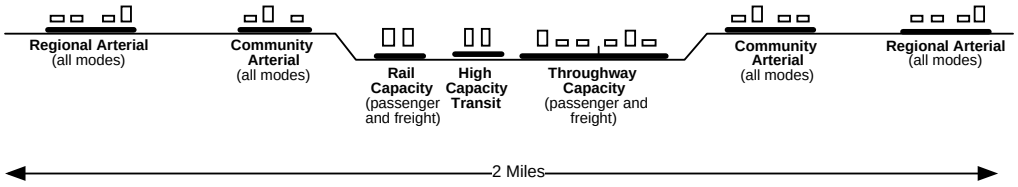
Regional Mobility Corridors

The regional mobility corridor concept is a sub-section of the regional street and throughway network concept that integrates arterial streets and throughways, as well as transit and other modes, into corridors that work together to provide for cross-regional, statewide and interstate travel. The regional mobility corridor concept is introduced in this section because throughways and arterial streets often serve a dual function of regional connectivity and as key elements of regional mobility corridors. This corridor approach considers multiple facilities, modes, jurisdictions, and land uses. The objective is to select the most effective mix of strategies to improve mobility within a specific corridor.

Accommodating bicycle and pedestrian travel is also important as we plan and invest in regional throughways and arterial streets. New throughway and arterial facilities, such as freeway interchanges or widened arterial streets, should not be a barrier to bicycling or walking. Today, throughways are typically six-lane facilities that serve as the workhorse for cross-regional, statewide and interstate travel. Additional lanes may be required in some places based on the importance of a facility to regional and state economic performance, excessive demand, and limitations or constraints that prevent creation of a well-connected street network due to topography, existing neighborhoods, or natural resource areas. Chapter 7 explores where such conditions may exist and defines the parameters for future refinement planning work specific to each regional mobility corridor.

Since the 1980s, regional mobility corridors have had throughway travel supplemented by high capacity transit service that provides an important passenger alternative. Parallel arterial streets, heavy rail and regional multi-use trails may also provide additional capacity in the regional mobility corridors. Regional mobility corridor facilities should be considered in conjunction with the parallel throughways for system evaluation and monitoring, system and demand management and phasing of physical investments in the individual facilities. **Figure 3.7** shows the regional mobility corridor concept applied on a map of the metropolitan region. The concept of a regional mobility corridor is shown in **Figure 3.8.**

Figure 3.8
Regional Mobility Corridor Concept



Note: Idealized concept for illustrative purposes showing recommended range of system analysis for the evaluation, monitoring, management and phasing of investments to throughways, arterial streets and transit service in the broader corridor. The illustration is modeled after I-84 between 12th and 60th avenues in Northeast Portland.

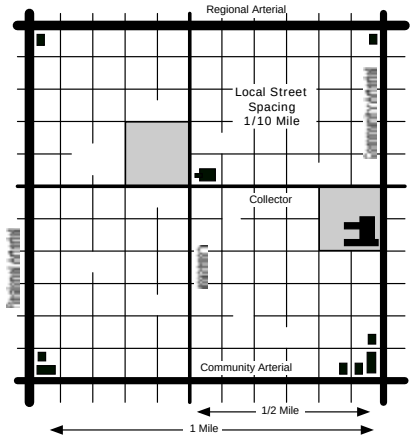
Local Streets Network Concept

Collector and local streets are general access facilities that provide for community and neighborhood circulation. Although they are not part of the regional transportation syste, they paly an important supporting role to the design and optimization of the regional transportation system.

Local jurisdictions are responsible for defining the network of local streets within the mile-spacing grid of arterial streets. Since the late 1990s, the region has required a maximum spacing of 1/10 mile for local streets, with the goal of encouraging local traffic to use local streets to minimize local traffic on regional arterial streets. Local street connectivity also benefits emergency response.

Shown in **Figure 3.9**, the local street network concept provides for bicycle and pedestrian travel and provides for direct access from local street systems to community destinations and transit on regional arterial streets. More frequent bike and pedestrian connections are recommended where collector and local streets cannot be constructed due to existing development or other topographic or environmental constraints.

Figure 3.9
Local Streets Network Concept



Note: Idealized concept for illustrative purposes showing desired spacing in residential and mixed-use areas to serve local circulation, walking and bicycling. The illustration is modeled after neighborhoods in Southeast Portland.

Collector and local streets are not part of the regional transportation system, but provide an important supporting role to the design and optimization of the regional transportation system.

Collector Streets

Collector streets provide both access and circulation. As such, collectors tend to carry fewer motor vehicles at lower travel speeds than arterial streets. Collectors may serve as freight access routes, providing connections from industrial or commercial areas to the arterial network. Collector streets serve neighborhood traffic and commercial/industrial areas. Collectors provide local circulation alternatives to arterial streets. Collectors provide both circulation and access within residential and commercial areas, helping to disperse traffic that might otherwise use the arterial system for local travel. Collectors may also serve as local bike, pedestrian and freight access routes, providing connections to the arterial and transit network. Collectors usually carry between 1,000 and 10,000 vehicles per day, with volumes varying by jurisdiction. Collector streets are ideally spaced at half-mile intervals, or midway between arterial streets. Speeds and volumes on collector streets are moderate.

Local Streets

Local streets primary provide direct access to adjacent land uses. While local streets are not intended to serve through traffic, the aggregate effect of local street system design affects arterial and collector system

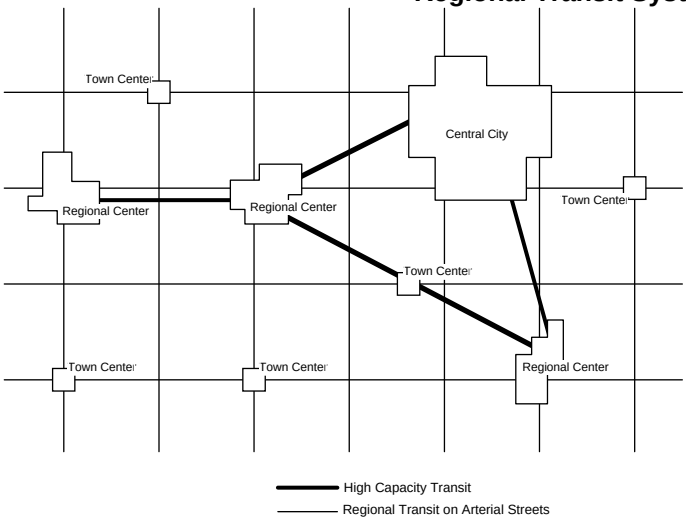
effectiveness. When local travel is restricted by a lack of connecting routes, local trips are forced onto the arterial and/or collector street networks. Strategies should retain the neighborhood character and livability along these local routes. Chapter 7 requires local street spacing of no more than 530 feet in new residential and mixed-use areas, and cul-de-sacs are limited to 200 feet in length to distribute vehicle movements and provide direct bicycle and pedestrian routes. Local streets usually carry fewer than 1,000 vehicles per day, with volumes varying by jurisdiction. Speeds on local streets are relatively low.

3.4.2.2 REGIONAL TRANSIT SYSTEM

Transit has a significant role in supporting the 2040 Regional Growth Concept. The 2040 Growth Concept calls for focusing future growth in regional and town centers, station communities, and 2040 corridors. The regional street system has carried public transit for more than a century, beginning with the streetcars of the early 1900s and evolving into a combination of vans, buses, streetcars and light rail trains today. The regional transit system concept presented here responds to significant growth in population and jobs in the areas outside of the Portland Central City that are difficult to serve with the current Portland-centered hub-and-spoke system.

The regional transit system concept calls for fast and reliable high capacity transit connections between the central city and regional centers that serves longer regional trips at a higher operating speed than regional bus service. In addition, the concept calls for convenient and reliable regional transit bus service on the majority of the regional arterial system, with streetcars on some streets in the Portland central city and regional centers. These services require passenger infrastructure at stops and stations and a pedestrian system that connects to adjacent streets and neighborhoods. The regional transit system concept is shown in **Figure 3.10**.

Figure 3.10
Regional Transit System Concept



The Region 2040 plan set forth a vision for connecting the central city to regional centers like Gresham, Clackamas and Hillsboro with light rail. The RTP expands this vision to include a complete network of regional transit along most arterial streets to better serve suburban communities.

The concept shown in **Figure 3.10** is built around a web of regional and local transit that allows movement to, from and between 2040 centers, providing a viable alternative to the automobile in convenience and travel time. In parts of the region where development focuses on regional and town centers and station communities, the RTP recommends providing radial transit service to serve these centers. In areas where development focuses on 2040 corridors, main streets and centers, the RTP recommends supporting transit by providing transit-supportive development and well-connected street systems to allow convenient bicycle and pedestrian access. The Regional Transit System is shown in **Figure 3.11**.

TriMet is the primary public transportation provider for the metropolitan region and is committed to providing the appropriate level of transit service to support the regional goals and strategies identified in the 2040 Growth Concept and RTP. TriMet implements the transit service component of the RTP as described in annual updates and expansions to their service plan, called the Transit Investment Plan (TIP). The South Metro Area Rapid Transit (SMART) district in Wilsonville also provides regional transit service, connecting Wilsonville to downtown Portland.

Consistent with the Oregon Transportation Plan, the transit design concept focuses on the total transit system, not just service enhancements. In addition to frequent, reliable service throughout the day, other elements of the total transit system include access to bus stops, customer information and places to wait for transit. The transit design concept includes bolstering existing service, reliability, passenger infrastructure, customer information and access. The transit design concept includes management of the existing system to support the return on public investment.

Each of these networks plays a different role in leveraging and supporting the Region 2040 vision and land uses, as illustrated in **Table 3.14**.

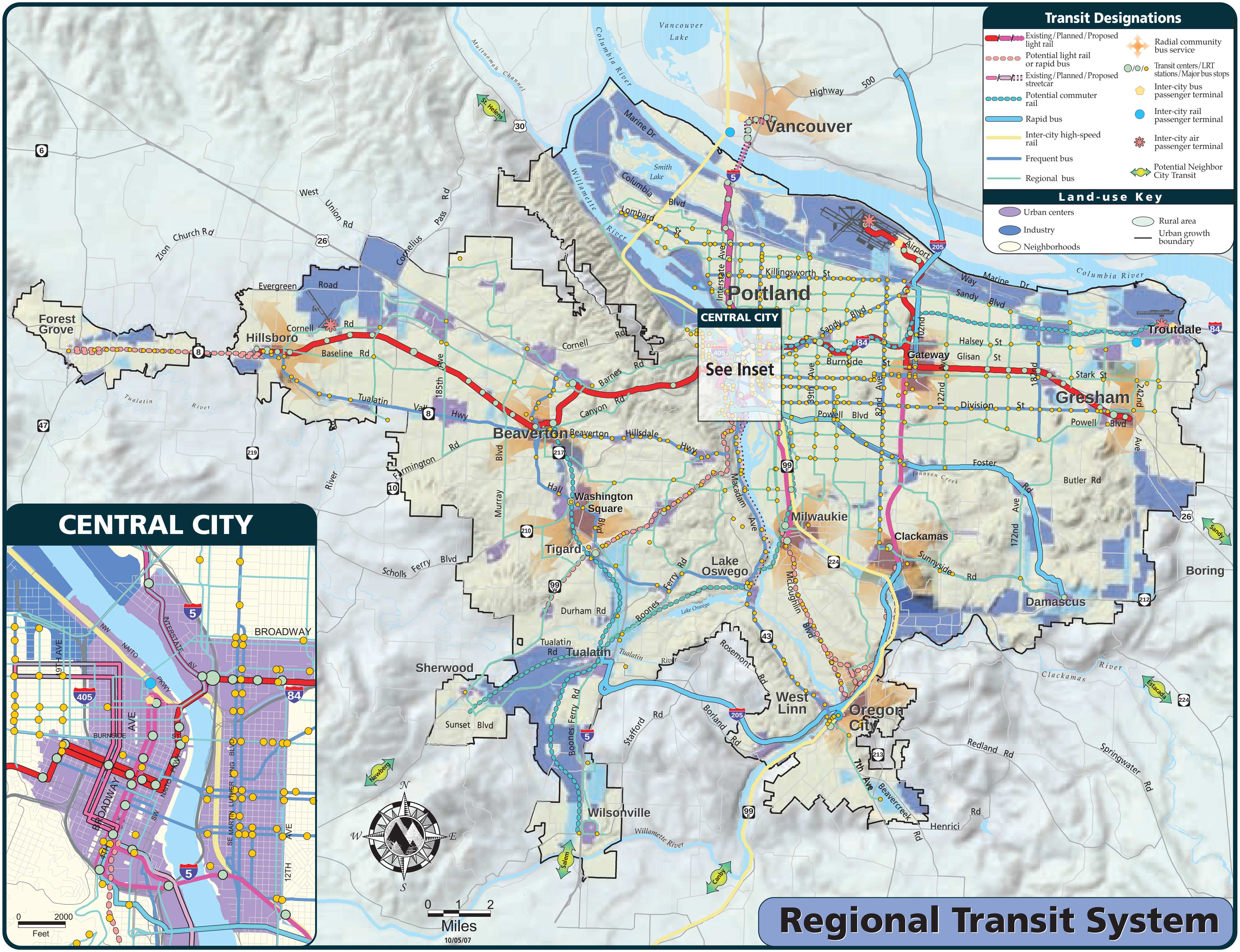
Table 3.14
Relationship Between 2040 Growth Concept and Regional Transit System

Service Type			Primary Components					Secondary Components				Other Urban Components		
						Intermodal Facilities								
			Central City	Regional Centers	Industrial Areas	PDX	Union Station	Station Communities	Town Centers	Main Streets	Corridors	Employment Areas	Inner Neighborhood	Outer Neighborhood
	Regional Transit Network	LRT	●	●		○	○	●	○					
		Commuter Rail	●	●			●		○					
		Rapid Bus	●	●			○	○			○			
		Streetcar & Frequent Bus	●	●				○	○	●	○		○	
		Regional Bus	●	●	○		○	○	●	○	●	○	○	
	Community Transit Network	Community Bus	○	○	●	●		○	○	○	○	●	●	○
		Mini-Bus	○	○	○			○	○	○	○	●	○	●
		Paratransit	○	○	○			○	○	○	○	○	○	○
		Park-and-Ride		●				○	○		○		○	●
	Inter-Urban Transit	Inter-urban Rail	●	○			●		○					
		Inter-city Bus	●	●		○	●		○					

● Best public transportation mode(s) designed to serve growth concept land use components

○ Additional public transportation mode(s) that may serve growth concept land use components

Table 3.14 provides a hierarchy of transit service for 2040 Growth Concept land-use components. "Core service" is defined as the most efficient level of public transportation service planned for a given land use and is indicated with a solid circle(s). A description of each type of core service is included in the glossary.


Regional Transit System
Transit Designations
Existing/Planned/Proposed light rail
Potential light rail or rapid bus
Existing/Planned/Proposed streetcar
Potential commuter rail
Rapid bus
Inter-city high-speed rail
Frequent bus
Regional bus
Radial community bus service
Transit centers/LRT stations/Major bus stops
Inter-city bus passenger terminal
Inter-city rail passenger terminal
Inter-city air passenger terminal
Potential Neighbor City Transit
Land-use Key
Urban centers
Industry
Neighborhoods
Rural area
Urban growth boundary
CENTRAL CITY
See Inset
Vancouver
Portland
Gateway
Gresham
Troutdale
Hillsboro
Forest Grove
Beaverton
Washington Square
Tigard
Lake Oswego
Milwaukie
Clackamas
Damascus
Boring
Tualatin
Sherwood
Wilsonville
West Linn
Oregon City
Vancouver Lake
Columbia River
Willamette River
Tualatin River
Clackamas River
BROADWAY
BURNSIDE
0 2000
Feet
0 1 2
Miles
10/05/07

Blank

High Capacity Transit Network

High capacity transit provides the backbone of the transit network connecting the Central City, Regional Centers, and passenger intermodal facilities. It operates on a fixed guideway or within an exclusive right-of-way, to the extent possible. Service frequencies vary by type of service. Passenger infrastructure is provided at transit stations and station communities, including real-time schedule information, ticket machines, special lighting, benches, shelters, bicycle parking, and commercial services. Using transit signal priority at at-grade crossings and/or intersections preserves speed and schedule reliability. Park-and-ride lots provide important and necessary access to the high capacity transit network.

Types of high capacity transit facilities and services include:

- Light Rail Transit
- Commuter Rail
- Bus Rapid Transit
- Intermodal Passenger Facilities (e.g., Amtrak & Greyhound)
- Park-and-ride lots

Regional Transit System

The following elements are included in the regional transit system shown in Figure 3.11. Definitions are provided in the glossary of terms.

- Light rail transit
- Commuter rail
- Bus rapid transit
- Passenger intermodal facilities
- Frequent bus
- Regional bus
- Streetcar
- Regional transit stops
- Park-and-ride lots
- Inter-urban passenger rail and bus service

Regional Transit Network

The regional transit network typically relies on transit service frequencies of 15 minutes or better on most regional arterial streets during the day and on weekends. It also offers coverage of and access to 2040 Target Areas listed in Table 3.1. As part of the regional transit network, streetcar service functions primarily as a connection within and between 2040 Target Areas. Regional transit service also includes preferential treatments at regional transit stops and high ridership locations, such as transit signal priority, covered bus shelters, curb extensions and special lighting. Park-and-ride lots provide important and necessary access to the regional transit network.

Types of regional transit services and facilities include:

- Frequent Bus
- Regional Bus
- Streetcar
- Park-and-Ride Lots
- Regional Transit Stops

Community Transit Network

The community transit network provides basic service and access to the regional and high capacity transit networks. Service frequencies vary by type of service. The network also offers coverage of and access to 2040 Target Areas. As part of the community transit network, streetcar service functions primarily as a local circulator that leverages higher density within primary or secondary land uses.

Transit preferential treatments and passenger facilities are appropriate at high ridership locations. Sidewalk connectivity and protected crosswalks are crucial elements of the community transit network.

Types of community transit services include:

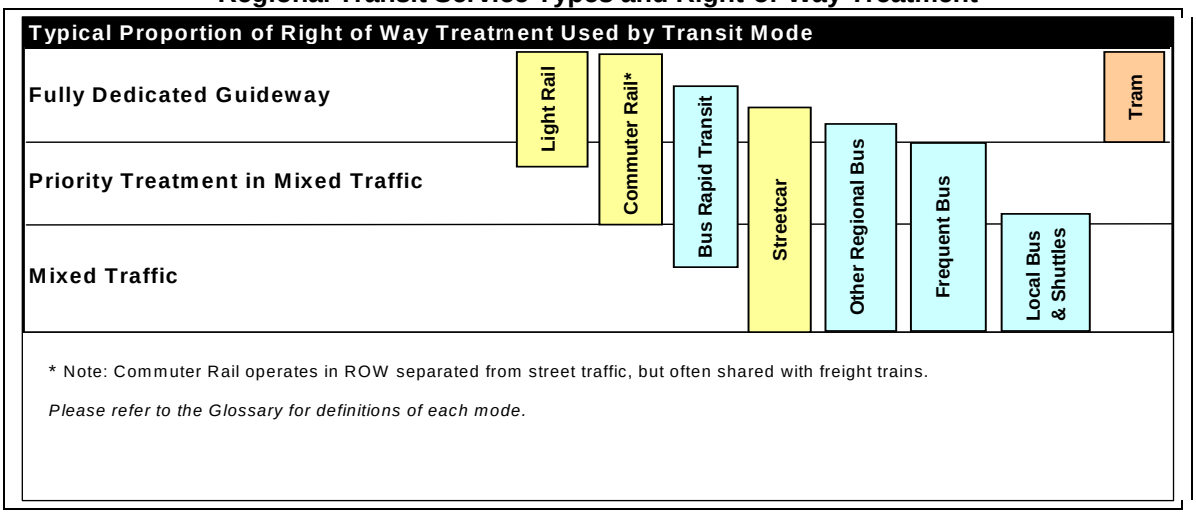
- Streetcar
- Tram
- Local Bus
- Para-Transit

Interurban Transit

The RTP also considers commuter/interurban passenger rail and bus service to neighbor cities a significant component of the regional transit network. Candidates for future study include Milwaukie-Lake Oswego-Tualatin-Sherwood-McMinnville as well as extension of Washington County Commuter Rail to Salem to expand transit connections from the region to the rest of the State.

The components of the regional transit system have different right-of-way needs. The regional transit system has a functional hierarchy similar to that of the regional street and throughway network. **Figure 3.12** shows the regional transit service types and right-of-way treatments.

Figure 3.12
Regional Transit Service Types and Right-of-Way Treatment



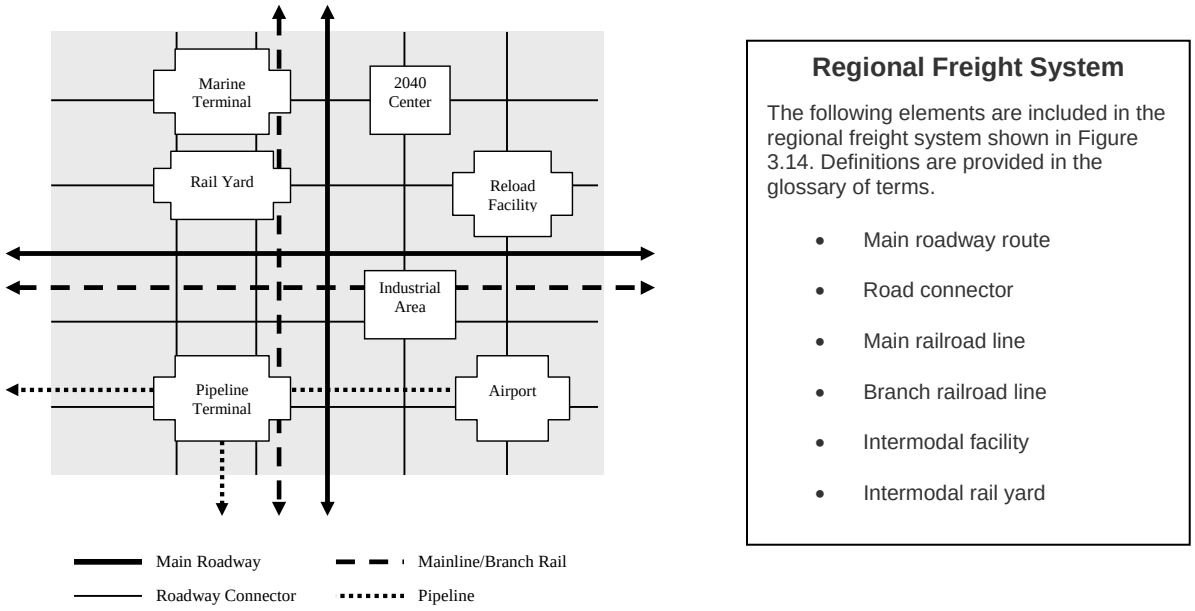
3.4.2.3 REGIONAL FREIGHT SYSTEM

The Portland –Vancouver region is a both an international gateway and domestic hub for commerce. Today, the movement of freight contributes significantly to our regional economy, and the trend is forecasted to continue.

The transport and distribution of freight occurs via the regional freight system, a combination of interconnected publicly and privately owned networks and terminal facilities. The concept in **Figure 3.13** shows the components of the regional freight system and their relationships.

Rivers, mainline rail, pipeline, air routes, and arterial streets and throughways connect our region to international and domestic markets beyond our boundaries. Inside our region, throughways and arterial streets distribute freight moved by truck to air, marine, and pipeline terminal facilities, rail yards, industrial areas, and commercial centers. Rail branch lines connect industrial areas, marine terminals, and pipeline terminals to rail yards. Pipelines transport petroleum products to and from terminal facilities.

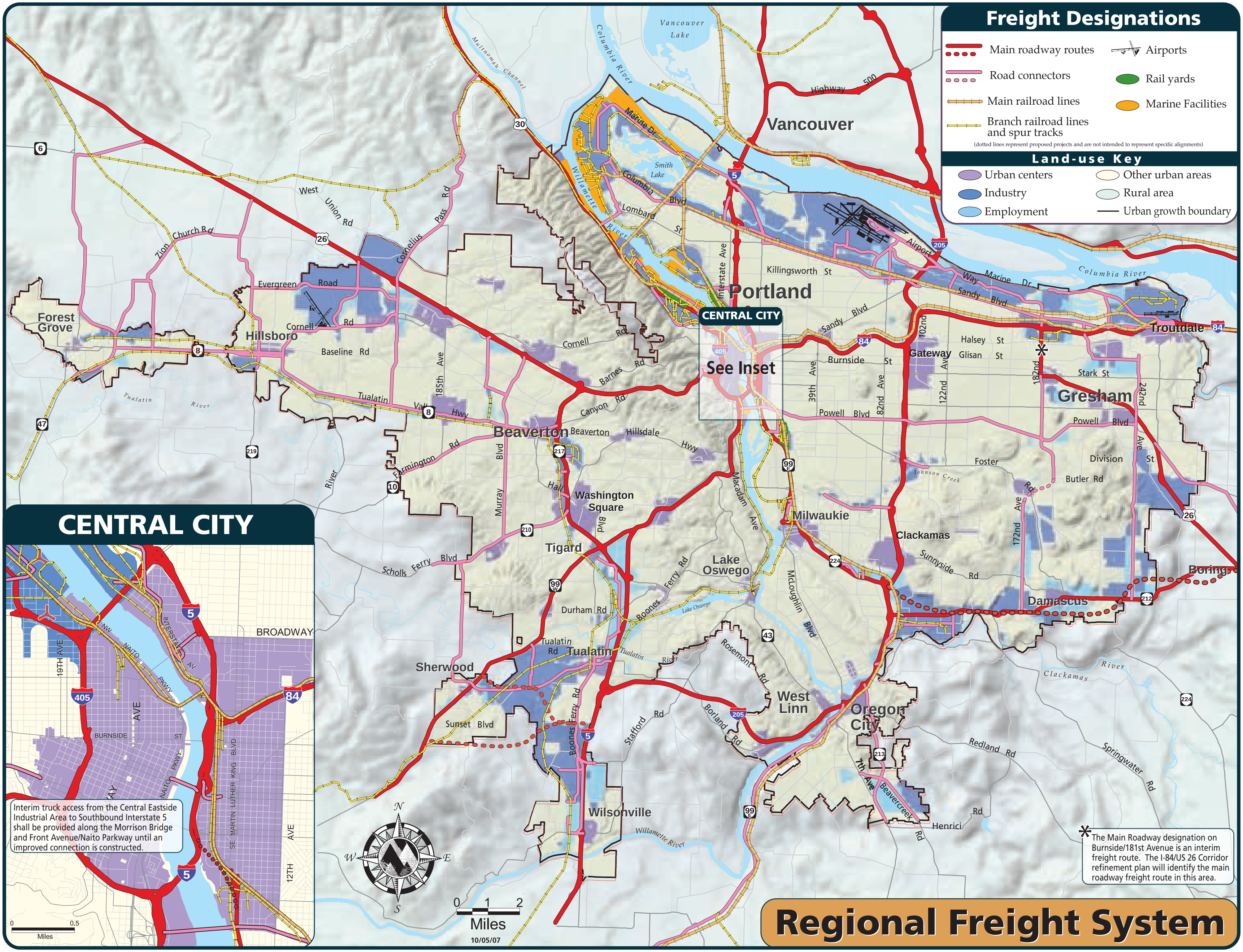
Figure 3.13
Regional Freight Concept



The 2005 *Cost of Congestion to the Economy of the Portland Region Study* reported that our region has a higher than average dependency on traded sector industries, particularly computer/electronic products, wholesale distribution services, metals, forestry/wood/paper products, and publishing; business sectors that serve broader regional, national, and international markets and bring outside dollars into the region's economy. These industries depend on a well-integrated and well-functioning international and domestic transportation system to stay competitive in a global economy.

As an international gateway and domestic freight hub, the region is particularly influenced by the dynamic trends affecting distribution and logistics. The 2002 *Commodity Flow Survey* projected an overall doubling of freight tonnage moved in the region by 2030. The region's forecasted population and job growth, estimated at an additional 1,000,000 residents and 600,000 jobs by 2030, and the associated boost in consumption of goods and services are significant drivers of the projected increased freight volume.

The Regional Freight System Map, shown in **Figure 3.14**, applies the regional freight concept on the ground to identify the transportation networks and facilities that serve our region and state's freight mobility needs.


Regional Freight System
Freight Designations
Main roadway routes
Road connectors
Main railroad lines
Branch railroad lines and spur tracks
Airports
Rail yards
Marine Facilities
(dotted lines represent proposed projects and are not intended to represent specific alignments)
Land-use Key
Urban centers
Industry
Employment
Other urban areas
Rural area
Urban growth boundary
CENTRAL CITY
See Inset
Interim truck access from the Central Eastside Industrial Area to Southbound Interstate 5 shall be provided along the Morrison Bridge and Front Avenue/Naito Parkway until an improved connection is constructed.
The Main Roadway designation on Burnside/181st Avenue is an interim freight route. The I-84/US 26 Corridor refinement plan will identify the main roadway freight route in this area.
Vancouver
Portland
Forest Grove
Hillsboro
Beaverton
Washington Square
Tigard
Lake Oswego
Milwaukie
Gateway
Gresham
Troutdale
Clackamas
Damascus
Boring
Tualatin
Sherwood
Wilsonville
West Linn
Oregon City
Vancouver Lake
Smith Lake
Columbia River
Willamette River
Tualatin River
Clackamas River
Multnomah Channel
Johnson Creek
Beavercreek
Henrici
BROADWAY
BURNSIDE
Miles
10/05/07

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3.4.2.4 REGIONAL BIKE AND PEDESTRIAN SYSTEMS

Residents in the Portland metropolitan region historically have recognized walking and bicycling as an important form of transportation. The RTP elevates the importance of and the need to support pedestrian and bicycle travel. Key elements of the urban pedestrian and bicycle system are on-street sidewalks and bicycle lanes, off-street multi-use trails, crossings locations, illumination and streetscape amenities that foster bicycle and pedestrian travel.

Oregon State statutes, administrative rules and the Oregon Transportation Plan establish that pedestrian and bicycle facilities are required on all collector and higher classification arterial streets when those roads are constructed or reconstructed. Exceptions are provided when a bikeway would be unsafe, where cost is excessively disproportionate to need or where there is an absence of need due to sparse population or other factors. Street system connectivity is critical because roadway networks provide the backbone for bicycle and pedestrian travel in the region.

Arterial streets are not always the best routes for bikeways, but are almost always the most direct route and are usually the best connection to destinations in centers and along 2040 corridors. The RTP has a responsibility to provide continuous bicycle and pedestrian connections on arterial streets except in cases where existing development, natural features or other circumstances constrain right-of-way. This, in turn, requires designing the transportation system to have a well-connected network of four-lane regional arterial streets that are supported by a well-connected network of collector and local streets.

Regional Bicycle System

The following elements are part of the regional bicycle system shown in Figure 3.15. Definitions are provided in the glossary of terms.

- Regional access bikeway
- Regional corridor bikeway
- Community connector bikeway
- Regional multi-use trail with transportation function

Regional Pedestrian System

The following elements are part of the regional pedestrian system shown in Figure 3.16. Definitions are provided in the glossary of terms.

- Pedestrian district
- Transit mixed-use corridor
- Regional multi-use trails with a transportation function

For purposes of the RTP, the regional bicycle and pedestrian systems typically correspond to the arterial street network and to regional multi-use trails with a transportation function. Bikeway gaps may be addressed through bicycle lanes or other bikeway designs, such as bicycle boulevards, on parallel collector or local streets off of the regional system when right-of-way constraints exist or when the arterial street system does not meet arterial spacing guidelines. The regional pedestrian network also includes infrastructure in 2040 centers and station communities.

Bicycle Travel

The regional bikeway system identifies a network of bikeways throughout the region that provide for bicycle mobility between and accessibility to and within the central city, regional centers and town centers. A complementary system of on-street and off-street regional bikeway corridors, regional multi-use trails and local bikeways is proposed to provide a continuous network.

In addition to major bikeway corridors that create a network of regional through-routes, the system provides accessibility to and within regional and town centers. These classifications, including regional access bikeways, regional corridor bikeways and community connector bikeways, are on-street bikeways that would be designed using a flexible "toolbox" of bikeway designs, including bike lanes, shoulder bikeways, bicycle boulevards and shared roadway/wide outside lanes.

The appropriateness of each design is based on adjacent motor vehicle speeds and volumes. The most appropriate bikeway design is defined in the regional street design concepts and in *Creating Livable*

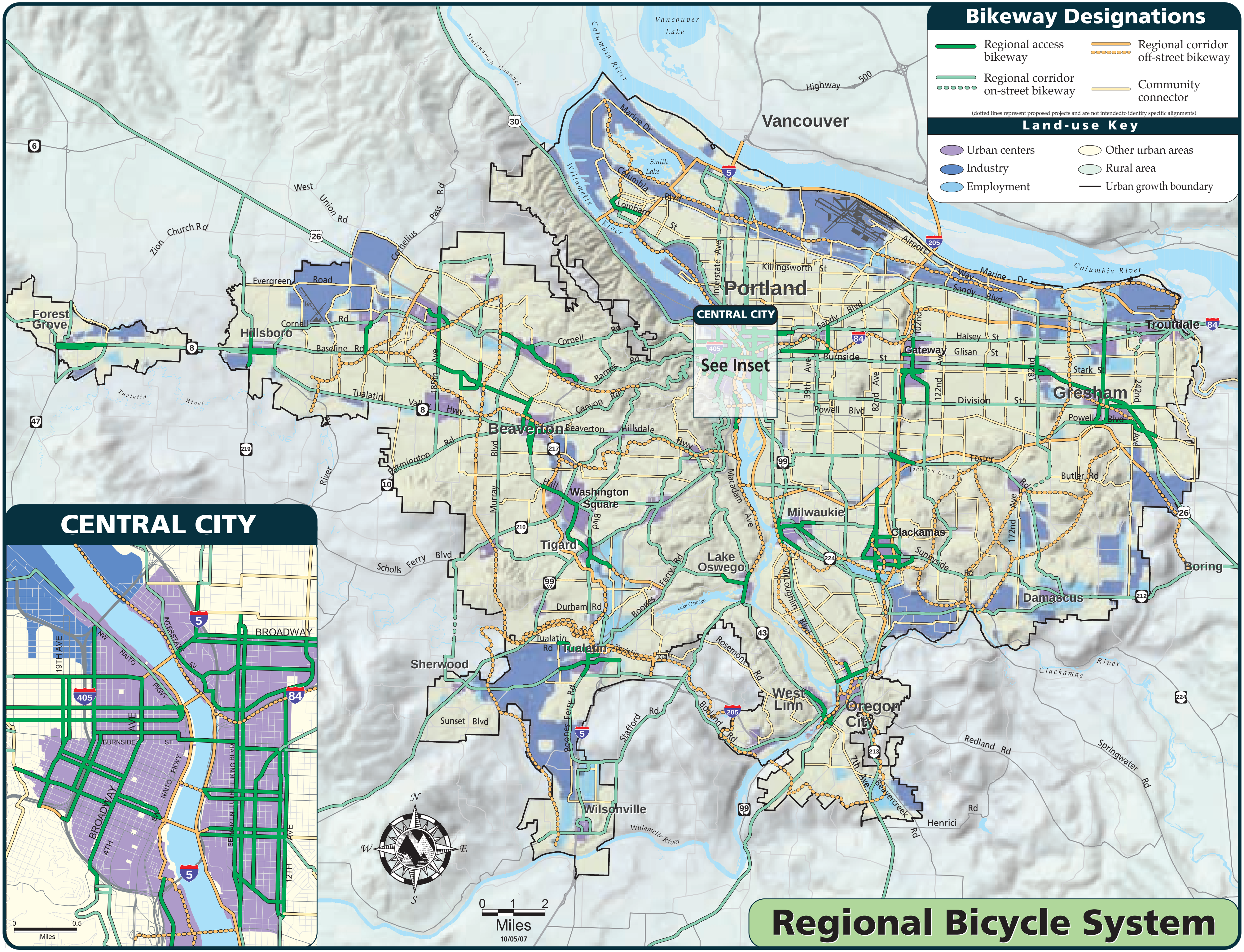
Streets: Street Design Guidelines for 2040. Regional streets provide the primary network for bicycle travel in the region, and require features that support bicycle traffic. Bicycle lanes are the preferred bikeway design for throughway (highway), boulevard and street design classification concepts described in the next section.

Pedestrian Travel

By providing dedicated space for those on foot or using mobility devices, pedestrian facilities are recognized as an important incentive that promotes walking as a mode of travel. Throughout this plan, the term "walking" should be interpreted to include traveling on foot as well as those pedestrians using mobility aids, such as wheelchairs. Walking for short distances is an attractive option for most people when safe and convenient pedestrian facilities are available. Combined with adequate sidewalks and curb ramps, pedestrian elements such as benches, curb extensions, marked street crossings, landscaping and wide planting strips make walking an attractive, convenient and safe mode of travel. The focus of the regional pedestrian system is identifying areas of high, or potentially high, pedestrian activity in order to target infrastructure improvements that can be made with regional funds.

A well-connected high-quality pedestrian environment facilitates walking trips by providing safe and convenient access to pedestrian destinations within a short distance. Public transportation use is enhanced by pedestrian improvements, especially those facilities that connect stations or bus stops to surrounding areas or that provide safe and attractive waiting areas. Improving walkway connections between office and commercial districts and surrounding neighborhoods provides opportunities for residents to walk to work, shopping or to run personal errands. This reduces the need to bring an automobile to work and enhances public transportation and carpooling as commute options.

The Regional Bicycle System and Regional Pedestrian System are shown in **Figures 3.15 and 3.16**, respectively.


Regional Bicycle System
Bikeway Designations
Regional access bikeway
Regional corridor off-street bikeway
Regional corridor on-street bikeway
Community connector
(dotted lines represent proposed projects and are not intendedto identify specific alignments)
Land-use Key
Urban centers
Other urban areas
Industry
Rural area
Employment
Urban growth boundary
CENTRAL CITY
See Inset
Vancouver
Portland
Forest Grove
Hillsboro
Beaverton
Washington Square
Tigard
Lake Oswego
Milwaukie
Clackamas
Gateway
Gresham
Troutdale
Boring
Damascus
Tualatin
Sherwood
Wilsonville
West Linn
Oregon City
Henrici
Columbia River
Willamette River
Tualatin River
Clackamas River
Multnomah Channel
Vancouver Lake
Smith Lake
Lake Oswego
Johnson Creek
BROADWAY
BURNSIDE
NAITO PKWY
INTERSTATE AV
19TH AVE
4TH
12TH
SE MARTIN LUTHER KING BLVD
0 1 2
Miles
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0 0.5
Miles
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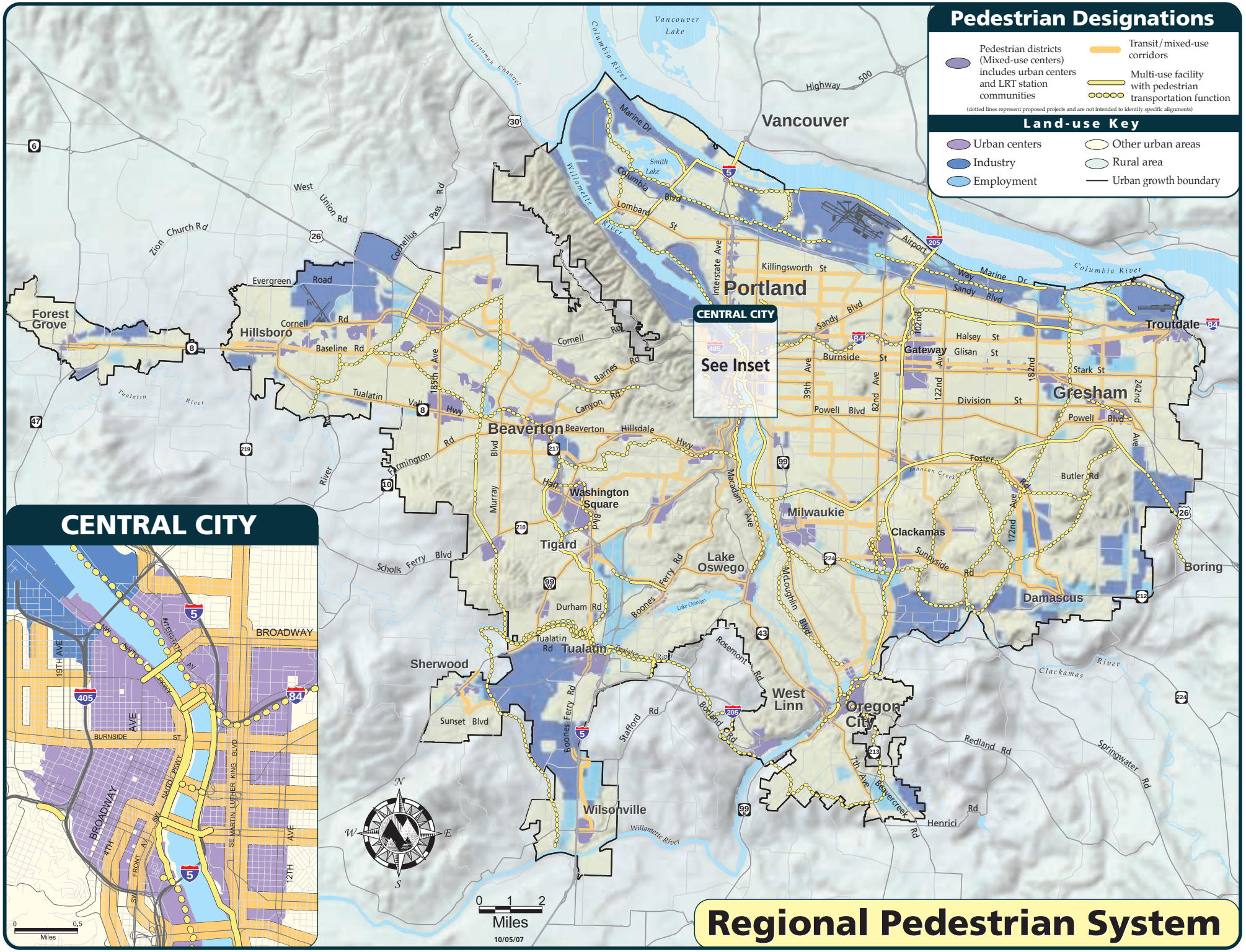

Pedestrian Designations
Pedestrian districts (Mixed-use centers) includes urban centers and LRT station communities
Transit/mixed-use corridors
Multi-use facility with pedestrian transportation function
(dotted lines represent proposed projects and are not intended to identify specific alignments)
Land-use Key
Urban centers
Industry
Employment
Other urban areas
Rural area
Urban growth boundary
CENTRAL CITY
See Inset
CENTRAL CITY
Vancouver
Portland
Forest Grove
Hillsboro
Beaverton
Tigard
Tualatin
Sherwood
Wilsonville
Lake Oswego
West Linn
Oregon City
Milwaukie
Clackamas
Gresham
Troutdale
Damascus
Boring
Vancouver Lake
Columbia River
Willamette River
Clackamas River
Tualatin River
Johnson Creek
Smith Lake
Highway 500
Marine Dr
Columbia Blvd
Lombard St
Killingsworth St
Interstate Ave
Airport Way
Sandy Blvd
Halsey St
Glisan St
Burnside St
Stark St
Division St
Powell Blvd
Foster Rd
Butler Rd
Evergreen Road
West Union Rd
Zion Church Rd
Cornelius Pass Rd
Cornell Rd
Baseline Rd
Barnes Rd
Tualatin Valley Hwy
Canyon Rd
Beaverton Hillsdale Hwy
Farmington Rd
Scholls Ferry Rd
Durham Rd
Boones Ferry Rd
Stafford Rd
Rosemont Rd
Borland Rd
Redland Rd
Springwater Rd
Henrici Rd
Beavercreek Rd
Macadam Ave
McLoughlin Blvd
Sunnyside Rd
Washington Square
Sunset Blvd
Murray Blvd
185th Ave
39th Ave
82nd Ave
122nd Ave
132nd
172nd Ave
202nd
242nd
Broadway
19th Ave
4th Ave
12th Ave
Burnside St
Naito Pkwy
SE Martin Luther King Blvd
SW Front Ave
N
S
E
W
0 1 2
Miles
10/05/07
0 0.5
Miles
Regional Pedestrian System

3.4.3 SYSTEMS DESIGN AND PLACE-MAKING CONCEPT

This section describes the individual elements of the street design concepts. Regional street and throughway system design concepts address federal, state and regional transportation planning mandates with design concepts intended that support regional and local implementation of the 2040 Growth Concept.

This 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. Land use planning determines where homes, schools, work, shopping, and other activities are located and can profoundly affect the way in which we move around the region and within our communities. 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 design concepts reflect that streets perform many, often conflicting functions. Conflicts among travel modes need to be reconciled for the safety of all modes of travel. The design concepts promote community livability by balancing all modes of travel and addressing the function and character of surrounding land uses. Regional Street and Throughway Design Concepts include consideration of various arterial designs, designs for pedestrians, bicyclist and transit and a discussion about the link between street design and stormwater management. The designs comprise several elements, depending on intended function of the street or throughway and the land uses the street serves.

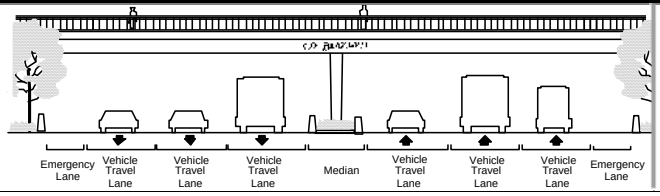
Table 3.15 summarizes throughway and arterial classifications, design elements and recommended functions, illustrating how multi-modal design elements can be integrated. The idealized cross sections in the table are illustrative only.

Regional System Design

The following definitions reflect the regional system design classification categories shown in Figure 3.17.

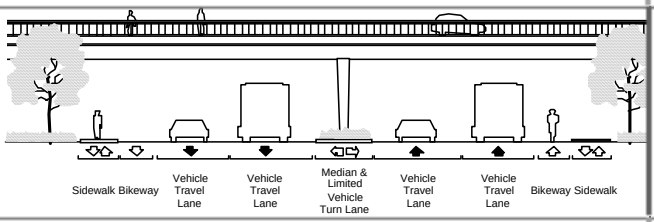
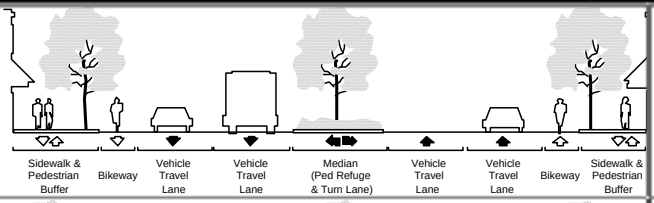
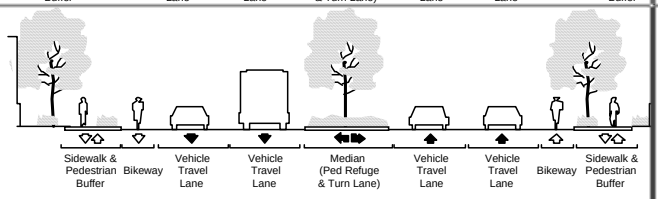
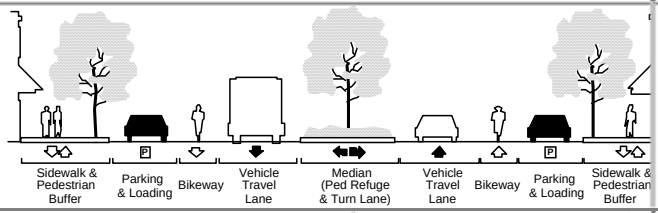
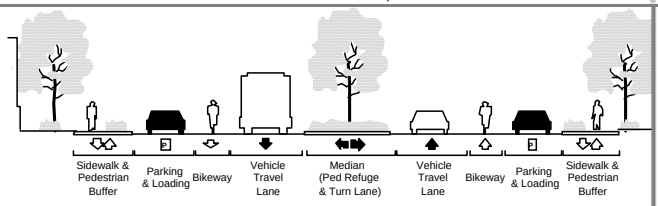
- **Throughways** – principal arterials that emphasize motor vehicle and freight travel and connect major activity centers and provide inter-city, inter-regional and inter-state connections, with an emphasis on mobility.
- **Boulevards -** arterial streets in mixed-use areas (e.g., 2040 centers, station communities and main streets) integrate motor vehicles, freight, transit, bicycle and pedestrian modes of travel, with an emphasis on pedestrian, bicycle and transit travel.
- **Streets -** arterial streets in 2040 mixed-use corridors, industrial areas, employment areas and neighborhoods integrate motor vehicles, freight, transit, bicycle and pedestrian modes of travel, with an emphasis on vehicle mobility and special pedestrian infrastructure on transit streets.

Table 3.15
Illustrative Regional Street and Throughway Design Concepts

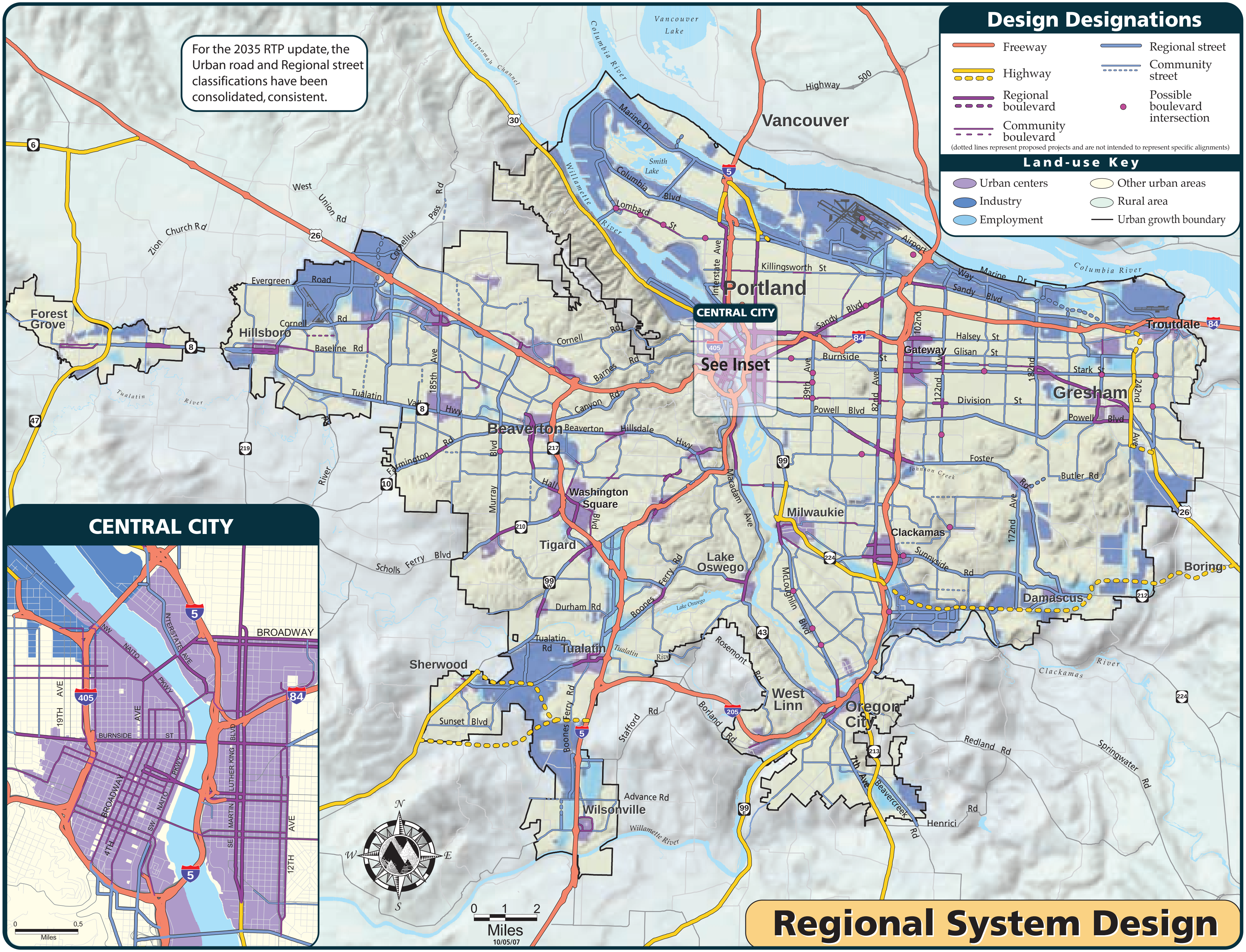
Trip Type	2040 Design Concept	Network Function	Illustrative Design Concept	Typical number of travel lanes[4]
THROUGHWAYS				
Interstate / regional	Throughway (Freeway)	Principal arterial		4 to 6 through lanes with grade separated interchanges

[4] The number of through lanes may vary based on right-of-way constraints or other factors. Some places in the region may require additional lanes due to a lack of connectivity.

Table 3.15
Illustrative Regional Street and Throughway Design Concepts

Trip Type	2040 Design Concept	Network Function	Illustrative Design Concept	Typical number of travel lanes[4]
Interstate / regional	Throughway (Highway)	Principal arterial		4 to 6 through lanes with grade separated intersections/ interchanges
Interstate / regional	Throughway (Parkway)	Principal arterial	[Place-holder for Parkway Concept schematic under development]	4 to 6 through lanes with grade separated intersections/ interchanges
ARTERIAL STREETS				
Regional/ City	Regional Boulevard • *2040 centers* • *station communities* • *Main streets*	Major Arterial		4 through lanes with turn lanes
Regional/ City	Regional Street • *Industrial areas* • *Employment areas* • *Corridors* • *Intermodal facilities*	Major Arterial		4 through lanes with turn lanes
City	Community Boulevard • *2040 centers* • *station communities* • *Main streets*	Minor Arterial		2 to 4 through lanes with turn lanes
City	Community Street • *Industrial areas* • *Employment areas* • *Corridors* • *Intermodal facilities*	Minor Arterial		2 to 4 through lanes with turn lanes

Source: Metro


Regional System Design
For the 2035 RTP update, the Urban road and Regional street classifications have been consolidated, consistent.
Design Designations
Freeway
Highway
Regional boulevard
Community boulevard
Regional street
Community street
Possible boulevard intersection
(dotted lines represent proposed projects and are not intended to represent specific alignments)
Land-use Key
Urban centers
Industry
Employment
Other urban areas
Rural area
Urban growth boundary
CENTRAL CITY
See Inset
BROADWAY
BURNSIDE
Vancouver
Portland
Gateway
Gresham
Troutdale
Beaverton
Hillsboro
Forest Grove
Washington Square
Tigard
Lake Oswego
Milwaukie
Clackamas
Boring
Damascus
Tualatin
Sherwood
Wilsonville
West Linn
Oregon City
Miles
10/05/07

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3.4.3.1 Designs for pedestrians, bicyclists and transit users

Street designs have a significant impact on people's ability to walk, bike and access 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 accidents for pedestrians, bicyclists, motorcyclists and motorists. Painted crosswalks, appropriate use of signs and signals and median islands make it easier for pedestrians and bicyclists to cross roads.

In addition, curb cutouts, 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, telephones, waste containers for public use, 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.

3.4.3.2 Designs for stormwater management and natural resource protection

The effect the public right-of-way has on the health of the natural environment, particularly urban waterways, is well-documented. Streets, parking lots and driveways combined form the largest impervious surfaces in the urban landscape, accounting for up to 65 percent of the total impervious surface area. A particular challenge is how to address conflicts between transportation facilities and wildlife and riparian corridors, and how transportation improvements can be located, designed and constructed with regard for riparian corridor and upland habitat protection plans.

Impervious surface coverage has been linked to changes in the shape of streams, water quality, water temperature and the biological health of waterways. The regional Green Streets program seeks to mitigate these effects through a combination of retrofits to existing streets and design guidelines for new streets and throughways. As arterial streets and throughways and other types of transportation infrastructure cut across the landscape, they form barriers to wildlife movement, disrupting migration patterns and population dynamics. These disruptions can be minimized through engineered solutions, such as wildlife-crossing devices and structuresand through incorporating wildlife corridor acquisition/restoration needs into transportation project development.

Infrastructure planning and design should first seek to avoid fish and wildlife habitat conservation areas. If that is not practicable, they should identify opportunities to mitigate the effects of transportation infrastructure and services through the application of "green" design treatments. For example, 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 throughways and arterial streets. Refer to Metro's *Green Streets: Innovative Solutions for Stormwater and Stream Crossings* handbook for more information on these designs.

3.4.4 TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS (TSMO) CONCEPT

This concept establishes an integrated program of system- and demand-management strategies to optimize the performance of existing and new multi-modal infrastructure through the implementation of systems, services, and projects designed to preserve capacity, improve security, safety and reliability. System management strategies represent a toolkit of programs and strategies to maximize capacity and operations of transportation facilities and services and provide travelers with real-time travel information. Demand management strategies represent a toolkit of programs and strategies, such as transit, carpooling, vanpooling, biking and walking, to reduce trips on the transportation system during peak periods and encourage alternatives to driving alone at all hours.

Transportation System Management and Operations (TSMO) Concept

The "toolkit" of programs and strategies to efficiently and effectively manage the regional transportation system:

- Operational management strategies
- Incident management strategies
- Event management strategies
- Traveler information strategies
- Parking management strategies
- Value pricing strategies

This section describes an integrated toolkit of programs and strategies to more effectively and efficiently manage transportation facilities and services in the region to preserve capacity and improve security, safety, and reliability. This toolkit, called Transportation System Management and Operations (TSMO), and has two components. The first component includes strategies that focus on making the infrastructure better serve the users of the transportation system. The second component includes programs and strategies seeking to influence travel behavior to make more efficient use of transportation infrastructure and services and enable the users to take advantage of everything the system has to offer. These components are commonly known as system and demand management, respectively.

Streets, throughways, bridges and port facilities often constitute the largest assets owned by local, state and regional governments and port authorities. Billions of dollars have already been invested in the multi-modal transportation infrastructure and services in the Portland metropolitan region alone, representing a major public investment that must be protected and managed efficiently. The region must maximize the return on this significant investment through better management and more efficient operation of the existing regional transportation system, and any new facilities and services identified by the RTP.

System management helps get the most efficiency out of our existing system, makes travel more reliable, convenient, and safe, and reduces traffic delays caused by crashes and other incidents. Many states and metropolitan areas are looking at new models for managing the capacity that already exists on regional transportation systems, and for managing new capacity.

3.4.4.1 System Management Strategies

Transportation System management (TSM) strategies include Intelligent Transportation Systems (ITS) and Advanced Traffic Management Systems (ATMS). Signal timing, speed limits, access management and many other elements can be managed at a relatively low cost to improve the safety and performance of existing infrastructure and thereby maximize the public investment and reliability of the system. Some of these strategies are implemented continuously while others respond to certain events, some of which can be anticipated while others cannot. These strategies can be applied to the throughway and arterial networks, construction work zones and regional transit systems, and can involve coordination between throughway, arterial street, freight, bus, rail, bicycle and pedestrian operations.

Operational Management

These are strategies that are carried out continuously, such as traffic signals and ramp meters. A TSMO strategy involves optimizing traffic signal timing to improve performance and safety. Through ongoing management, minor adjustments can be made, ideally in real-time, to improve system performance. On the transit system, the location of transit vehicles can be monitored so that dispatchers know if one is behind schedule or off route.

Incident Management

These strategies are oriented toward mitigating situations that may arise at any time. Incident management responds to vehicle accidents and breakdowns, as well as weather related issues, to improve traffic operations and restore traffic flow. Other activities that also benefit from these strategies include disaster response, evacuation and security planning efforts.

Event Management

Event management strategies are oriented to occasional situations. Unlike incident management, the events are known in advance, such as a parade, major sporting event, work zone or other kind of disruption. Operators can adjust signal timing, increase transit service and take other measures to improve system operations.

3.4.4.2 Demand Management

Demand management, also known as Transportation Demand Management (TDM), focuses on system users, the barriers they encounter and the benefits of traveling efficiently for all trip purposes. TDM strategies also include pricing strategies. TDM strategies encourage travelers to choose alternatives to driving alone by providing services, incentives, supportive infrastructure and awareness of travel options. Examples are rideshare matching services, employer transit pass incentive programs, flex time programs, end-of-trip facilities like bike racks and showers and marketing programs that provide individualized travel information. Similar to TSM, these strategies also improve the performance of existing infrastructure and services, and thereby improve the reliability of the system.

Trip Reduction Programs and Strategies

Trip reduction programs encourage people to combine trips in order to save time and money, conserve energy and reduce traffic congestion, promote saving time and money by combining trips or changing living and working habits. For example, doing several errands on one trip often requires less driving than making each errand separately. TDM programs may provide employers with incentives to allow their employees not otherwise required on the worksite to work from home in order to eliminate commute trips.

Mode Choice Programs and Strategies

Mode choice programs promote the benefits of traveling by modes other than the single occupant vehicle. Some mode choice programs focus on travelers who are currently driving alone because they lack information regarding the availability and effectiveness of other travel options. Programs in this category of strategies seek to increase the use of options such as carsharing, rideshare matching services, and vanpools. Mode choice programs depend on providing services, incentives and supportive infrastructure while raising awareness.

Traveler Information Programs

These programs seek to help travelers find the best route and timing for their trips, and can also help select among modes. For example, some driving commuters take one route out of habit even though another route might be more reliable. An on-line mapping tool compares transit and auto travel times and cost for trips. A website (www.traffic.com) shows real-time freeway speeds and whether the

congestion is freeing up or slowing to a stop. Other programs work closely with employers to allow employees to commute before or after the peak travel periods. Information about system performance and travel options helps travelers make more informed choices about routes, time, mode and cost. Such programs depend on public-private partnerships to share knowledge and expertise.

Parking management strategies and programs

These are strategies and programs that result in more efficient use of parking resources. Parking management strategies can include parking pricing, shared parking that serves multiple users or destinations, preferential parking or price discounts for carpools and/or short-term parking. When appropriately applied, parking management can reduce the number of parking spaces required in some situations. Implementation of parking management may require changing current development, zoning and design practices, broadening how parking problems and solutions are addressed and activities to improve enforcement and addressing potential spillover impacts.

Value pricing strategies

Value pricing—sometimes called congestion pricing —involves the application of market pricing (through variable tolls, variable priced lanes, area-wide charges or cordon charges) to the use of roadways at different times of day. Value pricing has been successful in other parts of the U.S. and internationally at managing peak use on limited roadway infrastructure by providing an incentive for drivers to select other modes, routes, destinations or times of day for their travels. Reducing discretionary peak hour travel helps the system operate more efficiently. In addition, those drivers who choose to pay tolls can benefit from significant savings in time. Similar variable charges have been utilized for pricing airline tickets, telephone rates and electricity rates to allocate resources during peak usage.

Value pricing is the only demand management tool that is location- and time-of-day-specific, making it uniquely effective in improving mobility and reliability of the transportation system while limiting vehicle miles traveled and congestion-related auto emissions. In addition, value pricing may generate revenues to help with needed transportation improvements. Circumstances where value pricing may be appropriate are:

- when one or more lanes are being added to a currently congested highway, peak period pricing for a stretch of several miles should be considered
- where a major new highway facility is being constructed where none exists now to provide congestion relief in the corridor, peak period pricing of all lanes should be considered
- where a major facility (bridge or highway) is undergoing reconstruction and significant capacity is being added, pricing of one or all lanes should be considered.

3.4.4.3 Application in the Portland Metropolitan Region

In some parts of the Portland metropolitan region, the transportation system is generally complete, while in other parts of the region, especially those where new development is planned, significant amounts of infrastructure will be added. In both contexts, management strategies have great value. Where the system is already built out, such strategies may be the only ways to manage congestion and achieve other objectives. Where growth is occurring, system and demand management strategies can be integrated before and during development to efficiently balance capacity with demand.

Technology is playing an increasing role in the implementation of transportation management strategies. The application of advanced technology to transportation, referred to as Intelligent Transportation Systems (ITS), can multiply the benefits of some strategies and create opportunities where none existed before. For example, a common strategy for managing throughways is to try to respond quickly when an incident occurs. This simple approach to system management does not require any advanced technology,

but it benefits from surveillance devices that shorten the time it takes to determine that a crash or breakdown has occurred, or communication technology that expedites the dispatching of a tow truck or emergency vehicle, promoting coordination among responders.

Application of demand management increases the benefit of new infrastructure improvements as well as offering travel choices to more slowly developing areas of the region. For example, individualized marketing applied to a travel corridor in North and Northeast Portland showed a net increase in transit ridership over increases resulting from other causes. The same project yielded higher levels of other non-drive-alone options and an increase in local trips. An example of demand management serving more slowly-developing areas comes from the regional rideshare program, with 8,000 registrants for carpool matching services and a coordinated vanpool program for commute trips equal to or greater than 10 miles one-way.

3.5 PERFORMANCE MANAGEMENT

Performance evaluation is an important communication and reporting tool that can be used as an iterative feedback mechanism for setting and evaluating transportation policy and planning objectives, and for informing transportation investment actions and priorities. The evaluation and monitoring of system performance has long been a part of the development and implementation of previous RTPs. Performance-based evaluation of transportation policy and planning objectives is a more recent trend in transportation planning, occurring since the last major update to the RTP in 2000.[5]

Performance measures that indicate transportation effects on the daily activities of businesses and residents in the region inform decision-makers about how to improve transportation services for all users of the regional transportation system. Performance measures also help measure progress in realizing the Region 2040 Growth Concept.

3.5.1 Linking Performance-Based Evaluation and Monitoring with the RTP

An outcomes-based plan requires performance measures for specific outcomes and careful monitoring to ensure that incremental land use decisions and corridor and project planning are consistent with the plan vision. However, monitoring the effectiveness of transportation investments is challenging. System performance results from multiple factors, including land use, land supply, cost, availability of capacity and transportation options, and demand for travel. Despite the challenges, benefits of this approach to performance-based evaluation and monitoring include:

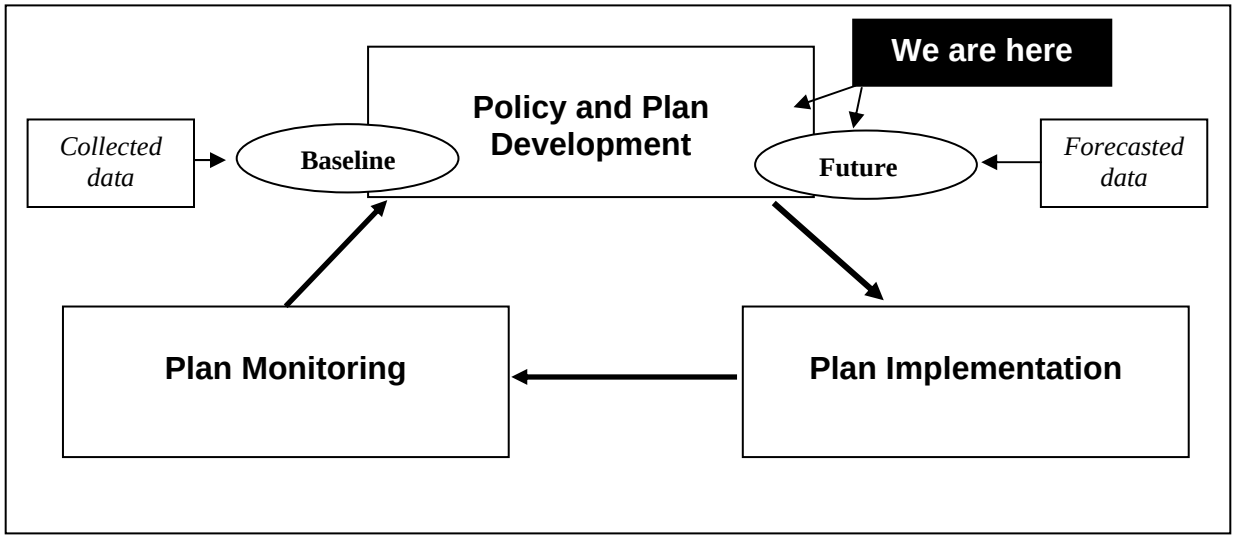
- Measurement of and feedback on the draft policy framework policies and investment priorities submitted by ODOT, TriMet and local agencies
- Improved communication of needs and priorities, which is especially important given the limited resources available for funding
- Informed decision-making
- Increased transparency of the transportation analysis and decision-making process
- Increased accountability through periodic reporting.

The final 2035 RTP will include a set of performance measures and benchmarks to monitor the plan implementation over time. Performance-based management and monitoring of RTP implementation will continue to be used beyond this RTP update, through periodic updates to the plan and through Metro's biennial performance indicators reporting process. The performance measures will serve as the dynamic

[5] This trend is documented in Transportation Research Board Conference Proceedings 36: Performance Measures to Improve Transportation Systems, August 22-24, 2004.

link between RTP goals and plan implementation by providing a more formal process of evaluation and monitoring to ensure the RTP satisfies the regional goals for transportation, land use, the economy and the environment. The RTP refers to the process of plan development, evaluation and monitoring over time as "performance management." The performance management process is shown in **Figure 3.18**.

Figure 3.18
Regional Transportation Plan Performance Management System



Within this framework, the RTP uses "goal," "objective," "indicator," "performance measure," and "benchmark" to label the distinct elements of the RTP outcomes-based performance management system.

Through evaluation and monitoring, the region will know the extent that investments in the transportation system are achieving desired outcomes and the best return on public investments. Development of a performance management process also satisfies benchmarks mandated by the Oregon Transportation Planning Rule (TPR) and federal requirements to establish a performance monitoring system as part of the Congestion Management Process (CMP).

CHAPTER 4

Growth and the Regional Investment Pool

Chapter 2 describes predicted growth in population and employment between 2005 and 2035 and overall regional travel patterns for the year 2035. Chapter 3 describes the policy framework that serves as the basis for identifying transportation needs and guides future planning and investment in the regional transportation system.

Chapter Organization:

This chapter describes the projects and programs identified by local agencies, ODOT, TriMet and Metro to address the impacts of future growth on our regional transportation system. This system is called the "2035 RTP Investment Pool." Refinements to this system of investments will be identified during the state component of the RTP update in 2008. Additional analysis and findings will be included in this chapter at that time.

This chapter is organized into the following sub-sections:

4.1 RTP Investment Pool: This section provides an overview of the process and principles used to identify the 2035 RTP Investment Pool and generally describes the types of projects and programs included in that system.

4.2 Round 1 System Analysis: This section evaluates the system-level performance of the 2035 RTP Investment Pool and highlights areas for further study and analysis as part of the state component of the RTP update in 2008.

4.3 Potential Environmental Impacts of RTP Investment Pool: This section describes potential environmental impacts of the pool of investments.

4.1 RTP Investment Pool

4.1.1 Process to Identify System Needs and Projects

The 2035 RTP Investment Pool was generated during the RTP solicitation process in spring 2007, whereby eligible state, regional, and local governments and special districts submitted projects and programs that responded to Chapter 3 goals and objectives and cost targets that equaled twice the amount of revenue anticipated to be available during the plan period. All the investments submitted come from previously adopted plans and studies that were developed through a public process. This includes local transportation system plans and corridor studies. Specific principles for identifying 2035 RTP Investment Pool needs and projects to meet those needs are summarized in Figure 4.1.

Figure 4.1

2035 RTP Investment Pool
Principles for Identifying Needs and Projects

Vision for consistency with the 2040 Growth Concept

- Implements all primary land-use components transportation needs
- Preserves function of regional mobility corridors
- Addresses most secondary land-use components transportation needs
- Addresses some transportation needs for other 2040 Growth Concept land-use components

Structure for consistency with the 2040 Growth Concept

- Central city and regional centers served by high capacity transit, have direct access to the regional throughway system and contain a mix of arterial street, pedestrian and bicycle systems improvements.
- Industrial areas are connected to the regional throughway system and intermodal facilities.
- Town centers, corridors, employment areas and main streets served by regional transit contain a mix of arterial street, pedestrian and bicycle systems improvements.
- Neighborhoods served by community transit and some improvements to the pedestrian and bicycle systems.

Structure for consistency with the Chapter 3 Policy Framework

- Reinforces growth in 2040 target areas
- Improves reliability of regional mobility corridors
- Addresses multi-modal system gaps and deficiencies
- Expands transportation choices
- Improves safety and security
- Benefits human health and the natural environment

Source: Metro

4.1.2 Scale and Scope of 2035 RTP Investment Pool

The 2035 RTP Investment Pool is estimated to cost a total of $16.07 billion to construct, representing almost twice the revenue anticipated to be available during the plan period. As a result, implementation of the investment pool would require all currently identified revenue sources, in addition to significant levels of new unspecified revenue sources at the local, regional, state or federal level to fully implement.

More than 1,000 projects and programs were submitted by agencies through the RTP solicitation process and are included in the 2035 RTP Investment Pool. Nearly two-thirds of the projects (57 percent) are from the current 2004 RTP. Close to half of the projects (46 percent) are estimated to cost between $1-$5 million, 19 percent fall in the $5-$10 million range, 15 percent fall within the $10-$25 million range and 8 percent of the project are estimated to cost more than $25 million.

4.1.3 Overview of 2035 RTP Investment Pool

The projects and programs described on the following pages represent the region's commitment to develop a transportation system that is adequate to meet region's travel needs during the plan period. The pool of investments will be subject to additional analysis and refinement during the state component of the RTP update in 2008.

Projects were submitted in one of two complementary investment strategy tracks that serve as the organizational structure for grouping investments, irrespective of project need, mode or type.

- **Track 1: State and Regional Mobility Corridor Investment Strategy** focuses on regional mobility corridor investments that leverage the 2040 Growth Concept and improve interstate, intrastate and cross-regional people and goods movement. These corridors are the backbone of the regional transportation system because of their statewide significance and the magnitude of costs associated with providing for people and goods movement in these corridors. The state and regional mobility corridors primarily comprise the major throughway and High Capacity Transit (HCT) systems that are owned and operated by the Oregon Department of Transportation (ODOT) and TriMet. The investments submitted under this track include HCT, throughway and parallel arterial and bus service expansions, adequately maintaining the Willamette River Bridges and implementation of system and demand management strategies. Transportation needs in these corridors significantly exceed revenues anticipated to be available during the RTP plan period.
- **Track 2: Community-Building Investment Strategy** focuses on community-building investments that leverage 2040 Growth Concept through regional street and transit system improvements that provide for community access and mobility. These investments represent the remaining one-third of the investment pool. The mix of investments submitted focus on providing multi-modal access to downtowns, other 2040 centers, main streets, and industrial/employment areas by addressing known safety deficiencies, expanding transit service, completing bike and pedestrian system gaps, building new street and trail connections and retrofitting existing streets to add new capacity and/or to be multi-modal. Community-building transportation needs also exceed revenues anticipated to be available during the RTP plan period; however many of the needs are much smaller in scale than the mobility corridor investments and can be funded through locally-generated revenues.

Table 4.1 provides a general overview of the 2035 Investment Pool.

Table 4.1

General Overview of the 2035 RTP Investment Pool[1]

	2005	2035 RTP Investment Pool	Percent Change
Freeway lane miles	*539*	*580*	*+8%*
Arterial lane miles	*4293*	*4847*	*+13%*
Freight network miles[2]	*676*	*703*	*+4%*
Light rail miles			
Bus rapid transit miles			
Frequent bus route miles			
Street car miles			
Other regional transit network miles			
Bicycle network miles added	*not available*		*n/a*
Pedestrian network miles added	*not available*		*n/a*

Note: This table includes arterial and freeway lane/route miles.
1 Within Metro urban growth boundary (excludes Clark County, Wash. and areas of Clackamas, Multnomah and Washington counties outside of the Metro urban growth boundary).

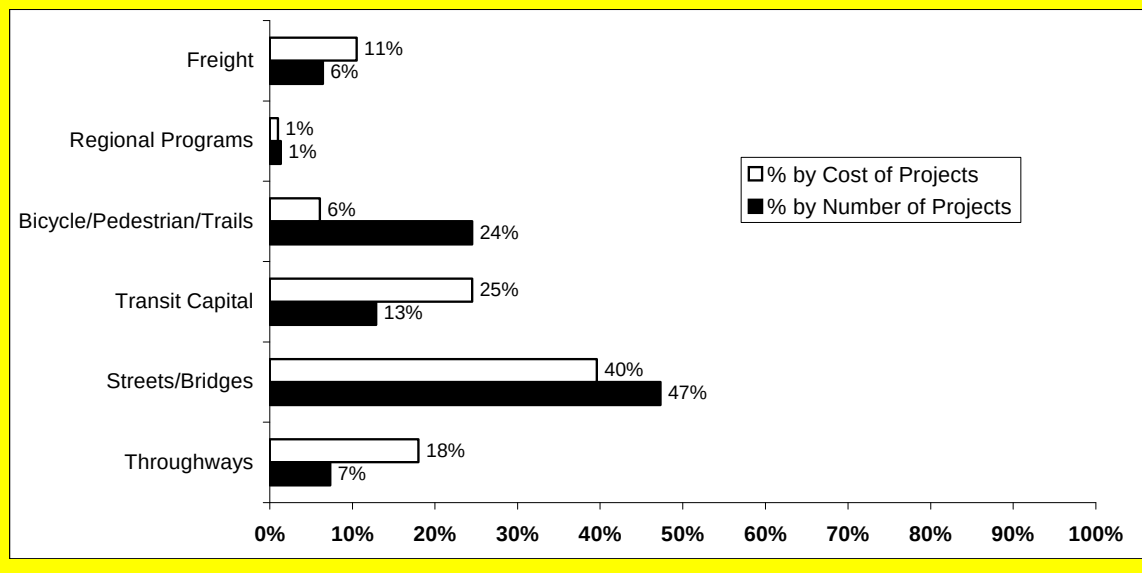
Source: Metro

The investment pool contains many "placeholder" projects for larger mobility corridor investments, where a specific transportation need is identified, but more work is needed to develop refined projects or programs that serve the identified need. In some cases, work is under way as is the case for the Sunrise Project, Columbia River Crossing, Milwaukie LRT, Portand-to-Lake Oswego Street Car and the Sellwood Bridge. Other corridor work will be completed through future National Environmental Policy Act (NEPA) processes.

Figure 4.2 depicts the number and modal emphasis of the street-related projects proposed in the investment pool. (Note: Throughout the document, cost estimates referring to "street-related" improvements include the full modal mix reflected in Figure 4.2. For example, any single street-related project may benefit multiple modes, including motor vehicles, bicyclists and pedestrians).

Figure 4.2

2035 RTP Investment Pool
Modal Categories by Cost and Number of Projects



Note: All "Street" and bridge projects include a bicycle and pedestrian component.

Source: Metro

Examples of the types of projects included in Figure 4.2 include:

- *Willamette River Bridge preservation.* Preservation and maintenance of the Willamette River bridges, including sidewalk/multi-use path repair, deck replacement, painting and lift span repair, and improved bicycle and pedestrian bridge access.
- *Expanded regional trails network.* Better bike and pedestrian connections to the regional trails network and construction of many new multi-use paths throughout the region. Figure 4.3 shows the existing and planned regional trails system as adopted in the Greenspaces Master Plan and the Regional Framework Plan. The map also includes a specific category that identifies trail gaps.
- *Freight access and connections*. Rail and street expansions to maintain access and connections for national and international rail, air and marine freight to reach its destination with limited delay.

- *Throughway expansion.* Major throughway expansions to maintain regional mobility and enhance access to intermodal industrial areas and facilities where goods move from one transportation mode to another. Projects included in the first round of analysis include:
    - I-5 Columbia River Crossing (CRC) 10-lane bridge with tolling, and includes four lanes from Hayden Island to Delta Park, and three lanes south of Delta Park
    - Sunrise Project from I-205 to Rock Creek junction (although the first round of analysis only included the connection from I-205 to 122nd Avenue)
    - US 26, OR 217, OR 213 and I-205 interchange improvements and some new main-line capacity
    - I-84/I-5 interchange improvements
    - I-5/99W Connector
- *New street connections and arterial street expansion*. Arterial street expansions that are complemented by new connections to maintain access to the regional throughway system and provide circulation and access between the central city, regional centers and town centers. Many of the new street connections across and parallel to regional throughways to provide direct alternate routes for shorter trips and improve access by all modes of travel.
- *Retrofit of major streets for walking, biking and transit.* Wider sidewalks, safer street crossings, landscaped buffers, improved bus stops and shelters, and bikeways along major streets that serve the central city, regional and town centers, corridors, main streets and employment areas. Figure 4.4 shows existing bike lanes, multi-use paths and bicycle boulevards in addition to bikeway gaps on the regional bicycle system. Figure 4.5 identifies existing sidewalks and gaps in the regional pedestrian system called for in Chapter 3.
- *Transit capital improvements.* New high capacity transit connections to Milwaukie and Oregon City and expanded streetcar service in downtown Portland and from Portland to Lake Oswego. Provide new park-and-ride facilities, low-floor air-conditioned buses, transit station upgrades that include ticket machines and bicycle parking and better passenger amenities at bus stops, including maps, phones, electronic displays showing actual bus locations and arrival times, covered shelters, curb extensions and sidewalk connections, special lighting and benches.
- *Transportation system management*. System management strategies, such as ramp metering, signal timing and access management, to better manage the flow of traffic on existing freeways and arterial streets to achieve maximum efficiency of the current throughway and arterial street system. Improved transit service reliability through the use of transit preferential treatments and service adjustments such as bus-only lanes, signal preemption, modified stop spacing and more direct routes. Real time information for the motorist and transit user about transportation operating conditions (i.e., traffic congestion and bus arrival times).
- *Transportation demand management*. Demand management strategies, such as transportation management associations in the central city, regional centers, some town centers and employment areas, attempt to increase transit ridership, vehicle occupancy, walking and biking, telecommuting, move some trips to off-peak travel periods or eliminate some trips altogether. Figure 4.6 shows existing demand management efforts in the Metro region.
- *Future studies*. These studies include: (a) town center plans to define long-term transportation needs for all modes of travel in these areas; (b) corridor refinement plans to develop phased strategies for implementing planned improvements in a particular corridor; and (c) regional throughway corridor

studies to identify phased throughway, arterial, transit and TSMO investments to maintain regional mobility and address growth travel demand in the corridor.

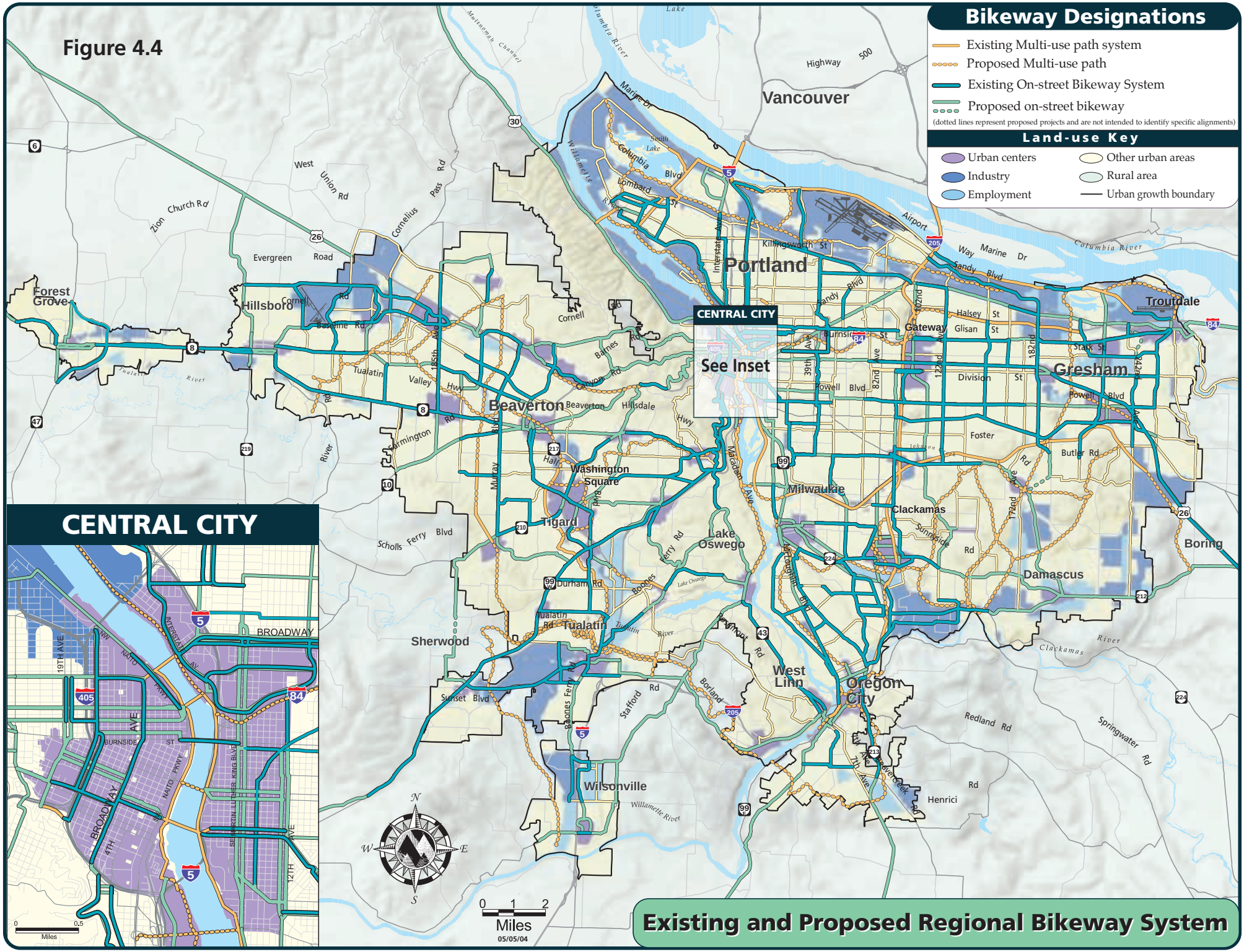
Other projects that are included in the 2035 RTP Investment Pool, but are not identified in Figure 4.2 include:

- *State highway and local street maintenance.* Maintenance and preservation of the existing system in fair or better condition, and begin addressing the backlog of poor pavement in poor condition.
- *Expanded transit service.* A 31 percent increase in transit service hours, including light rail transit to the central city and regional centers. Faster and more direct transit connections to regional and town centers, corridors and main streets, minimizing the need to go to downtown Portland to transfer. The increased bus service is timed to occur after 2014 with a priority on the addition of high quality frequent bus routes rather than greater coverage at lower levels of service. Continued expansion of LIFT service for the elderly and disabled at 4.6 percent per year is assumed in order to keep up with forecasted growth in demand for this service. This includes purchasing nearly 100 new LIFT vehicles per year by the year 2035, a significant capital investment.

Figure 4.3

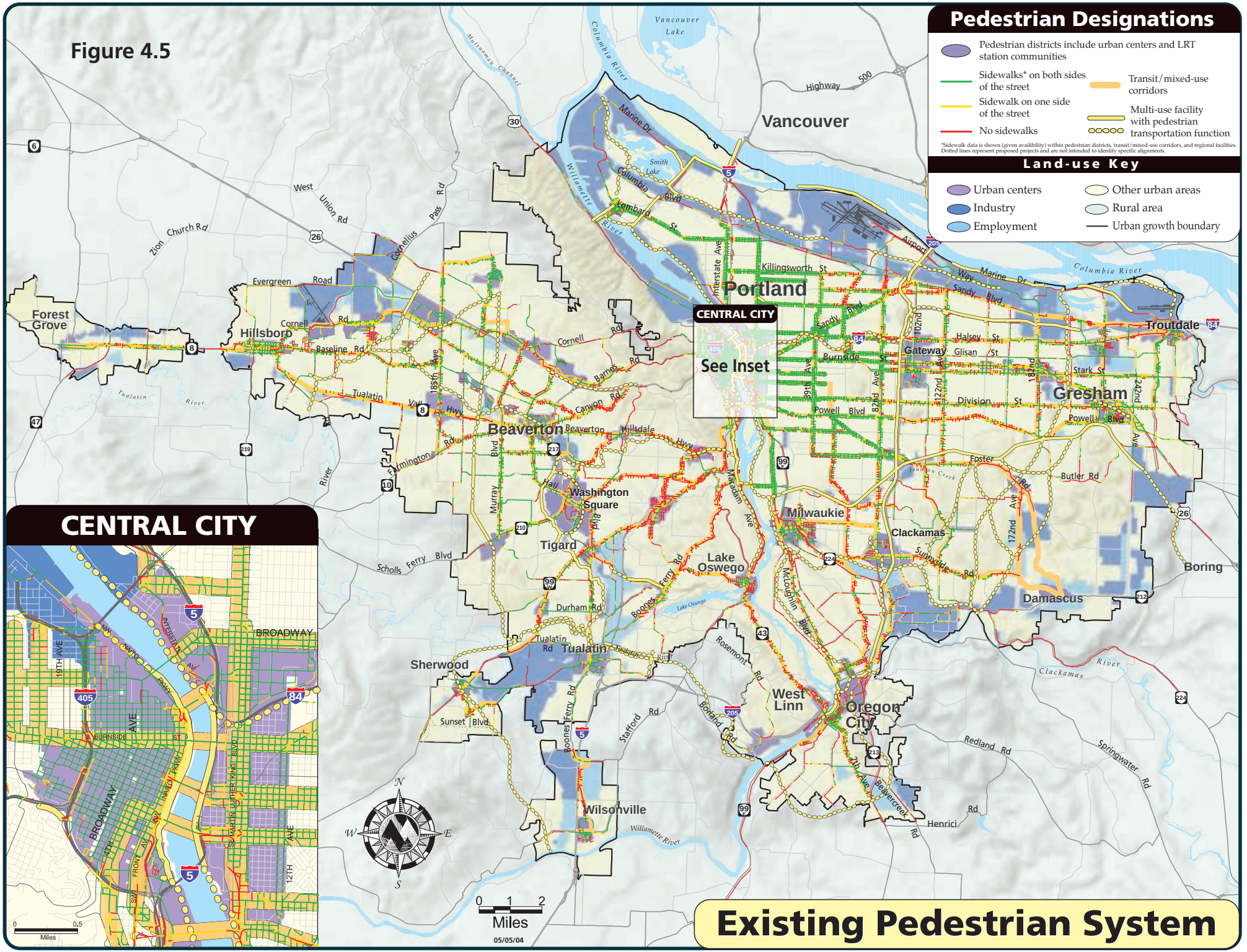
Regional Trails and Greenways

Figure 4.4


Bikeway Designations
Existing Multi-use path system
Proposed Multi-use path
Existing On-street Bikeway System
Proposed on-street bikeway
(dotted lines represent proposed projects and are not intended to identify specific alignments)
Land-use Key
Urban centers
Industry
Employment
Other urban areas
Rural area
Urban growth boundary
CENTRAL CITY
See Inset
Portland
Vancouver
Beaverton
Hillsboro
Forest Grove
Gresham
Troutdale
Tigard
Lake Oswego
Tualatin
Sherwood
Wilsonville
West Linn
Oregon City
Milwaukie
Clackamas
Damascus
Boring
Happy Valley
Washington Square
Columbia River
Willamette River
Clackamas River
Tualatin River
Miles
05/05/04
Existing and Proposed Regional Bikeway System

CENTRAL CITY
BROADWAY
BURNSIDE ST
BROADWAY AVE
4TH AVE
12TH AVE
19TH AVE
NATO PKWY
INTERSTATE AV
SE MARTIN LUTHER KING BLVD
Miles

Figure 4.5


Pedestrian Designations
Pedestrian districts include urban centers and LRT station communities
Sidewalks* on both sides of the street
Sidewalk on one side of the street
No sidewalks
Transit/mixed-use corridors
Multi-use facility with pedestrian transportation function
*Sidewalk data is shown (given availability) within pedestrian districts, transit/mixed-use corridors, and regional facilities. Dotted lines represent proposed projects and are not intended to identify specific alignments.
Land-use Key
Urban centers
Industry
Employment
Other urban areas
Rural area
Urban growth boundary
CENTRAL CITY
See Inset
Portland
Vancouver
Beaverton
Gresham
Hillsboro
Forest Grove
Tigard
Lake Oswego
Tualatin
Sherwood
Wilsonville
Milwaukie
Clackamas
Oregon City
West Linn
Troutdale
Damascus
Boring
Columbia River
Willamette River
Clackamas River
Tualatin River
Scholls Ferry Blvd
Barnes Rd
Cornell Rd
Canyon Rd
Powell Blvd
Sandy Blvd
Division St
Foster Rd
Butler Rd
Sunnyside Rd
Redland Rd
Springwater Rd
Stafford Rd
Rosemont Rd
Borland Rd
Boones Ferry Rd
Durham Rd
Lower Boones Ferry Rd
Beaverton Hillsdale Hwy
Tualatin Valley Hwy
Baseline Rd
Evergreen Road
West Union Rd
Zion Church Rd
Cornelius Pass Rd
Marine Dr
Columbia Blvd
Lombard St
Killingsworth St
Interstate Ave
Airport Way
Halsey St
Glisan St
Burnside
Stark St
Gateway
Hall Blvd
Washington Square
Murray Blvd
Farmington Rd
Tualatin Valley Hwy
Macadam Ave
McLoughlin Blvd
Johnson Creek
Willamette River
Multnomah Channel
Vancouver Lake
Smith Lake
Sunset Blvd
Henrici Rd
Beavercreek Rd
7th Ave
172nd Ave
182nd Ave
202nd Ave
242nd Ave
82nd Ave
122nd Ave
162nd Ave
Interstate 5
Interstate 84
Interstate 405
Highway 500
Highway 30
Highway 26
Highway 47
Highway 219
Highway 8
Highway 10
Highway 99W
Highway 99E
Highway 43
Highway 224
Highway 212
Highway 213
Highway 205
Highway 217
Highway 210
CENTRAL CITY
BROADWAY
BURNSIDE
10TH AVE
12TH AVE
4TH AVE
SEAMAN'S LUTE (TIKE) BLVD
SW FRONT AV
NW NAITO PKWY
INTERSTATE AV
0 1 2
Miles
05/05/04
0 0.5
Miles
Existing Pedestrian System

DRAFT Demand Management

System Map

METRO
PEOPLE PLACES • OPEN SPACES

Vancouver
Camas
Washougal
Hillsboro
Portland
Gresham
Beaverton
Tigard
Lake Oswego
Milwaukie
Damascus
Tualatin
Wilsonville

Legend

- Individualized marketing to employees
- Vanpool routes
- HOV lane

Max

- MAX
- Streetcar
- Commuter rail
- Participating employers
- Metro boundary
- Freeways and arterials
- Bus lines
- Individualized marketing to residents
- Rivers and lakes
- Centers
- Transportation Management Assoc.
- Washington Commute Trip Reduction
- Wilsonville TDM program
- Commitment to driving less by residents

0 1 2 3 Miles

1 inch equals 3 miles

4.2 RTP Round 1 System Analysis

4.2.1 Regional Performance

Population and employment is expected to increase by 47 percent and 65 percent respectively between 2005 and 2035 within the urban growth boundary. Growth in population and employment is predicted to result in a corresponding increase in travel demand during the same time period for both people and freight movement. Between 2005 and 2035, the number of person trips beginning and ending within the urban growth boundary are expected to increase by 52 percent, to 9.1 million trips per day.

In addition, despite a nearly 39 percent increase in the average vehicle miles traveled overall, vehicle miles traveled per capita are expected to decline by 5 percent and vehicle miles traveled per employee are expected to decline by 16 percent. Table 4.3 summarizes changes in trips made in the region between 2005 and 2035. Table 4.4 summarizes changes in vehicle miles traveled between 2005 and 2035.

Table 4.3

2035 RTP Round 1 - Average Weekday Trips[1]

	2005	2035 RTP No Build	2035 RTP Round 1	Percent Change
Average weekday person trips	*5,979,609*	*9,073,999*	*9,059,468*	*+52%*
Average home-based work trip length	*7.54*	*7.03*	*7.22*	*-4.2%*

Note: These numbers exclude trucks and through traffic.

[1] Within Metro urban growth boundary (excludes Clark County, Wash. and areas of Clackamas, Multnomah and Washington counties outside of the Metro urban growth boundary).

Source: Metro

Table 4.4

2035 RTP Round 1 - Vehicle Miles of Travel[1]

	2005	2035 RTP No Build	2035 RTP Round 1	Percent Change
Average weekday vehicle miles traveled	*20,044,778*	*27,084,711*	*27,799,893*	*+39%*
Average weekday vehicle miles traveled per person	*14.68*	*13.53*	*13.89*	*-5%*
Average weekday vehicle miles traveled per employee	*23.05*	*18.89*	*19.38*	*-16%*

Note: These numbers exclude trucks and through traffic.

[1] Within Metro urban growth boundary (excludes Clark County, Wash. and areas of Clackamas, Multnomah and Washington counties outside of the Metro urban growth boundary).

Source: Metro

Assuming implementation of the 2035 Round 1 System and travel behavior remains static, average motor vehicle speeds are expected to decrease from 25 mph in 2005 to 21 mph in 2035 during the evening two-hour peak period. This reduction in travel speed reflects an increase in the proportion of the region's freeway and arterial street network experiencing congestion during the evening two-hour peak period.

In 2005, slightly less than 9 percent of the region's freeway network experienced severe congestion during the evening two-hour peak period. By 2035, more than 22 percent of the region's freeway network is expected to experience severe congestion during the evening two-hour peak period. Assuming the 2035 Round 1 System is implemented, the proportion of the region's arterial streets experiencing severe

congestion is predicted to more than quadruple, increasing from less than 2 percent in 2005 to more than 8 percent in 2035. Delay on the region's freeway and arterial street networks also is also expected to increase between 2005 and 2035, with the greatest amount of delay predicted to occur on the arterial street network, reflecting several "hotspots" throughout the region. Table 4.5 summarizes changes in the amount and extent of congestion within the Metro urban growth boundary between 2005 and 2035.

Table 4.5

2035 RTP Round 1 - Motor Vehicle System Performance[1]

	2005	2035 RTP No Build	2035 RTP Round 1	Percent Change
Average motor vehicle speed	*25 mph*	*20 mph*	*21 mph*	*-16%*
Average motor vehicle travel time	*13 minutes*	*15 minutes*	*15 minutes*	*+15%*
Percent of freeway miles experiencing congestion (0.9>=v.c<1)	*20.6%*	*24.25.2%*	*25.5%*	*+24%*
Percent of freeway miles experiencing severe congestion (v/c >=1.0)	*8.72%*	*27.93%*	*22.53%*	*+158%*
Percent of arterial street miles experiencing congestion (0.9>=v.c<1)	*2.36%*	*6.20%*	*5.23%*	*+122%*
Percent of arterial street miles experiencing severe congestion (v/c >=1.0)	*1.69%*	*12.30%*	*8.22%*	*+386%*
Total motor vehicle hours of delay (v/c >0.9)	*5.74%*	*19.06%*	*14.86%*	*+159%*
Motor vehicle hours of delay on freeway (% of total)	*3.34%*	*8.02%*	*6.53%*	*+96%*
Motor vehicle hours delay on arterial streets (% of total)	*2.40%*	*11.04%*	*8.33%*	*+247%*

Note: These numbers are based on the evening two-hour peak period and includes all travel on the street and freeway system.
[1] Within Metro urban growth boundary (excludes Clark County, Wash. and areas of Clackamas, Multnomah and Washington counties outside of the Metro urban growth boundary).

Source: Metro

Drive-alone trips as a percentage of all person trips decrease by almost 4 percent between 2005 and 2035. In 2005, drive-alone trips represented 45 percent of all person trips within the Metro urban growth boundary. In 2035, drive alone trips are expected to represent 43 percent of all trips within the urban growth boundary. By comparison, bicycle and pedestrian travel are expected to increase between 2005 and 2035. In 2005, bicycling or walking (not including walk trips to transit) represented slightly less than 8 percent of all person trips inside the urban growth boundary. By 2035, bicycle and pedestrian travel is expected to represent slightly less than 9 percent of all person trips made inside the urban growth boundary.

Transit revenue hours are expected to increase by nearly 31 percent between 2005 and 2035. Transit trips as a proportion of all person trips are expected to increase by more than 40 percent the during the plan period, increasing from 4.07 percent of all person trips in 2005 to more than 5.71 percent of all person trips in 2035. Table 4.6 summarizes alternative mode performance. When implemented as a package, the Round 1 system mode strategies stabilize growth in single-occupant vehicle reliance, stabilize growth in vehicle miles traveled per capita and offer a number of choices for travel in this region.

Table 4.6

2035 RTP Round 1 - Alternative Mode Performance[1]

	2005	2035 RTP No Build	2035 RTP Round 1	Percent Change
Walk trips (as a percent of total person trips)	*6.59%*	*7.32%*	*7.47%*	*+12.8%*
Bike trips (as a percent of total person trips)	*1.08%*	*1.24%*	*1.21%*	*+12.0%*
Shared ride trips (as a percent of total person trips)	*29.8%*	*33.5%*	*32.6%*	*+9.4%*
Transit trips (as a percent of total person trips)	*4.07%*	*5.45%*	*5.71%*	*+40.3%*
Average weekday transit revenue hours	*5,663*	*6,611*	*7,415*	*+30.9%*
Percent of households within 1/2-mile of LRT or 1/5-mile of bus stop	*66%*	*62%*	*62%*	*-6.1%*
Percent of jobs within ½-mile of LRT or 1/5 mile of bus stop	*84%*	*81%*	*81%*	*-3.6%*

[1] Within Metro urban growth boundary (excludes Clark County, Wash. and areas of Clackamas, Multnomah and Washington counties outside of the Metro urban growth boundary).

Source: Metro

Trucks are the workhorses for moving freight within the Portland metropolitan region. Of the total freight moving into, out of and within the region, 67 percent complete all or part of the trip by truck in 2000.[1] By 2035, trucks are forecasted to move more than 75 percent of the region's freight tonnage.[2] Other modes that move freight in the Portland metropolitan region include:

- ocean vessels (10 percent),
- barges (5 percent),
- freight rail (5 percent),
- pipelines (8 percent),
- airplanes (0.2 percent).

Truck hours of delay are expected to increase by almost four-fold during the evening two-hour peak period between 2005 and 2035. This represents a change from 17 percent of truck hours experiencing delay in 2005 to nearly 46 percent of truck hours experiencing delay during the evening two-hour peak period. Table 4.7 summarizes performance of the regional freight system assuming implementation of the 2035 Round 1 System. More detailed analysis of the individual regional mobility corridors is needed to determine whether the mix of investments assumed in Round 1 provide adequate mobility and access for freight movement in the region.

[1] Global Insight, *Portland/Vancouver International and Domestic Trade Capacity Analysis*, 2006.
[2] Global Insight, 2006.

Table 4.7

2035 RTP Round 1 - Freight System Performance[1]

	2005	2035 RTP No Build	2035 RTP Round 1	Percent Change
AWD total truck trips	*31,323*	*45,769*	*45,769*	*+46%*
AWD truck average trip length	*13.14*	*13.50*	*13.47*	*+2.5%*
Two-hour peak period truck vehicle hours of delay	*219*	*1492*	*1053*	*+381%*
Two-hour peak period average truck travel time	*28.28*	*35.29*	*33.59*	*+18.8%*

Note: This summary of freight system performance reflects Metro's regional truck travel forecasting model.

[1] Within the four-county region, includes Clark, Clackamas, Multnomah and Washington counties.

Source: Metro

4.2.2 Regional Travel Times

In most parts of the region, evening two-hour peak period auto travel times will increase from 2005 travel times. The largest increases in auto travel times are expected to occur along I-205 from Gateway regional center to Oregon City regional center; OR 99E from Oregon City regional center to Milwaukie town center; OR 217/I-5/I-205 from Washington Square regional center to Oregon City regional center; OR 224/82nd from Milwaukie town center to Clackamas regional center and US 26 / OR 217 between the Portland Central City and Tigard town center.

Transit travel times, in contrast, are likely to stay the same or go up slightly in most corridors, and drop dramatically in a few. This reflects expanded service, including rapid bus and light rail, and transit preferential improvements in many corridors. The largest decrease in transit travel times is expected in a corridor where light rail and rapid bus service are proposed (Gateway to Oregon City).

Table 4.8 summarizes motor vehicle and transit travel times along major corridors that link key 2040 Target Areas consistent with RTP transit objectives. Transit travel times are less than 1.5 times the two-hour peak period auto travel time for the same corridor, in all but three of the corridors examined – Portland Central City to Vancouver on I-5 HOV; Washington Square regional center to Oregon City regional center on OR 217, I-5 and I-205; and I-205 between Gateway and Oregon City regional centers.

Table 4.8

2035 RTP Round 1 - Mobility Corridor Motor Vehicle and Transit Travel Time Comparison

Major Travel Corridor	Motor Vehicle Travel Times[3] (in minutes) 2005	2035 (% change)	Transit Travel Times[4] (in minutes) 2005	2035 (% change)
Central city to Beaverton on Highway 217	19	22 (+15.79%)	24	24 (0%)
Central city to Hillsboro on US26, Shute	37	41 (+10.81%)	50	50 (0%)
Central city to Tigard on US 26, OR 217	28	36 (+ 28.57%)	35	37 (+5.71%)*
Central city to Vancouver on I-5 SOV	25	23 (-8.00%)	33	34 (+3.03%)
Central city to Vancouver on I-5 HOV	19	17 (-10.53%)	33	34 (+3.03%)
Central city to Gateway on I-84	19	22 (+15.79%)	22	22 (0%)
Central city to Gresham on I-84, 207th, 223rd	33	37 (+12.12%)	42	42 (0%)
Central city to Milwaukie on 99E	21	24 (+14.29%)	28	28 (0%)
Washington Square to Oregon City on Highway 217, I-5 and I-205	33	46 (+39.39%)	102	108 (+5.88%) *
Gateway to Gresham on 102nd, Division St.	18	22 (+22.22%)	19	20 (+5.26%) *
Gateway to Oregon City on I-205	24	37 (+54.88%)	85	60 (-29.41%)
Milwaukie to Clackamas on Highway 224, 82nd	10	14 (+40.0%)	13	13 (0%)
Beaverton to Hillsboro on TV Highway	22	24 (+9.09%)	26	26 (0%)
Beaverton to Washington Sq on OR 217	8	10 (+25.00%)	10	13 (+30.0%)
T-6 to I-205 on Marine, Portland Rd, Columbia, US 30	22	23 (+4.55%)	N/A	N/A
T-6 to St Helens Rd on Lombard, St Johns Bridge	12	13 (+8.33%)	N/A	N/A
Portland International Airport to Gateway on Airport Way and I-205	10	11 (+10.00%)	13	13 (0%)
Milwaukie to Oregon City on Mcloughlin	16	23 (+43.75%)	20	26 (+30.0%)
Sunset Industrial Area to PDX on US 26,Shute, I-405,I-205	47	56 (+19.15%)	N/A	N/A
Clackamas Industrial Area to Rivergate on I-205, Columbia, Marine Dr	36	38 (+5.56%)	N/A	N/A

* This route includes a transfer.

Source: Metro

[3] Auto Travel times are based on Round 1 model results and are rounded figures.

[4] Transit Travel times are based on Round 1 model results and are rounded figures. They reflect in-vehicle travel time, except for where transfers occur (noted with a *). Gresham Civic Neighborhood Max Station was added to No Build and Round 1 networks. For some routes a rail route was chosen over a bus route even though the travel time may be slightly longer. Initial wait was not added to travel times. For transfers 1/2 the headway time was added.

4.2.3 Regional Travel Patterns

This section will be added prior to adoption of the federal component of the RTP update.

4.2.4 Regional Mobility Corridor Performance

Motor vehicle and transit volumes are expected to increase along major corridors throughout the region. Major corridors are defined as those corridors in the region that serve as the primary routes for moving people and freight. Tables 4.10 and 4.11 summarize the percent increase in peak direction motor vehicle and transit volumes during the evening two-hour peak period for the regional mobility corridors. Key findings are summarized at the end of this section.

Table 4.10

2035 RTP Round 1 Motor Vehicle Volumes[1]

Regional Mobility Corridor	2005	2035 RTP Round 1	Percent Change
(1a) I-5 North, Martin Luther King Jr. Boulevard, Interstate Avenue and Greeley Avenue	*17,751*	*19,808*	*+12%*
(1b) I-5 North Interstate Bridge	*13,180*	*17,060*	*+29%*
(2) I-5, Barbur Boulevard, Macadam	*16,685*	*25,635*	*+54%*
(3) I-5 South and Lower Boones Ferry Road	*17,712*	*19,577*	*+11%*
(4) Fremont Bridge and Marquam Bridge	*23,238*	*25,173*	*+8%*
(5) I-84, Broadway/Weidler, Sandy, Burnside, Belmont, Morrison and Hawthorne streets	*26,337*	*27,177*	*+3%*
(6) Sandy Boulevard, I-84, Marine Dr, Airport Way	*16,540*	*20,881*	*+26%*
(7) I-205 east of 60th Avenue	*8,787*	*15,876*	*+81%*
(8) I-205, 82nd and 92nd avenues	*15,819*	*18,862*	*+19%*
(9) Glenn Jackson Bridge	*15,881*	*20,901*	*+32%*
(10) Macadam,17th,McLoughlin Boulevard	*10,478*	*15,589*	*+49%*
(11) OR 224,Mcloughlin, Lake/Harmony	*8,912*	*13,864*	*+56%*
(12) Highway 212, Sunrise Corridor and Sunnyside Road	*7,237*	*15,277*	*+111%*
(13) OR 212	*1,192*	*1,875*	*+57%*
(14) Highway 213, Molalla Avenue and 99E	*8,905*	*15,750*	*+77%*
(15a) 181st, 207th, 223rd, 242nd , 242nd Connector, 257th	*11,537*	*17,887*	*+55%*
(15b) US 26, Orient	*4,005*	*9,012*	*+125%*
(16) (West of I-5) Marine, Columbia, Lombard	*2,563*	*3,422*	*+34%*
(17) (East of I-5) Marine, Columbia, Lombard	*7,234*	*7,940*	*+10%*
(18) Highway 30	*3,577*	*4,821*	*+35%*
(19) Highway 217, Hall Boulevard, Scholls Ferry and Oleson roads	*16,789*	*18,893*	*+13%*
(20) Tualatin-Sherwood Road, 99W and I-5 to 99W connector	*5,968*	*12,544*	*+110%*
(21) Cornell, Burnside, US 26, Bevaerton-Hillsdale Highway	*18,168*	*21,684*	*+19%*

Regional Mobility Corridor	2005	2035 RTP Round 1	Percent Change
(22) US 26, Beaverton-Hillsdale Highway, Canyon, Walker and Barnes roads	*20,826*	*24,511*	*+18%*
(23) Tualatin Valley Highway and Farmington Road	*7,170*	*9,499*	*+33%*
(24) OR 47, Cornelius-Schefflin	*2,146*	*3,414*	*+59%*
(25) Tualatin Valley Highway and Baseline and Cornell roads	*7,288*	*9,460*	*+30%*
(26) Halsey, Glisan, Burnside, Stark streets	*9,760*	*11,803*	*+21%*
(27) Division, Powell, Foster	*6,615*	*7,798*	*+18%*
(28) 172nd, , 190th Avenue, 242nd/Hogan	*2,698*	*9,641*	*+257%*
(29) Remaining Bridges: St Johns, Broadway, Steel, Burnside, Hawthorne, Ross Island, Sellwood, Abernethy, 7th st	*43,155*	*50,993*	*+18%*
(30) Powell, Division and Holgate streets	*8,170*	*8,648*	*+6%*

[1] These volumes reflect the peak direction during the evening two-hour peak period and include truck and autos. These volumes are based on Round 1 model results.

Source: Metro

Table 4.11

2035 RTP Round 1 Transit Volumes

Regional Mobility Corridor	2005	2035 RTP Round 1	Percent Change
(1a) LRT, I-5 North, Martin Luther King Jr. Boulevard, Interstate Avenue and Greeley Avenue	*2,928*	*7,162*	*+145%*
(1b) LRT, I-5 North Interstate Bridge	*1,452*	*4,975*	*+243%*
(2) I-5, Barbur, Macadam	*2,909*	*5,325*	*+83%*
(3) I-5, Lower Boones	*387*	*378*	*-2%*
(4) Fremont Bridge, Marquam Bridge	*1,248*	*2,510*	*+101%*
(5) LRT, I-84, Broadway/Weidler, Sandy, Burnside, Belmont, Morrison and Hawthorne streets	*7,742*	*15,072*	*+95%*
(6) Marine, Airport Way, Sandy, I-84	*246*	*428*	*+74%*
(7) I-205 east of 60th, Borland	*0*	*0*	*0*
(8) 82nd, 92nd, I-205, LRT	*358*	*2,849*	*+696%*
(9) Glenn Jackson Bridge	*120*	*133*	*+11%*
(10) LRT, Macadam, 17th, McLoughlin Boulevard	*1,660*	*3,239*	*+95%*
(11) OR 224, Mcloughlin/BRT, Lake/Harmony	*278*	*488*	*+76%*
(12) OR 212, Sunrise Hwy, Sunnyside	*54*	*228*	*+322%*
(13) OR 212	*0*	*0*	*0*
(14) OR 213, Molalla, OR 99E	*239*	*442*	*+85%*
15a) 181st, 207th, 223rd, 242nd, 242nd Connector, 257th	*181*	*340*	*+88%*
15b) US 26, Orient	*53*	*100*	*+89%*
16) (West of I-5) Marine, Columbia, Lombard	*34*	*98*	*+188%*
17) (East of I-5) Marine, Columbia, Lombard	*59*	*130*	*+120%*
18) US 30	*175*	*397*	*+127%*
(19) OR 217, Hall Boulevard, Commuter rail, Scholls Ferry and Oleson roads	*635*	*1,919*	*+202%*

Regional Mobility Corridor	2005	2035 RTP Round 1	Percent Change
(20) Tualatin-Sherwood, OR 99, I-5 connector, Commuter rail	*42*	*795*	*+1793%*
(21) Cornell, Burnside, US 26, Beaverton-Hillsdale Highway, LRT	*4,075*	*7,673*	*+88%*
(22) LRT, Beaverton-Hillsdale Highway, US 26, Canyon, Walker and Barnes roads	*3,457*	*6,677*	*+93%*
(23) Farmington, Tualatin Valley Highway	*265*	*407*	*+54%*
(24) OR 47, Cornelius-Sheflin	*0*	*0*	*0*
(25) Tualatin Valley Highway, Baseline, Cornell, LRT	*731*	*1,491*	*+104%*
(26) Halsey, Glisan, Burnside, Stark,	*2,244*	*3,347*	*+49%*
(27) Powell, Division and Foster	*675*	*1,130*	*+67%*
(28) 172nd,/190th, 242nd/Hogan	*0*	*0*	*0*
(29) Remaining bridges: St Johns, Broadway, Steel, Burnside, Morrison, Hawthorne, Ross Island, LRT, Sellwood, Abernethy, 7th St	*13,390*	*25,363*	*+89%*
(30) Powell, Division, Holgate	*1,812*	*2,805*	*+55%*

[1] These volumes reflect average weekday peak direction. These volumes are based on Round 1 model results.

Source: Metro

4.2.5 Summary of Key findings from Round 1 System Analysis

How to address increasing demand on our multimodal transportation system is a critical issue for the region. The first round of technical analysis demonstrated that in some cases system-level measures are no longer sufficient to determine whether investments lead to a safe, efficient and reliable transportation system or meet other RTP goals for land use, the economy and the environment.

The first round of modeling showed positive trends for several key system indicators. However, despite significant investments assumed in the region's throughway, transit, and arterial street systems, the region appears to lose ground on congestion and system reliability in key mobility corridors. The network of mobility corridors move people and freight between different parts of the region and connect the region with the rest of the state and beyond. This also has important implications for maintaining reliable access to important market areas that collectively serve as the backbone of the region's economy. Key market areas include the primary 2040 Target Areas – the Portland central city, regional centers, intermodal facilities and key industrial/employment areas.

As a result, the regional mobility corridors and their relationship to the primary 2040 Target Areas are recommended to be the focus of the additional technical analysis in 2008. A better understanding of an individual mobility corridor's transportation elements, intended function, land use connection and performance is needed. Additional work is also needed to identify a key set of performance measures that will be used to compare this first round of analysis to future rounds of analysis to be conducted in 2008. This information will provide an ability to compare changes in mobility across corridors as well as changes in access to the primary 2040 Target Areas in order to identify the most cost-effective mix of strategies and better target investments for the transportation system.

More specific findings for the evening two-hour peak period (unless otherwise noted) include:

- The overall highest traffic volumes are expected to remain in the interstate corridors such as I-5, I-84, I-205, as well as US 26. These interstate routes are most significant for truck mobility as almost 70 percent of truck trips involve a freeway.

- The dominant freight travel patterns are north-south along the I-5/I-205 corridors, followed by east-west oriented travel along the I-84 corridor.
- The largest percentage increase in travel demand occurs on facilities that serve new areas added to the urban growth boundary since the 2000, such as OR 212, 172nd Avenue, 190th Avenue, 242nd Avenue in Clackamas County.
- Several positive trends emerged, including a notable reduction in vehicle miles traveled per capita and average daily trip lengths, and a significant increase in transit ridership and the number of trips made by walking, bicycling and shared ride.
- Average weekday transit ridership is expected to be highest in the radial corridors that lead to the Portland central city and within the most developed areas of the regional centers and neighborhoods.
- Average weekday transit ridership is expected to be lowest in industrial areas such as Marine/Columbia/Lombard and along the routes serving the edges of the region, such as I-205 between I–5 and Oregon City.

4.3 Potential Environmental Impacts of RTP Investment Pool

4.3.1 Methodology

Metro identified the potential areas of conflict between the proposed RTP project and protected environmental features identified in the planning area. Using Geographic Information System (GIS) mapping software, different environmental features of the planning area were overlaid with the projects identified in the pool of projects identified for the RTP. It is important to note that the potential alignments for proposed projects are conceptual until more detailed project development work is conducted. For more detail see the Analysis of Environmental Considerations for RTP Update in the Appendices. The appendices also identify potential mitigation strategies in the region.

4.3.2 Regionally Significant Fish and Wildlife Habitat Inventory Analysis

This analysis used the regionally significant fish and wildlife habitat (Goal 5) inventory completed by Metro in 2005 as its basis. Metro developed the inventory based on the best science and data available and mapped regionally significant fish and wildlife habitat with input from local partners, resource agencies, technical review committees, and the public. Metro conducted fieldwork to validate and adjust the inventory. Identified habitat was ranked in importance based on its capacity to provide benefits to fish and wildlife.

Metro intersected the RTP Investment Pool with regionally significant Goal 5 resource areas and ODFW conservation opportunity areas. And found:

- 27 percent of projects (292 out of 1,025) intersect high value habitat areas.
- The portions of the projects that intersect high value habitat areas represent 5 percent of the total linear project mileage (125 of 2,325 miles).
- More street/bridge projects cross high value areas compared to other project modes, but trail projects compose more mileage of intersecting areas. This is explained by the fact that many regional trail projects travel alongside waterways, i.e. rivers, streams, creeks, for much of their potential alignments.

It is important to note that the potential alignments for proposed projects are conceptual until more detailed project development work is conducted. Projects that intersect high value areas should consider mitigation strategies as well as alignment options that avoid the resource area during future project development. See Appendices for a complete list of projects intersecting high-value areas.

4.3.3 Wildlife Incident Hotspots and Fish Passage Barriers Analysis

The purpose of the wildlife incident hotspot inventory is to identify key areas in the region where wildlife mortalities are caused by motor vehicles. This information highlights key areas where wildlife crossings designs should be considered in the transportation planning and project development process.

Fish barriers can come in the form of culvert blockages, dams, shallow water, or a combination of factors that prevent fish from reaching their spawning grounds. Transportation projects that may develop new barriers, or intersect existing barriers will require adequate fish passage as directed by State law.

Metro intersected the RTP Investment Pool projects with areas with wildlife incident hotspots as well as culverts that serve as barriers to fish passage. Several projects intersect with wildlife incident hotspots and/or problematic culverts. Identification of these projects early in the planning process provides an opportunity to consider wildlife corridor acquisition/restoration, wildlife crossing design treatments and other strategies as part of future project development. See Appendices for a complete list of RTP Projects that intersect with fish passage barriers and wildlife incident locations.

4.3.4 Floodplains and Wetlands Analysis

Metro intersected the RTP Investment Pool projects with inventoried wetland and floodplain areas in the Portland metropolitan region. Several projects cross wetland and floodplain areas. For more detail see Appendices. This data is also included in Metro's Regionally Significant Fish and Wildlife Habitat (Goal 5) Inventory and analysis described in Section 4.5.2.

4.3.5 Historic Sites, Properties and Districts Analysis

During the analysis of the financially constrained system, historic sites/districts/properties will be mapped with RTP projects and any intersections will be identified. The nature of these impacts is highly site and project specific, and the information about historic and cultural resources is constantly evolving. It is important for each project to be evaluated with up-to-date information during the project development.

4.3.6 Air Quality Analysis

Metro estimated future carbon monoxide, precursors of smog (volatile organic compounds and oxides of nitrogen) and carbon dioxide emissions from cars and trucks operating within the greater Portland air shed to the year 2035 using EMME/2 modeling software and Mobile 6.2, the latest model approved by the U.S. Environmental Protection Agency (EPA). The emissions analysis is not complete. This information will be added to this analysis when available.

4.3.7 Tribal Lands Analysis

Metro reviewed tribal lands data available from the Bureau of Indian Affairs to identify potential federally recognized tribal lands in the planning area. None were identified within or adjacent to the Metro planning area.

4.3.8 Environmental Justice Analysis

As an entity utilizing federal funds, Metro is responsible to successfully integrate environmental justice standards into its transportation program and planning activities. Any program or activity receiving federal financial assistance cannot discriminate against people based on race, color, national origin, age, sex, disability, religion or income status. The RTP Investment Pool projects were intersected with identified Environmental Justice Target Areas (2000 census block groups with two or more socio-economically sensitive populations). For more details see Appendices.

Chapter 5
Financial Plan

Federal regulations require that a regional transportation plan (RTP) be fiscally constrained. Total transportation expenditure levels identified within the RTP must not exceed the total revenue level reasonably expected to be available for the Metro region over the life of the plan; this includes existing revenues and new revenues that may be reasonably anticipated. This requirement ensures that the RTP is financially responsible. In following federal requirements, Metro has identified federal, state and local revenue resources that the regional can reasonably expect to receive from 2007 – 2035. All revenue estimates were developed in consultation with Metro's federal, state, and local agency partners. Preparation of the financial plan included a review of historical data, recent trends and other relevant materials. Previous federal authorization levels also serve as a baseline for future expected revenues.

Chapter Organization:

This chapter discusses the expected sources of transportation revenue in the Metro region as well as describing the operating, maintenance and preservation costs, for highways, transit and streets in the region. The financial analysis shows a dramatic shortfall in the region's ability to fund investments needed to keep pace with future growth.

This chapter is organized into five sub-sections:

5.1 The Region's Sources of Revenue: This section defines existing sources of revenues available for the transportation system in the Metro region.

5.2 Forecasts of Reasonable Expected Revenue: This section identifies and summarizes the amounts of reasonably expected revenue by funding pool, and serves the Financially Constrained System revenue forecast

5.3 Revenue Forecast Methodology: This section explains the methodology and documents the assumptions behind the funding pool revenue forecasts.

5.4 Costs versus Revenue for Operating and Maintaining the System: This section discusses the costs in the Metro region of operating and maintaining the existing and proposed transportation infrastructure for roadways and transit.

5.1 SOURCES OF REVENUE

This section defines existing sources of revenues available for the transportation system in the Metro region.

5.1.1 Traditional Sources of Revenue

This section defines traditional sources of revenues available for the transportation system in the Metro region from the federal, state and local levels.

5.1.1.1. Federal Sources

Highway Trust Fund. For road-related projects, Congress provides these revenues to the Metro region through the Federal Highway Administration (FHWA) to the Oregon Department of Transportation (ODOT) and then to Metro and the local cities and counties. For transit-related projects, Congress provides these revenues to the Metro region through the Federal Transit Administration (FTA) to TriMet, South Metropolitan Area Rapid Transit (SMART) in the Wilsonville area and Metro.

Federal Sources of Revenue:

- **Surface Transportation Program funds**
- **Congestion Mitigation/Air Quality funds**
- **Bridge funds**
- **Transportation Enhancement Funds**
- **Safety Funds**
- **High Priority Project funds (earmarks)**
- **Transit formula funds**
- **Transit discretionary funds**
- **Federal forest receipts**

Metro allocates the spending of these revenues by transportation agencies and local jurisdictions for projects in this region. The original source of these monies is primarily the federal gas tax, various truck taxes and funding from the federal general fund. Allocation and distribution of federal funds, other than routine maintenance, are accounted for in the Metropolitan Transportation Improvement Program (MTIP). Refer to Chapter 7 for more discussion on the MTIP. Some of these revenues are limited by FHWA to a particular purpose, such as highway bridge replacement and rehabilitation. Most of the funds, however, are flexible in that they can be spent on highways, streets, bikeways, sidewalks, transit capital, transportation system management (TSM), transportation demand management (TDM) and other air quality mitigation programs.

Federal trust fund money to the Metro region accounted for during the years 2007 through 2035 includes:

- **Regional Surface Transportation Program (STP) funds**. These funds may be used for virtually any transportation purpose short of building local residential streets.
- **Congestion Mitigation/Air Quality (CMAQ) funds.** These funds are to assist urban areas to achieve or maintain air quality standards for ground-level ozone and carbon monoxide. Typically, CMAQ funds support alternative mode projects and system or demand management programs.
- **Bridge funds.** The highway bridge replacement funding program was established to repair or replace bridges that have structural deficiencies and physical deterioration.
- **Enhancement funds.** Enhancement funds is limited to a list of 10 eligible activities relating to alternative modes to the single occupant vehicle, preservation of right-of-way, historic preservation, and environmental mitigation for transportation projects.
- **Safety funds.** The hazard elimination system program funds safety improvement projects that cost less than $500,000.

- **High Priority Project funds.** These are for specific projects designated by Congress to receive funds.

Additionally, the Oregon Department of Transportation will use federal trust fund money for transportation projects in the Metro region. At this time, ODOT limits the spending of most of these monies to road preservation and safety projects.

Transit Formula Funds. These funds are primarily for transit capital purchases such as buses and transit maintenance facilities. As the local transit providers, TriMet and SMART propose and Metro approves requests to the U.S. Department of Transportation for use of these monies. These funds will be used to maintain TriMet's current fleet and operations. Capital expenses related to expansion of transit service needs to be funded from other sources.

Transit Discretionary Funds. These funds are for major new transit capital projects. In this region, these funds have primarily been used to provide the federal portion of capital cost construction of the light rail system. Other eligible uses include bus purchases, bus rapid transit and system capital improvements. As the regional transportation planning agency, Metro determines which large transit capital projects will be given priority in the region to receive these funds. Once the priority has been determined, TriMet applies to the Federal Transit Administration for transit discretionary funds to build the project. These revenues would only be available to the region if specific transit projects are built; the revenues are not transferable to other uses.

Federal Forest Receipts. Forest receipts are revenues sent to counties by the federal government based on the amount of forest logging revenues realized on federal forest land within a county. Counties have historically used these revenues for transportation projects and maintenance.

5.1.1.2 State Sources

State revenues for transportation projects are distributed by the Oregon Transportation Commission, in accordance with state statutes, from the State Highway Trust Fund. The fund derives its revenues from:

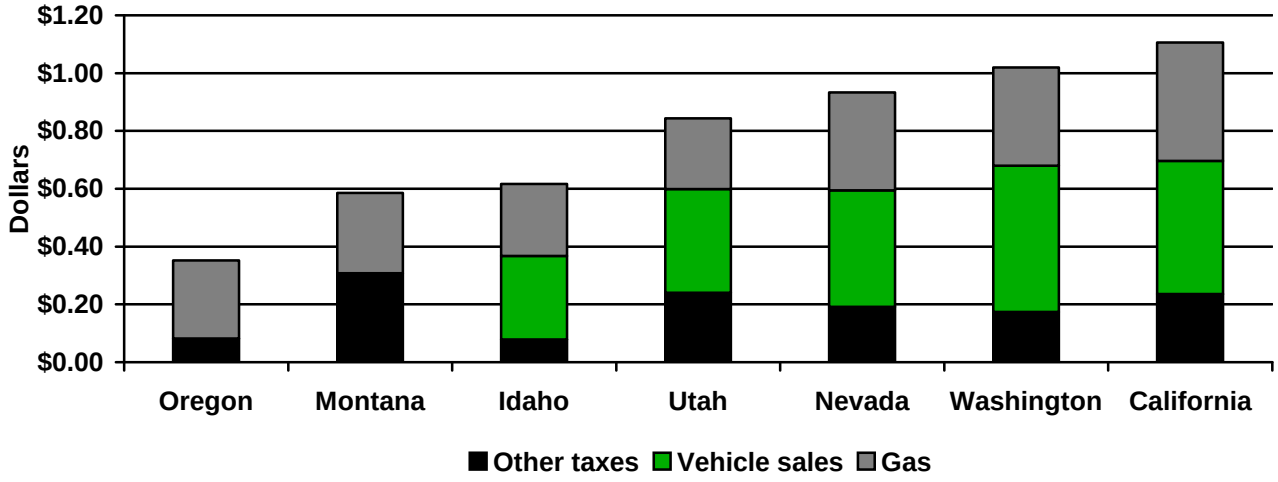
- statewide gas tax, which has not been increased since 1993;
- vehicle registration fee; and
- weight mile taxes on trucks.

State Sources of Revenue:

- **Statewide gas tax**
- **Vehicle registration fee**
- **Truck weight mile tax**

The general practice of state and local governments is to use trust fund monies they receive by statutory formula predominantly for road and bridge maintenance and preservation of the existing transportation system. Although modernization and expansion projects can be funded through this resource, the amount available is limited. Figure 5.1 shows Oregon has the lowest combined motor vehicle tax structure in the western United States. After collection costs, approximately 8 percent of the trust fund is dedicated to highway modernization. Approximately 60 percent of the State Highway Trust Fund revenues are distributed to ODOT. Oregon counties receive approximately 24 percent of the trust fund revenues, and Oregon cities receive approximately 16 percent. Historically, of the State Highway Trust Funds distributed to ODOT, the department generally allocates about 28.8 percent of that money to the Metro region.

Figure 5.1. Oregon Auto Taxes Among Lowest in Nation



Source: Oregon Department of Transportation, 2006.

As prescribed by state statute, the Oregon Transportation Commission (OTC) distributes the State Highway Trust Fund money to Oregon cities and counties. Trust fund money is distributed to counties based on the number of vehicles registered in that county. The metropolitan portion of Clackamas, Multnomah and Washington counties currently accounts for approximately 37 percent of all state trust fund revenues distributed to Oregon counties. The distribution of state trust fund money to Oregon cities is based on population. Cities in the Metro area currently receive approximately 47 percent of all state trust fund monies distributed.

5.1.1.3 Local Sources

Many of the cities and counties in the metropolitan region provide other sources of revenue to operation, maintenance and preservation (OMP) and new construction to the regional transportation system. The amount of revenue applied to the system is controlled by each jurisdiction and is spent within their boundaries. Based on historical trends and expected future growth, Metro has forecast how much revenue is expected to support the regionally significant transportation system from the following local revenue sources.

Local Sources of Revenue:

- **Local Portion of State Highway Trust Fund**
- **Local gas taxes**
- **Payroll Tax**
- **Transit passenger fares**

- **Local Portion of State Highway Trust Fund.** As noted, historically 40 percent of state trust fund revenues are distributed to the cities and counties of Oregon; although there is anticipation that 50 percent of new trust fund revenues would be distributed to cities and counties by formula.
- **Local Gas Tax.** Multnomah County levies a three cents per gallon gas tax and Washington County levies a one cent per gallon gas tax. Both counties share these revenues with the cities within their boundaries. Recently gas taxes have been approved for Milwaukie and Tigard. These revenues may be used for road maintenance and road expansion.

- **Payroll Tax**. TriMet levies a payroll tax of .6176 percent on all employers in its district (except federal employees). TriMet's payroll rate is limited by state statute to the current rate plus a planned increase to .7176 over the next ten year. Raising TriMet's payroll rate would require action by the state legislature. SMART is funded through a .3 percent payroll tax in the Wilsonville area. This revenue is used to support operations and maintenance of the transit systems.
- **TriMet Passenger Fares and Other Revenues.** TriMet passenger fare revenues also support operation of the transit system. SMART is a fareless transit system except for two routes operating to Salem and downtown Portland.

5.1.2 Development-Based Sources

Development-Based Sources of Revenue:

- **System development charges**
- **Traffic impact fees**
- **Urban renewal funding**
- **Developer contributions**

Development-based sources of transportation funding are fees collected by local governments based on the development of or use of land. These fees provide funding for transportation and other public investments as deemed appropriate by the local government that collects the fees and allocates the revenue. In some cases, the projects receiving these funds are transportation projects of regional significance and, therefore, a portion of these revenues estimated to be spent on regional projects is assumed in this forecast based on historical trends. These include:

- Transportation system development charges (SDCs) levied on new development;
- Traffic impact fees (TIFs) on commercial properties;
- Urban renewal funding in designated districts; and
- Developer contributions.

The revenues are collected by the cities and counties in the region for use within their jurisdictions, and are generally limited to providing transportation projects to serve the new development on the assessed properties.

5.1.3 Special Funds and Levies

A final source of transportation funding for the Metro region is special funds and levies. This category includes:

- **Property taxes**. General levies such as the Washington County's Major Streets Transportation Improvement Program (MSTIP), which are approved by popular election.
- **Local improvement districts (LIDs).** Special districts, such as the Lloyd District in the City of Portland, where a group of commercial property owners agree to provide money, in addition to their regular taxes, for public improvements and services (including transportation projects) within the district. In the Portland Central Business District, a local improvement district contributed to construction of the Portland Streetcar project.
- **Vehicle parking fees.** This source generates revenues from the City of Portland public parking garages and on-street parking meters. These revenues will contribute to construction of the Portland Streetcar project.

Other Sources of Revenue:

- **Property taxes**
- **Local improvement districts (LIDs)**
- **Vehicle parking fees**
- **Port of Portland transportation improvement fund revenues**
- **Street utility fees**
- **Washington County Urban Road Maintenance District**

- **Port of Portland transportation improvement fund revenues.** These revenues are derived from passenger facility charges, parking revenues and lease revenues, and are limited to fund projects or services on Port property. Investment of these revenues is guided by the annually updated Port of Portland Transportation Improvement Plan (2007), and approval by the Port Commission. These revenues are expected to leverage private investment in transportation projects, particularly from freight railroad companies.
- **Street Utility Fees**. The cities of Tualatin, Lake Oswego, Wilsonville and Milwaukie have adopted a street maintenance fee that is included in the local sewer and water bill. The fee is based upon the cost to maintain the street system in that jurisdiction and is used for maintenance activities within each respective jurisdiction..
- **Washington County Urban Road Maintenance District.** The County collects a $0.50 per $1,000 of assessed valuation fee in urban unincorporated Washington County for road maintenance within those areas.

5.2 FORECASTS OF REASONABLY EXPECTED REVENUE

This section identifies and summarizes the amounts of reasonably expected revenue by funding pool, and serves the Financially Constrained System revenue forecast.

5.2.1 Summary of Funding Pools

The RTP Financially Constrained System revenue forecast is based on amounts identified for six funding pools:

- ODOT Modernization Funding Pool
- Regional Transit and Programs Funding Pool
- Washington County and Cities Modernization Funding Pool
- Clackamas County and Cities Modernization Funding Pool
- City of Portland Modernization Funding Pool
- Multnomah County and Cities (excl. Portland) Modernization Funding Pool

A specific array of revenue sources was identified for each of these pools based on the historic use of the revenue sources and financial plans adopted by local governments. Some revenues – for example, the amount of Section 5309 New Start/Small Start Funds depend on the identified high capacity transit (HCT) and streetcar projects. Also, some revenues are used for several purposes, and simplifying assumptions were made about their use. For example, existing state highway trust fund revenues (state gas tax and registration fees) apportioned to cities and counties were assumed to be solely used for Operations, Maintenance and Preservation (OMP). Table 1 shows the revenue sources included in each funding pool.

Table 5.1: Modernization/Capital Revenue Sources by Funding Pool

	ODOT Modernization Pool	Regional Transit and Programs Modernization Pool	Local Government Modernization Pools
Existing State and Formula Federal Funds Excluding Federal Funds Allocated to Local Governments	X		
High Priority Projects and Other Federal Discretionary Grants: State Share Allocated to Metro Region	X		
New State Revenue Source: Assumed for Analytical Purposes to be the Metro Region Share of State Share of $15 Vehicle Registration Fee Increase Every 8 Years	X		
Metro Region STP Funds		X	X
CMAQ Funds: Allocation from State		X	
Transportation Enhancement Funds from State		X	
State Support of Transit Capital Programs		X	
5309 Discretionary Bus Grant		X	
5309 Discretionary New/Small Start Grant		X	X
Lottery Funds/Other State Grants		X	X
Transit District General and Federal Formula Funds		X	
Property Tax/Non-Transportation Sources			X
SDC/TIF			X
Franchise Fee			X
Urban Renewal			X
Private Development			X
Special Assessment			X
Metro Region City and County Share of $15 Vehicle Registration Fee Increase Every 8 Years			X
Local Bridge Program (Large/Small)			X
Miscellaneous Local Sources			X
Port of Portland Funds			X
Metro Region City and County Share of Existing Highway Trust Fund and Any Increases to Trust Fund			X
Utility Fees and Local Gas Tax			X

Forecasts show $9,070 million of reasonably expected revenue to be available in the Metro region from 2007 – 2035. Of this total $3,732 million is comprised of state and federal funds and the remaining $5,338 million is local funds. Federal funds account for 41 percent and local funds 59 percent of reasonably expected revenue.

Table 5.2 through Table 5.7, below, show the estimates of financially constrained revenues by funding pool.

Table 5.2: ODOT Modernization Funding Pool (Millions of 2007$)

Funding Source	Financially Constrained Amount
Metro Region Share of Existing State and Federal Formula Funds excluding Fed Funds Allocated to Local Governments	$273.20
ODOT Share of High Priority Project and Other Discretionary Fed Grants in Metro Region	$376.80
Metro Region Share of New Revenues: Assumed for Analytical Purposes to be State Share of $15 Vehicle Registration Fee Increase for Modernization Every 8 Years beginning 7/1/09	$147.70
OTIA	$97.90
Other (including other in STIP, local in STIP and unlisted other/carry forward in STIP)	$80.60
Financially Constrained Amount Forecasted for Metro region share of all ODOT Road Modernization Funds	**$976.20**

Note: Numbers may not add due to rounding.

Table 5.3: Regional Transit and Programs Funding Pool (Millions of 2007$)

Funding Source	Financially Constrained Amount
Metro Region CMAQ Funds	$306.00
Alternative Mode Share (25%) of Metro Region STP Funds	$120.70
Metro Region Enhancement Funds	$44.20
SMART Local Revenue	$105.20
5309 New Starts/Small Starts Funds	$639.90
State Lottery Bonds (Milwaukie LRT)	$250.00
Local Match for New Starts/Small Starts Funds	$101.60
Value of Willamette Shore ROW for Lake Oswego Streetcar Local Match	$75.00
TriMet Local Capital	$702.05
5309 Discretionary Bus Grants	$29.00
Financially Constrained Amount Forecasted	**$2,373.65**

Table 5.4: Clackamas County/Cities Modernization Funding Pools (Millions of 2007$)

Funding Source	Financially Constrained Amount
Regional High Priority Projects/Other Disc. Grants	$88.40
Regional STP Funds	$95.50
"Other" Federal Funds Exc. Bridge	$13.80
Bridge	$14.20
General Fund	$0.00
SDC-TIF	$585.00
Urban Renewal	$116.00
Private Development	$109.60
Special Assessment	$3.20
Other Local Sources	$99.50
Share of $15 VRF Increase Every 8 Years	$46.90
Financially Constrained Amount Forecasted	**$1,172.00**

Table 5.5: Washington County/Cities Modernization Funding Pools (Millions of 2007$)

Funding Source	Financially Constrained Amount
Regional High Priority Projects/Other Disc. Grants	$100.90
Regional STP Funds	$109.00
"Other" Federal Funds Exc. Bridge	$15.80
Bridge	$14.20
General Fund	$1,119.30
SDC-TIF	$327.20
Urban Renewal	$43.50
Private Development	$89.70
Special Assessment	$45.00
Other Local Sources	$126.20
Share of $15 VRF Increase Every 8 Years	$61.10
Financially Constrained Amount Forecasted	**$2,051.90**

Table 5.6: City of Portland and Port of Portland Modernization Funding Pools (Millions of 2007$)

Funding Source	City of Portland & Port of Portland
Regional High Priority Projects/Other Disc. Grants	$318.20
Regional STP Funds	$126.90
"Other" Federal Funds Exc. Bridge	$18.40
Bridge	$0.00
General Fund	$0.00
SDC-TIF	$222.00
Urban Renewal	$203.00
Private Development	$72.90
Special Assessment	$17.70
State Grants	$41.10
Other Local Sources	$58.00
Port of Portland Funds	$256.90
Share of $15 VRF Increase Every 8 Years	$94.80
Financially Constrained Amount Forecasted	**$1,429.90**

Table 5.7: Multnomah County/Cities (Excluding City of Portland) Modernization Funding Pools (Millions of 2007$)

Funding Source	Multnomah County/Cities excl. Portland
Regional High Priority Projects/Other Disc. Grants	$28.40
Regional STP Funds	$30.60
"Other" Federal Funds Exc. Bridge	$4.40
Bridge	$113.60
General Fund	$0.00
SDC-TIF	$393.60
Urban Renewal	$66.70
Private Development	$307.90
Special Assessment	$0.00
Other Local Sources	$72.80
Share of $15 VRF Increase Every 8 Years	$29.80
Financially Constrained Amount Forecasted	**$1,047.80**

5.3 REVENUE FORECAST METHODOLOGY

This section explains the methodology and documents the assumptions behind the funding pool revenue forecasts. The revenue forecasts for the 2035 update of the RTP are based on work conducted by ECONorthwest (ECONW) with assistance from Kittelson and Associates. The report titled, *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*, describes future costs and funding for regional transportation projects and programs and was used to estimate the level of funding reasonably available for transportation needs in the Metro region through 2007 – 2035. The full report is available on Metro's website.

5.3.1 ODOT Modernization Funding Pool Assumptions

There are three components to this funding pool:

1. *Metro Region Share of Existing State and Formula Federal Funds Excluding Federal Funds Allocated to Local Governments*
2. *ODOT Share of High Priority Projects and Other Discretionary Grants in Metro Region*
3. *Metro Region Share of $15 Vehicle Registration Fee Increase for Modernization Every Eight Years Beginning 7/1/09*

The "*Metro Region Share of Existing State and Formula Federal Funds*" uses estimates of state and federal funds primarily derived from ODOT's *Financial Assumptions for the Development of Metropolitan Transportation Plans 2005-2030 (December 2004)*[1]. The ODOT numbers were extrapolated to 2035, converted to 2007 dollars, and allocated statewide totals to the Metro Region. As used in the estimate of ODOT Road Modernization funds, federal funds apportioned to MPOs and "Other Federal Funds" are excluded. The underlying estimates of state and formula federal funds assumed, among other items:

- An extrapolation of existing state and federal revenues.
- Implementation of the OTIA program.
- A 1-cent per year increase to the state gas tax (with associated truck weight-mile tax increases). However, the ODOT methodology attributed all of these future revenue increases to OM&P. The revenues attributed to road modernization were limited to that minimally required by ORS 366.507. Thus, the assumed 1-cent per year gas tax increase does not affect ODOT's estimate of federal and state funds available for road modernization.
- A constant $8.1M (2003$) annual statewide "flex" to transit.
- The Metro region total of ODOT funding is 28.8 percent of the statewide total
- The initial forecasts by ECONW were reviewed by ODOT and adjusted to account for funding allocations in the recent State Transportation Improvement Program (STIP).

The *ODOT Share of High Priority Projects and Other Discretionary Grants in Metro Region* uses the SAFTEA-LU-based estimate of HPPP and Discretionary grants and pursuant to an agreement between Metro and ODOT, assumes that ODOT will be the grantee for one-half of these funds[2]. The other half is assumed for local government projects.

[1] ECONW. "Table 3-1." *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*. December 2006. p. 3-8.
[2] ECONW. "Table 3-2." *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*. December 2006. p. 3-13.

Assumptions were also made that there will be new state revenue available to the modernization program, which for analytical purposes is calculated as a $15 increase in the state vehicle registration fee every 8 years, and that these revenues would be split 50/30/20 between ODOT, counties, and cities. The ODOT share would be specifically dedicated for road modernization. The *Metro Region Share of $15 Vehicle Registration Fee Increase for Modernization Every Eight Years Beginning 7/1/09* uses the statewide forecasts of the ODOT share of a $15 VRF increase every eight years and applies a 0.288 factor to estimate the Metro region share of these ODOT mod funds[3].

5.3.2 Regional Transit and Programs Funding Pool Assumptions

This funding pool is comprised of the following revenue sources:

- *Metro Region CMAQ Funds*
- *Alternative Mode Share of Regional STP Funds*
- *Metro Region Enhancement Funds*
- *5309 Discretionary Bus Grants*
- *5309 New Starts/Small Starts Grants for transit capital projects*
- *Local Match for 5309 New Starts/Small Starts Funds*
- *State Support of Transit Capital Programs*
- *Local Transit Funds*

The *Metro Region CMAQ Funds* were estimated by converting the statewide CMAQ estimate, applying the estimated Metro share of 80 percent, and assuming that all of the Metro Region CMAQ funds would be allocated to the Alternative Mode Pool.[4] The *Alternative Mode Share of Regional STP Funds* were estimated by using the Metro Region STP funds forecast[5], and assuming that 25 percent would be allocated to transit and regional programs.

The *Metro Region Enhancement Funds* were estimated by converting the statewide Enhancement Funds estimate[6] to 2007 dollars, applying the estimated Metro share of 28.8 percent, as revised from the ECO NW Report, and assuming that all of the Metro Region Enhancement Funds would be allocated to the Regional Transit and Programs funding pool.

The *5309 Discretionary Bus Grants* were estimated at $1 million per year in 2007 dollars, based on historic trends. The *5309 New Starts & Small Starts Grants* funds are assumed for two transit capital projects: Milwaukie light rail transit (LRT) project and the Portland to Lake Oswego streetcar project. The total revenue forecasted for New Starts/Small Starts grants is 60 percent of the total cost of both the Milwaukie LRT and Portland to Lake Oswego streetcar, $639.9 million. To leverage the New Starts funds requires a 40 percent local funds match of about $426.6 million.

The *State Support of Transit Capital Programs* funds are derived from the lottery revenues. In the spring of 2007, the Oregon State Legislature committed these lottery revenues in the amount of $250 million to the Milwaukie LRT lottery bonds. This revenue will be applied as part of the local match for the federal New Starts funds as part of the Milwaukie LRT. For the Portland to Lake Oswego streetcar project, based on Federal Transit Administration precedent, assumes $75 million for the value of the Willamette Shore

[3] ECONW. "Table E-2." *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*. December 2006. p. E-2.
[4] ECONW. "Table E-6." *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*. December 2006. p. E-6.
[5] ECONW. "Table 3-3." *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*. December 2006. p. 3-14.
[6] ECONW. "Table E-6." *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*. December 2006. p. E-6.

right-of-way as part of the project's local match. The remaining $101.6 in local match is assumed to be a combination of local revenue sources from the City of Lake Oswego, the City of Portland, Clackamas County, the City of Milwaukie and TriMet.

For miscellaneous capital projects including constructing new operating facilities, on-street facilities, and vehicle purchases, more than $800 million is assumed from local transit revenue. For both SMART and TriMet this revenue is derived from estimates in local transit funds from payroll taxes and farebox revenue[7].

5.3.3 Local Government Modernization Funding Pools Assumptions

Individual road modernization pools are estimated for Clackamas Counties and Cities, Washington County and Cities, Portland, and Multnomah County and Cities Excluding Portland. The *Regional Share of High Priority Projects and Other Discretionary Grants in Metro Region* uses the SAFTEA-LU-based estimate of HPPP and Discretionary grants[8], and assumes that regional governments will be the grantee for one-half of these funds, pursuant to an agreement between Metro and ODOT.

The *Metro Region STP Funds for Roads* were estimated by using the Metro Region STP funds forecast[9], and assumes that 75 percent would be allocated to road modernization projects. The *Metro Region Share of "Other" Federal Funds Excluding Bridge* uses the "MTIP Allocation Basis" estimate of "Other" funds[10], and excludes the Bridge, Enhancement, Rural Roads and CMAQ components of that table. The Metro region's share of the state total is 28.8 percent.

The above calculations provide totals of state and federal funds for the Metro region. These Metro-wide totals were disaggregated to four sub-districts (City of Portland, Washington County, Clackamas County, and Multnomah County excluding City of Portland) on the basis of their proportionate population. Since the relative population between sub-districts changes annually based on the differing sub-district growth rates, an approximate mid-point population for each sub-district was used which was calculated as the average of population of the sub-districts between 2005 and 2035.

The initial estimates of Statewide *Bridge Fund* totals were taken and multiplied by 80 percent, to determine the Metro Region share. Of the Metro region share, 80 percent is anticipated for Large Bridges apportioned to Multnomah County, and Washington and Clackamas County are anticipated to receive 10 percent each for Small Bridges.

Local revenues were forecasted by year for the entire Metro region based on the data collected in the ECONW report, and shown by jurisdiction[11]. The initial forecast assumed:

- All state gas tax/registration fee revenues allocated to cities and counties, other than the $15 registration fee increases are used for OM&P.
- City and county revenues derived from the assumed $15 registration fee increase are used for road modernization projects.
- All local gas tax and utility fee revenues are dedicated to OM&P.

[7] ECONW. "Table E-14(A) and 14(B)." *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*. December 2006. p. E-18 – E-19.
[8] ECONW. "Table 3-2." *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*. December 2006. p. 3-13.
[9] ECONW. "Table 3-3." *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*. December 2006. p. 3-14.
[10] ECONW. "Table E-6." *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*. December 2006. p. E-18.
[11] ECONW. "Table E-11(A), 11(B), and 11(C)." *Preliminary Financial Analysis for the 2035 Regional Transportation Plan Update*. December 2006. p. E-13 – E-15.

- Estimates of *Urban Renewal* funds and *Private Development* revenues for modernization projects were primarily developed through consultation with applicable local governments.

5.4 COSTS VERSUS REVENUE FOR OPERATING AND MAINTAINING THE SYSTEM

This section discusses the costs in the Metro region of operating and maintaining the existing and proposed investment priorities for highways, streets and transit described in Chapter 6.

5.4.1 Federal Requirements for Operations and Maintenance

Federal Requirements

Federal regulations require that the RTP include a financial plan that compares expected revenue with the costs of proposed transportation investments. Additionally, 23 CFR 450.322(b)(11) requires a comparison of the estimated costs of constructing, maintaining, and operating the total transportation system, including existing and planned investments, over the plan period.[12]

For transportation system operations and maintenance, the 2035 RTP discusses system-level estimates of costs and revenues that are expected to be reasonably available to be able to operate and maintain the Metro region's transportation system. The following discussion is aimed at addressing the issues regarding operations, maintenance and preservation of both the roadway and transit system in the Metro region.

5.4.2 Highway and Street-Related Costs (Capital and OMP)

State highway operations, maintenance and preservation costs

While ODOT has a long-range goal of improving state highway pavement condition to 90 percent fair-or-better, funding to meet this goal does not appear to be likely. ODOT OM&P needs were based (with minor adjustments) on Scenario 3 of the 2006 Oregon Transportation Plan. This would maintain pavement condition at the 78 percent fair-or-better level. The financial assumptions contained in this document indicate that even this level will be difficult for ODOT to maintain.

ODOT had estimated non-modernization needs, OM&P costs, statewide at $983 million in the year 2008, increasing to $1,566 million in the year 2035. Financially constrained revenues forecasted to be available for these costs start at $819 million in 2008 and grow to $1,603 million by 2035.

State highway capital costs

Construction of new or improved state highway facilities on the Regional Mobility Corridors for financially constrained system by ODOT, including projects such as the Sunrise Corridor, the I-5 to 99W connector, US 26 and I-205, is expected to cost $1,232 million ($2007).

Regional street operations, maintenance and preservation costs

Comprehensive data of the Portland metropolitan region OMP needs is not currently available. Based upon information provided by cities and counties, it is estimated that to achieve what a life-cycle cost study would prescribe as an ideal level of OMP, would require an investment of approximately $237 million per year in 2008, increasing to more than $660 million per year by 2035 to address maintenance.

Forecasted revenues in the financially constrained plan available for local OMP expenditures fall short of this ideal level of OMP revenues, which range from approximately $171 million in 2008 to $450 million in

[12] "Metropolitan transportation planning process: Transportation plan." 23 CFR 450.322(b)(11).

2035; roughly 70 percent of "ideal" levels. However, this level of investment is fairly steady and represents the level of OMP investment in the regional street system that maintains the system at current conditions. While not ideal, this level of investment meets federal guidelines.

Regional street-related capital costs

Construction and improvement of city and county owned regional street facilities in the 2035 Financially Constrained System is expected to cost $4,120 million (2007$). This includes all projects that expand street capacity, improves right-of-way for freight, vehicles, bicycles and pedestrians, and strategies such as the regional transportation demand management (TDM) and transit oriented development (TOD) programs. Figure 5.2 shows the highway and regional street-related costs of OMP on the state highway system against expected revenue from 2007 – 2035.

Figure 5.2 - State Highway Operations, Maintenance and Preservation Costs and Revenues

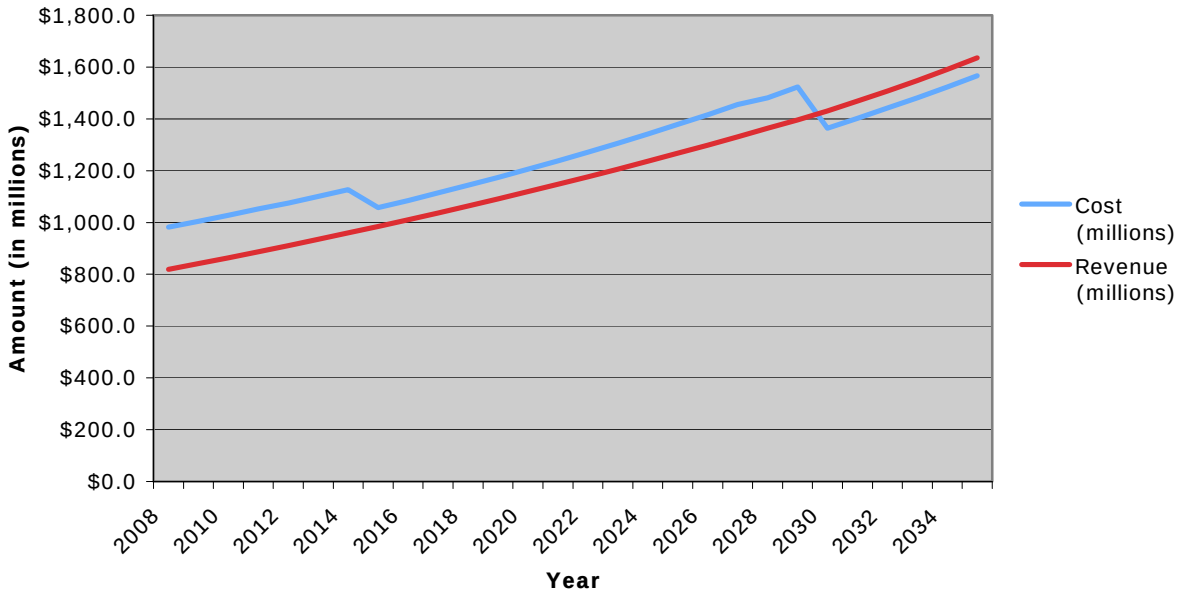
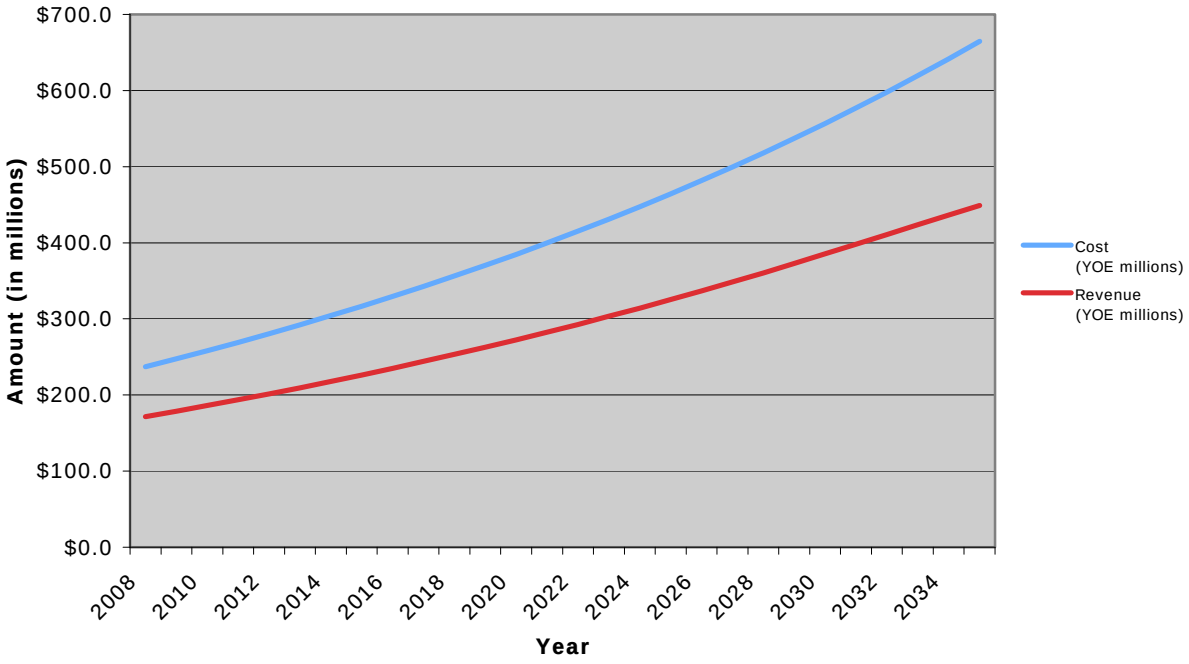


Figure 5.3 shows the roadway-related costs of OMP on the local roadway system against expected revenue from 2007 – 2035.

Figure 5.3 - Local Operations, Maintenance & Preservation Costs and Revenues



5.4.3 Transit-Related Costs

Transit operations and maintenance

Increasing TriMet and SMART service by 1 percent each year is assumed in the financially constrained transit system. Annual operating costs are expected to be $254 million in the year 2007 and $899 million in the year 2035, accounting for the approximately doubling of cost due to inflation and transit service provided.

Transit capital

Capital costs for transit include construction of light rail, commuter rail and streetcar rail systems, acquisition of additional buses and expanded maintenance facilities, right-of-way improvements such as bus shelters, bypass lanes and signals and new or upgraded transit centers and park-and-ride lots. Total transit capital costs for implementation of the financially constrained system are expected to be $2,672 million in 2007 dollars.

Figure 5.4 below shows the transit costs of OMP against expected revenue from 2007 – 2035.

Figure 5.4 - Fiscally Constrained Network Transit Revenues and Costs

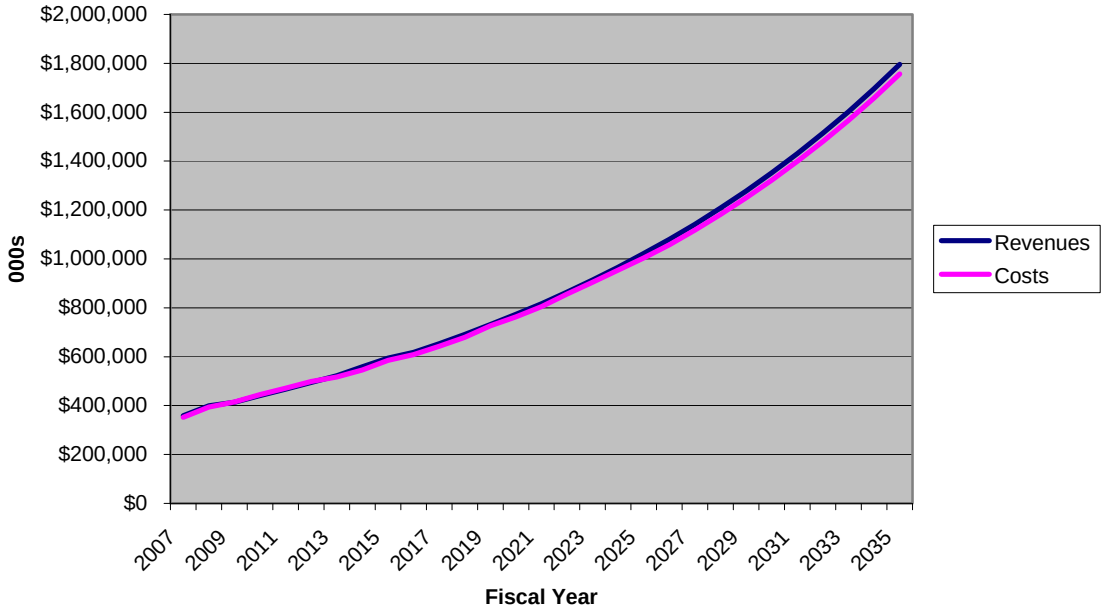
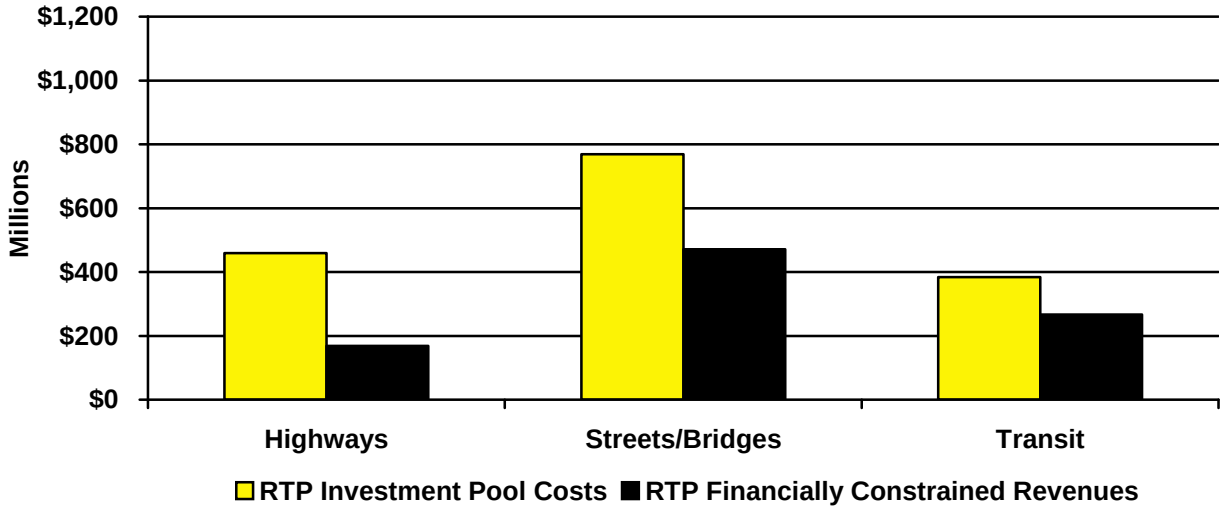


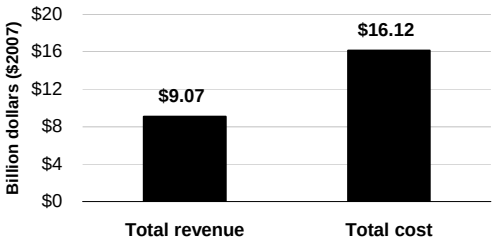
Figure 5.5 shows the gap between the estimated capital costs to fund the RTP Investment Pool and forecasted revenues for the 2035 RTP. The streets and bridges category includes bikeways, pedestrian facilities, freight rail investments and regional system and demand management programs. Chapter 6 describes a narrowed list of investments that match revenue forecasted to be available. These investment priorities are proposed to be the 2035 RTP Financially Constrained System.

Figure 5.5. 2035 RTP Comparison of Capital Costs and Revenues ($2007)



5.5 CONCLUSION

Federal, state and local funding for infrastructure investments is not keeping pace with needs, particularly for operations, maintenance and preservation of existing public assets but also needed expansion of the system. The 2035 RTP Investment Pool described in Chapter 4 is estimated to cost a total of $16.12 billion to construct, representing nearly twice the amount of revenue anticipated to be available during the plan period. In all, Metro anticipates $9.07 billion to be available for transportation investments through 2035.



Funding shortfall for capital needs.

State and local government purchasing power has steadily declined because the state gas tax has not increased since 1993. This shift in funding has been particularly acute in Oregon, as most states have turned to increased sales tax levies as a stop-gap for coping with the decrease in purchasing power of federal transportation funding. Lacking a sales tax, Oregon has focused on bonding strategies based on future gas tax receipts and lottery funds at the state level, but has not developed a long-term strategy. Local governments in Oregon have turned to increased property tax levies, road maintenance fees, system development charges and traffic impact fees to attempt to keep pace.

Diminished available resources mean increased competition for available transportation funds and reduced ability to expand, improve and maintain existing transportation infrastructure. Meanwhile, the region's transportation infrastructure continues to age and requires increasing maintenance. Increased traffic volumes also increase the maintenance needs of regional streets and throughways. Existing maintenance backlogs are expected to grow without new sources of revenues.

New funding strategies, enhanced public and private collaborations and stronger public support for seeking new revenue sources must be developed to maintain existing transportation assets as well as to pay for major system investments. These and other key transportation finance issues will be the focus of additional policy discussions during the state component of the RTP update. The state component of the RTP update will seek to develop innovative and stable funding sources to address current and future transportation needs. The fundamental state requirement for the RTP is to develop a plan that is adequate to serve planned land uses. In addition, the region (through the RTP) and local governments (in local transportation system plans) must have a financing strategy that supports implementation of the plans.

The region's funding gap is so significant, the region must use every tool at our disposal to address current and future transportation needs in support of the long-range vision for managing growth in the region – the 2040 Growth Concept. The region needs a strategy that effective links land use and transportation investment decisions. Both short-term and long-term strategies are needed to raise new revenues to fund needed investments.

Ultimately, the region may decide to develop an action plan to raise these revenue sources in order to more fully implement the 2040 Growth Concept and address more of the needs identified in Chapter 4. The region's economy and livability depend on finding solutions to these issues – and so do future generations of people who will live and work in this region.

CHAPTER 6

Investment Priorities

The financial analysis in Chapter 5 shows a dramatic shortfall in the region's ability to fund the pool of investments identified in Chapter 4, with needed improvements costing more than 1.5 times the current revenue projections. The shortfall has profound implications for the region's ability to keep pace with growth, and implement the 2040 Growth Concept. The shortfall could affect all aspects of the regional transportation system, in particular limiting the region's ability to expand existing throughways, arterials, transit service as well as adequately serve the region's pedestrian, bicycle and freight needs.

Chapter Organization:

This chapter presents the Financially Constrained System, which serves as the basis for complying with federal planning and air quality regulations. In this scenario, the scale of the system is limited to approximately $9.07 billion, which includes existing and expanded funding sources that can reasonably be expected to be available for transportation uses during the plan period.[1] The Financially Constrained System represents a statement of priority needs, given current transportation funding constraints.

This chapter is organized in four sub-sections:

6.1 Overview of Financially Constrained System: This section provides an overview of the process and principles used to identify the financially constrained system. The proposed investments reflect ODOT, TriMet and local government priorities for investments in the regional transportation system.

6.2 Effects of Growth on the Financially Constrained System: This section will evaluate the performance of the Financially Constrained System and the corresponding impact on implementation of the 2040 Growth Concept.

6.3 Environmental Impacts of the 2035 RTP Financially Constrained System: This section describes potential environmental impacts of and mitigation strategies for the financially constrained system of investments, consistent with federal SAFETEA-LU.

6.4 Proposed Financially Constrained System: A description of the proposed projects and programs proposed to be included in the Financially Constrained system is shown at the end of the chapter.

6.1 Overview of the Proposed Financially Constrained System

The proposed Financially Constrained System of investments are eligible for federal and state funding and serves as the basis for complying with federal planning and air quality regulations. This system contains many "placeholder" projects for larger mobility corridor investments, where a specific transportation need is identified, but more work is needed to develop refined projects or programs that serve the identified need. In some cases, work is under way as is the case for the Sunrise Project,

[1] See Chapter 5 for more detail on the revenue assumptions used to develop the financially constrained system.

Columbia River Crossing, Milwaukie LRT, Portand-to-Lake Oswego Street Car and the Sellwood Bridge. Other corridor work will be completed through future National Environmental Policy Act (NEPA) processes.

6.1.1 Process to Identify System Needs and Projects

While the primary mission of the 2035 Regional Transportation Plan is to implement the 2040 Growth Concept, the plan must also address other state and federal transportation planning requirements that may not directly assist in implementing the growth concept. Chapter 3 of this plan identifies specific transportation needs for each 2040 Growth Concept land-uses and policies for defining a balanced regional transportation system.

6.1.2 Financially Constrained System Defined

The financially constrained system is a transportation scenario that assumes existing and proposed funding sources that can reasonably be expected to be available for transportation uses during the plan period. It is required by federal transportation planning regulations and constitutes the federally recognized plan. The purpose of defining a financially constrained system is to provide a benchmark to demonstrate that current transportation funding is not adequate to serve the region's transportation needs, yet continues to satisfy federal conformity and air quality regulations.

During the plan period, approximately $9.07 billion in forecasted revenue was allocated for capital improvements. This amount represents a major shortfall when compared to the total capital cost to implement the pool of investments identified by local agencies, ODOT, TriMet and Metro in Chapter 4. As a result, the financially constrained system does not attempt to address all transportation needs. Instead, the financially constrained system attempts to focus limited revenue in key 2040 target areas throughout the region, including the central city, industrial areas and intermodal facilities and regional and town centers.

Other considerations in developing the financially constrained system included:

- a focus on system and demand management investments and implementation of transportation control measures to meet air quality requirements;
- investments that met multiple goals identified in Chapter 3 of this plan;
- smaller, key phases of larger projects; and
- projects that would complete gaps or address existing deficiencies in the components of the regional transportation systems identified in Chapter 3 of this plan.

Specific principles for identifying 2035 Financially Constrained System needs and projects to meet those needs are summarized in **Figure 6.1**.

Figure 6.1
2035 Financially Constrained System
Principles for Identifying Needs and Projects

Vision for consistency with the 2040 Growth Concept

- Implements the most significant primary land-use components transportation needs
- Addresses some secondary land-use components transportation needs
- Addresses few needs for other 2040 Growth Concept land-use components

Structure for consistency with the 2040 Growth Concept

- Central city and all regional centers served by high capacity transit, have direct access to regional highway system and contain a mix of arterial street, pedestrian and bicycle systems improvements.
- Most industrial areas have strong connections to regional highway system and intermodal facilities.
- Some town centers, corridors, employment areas and main streets served by regional transit and contain a mix of arterial street, pedestrian and bicycle systems improvements.
- Few neighborhoods served by community transit and improvements to the pedestrian and bicycle systems.

Structure for consistency with the Chapter 3 Policy Framework

- Reinforces growth in 2040 target areas
- Improves reliability of regional mobility corridors
- Addresses multi-modal system gaps and deficiencies
- Expands transportation choices
- Improves safety and security
- Benefits human health and the natural environment
- Preserves air quality conformity status, meeting transportation control measures

Source: Metro

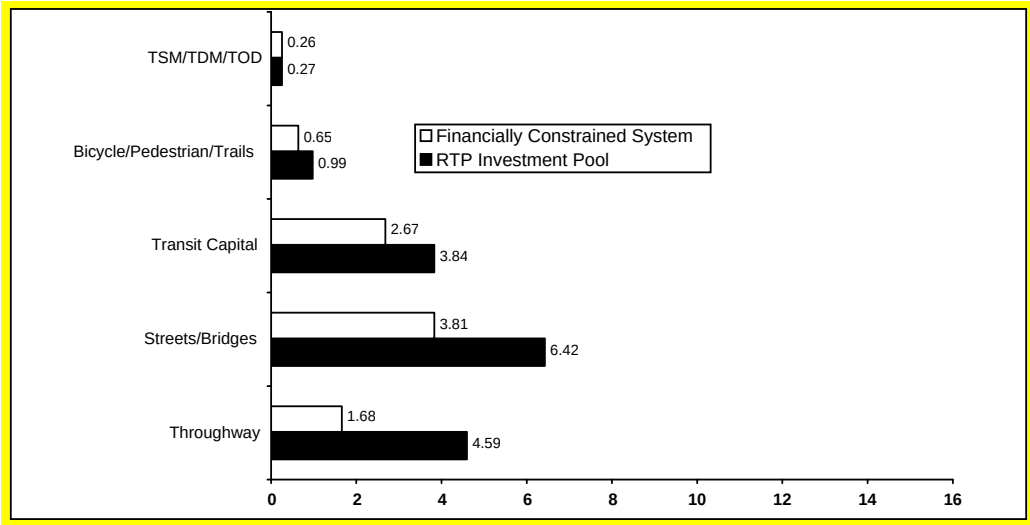
6.1.3 Overview of Financially Constrained System Projects and Programs

Similar to the 2035 RTP Investment Pool described in Chapter 4, the list of financially constrained system of investments was generated by local agencies, ODOT, TriMet, SMART and Metro and come from previously adopted plans and studies that were developed through a public process. See Chapter 4, Table 4.2 for more detail on project sources.

While the 2035 RTP Investment Pool represents a statement of need, the 2035 Financially Constrained System represents a statement of the highest priority need for the regional transportation system as defined by the project sponsors. The 2035 Financially System represents a scaled-back list of investments that matches the $9.07 billion of revenue expected to be available during the plan period. Overall an asset management and project development strategy was emphasized by ODOT, TriMet and Multnomah County when prioritizing investments in the transit, highway and bridges elements of the regional mobility corridors. Local agencies identified community-building investments consistent with the policy framework, 2040 implementation and air quality goals.

Figure 6.2 compares the RTP Investment Pool with the Proposed Financially Constrained System.

Figure 6.2
Comparison of RTP Investment Pool and Proposed Financially Constrained System
(billions in $2007)

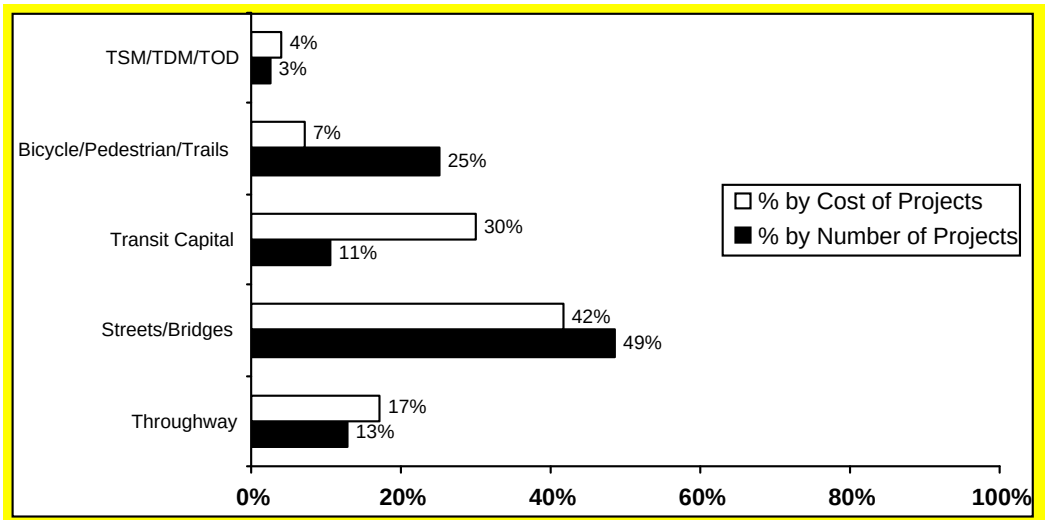


Note: All street and bridge projects include a bicycle and pedestrian component.

Source: Metro

Figure 6.3 graphs the number of projects proposed in the financially constrained system by mode. (Note: Throughout the document, cost estimates referring to "street-related" improvements include the full modal mix reflected in Figure 6.3).

Figure 6.3
2035 Financially Constrained System



Note: All street and bridge projects include a bicycle and pedestrian component.

Source: Metro

Examples of the types of projects included in Figure 6.3 include:

- *Willamette River Bridges preservation.* Continued rehabilitation of the Broadway, Hawthorne, Morrison and Burnside bridges, including sidewalk/multi-use path repair, deck replacement, painting and lift span repair, and improved bicycle and pedestrian bridge access. Project development funds for the Sellwood Bridge are also included with construction funds to be determined.
- *Expanded regional trails network.* Critical bike and pedestrian connections to the regional trails network and construction of many new multi-use paths throughout the region.
- *Freight improvements*. Key throughway, arterial street and freight rail expansions to maintain access for domestic and international rail, air and marine freight to reach its destination reliably with minimal delay.
- *Throughway expansion.* Targeted interchange and throughway expansions to address key bottlenecks on the freeway system and maintain regional mobility and access to industrial areas and intermodal facilities where goods move from one transportation mode to another. This includes interchanges on I-205, I-84, OR 217 and US 26 and mainline capacity on I-5 North and US 26 West). In addition, $270.5 million is proposed for project development, right-of-way acquisition and some initial construction for Projects of Statewide Significance. This includes I-5/Columbia River Crossing, Sunrise Project, I-5/99W Connector and the I-5/I-84 Interchange.
- *New street connections and arterial street expansion*. Most critical arterial street expansions needed to maintain access to the regional throughway system and maintain circulation and access between the central city, regional centers and town centers. New street connections across and parallel to regional mobility corridors to manage congestion and other new connections that improve access and circulation in 2040 Target Areas by all modes of travel.
- *Retrofit of major streets for walking, biking and transit.* Wider sidewalks, safer street crossings, landscaped buffers, improved bus stops and bikeways along major streets that serve the central city and regional centers, most town centers, corridors and main streets and some employment areas.
- *Transit capital improvements.* Construction of Milwaukie LRT, Lake Oswego Streetcar, Eastside Streetcar Loop in downtown Portland and McLoughlin Boulevard Bus Rapid Transit south of Milwaukie, connecting to Oregon City are identified as the priorities for major transit capital investments in the region. Provide new park-and-ride facilities, rehabilitation of the Steel Bridge, purchase and replacement of additional low-floor air-conditioned buses transit vehicles based on their lifecycle, transit station upgrades that include ticket machines and bicycle parking and better passenger amenities at bus stops, including maps, phones, electronic displays showing actual bus locations and arrival times, covered shelters, curb extensions and sidewalk connections, special lighting and benches.
- *Transportation system management*. System management strategies where traditional capacity investments would be too costly or not appropriate due to topographic, environmental or community impacts. Examples of these strategies include ramp metering, signal timing and access management, to better manage the flow of traffic on existing freeways and arterial streets to achieve maximum efficiency of the current road system without adding major new infrastructure. Improve transit service reliability through the use of transit preferential treatments and service adjustments such as reserved bus lanes, signal preemption, modified stop spacing and more direct routes.
- *Transportation Demand Management*. Demand management strategies to eliminate or delay the need for some improvements. Examples of these strategies include transportation management associations (TMAs) in the central city, regional centers and some town centers and employment areas. TMAs and other demand management strategies attempt to increase transit ridership, vehicle

occupancy, walking and biking and reduce the length of some trips, move some trips to off-peak travel periods or eliminate some trips altogether.

Other projects that are included in the 2035 Financially Constrained System, but are not identified in Figure 6.2 include:

- *State and local road maintenance.* Current levels of regional system operations, maintenance and preservation needs and relies on all currently identified revenue sources at the local, regional, state or federal level.
- *Expanded transit service.* The transit component requires a balancing of capital investments in service expansion through new and improved high capacity transit, bus and streetcar routes with the cost of on-going operations taking into account the need to add buses and LRT vehicles to the existing service to compensate for congestion and increased ridership demand. A minimum 1.0 percent increase per year in transit service hours is assumed, with an emphasis on light rail transit to the central city and regional centers. Faster and more direct transit connections to regional and town centers, corridors and main streets, minimizing the need to go to downtown Portland to transfer are also included. The increased bus service is timed to occur after 2014 with a priority on the addition of high quality frequent bus routes rather than greater coverage at lower levels of service. Continued expansion of LIFT service for the elderly and disabled at 4.6 percent per year is assumed in order to keep up with forecasted growth in demand for this service. This includes purchasing nearly 100 new LIFT vehicles per year by the year 2035, a significant capital investment.

Table 6.1 provides lists the proposed financially constrained system of investments.

These sections will be completed in Winter 2007 as part of the air quality conformity analysis, after the financially constrained system of investments is approved by JPACT and the Metro Council.

6.2 Effects of Growth on Financially Constrained System

This section will evaluate the performance of the Financially Constrained System and the corresponding impact on implementation of the 2040 Growth Concept. The financially constrained system was defined to meet federal requirements and demonstrate that current transportation funding is not adequate to serve this region's transportation needs during the plan period. Evaluation of this system of investments will occur as part of the air quality conformity analysis to be conducted in December 2007-January 2008. The results of the evaluation will be added to this chapter prior to final action on the federal component of the RTP by JPACT and the Metro Council in February 2008.

The analysis of this Financially Constrained network is expected to show an unacceptable level of congestion on many of the regional mobility corridors, with accompanying impacts on the region's ability to adequately serve expected growth in centers and maintain adequate access to intermodal facilities and industrial areas. This underscores the importance of exploring new and innovative combinations of investments and funding strategies for addressing the region's transportation needs during the state component of the RTP update in 2008.

6.3 Potential Environment Impacts of the 2035 RTP Financially Constrained System

This section will describes potential environmental impacts of and mitigation strategies for the financially constrained system of investments, consistent with federal SAFETEA-LU. This analysis will also be conducted in December 2007. The results of the evaluation will be added to this chapter prior to final action on the federal component of the RTP by JPACT and the Metro Council in February 2008.

2035 Regional Transportation Plan:

Proposed Financially Constrained System of Investments

October 15th, 2007

RTP Projects by Mode

- Streets & Throughways
- Regional Trail
- Bike / Pedestrian
- Transit

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Miles

(Dotted lines represent proposed projects and are not intended to identify specific alignments)

Table 6.1 -
Proposed 2035 RTP Financially Constrained System

Metro Project ID	Nominating Agency	Facility Owner / Operator	Project/Program Name	Project Start Location (Identify starting point of project)	Project End Location (Identify terminus of project)	Description	Estimated Cost ($2007)	Time Period	2040 Land Use
10000	Clackamas Co.	Clackamas Co.	Linwood/Harmony/ Lake Rd. overcrossing/ Intersection	Linwood/Harmony/ Lake Rd.		Add NB right turn lane, add EB right turn lane, add WB left turn lane and grade separate UPRR.	$20,000,000	2008-2017	Regional center
10001	Clackamas Co.	ODOT	Johnson Creek Blvd. Interchange Improvements	JCB/I-205 interchange		Add loop ramp and NB on-ramp; realign SB off-ramp.	$9,800,000	2008-2017	Employment area
10002	Clackamas Co.	Clackamas Co.	Johnson Creek Blvd. Improvements	45th	82nd	Widen to three to five lanes and widen bridge over Johnson Creek .	$40,790,000	2018-2025	Industrial area
10003	Clackamas Co.	Clackamas Co.	Harmony Rd. Improvements	Hwy 224	SE 84th Ave.	Widen to five lanes, add bike lanes and sidewalks.	$23,400,000	2008-2017	Regional center
10004	Clackamas Co.	Clackamas Co.	Otty Rd. Improvements	82nd Ave.	92nd Ave.	Widen, add turn lanes, sidewalks, on-street parking, central median and landscaping.	$7,340,000	2008-2017	Employment area
10005	Clackamas Co.	Clackamas Co.	West Monterey Extension	82nd Ave.	Fuller Rd.	New two-lane extension.	$6,200,000	2018-2025	Regional center
10007	Clackamas Co.	Clackamas Co.	Causey Ave. overcrossing	over I-205	Bob Schumacher Rd.	Extend new three-lane crossing over I-205.	$14,800,000	2018-2025	Regional center
10008	Clackamas Co.	Clackamas Co.	79th Ave. Extension	Johnson Creek Blvd	King Rd.	Build N-S collector west of 82nd Ave..	$12,780,000	2008-2017	Employment area
10009	Clackamas Co.	Clackamas Co.	Fuller Rd. Improvements	Otty Rd.	Johnson Creek Blvd.	Widen street and add turn lanes, sidewalks, on-street parking, central median and landscaping.	$4,000,000	2008-2017	Employment area
10012	Clackamas Co.	Clackamas Co.	Fuller Rd. Improvements	Harmony Rd.	Monroe St	Widen to three lanes to include disconnecting auto access to King Road.	$5,300,000	2026-2035	Employment area
10013	Clackamas Co.	Clackamas Co.	Boyer Dr. Extension	82nd	Fuller Rd.	New two-lane extension.	$2,520,000	2008-2017	Employment area
10014	Clackamas Co.	Clackamas Co.	82nd Ave. Multi-Modal Improvements	Clatsop Ave.	Monterey Ave.	Widen to add sidewalks, lighting, central median, planting strips and landscaping.	$13,600,000	2026-2035	Regional center
10018	Clackamas Co.	Clackamas Co.	Improvements	Monterey Ave.	Sunnybrook Blvd.	Complete boulevard design improvements.	$5,400,000	2008-2017	Regional center
10019	Clackamas Co.	Clackamas Co.	West Sunnybrook Rd. Extension	82nd	Harmony Rd.	Construct three-lane extension.	$6,970,000	2008-2017	Regional center
10020	Clackamas Co.	Clackamas Co.	Clackamas County ITS Plan	Countywide		Deploy traffic responsive signal timing, ramp metering, traffic management equipment for better routing of traffic during incidents along the three key ODOT corridors - I-205, I-5, 99E. Install signal controller upgrades and update county ITS plan.	$6,500,000	2008-2017	Regional center
10021	Clackamas Co.	Clackamas Co.	Improvements	Hwy 212	Lawnfield Rd.	Extend Industrial Way from Mather Road to Lawnfield Road.	$8,570,000	2008-2017	Industrial area
10022	Clackamas Co.	Clackamas Co.	SE 82nd Dr. Improvements	Hwy 212	Lawnfield Rd.	Widen to five lanes to accommodate truck movement.	$12,350,000	2026-2035	Industrial area
10025	Clackamas Co.	Clackamas Co.	Phase 2	Hwy 213	College	Widen to 5 lanes with sidewalks and bike lanes.	$5,800,000	2008-2017	Industrial area
10026	Clackamas Co.	Clackamas Co.	Phase 3	Clackamas Community College	Urban Growth Boundary	Widen to 4 lanes with sidewalks and bike lanes.	$12,920,000	2008-2017	Industrial area
10029	Clackamas Co.	Clackamas Co.	Stafford Rd Improvements	I-205	Rosemont Rd.	Widen to three lanes including bike lanes and sidewalks.	$46,300,000	2018-2025	Other
10033	Clackamas Co.	Clackamas Co.	172nd Ave. Improvements	Foster Rd./190th	Hwy 212	Widen to five lanes including new bridge, construct connection to 190th.	$38,480,000	2008-2017	Industrial area
10038	Clackamas Co.	Clackamas Co.	242nd	Multnomah County line	Hwy. 212	Reconstruct 242nd and widen to three/five lanes. The Damascus/Boring Concept Plan identifies 242nd as a community bus transit classification.	$53,340,000	2018-2025	Town center
10040	Happy Valley	Clackamas Co.	162nd Ave. Extension North	Hagen Rd.	Clatsop St.	Construct a new 3 lane roadway with traffic signals.	$27,970,000	2018-2025	Neighborhood
10041	Happy Valley	Clackamas Co.	162nd Ave. Extension South	157th Ave.	Hwy. 212	Construct a new 3 lane roadway with traffic signals, bridge over Rock Creek.	$22,610,000	2018-2025	Employment area
10042	Clackamas Co.	Clackamas Co.	97th realignment	Lawnfield	Sunnybrook Blvd.	Realign the existing Lawnfield Road from 98th to 97th, reduce the grade from 18% to 8%.	$20,650,000	2008-2017	Industrial area
10047	Clackamas Co.	Clackamas Co.	Holcomb Blvd.	Abernethy Rd.	Bradley Rd.	Reconstruct & widen (urban).	$22,790,000	2008-2017	Neighborhood
10048	Clackamas Co.	Clackamas Co.	Holly Lane	Redland Rd.	Maple Lane	Turn lanes, bike lanes, sidewalks, intersection improvements, bridge replacement.	$20,740,000	2018-2025	Other
10052	Clackamas Co.	Clackamas Co.	Mather Rd.	SE 82nd Dr.	Industrial Way	Extend Mather Rd. across railroad to SE 82nd Dr.	$17,250,000	2008-2017	Neighborhood
10057	Clackamas Co.	Clackamas Co.	Redland Rd.	Abernethy Rd.	UGB	Turn lanes, bike lanes, sidewalks, intersection improvements, bridge replacements (2).	$17,060,000	2008-2017	Town center
10066	Clackamas Co.	Clackamas Co.	92nd/Johnson Creek Blvd. intersection	92nd/JCB intersection		Add turn lanes on 92nd (northbound left at JCB, and northbound right at Idleman).	$1,000,000	2008-2017	Employment area
10067	North Clackamas PRD	Clackamas Co.	Phillips Creek Trail	I-205 Trail	N Clackamas Greenway	Build trail through Clackamas Town Center for access to light rail.	$2,270,000	2008-2017	2040 corridor
10069	North Clackamas PRD		East Buttes Powerline Trail	Springwater/Gresham-Fairview trail	Clackamas Greenway	Build trail linking Gresham and the Clackamas River.	$1,900,000	2008-2017	2040 corridor
10070	North Clackamas PRD		Mt. Scott Creek Trail	Mt. Talbert	Springwater corridor	Build trail to Mt. Talbert regional park.	$5,100,000	2008-2017	2040 corridor
10071	North Clackamas PRD		Scouter's Mt. Trail	Springwater/Powell Butte	Springwater corridor	Build trail to/on Scouter's Mt.	$9,070,000	2008-2017	2040 corridor

Table 6.1 -
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Metro Project ID	Nominating Agency	Facility Owner / Operator	Project/Program Name	Project Start Location (Identify starting point of project)	Project End Location (Identify terminus of project)	Description	Estimated Cost ($2007)	Time Period	2040 Land Use
10072	Damascus		Sunnyside Rd. Frequent Bus	Clackamas TC	Damascus TC	Construct improvements that enhance Frequent bus service.	$1,000,000	2008-2017	Town center
10073	Damascus	ODOT	Hwy.-212 intersections	SE 162nd	Anderson Rd.	Existing Highway 212 remains two lanes with turn pockets from 162nd Ave. to Anderson Road south of limited access parkway. Design elements to be included are sidewalks, bike lanes, and a landscaped buffer.	$5,970,000	2008-2017	Industrial area
10074	Damascus		New Connection	Parkway Interchange Near 190th Ave.	Arterial #3	Rock Creek junction interchange to 172nd Ave through Rock Creek industrial area.	$19,800,000	2018-2025	Industrial area
10075	Damascus	Damascus	Royer Rd. Connection	Royer Rd. North Segment End	Royer Rd. South Segment	Construct a roadway connection between the northern and southern sections of Royer Road.	$5,980,000	2026-2035	Neighborhood
10076	Damascus	Damascus	SE Sunnyside Rd East Extension	SE 172nd Ave.	SE 242nd Ave.	Extend Sunnyside Road east from 172nd Ave to 242nd Ave. Evaluate alignment options between Bohna Park Road and Tillstrom Road for the connection from Foster Road to 242nd Ave.	$101,500,000	2018-2025	Town center
10077	Damascus	Damascus	222nd Ave.	Hwy. 212	Tillstrom Rd.	turn pockets at intersections. All major arterials are to be designed with sidewalks, bike lanes, and a landscaped buffer between sidewalk and curb or on-street parking in town center.	$30,370,000	2026-2035	Neighborhood
10078	Damascus	ODOT	Hwy. 224	Sunrise End	Carver Bridge	Widen Highway 224 to four lanes with turn pockets at intersections to Carver bridge. The Damascus/Boring Concept Plan identifies Highway 224 as a community bus transit classification.	$12,150,000	2018-2025	Industrial area
10079	Damascus	Damascus	Widen Tillstrom Rd.	Foster Rd.	242nd Ave.	Widen Tillstrom Rd to 4 lanes with turn pockets at intersections. Damascus/Boring Concept Plan identifies Tillstrom Rd as a transit street.	$18,480,000	2026-2035	Town center
10081	Happy Valley		122nd/129th Improvements	Sunnyside Rd.	King Rd.	Widen to three lanes, smooth curves.	$13,360,000	2008-2017	Town center
10082	Happy Valley		Improvements	Happy Valley City Limits	145th Ave.	Widen to three lanes.	$20,820,000	2026-2035	Town center
10083	Happy Valley		Clatsop St. Extension West	132nd Ave.	Mt. Scott Blvd	Construct a new 3 lane roadway with traffic signals.	$17,190,000	2018-2025	Neighborhood
10088	Lake Oswego		Lower Boones Ferry Rd.	I-5	Portland	Improves bike/ped connections within this corridor.	$20,720,000	2018-2025	Town center
10089	Lake Oswego		Lake Oswego Transit center	Lake Oswego downtown	Near street car	Move existing transit center closer to the street car for better connectivity.	$7,790,000	2018-2026	Town center
10092	Wilsonville		Tonquin Trail	line	Boones Ferry Landing	Shared use path with some on-street portions.	$2,000,000	2008-2017	Other
10095	Milwaukie	Milwaukie	Railroad Ave. Bike/Ped Improvement	37th Ave.	Linwood Ave.	Construct sidewalks and bike lanes. Key E-W connection parrallel route for Highway 224 mobility corridor.	$21,500,000	2008-2017	Town center
10096	Milwaukie	Milwaukie	37th Ave. Bike/Ped Improvement	Hwy. 224	Harrison St.	Construct sidewalks and bike lanes. Key connection between Highway 224 and Harrison Street (Arterial).	$2,800,000	2018-2025	Town center
10099	Milwaukie	Milwaukie	Monroe Bike Boulevard	21st Ave.	Linwood Ave.	Boulevard treatment.	$2,400,000	2008-2017	Town center
10100	Milwaukie	Milwaukie	Downtown Station Area Streetscaping (21st & Main)	TBD	TBD	Reconstruct streetscape, including street trees, rain gardens, ADA ramps, street furniture, parking meters, and pedestrian-scale lighting.	$6,700,000	2008-2017	Station community
10101	Milwaukie	Milwaukie	Removal/Bridge Replacment/Milwaukie TC River Access Improvements	Washington	Adams	Remove dam and bridge; replace bridge with full bike and pedestrain facilities and a multi-use path undercrossing.	$12,400,000	2008-2017	Town center
10103	Milwaukie	Milwaukie	King Rd. Blvd. Project	42nd Ave.	Linwood Ave.	Construct boulevard, including new sidewalks, bus stop shelters, planter strips, medians, pedestrian scale lighting.	$14,300,000	2018-2025	Town center
10104	Milwaukie	Milwaukie	17th Ave. Trolley Trail Connector	17th Ave. & McLoughlin	17th Ave. & Ochoco	Construct sidewalks; improve bus stops; and correct gaps in bikelanes on 17th Ave. to provide connection between Trolley Trail and Springwater Corridor. Alternative alignment: multi-use path along Johnson Creek from Lava Drive to Ochoco.	$3,200,000	2008-2017	Town center
10109	Milwaukie	Milwaukie	Kellogg Creek Trail	99-E	Miramonte Lodge	Construct low-impact trail-type sidewalk.	$3,100,000	2008-2017	Town center
10110	Milwaukie	Milwaukie	Milwaukie TC reconstruction (including layover improvements)	Downtown TC	Milwaukie Park & Ride	Construct new bus shelters/stops at Transit Center, consolidating multiple bus stops. Build bus layover facility at Milwaukie Park and Ride.	$4,900,000	2008-2017	Intermodal facility
10113	Milwaukie		River Rd. Sidewalks	99-E	City Limit	Construct sidewalks.	$2,400,000	2026-2035	Town center
10118	Oregon City	ODOT	McLoughlin Blvd. Improvements - Phase 3	Railroad Tunnel	10th St.	Complete boulevard design improvements and viaduct improvements.	$14,300,000	2018-2025	Regional center
10124	Oregon City	Oregon City	Molalla Ave. Streetscape Improvements Phase 3	Holmes	Warner Milne	Streetscape improvements including widening sidewalks, sidewalk infill, ADA accessibility, bike lanes, reconfigure travel lanes, add bus stop amenities.	$700,000	2018-2025	Regional center

Table 6.1 -
Proposed 2035 RTP Financially Constrained System

Metro Project ID	Nominating Agency	Facility Owner / Operator	Project/Program Name	Project Start Location (Identify starting point of project)	Project End Location (Identify terminus of project)	Description	Estimated Cost ($2007)	Time Period	2040 Land Use
10125	Oregon City	Oregon City	Molalla Ave. Streetscape Improvements Phase 4	Beavercreek	Hwy. 213	Streetscape improvements including widening sidewalks, sidewalk infill, ADA accessibility, bike lanes, reconfigure travel lanes, add bus stop amenities.	$8,000,000	2008-2017	Regional center
10126	Oregon City	Oregon City	Swan Extension	Swan	UGB	Through lanes, sidewalks, bike lanes, turn lanes to serve UGB expansion area.	$41,000,000	2018-2025	Regional center
10127	West Linn	ODOT	Hwy. 43 Improvements	Holly St.	Arbor Dr.	Although the project is now in the conceptual design stage (to be completed by June 30, 2007), the project should consist of roadway improvements such as widening, installation of medians, turn lanes, street trees, signal interconnections, bike lanes.	$21,400,000	2008-2017	Town center
10128	West Linn	West Linn	Willamette Falls Dr./bicycle lanes and streetlights	Hwy. 43	10th St.	Widen street to provide bike lanes and sidewalks on a narrow roadway. This will provide a direct connection between two town center areas. Bicycle lanes will be 6' wide adjacent to 12' wide travel lanes. The addition of streelights to this roadway will.	$2,500,000	2008-2017	Station community
10129	West Linn		Willamette River Greenway Trail	Willamette Park	Lake Oswego - Willamette River trail	Paved trail running parallel to the Willamette River from Willamette Park at the mount of the Tualatin River eventually to the Lake Oswego City Limits facilitating connection to the Willamette River Trail with neighboring cities as part of the Metro Region.	$2,000,000	2018-2025	Town center
10130	Wilsonville	Wilsonville	Kinsman Rd. Extension from Barber St. to Boeckman Rd.	Barber St.	Boeckman Rd.	Extend 3 lanes with sidewalks and bike lanes.	$5,750,000	2008-2017	Employment area
10131	Wilsonville	Wilsonville	Tooze Rd. Improvements	110th Ave.	Grahams Ferry Rd.	trail system.	$3,800,000	2008-2017	Neighborhood
10132	Wilsonville	Wilsonville	Boeckman Rd./I-5 Overcrossing Improvements	Boberg Rd.	Parkway Ave.	Widen Boeckman Road bridge over I-5 to 3 lanes. Add bike/pedestrian connections to regional trail system.	$13,600,000	2008-2017	Intermodal facility
10133	Wilsonville	Wilsonville	French Prairie Bicycle/Pedestrian Bridge	Boones Ferry Rd.	ButtevilleRd.	New bicycle/pedestrian/emergency vehicle only bridge crossing the Willamette River.	$15,000,000	2008-2017	Other
10134	Wilsonville	Wilsonville	SW 65th, Elligsen Rd. and Stafford road Intersection Improvemnts	Intersection of SW 65th, Elligsen Rd. and Stafford Rd.	Intersection of SW 65th, Elligsen Rd. and Stafford Rd.	Currently there are two intersections with a dangerous grade difference and within 100 ft of one another. Combining them into one or the construction of a round-about will help with safety and navigabiliity concerns.	$1,000,000	2008-2017	Other
10135	West Linn	West Linn	19th St. Improvements	Blankenship Rd.	Willamette Falls Dr.	Improvements to include curb, gutter, pavement widening and sidewalks.	$1,200,000	2008-2017	Town center
10137	Damascus	Damascus	Multi-Use Local/Regional Trail and PRT Study	Damascus	N/A	access and connects with Happy Valley and Gresham. Study will also evaluate potential for personal rapid transit.	$2,000,000	2008-2017	Town center
10138	Damascus	Damascus	Hwy 212 widening to 5 lane boulevard	Sunrise Unit 1 Terminus	East City Limits	Widen Highway 212 to a 5 lane boulevard section through Damascus.	$58,500,000	2018-2025	Town center
10141	Oregon City	ODOT	I-205/Hwy. 213 Interchange Phase 1	Redland Rd.	I-205	Grade separate SB Hwy. 213 at Washington Street and add a northbound lane to Hwy. 213 from just south of Washington Street to the I-205 on-ramp. Reconstruct I-205 SB off-ramp to Hwy. 213 to provide more storage and enhance freeway operations and safety.	$22,000,000	2008-2017	Regional center
10146	Oregon City	ODOT	Phase 2	Dunes Dr.	Clackamas River Bridge	Complete boulevard and gateway improvements.	$4,000,000	2008-2017	Regional center
10147	Oregon City	Oregon City	Newell Creek Canyon Trail (East)	Hwy 213 and Redland Rd.	Beavercreek Rd.	Regional trail would follow the Oregon City-Molalla interurban railroad bench on the east side of Newell Creek Canyon.	$3,000,000	2018-2025	Neighborhood
10148	Oregon City	Oregon City	Oregon City Loop Trail	Beavercreek Rd.	Hwy 213	Regional trail would generally follow the Oregon City UGB on a collection of local roads, through new development, along powerline right-of-way, and down the bluff to link up with the Promenade in downtown Oregon City	$3,000,000	2008-2017	Neighborhood
10149	Oregon City	Oregon City	Beaver Lake Trail	Clackamas Community College	Oregon City UGB	Regional trail would travel from Clackamas Community College through the Oregon City High School campus to the airstrip area. The trail would skirt the golf course area and continue to Beaver Lake.	$500,000	2008-2017	Employment area
10150	Oregon City	Oregon City	Barlow Rd. Trail	Abernethy Rd.	Oregon City city limits	Regional trail would follow the perceptive alignment of the historic Barlow Road from Abernethy Green to the Oregon City UGB. The trail would primarily utilize existing and proposed roadways.	$1,000,000	2008-2017	Regional center
10153	Wilsonville	Wilsonville	Barber St. Extension from Kinsman Rd. to Villebois Village	Kinsman Rd.	Villebois Village	Extend 3 lanes with sidewalks and bike lanes.	$8,900,000	2008-2017	Employment area

Table 6.1 -
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10154	Wilsonville	ODOT	Wilsonville Rd./I-5 Interchange Improvements - Setback Abutments & Widen Wilsonville Rd.	Town Center Loop W	Boones Ferry Rd.	Provide additional left-turn lanes, setback abutments, improves signal synchonization, fixes sight distance problems, and provides for enhnaced bike/ped safety.	$11,000,000	2008-2017	Town center
10155	Wilsonville	ODOT	Wilsonville Rd./I-5 Interchange Improvements - On/Off Ramps	N. of Interchange	S. of Interchange	Widen and lengthen on/off ramps.	$12,000,000	2008-2017	Town center
10158	ODOT		I-5 Northbound Off Ramp at SW Macadam	I-5	I-405	Construct new off-ramp at NB I-5 to NB Macadam Ave and provide safety and modernization improvements to I-5 S.	$40,000,000	2008-2017	Portland Central City
10159	Portland		Springwater [Trail Connection] - Sellwood Gap	SE Umatilla	SE 19th Ave.	Construct trail-with-rail shared use path between Springwater on the Willamette and Springwater Three Bridges.	$3,032,411	2008-2017	Main street
10160	Portland	ODOT	Lloyd District Access Improvements	I-5		Add traffic signals and improve intersections at NE 2nd and Broadway and NE 2nd and Weidler Streets.	$998,243	2008-2017	
10161	Portland		Portland Transit Mall Restoration and reconstruction for Light Rail Transit	Irving	Jefferson	Extend mall and reconfigure to accommodate light rail tracks and stations. Repairs to Transit Mall including sidewalk brick work, reconstruction, curbs, gutters, and other pedestrian improvements.		2018-2025	Portland Central City
10162	Portland		Willamette Greenway Trail - South Waterfront	Marquam Bridge (overhead)	SW Lowell	Provide two paths in order to separate bicyclists from pedestrians in remaining gaps (Marquam Bridge to SW Gibbs, SW Lowell to SW Lane, Benz Springs) of South Waterfront's Willamette Greenway trail.	$2,650,000	2008-2017	Town center
10163	Portland	ODOT	I-5 at Gibbs, SW: Pedestrian/Bike Overcrossing		I-5/SW Gibbs Bridge	Construct a bike and pedestrian bridge of I-5 at SW Gibbs to connect the Corbett-Terwilliger-Lair Hill neighborhood to North Macadam.	$12,259,000	2008-2017	
10164	Portland		South Portal, Phase I & II	Bancroft/Hood/Macadam	Bancroft/Hood/Macadam	Improve SW Bancroft, SW Moody and SW Bond Streets.	$57,330,684	2008-2017	Portland Central City
10165	Portland		Moody/Bond Ave, SW (Sheridan to Gibbs)	River Parkway	SW Bancroft	Five lane street improvement from SW Sheridan to SW Gibbs Street.	$18,834,515	2008-2017	Portland Central City
10166	Portland		NW Burnside at Skyline Rd.	Skyline Rd.		Intersection improvements.	$1,850,716	2026-2035	Portland Central City
10169	Portland		Burnside/Couch, East [Blvd/Streetscape]	E 12th	Burnside Bridge	Implements a one-way couplet design including new traffic signals, widened sidewalks, curb extensions, bike lanes on-street parking and street trees.	$23,908,393	2008-2017	Portland Central City
10171	Portland		Burnside/Couch, West [Blvd/Streetscape]	Burnside Bridge	W 15th	Implements a one-way couplet design including new traffic signals, widened sidewalks, curb extensions, bike lanes on-street parking and street trees.	$75,895,353	2008-2017	Portland Central City
10173	Portland/ODOT		Macadam, SW (Bancroft - Sellwood Br): ITS	SW Bancroft	Sellwood Bridge	Install needed ITS infrastructure (communication network, new traffic controllers, CCTV cameras, and vehicle /pedestrian detectors). These ITS devices allow us to provide more efficient and safe operation of our traffic signal system.	$401,794	2018-2025	Portland Central City
10174	Portland		Going, N (Interstate - Greeley): ITS	Interstate	Greeley	Install needed ITS infrastructure (communication network, new traffic controllers, CCTV cameras, and vehicle /pedestrian detectors). These ITS devices allow us to provide more efficient and safe operation of our traffic signal system.	$950,024	2008-2017	Industrial/Employment area
10175	Portland/ ODOT		Yeon/St. Helens, NW (US 30): ITS	NW Yeon/St. Helens		Install needed ITS infrastructure (communication network, new traffic controllers, CCTV cameras, and vehicle /pedestrian detectors). These ITS devices allow us to provide more efficient and safe operation of our traffic signal system.	$885,499	2008-2017	Industrial/Employment area
10176	Portland		PSL - Eastside Extension	NW Lovejoy/10th	NE 7th/ Oregon.	Construct streetcar from NW Lovejoy/10th to NE 7th / Oregon.	$147,000,000	2018-2025	Portland Central City
10177	Portland		PSL - OMSI to Riverplace or South Waterfront (close loop)	NE Oregon	SE Water	Contstruct streetcar from NE Oregon to SE Water.	$19,000,000	2018-2025	Portland Central City
10178	Portland		Going St Bridge, N: Seismic Retrofit	Going St Overpass	n/a	superstructure to help minimize the risk of a structural collapse in a major earthquake.	$4,000,000	2008-2017	Industrial/Employment area
10181	Portland		Fifties Bikeway, NE/SE (Tillamook to Woodstock)	SE Woodstock	NE Tillamook	Curb extensions, median refuges, signal modifications, and striping changes to create a north-south bicycle boulevard, along various interconnected portions of 52nd-57th streets between NE Thompson and SE Woodstock Blvd.	$1,595,049	2026-2035	

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Proposed 2035 RTP Financially Constrained System

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10182	Portland/ODOT		St. Johns Pedestrian District, N			Enhance pedestrian access to transit, improve safety, and enhance the streetscape such as better lighting and crossings. Improvements including realigning the "ivy" island, curb extensions, a new traffic signal at Richmond/Lombard, and pedestrian connections between St. Johns and the riverfront based on the St. Johns/Lombard Plan.	$5,000,000	2008-2017	Town Center, Main Street or Station Community
10185	Portland		Foster & Woodstock, SE (87th - 94th): Street Improvements, Phase I	SE 87th	SE 94th	Implement Lents Town Center Business District Plan with new traffic signals, pedestrian amenities, wider sidewalks, pedestrian crossings, street lighting, increased on-street parking.	$13,812,000	2008-2017	Town Center, Main Street or Station Community
10186	Portland		Foster & Woodstock, SE (94th - 101th): Street Improvements, Phase II	SE 94th	SE 101st	Implement Lents Town Center Business District Plan with new traffic signals, pedestrian amenities, wider sidewalks, pedestrian crossings, and street lighting.	$11,510,000	2008-2017	Town Center, Main Street or Station Community
10187	Portland		Foster Rd., SE (82nd - 87th): Lents Town Center Street Improvements	SE 82nd	SE 87th	Implement Lents Town Center Business District Plan with new traffic signals, pedestrian amenities, wider sidewalks, pedestrian crossings, street lighting, and on-street parking as appropriate.	$4,625,000	2008-2017	Town Center, Main Street or Station Community
10189	Portland		Capitol Hwy, SW	SW Multnomah Blvd	SW Taylors Ferry	Improve SW Capitol Highway from SW Multnomah Boulevard to SW Taylors Ferry Road per the 1996 Capitol Highway Plan.	$9,613,958	2008-2017	Town Center, Main Street or Station Community
10190	Portland		23rd Ave., NW (Lovejoy - Burnside): Rd. Reconstruction	NW Lovejoy	W Burnside	Rebuild street.	$3,350,000	2008-2017	Town Center, Main Street or Station Community
10191	Portland		Hwy - Multnomah): Multi-modal Improvements	SW Capitol Hwy	SW Multnomah Blvd	Reconstruct road to three lanes with signal improvements at Multnomah intersection, drainage, bike lanes, sidewalks and curbs.	$12,905,000	2008-2017	
10192	Portland		Division Streetscape and Reconstruction	SE 6th Ave. SE 39th Ave.	SE 39th Ave.	The project will design and build streetscape and transportation improvements between SE 12th Ave and SE 39th Ave, complete base repair and pavement reconstruction between SE 6th Ave and SE 10th Ave, and grind and overlay asphalt in the area between SE 10th Ave and SE 39th Ave.	$5,848,135	2008-2017	
10194	Portland		Killingsworth, N (Interstate - MLK Jr Blvd): Street Improvements	N Interstate	MLK Jr Blvd	Construct street improvements to improve pedestrian connections to Interstate MAX LRT and to establish a main street character promoting pedestrian-oriented activities. Commentary: Update project to reflect recommendations in the Killingsworth Street Improvements Planning Project.	$4,900,000	2008-2017	Town Center, Main Street or Station Community
10196	Portland		Cully Blvd. Green St.	NE Prescott St.	NE Killingsworth	Prescott Street and NE Killingsworth Street. Project planning and preliminary engineering will analyze alternatives for the roadway with public input and involvement.	$5,255,633	2018-2025	
10197	Portland		Russell St. Improvements, N	N Williams	N Interstate	Mississippi (Russell - Interstate) to enhance ped connections from Eliot neighborhood and Lower Albina dist to the LRT station. Improve the N williams at N Stanton intersection.	$3,300,000	2018-2025	Town Center, Main Street or Station Community
10198	Portland		122nd, NE/SE (NE Airport Way to SE Powell Blvd): ITS	Airport Way	SE Powell Blvd	controllers, CCTV cameras, and vehicle /pedestrian detectors). These ITS devices allow us to provide more efficient and safe operation of our traffic signal system.	$515,703	2018-2025	
10199	Portland		SE 136th Ave. (Division to Powell) Bikeway	SE Division	SE Foster	curb with 2-13' traffic lanes and 2-5' bike lanes; 6" curbs, 9' swales and 6' sidewalks on both sides.	$6,090,590	2026-2035	
10201	Portland		102nd Ave., NE (Weidler - Glisan): Gateway Plan District Multi-modal Improvements, Phase I	NE Weidler	NE Glisan	Implement Gateway Regional Center plan with boulevard design retrofit, new traffic signals, improved pedestrian facilities and crossings, street lighting, bicycle lanes, and multi-modal safety improvements.	$3,234,000	2008-2017	Regional center
10202	Portland		102nd Ave, NE/SE (Glisan - Stark): Gateway Plan District Multi-modal Improvements, Phase II	NE Glisan	SE Market	Implement Gateway regional center plan with boulevard design retrofit, new traffic signals, improved pedestrian facilities and crossings, street lighting and new bicycle facilities.	$2,137,561	2008-2017	Regional center
10203	Portland		Glisan St, NE (122nd - City Limits): Multi-modal Improvements	NE 122nd	City Limits	Infill missing sidewalk, add curb ramps at corner, add 3 median island crossings, and add a signal.	$3,100,241	2018-2025	
10204	Portland		Gateway Regional Center, Local and Collector Streets	NE Weidler/97th	NE Glisan/102nd	High priority local and collector street and pedestrian improvements in the Gateway Regional Center.	$32,648,540	2008-2017	Regional center
10206	Portland		& off-street trail gaps between I-5 and 185th	I-5	NE 185th Ave.	Close gaps in Marine Dr bike lanes (NE 6th to 28th);and trail (Bridgeton levee & one connector, 28th to 33rd, 112th to 122nd, gaps near 185th)	$2,130,835	2008-2017	Industrial area

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10208	Portland		MLK O-Xing/Turn Lanes (Columbia-Lombard)	Intersections of MLK and NE Columbia Blvd/Lombard		Intersection and signalization improvements with right turn lane.	$2,228,909	2008-2017	Industrial/Employment area
10209	Portland		Alderwood)	Columbia Slough	NE Alderwood	Improve NE 92nd Drive from Columbia Slough to Alderwood Rd.	$2,406,547	2008-2017	
10210	Portland		Cornfoot):Roadway & Intersection Improvements	NE 47th	NE Columbia Blvd	movements to the cargo area located within the airport area. Project includes sidewalk and bikeway improvements.	$5,541,678	2008-2017	Industrial/Employment area
10212	Portland		Airport Way/122nd, NE: Intersection Improvement	NE Airport Way/122nd		Add northbound left turn lane, modify traffic signal, and reconstruct island.	$1,100,000	2008-2017	Industrial/Employment area
10213	Port/ Portland		Airport Way, NE (I-205 to NE 158th Ave.): ITS	I-205	NE 158th	Install needed ITS infrastructure (communication network, new traffic controllers, CCTV cameras, and vehicle /pedestrian detectors). These ITS devices allow us to provide more efficient and safe operation of our traffic signal system.	$278,251	2008-2017	Industrial/Employment area
10214	Portland/ ODOT		Lombard, N (Rivergate - to T-6): Multi-modal Improvements	Rivergate	T-6	Widen N Lombard to include two travel lanes, a non-continuous center turn land, medians, bike lanes, sidewalks and planting strips.	$34,517,517	2008-2017	Industrial/Employment area
10215	Portland		Foster Rd., SE (136th - Jenne): Multi-modal Improvements	SE 136th	SE Jenne Rd.	Widen street to three lanes to provide two travel lanes, continuous turn lane, bike lanes, sidewalk, and drainage.	$16,963,856	2008-2017	
10216	Portland		SmartTrips Portland, a city-wide individualized marketing strategy			SmartTrips Portland is a comprehensive approach to reduce drive-alone trips and increase biking, walking and public transit in targeted geographic areas or key transportation corridors of the city. It incorporates the innovative and highly effective “individualized marketing” methodology, which hand delivers packets of information to residents who wish to learn more about transportation options. Key components feature biking and walking maps and organized activities which get people out in their neighborhoods or places of employment to shop, work, and discover how many trips they can easily, conveniently, and safely make without using a car. Success is tracked by evaluating qualitative and quantitative results from surveys and other performance measures.	$4,450,000	2009-2018	other
10217	Region		Lombard at Columbia Slough, N: Overcrossing	N Lombard/Columbia Slough Overcrossing		Add sidewalk and bike lanes to strengthened bridge.	$9,767,000	2008-2017	
10218	Portland		Burgard-Lombard, N: Street Improvements	Intersection of N Burgard/Columbia	UPRR Bridge on N. Lombard	From UPRR Bridge to N Columbia Blvd. Widen street to include 2 12-foot travel lanes, continuous left turn lane, bike lanes and sidewalk.	$24,884,000	2008-2017	
10219	ODOT/ Portland		Argyle on the Hill, N Columbia to N Denver Ave.	Columbia Blvd	N Denver	New N Argyle street connection, west of I-5.	$11,773,032	2018-2025	
10220	Portland		Seventies Greenstreet and Bikeway, NE	NE Killingsworth Ave.	Clatsop St.	Develop a combined pedestrian greenway and bike boulevard including crossing improvements at arterials, streetlighting, and public art from Killingsworth to Clatsop. Develop a combined pedestrian greenway and bike boulevard including crossing improvements at arterials.	$4,120,727	2018-2025	
10221	Portland		Skyline, NW (Hwy 26 - City Limits): Shoulder Improvements	Hwy 26	City Limits	Widen existing 22' of pavement to 32', and add 2' shoulders adjacent to lanes.	$8,088,812	2026-2035	
10222	Portland		Flavel Dr, SE	SE 45th	Clatsop	Fully improve street from SE 45th to Clatsop Street with travel lanes, curbs, swales, sidewalks, and some bike lanes.	$7,294,088	2026-2035	
10223	Portland		122nd, SE (at Morrison): Pedestrian Overcrossing			Provide an at-grade improved pedestrian crossing on SE 122nd Ave..	$1,993,000	2026-2035	
10224	Portland		Barbara Welch Rd., SE:Multimodal Improvements	SE Foster	City Limits	Widen existing 20' of pavement to new 34' roadway with travel lanes, bike lanes, curb and sidewalk.	$20,191,557	2026-2035	
10225	Portland		Powellhurst/Gilbert Pedestrian Improvements to SE 122nd Ave.	SE Harold	SE Raymond	Add sidewalks to SE 122nd Ave. between SE Harold Street and SE Raymond Street.	$1,473,288	2026-2035	
10226	Portland		Hamilton St., SW	SW Dosch	SW Scholls Ferry Rd.	Improve SW Hamilton Street between SW Dosch and Scholls Ferry Road.	$12,420,360	2026-2035	
10227	Portland		Stephenson, SW (Boones Ferry - 35th): Multi-modal Improvements	SW Boones Ferry	SW 35th	Install bikeway, pedestrian facilities, and improve and signalize the intersection at SW Stephenson and SW Boones Ferry Road.	$3,813,000	2026-2035	
10228	ODOT/ Portland/ Port		82nd Ave./Columbia, NE: Intersection Improvements	Intersection of NE 82nd/Columbia Blvd		Widen and reconfigure intersection.	$3,408,000	2008-2017	
10229	Portland		Columbia Bl/Portland Rd., N: Intersection Improvments	Intersection of Columbia Blvd/Portland Rd.		Redesign intersection.	$1,214,000	2008-2017	
10230	Portland		Twenties Bikeway, NE/SE (Lombard - Clinton)	NE Lombard	SE Clinton	Oregon,Wasco, from SE Clinton to NE Lombard using bike blvds & bike lanes.	$1,837,573	2026-2035	

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10232	Portland		Flanders, NW (Steel Bridge to Westover): Bicycle Facility	Steel Bridge	NW Westover	Add bike boulevard from NW 24th Ave to the Steel Bridge, new bike/pedestrian bridge over I-405 on Flanders, connections to bikeways on Vista, 18th, 14th, 13th, Broadway, 3rd, 2nd, Glisan and Everett.	$2,392,337	2008-2017	
10234	Portland		Columbia Slough Trail	Confluence of Columbia Slough and North Slough	NE 158th Ave.	Landfill to Pier Park; I-5 to NE Elrod; NE Elrod to NE 82nd Ave; NE 82nd Ave to 92nd Ave; I-205 to approx. NE 128th; NE 145th to 158th, Peninsula Canal, Cross-Levee.	$8,460,000	2008-2017	Intermodal facility
10334	Portland		11th/13th, NE (at Columbia Bl): Roadway Connector	NE Columbia Blvd	NE Lombard	New 3-lane roadway and bridge over rail line to connect Lombard and Columbia. Provides space for double tracking of rail line.	$1,000,000	2008-2017	
10336	Portland		Alderwood/Columbia Blvd/Cully, NE: Intersection Improvements	Intersection of NE Alderwood/Columbia Blvd/Cully		radii and improving circulation for trucks serving expanding air cargo facilities south of Portland.	$1,460,000	2008-2017	Industrial/Employment area
10343	Portland/ Port		West Hayden Crossing, N	N Marine Dr.	Hayden Island	New four-lane bridge from Marine Drive to Hayden Island to serve as the primary access to marine terminals on the island.	$49,800,000	2008-2017	Industrial/Employment area
10353	Portland		Delta Park Trail	Columbia Slough Trail near N Whitaker Way	N Marine Dr.	Multi-modal path between Columbia Slough and Marine Drive Trails, through East Delta Park.	$275,000	2008-2017	Industrial area
10354	Portland		Fanno Creek Greenway (Red Electric) Trail	SW Dover near Multnomah County line	Willamette Park	connects and extends the existing Fanno Creek Greenway Trail to Willamette Park.	$17,653,000	2008-2017	Town center
10355	Portland		North Portland Willamette Greenway Study	N Burlington Ave.	Steel Bridge	Study mostly off-street trail near the river for both bicycle and pedestrian commuting and recreational use.	$200,000	2008-2017	Portland Central City
10357	Port of Portland		Channel Deepening	mouth of Columbia River	Portland/Vancouver harbor	Deepening the Columbia River channel to 43 feet between mouth of Columbia River and Portland/Vancouver Harbor.	$150,573,000	2008-2017	Other
10358	Port of Portland		Airport Way Terminal Entrance Roadway Relocation	PDX Terminal Area		Relocate and widen Airport Way northerly at Terminal entrance (to be scoped by PDX Master Plan).	$12,818,000	2008-2017	Industrial area
10360	Port of Portland		Airport Way Return and Exit Roadways	PDX Terminal Area		(Terminal Access Study, projects R4 and R5; to be scoped by PDX Master Plan).	$6,400,900	2008-2017	Industrial area
10361	Port of Portland		Widen Airport Way West of 82nd	82nd Ave.	PDX Terminal	Widen Airport Way from terminal to 82nd Ave.	$8,588,400	2008-2017	Industrial area
10362	Port of Portland		Separation			Construct grade-separated overcrossing.	$92,000,000	2008-2017	Industrial area
10363	Port of Portland		SW Quad Access	NE 33rd Ave.	SW Quad	Provide street access from 33rd Ave. into SW Quad.	$5,917,500	2008-2017	Industrial area
10364	Port of Portland		Realignment			Realign light rail track into terminal building.	$16,330,700	2008-2017	Industrial area
10366	Port of Portland		Alderwood Rd. and Cornfoot Intersection Improvements			Add signals and/or improve turn lanes at Alderwood Rd/82nd Ave, Alderwood Rd/Cornfoot Rd, AirTrans Way/Cornfoot Rd.	$2,206,000	2008-2017	Industrial area
10367	Port of Portland		CS/PIC Access Improvements			Intersection improvements (installation of stop signs, signalization and/or channelization) at Sandy Blvd/105th Ave, Airport Way/Holman St, Alderwood Rd/Holman St, Alderwood Rd/Cascades Pkwy.	$1,217,000	2008-2017	Industrial area
10368	Port of Portland		PIC Ped/Bike Network			Construct bike and pedestrian facilities as shown in the CS/PIC Plan District.	$1,163,835	2008-2017	Industrial area
10369	Port of Portland		Leadbetter St. Extension/Overcrossing			Complete Leadbetter St. loop to Marine Dr. (Pacific Gateway/T-6 intersection) and construct road bridge over rail line.	$11,203,600	2008-2017	Industrial area
10370	Port of Portland		PDX ITS			Intelligent Transportation Systems in the PDX area.	$3,000,000	2008-2017	Industrial area
10371	Port of Portland		Airport Way Braided Ramps			Construct braided ramps between the I-205 interchange and Mt. Hood Interchange.	$59,000,000	2018-2025	Industrial area
10373	Port of Portland		Rivergate ITS			Intelligent Transportation System in Rivergate.	$480,000	2008-2017	Industrial area
10375	Port of Portland		Cathedral Park Quiet Zone			Address rail switching noise related to the Toyota operations at T-4 by improving multiple public rail crossings in the St. Johns Cathedral Park area.	$5,198,900	2008-2017	Industrial area
10376	Port of Portland		Columbia Blvd. Widening	60th Ave.	82nd Ave.	Widen Columbia Blvd. to five lanes between 60th Ave and 82nd Ave.	$14,859,000	2008-2017	Industrial area
10377	Port of Portland		PSU ITS Expansion, incl. freight data repository			Expand PSU's existing web based ITS "count sensor" program beyond the freeway to some key arterials throughout the region. Create a repository of freight data (primarily truck data) from the region's Freight Data Collection project.	$0	2008-2017	Industrial area
10378	Port of Portland		Honda Overcrossing	Marine Dr.	Terminal 6	Construct an elevated roadway between Marine Dr. and Terminal 6.	$3,649,084	2008-2017	Industrial area
10379	Port of Portland		Marine Dr. Improvement Phase 2			Construct rail overcrossing on Marine Dr.	$13,644,200	2018-2025	Industrial area

Table 6.1 -
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10380	Port of Portland		PDX Transportation Demand Management (TDM)			Implement strategies at PDX and PIC properties that reduce auto trips in the airport area. Programs to be undertaken with other area businesses/developers to maximize effectiveness; possible administration through a transportation management association.	$0	2008-2017	Other
10382	Multnomah Co.	Multnomah Co.	standards by widening the existing 2 lanes to provide for 4 traffic lanes, a continuous left-turn lane, bike lanes, sidewalks, and intersection improvements.	257th Ave.	Troutdale Rd.	Upgrades road from rural 2 land facility to urban standards with sidewalks and bicycle lanes.	$3,150,000	2008-2017	Other
10384	Multnomah Co.	Multnomah Co.	Reconstruct Scholls Ferry Rd.	US 26	Washington County	sidewalks.	$3,500,000	2026-2035	Neighborhood
10385	Multnomah Co.	Multnomah Co.	Reconstruct Halsey St.	238th Ave.	Hwy	and bicycle lanes.	$3,600,000	2008-2017	Town center
10386	Gresham & Multnomah County	Gresham & Multnomah County	Reconstruct Glisan St.	202nd Ave.	207th Ave.	Construct Glisan Street to arterial standards including bike lanes, sidewalks, two travel lanes in each direction, center turn lane/median and drainage improvements. South side of Glisan St is City of Gresham.	$9,842,749	2008-2017	Employment area
10387	Multnomah Co.	Multnomah Co.	Reconstruct Arata Rd.	223rd Ave.	238th Ave.	Construct to 3 lane collector standards with center turn lane/median, sidewalks, bicycle lanes.	$2,300,000	2008-2017	Town center
10388	Multnomah Co.	Multnomah Co.	Reconstruct 223rd Ave.	Halsey St.	Sandy Blvd	center turn lane/median, sidewalks and bicycle lanes. Requires reconstruction of RR bridge under another project.	$1,400,000	2008-2017	Neighborhood
10389	Multnomah Co.	Multnomah Co.	Reconstruct 223rd Ave.	Sandy Blvd	Marine Dr.	center turn lane/median, sidewalks, bicycle lanes. Possible culvert replacement for fish passage could add $120,000 to cost. Requires replacement of RR bridge not included in this proposal.	$2,267,000	2018-2025	Industrial area
10390	Multnomah Co.	Multnomah Co.	Reconstruct Troutdale Rd.	Strebin Rd.	Cherry Park Rd.	Reconstruct to major collector standards with 2 travel lanes, center turn lane/median, sidewalks, bicycle lanes. Requires new fish culvert at Beaver Creek.	$6,297,000	2026-2035	Neighborhood
10391	Multnomah Co.	Multnomah Co.	Reconstruct Historic Columbia River Hwy.	244th Ave.	Halsey St.	Reconstruct to minor arterial standards with 2 travel lanes, center turn lane/median, bicycle lanes and sidewalk. Reconstruction of railroad bridge is not included in this project.	$6,151,000	2026-2035	Other
10392	Multnomah Co.		Projects	Various streets		Implement findings of traffic management plan.	$9,200,000	2008-2017	Industrial area
10393	Multnomah Co.	Multnomah Co.	Replace RR Over-crossing on 223rd Ave.	At I-84		Reconstruct railroad bridge on 223rd Ave, at I-84 to accommodate wider travel lanes, sidewalks and bike lanes.	$7,000,000	2008-2017	Industrial area
10394	Multnomah Co.	Multnomah Co.	Replace RR Over-crossing on 223rd Ave.	2000' north of I-84		Reconstruct railroad bridge on 223rd Ave, 2000' north of I-84 to accommodate wider travel lanes, sidewalks and bike lanes.	$7,000,000	2018-2025	Industrial area
10395	Multnomah Co.	Multnomah Co.	Replace RR over crossing.	Half mile east of 244th Ave.		Reconstruct railroad bridge to accommodate wider travel lanes, sidewalks and bike lanes.	$7,000,000	2026-2035	Employment area
10396	Metro	Multnomah Co.	Reconstruct Cornelius Pass Rd.	Hwy. 30	Mile Post 3	Reconstruct Cornelius Pass Road including passing lane, safety, shoulder and drainage improvements.	$37,000,000	2026-2035	Other
10397	Gresham		Reconstruct 242nd Ave.	St.ark St.	Glisan St.	Construct 242nd Ave to principal arterial standards with 4 travel lanes, center turn lane/median, sidewalks and bicycle lanes, and install traffic signal at 23rd St. Project is southern segment of 242nd Ave Connector. (West half of road is in Gresham).	$1,925,000	2008-2017	Other
10398	Multnomah Co.	Multnomah Co.	Wood Village Blvd Extension	Arata Rd.	Halsey St.	Construct new extension of Wood Village Blvd as a major collector with 2 travel lanes, center turn lane/median, sidewalks and bicycle lanes.	$1,573,000	2008-2017	Town center
10399	Multnomah Co.	Multnomah Co.	Reconstruct Sandy Blvd.	207th Ave.	238th Ave.	Reconstruct Sandy Blvd to arterial standards with bike lanes, sidewalks and drainage improvements, utilizing recommendations from TGM grant.	$7,438,000	2018-2025	Industrial area
10400	Multnomah Co.	Multnomah Co.	Construct new bicycle/pedestrian facility on Morrison Bridge	East Bridge head	West bridge head	disability and presents major obstacles to bicycle and pedestrian use. Project would provide a multi-use bicycle and pedestrian facility providing improved access for non-motorized travelers.	$2,100,000	2008-2017	Portland Central City
10401	Multnomah Co.	Multnomah Co.	Reconstruct Marine Dr.	Interlachen	I-84	Reconstruct Marine Drive between Intelachen and the frontage roads in Troutdale.	$14,000,000	2018-2025	Industrial area
10402	Multnomah Co.	Multnomah Co.	Construct new road north of I-84, Exit 16	Sandy Blvd	Marine Dr.	Construct new connector between Sandy Blvd. and Marine Dr, linking industrial sites with I-84	$14,500,000	2018-2025	Industrial area

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10403	Multnomah Co.	Multnomah Co.	improvements at intersections and mid-block crossings	St.ark St.	Cherry Park Rd. north	Improve sidewalks, crossings, lgithing and bus stops.	$1,600,000	2008-2017	2040 corridor
10404	Multnomah Co.	Multnomah Co.	Beaver Creek Culvert Replacement	Troutdale Rd.	Cochran Rd.	Replace culverts with fish friendly structures allowing for passage to federally endangered species	$6,000,000	2008-2017	Other
10405	Multnomah Co.	Multnomah Co.	Pedestrian Improvements	Various streets		Install pedestrian improvements--crossings, lighting, sidewalks.	$1,940,000	2018-2025	Neighborhood
10406	Multnomah Co.	Multnomah Co.	Reconstruct St.ark St. to arterial standards	Troutdale Rd.	Hampton Rd.	Reconstruct road to arterial standards with 1 travel lanes in each direction, center turn lane/median, sidewalks and bicycle lanes.	$1,810,000	2018-2025	Neighborhood
10407	Multnomah Co.	Multnomah Co.	Fish passage culvert replacement	Fairview and Arata Creeks		Replace 5 culverts with fish friendly structures allowing for passage to federally endangered species.	$1,511,000	2026-2035	Other
10408	Multnomah Co.	Multnomah Co.	40 mile loop trail	Marine Dr.	Hist Columbia River Hwy	Constructs new multi-use trail adjacent to Columbia and Sandy Rivers.	$3,500,000	2018-2025	Other
10409	Multnomah Co.	Multnomah Co.	Beaver Creek Trail	Mt. Hood Comm. Coll.	Hist Columbia River Hwy	Constructs new trail adjacent to Beaver Creek.	$1,400,000	2018-2025	Other
10410	Multnomah Co.	Multnomah Co.	Broadway Bridge Rehabilitation			phase 1 seismic.	$22,700,000	2008-2017	Portland Central City
10411	Multnomah Co.	Multnomah Co.	Burnside Bridge Rehabilitation			phase 1and 2 seismic.	$41,600,000	2008-2017	Portland Central City
10412	Multnomah Co.	Multnomah Co.	Morrison Bridge Rehabilitation			Rehabilitate mechanical system, approach structure, corrosion control, phase 1 seismic.	$42,000,000	2008-2017	Portland Central City
10413	Multnomah Co.	Multnomah Co.	Hawthorne Bridge Rehabilitation			Rehabilitate mechanical system, approach structure, corrosion control, phase 1 seismic.	$13,300,000	2008-2017	Portland Central City
10414	Multnomah Co.	Multnomah Co.	Rehabilitation/Replacement			Implement results of alternatives analysis.	$25,100,000	2008-2017	Main street
10419	Gresham	Gresham	Civic Neighb. LRT station plaza	Max line west of City Hall	728' to the northwest	Constructs new light rail station to max blue line.	$5,600,000	2008-2017	Regional center
10420	Gresham	Gresham	Palmquist Rd. Improvements	242nd Ave.	US 26	Widens to five lanes.	$7,784,844	2018-2025	Employment area
10421	Gresham	Gresham	Burnside Rd. Blvd Improvements	181st	197th	Complete boulevard improvements.	$7,873,990	2008-2017	Town center
10423	Gresham	Gresham	Cleveland St. Reconstr.	Powell	Burnside	Reconstructs street from Burnside to Powell.	$1,100,000	2008-2017	Regional center
10424	Gresham	Gresham	Wallula St. Reconstr, + intersections	Division	Stark	Widen road, add curb/gutter, sidewalks. At Burnside, add northbound, southboulnd, left turn lanes. Signalize Stark.	$8,347,988	2018-2025	Regional center
10425	Gresham	Gresham	Bull Run Rd.. Reconstruction	242nd Ave.	257th Ave.	Brings to standards, adds pedestrian, bicycle facilities.	$4,466,312	2018-2025	Employment area
10427	Gresham	Gresham	Regner Rd. Reconstruction	Roberts	City Limits	Regner/Butler intersection by adding NB left-turn pocket and signalizing intersection.	$29,265,570	2018-2025	Neighborhood
10428	Gresham	Gresham	257th Corridor Improvements	Division	Powell Valley Rd.	Brings to standards, adds pedestrian, bicycle facilities.	$8,623,103	2008-2017	Regional center
10430	Gresham	Gresham	Orient Dr. Imps.	South City Limits	257th Ave.	Upgrades to arterial 4 lane standards.	$9,000,000	2018-2025	Industrial area
10431	Gresham	Gresham	Highland/190th Rd. Widening	Starting at the intersection of Powell and Highland, then so. To intersection of Highland and Pleasant View, then so.	Ending at the intersection of Pleasant View Dr./SE 190th and Butler	Reconstruct and widen street to five lanes with sidewalks and bike lanes. Widen and determine the appropriate cross-section for Highland Drive and Pleasant View Drive from Powell Boulevard to 190th Ave..	$19,646,521	2008-2017	Employment area
10434	Gresham	Gresham	Burnside St. Improvements	NE Wallula St.	Hogan	Complete boulevard design improvements Wallulla to Hogan (2004 RTP 2048), also improve intersection of Burnside at Division (2002 TSP #15) by adding eastbound RT and signal, and also improve the intersection of Burnside and Hogan (2004 RTP #2032).	$32,545,601	2008-2017	Regional center
10436	Gresham	Gresham	Max Trail	Cleveland	Ruby Junction	Construct new shared use path.	$1,897,279	2008-2017	Regional center
10437	Gresham	Gresham	Gresham/Fairview Trail	Halsey	Marine Dr.	Springwater trail connect. incl. Trailhead @ Marine Dr.	$4,608,799	2018-2025	Town center
10438	Gresham	Gresham	Springwater Trail Connections	Pl. View/190th	N/A	Provide ped, bike and equest.access to regional trail.	$271,562	2018-2025	Town center
10439	Gresham	Gresham	Main City Park Traihead	Main City Park		Improves parking lot, facilities (MTIP project).	$570,299	2008-2017	Regional center
10441	Gresham	Gresham	Gresham RC Ped and Ped to Max	all stations		Improve sidewalks, lighting, crossings, bus shelters, benches.	$584,820	2008-2017	Regional center
10442	Gresham	Gresham	Phase 3 Signal Optimization	System Wide		Optimize signals, provide message boards.	$6,227,280	2008-2017	Regional center
10443	Gresham	Gresham	Sandy Blvd. Widening	165th	202nd	Widens street to 5 lanes w. sidewalks, bikelanes.	$26,040,578	2018-2025	Industrial area
10444	Gresham	Gresham	181st Ave. Widening	Halsey St.	EB on-ramp to I-84	Widens street to three lanes southbound.	$1,797,270	2008-2017	2040 corridor
10445	Gresham	Gresham	Improvement	181st./Glisan	"	Improve Intersection.	$1,041,867	2018-2025	2040 corridor
10446	Gresham	Gresham	Improvement	181st/Burnside		Improve Intersection.	$831,210	2018-2025	2040 corridor
10447	Gresham	Gresham	162nd Ave. Imps. Plus TIF project	Glisan	Halsey	Reconstruct, widen to 5 lanes, plus EB RT at Glisan.	$7,915,303	2018-2025	Other
10449	Gresham	Gresham	201st: Halsey to Sandy	Halsey	Sandy	Improve to collector standards.	$8,335,400	2008-2017	Industrial area
10450	Gresham	Gresham	2 Birdsdale Projects, at Division,	at Division	at Stark	Division:SB, EB turn lanes. At Stark: add 2nd NB LT lane and exclusive RT lane.	$1,375,500	2008-2017	Industrial area
10453	Gresham	Gresham	Stark St. Improvements	190th	197th	Complete boulevard design improvements.	$6,774,280	2018-2025	Town center
10454	Gresham	Gresham	181st Ave. Improvements	Glisan	Yamhill	Complete boulevard design improvements.	$11,440,061	2008-2017	Town center
10455	Gresham	Gresham	Max181st, 188th, Stark & int. streets and LRT			Improve sidewalks, lighting, crossings, bus shelters, benches.	$8,919,615	2018-2025	Town center
10458	Gresham		Halsey St. Improvements	190th	201st	Widen to 4 lanes w. sidewalks and bikelanes.	$4,430,961	2008-2017	Town center

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10459	Gresham	Gresham	Burnside SC Pedestrian Imps.	172nd, 197th, Glisan, Stark & intersecting sts		Improve sidewalks, lighting, crossings, bus shelters, benches.	$1,192,669	2018-2025	Regional center
10462	Gresham	Gresham	Butler Rd. Improvements	190th	Towle Rd.	Improve Butler Rd. in new alignment to collector standards, at intersection, add northbound and westbound turn pockets and signalize.	$13,166,455	2008-2017	Neighborhood
10463	Gresham	Gresham	Foster Rd. Extension (north)	Jenne	172nd	New north extension of Foster.	$15,417,627	2008-2017	Town center
10464	Gresham	Gresham	Giese Rd. Extension	182nd	172nd	New ext. of Giese Rd. to Foster Road.	$17,987,232	2018-2025	Town center
10465	Gresham	Gresham	172nd Ave. Improvements	Giese Rd.	Butler Rd.	Upgrade street to urban standards w. sidewalks, bikelanes.	$11,520,364	2018-2025	Town center
10466	Gresham	Gresham	172nd Ave. Improvements	Butler Rd.	Cheldelin Rd.	Upgrade street to urban standards w. sidewalks, bikelanes, and add roundabout or traffic signal at 172nd/Foster.	$7,112,978	2018-2025	Town center
10468	Gresham	Gresham	Giese Rd. Improvements	182nd Ave.	190th Ave.	Upgrade street to urban standards w. sidewalks, bikelanes.	$5,430,469	2018-2025	Town center
10469	Gresham	Gresham	Foster Rd. Bridge	Foster Rd.		Construct bridge crossing.	$2,642,220	2018-2025	2040 corridor
10470	Gresham	Gresham	Giese Rd. Extension Bridge	Giese Rd.		Construct bridge crossing.	$2,642,220	2018-2025	Town center
10471	Gresham	Gresham	Butler Rd. Extension and Bridge	Binford	Rodlun	Construct new Butler road extension and bridge crossing.	$12,268,899	2008-2017	Town center
10472	Gresham	Gresham	Eastman at Division			Add SB RT lane and 2nd NB and SB LT lanes.	$912,928	2008-2017	Regional center
10473	Gresham	Gresham	Eastman at Stark			Add EB and NB RT lanes and 2nd NB and SB LT lns.	$1,196,756	2008-2017	Regional center
10474	Gresham	Gresham	Rugg Rd. Ext.	Orient Dr.	US 26	Construction of new roadway that adds e/w capacity in vicinity Rugg Rd and connects Springwater Industrial area to Highway 26.	$30,672,208	2008-2017	Industrial area
10475	Gresham	Gresham	Rugg Rd. Ext.	US 26	252nd Ave.	Construction of new roadway that adds e/w capacity in vicinity Rugg Rd and connects Springwater Industrial area to Highway 26.	$39,329,973	2008-2017	Industrial area
10476	Gresham	Gresham	Rugg Rd.	252nd Ave.	242nd. Ave.	Construction of new roadway that adds e/w capacity in vicinity Rugg Rd and connects Springwater Industrial area to Highway 26.	$12,770,187	2008-2017	Industrial area
10477	Gresham	Gresham	4	242nd Ave.	252nd Ave.	Construction of new street for implementation of Springwater Plan.	$13,148,679	2008-2017	Industrial area
10478	Gresham	Gresham	252nd Ave.	Palmquist Rd.	10	Construction of new street for implementation of Springwater Plan.	$26,162,462	2008-2017	Industrial area
10479	Gresham	Gresham	252nd Ave.	10	Rugg Rd.	Construction of new street for implementation of Springwater Plan.	$9,808,690	2008-2017	Industrial area
10480	Gresham	Gresham	7	242nd Ave.	9	Construction of new street for implementation of Springwater Plan.	$8,008,421	2008-2017	Industrial area
10481	Gresham	Gresham	8	242nd Ave.	9	Construction of new street for implementation of Springwater Plan.	$5,519,551	2008-2017	Industrial area
10482	Gresham	Gresham	9	7	252nd Ave.	Construction of new street for implementation of Springwater Plan.	$8,008,421	2008-2017	Industrial area
10483	Gresham	Gresham	10	252nd Ave.	Telford Rd.	Construction of new street for implementation of Springwater Plan.	$12,202,421	2008-2017	Industrial area
10484	Gresham	Gresham	11	Telford Rd.	Orient Dr.	Construction of new street for implementation of Springwater Plan.	$21,031,280	2008-2017	Industrial area
10485	Gresham	Gresham	Hogan	Palmquist Rd.	Rugg Rd.	Improvement of existing roadway to arterial 4 lane standards.	$47,291,190	2008-2017	Industrial area
10486	Gresham	Gresham	Telford Rd.	Springwater Boundary	252nd Ave.	Improvement of existing roadway to collector standards, add bike and ped facilities, intersection improvements.	$29,419,888	2008-2017	Industrial area
10488	Gresham	Gresham	282nd Ave.	Springwater Boundary	20	Improvement of existing roadway to collector standards, add bike and ped facilities, intersection improvements.	$7,146,436	2008-2017	Industrial area
10490	Gresham	Gresham	201st RR Bridge at I-84	201st/I-84	"	Construct new RR bridge to accommodate alternative modes.	$2,359,125	2008-2017	Industrial area
10493	Gresham	Gresham	181st Ave. Sandy to I-84	Sandy	I-84	Add southbound aux lane & widen RR overcrossing.	$827,659	2018-2025	Industrial area
10494	Gresham	Gresham	162nd at Stark St.			Exclusive southbound and eastbound right turns at Stark.	$888,209	2008-2017	Employment area
10495	Gresham	Gresham	181st Ave. at Halsey	181st/Halsey		add 2nd LT ln to N & S legs, add RT ln to EB WB SB.	$1,025,038	2008-2017	Industrial area
10496	Gresham	Gresham	181st at I-84	181st/I-84		Freight mobility improvements subect to refinement study.	$250,000	2018-2025	2040 corridor
10497	Gresham	Gresham	181st at Sandy, at Stark			At Sandy: Northbound right turn, 2nd westbound left turn. Overlap eastbound right turn. At Stark, add 2nd left turn lane on east and west legs.	$1,884,390	2008-2017	2040 corridor
10498	Gresham	Gresham	181st (182nd) at Division/Powell Intersections	181st at Division, Powell		At Division: add second westbound left turn lane (TIF P1). At Powell, add northbound and southbound double left turn lanes (TIF P2 and TSP8).At Powell add SB and NB lanes.	$1,682,670	2008-2017	2040 corridor
10499	Gresham	Gresham	192nd Ave. Wilkes to Halsey	192/Wilkes	192/Halsey	Improve to collector street standards.	$3,833,031	2008-2017	Industrial area
10500	Gresham	Gresham	257th (Kane) at Stark, and Stark: Kane to Troutdale Rd.	Stark: Kane to	Troutdale Rd.	Kane/Stark add 2nd NB left turn lane, and excl. RT lane. Stark: Kane to Troutdale Road: add two travel lanes and continuous turn lane.	$614,387	2008-2017	2040 corridor
10501	Gresham	Gresham	Barnes Rd., Powell Valley to city limits: only Powell Valley to Orient	Powell Valley	Orient Dr.	Widen road and add improvements.	$7,135,229	2018-2025	Neighborhood
10502	Gresham	Gresham	Bike signs	various locations		Add directional signs to bike network.	$1,400,000	2008-2017	Other
10503	Gresham	Gresham	Burnside at Powell			At Powell: eliminate EB and WB left turn lanes.	$683,517	2008-2017	2040 corridor
10504	Gresham	Gresham	Ped to Max: Hood St.	Powell	Division	Improve ped access/multi-modal on Hood St.	$986,467	2008-2017	Regional center
10505	Gresham	Gresham	Civic Neighborhood TOD	16th and NW Norman		Support construction of street infrastructure improvements.	$4,765,219	2008-2017	Regional center

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10506	Gresham	Gresham	Transit: Columbia Corridor TMA			Transit/bus service improvements, 2 locations.	$185,258	2008-2017	Industrial area
10507	Gresham	Gresham	Glisan, 162nd to 202	162nd/I-84	202nd	Retrofit bikelanes.	$104,850	2008-2017	Employment area
10508	Gresham	Gresham	Glisan, Eastman (223rd) to Hogan	223rd (Eastman)	Hogan	Construct bike lane.	$62,910	2008-2017	2040 corridor
10509	Gresham	Gresham	Safe walking routes, missing links	various locations		Construct missing links and safe routes to school.	$4,089,150	2008-2017	Other
10511	Gresham	Gresham	Hogan Rd. at Stark St.	Stark		Add right turn lanes on all approaches and second northbound and southbound left turns.	$1,908,431	2018-2025	2040 corridor
10512	Gresham	Gresham	Hogan: Powell to Burnside boulevard improvements plus three intersection improvements	Powell	Burnside	Improve to boulevard standards, and intersection improvements at Burnside, Division and Powell.	$8,739,328	2018-2025	Regional center
10516	Gresham	Gresham	San Rafael, 181st to 201st	181st	201st	Complete collector and remove frontage road.	$9,990,952	2008-2017	Industrial area
10518	Gresham	Gresham	Wilkes St., 181st to 192nd	181st	192nd	Improve Wilkes to collector standards and provide slip ramp connection from Eastbound I-84 on ramp.	$6,781,698	2018-2025	Industrial area
10519	Gresham	Gresham	Pedestrian enhancements	162nd/Bside, and	181st Burnside	Pedestrian enhancements.	$75,492	2008-2017	Regional center
10521	Gresham	Gresham	Signalize intersections			Signalize intersections.	$768,590	2018-2025	Other
10527	Gresham	Gresham	Hogan, Powell Blvd to Palmquist	Powell	Palmquist	Improve to arterial standards.	$8,444,619	2018-2025	Industrial area
10530	Gresham	Gresham	Towle Ave. Butler Rd. to Binford Lk	Butler Rd.	Binford Lake Parkway	Improve to collector standards. Add roundabout at Towle/Binford.	$11,897,840	2018-2025	Neighborhood
10533	Gresham	Gresham	190th:30th to So. Boundary of Pleasant Valley	30th	Southern boundary of Pleasant Valley	Improve existing road to major arterial standards, signalize 190th @ Giese, Butler, Richey, Cheldelin.	$28,644,245	2008-2017	Town center
10534	Gresham	Gresham	Cheldelin: 172nd to 190th	172nd	190th	172nd, 182nd, Foster.	$19,795,513	2008-2017	Town center
10535	Gresham	Gresham	Clatsop: New extension	162nd	172nd	Extend Clatsop into Pleasant Valley, and construct bridge.	$20,163,595	2008-2017	Town center
10536	Gresham	Gresham	Clatsop: Improvements	162nd	Portland Boundary	162nd.	$4,202,582	2008-2017	Town center
10537	Gresham	Gresham	Richey	182nd	190th	Improve to collector standards, and signalize 190th/Richey.	$7,925,735	2008-2017	Town center
10538	Gresham	Gresham	Sager	162nd	Foster	Improve to collector standards, and signalize Sager @172nd.	$15,794,720	2008-2017	Town center
10539	Gresham	Gresham	Foster South: new road	County Line	Sager	Build new road section to collector standards.	$7,120,992	2008-2017	Town center
10540	Gresham	Gresham	162nd	Foster	southern boundary of Pleasant Valley	Improve 162nd to collector standards, add signal at Foster @ 162nd.	$21,236,546	2008-2017	Town center
10541	Gresham	Gresham	182nd	Giese	Cheldelin	Improve 182nd to collector standards.	$11,797,690	2008-2017	
10542	Gresham	Gresham	Foster Rd. Improvements	162nd	Jenne Rd.	Improve Jenne to minor arterial standards.	$3,014,698	2008-2017	Town center
10543	Gresham	Gresham	172nd: Cheldelin south to Pleasant Valley boundary	Cheldelin	So. Boundary of Pleasant Valley	Improve Foster Rd to Minor Arterial (parkway) standards, 2 lanes with turn pockets where appropriate.	$8,651,396	2008-2017	Town center
10545	Washington Co.		OR 10: Oleson Rd. Improvement	Oleson Rd. south of OR10	Oleson Rd. at Scholls Ferry	Realign Oleson Rd. 500 feet to east and reconfigure Oleson intersections with OR10 and Scholls Ferry Rd.	$30,888,000	2018-2025	Town center
10546	Washington Co.	Washington Co.	170th Ave. Improvements	Alexander St.	Merlo Rd.	bike lanes and sidewalks.	$28,093,000	2018-2025	Neighborhood
10547	Washington Co.	Washington Co.	Improvement	Cornell Rd.	Bronson Rd.	sidewalks.	$58,641,000	2018-2025	Town center
10549	Washington Co.	Washington Co.	Cornell @ 143rd Improvements	Science Park Dr.	143rd Ave.	intersection.	$12,400,000	2008-2017	Town center
10551	Washington Co.	Washington Co.	185th to West Union Improvement	North of Westview H.S.	West Union Rd.	bikelanes and sidewalks.	$6,794,000	2008-2017	Neighborhood
10554	Washington Co.	Washington Co.	Bethany Blvd. Improvements	Kaiser Rd.	West Union Rd.	Widen to 5 lanes with bikelanes and sidewalks.	$22,046,000	2018-2025	Town center
10558	Washington Co.	Washington Co.	Cornell Rd. Improvements	113th Ave.	107th Ave.	Widen from two to three lanes with bike lanes and sidewalks.	$9,941,000	2018-2025	Neighborhood
10559	Washington Co.	Washington Co.	Cornell to Murray Improvements	Murray Blvd.	Hwy. 26	Widen Cornell from three to five lanes with bike lanes and sidewalks.	$40,620,000	2018-2025	Town center
10560	Washington Co.	Washington Co.	Farmington Rd. Improvements	170th Ave.	185th Ave.	Widen roadway from 2/3 lanes to 5 lanes with bike lanes and sidewalks.	$17,676,000	2008-2017	2040 corridor
10561	Washington Co.	Washington Co.	Jenkins Rd. Improvements	Murray Blvd.	158th Ave.	Widen roadway from three to five lanes with bike lanes and sidewalks.	$15,530,000	2018-2025	Station community
10563	Washington Co.	Washington Co.	Kaiser/143rd Ave. Improvements	Bethany Blvd.	Cornell Rd.	Widen from two to three lanes with bike lanes and sidewalks.	$38,357,000	2018-2025	Neighborhood
10567	Washington Co.	Washington Co.	Taylors Ferry Extension	Oleson Rd.	Washington Dr.	Construct new two lane extension with bike lanes and sidewalks	$4,390,000	2026-2035	Neighborhood
10568	Washington Co.	Washington Co.	Improvements	Hwy. 99W	Teton Ave.	Widen from three to five lanes with bike lanes and sidewalks.	$49,150,000	2018-2025	Industrial area
10569	Washington Co.	Washington Co.	Walker Rd. Improvements	185th Ave.	Stucki Ave.	Widen from two to five lanes with bike lanes and sidewalks.	$14,776,000	2018-2025	Station community
10570	Washington Co.	Washington Co.	Walker to Hwy. 217 Improvements	185th Ave.	Hwy. 217	Widen from two to five lanes with bike lanes and sidewalks.	$89,612,000	2018-2025	Station community
10571	Washington Co.	Washington Co.	West Union Rd. Improvements	185th Ave.	143rd Ave.	Widen from two to three lanes with bike lanes and sidewalks.	$34,870,000	2026-2035	Neighborhood
10572	Washington Co.	Washington Co.	Barnes Rd. Improvements	St. Vincent's Hosp. entrance	Leahy Rd.	Widen from two to five lanes with bike lanes and sidewalks.	$8,933,000	2018-2025	Station community
10574	Washington Co.	Washington Co.	Farmington to 198th Improvements	185th Ave.	198th Ave.	Widen from two to three lanes with bike lanes and sidewalks.	$17,326,000	2026-2035	Neighborhood
10576	Washington Co.	Washington Co.	Saltzman Rd. Improvements	Cornell Rd.	Burton Rd.	Widen from two to three lanes with bike lanes and sidewalks.	$12,550,000	2008-2017	Town center
10578	Washington Co.	Washington Co.	Merlo/158th Improvements	170th Ave.	Walker Rd.	Widen roadway to five lanes with bike lanes and sidewalks	$24,735,000	2018-2025	Station community
10579	Washington Co.	Washington Co.	Barnes to 119th Improvements	Hwy. 217	119th (future)	Widen to five lanes with bike lanes and sidewalks	$30,316,000	2008-2017	Station community
10581	Washington Co.	Washington Co.	Brookwood Rd. Improvements	T.V. Hwy.	Baseline Rd.	Widen roadway to three lanes with bike lanes and sidewalks.	$11,970,000	2008-2017	Neighborhood
10583	Washington Co.	Washington Co.	185th to Bany Rd. Improvements	Farmington Rd.	Bany Rd.	Widen to three lanes with bike lanes and sidewalks	$7,706,000	2026-2035	Neighborhood
10587	Washington Co.	Washington Co.	Cornelius Pass Rd. Improvements	Amberwood Dr.	T.V. Hwy.	Widen to five lanes with bike lanes and sidewalks	$59,872,000	2008-2017	Neighborhood
10590	Washington Co.	Washington Co.	Tonquin Rd. Improvements	Grahams Ferry Rd.	Oregon St.	Realign and widen to three lanes with bike lanes and sidewalks.	$28,406,000	2018-2025	Other

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10592	Washington Co.	Washington Co.	205th Ave. Improvements	Quatama Rd.	Baseline Rd.	Widen road to 5 lanes with bike lanes and sidewalks. Widen bridge over Beaverton Creek to four lanes with bike lanes and sidewalks.	$18,061,000	2008-2017	Station community
10596	Washington Co.		Scholls Ferry Rd. Improvements	Hwy. 217	121st Ave.	Widen to seven lanes with bike lanes and sidewalks.	$19,749,000	2018-2025	2040 corridor
10597	Washington Co.		Evergreen Rd. Improvements	253rd Ave.	Sewell Ave.	Widen to 5 lanes with bike lanes and sidewalks.	$11,242,000	2008-2017	Employment area
10600	Washington Co.	ODOT	Hwy. 26/Shute Interchange Improvements	Hwy. 26/Shute Rd./Helvetia Rd.	N/A	Add westbound to southbound loop ramp, additional northbound through lane and relocate Jacobsen intersection.	$29,272,000	2008-2017	Industrial area
10601	Washington Co.	ODOT	Improvements	Cornell Rd.	Bronson Rd.	Rebuild overpass to accommodate additional northbound thru-lane.	$8,720,000	2018-2025	Employment area
10602	Washington Co.	Washington Co.	Scholls Ferry ATMS	Hall Blvd.	Murray Blvd.	Install integrated surveillance and management equipment.	$1,109,000	2008-2017	2040 corridor
10603	Washington Co.	Washington Co.	Tualatin-Sherwood Rd. ATMS	I-5	Teton Ave.	Install integrated surveillance and management equipment.	$1,594,000	2008-2017	Industrial area
10604	Washington Co.	Washington Co.	185th Ave. ATMS	Baseline Rd.	Hwy. 26	Install integrated surveillance and management equipment.	$1,095,000	2008-2017	2040 corridor
10605	Washington Co.	Washington Co.	Cornell Rd. ATMS	Cornelius Pass Rd.	Wash. Co. TOC	Install integrated surveillance and management equipment.	$2,043,000	2008-2017	2040 corridor
10606	Washington Co.	Washington Co.	Washington Square Regional Center Pedestrian Improvements	Wash. Sq. Regional Center		Complete 7400 feet of sidewalk improvements.	$8,954,000	2008-2017	Regional center
10607	Washington Co.	Washington Co.	Sunset TC Station Community Pedestrian Improvements	Sunset TC Station Community		Complete 9100 feet of sidewalk improvements.	$6,006,000	2008-2017	Station community
10608	Washington Co.	Washington Co.	Aloha TC Pedestrian Improvements	Aloha Town Center		Complete23,500 feet of sidewalk improvements.	$10,105,000	2008-2017	Town center
10610	Washington Co.	Washington Co.	Saltzman Rd. Bike	Cornell Rd.	Barnes Rd.	Complete 950 feet of bike lanes in town center.	$823,000	2008-2017	Regional center
10611	Washington Co.	Washington Co.	Locust Ave. Bike	Hall Blvd.	80th Ave.	Completes 1650 feet of bike lanes in regional center.	$3,417,000	2008-2017	Station community
10612	Washington Co.	Washington Co.	Greenburg Rd. Bike	Hall Blvd.	Hwy. 217	Completes 3400 feet of bike lanes in regional center.	$3,610,000	2008-2017	Town center
10613	Washington Co.	Washington Co.	Cornell Rd. Bike	Saltzman Rd.	119th Ave.	Completes 1750 feet of bike lanes in town center.	$1,036,000	2008-2017	Town center
10614	Washington Co.	Washington Co.	Butner Rd. Bike	Cedar Hills Blvd..	Park Way	Completes 7800 feet of bike lanes to transit corridor.	$3,524,000	2008-2017	2040 corridor
10615	Washington Co.	Washington Co.	Bronson Rd. Bike	185th Ave.	Bethany Blvd.	Completes 7500 feet of bike lanes to transit corridor.	$5,490,000	2008-2017	2040 corridor
10616	Beaverton	Beaverton and Washington County	Hall Blvd. Complete right-of-way and construction of multimodal street extension with Boulevard Design	Crescent St.	Hall Blvd.	Extend 2-lane Rose Biggi Ave. to Hall Blvd. (via Westgate Drive) to fill a gap; boulevard design; add sidewalks, bikeway (PE funded STIP Key #14400).	$3,500,000	2008-2017	Regional center
10617	Beaverton	Beaverton	Hocken Ave. Safety, turn lanes, bicycle, and pedestrian improvements	Murray Blvd.	Hocken Ave.	Construct turn lanes and intersection improvements; signalize where warranted; add bike lanes and sidewalks in gaps.	$8,700,000	2008-2017	Regional center
10618	Beaverton	Beaverton	Dawson/Westgate multimodal extension from Rose Biggi Ave. to Hocken Ave.	Rose Biggi Avenue	Hocken Ave. via Dawson to Westgate at Rose Biggi	Extend 2 lane street from Hocken via Dawson and Westgate at Rose Biggi to fill a gap; realign Dawson/Westgate at Cedar Hills; add turn lanes at intersections, sidewalks, bikeway.	$8,900,000	2008-2017	Regional center
10619	Beaverton	Beaverton	Crescent St. multimodal extension to Cedar Hills Blvd.	Rose Biggi Ave.	Cedar Hills Blvd.	Extend 2 lane Crescent from Cedar Hills to Rose Biggi Ave. to fill a gap; add sidewalks, bikeway.	$3,500,000	2008-2017	Regional center
10620	Beaverton	Beaverton	Millikan Way multimodal extension from Watson Ave. to 114th Ave.	Watson Ave.	114th Ave.	Extend 2 lane Millikan Way to 114th to fill a gap; add turn lanes at intersections, sidewalks, bikeway.	$13,800,000	2018-2025	Regional center
10621	Beaverton	Beaverton	New street connection from Broadway to 115th Ave.	Broadway	115th Ave.	Construct new 2 lane street with bikeway and sidewalks.	$4,500,000	2018-2025	Regional center
10622	Beaverton	Beaverton	144th multimodal street connections	Electric	144th Ave.	Connect existing streets and improve to standard with bikeways and sidewalks.	$7,200,000	2018-2025	Station community
10624	Beaverton	Beaverton	120th Ave.: new 2 lane multimodal street	Center St.	Canyon Rd.	Construct new multimodal street with bikeways and sidewalks; turn lanes and signals as needed.	$8,900,000	2018-2025	Regional center
10625	Beaverton	Beaverton	Rose Biggi Ave.: 2 lane multimodal street extension	Tualatin Valley Hwy	Broadway	Construct 2 lane boulevard extension with bikeways and sidewalks.	$3,000,000	2008-2017	Regional center
10626	Beaverton	Beaverton	114th Ave./115th Ave. 2 lane multimodal street	LRT	Beaverton Hillsdale Hwy/Griffith Drive	Construct 2 lane street with bike and pedestrian improvements.	$10,000,000	2008-2017	Regional center
10627	Beaverton	Beaverton	extension	Electric	Millikan	Extend existing street to Millikan with bikeways and sidewalks.	$3,900,000	2018-2025	Station community
10628	Beaverton	Beaverton	Center Street and 113th Ave. safety, bike, and pedestrian improvements	Hall Blvd.	Cabot Street	Add sidewalks and bikelanes; add turn lanes where needed.	$5,400,000	2008-2017	Regional center
10630	Beaverton	Beaverton	from Cedar Hills Blvd. to Hocken Ave.	Hocken Ave.	Cedar Hills Blvd.	Extend Hall Blvd. from Cedar Hills to Hocken to fill a gap; add turn lanes at intersections, sidewalks and bikeway.	$5,500,000	2008-2017	2040 corridor
10631	Beaverton	Beaverton	141st/142nd/144th multimodal street extension connections	141st Ave.	144th Ave.	Connect streets, add bikeways, sidewalks, turns lanes and signalize as warranted.	$6,400,000	2008-2017	Station community
10632	Beaverton	Beaverton	Allen Blvd. safety, bicycle and pedestrian improvements	Highway 217	Murray Blvd.	Widen street adding turn lanes and signals where needed, construct bike lanes and sidewalks.	$41,600,000	2026-2035	2040 corridor

Table 6.1 -
Proposed 2035 RTP Financially Constrained System

Metro Project ID	Nominating Agency	Facility Owner / Operator	Project/Program Name	Project Start Location (Identify starting point of project)	Project End Location (Identify terminus of project)	Description	Estimated Cost ($2007)	Time Period	2040 Land Use
10633	Beaverton	Beaverton	Allen Blvd. safety, bicycle and pedestrian improvements	Highway 217	Western Ave.	Widen street to 4/5 lanes adding turn lanes and signals where needed, construct bike lanes and sidewalks.	$6,300,000	2018-2025	Industrial area
10634	Beaverton	Beaverton	Cedar Hills Blvd. safety, bicycle and pedestrian improvements	Farmington Rd.	Walker Rd.	Add turn lanes, bike lanes and sidewalks.	$19,000,000	2018-2025	2040 corridor
10635	Beaverton	Beaverton	125th Ave. multimodal extension Brockman to Hall Blvd.	Brockman St.	Hall Blvd.	Construct new multimodal street with bike lanes and sidewalks.	$13,900,000	2008-2017	Neighborhood
10636	Beaverton	Beaverton	Millikan Way safety, bike and pedestrian improvements	141st Ave.	Hocken Ave.	Add turn lanes as needed, bike lanes and sidewalks, signalize as warranted.	$2,600,000	2018-2025	Station community
10638	Beaverton	Beaverton	extension	Scholls Ferry Rd.	Barrows Rd.	Extend 2 lane street with turn lanes, bike lanes and sidewalks.	$4,900,000	2008-2017	Town Center
10639	Beaverton	Beaverton	Weir Rd. safety, bicycle and pedestrian improvements	155th Ave.	175th Ave.	Add turn lanes, bikelanes and sidewalks in gaps, turn lanes.	$4,100,000	2018-2025	Neighborhood
10640	Beaverton	Beaverton	street extension from Hall Blvd. to Denney Road	Hall Blvd.	Denney Rd.	Extend 2 lane street with turn lanes, bikelanes and sidewalks.	$15,400,000	2018-2025	Regional center
10642	Beaverton	Beaverton	Adaptive Traffic Signal Systems	Adaptive Traffic Signal Systems	Blvd., Hall Blvd., Farmington Road	New signals and signal upgrades.	$10,000,000	2018-2025	
10643	Beaverton	ODOT	217	217 SB ramp	740' w/o ramp	Construct sidewalks.	$400,000	2008-2017	Regional center
10644	Beaverton		110th Ave. sidewalk gaps	Beaverton Hillsdale Hwy	Canyon Rd	Construct sidewalks.	$1,400,000	2018-2025	Regional center
10645	Beaverton	Beaverton	117th Ave. sidewalk gaps	LRT	Center St.	Construct sidewalks.	$400,000	2008-2017	Regional center
10646	Beaverton	Beaverton	Hall Blvd. / Watson Ave. pedestrian improvements	Cedar Hills Bvld.	Allen Blvd.	Add pedestrian improvements at intersections and amenities (lighting, plazas).	$2,400,000	2008-2017	Regional center
10648	Beaverton	Beaverton	Denney Rd. sidewalks	Nimbus Rd.	Scholls Ferry Rd.	Construct sidewalks.	$2,200,000	2026-2035	Industrial area
10649	Beaverton	Beaverton	Allen Blvd sidewalks	Western Ave.	Arctic Dr.	Construct sidewalks.	$200,000	2018-2025	Industrial area
10650	Beaverton	Beaverton	Western Ave. sidewalks	5th Street	800 ft s/o 5th Street	Construct sidewalks.	$600,000	2018-2025	Industrial area
10651	Beaverton	Beaverton	Allen Blvd. sidewalks	King Blvd.	Western Ave.	Construct sidewalks.	$3,100,000	2018-2025	Industrial area
10652	Beaverton	Beaverton	141st Ave. sidewalks	Farmington Rd	Allen Blvd	Construct sidewalks.	$300,000	2008-2017	2040 corridor
10653	Beaverton	Beaverton	Sexton Mountain Drive multimodal street extension from 155th Ave. to Sexton Mtn. across the powerline	155th Ave.	Sexton Mountain Drive	Extend 2 lane street with bikelanes and sidewalks	$2,500,000	2018-2025	Neighborhood
10654	Beaverton	Beaverton	lanes	175th Ave.	155th Ave.	Construct sidewalks and bike lanes.	$2,000,000	2018-2025	
10656	Beaverton	Beaverton	Jamieson Rd. sidewalks	Pinehurst/Cypress	Woodlands Dr.	Construct sidewalks.	$400,000	2018-2025	
10659	Beaverton	Beaverton	Laurelwood Ave., Birchwood Road, 87th Ave. sidewalks	Scholls Ferry Road	Canyon Road	Construct sidewalks.	$700,000	2008-2017	
10661	Beaverton	Beaverton	155th Ave. sidewalks	Beard Rd.	Weir Rd.	Construct sidewalks.	$2,700,000	2008-2017	
10662	Beaverton	Beaverton	155th Ave. sidewalks	Davis Rd.	Beverly Beach Ct	Construct sidewalks.	$1,800,000	2008-2017	
10663	Beaverton	Beaverton	Hall Blvd. bike lanes & turn lanes to Cedar Hills	Farmington Road	Cedar Hills Blvd.	Construct bike lanes and turn lanes.	$5,200,000	2018-2025	
10664	Beaverton	Beaverton	Watson Ave. bike lanes	Hall Blvd.	Cedar Hills Blvd.	Construct bike lanes.	$4,500,000	2018-2025	
10665	Beaverton	Beaverton	6th Ave. bikelanes	Murray Blvd.	Erickson Ave.	Construct bike lanes.	$3,600,000	2018-2025	
10666	Beaverton	Beaverton	Greenway Dr. bike lanes	Hall Blvd.	125th Ave.	Construct bike lanes.	$3,700,000	2018-2025	
10667	Beaverton	Beaverton	155th Ave. bike lanes	Davis Rd.	Wier Rd.	Construct bike lanes in gaps.	$5,400,000	2018-2025	
10668	Beaverton	Beaverton	Farmington Rd Bike lane retrofit	Hwy 217	Hocken Ave.	Construct bike lanes.	$12,600,000	2018-2025	
10669	Beaverton	Beaverton	Hall Blvd. bike lanes & turn lanes	12th St.	s/o Allen Blvd.	Construct bike lanes and turn lanes.	$5,200,000	2018-2025	
10670	Beaverton	Beaverton	Denney Rd. bike lanes	Hall Blvd.	Scholls Ferry Rd.	Construct bike lanes.	$6,100,000	2018-2025	
10671	Beaverton	Beaverton	Allen Blvd. bike lanes	200' e/o Western	Scholls Ferry Rd.	Construct bike lanes.	$4,300,000	2018-2025	
10672	Beaverton	Beaverton	Western Ave. bike lanes	Beaverton Hillsdale Hwy	Allen Blvd.	Construct bike lanes.	$5,000,000	2018-2025	
10674	Sherwood	Sherwood	Oregon-Tonquin Intersection & Street Improvements	Oregon St.	at Tonquin	Intersection improvements (consider roundabout) on Oregon at Tonquin Road; sidewalks and bike access through the intersection.	$1,945,000	2018-2025	Industrial area
10677	Sherwood	Sherwood	Adams Ave Phase 2	T-S Rd.	99W	Construct 3 lane road, landscaping and mulit-use path.	$8,580,000	2018-2025	Employment area
10680	Sherwood	Sherwood	Improvements	99W	Kruger Rd	Intersection safety improvements.	$2,700,000	2018-2025	Employment area
10681	Sherwood		Elwert Rd	99W	Edy Rd	Upgrade road to arterial standards.	$11,430,000	2018-2025	Employment area
10682	Sherwood	Sherwood	Brookman Rd	99W	Ladd Hill Rd	Reconstruct road to collector standards.	$20,510,000	2018-2025	Neighborhood
10691	Sherwood		Edy Rd/Sherwood Blvd	Borcher Dr	3rd St.	Reconstruct road to arterial standards; add sidewalks.	$7,740,000	2018-2025	2040 corridor
10692	Sherwood		Edy Rd	Borcher Dr	City limits	Reconstruct road to collector standards w/ sidewalks and bike lanes.	$8,760,000	2008-2017	Neighborhood
10693	Sherwood	Sherwood	Ladd Hill Rd.	Sunset Blvd	UGB	Upgrade street to arterial standards.	$6,340,000	2026-2035	Other
10694	Sherwood	Sherwood	Murdock	UGB	Oregon St	Add bike lanes.	$1,340,000	2008-2017	Neighborhood
10695	Sherwood	Sherwood	Meinecke	99W	1st	Add bike lanes.	$1,150,000	2018-2025	Main street
10699	Sherwood	Sherwood	Oregon Street	Murdock	Railroad Crossing	Construct road to 3 lane collector standards.	$6,712,000	2026-2035	Industrial area

Table 6.1 -
Proposed 2035 RTP Financially Constrained System

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10701	Sherwood	Sherwood	Regional Trail System / West fork of Tonquin Trail	Middle fork of Tonquin Trail	Wildlife Refuge	Construct regional trail to connect SE City limits with trail system north of City limits.	$2,465,000	2018-2025	Other
10702	Sherwood	Sherwood	2040 Corridor Signal & Intersection Improvements	Borcher Dr	Century	Improve 3-leg intersection at Edy&Borchers; remove traffic signal at Baler; remove traffic signal at Langer; add traffic signal at Century.	$2,812,000	2026-2035	2040 corridor
10703	Sherwood	Sherwood	Pedestrian Links to Schools & Town Center			Pedestrian upgrades, new sidewalks, sidewalk infill at: Sunset, Division, Edy, Elwert, Meinecke, Pine, Roy, Ladd Hill, Timbrel, Washington, Willamette, Old Pacific Hwy.	$6,983,000	2018-2025	Neighborhood
10709	Tualatin	Tualatin	Sagert	Martinazzi	N/A	Signalize intersection and change grades to provide better sight distance.	$1,700,000	2008-2017	Neighborhood
10714	Tualatin	Tualatin	105th Ave/Avery Street	Blake	105th	from Avery to 108th.	$5,000,000	2008-2017	Neighborhood
10715	Tualatin	Tualatin	Herman	Teton	Tualatin	Reconstruct and widen to 3 lanes from Teton to Tualatin.	$2,500,000	2008-2017	Industrial area
10716	Tualatin	Tualatin	Myslony	112th	124th Ave	Reconstruct/widen from 112th to 124th to fill system.	$9,400,000	2008-2017	Industrial area
10718	Tualatin	Tualatin	Herman	Cipole	124th Ave	Reconstruction from Cipole to 124th.	$4,100,000	2008-2017	Industrial area
10720	Tualatin	Tualatin	Boones Ferry	Tualatin-Sherwood	Ibach	Widen to 5 lanes from Tualatin-Sherwood to Ibach.	$16,500,000	2026-2035	Main street
10721	Tualatin	Tualatin	McEwan	65th	Lake Oswego	Widen to 3 lanes from 65th to Lake Oswego.	$3,520,000	2026-2035	Employment area
10722	Tualatin	Tualatin	65th	Nyberg	Childs Rd	Extension across the Tualatin River from Nyberg to Childs Road.	$15,000,000	2026-2035	Main street
10725	Tualatin	Tualatin	65th	Sagert	Nyberg	Widen to 5 lanes from Sagert to Nyberg.	$19,000,000	2026-2035	Main street
10728	Tualatin	Tualatin	Boones Ferry	N/A	N/A	to Ibach (6 signals).	$78,000	2008-2017	Other
10729	Tualatin	Tualatin	Loop Rd	Martinazzi	Boones Ferry	Construct street from Tualatin-Sherwod to Boones Ferry Rd to Martinazzi.	$6,900,000	2026-2035	Main street
10730	Tualatin	Tualatin	E-W connection	108th	112th	Construct new street.	$18,200,000	2008-2017	Industrial area
10735	Tualatin	Tualatin	Herman	108th	Teton	Widen to 5 lanes from 108th to Teton.	$1,250,000	2018-2025	Main street
10736	Tualatin	Tualatin	124th Ave	Tualatin-Sherwood	Tonquin	Construct new street from Tualatin-Sherwood to Tonquin Rd - 5 lanes.	$82,500,000	2008-2017	Main street
10737	Tualatin	Tualatin	Central Design District Pedestrian Improvements			Pedestrian improvements & bike lanes.	$10,600,000	2008-2017	Town center
10738	Tualatin	Tualatin	Teton	Herman	Tualatin-Sherwood	Add bikelanes to Teton from Avery to Tualatin Rd.	$3,800,000	2026-2035	Industrial area
10739	Tualatin	Tualatin	Nyberg	Tualatin-Sherwood	65th	Add bikelanes on Nyberg from I-5 to 65th.	$7,000,000	2026-2035	Main street
10740	Tualatin	Tualatin	65th Ave.	Borland	Childs Rd	Add bikelanes on 65th Ave from Sagert to Nyberg. Construct a pedestrian bridge over the River from Tualatin to Childs Rd.	$8,000,000	2026-2035	Employment area
10741	Tualatin	Tualatin	95th Ave.	Avery	Tualatin-Sherwood	Add bikelanes from Avery to Tualatin-Sherwood Rd.	$2,400,000	2026-2035	Main street
10742	Tualatin	Tualatin	108th Ave.			Pedestrian bridge over Tualatin River and connecting paths.	$2,000,000	2026-2035	Other
10744	Tualatin	Tualatin	Tualatin River Pathway				$8,600,000	2018-2025	Other
10745	Tualatin	Tualatin	Pedestrian Trail	65th	Martinazzi	Pedestrian trail from 65th to Martinazzi.	$1,600,000	2018-2025	Other
10746	Tigard		Washington Square Connectivity Improvements	Washington Square local street connections	Washington Square local street connections	Increase local street connections at Washington Square Center based on recommendations in regional center plan.	$6,912,000	2018-2025	Regional center
10747	Tigard		Plaza	Nimbus	Locust	Scholls Ferry Road.	$5,166,000	2018-2025	Regional center
10748	Tigard		Greenburg Road Improvements, South	Shady Lane	North Dakota	Widen to 5 lanes with bikeways and sidewalks. Includes bridge replacement.	$14,330,000	2008-2017	Regional center
10749	Tigard		Washington Square Regional Center Pedestrian Improvements	Various	Various	Improve sidewalks, lighting, crossings, bus shelters, and benches at Washington Square.	$5,720,000	2018-2025	Regional center
10750	Tigard		Greenburg Road Improvements	Tiedeman Ave.	Hwy. 99W	Widen to 5 lanes.	$15,017,000	2018-2025	Town center
10751	Tigard	ODOT	Hwy. 217 Overcrossing	Hunziker Road	72nd Ave.	Realign Hunziker Road to meet Hampton Street at 72nd Ave. and removes existing 72nd/Hunziker Road intersection.	$9,635,000	2018-2025	Employment area
10753	Tigard	Tigard	Durham Road Improvements	Upper Boones Ferry Road	Hall Blvd.	Widen to 5 lanes.	$21,093,000	2008-2017	Employment area
10754	Tigard	Tigard	Walnut Street Extension	99W	Hunziker Road	Extend street east of 99W to connect to Hunziker Road. (PE Phase only)	$3,770,000	2008-2017	Town center
10755	Tigard	Tigard	72nd Ave. Improvements	99W	Hunziker Road	Widen to 5 lanes with bikeways and sidewalks. Includes bridge replacement.	$50,964,000	2008-2017	Employment area
10759	Tigard	Tigard	Dartmouth Street Improvements	72nd Ave.	68th Ave.	Widen to 4 lanes with turn lanes and sidewalks.	$4,412,000	2008-2017	Employment area
10760	Tigard	Tigard	Tigard Town Center Pedestrian Improvements	Tigard Town Center	Throughout TC area	Improve Sidewalks, lighting, crossings, bus shelters and benches throughtout the Town Center including: Highway 99W, Hall Blvd, Main Street, Hunziker, Walnut and neighborhood streets.	$4,882,000	2018-2025	Town center
10762	Tigard		Nimbus Ave. Extension	Nimbus Ave.	Greenburg Road	2 lane extension with sidewalks and bike lanes.	$4,680,000	2018-2025	Regional center
10763	Tigard		Washington Square Regional Center Greenbelt Shared Use Path	Hall Blvd.	Hwy. 217	Complete shared-use path construction.	$1,821,000	2008-2017	Regional center
10764	Tigard	Tigard	Durham Road Improvements	Hall Blvd.	99W	replacement.	$30,515,000	2018-2025	2040 corridor

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10766	Tigard		Regional Trail Gap Closure	Wash Sq Loop, and Westside Trails	Fanno, Wash Sq Loop, and Westside Trails	Infill gaps in regional trail network. Affected trails include Fanno Creek, Washington Square Loop and Westside Trails.	$6,890,000		2040 corridor
10767	Tigard		72nd Ave. Intersection Improvements	Hwy 99W	Upper Boones Ferry	Southbound right turn lane, northbound right turn overlap at Hwy 99W and 72nd; Southbound or Eastbound right turn lane at 72nd/Hampton/Hunziker.	$2,000,000	2008-2017	Employment area
10768	Tigard	Tigard	Upper Boones Ferry Intersection Improvements	Durham Road	I-5	Reconfigure intersection of Durham & Upper Boones Ferry to create a through route between Durham & I-5/Carmen Interchange; 2nd Northbound Turn Lane at 72nd/Carmen; 72nd/Boones Ferry assuming Boones Ferry/72nd widened to 5 lanes; eastbound right turn lane at Carman/I-5 southbound.	$9,630,000	2008-2017	Employment area
10769	Tigard	Tigard	Greenburg Intersection Improvements	Hall	Tiedeman Ave	2nd Northbound turn lane, modify signal timing at Greenburg/Gleson/Hall; install boulevard treatment at Greenburg/Washington Square Road; improve geometry/alignment and extence cycle length at intersection of Greenburg/Tiedeman.	$9,512,000	2008-2017	Regional center
10770	Tigard	ODOT	Hwy. 99W Intersection Improvements	68th	Beef Bend Road	At 68th/99W add 2nd westbound turn lane, a northbound left turn lane, a southbound left turn lane; at 72nd/99W add southbound right turn lane, northbound right turn overlap, and retain eastbound right turn lane when Hall widened to 7 lanes; at Dartmouth/99W retain eastbound right turn lane when 99W widened to 7 lanes; at 217 northbound on-ramp add 2nd northbound turn lane and retain both eastbound and westbound right turn lanes when Hall widened to 7 lanes; At 217 southbound on-ramp add 2nd southbound right turn lane and retain eastbound right lane when 99W widened to 7 lanes; at Main/Greenburg/99W add southbound left turn lane, and retain westbound right turn lane when 99W widened to 7 lanes; at Walnut/99W retain westbound right turn lane when 99W widened to 7 lanes; at Beef Bend/99W add southbound right turn lane and adjust cycle length.	$19,669,000	2008-2017	2040 corridor
10771	Forest Grove	TriMet	High Capacity Transit: Blue Line west : Hwy. 8 extension	Hillsboro	Forest Grove	have identified a need to extend the MAX system to Forest Grove. The proposed line would run from the end of the existing HCT system in Hillsboro to downtown Forest Grove.	$1,500,000	2008-2017	Regional center
10773	Forest Grove		Thatcher/Gales Creek	Thatcher	Gales Creek	Re-align Thatcher Road at its intersection with Gales Creek Road.	$3,600,000	2008-2017	Employment area
10774	Forest Grove	Forest Grove	23rd/24th	Hawthorne	Quince	Construct collector level roadway between Hawthorne Ave. and Quince Street.	$15,000,000	2008-2017	Industrial area
10775	Forest Grove	Forest Grove	E/Pacific/19th Intersection	E	Pacific	Extend 19th west and connect up to E and Pacific with a round-about.	$4,800,000	2008-2017	Neighborhood
10776	Forest Grove	Forest Grove	HWY 8/HWY 47 Intersection	HWY 8	HWY 47	Turn Lanes, modify traffic signal.	$3,300,000	2008-2017	Employment area
10778	Forest Grove	Forest Grove	Heather Industrial Connector	Mountain View	HWY 47	Extend westerly from existing terminus to connect to Hwy 47 and the City of Cornelius.	$5,800,000	2008-2017	Industrial area
10779	Forest Grove	Forest Grove	Hwy 8/Pacific/19th	Cornelius City Limits	B	Retrofit the street with a boulevard design from Quince Street to B Street including wider sidewalks, curb extensions, safer street crossings, bus shelters and benches.	$12,100,000	2008-2017	2040 corridor
10781	Forest Grove	Forest Grove	West UGB Trail	Ritchey	David Hill	Multi-use trail.	$3,100,000	2008-2017	Neighborhood
10782	Forest Grove	Forest Grove	Pedestrian and Bicycle Improvements	Creek - Sunset / 26th-Willamina	/Gales Creek - Sunset / 26th-Willamina	Bike lanes and sidewalks.	$5,600,000	2008-2017	Neighborhood
10784	Forest Grove	Forest Grove	David Hill Bicycle Pedestrian	Thatcher	Forest Gale Dr.	Multi-use trail.	$4,900,000	2008-2017	Neighborhood
10785	Cornelius	Cornelius	14th Ave	Dogwood	Holladay	Regulate OR8 traffic flow; widen local collector to improve Main Street/Industrial Area north/south connectivity.	$2,800,000	2008-2017	Main street
10786	Cornelius		Susbauer Rd	TV Hwy	Zion Church Rd	Improve County Freight Connector route to urban standard w/in City (sidewalks & bike lanes); widen rural road with shoulder bike lane, reconstruct Dairy Crk Bridge to eliminate frequent road flooding.	$1,000,000	2008-2017	Main street
10788	Cornelius	Cornelius	10th Ave	TV Hwy	Golf Course Rd	Improve to urban standard w/in City (sidewalks & bike lanes); widen rural road with shoulder bike lane, reconstruct Council Creek Bridge.	$700,000	2018-2025	Main street
10795	Cornelius	Cornelius	Holladay St Extension	4th	Yew	Construct new collector.	$2,500,000	2018-2025	Main street

Table 6.1 -
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10796	Cornelius	Cornelius	Holladay St Extension	10th	Gray	Construct new collector.	$1,300,000	2008-2017	Main street
10797	Cornelius	Cornelius	Holladay St Extension	Gray	19th	Construct new collector.	$1,300,000	2018-2025	Main street
10798	Cornelius	Cornelius	Davis St. Extension	4th Ave	10th Ave	Construct new collector.	$2,500,000	2018-2025	Main street
10799	Cornelius	Cornelius	Davis St. Extension	19th Ave	29th Ave	Construct new collector.	$4,500,000	2018-2025	Main street
10800	Cornelius	Cornelius	Dogwood St. Extension	E. City Limits	345th Ave.	Construct new collector.	$1,500,000	2008-2017	Main street
10801	Cornelius	Cornelius	29th Ave.	TV Hwy	345th Ave.	Construct new collector.	$4,200,000	2008-2017	Main street
10802	Cornelius	Cornelius	29th Ave	TV Hwy		Signalize intersection.	$600,000	2008-2017	Main street
10803	Cornelius	Cornelius	TV Hwy	4th Ave	29th Ave	Interconnect OR 8 signal system in Cornelius.	$450,000	2008-2017	Main street
10804	Cornelius	Cornelius	Collector Bike Lanes			Sign & stripe about 50 blocks of collectors.	$350,000	2008-2017	Main street
10805	Cornelius	ODOT	TV Hwy Ped Infill			Build out sidewalk gaps on TV Hwy. in Cornelius.	$1,020,000	2008-2017	Main street
10806	Cornelius		Council Creek Trail System	See Metro Trail Map	See Metro Trail Map	Build a bike/ped trail system along Council Creek in Cornelius.	$2,040,000	2008-2017	Main street
10807	Cornelius	Cornelius	HCT Park & Ride	26th Ave	N/A	Build station area and park & ride facilities.	$850,000	2018-2025	Main street
10808	Cornelius	Cornelius	HCT Park & Ride	10th Ave	N/A	Build station area and park & ride facilities.	$850,000	2018-2025	Main street
10809	THPRD	THPRD	Bronson Creek Community Trail	Bronson Creek Park Cornell Rd. (THPRD)	Laidlaw Rd.	To design and construct a community trail segment in a greenway corridor, 8'-10' wide paved.	$3,500,000	2018-2025	Other
10810	THPRD	THPRD	Westside Trail (Regional)	Hwy 26	THPRD Nature Park	To design and construct a regional trail multi-use segment in a utility corridor, 10'-12' wide paved.	$4,000,000	2008-2016	Other
10811	THPRD	THPRD	Beaverton Creek Trail (Regional)	SW 194th Ave.	Fanno Creek Trail	To design and construct a regional trail multi-use segment in a utility corridor, 10'-12' wide paved.	$7,000,000	2018-2025	Other
10813	THPRD	THPRD	Westside Trail (Regional)	Farmington Rd.	Scholls Ferry Rd.	To design and construct a regional trail multi-use segment in a utility corridor, 10'-12' wide paved.	$4,000,000	2008-2017	Other
10814	Hillsboro	Hillsboro	Evergreen Rd	25th Ave	Sewell Rd	Widen to 5 lanes with bike lanes and sidewalks.	$4,000,000	2008-2017	Employment area
10815	Hillsboro	Hillsboro	Cornell Rd Signal Coordination	185th	Cornelius Pass	Interconnect Traffic Signals (Extends County ATMS).	$1,000,000	2008-2017	Town center
10816	Hillsboro	Hillsboro	TV Hwy. Signal Coordination	209th	10th Ave.	Interconnect traffic signals.	$2,350,000	2008-2017	2040 corridor
10818	Hillsboro	Hillsboro	231st Ave./Century Blvd	Baseline	Lois	Bridge and 3 lanes with bike lanes and sidewalks.	$26,248,000	2018-2025	
10819	Hillsboro	Hillsboro	231st Ave./Century Blvd	Baseline	Dogwood	Widen to 3 lanes with bike lanes and sidewalks.	$6,800,000	2008-2017	
10820	Hillsboro	Hillsboro	Brookwood (247th)	TV Hwy.	River Road	Widen to 3 lanes with bike/ped TV Hwy to Alexander, 2 lanes with onstreet parking and bike/ped Alexander to UGB.	$2,094,000	2008-2017	
10821	Hillsboro	Hillsboro	Huffman	Shute	West UGB(Sewell)	Build 3 lane with bike lanes and sidewalks.	$9,282,000	2008-2017	Industrial area
10822	Hillsboro	Hillsboro	253rd	Evergreen	North UGB	Build 3 lane with bike lanes and sidewalks.	$6,162,000	2008-2017	Industrial area
10823	Hillsboro	Hillsboro	Amberwood	206th	Cornelius Pass	Improve to 3 lane with bike lanes and sidewalks.	$2,312,000	2018-2025	Town center
10824	Hillsboro	Hillsboro	Cornell Rd	Arrington	Main Street	Improve to 5 lane with bike lanes and sidewalks.	$9,248,000	2018-2025	Regional center
10827	Hillsboro	Hillsboro	Quatama Road	LRT	Cornelius Pass	Widen to 3 lane with bike lanes/sidewalks.	$1,800,000	2008-2017	Station community
10828	Hillsboro	Hillsboro	Edgeway (Salix)	LRT	Walker Rd	Extend as 2/3 lane with bike/sidewalks.	$6,664,000	2018-2025	Station community
10831	Hillsboro	Hillsboro	Century Blvd	Bennett	West Union Rd	Extend 2/3 lane with US 26 Overpass, connect existing segments.	$12,920,000	2018-2025	Industrial area
10833	Hillsboro	Hillsboro	Grant Street Extension	28th	Brookwood	Extend 3 lane road with bike lanes/sidewalks.	$12,240,000	2018-2025	Station community
10834	Hillsboro	Hillsboro	28th Ave.	Main	25th	Widen to 3 lanes with bike/sidewalks.	$4,352,000	2018-2025	Main street
10835	Hillsboro	Hillsboro	185th Ave.	Cornell Rd	Walker Rd	Widen to 7 lanes.	$4,896,000	2018-2025	Town center
10836	Hillsboro	Hillsboro	Evergreen Rd	Glencoe Rd	25th	Widen to 5 lanes with bike lanes and sidewalks.	$5,440,000	2026-2035	2040 corridor
10838	Hillsboro	Hillsboro	Davis Road	Brookwood	234th (Century)	Extend 3 lane road with bike lanes/sidewalks.	$4,474,000	2008-2017	
10839	Hillsboro	Hillsboro	Century Blvd (234th)	Alexander	South UGB	Extend 3 lane road with bike lanes/sidewalks.	$11,636,000	2008-2017	
10840	Hillsboro	Hillsboro	Regional Center Improvements	N/A	N/A	Miscellaneous Improvements to maintain capacity.	$10,470,000	2018-2025	Regional center
10841	Hillsboro	Hillsboro	Other Traffic Signals	N/A	N/A	Future Traffic Signals (Town Centers, 2040 Corridors).	$5,700,000	2008-2017	
10842	Hillsboro	Hillsboro	Other Collector Reconstruction	N/A	N/A	Miscellaneous locations.	$35,000,000	2018-2025	
10843	Hillsboro	Hillsboro	Intersection Improvements	N/A	N/A	Miscellaneous locations.	$25,000,000	2018-2025	
10846	Hillsboro	ODOT	TV Hwy.	185th	Brookwood	Expand to 7 lanes with bike/sidewalks.	$42,000,000	2026-2035	2040 corridor
10847	Hillsboro	Hillsboro	Regional Center Ped Improvements	N/A	N/A	Infill missing pedestrian sidewalks.	$4,550,000	2018-2025	Regional center
10848	Hillsboro	Hillsboro	Industrial/Town Center Ped Improv	N/A	N/A	Infill missing pedestrian sidewalks.	$1,300,000	2018-2025	2040 corridor
10849	Hillsboro	Hillsboro	Regional Center- Bike Improvement	N/A	N/A	Infill missing bike lane connections.	$2,110,000	2018-2025	Regional center
10850	Hillsboro	Hillsboro	Beav Ck Trail, Bronson Ck Trail,			Construct bike/ped trail.	$1,000,000	2018-2025	2040 corridor
10851	Hillsboro	Hillsboro	Rock Ck Trail - Multi Use	River Road	Orchard Park (East of Cornelius Pass Rd)	Construct bike/ped trail.	$5,520,000	2018-2025	2040 corridor
10852	Wilsonville	ODOT	95th Ave/Boones Ferry Rd/Commerce Circle Intersection Improvements	95th Ave.	Southbound off-ramp I-5/Stafford Rd Interchange	Provide dual left-turn and right-turn lanes, improve signal synchonization, access management measures, fix sight-distance problems, and add extra lanes.	$2,500,000	2008-2017	2040 corridor

Table 6.1 -
Proposed 2035 RTP Financially Constrained System

Metro Project ID	Nominating Agency	Facility Owner / Operator	Project/Program Name	Project Start Location (Identify starting point of project)	Project End Location (Identify terminus of project)	Description	Estimated Cost ($2007)	Time Period	2040 Land Use
10853	Wilsonville	Wilsonville	Kinsman Rd Extension from Ridder Rd to Day St	Ridder Rd	Day St	Extend 3 lanes with sidewalks and bike lanes.	$6,500,000	2008-2017	Industrial area
10854	Wilsonville		Tonquin Trail	Tualitin/Sherwood	Washington/Clackamas County line	Shared use path with some on-street portions.	$2,000,000	2008-2017	Other
10855	Metro		Regional TOD Implementation Program	2040 Centers, Stations Areas and Corridors	2041 Centers, Stations Areas and Corridors	growth management, is implementing a highly integrated land use and transportation plan calling for substantial amounts of the region's growth to occur in medium- to high-density mixed-use, walkable urban "centers" linked by high quality transit service. TOD Program funding helps cause the construction of "transit villages" and other catalyst projects by the private sector. These projects mix of moderate- to high-intensity land uses, are physically or functionally connection to the transit system (including MAX light rail, Portland streetcar, commuter rail and high frequency bus), and create a walkable communities through design	$67,500,000	2008 - 2035	Other
10856	Gresham		Richey/Foster Connection	Intersection Richey/Foster		Construct roundabout and related improvements to Foster.	$656,452	2018-2025	Employment area
10857	Gresham	Gresham	Jenne/Foster	Intersection Jenne/Foster		Add second EB left turn lane. Requires widening of Jenne North.	$540,780	2018-2025	Employment area
10858	Gresham	Gresham	174th/Powell	Intersection of 174th/Powell		Improve intersection to 5 lane section.	$1,860,824	2018-2025	Employment area
10860	Gresham	Gresham	Collector 72 (Knapp)	172nd	182nd	Build new road to green street collector standards.	$10,703,002	2008-2017	Town center
10861	Gresham	Gresham	Collector 72 (Knapp)	182nd	190th	Build new road to green street collector standards.	$10,368,393	2008-2017	Town center
10862	Gresham	Gresham	Community Street 72	190th	Binford Parkway	Build new road to green street community standards.	$9,991,393	2008-2017	Employment area
10863	ODOT	ODOT	southbound to two-way under I-84 and widen to five lanes.	Troutdale interchange (exit 17)		Convert Marine Drive one-way southbound to two-way under I-84 and widen to five lanes.	$20,400,000	2008-2017	Throughway
10864	ODOT	ODOT	New interchange on US 26 to serve industrial area.	US 26 and Callister Road	US 26 and 267th Ave.	New interchange on US 26 to serve industrial area.	$29,500,000	2018-2025	Throughway
10865	ODOT	ODOT	New I-205 NB on-ramp at I-205/Airport Way interchange based on I-205/Airport Way Study	I-205 and Airport Way		New I-205 NB on-ramp at I-205/Airport Way interchange based on I-205/Airport Way Study.	$27,200,000	2008-2017	Throughway
10866	ODOT	ODOT	Improve I-5/Columbia River bridge (Oregon share)	Victory Blvd.	Washington state line	Improve I-5/Columbia River bridge (Oregon share).	$50,000,000	2008-2017	Throughway
10867	ODOT	ODOT	engineering and environmental work to modernize freeway and ramps to improve access to the Lloyd District and Rose Quarter	I-5 and I-84	I-5 and Greeley St.	Conduct preliminary engineering and environmental work to modernize freeway and ramps to improve access to the Lloyd District and Rose Quarter.	$50,000,000	2008-2017	Throughway
10869	ODOT	ODOT	highway facility from I-205 to 122nd and interim connection to 122nd Ave as defined by supplemental EIS	I-205	122nd Ave.	Construct new highway facility from I-205 to 122nd and interim connection to 122nd Ave as defined by supplemental EIS.	$200,000,000	2008-2017	Throughway
10870	ODOT	ODOT	Conduct study, complete environmental design work and NEPA for I-5 to OR-99W Connector and acquire ROW	OR 99W	I-5	Phase 1: Conduct study, complete environmental design work and NEPA for I-5 to OR-99W Connector and acuire ROW.	$100,500,000	2008-2017	Throughway
10871	ODOT	ODOT	road), from I-84 EB off-ramp to 257th Dr.	I-84 EB off ramp	257th Dr.	Marine Drive extension (backage road), from I-84 EB off-ramp to 257th Drive.	$8,200,000	2008-2017	Throughway
10872	ODOT	ODOT	interchange ramp and extend acceleration lane and add auxiliary lane on SB I-5 to Stafford Road.	I-205	Stafford Road	Add lane to SB I-205 to SB I-5 interchange ramp and extend acceleration lane and add auxiliary lane on SB I-5 to Stafford Road.	$9,700,000	2008-2017	Throughway
10873	ODOT	ODOT	US 26W: Widen highway to 6 lanes	185th Ave.	Cornelius Pass Road	Widen highway to 6 lanes.	$36,119,034	2008-2017	Throughway
10874	ODOT	ODOT	between Columbia Blvd and Denver Ave near Argyle Street; replace Denver Viaduct; Relocate/reconstruct and signalize Denver/Schmeer Rd intersection	Victory	Lombard	Construct new roadway between Columbia Blvd and Denver Ave near Argyle Street; replace Denver Viaduct; Relocate/reconstruct and signalize Denver/Schmeer Rd intersection.	$46,000,000	2008-2017	Throughway
10875	ODOT	ODOT	OR 217: Braid OR 217 ramps between Beaverton-Hillsdale Hwy. and Allen Blvd. in both directions.	Beaverton-Hillsdale Hwy.	Allen Blvd.	Braid OR 217 ramps between Beaverton-Hillsdale Highway and Allen Boulevard in both directions.	$79,600,000	2008-2017	Throughway
10876	ODOT	ODOT	205 NB exit	Halsey exit	I-205 NB exit	I-84 Lane Extension: Halsey to I-205 NB ramp.	$6,446,790	2008-2017	Throughway
10890	ODOT	ODOT	way for Phase 1: I-205 to SE 122nd Ave	I-205	122nd Ave.	Acquire right-of-way for Phase 1: I-205 to SE 122nd Ave.	$55,000,000	2008-2017	Throughway

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Metro Project ID	Nominating Agency	Facility Owner / Operator	Project/Program Name	Project Start Location (Identify starting point of project)	Project End Location (Identify terminus of project)	Description	Estimated Cost ($2007)	Time Period	2040 Land Use
10894	ODOT	ODOT	Sunrise Hwy. Phase 1 PE: I-205 to SE 122nd Ave	I-205	SE 122nd Ave	PE for Phase 1: I-205 to SE 122nd Ave.	$15,000,000	2018-2025	Throughway
10899	TriMet		Washington County Commuter Rail spare DMUs	N/A	N/A	1 powered and 2 trailer DMUs for spares and service reliability.	$9,000,000	2010	
10901	TriMet		MAX light rail: South Corridor Ph 2: Portland to Milwaukie	N/A	N/A	Portland, N Macadam, OMSI, Brooklyn, Milwaukie, (Park Ave.).	$816,500,000	2010	
10912	TriMet		Streetcar Extension: Portland to Lake Oswego via Willamette Shore	N/A	N/A	Portland to Lake Oswego extension of Portland Streetcar.	$250,000,000	2015	
10916	TriMet		Bus Rapid Transit: SE McLoughlin to Oregon City and CCC	N/A	N/A	Milwaukie, Gladstone, Oregon City, CCC (possible predecessor to LRT).	$8,500,000	2015	
10921	TriMet		MAX LRT on Steel Bridge: Capacity and operations improvements	N/A	N/A	Possible additional tracks, bridge rehabilitation, seismic upgrade.	$50,000,000	2015	
10926	TriMet		Transit dispatch center upgrade	N/A	N/A	To accommodate increasing operating complexities.	$7,600,000	2015	
10927	TriMet		MAX LRT: Operational upgrades	N/A	N/A	Sidings, powered turnouts, block and signal control infill.	$18,862,000	on-going	
10928	TriMet		New MAX LRT vehicles	N/A	N/A	See below.	$49,000,000	see below	
10929	TriMet		Tualatin	N/A	N/A	improvements.	$3,075,000	2015	
10930	TriMet		Frequent Bus: Line 31 - Milwaukie to Clackamas Regional Center	N/A	N/A	240 additional service hours upgrade and related bus stop and ROW improvements.	$1,100,000	2015	
10931	TriMet		Frequent Bus: Line 31 - Clackamas Regional Center to 152nd	N/A	N/A	125 additional service hours upgrade and related bus stop and ROW improvements.	$1,100,000	2020	
10933	TriMet		to I-205	N/A	N/A	ROW improvements.	$1,600,000	2015	
10934	TriMet		Frequent Bus: Line 4 - Division to Gresham TC	N/A	N/A	50 additional service hours for span of service and related bus stop and ROW improvements.	$3,375,000	2015	
10935	TriMet		Park	N/A	N/A	ROW improvements.	$1,200,000	2015	
10936	TriMet		Frequent Bus: Line 15 - Belmont	N/A	N/A	ROW improvements.	$2,600,000	2015	
10937	TriMet		Frequent Bus: Line 54 - Beaverton Hillsdale Hwy. to Beaverton TC	N/A	N/A	225 additional service hours for FS extension and related bus stop and ROW improvements.	$2,450,000	2020	
10938	TriMet		Frequent Bus: Line 33 - McLoughlin to Clackamas Community College	N/A	N/A	260 additional service hours for FS extension and related bus stop and ROW improvements.	$875,000	2020	
10939	TriMet		Frequent Bus: Line 33 - McLoughlin to Oregon City	N/A	N/A	1601 additional service hours for span of service and related bus stop and ROW improvements.	$1,675,000	2020	
10940	TriMet		Frequent Bus: Line 35 - Macadam Ave. to Oregon City	N/A	N/A	605 additional service hours upgrade and related bus stop and ROW improvements.	$3,600,000	2020	
10941	TriMet		Frequent Bus: Line 12 - Barbur to Durham Road	N/A	N/A	60 additional service hours for span of service and related bus stop and ROW improvements.	$3,500,000	2020	
10942	TriMet		Frequent Bus: Line 12 - Sandy to Parkrose TC	N/A	N/A	40 additional service hours for span of service and related bus stop and ROW improvements.	$4,175,000	2020	
10943	TriMet		Frequent Bus: Line 12 - Barbur from Durham to Sherwood	N/A	N/A	140 additional service hours for FS extension and related bus stop and ROW improvements.	$1,050,000	2025	
10944	TriMet		Town Center to Oregon City via Webster Road	N/A	N/A	305 additional service hours for upgrade of service and related bus stop and ROW improvements.	$2,825,000	2025	
10945	TriMet		181st/182nd Ave., NE Sandy to SE Powell Blvd.s	N/A	N/A	380 additional service hours for upgrade of service and related bus stop and ROW improvements.	$2,025,000	2025	
10979	City of Portland		Burnside/Couch Streetcar, East & West [NW 23rd to E 14th]	NW 23rd	E 14th	Construct streetcar from NW 23rd Avenue to E 14th Avenue.	$118,500,000	2015	
10981	TriMet		Regional Bus: North Macadam / Line 35 realignment	N/A	N/A	Shift of Line 35 through this fast-growing area.	tbd	2010	
10984	TriMet		Park & Ride	N/A	N/A	Reconfigure lot in response to lease expiration.	$2,000,000	2010	
10990	TriMet		Park & Ride management strategy implementation	N/A	N/A	Convert major park & ride lots for shared use and/or pay lots.	$0		
10993	TriMet		Milwaukie bus layover facility	N/A	N/A	Modification to Milwaukie Park & Ride.	$627,000	2010	
10995	TriMet		Rose Quarter Bike Improvements	N/A	N/A	Modify Rose Quarter to accommodate through bike traffic.	$250,000	2008	
10997	TriMet		Willow Creek Transit Center	N/A	N/A	Reconstruct TC portion of MAX/bus facility for TOD opportunity (PCC).	tbd		
10998	TriMet		Bus replacements	N/A	N/A	40 buses.	$355,200,000	2008-2035	
10999	TriMet		Bus purchases for congestion	N/A	N/A	40 buses.	$0	2008-2035	
11015	TriMet		Bus purchases for expansion	N/A	N/A	Allocate to individual routes, above.	$0	2008-2035	
11016	TriMet		LIFT vehicle replacement	N/A	N/A	36 buses.	$145,350,000	2008-2036	

Table 6.1 -
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11032	TriMet		Ruby Junction light rail operating base expansion	N/A	N/A	Stub yard expansion on west side of Eleven-Mile Ave. Cost is inlcuded as part of the Milwaukie light rail project cost estimate.	tbd	2015	
11035	TriMet		expansion	N/A	N/A	Good deadhead site, land already available, shop annex and parking.	$11,637,609	2015	
11036	TriMet		replacement	N/A	N/A	Over due replacement, creates new entrance.	$6,411,300	2010	
11038	TriMet		expansion	N/A	N/A	Phase 1 to include parking structure.	$10,386,000	2010	
11042	TriMet		Bus priority treatment	N/A	N/A	Traffic signal priority treatments, jump lanes, etc.	$5,000,000	on-going	
11043	TriMet		Pedestrian access improvements	N/A	N/A	Sidewalks, crosswalks and ADA improvments to transit access.	$5,000,000	on-going	
11044	Metro		Regional Trail Master Plans	N/A	N/A	Develop trail master plans, working with local jurisdicitions, trail advoacate orgainzations, local residents, property owners, railforad companies, and businesses, for the following locations: Hillsboro to Council Creek & Gales Creek Trail, North Portland Greenway Trail: Steel Bridge to ST John's Bridge, East Buttes Loop Trail Master Plan: Gresham and Happy Valley to Dmascus; Springwater Corridor to Clackamas Bluffs and Greenway, Gateway to the Columbia Gorge Trail: Gresham/Fairview to Troutdale to Columbia Gorge Trail Connections, Portland South Watefront to Lake Osego to West Linn Trail, Columbia Slough Trail, Regional Trails Strategy and Master Plan for the Porltand Metro Area (including relationship of regional trails to on-street bikeways and local trail system).	$1,100,000	2008-2017	
11054	Metro		Regional Travel Options Program	Employment Areas, 2040 Centers, new corridor projects and congested corridors	Employment Areas, 2040 Centers, new corridor projects and congested corridors	RTO is the region's tool to manage congestion and reduce air pollution. RTO implements transportation demand management strategies such as employer outreach to encourage employers to subsidize and provide end-of-trip facilities to help employees choose options other than driving alone. RTO supports Transportation Management Associations and other public/private partnerships that reduce VMT. RTO also addresses non-commute trips through individualized marketing; helping residents try new travel options fro some or all of their trips. As the region's population and economy grows, the RTO program will gain efficiencies moving people and goods on built-out transportation infrastructure.	$74,250,000	2008-2035	Employment area
11074	Gresham		East Buttes Loop Trail: From Springwater Trail to Rodlun Road	Springwater Trail	Rodlun Road	Construct new shared use trail (12' wide pervious asphalt)	$8,300,000	2008-2017	Outer neigborhood/Park
11081	Lake Oswego		Boones Ferry Rd bike lanes	Country Club	North City Limits	Bike lanes	$5,710,000	2008-2017	2040 corridor
11082	Lake Oswego		Carman Dr. sidewalks & bike lanes	Meadows Rd	I-5	bike lanes	$760,000	2008-2017	Neighborhood
11083	Lake Oswego		Iron Mountain	10th St.	Bryant Rd.	bike lanes	$3,900,000	2008-2017	Neighborhood
11084	Lake Oswego		Pilkington Rd bike lanes/ sidewalk	Boones Ferry Rd	Childs Rd	park & ride relocation	$1,510,000	2008-2017	Neighborhood
11085	Lake Oswego		Kerr Parkway bike lanes	Stephenson	Boones Ferry Rd	bike lanes	$1,560,000	2008-2017	Neighborhood
11087	Lake Oswego		Bryant Rd bike lanes/pathway	Childs Rd	Boones Ferry Rd		$610,000	2008-2017	Neighborhood
11088	Oregon City	Clackamas Co.	Holly Lane	Redland Rd.	Holcomb Rd.		$21,000,000	2018-2025	Other
11089	Washington Co.	Washington Co.	92nd Ave. Ped.	Garden Home Blvd.	Allen Blvd.	Completes 3800 feet of sidewalk improvements to transit corridor	$3,922,000	2008-2017	Neighborhood
11090	Washington Co.	Washington Co.	10th Ave/Cornell Bike	Baseline Rd.	25th Ave.	Completes 5400 feet of bike lanes in transit corridor	$7,911,000	2008-2017	2040 corridor
11091	Portland/Port of Portland	Portland/Port of Portland	Columbia Blvd./I-205 Interchange: SB On-Ramp Improvement			Expand the on-ramp to three lanes, including for truck/HOV	$750,000	2008-2017	
11092	Port of Portland		Ramsey Rail Yard	Bonneville Yard	BNSF Ford Facility	Construct up to six yard tracks and one lead track	$13,900,000	2008-2018	
11093	Washington Co.	Washington Co.	Flashing Yellow Arrow Program (ITS)	Various locations in urban Washington Co.		Install flashing yellow arrow signal phase at more than 200 intersections	$1,326,000	2008-2017	2040 corridor
11094	Cornelius		Baseline Boulevard Imprvm't	10th	19th	Build sidewalks & other pedestrian amenities	$3,600,000	2008-2017	Main street
11095	Cornelius		11th-17th Avenue	Baseline	Adair	Ped improvement of Main Street Dist local streets	$3,400,000	2008-2017	
11100	Gresham		Road to 190th	Rodlun	190th	Construct new shared use trail (12' wide pervious asphalt)	$2,800,000	2008-2017	Outer neigborhood/Park
11102	City of Portland		Extension to Hollywood via Sandy Blvd	E 14th	Hollywood District	Extend streetcar from E 14th Avenue to the Hollywood District.	$70,000,000	2015	
11103	Metro		Regional Planning				$67,500,000	2008-2035	
11104	Metro		Regional ITS/TSMO				$40,500,000	2008-2035	
11105	SMART		Current Fixed Route and Dial-a-Ride Services			Continuation of 5 fixed routes with scheduled service and dial-a-ride service for seniors and people with disabilities	$228,700,000	2008-2017	Other

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Metro Project ID	Nominating Agency	Facility Owner / Operator	Project/Program Name	Project Start Location (Identify starting point of project)	Project End Location (Identify terminus of project)	Description	Estimated Cost ($2007)	Time Period	2040 Land Use
11106	SMART		Extension of transit service to connect with regional commuter rail			Expansion of transit service to coordinate and connect with the commuter rail service.	$33,750,000	2008-2017	Intermodal facility
11107	SMART		Extension of transit service from Wilsonville to downtown Portland			Provide an intercity transit connection between Wilsonville and Portland.	$19,100,000	2008-2017	Other
11108	SMART		Extension of transit service within Wilsonville			Extend transit service to connect newl-developed residential areas with other areas of Wilsonville and with multi-modal connections.	$24,550,000	2008-2017	Neighborhood
11109	SMART		Bus Replacements			Purchase buses to replace those that are no longer safe or reliable.	$13,100,000	2008-2035	Other
11110	SMART		Wilsonville Commuter Rail Station Park & Ride Improvements			Provide paved parking spaces at the Wilsonville commuter rail station.	$4,500,000	2008-2017	Intermodal facility
11111	SMART		Wilsonville SMART Offices			Design and construct SMART offices near the Wilsonville commuter rail station	$2,000,000	2008-2017	Other
11112	SMART		Wilsonville SMART Fleet Services Facility			Design and construct a transit fleet services facility near the Wilsonville commuter rail station	$8,000,000	2008-2017	Other
11113	SMART		Transportation Management Association (TMA)			Form a transportation management association (TMA) to provide transportation services and information on alternatives to local employers and employees	$200,000	2018-2025	Industrial area and Employment Area
11114	Portland		Foster & Woodstock, SE (87th - 101st): Streetscape	SE 87th	SE 101st	Implement Lents Town Center Business District Plan with new traffic signals, pedestrian amenities, wider sidewalks, pedestrian crossings, street lighting, increased on-street parking.	$2,151,724	2008-2017	Town Center, Main Street or Station Community
11115	TriMet		Merlo ATP Administration Building	N/A	N/A	Replaces lease space in CWS offices.	$1,048,537	2010	

CHAPTER 7

Implementation

The goals, objectives, actions and investment strategies in this plan address federal, state and regional planning requirements. Implementation of this plan will require a cooperative effort by all jurisdictions responsible for transportation planning in the region, and will involve the following:

- adoption of regional policies and transportation strategies in local plans;
- a concerted regional effort to secure needed funding to build planned transportation facilities needed to serve a growing region;
- focusing strategic investments and system management policies that leverage key 2040 Growth Concept components and preserve the function of the region's mobility corridors;
- periodic updates of the plan on a rolling, four-year cycle to respond to development trends and the associated changes in travel demand;
- incorporating transportation solutions from corridor-level and sub-area refinement plans; and
- ongoing monitoring for consistency of the RTP with local TSP development and other implementing agency plans, including the Oregon Department of Transportation's Six-Year State Transportation Improvement Program (STIP) and TriMet's Transit Implementation Plan (TIP).

Chapter Organization:

This chapter is organized into the following sub-sections:

7.1 Compliance with Federal Requirements: This section describes the metropolitan planning process outlined by Congress in the federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and how it applies to the plan.

7.2 Compliance with State Requirements: This section describes the applicable statewide planning goals and regulations the regional transportation system plan (TSP) must address and the corresponding provisions contained in the plan.

7.3 Compliance with Regional Requirements: This section describes the applicable regional planning requirements the RTP must address and the corresponding provisions contained in the plan.

7.4 Local Implementation: This section describes how the plan is implemented through local Transportation System Plans (TSPs).

7.5 Metropolitan Transportation Improvement Program (MTIP) Implementation: This section describes the relationship of the plan to the Metropolitan Transportation Improvement Plan.

7.6 Process for Amending the Regional Transportation Plan (RTP): This section describes the process for updating and amending the plan.

7.7 Project Development and Refinement Planning: This section describes the process for completing refinement and concept plans, and locations where such plans must be completed in order to define RTP needs.

7.8 Unresolved Issues: This section describes unresolved issues that cannot be addressed at this time, but must be considered in future updates to the plan.

7.1 Compliance with Federal Requirements

7.1.1 Metropolitan Planning Required by SAFETEA-LU

The metropolitan planning process outlined by Congress in the federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) establishes a cooperative, continuous and comprehensive framework for making transportation investment decisions in metropolitan areas throughout the United States. Program oversight is a joint FHWA/FTA responsibility. The federal planning requirements were originally promulgated as part of the 1992 federal Intermodal Surface Transportation Efficiency Act (ISTEA), and were substantially reaffirmed by TEA-21 in 1998 and SAFETEA-LU in 2005.

Among the most significant continuing provisions of SAFETEA-LU for the Metro region are the following planning requirements:

- Metro, in cooperation with the ODOT, TriMet and other transit operators, remain responsible for determining the best mix of transportation investments to meet metropolitan transportation needs.

- Metro is responsible for adopting the Regional Transportation Plan.

- Metro is responsible for adopting the MTIP. ODOT must include the MTIP without change in the STIP. The Governor is designated to resolve any disagreements between Metro's MTIP and ODOT's STIP.

- The RTP must provide a 25-year planning perspective, addressing air quality consistency, fiscal constraint and public involvement requirements established under the original ISTEA.

- The Oregon Department of Environmental Quality must adopt an Oregon State Implementation Plan (SIP) to maintain air quality standards for ozone and carbon monoxide. The SIP includes actions that must be adopted by Metro and results in an emissions budget for carbon monoxide and ozone. Metro must demonstrate progress toward implementing the actions identified in the SIP and demonstrate conformity with the carbon monoxide and ozone emissions budgets.

- The plan must contain operational and management strategies to improve the performance of existing transportation facilities; investment and other strategies that provide for multimodal capacity increases based on regional priorities and needs; and proposed transportation and transit enhancement activities.

- A Congestion Management Process (CMP) is required in larger metropolitan areas that are designated as air quality maintenance or non-attainment areas. The Portland metropolitan region was designated as a maintenance area in 1997. Highway projects that increase single-occupant vehicle capacity must be consistent with the CMP.

- The CMP continues the requirement that alternatives to motor vehicle capacity increases be evaluated prior to adding single-occupant vehicle projects.

- Federal Highway Administration and Federal Transit Administration certification of the planning process is required in larger metropolitan areas, including the Metro region.

TEA-21 consolidated the 16 planning factors from the original ISTEA into seven broad areas to be considered in the planning process (contained in section 1203(f) of the federal act). SAFETEA-LU segregated safety and security planning into separate factors. These factors are advisory, and failure to consider any one of the factors is not reviewable in court. However, the eight factors are fully address in the RTP, and seek to:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency

- Increase the safety of the transportation system for motorized and non-motorized users

- Increase the security of the transportation system for motorized and non-motorized users

- Increase the accessibility and mobility options available to people and for freight

- Protect and enhance the environment, promote energy conservation and improve quality of life

- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight

- Promote efficient system management and operation

- Emphasize the preservation of the existing transportation system

Each of these factors has been addressed through RTP policies identified in Chapter 3 of this plan and selection of the pool of transportation projects and programs identified in Chapter 4 of this plan. **Table 7.1** shows the relationship between each of the RTP goals described in Chapter 3 and the planning factors identified in the federal SAFETEA-LU.

Table 7.1
Comparison of RTP Goals to SAFETEA-LU Planning Factors

SAFETEA-LU Planning Factor	Regional Transportation Plan Goal(s)
Planning Factor 1: Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.	**Goal 1:** Foster Vibrant Communities and Efficient Urban Form **Goal 2:** Sustain Economic Competitiveness and Prosperity **Goal 4:** Emphasize Efficient and Effective

SAFETEA-LU Planning Factor	Regional Transportation Plan Goal(s)
	Management of the Transportation System **Goal 6:** Promote Environmental Stewardship **Goal 7:** Enhance Human Health **Goal 8:** Ensure Equity **Goal 9:** Ensure Sustainability **Goal 10:** Deliver Accountability
Planning Factor 2: Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency.	**Goal 2:** Sustain Economic Competitiveness and Prosperity
Planning Factor 3: Increase the accessibility and mobility of people and for freight.	**Goal 2:** Sustain Economic Competitiveness and Prosperity **Goal 3:** Expand Transportation Choices
Planning Factor 4: Promote efficient system management and operation.	**Goal 4:** Emphasize Efficient and Effective Management of the Transportation System **Goal 9:** Ensure Sustainability
Planning Factor 5: Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.	**Goal 2:** Sustain Economic Competitiveness and Prosperity **Goal 3:** Expand Transportation Choices **Goal 4:** Emphasize Efficient and Effective Management of the Transportation System
Planning Factor 6: Increase the safety of the transportation system for motorized and non-motorized users.	**Goal 4:** Emphasize Efficient and Effective Management of the Transportation System **Goal 5:** Enhance Safety and Security
Planning Factor 7: Increase the security of the transportation system for motorized and non-motorized users.	**Goal 4:** Emphasize Efficient and Effective Management of the Transportation System **Goal 5:** Enhance Safety and Security
Planning Factor 8: Emphasize the preservation of the existing transportation system.	**Goal 4:** Emphasize Efficient and Effective Management of the Transportation System **Goal 9:** Ensure Sustainability

In addition to changes to the ISTEA planning factors and scope of regional transportation planning, TEA-21 also modified several other elements of the federal ISTEA. Under the revised provisions, the Regional Transportation Plan must:

- Include operation and management of the transportation system in the general objectives of the planning process

- Address transportation planning area boundary relationship to non-attainment area boundaries; boundaries established on date of enactment remain as is, but future expansions of non-attainment area boundaries do not force expansion of transportation planning area unless agreed to by the Governor and Metro

- Coordinate with neighboring MPOs where a project crosses planning area boundaries

- Specifically identify freight shippers and users of public transit on the list of stakeholders to be given opportunity to comment on plans and TIPs

- Cooperate with ODOT and transit agencies in the development of financial estimates that support plan and TIP development

- Identify projects that will be implemented within a forecast of revenues that can be reasonably expected to be available over the life of the Regional Transportation Plan. The Regional Transportation Plan may also include additional projects that may be identified for illustrative purposes, and would be included in plans and TIPs if additional resources were available. Additional action by ODOT, Metro and the Secretary of Transportation is required to advance such projects.

SAFETEA-LU further expanded regional planning requirements, with the following new provisions:

- MPOs are encouraged to consult or coordinate with planning officials responsible for other types of planning activities affected by transportation, including planned growth, economic development, environmental protection, airport operations, and freight movement.

- The metropolitan planning process must promote consistency between transportation improvements and State and local planned growth and economic development patterns.

- The RTP must be updated at least every 4 years in non-attainment and maintenance areas (up from a 3-year cycle).

- Intermodal connectors are added as a transportation facility.

- The RTP must include a discussion of potential environmental mitigation activities along with potential sites to carry out the activities to be included. The discussion is to be developed in consultation with Federal, State, and tribal wildlife, land management, and regulatory agencies.

- Transit operators are to be included in the cooperative development of funding estimates for the financial plan section.

- MPOs are required to consult with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning development of the Plan.

- Representatives of users of pedestrian walkways, bicycle transportation facilities, seniors and people with disabilities are specifically added as parties to be provided with the opportunity to participate in the planning process.

- The MPO must develop a participation plan in consultation with interested parties that provides reasonable opportunities for all parties to comment.

- To carry out the participation plan, public meetings must be conducted at convenient and accessible locations at convenient times, employ visualization techniques to describe plans and make public information available in an electronically accessible format.

- The RTP must be published and made available electronically.

While the RTP already met many of these provisions in previous updates, the current plan has been explicitly updated to ensure full consistency with these new requirements. A summary of RTP compliance with these provisions will be included in formal federal findings that will be developed after the plan is approved.

7.1.2 Air Quality Conformity: Criteria that Constitutes a Conformed Plan

The 2035 RTP Investment Pool described in Chapter 4 requires new revenue sources and go beyond federal requirements that long-range transportation plans be based upon "constrained resources." Air quality conformity of this plan will be based on a scaled-down 2035 RTP investment Pool that can likely be implemented within the federally defined fiscally constrained level of reasonably available resources. This system will be termed the 2035 Financially Constrained System. Air quality conformity entails:

- Making reasonable progress on Transportation Control Measures as identified in the SIP.
- Staying within the carbon monoxide and ozone emissions budgets set for transportation with the SIP based upon a fiscally constrained transportation network.

The Portland metropolitan region is currently designated a maintenance area for the National Ambient Air Quality Standards (NAAQS) for ozone and carbon monoxide under the Clean Air Act Amendments of 1990. In addition, although re-classified to "attainment" for ozone, the region has chosen to demonstrate conformity with ozone standards to ensure the region does not lapse into non-attainment. Finally, new state and/or federal regulations to reduce climate change are likely in the RTP's planning horizon and will be addressed in future updates to the plan.

7.1.3 Demonstration of Air Quality Conformity

The Appendices will provide detailed information on the air quality conformity analysis to be completed on the 2035 Financially Constrained System. The analysis will be completed upon approval of the financially constrained system.

Section 7.2 will be updated as part of Phase 5 of the RTP update, when compliance with the Oregon Transportation Planning Rule (TPR) will be addressed. In 2006, the Land Conservation and Development Commission (LCDC) adopted several new provisions in a series of amendments to the TPR. These changes represent major new challenges for the RTP, and will be the focus of many of the Phase 5 activities.

7.2 Compliance with State Requirements

This section identifies the applicable state regulations for the regional transportation system plan and identifies the corresponding provisions contained in this RTP. Findings of Fact and Conclusions of Law explaining TPR compliance, which were adopted with the 2000 RTP, are found in Appendix 5.0.

7.2.1 System Plan Required by Oregon Transportation Planning Rule

The Oregon Transportation Planning Rule (TPR) sets forth a number of requirements for Metro's Transportation System Plan (TSP). This RTP has a number of purposes. This Plan is adopted as the regional functional plan for transportation and the federal metropolitan transportation plan, as well as

the regional TSP under state law. The RTP as regional TSP, must address provisions of Oregon Administrative Rule 660.012.000 applicable to regional TPSs.

The following TPR provisions are addressed in the portions of this multipurpose plan indicated under each applicable TPR requirement. Together, these portions of the 2000 RTP comprise the regional TSP. Other portions of the RTP not indicated under the applicable TPR requirement address regional and federal planning issues beyond the regional TSP under this administrative rule.

- **660.012.0015(2) - MPOs shall prepare TSPs in compliance with TPR**
  Metro is required to prepare a Transportation System Plan (TSP) for facilities of regional significance within Metro's jurisdiction. The portions of the 2000 RTP which constitutes the regional transportation system plan are provisions of Chapters 1, 2, 5, 6 and the Appendix which address regional TSP issues, including the priority system of improvements.

- **660.012.0020 - TSP adequately serves regional transportation needs**
  The RTP fully addresses this requirement by identifying the region's 20-year transportation needs in Chapter 2, including the future motor vehicle, public transportation, bicycle, pedestrian and freight system improvements, and complementary demand management, parking and financing programs in Chapter 5 adequate to respond to these identified needs.

- **660.012.0025 - Complying with Statewide Planning goals**
  This is the first regional TSP adopted in the metro region. As such, the 2000 RTP identifies transportation needs for regional facilities for the purpose of informing regional and local transportation and land-use planning. In some cases where a need has been established, decisions regarding function, general location and mode are deferred to a refinement plan or local TSP. In these cases, the findings in Chapter 5 describe how these needs are met for the purpose of RTP analysis, and Sections 6.7.5 and 6.7.6 of this chapter establish the need for refinement planning, and base assumptions for specific refinement plans that are needed to ensure consistency with the RTP.

- **660. 012.0025(3) - Refinement plans allowed**
  A number of refinement plans are proposed in the 2000 RTP, including 16 corridor plans and three area plans. Section 6.7 of this chapter describes the purpose and scope of refinement plans.

- **660.012.0030 - Determination of transportation needs**
  The project development phase of the 2000 RTP followed the congestion management requirements of Section 6.6.3 of this chapter, which incorporates the TPR requirements for determining transportation needs.

- **660.012.0035 - Transportation system evaluation required**
  This 2000 RTP is built on an extensive foundation of modeling and analysis. The Region 2040 project included five separate land use and transportation scenarios, including the alternative adopted and acknowledged in the 1995 Regional Urban Growth Goals and Objectives as the 2040 Growth Concept. A detailed transportatoin system was developed and modeled for each scenario, and the lessons learned from this effort were the starting point for the 2000 RTP update. Next, a level-of-service alternatives analysis was developed to further refine the region's system performance standards. Finally, the system development component of the 2000 RTP update included four separate rounds of modeling and analysis that combined the principles of the Region 2040 project and the level of service analysis.

  For the purpose of complying with this requirement, the Priority System in Chapter 5 of the 2000 RTP establishes a scale of the improvements that are adequate to meet state and regional travel needs in the

Metro area, including the needs of the disadvantaged, the movement of goods and the protection of farm and forest resources within rural reserves.

- **660.012.0035(4) - Reduction in vehicle miles traveled per capita**
  The 2000 RTP addresses this requirement through the non-SOV modal targets set forth in Table 1.3 of this plan. The modal targets are linked to the 2040 Growth Concept, and if met, would result in satisfying the required 10 percent reduction in vehicle miles traveled per capita over the 20-year plan period. The non-SOV modal targets set the context for transportation improvements proposed in this plan. The analysis in Chapter 5 establishes that the region is making substantial progress toward meeting this TPR requirement, though the modal targets would not be met in all areas, due to the relative state of urbanization at the conclusion of the planning period. Areas with the greatest concentration of mixed-use development and quality transit service will easily meet the targets, while areas that are still developing are expected to meet the targets beyond the 20-year plan period.

  These findings represent the good faith effort required to comply with this element of the TPR. An outstanding issue in Section 6.8.10 of this chapter directs future updates of the RTP to expand on alternative measures that both comply with the TPR, and improve on the plan's ability to identify appropriate transportation projects to meet identified needs.

- **660.012.0035(6) - Measures and objectives required for non-auto travel**
  The non-SOV modal targets in Table 1.3 of this plan provide the basic framework for compliance with this TPR provision, which requires a number of measures for demonstrating reduced reliance on the automobile. Other policies in Chapter 1 of this plan complement the non-SOV modal targets, and findings in Chapter 5 of this plan demonstrate a reduced reliance on the automobile based on the proposed system improvements.

- **660.012.0040 - Transportation funding program**
  The project descriptions in Appendix 1.1 and financial analysis in Chapter 4 of this plan satisfy the various TPR trnasportation funding requirements. Benchmarks in Section 6.5.3 of this chapter will address TPR requirements for implementation of the RTP through the MTIP.

- **660.012.0050 - Transportation project development**
  Section 6.7 of this chapter establishes the regional project development requirements for improvements included in the RTP. These and other related requirements are consistent with TPR provisions for project development.

Metro's adoption of the 2000 RTP provisions that address these applicable provisions of the TPR establishes the regional TSP for the Metro region. Through the consistency review process, local TSPs will be evaluated to ensure that local strategies needed to satisfy the above regional planning requirements are implemented. However, local TSPs are not required to make specific findings on these TPR provisions for the regional system, since the RTP establishes compliance for the Metro region. Appendix 5.0 includes full findings of compliance with the TPR.

7.2.2 Regional TSP Provisions Addressed Through Local TSPs

The 2000 RTP establishes compliance for regional TSP requirements with the policies, projects and financial analysis contained in this plan. Local consistency with the 2000 RTP is described in Section 6.4.1. However, implementation of some regional TSP requirements will occur only through local implementation of RTP policies. These include adoption of the modal targets specified in Policy 19.0 of Chapter 1, and in parking management requirements contained in Title 2 of the Urban Growth

Management Functional Plan. Local adoption of the Chapter 1 modal targets is necessary to demonstrate compliance with the VMT/Capita reduction findings described in Chapter 5 of the plan.

7.2.3 Special Designations in the Oregon Highway Plan (OHP)

The Oregon Highway Plan (OHP) establishes three special district designations for certain areas along state-owned facilities. The purpose of the designations is to respond to unique community access and circulation needs, while maintaining statewide travel function. Though these special districts are generally identified jointly between ODOT and local jurisdictions, the RTP establishes a policy framework that supports these OHP designations through the 2040 Growth Concept and corresponding regional street design classifications contained in Section 1.3.5. The following is a summary of how RTP street design designations correspond to the OHP special district classifications:

- ***Special Transportation Area (STA):*** This designation is intended to provide access to community activities, businesses and residences along state facilities in a downtown, business district or community center. In these areas, the OHP acknowledges that local access issues outweigh highway mobility, except on certain freight routes, where mobility needs are more balanced with local access.

The RTP addresses this OHP designation through the boulevard design classifications, located in the 2040 central city, regional center, town center and main street land use components. In the Metro region, state routes designated as boulevards that also meet other standards as defined in the OHP, are eligible to be designated STAs. Further, the application of the boulevard design classifications also factors in major freight corridors, and this design classification is generally not applied to such routes.

- ***Commercial Center:*** This designation applies to relatively large (400,000 square feet) commercial centers located along state facilities. In these areas, the OHP allows for consolidate access roads or driveways that serve these areas, but such access is subject to meeting OHP mobility standards on the state highway serving the center. If the center has consolidated access roads and meets other OHP standards, the OHP mobility standard may be reduced.

The RTP supports this OHP designation with the throughway design classifications, which include freeway and highway design types. The throughway designs are mobility-oriented, and generally apply to routes that form major motor vehicle connections between the central city, regional centers and intermodal facilities. The throughway design classifications support the concept of limiting future access on a number of state facilities in the region that are designated as principal routes in the RTP.

- ***Urban Business Area (UBA):*** This designation recognizes existing commercial strips or centers along state facilities with the objective of balancing access need with the need to move through-traffic.

In the Metro region, these areas are generally designated as mixed-use corridors and neighborhoods in the 2040 Growth Concept, and a corresponding regional or community street design classification in the RTP which calls for a balance between motor vehicle mobility, and local access. These designs are multi-modal in nature, and include transit, bicycle and pedestrian design features, consistent with the OHP designation. The regional and community street classification can also be found in some regional and town centers, and where these are state routes, the facility is eligible for the OHP designation of Urban Business Area.

7.2.4 Compliance with State Requirements

Compliance with Statewide Planning Goals

Together, the RTP and city and county TSPs that implement the RTP will constitute the land use decision about need, mode, and function and general location of planned transportation facilities and improvements shown in the RTP. As the regional transportation system plan, the RTP constitutes the land use decision about need, mode and function of planned transportation facilities and improvements. The RTP also identifies the general location of planned transportation facilities and improvements.

The land use decision specifying the general location of planned regional transportation facilities and improvements will be made by cities and counties as they develop and adopt local TSPs that implement the RTP. While the specific alignment of a project may be incorporated into a TSP, such decisions are subject to the project development requirements in Section 6.7, and must include findings of consistency with applicable statewide planning goals, as described below.

In preparing and adopting local TSPs, cities and counties will prepare findings showing how specific alignment of planned regional facilities or general location or specific alignment of local facilities is consistent with provisions of the RTP, acknowledged comprehensive plans and applicable statewide planning goals, if any. If the actual alignment or configuration of a planned facility proposed by a city or county is inconsistent with the general location of a facility in the RTP, the process described in Section 6.4 to resolve such issues shall be used prior to a final land use decision by a city or county.

This section describes how cities and counties will address consistency with applicable local comprehensive plans and statewide planning goals.

General Location of Planned Transportation Facilities

Maps included in the RTP illustrate the general location of planned transportation facilities and improvements. For the purposes of this plan, the general location of transportation facilities and improvements is the location shown on maps adopted as part of this plan and as described in this section. Where more than one map in the RTP shows the location of a planned facility, the most detailed map included in the plan shall be the identified general location of that facility.

Except as otherwise described in the plan, the general location of planned transportation and facilities is as follows:

For new facilities, the general location includes a corridor within 200 feet of the location depicted on the maps included within the RTP. For interchanges, the general location corresponds to the general location of the crossing roadways. The general location of connecting ramps is not specified. For existing facilities that are planned for improvement the general location includes a corridor within fifty feet of the existing right-of-way. For realignments of existing facilities the general location includes a corridor within 200 feet of the segment to be realigned, measured from the existing right-of-way or as depicted on the plan map.

Local transportation system plans and project development are consistent with the RTP if a planned facility or improvement is sited within the general location shown on the RTP maps and described above in this section. Cities and counties may refine or revise the general location of planned facilities as they prepare local transportation system plans to implement the RTP. Such revisions may be appropriate to

lessen project impacts, or to comply with applicable requirements in local plans or statewide planning goals. A decision to authorize a planned facility or improvement outside of the general location shown and described in the RTP requires an amendment to the RTP to revise the proposed general location of the improvement.

Transportation Facilities and Improvements authorized by existing acknowledged comprehensive plans

New decisions are required to authorize transportation facilities and improvements included in the RTP that are not authorized by the relevant jurisdiction's acknowledged comprehensive plan on August 10, 2000. Many of the facilities and improvements included in the RTP are currently authorized by the existing, acknowledged comprehensive plans. Additional findings demonstrating consistency with an acknowledged plan or the statewide planning goals are required only if the facility or improvement is not currently allowed by the jurisdiction's existing acknowledged comprehensive plan. Additional findings would be required if a local government changes the function, mode or general location of a facility from what is currently provided for in the acknowledged comprehensive plan.

Applicability of Statewide Planning Goals to decisions about General Location

Several statewide planning goals include "site specific" requirements that can affect decisions about the general location of planned transportation facilities. These include:

Goal 5	Open Spaces, Scenic, Historic and Natural Resources
Goal 7	Natural Hazards and Disasters
Goal 9	Economic Development, as it relates to protection of sites for specific uses (i.e. such as sites for large industrial uses)
Goal 10	Housing, as it relates to maintaining a sufficient inventory of buildable lands to meet specific housing needs (such as the need for multi-family housing)
Goal 15	Willamette River Greenway

Generally, compliance with the goals is achieved by demonstrating compliance with an acknowledged comprehensive plan. If City and county plans have been acknowledged to comply with the Goals and related rules, a planned improvement consistent with that plan is presumed to comply with the related goal requirement. Cities and counties may adopt the general location for needed transportation improvements, and defer findings of consistency with statewide planning goals to the project development phase. However, specific alignment decisions included in a local TSP must also include findings of consistency with applicable statewide planning goals.

In some situations, the Statewide Planning Goals and related rules may apply in addition to the acknowledged plan. This would occur, for example, if the jurisdiction is in periodic review, or an adopted statewide rule requirement otherwise requires direct application of the goal. Cities and counties will assess whether there are applicable goal requirements, and adopt findings to comply with applicable goals, as they prepare local transportation system plans to implement the regional transportation plan.

If in preparing a local TSP, a city or county determines that the identified general location of a transportation facility or improvement is inconsistent with an applicable provision of its comprehensive plan or an applicable statewide planning goal requirement, it shall:

- propose a revision to the general location of the planned facility or improvement to accomplish compliance with the applicable plan or goal requirement. If the revised general location is outside the general location specified in the RTP, this would require an amendment to the RTP; or

- propose a revision to the comprehensive plan to authorize the planned improvement within the general location specified in the RTP. This may require additional goal findings, for example, if a goal-protected site is affected.

Effect of an Approved Local TSP on Subsequent Land Use Decisions

Once a local TSP is adopted and determined to comply with the RTP and applicable local plans and statewide planning goals, the actual alignment of the planned transportation facility or improvement is determined through the project development process. Subsequent actions to provide or construct a facility or improvement that are consistent with the local TSP may rely upon and need not reconsider the general location of the planned facility.

Additional land use approvals may be needed to authorize construction of a planned transportation improvement within the general location specified in an adopted local transportation system plan. This would occur if the local comprehensive plan and land use regulations require some additional review to authorize the improvement, such as a conditional use permits. Generally, the scope of review of such approvals should be limited to address siting, design or alignment of the planned improvement within the general location specified in the local TSP.

Section 7.3 will be updated as part of Phase 5 of the RTP update, when implementation of the Region 2040 Growth Concept will be revisited and updated. In 2008, the New Look process will establish a number of new regional directives that must be addressed in the RTP, including the creation of urban and rural reserves, and other amendments to the 2040 Growth Concept. Some of these directives will be completed in time for inclusion in the RTP in 2008, while others will be incorporated as discrete amendments or as part of the 2012 update to the RTP.

7.3 Compliance with Regional Requirements

In November 1992, the voters approved Metro's Charter. The Charter established regional planning as Metro's primary mission and required the agency to adopt a Regional Framework Plan (RFP). The plan was subsequently adopted in 1997, and now serves as the document that merges all of Metro's adopted land-use planning policies and requirements. Chapter 2 of the Regional Framework Plan describes the different 2040 Growth Concept land-use components, called "2040 Design Types," and their associated transportation policies. The Regional Framework Plan directs Metro to implement these 2040 Design Types through the RTP and Metropolitan Transportation Improvement Program (MTIP). These requirements are addressed as follows:

- Chapter 1 of the updated RTP has been revised to be completely consistent with applicable framework plan policies, and the policies contained in Chapter 1 of this plan incorporate all of the policies and system maps included in Chapter 2 of the framework plan. These policies

served as a starting point for evaluating all of the system improvements proposed in this plan, and the findings in Chapter 3 and 5 of the RTP demonstrate how the blend of proposed transportation projects and programs is consistent with the Regional Framework Plan and 2040 Growth Concept.

- The MTIP process has also been amended for consistency with the Regional Framework Plan. During the Priorities 2000 MTIP allocation process, project selection criteria were based on 2040 Growth Concept principles, and funding categories and criteria were revised to ensure that improvements critical to implementing the 2040 Growth Concept were adequately funded.

Prior to completion of this updated RTP, several transportation planning requirements were included in the *Urban Growth Management Functional Plan* (UGMFP), which was enacted to address rapid growth issues in the region while the Regional Framework Plan and other long-range plans were under development. This 2000 RTP now replaces and expands the performance standards required for all city and county comprehensive plans in the region contained in Title 6 of the UGMFP. *See Sections 6.4.4 through 6.4.7, 6.6, 6.6.3 and 6.7.3.* In addition, parking policies contained in this plan were developed to complement Title 2 of the UGMFP, which regulates off-street parking in the region. *See Section 1.3.6, Policy 19.1.* Therefore, this RTP serves as a discrete functional plan that is both consistent with, and fully complementary of the UGMFP.

To ensure consistency between the 2000 RTP and local transportation system plans (TSPs), Metro shall develop a process for tracking local TSP project and functional classification refinements that are consistent with the RTP, and require a future amendment to be incorporated into the RTP. Such changes should be categorized according to degrees of significance and impact, with major changes subject to policy-level review and minor changes tracked administratively. This process should build on the established process of formal comment on local plan amendments relevant to the RTP.

Local implementation of the RTP is largely shaped by state planning requirements set forth in the Transportation Planning Rule. Section 7.4 will be updated, accordingly, as part of Phase 5 of the RTP update, when compliance with the Oregon Transportation Planning Rule (TPR) will be addressed. In 2006, the Land Conservation and Development Commission (LCDC) adopted several new provisions in a series of amendments to the TPR that expand local planning requirements, directly. These provisions and other new TPR features will be the focus of many of the Phase 5 activities.

7.4 Local Implementation

7.4.1 Local Consistency with the RTP

The comprehensive plans adopted by the cities and counties within the Metro region are the mechanisms by which local jurisdictions plan for transportation facilities. These local plans identify future development patterns that must be served by the transportation system. Local comprehensive plans also define the shape of the future transportation system and identify needed investments. All local plans must demonstrate consistency with the RTP as part of their normal process of completing their plan or during the next periodic review. Metro will continue to work in partnership with local jurisdictions to ensure plan consistency.

The 2000 RTP is Metro's regional functional plan for transportation. Functional plans by state law include "recommendations" and "requirements." The listed RTP elements below are all functional plan requirements. Where "consistency" is required with RTP elements, those elements must be included in local plans in a manner that substantially complies with that RTP element. Where "compliance" is required with RTP elements, the requirements in those elements must be included in local plans as they appear in the RTP.

For inconsistencies, cities and counties, special districts or Metro may initiate the dispute resolution process detailed in this chapter prior to action by Metro to require an amendment to a local comprehensive plan, transit service plan or other facilities plan. Specific elements in the 2000 RTP that require city, county and special district compliance or consistency are as follows:

Chapter 1 *Consistency with policies, objectives, motor vehicle level-of-service measure and modal targets, system maps and functional classifications including the following elements of Section 1.3:*

- *regional transportation policies 1 through 20 and objectives under those policies*
- *all system maps (Figures 1.1 through 1.19, including the street design, motor vehicle, public transportation, bicycle, pedestrian and freight systems)*
- *motor vehicle performance measures (Table 1.2), or alternative performance measures as provided for in Section 6.4.7(1)*
- *regional non-SOV modal targets (Table 1.3)*

Chapter 2 *Consistency with the 2020 population and employment forecast contained in Section 2.1 and 2.3, or alternative forecast as provided for in Section 6.4.9 of this chapter, but only for the purpose of TSP development and analysis.*

Chapter 6 *Compliance with the following elements of the RTP implementation strategy:*

- *Local implementation requirements contained in Section 6.4*
- *Project development and refinement planning requirements and guidelines contained in Section 6.7*

For the purpose of local planning, all remaining provisions in the RTP are recommendations unless clearly designated in this section as a requirement of local government comprehensive plans. All local comprehensive plans and future amendments to local plans are required by state law to be consistent with the adopted RTP. For the purpose of transit service planning, or improvements to regional transportation facilities by any special district, all of the provisions in the RTP are recommendations unless clearly designated as a requirement. Transit system plans are required by federal law to be consistent with adopted RTP policies and guidelines. Special district facility plans that affect regional facilities, such as port or passenger rail improvements, are also required to be consistent with the RTP.

The state Transportation Planning Rule (TPR) requires most cities and counties in the Metro region to adopt local Transportation System Plans (TSPs) in their comprehensive plans. These local TSPs are required by the TPR to be consistent with the RTP policies, projects and performance measures identified in this section.

7.4.2 Local TSP Development

Local TSPs must identify transportation needs for a 20-year planning period, including needs for regional travel within the local jurisdiction, as identified in the RTP. Needs are generally identified either through a periodic review of a local TSP or a specific comprehensive plan amendment. Local TSPs that include planning for potential urban areas located outside the urban growth boundary shall also include project staging that links the development of urban infrastructure in these areas to future expansion of the urban growth boundary. In these areas, local plans shall also prohibit the construction of urban transportation improvements until the urban growth boundary has been expanded and urban land use designations have been adopted in local comprehensive plans.

Once a transportation need has been established, an appropriate transportation strategy or solution is identified through a two-phased process. The first phase is system-level planning, where a number of transportation alternatives are considered over a large geographic area such as a corridor or local planning area, or through a local or regional Transportation System Plan (TSP). The purpose of the system-level planning step is to:

- consider alternative modes, corridors, and strategies to address identified needs
- determine a recommended set of transportation projects, actions, or strategies and the appropriate modes and corridors to address identified needs in the system-level study area

The second phase is project-level planning (also referred to as project development), and is described separately in this chapter in Section 6.7.

Local TSP development is multi-modal in nature, resulting in blended transportation strategies that combine the best transportation improvements that address a need, and are consistent with overall local comprehensive plan objectives.

7.4.3 Process for Metro Review of Local Plan Amendments, Facility and Service Plans

Metro will review local plans and plan amendments, and facility plans that affect regional facilities for consistency with the RTP. Prior to adoption by ordinance, local TSPs shall be reviewed for consistency with these elements of the RTP. Metro will submit formal comment as part off the adoption process for local TSPs to identify areas where inconsistencies with the RTP exist, and suggest remedies.

Upon adoption of a local TSP, Metro will complete a final consistency review, and a finding of consistency with applicable elements of the RTP will be forwarded to the state Department of Land Conservation and Development (DLCD) for consideration as part of state review of local plan amendments or local periodic review. A finding of non-compliance for local TSPs that are found to be inconsistent with the RTP will be forwarded to DLCD if conflicting elements in local plans or the RTP cannot be resolved between Metro and the local jurisdiction.

The following procedures are required for local plan amendments:

1. When a local jurisdiction or special district is considering plan amendments or facility plans which are subject to RTP local plan compliance requirements, the jurisdiction shall forward the proposed amendments or plans to Metro prior to public hearings on the amendment.

2. Within four weeks of receipt of notice, the Transportation Director shall notify the local jurisdiction through formal written comment whether the proposed amendment is consistent with RTP requirements, and what, if any, modifications would be required to achieve consistency. The Director's finding may be appealed by both the local jurisdiction or the owner of an affected facility, first to JPACT and then to the Metro Council.

3. A jurisdiction shall notify Metro of its final action on a proposed plan amendment.

4. Following adoption of a local plan, Metro shall forward a finding of consistency to DLCD, or identify inconsistencies that were not remedied as part of the local adoption process.

7.4.4 Transportation Systems Analysis Required for Local Plan Amendments

This section applies to city and county comprehensive plan amendments or to any local studies that would recommend or require an amendment to the Regional Transportation Plan to add significant single occupancy vehicle (SOV) capacity to the regional motor vehicle system, as defined by Figure 1.12. This section does not apply to projects in local TSPs that are included in the 2000 RTP. For the purpose of this section, significant SOV capacity is defined as any increase in general vehicle capacity designed to serve 700 or more additional vehicle trips in one direction in one hour over a length of more than one mile. This section does not apply to plans that incorporate the policies and projects contained in the RTP.

Consistent with Federal Congestion Management System requirements (23 CFR Part 500) and TPR system planning requirements (660-12), the following actions shall be considered when local transportation system plans (TSPs), multi-modal corridor and sub-area studies, mode specific plans or special studies (including land-use actions) are developed:

1. Transportation demand strategies that further refine or implement a regional strategy identified in the RTP

2. Transportation system management strategies, including intelligent Transportation Systems (ITS) that refine or implement a regional strategy identified in the RTP

3. Sub-area or local transit, bicycle and pedestrian system improvements to improve mode split

4. The effect of a comprehensive plan change on mode split targets and actions to ensure the overall mode split target for the local TSP is being achieved

5. Improvements to parallel arterials, collectors, or local streets, consistent with connectivity standards contained in Section 6.4.5, as appropriate, to address the transportation need and to keep through trips on arterial streets and provide local trips with alternative routes

6. Traffic calming techniques or changes to the motor vehicle functional classification, to maintain appropriate motor vehicle functional classification

7. If upon a demonstration that the above considerations do not adequately and cost-effectively address the problem, a significant capacity improvement may be included in the comprehensive plan

Upon a demonstration that the above considerations do not adequately and cost-effectively address the problem and where accessibility is significantly hindered, Metro and the affected city or county shall consider:

1. Amendments to the boundaries of a 2040 Growth Concept design type

2. Amendments or exceptions to land-use functional plan requirements

3. Amendments to the 2040 Growth Concept

4. Designation of an Area of Special Concern, consistent with Section 6.7.7

Demonstration of compliance will be included in the required congestion management system compliance report submitted to Metro by cities and counties as part of system-level planning and through findings consistent with the TPR in the case of amendments to applicable plans.

7.4.5 Design Standards for Street Connectivity

The design of local street systems, including "local" and "collector" functional classifications, is generally beyond the scope of the 2000 RTP. However, the aggregate effect of local street design impacts the effectiveness of the regional system when local travel is restricted by a lack of connecting routes, and local trips are forced onto the regional network. Therefore, streets should be designed to keep through trips on arterial streets and provide local trips with alternative routes. The following mapping requirements and design standards are intended to improve local circulation in a manner that protects the integrity of the regional transportation system.

Cities and counties within the Metro region are required to amend their comprehensive plans, implementing ordinances and administrative codes, if necessary, to comply with or exceed the following mapping requirements and design standards:

1. Cities and counties must identify all contiguous areas of vacant and redevelopable parcels of five or more acres planned or zoned for residential or mixed-use development and prepare a conceptual new streets plan map**.** The map shall be adopted as a part of the Transportation System Plan element of the local Comprehensive Plan. The purpose of this map is to provide guidance to land-owners and developers on desired street connections that will improve local access and preserve the integrity of the regional street system.

   The conceptual street plan map should identify street connections to adjacent areas in a manner that promotes a logical, direct and connected street system. Specifically, the map should conceptually demonstrate opportunities to extend and connect to existing streets, provide direct public right-of-way routes, and limit the potential of cul-de-sac and other closed-end street designs.

2. In addition to preparing the above conceptual street plan map, cities and counties shall require new residential or mixed-use development involving construction of new street(s) to provide a site plan that reflects the following:

   a. Street connections:

- Responds to and expands on the conceptual street plan map as described in Section 6.4.5(1) for areas where a map has been completed.

- Provides full street connections with spacing of no more than 530 feet between connections except where prevented by barriers such as topography, railroads, freeways, pre-existing development, or where lease provisions, easements, covenants or other restrictions existing prior to May 1, 1995, which preclude street connections.

- Where streets must cross water features identified in Title 3 of the Urban Growth Management Functional Plan (UGMFP), provide crossings at an average spacing of 800 to 1,200 feet, unless habitat quality or length of crossing prevents a full street connection.

b. Accessways:

- When full street connections are not possible provides bike and pedestrian accessways on public easements or rights-of-way in lieu of streets. Spacing of accessways between full street connections shall be no more than 330 feet except where prevented by barriers such as topography, railroads, freeways, pre-existing development, or where lease provisions, easements, covenants or other restrictions existing prior to May 1, 1995 which preclude accessway connections.

- Bike and pedestrian accessways that cross water features identified in Title 3 of the UGMFP should have an average spacing no more than 530 feet, unless habitat quality or length of crossing prevents a connection.

c. Centers, main streets and station communities:

- Where full street connections over water features identified in Title 3 of the UGMFP cannot be constructed in centers, main streets and station communities (including direct connections from adjacent neighborhoods), or spacing of full street crossings exceeds 1,200 feet, provide bicycle and pedestrian crossings at an average spacing of 530 feet, unless exceptional habitat quality or length of crossing prevents a connection.

d. Other considerations:

- Limits the use of cul-de-sac designs and other closed-end street systems to situations where barriers prevent full street extensions.

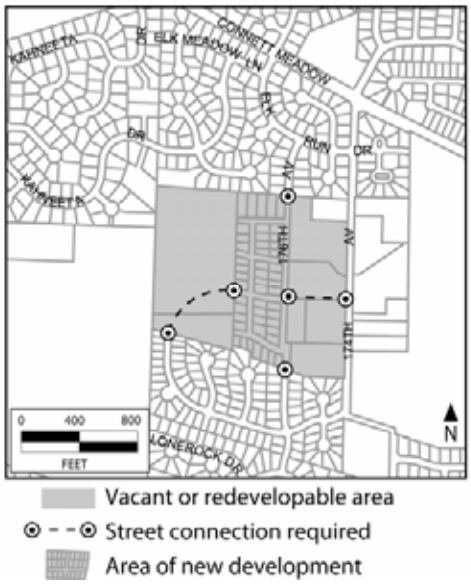
- Includes no closed-end street longer than 200 feet or with more than 25 dwelling units.

- Includes street cross-sections demonstrating dimensions of right-of-way improvements, with streets designed for posted or expected speed limits.

For replacement or new construction of local street crossings on streams identified in Title 3 of the Urban Growth Management Functional Plan, Cities and Counties, TriMet, ODOT and the Port of Portland shall amend design codes, standards and plans to allow consideration of the stream crossing design guidelines contained in the Green Streets handbook.

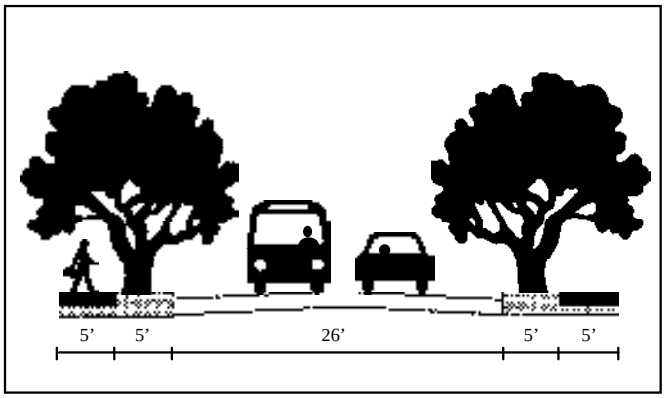
Figure 6.1 demonstrates a site plan map that a developer would provide to meet code regulations for the subdivision of a single parcel. Figure 6.2 shows a street cross-section that could be submitted by a developer for approval during the permitting process.

Figure 6.1
Site Plan Map



Source: Metro

Figure 6.2
Street Cross Section – Local Street, mid-block



Source: Metro

3. Street design code language and guidelines must allow for:

   a. Consideration of narrow street design alternatives. For local streets, no more than 46 feet of total right-of-way, including pavement widths of no more than 28 feet, curb-face to curb-face, sidewalk widths of at least 5 feet and landscaped pedestrian buffer strips that include street

trees. Special traffic calming designs that use a narrow right-of-way, such as woonerfs and chicanes, may also be considered as narrow street designs.

b. Short and direct public right-of-way routes to connect residential uses with nearby commercial services, schools, parks and other neighborhood facilities.

c. Consideration of opportunities to incrementally extend streets from nearby areas.

d. Consideration of traffic calming devices to discourage traffic infiltration and excessive speeds on local streets.

4. For redevelopment of existing land-uses that require construction of new streets, cities and counties shall develop local approaches to encourage adequate street connectivity.

7.4.6 Alternative Mode Analysis

Improvement in non-SOV mode share will be used as the key regional measure for assessing transportation system improvements in the central city, regional centers, town centers and station communities. For other 2040 Growth Concept design types, non-SOV mode share will be used as an important factor in assessing transportation system improvements. These modal targets will also be used to demonstrate compliance with per capita travel reductions required by the state TPR. This section requires that cities and counties establish non-SOV regional modal targets for all 2040 design types that will be used to guide transportation system improvements, in accordance with Table 1.3 in Chapter 1 of this plan:

1. Each jurisdiction shall establish an alternative mode share target (defined as non-single occupancy vehicle person-trips as a percentage of all person-trips for all modes of transportation) in local TSPs for trips into, out of and within all 2040 Growth Concept land-use design types within its boundaries. The alternative mode share target shall be no less than the regional modal targets for these 2040 Growth Concept land-use design types to be established in Table 1.3 in Chapter 1 of this plan.

2. Cities and counties, working with TriMet and other regional agencies, shall identify actions in local TSPs that will result in progress toward achieving the non-SOV modal targets. These actions should initially be based on RTP modeling assumptions, analysis and conclusions, and include consideration of the maximum parking ratios adopted as part of Title 2, section 3.07.220 of the *Urban Growth Management Functional Plan*; regional street design considerations in Section 6.7.3, Title 6, transportation demand management strategies and transit's role in serving the area. Local benchmarks for evaluating progress toward achieving modal targets may be based on future RTP updates and analysis, if local jurisdictions are unable to generate this information as part of TSP development.

3. Metro shall evaluate local progress toward achieving the non-SOV modal targets during the 20-year plan period of a local TSP using the Appendix 1.8 "TAZ Assumptions for Parking Transit and Connectivity Factors" chart as minimum performance requirements for local actions proposed to meet the non-SOV requirements.

7.4.7 Motor Vehicle Congestion Analysis

Motor Vehicle Level-Of-Service (LOS) is a measurement of congestion as a share of designed motor vehicle capacity of a road. Policy 13.0 and Table 1.2 of this plan establish motor vehicle level-of-service policy for regional facilities. These standards shall be incorporated into local comprehensive plans and implementing ordinances to replace current methods of determining motor vehicle congestion on regional facilities. Jurisdictions may adopt alternative standards that do not exceed the minimum LOS established in Table 1.2. However, the alternative standard must not:

- result in major motor vehicle capacity improvements that have the effect of shifting unacceptable levels of congestion into neighboring jurisdictions along shared regional facilities;

- result in motor vehicle capacity improvements to the principal arterial system (as defined in Figure 1.12) that are not recommended in, or are inconsistent with, the RTP.

- increase SOV travel to a measurable degree that affects local consistency with the modal targets contained in Table 1.3.

By definition, the RTP addresses congestion of regional significance through the projects identified in Chapter 5 or refinements plans contained in this chapter of the plan. Other, more localized congestion is more appropriately addressed through the local TSP process, and includes any locations on the regional Motor Vehicle System (Figure 1.12) that are not addressed by the RTP. Localized congestion occurs where short links within the transportation system are exceeding LOS standards, though the overall system in the vicinity of the congested link is performing acceptably. In cases where these localized areas of congestion are located on Principal Arterial routes (as defined in Figure 1.12) or the Regional Freight System (Figure 1.17), they shall be evaluated as part of the local TSP process to determine whether an unmet transportation need exists that has not been addressed in the RTP. Should a local jurisdiction determine that an unmet need exists on such a facility, the jurisdiction shall identify the need in the local TSP, and propose one of the following actions to incorporate the need and recommended solution into the RTP:

- Identify the unmet need and proposed projects at the time of Metro review of local TSPs for consistency, but incorporate the project into the regional TSP during the next scheduled RTP update; or

- Propose an amendment to the RTP for unmet needs and resulting projects where a more immediate update of the regional TSP is appropriate or required.

Intersection analysis and improvements also generally fall outside of the RTP, and capacity improvements recommended in this plan generally apply to links in the regional system, not intersections.

For the purpose of demonstrating local compliance with Table 1.2 as part of a periodic review or plan amendment, the following procedure for conducting the motor vehicle congestion analysis shall be used:

1. *Analysis* – A transportation need is identified in a given location when analysis indicates that congestion has reached the level indicated in the "exceeds deficiency threshold" column of Table 1.2 and that this level of congestion will negatively impact accessibility, as determined through Section 6.4.7(2). The analysis should consider a mid-day hour appropriate for the study area and

the appropriate two-hour peak-hour condition, either A.M. or P.M. or both, to address the problem. Other non-peak hours of the day, such as mid-day on Saturday, should also be considered to determine whether congestion is consistent with the acceptable or preferred operating standards identified in Table 1.2. The lead agency or jurisdictions will be responsible for determining the appropriate peak and non-peak analysis periods.

An appropriate solution to the need is determined through requirements contained in this chapter. For regional transportation planning purposes, the recommended solution should be consistent with the acceptable or preferred operating standards identified in Table 1.2. A city or county may choose a higher level-of-service operating standard where findings of consistency with section 6.4.4 have been developed as part of the local planning process. The requirements in Section 6.6.2 shall also be satisfied in order to add any projects to the RTP based on the higher level-of-service standard.

2. *Accessibility* – If a deficiency threshold is exceeded on the regional transportation system as identified in Table 1.2, cities and counties shall evaluate the impact of the congestion on regional accessibility using the best available quantitative or qualitative methods. If a determination is made by Metro that exceeding the deficiency threshold negatively impacts regional accessibility, cities and counties shall follow the transportation systems analysis and transportation project analysis procedures identified in Sections 6.4.2 and 6.7.3.

3. *Consistency* – The identified function or the identified capacity of a road may be significantly affected by planning for 2040 Growth Concept design types. Cities and counties shall take actions described in Section 6.7 of this chapter, including amendment of their transportation plans and implementing ordinances, if necessary, to preserve the identified function and identified capacity of the road, and to retain consistency between allowed land-uses and planning for transportation facilities.

7.4.8 Future RTP Refinements Identified through Local TSPs

The 2000 RTP represents the most extensive update to the plan since it was first adopted in 1982. It is the first RTP to reflect the 2040 Growth Concept, Regional Framework Plan and state Transportation Planning Rule. In the process of addressing these various planning mandates, the plan's policies and projects are dramatically different than the previous RTP. This update also represents the first time that the plan has considered growth in urban reserves located outside the urban growth boundary but expected to urbanize during the 20-year plan period. As a result, many of the proposed transportation solutions are conceptual in nature, and must be further refined.

In many cases, these proposed transportation solutions were initiated by local jurisdictions and special agencies through the collaborative process that Metro used to develop the updated RTP. However, the scope of the changes to the RTP will require most cities and counties and special agencies to make substantial changes to comprehensive, facility and service plans, as they bring local plans into compliance with the regional plan. In the process of making such changes, local jurisdictions and special agencies will further refine many of the solutions included in this plan.

Such refinements will be reviewed by Metro and, based on a finding of consistency with RTP policies, specifically proposed for inclusion in future updates to the RTP. Section 6.3 requires Metro to develop a process for to ensure consistency between the 2000 RTP and local TSPs by developing a process for tracking local project and functional classification refinements that are consistent with the RTP, but require a future amendment to be incorporated into the RTP. This process will occur concurrently with

overall review of local plan amendments, facility plans and service plans, and is subject to the same appeal and dispute resolution process. While such proposed amendments to the RTP may not be effective until a formal amendment has been adopted, the purpose of endorsing such proposed changes is to allow cities and counties to retain the proposed transportation solutions in local plans, with a finding of consistency with the RTP, and to provide a mechanism for timely refinements to local and regional transportation plans.

7.4.9 Local 2020 Forecast – Options for Refinements

The 2000 RTP is a 20-year plan, with a 2020 forecast developed from 1994 base data. Metro produced an updated 2020 forecast that accounts for urban reserve actions, and estimates the amount of jobs and housing expected in urban reserves in 2020. Local TSPs using the 2020 forecast may experience different modeling outcomes in these areas than were observed during the development of the RTP. Therefore, Metro will accept local plans under the following four options:

1. Local plans in areas unaffected by urban reserve actions may be developed using the RTP forecast for 2020 (which is based on 1994 data).

2. Local plans already under way at the time of RTP adoption, and which include areas affected by urban reserve actions, may be developed using the RTP forecast for 2020 (based on 1994 data), with population and employment allocations adjusted by the local jurisdiction to reflect urban reserve actions. However, adjustments to population and employment allocations shall (a) remain within the holding capacity of a traffic zone or area, as defined by Metro's productivity analysis, and (b) not exceed traffic zone or area assumptions of the updated 2020 forecast.

3. Local plans in areas affected by urban reserve actions may use the updated 2020 forecast, and any subsequent differences in proposed transportation solutions will be reconciled during Metro's review of the local plan.

4. Local plans may be based on updated, locally developed population and employment data, conditions and 2020 forecasts. However, population and employment data and forecasts, and the methodology for generating the data and forecasts shall be coordinated at the county level, and accepted by Metro technical staff and TPAC as statistically valid. Subsequent adjustments to the population and employment allocations for traffic zones may be made in the local planning to reflect updated population and employment data and 2020 forecasts. Metro shall consider the updated locally developed data and forecasts in future RTP forecasts of population and employment. Subsequent differences in local TSP project recommendations that result from the differences in population and employment forecasts will be resolved in the next scheduled RTP update.

Metro will update the 2020 population and employment allocations periodically to reflect local and regional land-use decisions. For example, changes to the 2020 population and employment allocations could result if an urban reserve area is reduced in size or taken out altogether if the urban growth boundary is expanded or if local zoning capacity is amended to increase or decrease. The provisions in this section are for the purpose of TSP development and analysis, and do not necessarily apply to other planning activities.

7.4.10 Transit Service Planning

Efficient and effective transit service is critical to meeting mode-split targets, and the regional transit functional classifications are tied to 2040 Growth Concept land-use components. Local transportation system plans shall include measures to improve transit access, passenger environments and transit service speed and reliability for:

- rail station areas, rapid bus and frequent bus corridors where service is existing or planned
- regional bus corridors where services exists at the time of TSP development

To ensure that these measures are uniformly implemented, cities and counties shall:

1. Adopt a transit system map, consistent with the transit functional classifications shown in Figure 1.16, as part of the local TSP.
2. Amend development code regulations to require new retail, office and institutional buildings on sites at major transit stops to:
    1. Locate buildings within 20 feet of or provide a pedestrian plaza at the major transit stops
    2. Provide reasonably direct pedestrian connections between the transit stop and building entrances on the site
    3. Provide a transit passenger landing pad accessible to disabled persons (if not already existing to transit agency standards)
    4. Provide an easement or dedication for a passenger shelter and underground utility connection from the new development to the transit amenity if requested by the public transit provider
    5. Provide lighting at a transit stop (if not already existing to transit agency standards).
3. Consider designating pedestrian districts in a comprehensive plan or other implementing land use regulations as a means of meeting or exceeding the requirements of OAR 660-012-0045 (4a-c) and this plan section 6.4.10(2) above. Pedestrian district designation shall address the following criteria:

    (a) A connected street and pedestrian network, preferably through a local street and pedestrian network plan covering the affected area.

    (b) Designated pedestrian districts should specifically consider, but are not limited to these elements: Transit/pedestrian/bicycle interconnection; parking and access management; sidewalk and accessway location and width; alleys; street tree location and spacing; street crossing and intersection design for pedestrians; street furniture and lighting at a pedestrian scale; and traffic speed. When local transportation system plans are adopted, designated pedestrian districts should be coordinated with the financing program required by the Transportation Planning Rule.

4. Provide for direct and logical pedestrian crossings at transit stops and marked crossings at major transit stops.

5. Consider street designs which anticipate planned transit stop spacing, location, and facilities (such as shelters, benches, signage, passenger waiting areas) and are consistent with the Creating Livable Streets design guidelines.

Public transit providers shall consider the needs and unique circumstances of special needs populations when planning for service. These populations include, but are not limited to, students, the elderly, the economically disadvantaged, the mobility impaired and others with special needs. Consideration shall be given to:

1. adequate transit facilities to provide service

2. hours of operation to provide transit service corresponding to hours of operation of institutions, employers and service providers to these communities

3. adequate levels of transit service to these populations relative to the rest of the community and their special needs

7.5 Metropolitan Transportation Improvement Program (MTIP)

An important tool for implementing the RTP is the Metropolitan Transportation Improvement Program (MTIP). The MTIP schedules and identifies funding sources for projects of regional significance to be built during a four-year period. Federal law requires that all projects using federal funds be included in the MTIP. This section describes the role of the MTIP in regional planning and its relationship to the RTP.

7.5.1 The Role of the MTIP in Regional Planning

In developing the MTIP, the region gives top priority to strategic transportation investments that leverage and reinforce the urban form outlined in Chapter 3, of this plan. The MTIP is approved by JPACT, the Metro Council and the Governor of the State of Oregon. The MTIP is then incorporated, without change, into the State TIP (STIP), which integrates regional and statewide improvement plans. The MTIP is updated every two years.

ISTEA and TEA-21 created important new fiscal requirements for the TIP. The TIP is fiscally constrained and includes only those projects for which federal resources are reasonably available. Projects are grouped by funding category, with project costs not to exceed expected revenue sources. The MTIP financial plan is not comprehensive; it covers only federal funds for capital improvements, and does not include operations, maintenance and preservation or local funds for capital costs.

It is the responsibility of the cities, counties, ODOT, TriMet and the Port of Portland to implement necessary improvements to the regional system, as well as those needed for local travel. These agencies are eligible to receive federal funds allocated through the MTIP process for projects included in the RTP. The TIP is prepared by Metro in consultation with these agencies. Inter-regional coordination throughout the planning and programming process will help to ensure that improvement projects are consistent with regional objectives and with each other.

Projects included in the MTIP must also be included in the RTP financially constrained system. The revenue assumptions used to develop the financially constrained system are defined in Chapter 5. Projects included in the financially constrained system are identified in Chapter 6. However, while the financially constrained system should provide the basis for most MTIP funding decisions, other projects from the RTP may also be selected for funding.

In the event that such projects are drawn from the plan for funding, the RTP financially constrained system will be amended to include the project or projects. In addition, when the financially constrained system is amended, continued financial constraint must be demonstrated by identifying additional revenues or removal of other projects from the financially constrained system. Except in the case of exempt projects (as defined by the federal and state conformity rules) such actions require an air quality conformity determination.

7.5.2 How the MTIP is Developed

Though the MTIP development process is initiated by Metro, the work begins at the local level, with city and county elected officials receiving input from citizens through local planning efforts, and later sharing their transportation needs at the Joint Policy Advisory Committee on Transportation (JPACT). Additional public input is received at the regional level, as well, when JPACT and the Metro Council review the MTIP for final approval. Upon adoption by the Council, the MTIP is submitted to the Oregon Transportation Commission (OTC) for approval as part of the State Transportation Improvement Plan (STIP).

7.5.3 RTP Implementation Benchmarks

The RTP establishes a general direction for implementation of needed improvements that reflects a wide variety of factors, including expected development trends, existing safety and operational deficiencies and anticipated revenue. The project timing proposed in the RTP also reflects an effort to create a balanced, multi-modal transportation system. As such, the projects are organized according to those needed during the first five, second five and final ten years of the planning period. To ensure that incremental funding decisions that occur through the MTIP follow this general RTP direction, benchmarks shall be established for monitoring RTP implementation over time, and:

1. The benchmarks shall be tied to Chapter 3 objectives and shall address the relative performance of the system and the degree to which the various RTP projects are being implemented.

2. Findings for consistency with the benchmarks shall be developed as part of the biennial MTIP update, or as necessary in conjunction with other RTP monitoring activities.

In addition, benchmarks should be designed to track the following general information to the degree practicable for ongoing monitoring:

- progress on financing the strategic system
- progress in completing the modal systems described in Chapter 3
- relative change in system performance measures
- progress toward land use objectives related to the RTP

- relative comparisons with similar metropolitan regions on key measures

Section 7.6 will be updated as part of Phase 5 of the RTP update, when compliance with the Oregon Transportation Planning Rule (TPR) will be addressed.

7.6 Process for Amending the RTP

7.6.1 RTP Policy, System Map and Compliance Criteria Amendments

When Metro amends policies or system maps in Chapter 1 of this plan or compliance criteria in this chapter, it will evaluate and adopt findings regarding consistency with the Regional Framework Plan. Decisions on amendments made at this level are land-use decisions for need, mode, corridor, general scope and function of a proposed project. Subsequent land-use decisions on final project design and impact mitigation will be needed prior to construction. Such analysis to evaluate impacts could lead to a "no-build" decision where a proposed project is not recommended for implementation, and would require reconsideration of the proposed project or system improvements. As such, amendments at this level shall be reviewed through the post-acknowledgement process. However, a decision on an amendment to the Regional Transportation Plan should not foreclose or appear to foreclose full and fair consideration of all relevant goal issues at such time that specific projects and programs are adopted by a local jurisdiction.

It is Metro's responsibility to adopt findings based on project need, mode, corridor, general scope and function of projects proposed in the Regional Transportation Plan. The affected jurisdiction is responsible for preparing the specific local plan amendments and findings related to specific location, project design and impact mitigation and for scheduling them for hearing before the governing body in time for action by that body by the time required.

7.6.2 RTP Project Amendments

The RTP establishes a comprehensive policy direction for the regional transportation system and recommends a balanced program of transportation investments to implement that policy direction. However, the recommended investments do not solve all transportation problems and are not intended to be the definitive capital improvement program on the local transportation system for the next 20 years.

Rather, the RTP identifies the projects, programs or further refinement studies required to adequately meet regional transportation system needs during the 20-year planning period. Local conditions will be addressed through city and county TSPs, and will require additional analysis and improvements to provide an adequate transportation system. Section 6.7 of this chapter anticipates such refinements, particularly given the degree to which this RTP has been updated from previous plans. Similarly, refinements to the RTP may result from ongoing corridor plans or area studies. The following processes may be used to update the RTP to include such changes:

1. Amendments resulting from major studies: as the findings of such studies are produced, they will be recommended by a resolution of JPACT and the Metro Council. These amendments must be incorporated into the RTP through a quasi-judicial or legislative process, as needed.

2. Amendments resulting from local TSPs: new roadway, transit, bikeway, pedestrian, freight and demand management projects necessary to meet the objectives of the RTP shall be accompanied by an demonstration of consistency with the RTP based on the following criteria:

   a. The objectives to be met by the proposed projects(s) are consistent with RTP goals, policies and objectives (Chapter 1).

   b. The proposed action is consistent with the modal function of the facility as defined in Chapter 1.

   c. The impact of the proposed projects(s) on the balance of the regional system is evaluated through a CMS analysis.

   d. The proposed action is needed to achieve the motor vehicle level-of-service performance criteria identified in the RTP, or alternative performance criteria adopted in local TSPs under the provisions of Section 6.4.7, as follows:

      A) principal, major and minor arterial capacity improvements are necessary to maintain compliance with Policy 13.0, Table 1.2, or alternative performance criteria adopted in local TSPs. Improvements that are designed to provide a higher level of service than the minimum acceptable standard established in Policy 13.0 can be designed and/or provided at the option of the implementing jurisdiction. Such actions must be consistent with the RTP as outlined in this section and demonstrate that either:

         i) a long-range evaluation of travel demand indicates a probable need for right-of-way preservation beyond that necessary for the 20-year project design, or

         ii) the additional service provided by the higher level design is the result of a design characteristic necessary to achieve the minimum motor vehicle performance measure

      B) local transportation system improvements must be consistent with the following:

         i) the local system must adequately serve the local travel demands expected from development of the land-use plan to the year 2020 to ensure that the regional system is not overburdened with local traffic
         ii) local analysis shall incorporate required street connectivity plans

         iii) the local system provides continuity between neighboring jurisdictions, consistency between city and county plans for facilities within city boundaries and consistency between local jurisdictions and ODOT plans

   e. The need for the proposed action based on Metro's adopted population and employment projections, or refinements as noted in Section 6.4.8.

   f. The proposed action is consistent with the regional non-SOV modal targets specified in Table 1.3 of Chapter 1.

   g. The proposed action represents the lowest cost system alternative solution acceptable.

   h. The proposed action is not prohibited by unacceptable environmental impacts or other considerations.

i. A goal, policy or system plan element in the federal RTP would likely change as the result of a "no-build" project decision later in the process.

j. The project is in the local jurisdiction's TSP, or a final local land-use action occurred.

k. The project is contained in or consistent with the RTP, adopted comprehensive plan, or implementation plan(s) of any other affected jurisdictions.

l. Sufficient public involvement activities have occurred regarding the proposed action.

The amount of information required to address these criteria shall be commensurate with the scope of the project. Such additions will be amended into the RTP as part of the project update process described in this section. Operations, maintenance and safety improvements are deemed consistent with the policy intent of the RTP if (a) they are needed to serve the travel demand associated with Metro's adopted population and employment forecasts, and (b) they are consistent with affected jurisdictional plans.

3. Amendments resulting from updates to the Regional Framework Plan or related functional plans.

7.6.3 Congestion Management Process Requirements

This section applies to any amendments to the Regional Transportation Plan to add significant single occupancy vehicle (SOV) capacity to multi-modal arterials and/or highways. Consistent with Federal Congestion Management Process (CMP) requirements (23 CFR Part 500) and TPR system planning requirements (OAR 660-12), the following actions shall be considered through the RTP when recommendations are made to revise the RTP to define the need, mode, corridor and function to address an identified transportation needs, and prior to recommendations to add significant SOV capacity:

1. Regional transportation demand strategies

2. Regional transportation system management strategies, including intelligent transportation systems (ITS)

3. High occupancy vehicle (HOV) strategies

4. Regional transit, bicycle and pedestrian system improvements to improve mode split

5. Unintended land-use and transportation effects resulting from a proposed SOV project or projects

6. Effects of latent demand from other modes, routes or time of day from a proposed SOV project or projects

7. If upon a demonstration that the considerations in 1 through 6 do not adequately and cost-effectively address the problem, a significant capacity improvement may be included in the regional transportation plan

7.6.4 Plan Maintenance

The RTP is updated every three to five years, and covers a minimum 20-year plan period. Periodic amendments to the plan will also occur, as needed, to reflect recommendations from corridor or sub-area planning studies. As preparation for each scheduled update, development throughout the region will be monitored to determine whether growth (and the associated travel demand) occurs as forecast. Metro will review its population and employment forecasts annually and update them at least every five years for the following conditions:

- national or regional growth rates differ substantially from those previously assumed
- significant changes in growth rate or pattern develop within jurisdictions
- changes to the urban growth boundary are adopted
- a jurisdiction substantially changes its land-use plan

New information gathered during the course of the year on such issues as energy price and supply, population and employment growth, inflation and new state and federal laws may result in different conditions to be addressed by the plan. These modifications will be incorporated as needed during periodic updates to the plan. Each update will occur in cooperation with affected jurisdictions, state agencies and public transit providers.

Section 7.7 will be updated as part of Phase 5 of the RTP update, when two additional rounds of system analysis will frame corridor strategies for the regional mobility system. This section is expected to include a significantly expanded systems management element for each corridor. To the extent possible, a framework for concept planning in development areas will also be included in this section.

7.7 Project Development and Refinement Planning

7.7.1 Role of RTP and the Decision to Proceed with Project Development

Metro is the regional planning agency for the metropolitan area. Metro does not complete local transportation system plans, engineer or build transportation facilities or permit land uses or transportation projects. These activities occur at the local level. After a project has been incorporated in the RTP, it is the responsibility of the local sponsoring jurisdiction to determine the details of the project (design, operations, etc.). The local jurisdiction responsible for the applicable transportation system plan shall reach a decision on whether to build the improvement based upon detailed environmental impact analysis, adoption of actions to mitigate impacts and findings demonstrating consistency with applicable comprehensive plans and applicable statewide planning goals. If this process results in a decision not to build the project, the RTP will be amended to delete the recommended improvement and an alternative must be identified to address the original transportation need.

7.7.2 New Solutions Re-submitted to RTP if No-Build Option is Selected

When a "no-build" alternative is selected at the conclusion of a project development process, a new transportation solution must be developed to meet the original need identified in the RTP, or a finding that the need has changed or been addressed by other system improvements. In these cases, the new

solution or findings will be submitted as an amendment to the RTP, and would also be evaluated at the project development level.

7.7.3 Project Development Requirements

Transportation improvements where need, mode, function and general location have already been identified in the RTP and local plans for a specific alignment must be evaluated on a detailed, project development level. This evaluation is generally completed at the local jurisdiction level, or jointly by affected or sponsoring agencies, in coordination with Metro. The purpose of project development planning is to consider project design details and select a project alignment, as necessary, after evaluating engineering and design alternatives, potential environmental impacts and consistency with applicable comprehensive plans and the RTP. The project need, mode, function and general location do not need to be addressed at the project level, since these findings have been previously established by the RTP.

The TPR and Metro's Interim 1996 Congestion Management System (CMS) document require that measures to improve operational efficiency be addressed at the project level, though system-wide considerations are addressed by the RTP. Therefore, demonstration of compliance for projects not included in the RTP shall be documented in a required Congestion Management System report that is part of the project-level planning and development (Appendix D of the Interim CMS document). In addition, the CMS requires that street design guidelines be considered as part of the project-level planning process. This CMS requirement does not apply to locally funded projects on local facilities. Unless otherwise stipulated in the MTIP process, these provisions are simply guidelines for locally funded projects.

Therefore, in addition to system-level congestion management requirements described in Section 6.6.3 in this chapter, cities, counties, TriMet, ODOT, and the Port of Portland shall consider the following project-level operational and design considerations during transportation project analysis as part of completing the CMS report:

1. Transportation system management (e.g., access management, signal inter-ties, lane channelization, etc.) to address or preserve existing street capacity.

2. Street design policies, classifications and design principles contained in Chapter 1 of this plan. See Section 1.3.5, Policy 11.0, Figure 1.4. Implementing guidelines are contained in *Creating Livable Streets: Street Design Guidelines for 2040* (2nd edition, 2002) or other similar resources consistent with regional street design policies.

3. Environmental design guidelines, as contained in *Green Streets: Innovative Solutions for Stormwater and Street Crossings* (2002), and *Trees for Green Streets: An Illustrated Guide* (2002), or other similar resources consistent with federal regulations for stream protection.

Transportation providers in the Metro region, including the cities and counties, TriMet, ODOT, and the Port of Portland are required to amend their comprehensive plans, implementing ordinances and administrative codes, if necessary, to consider the *Creating Livable Streets* design guidelines as part of project development. Transportation providers shall amend design codes, standards and plans to allow consideration of the guidelines contained in *Green Streets: Innovative Solutions for Stormwater and Street Crossings.*

7.7.4 Refinement Planning Scope and Responsibilities

In some areas defined in this section, the need for refinement planning is warranted before specific projects or actions that meet and identified need can be adopted into the RTP. Refinement plans generally involve a combination of transportation and land use analysis, multiple local jurisdictions and facilities operated by multiple transportation providers. Therefore, unless otherwise specified in this section, Metro or ODOT will initiate and lead necessary refinement planning in coordination with other affected local, regional and state agencies. Refinement planning efforts will be multi-modal evaluations of possible transportation solutions in response to needs identified in the RTP, including land use alternatives and to address consistency with applicable statewide planning goals Refinement plans fall into two broad groups of scope and complexity:

- Type I - Major corridor refinements are necessary where a transportation need exists, but mode, function and general location of a transportation improvement are not determined, and a range of actions must be considered prior to identifying specific projects.

- Type II - Minor corridor refinements are necessary where both the need and mode for a transportation improvement are identified in the RTP, but a specific project has not been identified.

Appendix 3.1 describes the 2000 RTP prioritization for major corridor refinements and minor corridor refinements. Refinement plan and corridor study prioritization and specific scope for each corridor is subject to annual updates as part of the Unified Work Plan (UWP).

7.7.5 Type I – Major Corridor Refinements

Type I, major corridor refinements will be conducted by state or regional agencies working in partnership with local governments in the following areas. In each case, a transportation need has been established by the RTP, and in some cases, mode, function or general location may be determined or the decision on these elements narrowed at the TSP level to focus the refinement planning work. A transportation need is identified when regional standards for safety, mobility, or congestion are exceeded. In many of these corridors, RTP analysis indicates several standards are exceeded.

The purpose of Type I major corridor refinements is to develop an appropriate transportation strategy or solution through the corridor planning process that determined mode, function and general location of a project or set of projects. For each corridor, a number of transportation alternatives will be examined over a broad geographic area or through a local TSP to determine a recommended set of projects, actions or strategies that meet the identified need. This section of the RTP also identifies a number of corridor planning issues that shall be addressed as part of the refinement planning process.

For refinement planning in corridors located outside the urban growth boundary, this work shall also address relevant statewide planning goal exception requirements pursuant to Section 660.012.0070 of the state transportation planning rule. These findings shall expand on exceptions findings made as part of the 2000 RTP adoption ordinance, but address more localized issues relevant to the refinement level of planning.

The specific project recommendations from Type I major corridor refinements are then incorporated into the RTP, as appropriate. This section contains the following specific considerations that must be incorporated into corridor studies as they occur:

Interstate-5 North (I-84 to Clark County)

This heavily traveled route is the main connection between Portland and Vancouver. In addition to a number of planned and proposed highway capacity improvements, light rail is proposed along Interstate Avenue to the Expo Center, and may eventually extend to Vancouver. As improvements are implemented in this corridor, the following design considerations should be addressed:

- consider HOV lanes and peak period pricing
- transit alternatives from Vancouver to the Portland Central City (including light rail transit and express bus)
- maintain an acceptable level of access to the central city from Portland neighborhoods and Clark County
- maintain off-peak freight mobility, especially to numerous marine, rail and truck terminals in the area
- consider adding reversible express lanes to I-5
- consider new arterial connections for freight access between Highway 30, port terminals in Portland and port facilities in Vancouver, Wa.
- maintain an acceptable level of access to freight intermodal facilities and to the Northeast Portland Highway
- construct interchange improvements at Columbia Boulevard to provide freight access to Northeast Portland Highway
- address freight rail network needs
- consider additional Interstate Bridge capacity sufficient to handle project needs
- develop actions to reduce through-traffic on MLK and Interstate to allow main street redevelopment

Interstate-5 South (Highway 217 to Willamette River/Boones Bridge)

This facility serves as the major southern access to and from the central city. The route also serves as an important freight corridor, where Willamette Valley traffic enters the region at the Wilsonville "gateway,"and provides access to Washington County via Highway 217. Projections for this facility indicate that growth in traffic between the Metro region and the Willamette Valley will account for as much as 80 percent of the traffic volume along the southern portion of I-5, in the Tualatin and Wilsonville area. A joint ODOT and Wilsonville study[1] concludes that in 2030 widening of I-5 to eight lanes would be required to meet interstate freeway capacity standards set by Metro and ODOT and that freeway access capacity would not be adequate with an improved I-5/Wilsonville Road interchange. For these reasons, the appropriate improvements in this corridor are unclear at this time. However, I-5 serves as a critical

[1] I-5/Wilsonville Freeway Access Study, DKS Associates, November 2002

gateway for regional travel and commerce, and an acceptable transportation strategy in this corridor has statewide significance. A major corridor study is proposed to address the following issues:

- the effects of widening I-205 on the I-5 South corridor
- the effects of the I-5 to 99W Connector on the Stafford Road interchange and the resultant need for increased freeway access
- the effects of peak period congestion in this area on regional freight mobility and travel patterns
- the ability of inter-city transit service, to/from neighboring cities in the Willamette Valley, including commuter rail, to slow traffic growth in the I-5 corridor
- the ability to maintain off-peak freight mobility with capacity improvements
- the potential for better coordination between the Metro region and valley jurisdictions on land-use policies
- the effects of a planned long-term strategy for managing increased travel along I-5 in the Willamette Valley
- the effects of UGB expansion and Industrial Lands Evaluation studies on regional freight mobility
- the effects to freight mobility and local circulation due to diminished freeway access capacity in the I-5/Wilsonville corridor

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

- peak period pricing and HOV lanes for expanded capacity
- provide rapid bus service on parallel Barbur route, connecting Wilsonville to the central city
- provide additional overcrossings in West Portland town center to improve local circulation and interchange access
- provide additional freeway access improvements in the I-5/Wilsonville corridor to improve freight mobility and local circulation, (e.g. a new Boeckman Road interchange)
- add capacity to parallel arterial routes, including 72nd Avenue, Boones Ferry, Lower Boones Ferry and Carmen Drive
- add overcrossings in vicinity of Tigard Triangle to improve local circulation
- extend commuter rail service from Salem to the central city, Tualatin transit center and Milwaukie, primarily along existing heavy rail tracks
- additional I-5 mainline capacity (2030 demand on I-5 would exceed capacity)
- provision of auxiliary lanes between all I-5 freeway on- and off-ramps in Wilsonville.

Interstate 205

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

- provide for some peak period mobility for longer trips
- preserve freight mobility from I-5 to Clark County, with an emphasis on connections to Highway 213, Highway 224 and Sunrise Corridor
- maintain an acceptable level of access to the Oregon City, Clackamas and Gateway regional centers and Sunrise industrial area
- maintain acceptable levels of access to PDX, including air cargo access

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

- auxiliary lanes added from Airport Way to I-84 East
- consider express, peak period pricing or HOV lanes as a strategy for expanding capacity
- relative value of specific ramp, overcrossing and parallel route improvements
- eastbound HOV lane from I-5 to the Oregon City Bridge
- truck climbing lane south of Oregon City
- potential for rapid bus service or light rail from Oregon City to Gateway
- potential for extension of rapid bus service or light rail north from Gateway into Clark County
- potential for refinements to 2040 land-use assumptions in this area to expand potential employment in the subarea and improve jobs/housing imbalance
- potential for re-evaluating the suitability of the Beavercreek area for urban growth boundary expansion, based on ability to serve the area with adequate regional transportation infrastructure

McLoughlin-Highway 224

Long-term improvements are needed in this corridor to preserve access to and from the Central City from the Clackamas County area, to provide access to the developing Clackamas regional center and to support downtown development in the Milwaukie town center. The recently completed South/North light rail study demonstrated a long-term need for high-capacity transit service in this corridor. The long-term transit need is critical, as demonstrated in the RTP analysis, where both highway and high-capacity transit service were needed over the 20-year plan period to keep pace with expected growth in this part

of the region. The 2040 Growth Concept also calls for the regional centers and central city to be served with light rail. Transportation solutions in this corridor should address the following design considerations

- institute aggressive access management throughout corridor, including intersection grade separation along Highway 224 between Harrison Street and I-205
- design access points to McLoughlin and Highway 224 to discourage traffic spillover onto Lake Road, 34th Avenue, Johnson Creek boulevard, 17th Avenue and Tacoma Street
- monitor other local collector routes and mitigate spillover effect from congestion on McLoughlin and Highway 224
- consider an added reversible HOV or peak-period priced lane between Ross Island Bridge and Harold Street intersection
- expand highway capacity to a total of three general purpose lanes in each direction from Harold Street to I-205, with consideration of express, HOV lanes or peak period pricing for new capacity
- provide a more direct transition from McLoughlin to Highway 224 at Milwaukie to orient long trips and through traffic onto Highway 224 and northbound McLoughlin
- provide improved transit access to Milwaukie and Clackamas regional centers, including rapid bus in the short term, and light rail service from Clackamas regional center to Central City in the long term

Powell Boulevard/Foster Road Phase 2

The Powell Boulevard/Foster Road Corridor represents both a key transportation challenge and an opportunity to meet 2040 regional land use goals. The Powell/Foster Corridor is a top priority among corridors requiring refinement plans. Despite policy changes to level-of-service standards that permit greater levels of congestion, significant multi-modal improvements will be needed in order to continue to serve transportation needs of the communities and industrial areas in southeast Portland and Gresham. The corridor is also critical to providing access to the planned growth areas in Pleasant Valley, along with Damascus and Springwater that have recently been added to the Urban Growth Boundary. In addition, the corridor is constrained by significant topographical and environmental features.

As a result of the findings from Phase 1 of the Powell Boulevard/Foster Road Corridor Plan, which was completed in 2003, specific multi-modal projects have been identified that address transportation needs on Powell Boulevard between inner SE Portland and Gresham, and on Foster Road west of Barbara Welch Road. System level decisions for transit service were also made for the corridor.

Several outstanding transportation problems in the Pleasant Valley, Damascus and south Gresham areas, require additional planning work before specific multi-modal projects can be developed and implemented. The Phase 2 plan should closely coordinated with concept plans for Damascus and the Springwater area, in order to incorporate the updated land use and transportation assumptions. It should examine the following transportation solutions and strategies:

- Determine the appropriate cross section on Foster Road between Barbara Welch Road and Jenne Road and the project timing, to meet roadway, transit, pedestrian and bike needs.

- Explore possibilities for potential new street connection improvements in the Mount Scott area that reduce local travel demand on Foster Road and improve access to the Pleasant Valley area.

- Develop conceptual designs and determine right-of-way for an improvement and extension of SE 174th Avenue between Powell Boulevard and Giese Road, or another new north-south roadway in the area, to accommodate travel demand and improve access to Pleasant Valley. The alignment should consider engineering feasibility, land use and environmental affects, safety, and overall costs.

- Further define the three-lane Highland Drive and Pleasant View Drive option that was recommended as part of Phase 1. This option needs to address design, operational, and safety-related issues.

- Work with local jurisdictions to provide for access management on arterials serving Pleasant Valley and Damascus.

- Address other regional north-south transportation needs identified by the Damascus Concept Plan and Springwater concept planning effort. Further evaluate alignment issues, engineering cost estimates, and right-of-way impacts of future roadway projects north of Damascus that are identified as part of the concept planning effort.

Highway 217

Improvements in this corridor are needed to accommodate expected travel demand, and maintain acceptable levels of access to the Beaverton and Washington Square regional centers. The following design and functional considerations should be included in the development of transportation solutions for this corridor:

- expand highway to include a new lane in each direction from I-5 to US 26

- address the competing needs of serving localized trips to the Washington Square and Beaverton regional centers and longer trips on Highway 217

- consider express, HOV lanes and peak period pricing when adding new capacity

- design capacity improvements to maintain some mobility for regional trips during peak travel periods

- design capacity improvements to preserve freight mobility during off-peak hours

- retain auxiliary lanes where they currently exist

- improve parallel routes to accommodate a greater share of local trips in this corridor

- consider improve light rail service or rapid bus service with substantially improved headways

- coordinate with planned commuter rail service from Wilsonville to Beaverton regional center

Tualatin Valley Highway

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

defined as extending from Highway 217 on the east to First Avenue in Hillsboro to the west, and from Farmington Road on the south to Baseline Road to the north. The following design considerations should be addressed as part of a corridor study:

- develop an access management plan as part of a congestion management strategy

- implement TSM and other interim intersection improvements at various locations between Cedar Hills Boulevard and Brookwood Avenue

- the relative trade-offs of a variety of capacity and transit improvements, including:
  a. improvements on parallel routes such as Farmington, Alexander, Baseline and Walker roads as an alternative to expanding Tualatin Valley Highway

  b. seven-lane arterial improvements from Cedar Hills Boulevard or Murray Boulevard to Brookwood Avenue or Baseline Road in Hillsboro

  c. a limited access, divided facility from Cedar Hills Boulevard or Murray Boulevard to Brookwood Avenue, with three lanes in each direction and some grade separation at major intersections

  d. transit service that complements both the function of Tualatin Valley Highway and the existing light rail service in the corridor

- evaluate impacts of the principal arterial designation, and subsequent operation effects on travel within the Beaverton regional center

- evaluate motor vehicle and street design designations as part of the study to determine the most appropriate classifications for this route

North Willamette Crossing

The RTP analysis shows a strong demand for travel between Northeast Portland Highway and the adjacent Rivergate industrial area and Highway 30 on the opposite side of the Willamette River. The St. Johns Bridge currently serves this demand. However, the St. Johns crossing has a number of limitations that must be considered in the long term in order to maintain adequate freight and general access to the Rivergate industrial area and intermodal facilities. Currently, the St. Johns truck strategy is being developed (and should be completed in 2000) to balance freight mobility needs with the long-term health of the St. Johns town center. The truck strategy is an interim solution to demand in this corridor, and does not attempt to address long-term access to Rivergate and Northeast Portland Highway from Highway 30. Specifically, the following issues should be considered in a corridor plan:

- build on the St. Johns Truck Strategy recommendations to adequate freight and general access to Rivergate, while considering potentially negative impacts on the development of the St. Johns town center

- incorporate the planned development of a streamlined Northeast Portland Highway connection from I-205 to Rivergate to the crossing study

- include a long-term management plan for the St. John's Bridge, in the event that a new crossing is identified in the corridor plan recommendations

Barbur Boulevard/Interstate-5

This corridor provides access to the Central City and to neighborhoods and commercial areas in the inner southwest quadrant of the region. Barbur Boulevard is identified as a multi-modal facility with potential light rail or Rapid Bus as well as serving a regional role for motor vehicle, bicycle and pedestrian systems. I-5 in this corridor is a Main Roadway route for freight and a Principle Arterial for motor vehicles extending southward beyond the region.

Segments of both Barbur Boulevard and I-5 in this corridor experience significant congestion and poor service levels even with Priority System improvements, especially from the Terwilliger interchange northward. However, Rapid Bus service along Barbur and other expanded bus services are expected to experience promising ridership levels. Significant localized congestion occurs along the intersecting street segments of Bertha, Terwilliger and Capitol Highway/Taylors Ferry roads. Broad street cross-sections, angled intersections and limited signalized crossing opportunities along Barbur Boulevard creates traffic safety hazards and inhibits walking to local destinations and access to transit services.

Transportation solutions in the corridor should include the following considerations:

- Regional and local transit services and facilities needed to serve the Barbur corridor within the RTP planning horizon.

- Possible new locations or relocations for I-5 on-ramps and off-ramps and street connections across the freeway right-of-way.

- Opportunities for new or improved local street connections to Barbur Boulevard.

- Facilities to improve bicycle and pedestrian safety along Barbur and access to transit services and local destinations.

- Traffic management and intelligent transportation system improvements along the corridor.

- Potential mainline freeway improvements including possible southbound truck climbing lanes.

7.7.6 Type II - Minor Corridor Refinements

Type II minor corridor refinements will be conducted by state or regional agencies working in partnership with local governments in the following areas. In each case, a transportation need has been established by the RTP, and in some cases, mode, function or general location may be determined or the decision on these elements narrowed at the TSP level to focus the refinement planning work. A

transportation need is identified when regional standards for safety, mobility, or congestion are exceeded. In many of these corridors, RTP analysis indicates several standards are exceeded.

The purpose of the minor corridor refinement process is to identify specific projects consistent with the identified need, mode and general corridor. These proposed transportation projects must be developed to a more detailed level before construction can occur. This process is described in Section 6.7.3 of this chapter. For minor refinement planning in corridors located outside the UGB, this work shall also address relevant statewide planning goal exception requirements pursuant to Section 660.012.0070 of the state transportation planning rule. These findings shall expand on exceptions findings made as part of the 2000 RTP adoption ordinance, but address more localized issues relevant to the refinement level of planning. The specific project recommendations from major corridor studies are then incorporated into the RTP, as appropriate.

Because minor corridor refinements are more specific in location and mode, local TSPs shall consider measures to protect future right-of-way options within the affected corridors. Likewise, the refinement planning process shall make recommendations for corridor preservation or right-of-way acquisition strategies to ensure that final project recommendations are not precluded by land use decisions within the corridor.

The project development stage determines design details, and a project location or alignment, if necessary, after evaluating engineering and design details, and environmental impacts. While all projects in this plan must follow this process before construction can occur, the following projects must also consider the design elements described in this section:

Banfield (Interstate 84) Corridor

Despite the relatively heavy investments made in transit and highway capacity in this corridor in the 1980s, further improvements are needed to ensure an acceptable level of access to the central city from Eastside Portland neighborhoods and East Multnomah County. However, physical, environmental and social impacts make highway capacity improvements in this corridor unfeasible. Instead, local and special district plans should consider the following transportation solutions for this corridor:

- mitigate infiltration on adjacent corridors due to congestion along I-84 through a coordinated system of traffic management techniques (ITS)
- improve light rail headways substantially to keep pace with travel demand in the corridor
- improve bus service along adjacent corridors to keep pace with travel demand, including express and non-peak service
- consider additional feeder bus service and park-and-ride capacity along the eastern portion of the light rail corridor to address demand originating from East Multnomah and North Clackamas Counties
- develop TSM strategies for the Gateway regional center to mitigate expected spillover effects on the development of the regional center

Northeast Portland Highway

As radial urban highways such as the Banfield and Interstate-5 are increasingly burdened by peak period congestion, freight mobility will rely more heavily on circumferential routes, including I-205 and Northeast Portland Highway, for access to industrial areas and intermodal facilities. Northeast Portland Highway plays a particularly important role, as it links the Rivergate marine terminals and PDX air terminals to industry across the region (this route includes Killingsworth and Lombard streets from I-205 to MLK Jr. Boulevard, and Columbia Boulevard from MLK Jr. Boulevard to North Burgard). Though Northeast Portland Highway appears to have adequate capacity to serve expected 2020 demand, a number of refinements in the corridor are needed. Local and special district plans should consider the following transportation solutions as improvements are made in this corridor:

- improve Northeast Portland Highway as a strategy for addressing Banfield corridor and east Marine Drive congestion
- develop a long-term strategy to serve freight movement between Highway 30 and Rivergate
- implement aggressive access management along Northeast Portland Highway
- implement and refine Columbia Corridor improvements to address full corridor needs of Northeast Portland Highway, from Rivergate to I-205
- consider future grade separation at major intersections
- streamline the Northeast Portland Highway connection from the Lombard/Killingsworth section to Columbia Boulevard with an improved transition point at MLK Jr. Boulevard
- improve the Columbia Boulevard interchange at I-5 to provide full access to Northeast Portland Highway
- construct capacity and intersection improvements between 82nd Avenue and I-205
- Implement the St. Johns Truck Strategy recommendations in order to direct truck traffic onto the designated freight system, as shown in Figure 1.17, and protect the Lombard main street and St. Johns town center from truck traffic impacts.

Interstate-84 to US 26 Connector

The long-term need to develop a highway link between I-84 and Highway 26 exists, but a series of interim improvements to Hogan Road are adequate to meet projected demand through 2020. The RTP calls for a series of interim improvements that will better connect Hogan Road to both I-84 on the north, and Highway 26 to the south.

These improvements are needed to ensure continued development of the Gresham regional center and expected freight mobility demands of through traffic. They also benefit transit-oriented development along the MAX light rail corridor, as they would move freight traffic from its current route along Burnside, where it conflicts with development of the Rockwood town center and adjacent station communities. In addition to planned improvements to the Hogan Road corridor, local plans or a corridor study should address:

- more aggressive access management between Stark Street and Powell Boulevard on 181st, 207th and 257th avenues

- redesigned intersections improvements on Hogan at Stark, Burnside, Division and Powell to streamline through-flow

- the need for a long-term primary freight route in the corridor

- the potential for a new alignment south of Powell Boulevard to US 26.

Sunrise Corridor

The full Sunrise Corridor improvement from I-205 to Highway 26 is needed during the 20-year plan period, but should be implemented with a design and phasing that reinforces development of the Damascus town center, and protect rural reserves from urban traffic impacts. This corridor includes rural areas outside the Metro area urban growth boundary. Impacts on rural resources in these areas shall be addressed through statewide planning goal exception findings that expand on findings already adopted in the 2000 RTP, pursuant to Section 660.012.0070 of the state transportation planning rule. Though a draft environmental impact statement has been prepared for this corridor, the final environmental impact statement should be refined to consider the following elements:

- Construct the segment from I-205/Highway 224 interchange to existing Highway 212 at Rock Creek as funds become available

- preserve right-of-way (ROW) from Rock Creek to Highway 26 as funds become available

- consider phasing Sunrise construction as follows: (a) complete I-205 to Rock Creek segment first, followed by (b) ROW acquisition of remaining segments, then (c) construction of 222nd Avenue to Highway 26 segment and (d) lastly, construction of middle segment from Rock Creek to 222nd Avenue as Damascus town center develops

- consider express, peak period pricing and HOV lanes as phases of the Sunrise Corridor are constructed

- reflect planned network of streets in Damascus/Pleasant Valley area in refined interchange locations along the Sunrise Route, including a connection at 172nd Avenue, the proposed major north/south route in the area

- implement bus service in parallel corridor from Damascus to Clackamas regional center via Sunnyside Road

- avoid premature construction that could unintentionally increase urban pressures in rural reserves east of Damascus

- examine the potential for the highway to serve as a "hard edge" in the ultimate urban form of the Damascus area

- develop a concurrent plan to transition the function of the existing Highway 212 facility into a major arterial function, with appropriate access management and intersection treatments identified

- pursue a Green Corridor intergovernmental agreement (IGA) for the Sunrise Corridor from the Damascus town center to US 26, with the specific western terminus for the IGA flexible to future expansion of the urban growth boundary.

I-5 to 99W Connector

An improved regional connection between Highway 99W and I-5 is needed in the Tualatin area to accommodate regional traffic, and to move it away from the Tualatin, Sherwood and Tigard town centers. The RTP has narrowed the corridor to include two alternatives that depart from I-5 in the same general corridor, but split to form northern and southern alignments relative to the City of Sherwood. Impacts on rural resources in both alignments of this corridor shall be addressed through statewide planning goal exception findings that expand on findings already adopted in the 2000 RTP, pursuant to Section 660.012.0070 of the state transportation planning rule. This connection will also have significant effects on urban form in this rapidly growing area, and the following considerations should be addressed in a corridor plan:

- balance improvement plans with impacts on Tualatin and Sherwood town centers and adjacent rural reserves

- in addition to the northern alignment considered in the Western Bypass Study, examine the benefits of a southern alignment, located along the southern edge of Tualatin and Sherwood, including the accompanying improvements to 99W that would be required with either alignment

- identify parallel capacity improvements to Tualatin-Sherwood Road and 99W in Tigard from I-5 to Highway 217 that could be used to phase in, and eventually complement future highway improvements

- link urban growth boundary expansion in this area to the corridor plan and examine potential the proposed highway to serve as a "hard edge" in the ultimate urban form of the Sherwood area

- develop an access management and connectivity plan for 99W in the Tigard area that balances accessibility needs with physical and economic constraints that limit the ability to expand capacity in this area

- consider express, peak-period pricing and HOV lanes

- pursue a Green Corridor intergovernmental agreement (IGA) for the I-5/99W connector and Highway 99W south of the connector.

Sunset Highway

Improvements are needed in this corridor to preserve access to and from the central city and the Sunset Corridor employment area, and provide access to Hillsboro regional center. The following elements should be considered as improvements are implemented in this corridor:

- maintain off-peak freight mobility

- phase in capacity improvements from the Sylvan interchange to 185th Avenue, expanding to a total of three general purpose lanes in each direction

- improve light rail service, with substantially increased headways
- construct major interchange improvements at Sylvan, Cedar Hills Boulevard and Cornelius Pass Road
- identify and construction additional overcrossings in the vicinity of interchanges to improve connectivity and travel options for local traffic, thus improving interchange function
- consider express, peak period pricing or HOV lanes when adding highway capacity, especially west of Highway 217

Highway 213

Improvements to this highway link between I-205 and the Willamette Valley should be built in phases, and consider the following:

- continued development of the Oregon City regional center
- interim improvements identified in the 1999 Highway 213 Urban Corridor Study (and included in this plan)
- freight mobility demands
- access needs of Beavercreek urban area, including a re-evaluation of the suitability of Oregon City urban growth boundary expansion in light of transportation constraints
- transit service to areas south of Oregon City.

Macadam/Highway 43

Though heavy travel demand existing along Macadam/Highway 43, between Lake Oswego and the central city, physical and environmental constraints preclude major roadway expansion. Instead, a long-term strategy for high-capacity transit that links the central city to southwest neighborhoods and Lake Oswego town center is needed. As this service is implemented, the following options should be considered in local and special district plans:

- interim repairs to maintain Willamette Shores Trolley excursion service
- implement frequent bus service from Lake Oswego town center to Portland central city in the Macadam corridor
- phasing of future streetcar commuter service or commuter rail in this corridor to provide a high-capacity travel option during congested commute periods, using either the Willamette Shore Line right-of-way, the Macadam Corridor Design Guidelines (1985) rail alignment or other right-of-way as appropriate.
- implement bicycle safety improvements where appropriate south of the Sellwood Bridge

7.7.7 Areas of Special Concern

Section 660.012.0060 of the state Transportation Planning Rule (TPR) allows local plans to "modify planned function, capacity and performance standards, as needed, to accept greater motor vehicle congestion to promote mixed-use, pedestrian friendly development where multi-modal choices are provided." Facilities in the areas or corridors described in this section are expected to exceed the motor vehicle level of service policy set forth in this plan, and fall under this designation, as they are planned mixed use areas that will have a wide range of transportation alternatives.

However, in each case, the range of transportation solutions needed to address an RTP motor vehicle deficiency represents an unacceptable social, financial or environmental impact, and would be inconsistent with other local, regional and statewide planning goals. Further, each of these areas or corridors represents a relatively localized impact on the overall regional system, and other, alternative travel routes that would continue to conveniently serve regional travel needs. Strategies for managing traffic impacts and providing adequate transportation performance in these areas could include bicycle, pedestrian and transit improvements, demand management programs or changes to land-use plans.

In these areas where motor vehicle performance measures will be exceeded, local TSPs shall adopt one of the following approaches for establishing other transportation performance standards for Areas of Special Concern:

1. Adopt the following performance measures, and provide an analysis that demonstrates progress toward meeting these measures in the local TSP:

    a. Non-SOV modal targets consistent with Table 1.3 in Chapter 1 of this plan

    b. parking ratios consistent with Title 2 of the Urban Growth Management Functional Plan (UGMFP)

    c. a street connectivity plan for the Area of Special Concern that meets the connectivity requirements set forth in Section 6.4.5 of this chapter

    d. a plan for mixed-use development

2. Establish an Area of Special Concern action plan that:

    a. anticipates the growth and subsequent impacts of motor vehicle traffic on multi-modal travel in these areas

    b. establishes an action plan for mitigating the growth and subsequent impacts of motor vehicle traffic

    c. establishes performance standards for monitoring and implementing the action plan

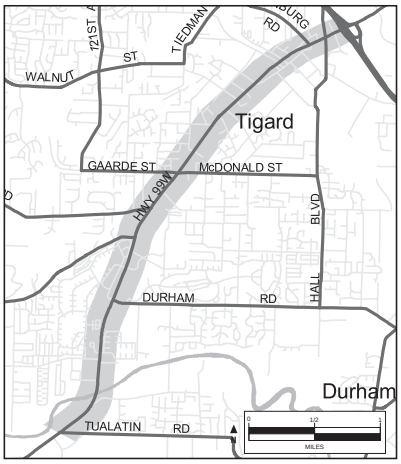
    The action plan shall consider land-use strategies, as well as transportation solutions for managing the effects of continued traffic growth.

For either strategy, the adopted approach and performance measures shall be incorporated into Appendix 3.6 of the RTP during the next scheduled update. For an Area of Special Concern, adopted

performance measures consistent with this section are required at the time of a plan amendment that significantly affects a regional facility, consistent with OAR 660.012.0060.

The following Areas of Special Concern where refinement planning to establish performance measures shall occur as part of the local TSP process, in accordance with this section:

Highway 99W



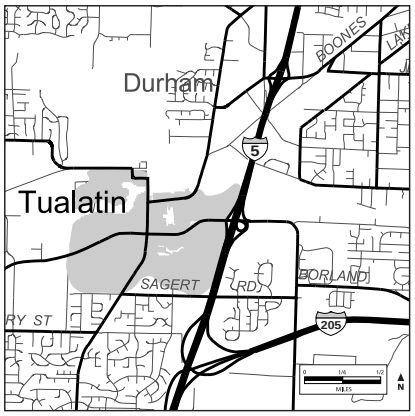
The Highway 99W corridor between Highway 217 and Durham Road is designated as a mixed-used corridor in the 2040 Growth Concept, and connects the Tigard and King City town centers. This route also experiences heavy travel demand. The City of Tigard has already examined a wide range of improvements that would address the strong travel demand in this corridor. The RTP establishes the proposed I-5 to 99W connector as the principal route connecting the Metro region to the 99W corridor outside the region. This emphasis is intended to change in the long term the function of 99W, north of Sherwood, to a major arterial classification, with less need to accommodate longer, through trips.

However, for much of Washington County, Highway 99W will still be a major connection, linking Sherwood and Tigard to the rest of the County and linking the rest of the County to the Highway 99W corridor outside of the region. A number of alternatives for relieving congestion have been tested as part of the RTP update, and by the City of Tigard in earlier planning efforts. These efforts led to the common conclusion the latent travel demand in the Highway 99W corridor is too great to be reasonably offset solely by capacity projects. While the RTP proposed new capacity on 99W between I-5 and Greenburg Road, no specific capacity projects are proposed south of Greenburg Road, due to latent demand and the impacts that a major road expansion would have on existing development. As a result, this section of Highway 99W is not expected to meet the region's motor vehicle level of service policies during mid-day and peak demand periods in the future, and an alternative approach to managing and accommodating traffic in the corridor is needed.

Since statewide, regional and local travel will still need to be accommodated and managed for sometime ODOT, Metro, Washington County and Tigard should cooperatively address the means for transitioning to the future role of the facility to emphasize serving circulation within the local community. This will include factoring in the social, environmental and economic impacts that congestion along this facility will bring. Additionally the analysis should specifically document the schedule for providing the alternatives for accommodating the regional and statewide travel. Similarly the local TSPs should include the agreed upon action plans and benchmarks to ensure the local traffic and access to Highway 99W is managed in a way that is consistent with broader community goals. Additional alternative mode choices should be ensured for Tigard and King City town centers. TriMet should be a major participant in the alternative mode analysis. The results of this cooperative approach should be reflected in the local TSPs and the RTP.

In addition, other possible solutions, such as ODOT's new program for local street improvements along highway corridors, may provide alternatives for managing traffic growth on 99W. Finally, the local TSPs should also consider changes to planned land use that would minimize the effects of growing congestion.

Tualatin Town Center



Tualatin town center is adjacent to an important industrial area and employment center. New street connections and capacity improvements to streets parallel to 99W and I-5 help improve local circulation and maintain adequate access to the industrial and employment area in Tualatin. However, the analysis of travel demand on regional streets shows that several streets continue to exceed the LOS policy established in Table 1.2, including Hall Boulevard and Boones Ferry Road.

The Tualatin transportation system plan should further evaluate ITS or other system management strategies to further address travel demands and peak-hour expected congestion along Hall Boulevard and Boones Ferry Road entering the town center. In addition, the local TSP should examine the ability of local streets in these areas to absorb travel demand to a degree that cannot be measured in the regional model. A traffic management plan for these streets should be integrated with the overall TSP strategy, but should establish specific action plans and benchmarks for facilities determined to exceed the LOS policy in the local analysis. Alternative mode choices should be identified to further reduce travel demand in addition to placing an emphasis on connectivity, including new development, retrofits and interconnected parking lots in commercial/employment areas. Overall, commuter rail is expected to be an important part of the modal mix of improvements for this part of the region because it offers separate right-of-way for transit service in a corridor that is expected to experience congestion during the morning and evening two-hour peak period. The local TSP should also consider strategies for providing better access to commuter rail.

7.8 Unresolved Issues

The section describes a number of issues that could not be addressed at the time of adoption of this plan, but should be addressed in the state component of the RTP update in 2008 or as part of future updates to the RTP.

7.8.1 Regional Transportation Model Enhancements

Bicycle and Pedestrian Modeling

The existing regional transportation model probably underestimates bicycle and pedestrian trips, and does not predict bicycle travel according to the transportation network. Instead, the current model predicts bicycle and pedestrian trips as part of the "mode choice" step of the modeling process, but does not assign these trips to a network to predict how they might be distributed. While pedestrian trips are generally short enough to make a network assignment impractical, bicycle trips are of sufficient length to be assigned to a network and evaluated at this level. In 2007, Metro initiated work to improve bicycle modeling capability, with model enhancements expected for the next RTP update.

ODOT Statewide Model

ODOT has nearly completed a more detailed set of travel zones for the state which will allow Metro to better predict travel demand at "gateway" points where statewide traffic enters the region. Currently, the regional model simply projects historic traffic volumes on such routes, but is unable to evaluate how congestion, parallel routes, and distribution of employment in and outside the region affects travel demand at these "gateway" locations. The ODOT Statewide Model is scheduled for completion in early 2008, and will be considered for the next RTP update.

Regional Travel Behavior Survey

The Portland region travel behavior survey scheduled for 2007 was postponed until 2010 due to the significant construction in the downtown Portland transit mall area. The survey results will be used to refine the region's travel demand model to better predict travel behavior based on data collected as part of the survey.

7.8.2 Urban and Rural Reserve Planning and Green Corridor Implementation

Green corridors were adopted as part of the 2040 Growth Concept. They are designated in rural areas where state-owned highways connect neighbor cities to the metro area. The purpose of green corridors is to prevent unintended urban development along these often heavily traveled routes, and maintain the sense of separation that exists between neighbor cities and the Metro region. The green corridor concept calls for a combination of access management and physical improvements to limit the effects of urban travel on the routes on adjacent rural activities.

In several corridors, Metro has already developed inter-governmental agreements (IGAs) with local governments to address access management issues. However, IGAs are not in place in most corridors, and physical improvements, such as street and driveway closures, landscaping and public signage have not been implemented in any green corridors.

Unresolved Issues:

- **Regional Transportation Model Enhancements**
- **Urban and Rural Reserve Planning and Green Corridor Implementation**
- **RTP Performance Measures**
- **RTP Modal Targets Implementation**
- **Adequacy Determination and Statewide Planning Goal 12 Compliance**
- **Regional Bridges**
- **ODOT District Highways**
- **Regional Freight Study**
- **Regional High Capacity Transit Study**
- **Regional Strategy for Management and Operations**
- **Regional Transportation Demand Management Strategic Plan Update**
- **Transportation Finance**

The 2035 RTP assumes future urban growth boundary expansions following the current state land use hierarchy. During the next several years, Metro will also complete a plan for urban and rural reserves in the region, under new statutes approved by the 2007 Legislature. The urban and rural reserve work program will not only provide an opportunity to establish a more certain framework for transportation improvements along the urban edge, but also a context for an update the Green Corridors policy. Metro will also continue to work with ODOT and affected local jurisdictions to complete IGAs for the remaining green corridors that reflect updated plans for urban and rural reserves, and develop plans for necessary improvements and management strategies for Green Corridors that reinforce emerging policies for our urban edge.

7.8.3 RTP Performance Measures – System-wide and Regional Mobility Corridors

The 2000 RTP marked the first time the plan included a performance measure other than level-of-service is adopted as regional policy. The plan incorporated 2040 Modal Targets and the Area of Special Concern designation to allow for a broader definition of performance in mixed-use centers and corridors, where transportation solutions solely aimed at relieving congestion are inappropriate for functional, physical, financial or environmental reasons. These two measures represented a first step toward a more broadly defined set of performance measures.

The federal component of the 2035 RTP was unable to resolve how to address increasing demand on our multi-modal transportation system, particularly the *Regional Mobility Corridors* – transportation corridors centered on the region's network of interstate and state highways that include parallel networks of

arterial roadways, high capacity and regional transit routes and multi-purpose paths. The network of corridors is intended to move people and freight between different parts of the region and connect the region with the rest of the state and beyond. The first round of technical analysis (which included the RTP investment pool of projects) demonstrated that system-level measures are no longer sufficient to determine whether investments lead to a safe, efficient and reliable transportation system or meet other RTP goals for land use, the economy and the environment.

Performance measures will be defined during the state component of the RTP update in 2008. Table 7.2 provides a list of potential performance measures identified during the federal component of the RTP update. The state component of the RTP update should continue to expand the definition of performance to encompass all modes of travel as they relate to planned land uses and other RTP goals identified in Chapter 3. While level-of-service and other congestion-related measures should be considered as part of a more diverse set of measures, it should be evaluated in a more comprehensive fashion to ensure that transportation solutions identified in future RTP updates represent the best possible approaches to serving the region's travel demand. Development of a performance management process also satisfies benchmarks mandated by the Oregon Transportation Planning Rule (TPR) and federal requirements to establish a performance monitoring system as part of the Congestion Management Process (CMP).

Table 7.2
Potential RTP Performance Measures

Goal Statement	Potential Performance Measures
Goal 1: Foster Vibrant Communities and Efficient Urban Form Land use and transportation decisions are linked to promote an efficient and compact urban form that fosters vibrant communities; optimizes public investments; and supports jobs, schools, shopping, services, recreational opportunities and housing proximity.	• *Average trip length.* • *Total acres of developed land.* • *Density of uses per acre.* • *Average commute length.* • *Vehicle miles traveled (VMT) per person.* • *Percent of population, jobs and homes attracted to UGB (capture rate).* • *Percent of surface area devoted to parking in 2040 target areas.* • *Percent of transportation investments in highest priority land uses (by 2040 land use).* • *Percent of transportation investments serving high priority land uses (by 2040 land use).*

Goal Statement	Potential Performance Measures
Goal 2: Sustain Economic Competitiveness and Prosperity Multi-modal transportation infrastructure and services support the region's well-being and a diverse, innovative, sustainable and growing regional and state economy through the reliable and efficient movement of people, freight, goods, services and information within the region and to destinations outside the region.	• *Percent of industrial areas and freight intermodal facilities served by direct arterial connections to throughways.* • *Develop an access to rail measure.* • *Develop a cost of congestion measure.* • *Variability of travel times on regional freight routes during peak and off-peak periods.* • *Traffic congestion (level-of-service) and delay on regional freight routes during peak and off-peak periods.* • *Auto and transit travel time contours for the Central city and selected regional centers, industrial areas and employment areas during peak and off-peak periods.* • *Truck travel time contours for regionally significant industrial areas during peak and off-peak periods.* • *Percent of jobs retained and created in 2040 centers and industrial areas.* • *Regional GDP* • *Total person-trip capacity and freight capacity and volumes for regional mobility corridors in peak and off-peak periods.* • *Auto, truck and transit travel times for peak and off-peak periods.* • *Traffic congestion (level-of-service) and delay on regional mobility corridors.* • *Percent of vehicle miles traveled in congestion.*

Goal Statement	Potential Performance Measures
Goal 3: Expand Transportation Choices Multi-modal transportation infrastructure and services provide all residents of the region with affordable and equitable options for accessing housing, jobs, services, shopping, educational, cultural and recreational opportunities, and facilitate competitive choices for goods movement for all businesses in the region.	• *Modal share of walking, biking, transit and shared ride by 2040 land use.* • *Difference between travel time contours for 2040 target areas by mode.* • *Percent of homes within 30 minutes travel time of employment by auto and transit during peak periods.* • *Percent of jobs within 30 minutes of travel time to workforce by auto and transit during peak periods.* • *Percent of homes within 30 minutes' travel time of employment, broken down by mode.* • *Percent of homes and parks within one-quarter mile of regional multi-use trail system.* • *Percent of homes and parks within one-half mile access (via neighborhood streets) to bikeways.* • *Percent of seniors and people with disabilities within one-quarter mile of regional transit service via continuous sidewalks/protected crosswalks.* • *Percent of environmental justice target area households within one-quarter mile of regional transit service.* • *Percent of homes and jobs within one-quarter mile of regional and community transit service.* • *Percent of homes and jobs within one-half mile of high capacity transit service.* • *Percent of household income (by quintile) spent on transportation.* • *Percent of arterial network with intersections with ADA-compliant ramps, adequate and unobstructed sidewalks and transit stops that are accessible.*
Goal 4: Emphasize Effective and Efficient Management of the Transportation System Multi-modal transportation infrastructure and services are well-managed and optimized to improve travel conditions and operations, and maximize the multi-modal capacity and operating performance of existing and future transportation infrastructure and services.	• *Percent of throughway network complete.* • *Percent of arterial network complete.* • *Percent of regional bike network complete.* • *Percent of regional pedestrian network complete.* • *Percent of all transit stops with connecting sidewalks.* • *Intervals of controlled crossings of regional arterials.* • *Percent of regional multi-use trails with a transportation function completed.* • *Centerline miles per square mile in and around residential neighborhoods.* • *Share of traffic control devices under active management.* • *Share of large employers in the region with employer-based trip reduction programs in place.* • *VMT reduced within trip reduction programs.* • *Increased carpool matches and vanpool ridership.*

Goal Statement	Potential Performance Measures
Goal 5: Enhance Safety and Security Multi-modal transportation infrastructure and services are safe and secure for the public and goods movement.	• *Per capita crashes, serious injuries and fatalities by mode.* • *Percent and number of Safety Priority Index System (SPIS) locations addressed in past five years.* • *Number of reoccurring SPIS intersections and segments from year-to-year as identified in ODOT Highway Safety Action Plan.* • *Number of crashes, serious injuries and fatalities in identified safety corridors by mode.* • *Number of crashes, serious injuries and fatalities involving bicyclists and pedestrians within one-quarter to one-half mile of a school. Overall VMT.* • *Regional spending on imported energy.* • *Regional gasoline consumption.* • *Modal share of non-SOV travel modes.* • *Measure of personal safety.*
Goal 6: Promote Environmental Stewardship Promote responsible stewardship of the region's natural, community, and cultural resources during planning, design, construction and management of multi-modal transportation infrastructure and services.	• *Acres of environmentally-sensitive land impacted by new transportation infrastructure.* • *Number and percent of culverts on regional road system that inhibit fish passage.* • *Acres of riparian and wildlife corridors impacted by new transportation infrastructure.* • *Percent of street system with street trees that provide canopy for interception of precipitation.* • *Percent of street system with infiltration capacity.* • *Runoff volume measurements.* • *Tons per year of carbon/green house gas emissions.*
Goal 7: Enhance Human Health Multi-modal transportation infrastructure and services enhance quality of human health by providing safe and convenient options that support active living and physical activity, and minimize transportation-related pollution that negatively impacts human health.	• *Number of non-automotive trips per capita per day.* • *Daily vehicle miles traveled per person.* • *Pedestrian and bike trips to school.* • *BTU's consumed per capita for transportation.* • *Obesity rates and rates of diseases associated with low levels of physical activity (e.g. adult onset diabetes).* • *Tons per year of smog forming, particulate and air toxics pollutants released.* • *Rates of asthma or other air-quality-related health incidents*
Goal 8: Ensure Equity Regional transportation planning and investment decisions ensure the benefits and impacts of investments are equitably distributed.	• *Distribution of transportation investments by environmental justice target area.*

Goal Statement	Potential Performance Measures
Goal 9: Sustainability Regional transportation planning and investment decisions promote responsible fiscal, social and environmental stewardship by maximizing the return on public investment in infrastructure and placing the highest priority on investments that reinforce Region 2040 and achieve multiple goals.	• *Condition of transportation system (by type).* • *Percent of road maintenance and preservation needs funded at local and state levels.* • *Reductions in traffic congestion and delay.* • *Transit trips per transit revenue hour.* • *Relative cost comparison for roadway and transit system operations and maintenance.* • *Percent of funding spent on high-priority projects that achieve multiple goals.* • *Cost per person trip.* • *Return on investment ratio of public to private project and/or district infrastructure and development investments.* • *Return on investment ratio of public infrastructure and development costs to economic benefit in terms of job creation, retention, tourism, etc.* • *New transportation funding sources secured beyond existing resources, including those forecasted as necessary for the financially constrained and the illustrative systems.* • *Transportation investments by funding source or strategy.* • *Public and private commitments to pursue appropriate revenue sources.* • *Reductions or increases in total infrastructure costs that the public must pay for new and refill development (includes required capacity increases in other parts of the system.)*
Goal 10: Deliver Accountability The region's government, business, institutional and community leaders work together in an open and transparent manner so the public experiences an integrated, comprehensive system of transportation facilities and services that bridge governance, institutional and fiscal barriers.	• *Inclusiveness of planning process and opportunities for involvement.* • *Diversity of social and economic backgrounds among meeting attendees.* • *Percent of population in cities and unincorporated area represented on JPACT and MPAC.* • *Percent of regional roadways connected to central operations center and ODOT operations center.* • *Distribution of transportation investments by environmental justice target area.*

7.8.4 RTP Modal Targets Implementation

In 2004, Metro was awarded state Transportation/Growth Management funds to identify best practices and further clarify what constitutes a minimum requirements for local transportation system plans to meet the RTP modal targets. Metro's primary goal is to ensure that the planning programs be adopted, and that on-the-ground progress be demonstrated over time. However, progress toward the non-SOV modal targets is an output of the regional travel demand model, but cannot be generated by local jurisdictions. The research from this study was completed and published in 2005, largely confirming the approach that the RTP had already adopted, but recommending that progress on how to best measure modal target compliance be periodically evaluated as part of RTP updates. These updates will:

- Continue to identify best practices and minimum requirements for local governments to demonstrate that local TSPs can meet non-SOV mode split targets in the RTP. This will help

Metro continue to ensure RTP compliance with Section 660-012-0035(5) of the Transportation Planning Rule.

- Ensure that minimum requirements identified are reasonably sufficient to enable local jurisdictions to achieve the Non SOV Modal Targets of Table 1.3 and the Alternative Mode Analysis of section 6.4.6 of the RTP.
- Ensure that minimum requirements identified can be carried out by Metro and/or local jurisdictions without a significant commitment of staff time or other resources.
- Provide education on the benefits of reducing non-SOV mode trips.

This effort will be linked to the RTP performance measure efforts described in the previous section.

7.8.5 Adequacy Determination and Statewide Planning Goal 12 Compliance

Section 660.012.0060 of the Oregon Transportation Planning Rule (TPR) requires local governments to evaluate amendments to acknowledged plans and regulations to ensure that the changes are consistent with planned transportation improvements. Amendments in 2006 broadened this evaluation to include new interchange protections for areas within "1/2-mile" of an interchange and defined a "reasonably likely" determination process that, in effect, provides ODOT with approval authority on plan amendments that are found to have a "significant" impact on state facilities.

These amendments could have unintended consequences for the Metro region by limiting the region's ability to implement the 2040 Growth Concept. Implementation of the "reasonably likely" provision is further complicated in the Metro region by the fact that almost all of the interstate system has been designated for "refinement planning" under the TPR, and thus has no specific transportation improvements called out in the RTP or local plans until this work is completed.

For the Metro region, the RTP defines the "priority" system of improvements for major transportation facilities as the basis for evaluating such amendments. However, given that a 46 percent funding shortfall between the RTP priority system and existing revenue projections exists, this methodology can result in plan amendments being justified by transportation improvements that are unlikely to occur in a timely period, due to the current funding shortfall. Under this scenario, a more realistic basis for evaluating the system might be the "financially constrained" system, which represents just 40 percent of the larger "illustrative" system, and is based on recent funding history. Conversely, using the much more conservative financially constrained system for this analysis risks turning away unanticipated economic development that is consistent with the general intent of a local plan, but requiring greater transportation infrastructure than is provided in the constrained scenario.

Prior to the completion of the state component of the 2035 update to the RTP, the issue of defining an adequate system of improvements for the purpose of evaluating local plan amendments should be addressed in detail to ensure a balance between allowing desired development and preventing land use actions that outstrip the public ability to provide transportation infrastructure. This effort should include a cross-section of local and regional interests and state agency officials, and could lead to recommended RTP amendments that implement a new strategy for considering such proposals. The effort should be led jointly by Metro and ODOT, in partnership with local governments and special districts in the Metro region.

7.8.6 Regional Bridges

The region continues to struggle with a long-term strategy for maintaining major bridges that serve regional travel, particularly local bridges spanning the Willamette River. Currently, Multnomah county has primary responsibility for five of the ten bridges. Within 20 years, four of Multnomah County's five Willamette River Bridges will be 100 years old. The county's capital program for these bridges is

estimates to cost $450 million, yet only $144 million in federal, state and county revenues has been identified. All the region's bridges face maintenance challenges that come from age and use. The state component of the 2035 RTP should determine primary financial responsibility for ensuring ongoing operations and maintenance and other transportation needs of regional bridges given the regional economic importance of keeping these key downtown Portland bridges fully functional in the long-term.

7.8.7 ODOT District Highways

As ODOT continues to face decreased funding for system operations and maintenance, a significant backlog of multi-modal modernization investments on the ODOT-owned "district highways" has developed. These are former mobility routes, built before the development of the regional throughway system evolved, have since evolved into urban arterial streets that connect 2040 Target Areas and function, in many cases, as regional transit routes.

However, most have a backlog of basic urban improvements that must be addressed in order to fully implement the 2040 Growth Concept. The state component of the 2035 RTP should establish a long-term strategy for transferring responsibility for these routes to local governments, which are best equipped to build and maintain needed improvements. Some of these routes should also be evaluated for their role as complementary facilities within the context of the regional mobility corridors, and prioritized accordingly for needed multi-modal investments.

7.8.8 Regional Freight Study

The demands on the region's freight and goods movement transportation system are growing in a dynamic manner that is driven by global market needs and opportunities. As the Portland metropolitan region is both an international gateway and a domestic hub for freight, its suppliers, manufacturers, customers, and logistic providers are directly tied to the global trade forces that are producing record levels of freight movement. This trend is propelling the call to action by the region's business community to address transportation system efficiency for freight movement.

Metro is responding with the development of the Regional Freight and Goods Movement Action Plan, an element of the 2035 Regional Transportation Plan (RTP) Update. Sustaining the region's high-quality livability as it grows depends on good decision-making that recognizes the interdependence of economic, transportation and land use goals. The action plan lays out the key issues, goals, and investment priorities for the region's freight transportation system.

A stakeholder committee, comprised of private sector logistics experts and public sector officials provided valuable input on both the identification of key freight-related issues and priorities for addressing them. With regard to general issues, the most cited concern was the chronic bottlenecks on the road and freight rail networks serving the region. Unpredictable travel times due to road incidents, construction, weather, and special events decrease system reliability that is critical for efficient freight movements. Barriers to access, like weight-limited bridges, low clearances, poorly designed intersections cause out-of-direction travel and pose potential safety impacts. With regard to land use, industrial activities compete against other uses for land and system capacity. Stakeholders also raised the need to better manage the environmental impacts caused by freight activities.

With regard to investment priorities, stakeholders pointed to the throughway system bottlenecks as the key issue to resolve. With almost 70 percent of the region's truck trips using the throughway system during their journey, efficiency improvements on these facilities are critical to meeting increasing demand. Other investment priorities include improvements to interchanges and arterial routes that provide access to industrial areas; upgrading freight rail line and yard infrastructure; and completion of the Columbia River channel deepening effort.

The action plan recommendations will be completed in early 2008 and carried forward into the state component of the 2035 RTP Update.

7.8.9 Regional High Capacity Transit Study

In 2008, Metro will conduct a regional high capacity transit (HCT) study in coordination with the 2035 RTP update and Portland Streetcar System Plan and Portland Primary Transit Network (PTN) efforts. The HCT study will provide a needed update to the region's vision for future HCT investments, and how the evolution of the HCT system will continue to leverage the development of the 2040 Growth Concept. The planning effort will assess system-wide needs to evaluate and prioritize new projects and extension to existing HCT routes in the region. The study will include a technical evaluation of cost, potential ridership, land use and financial feasibility. Recommendations from the study may be complete in time for consideration as part of the state component of the 2035 RTP, or as a separate amendment to the plan.

7.8.10 Regional Strategy for Management and Operations

Metro received a Transportation Growth Management Grant to create a regional strategy for transportation system management and operations (TSMO). The strategy will include a regional vision that coordinates management and operations efforts by local implementing agencies and define a menu of TSMO strategies that could be applied in the region. The process will be closely coordinated with the 2035 RTP update and may result in amendments to the plan's policies and investment strategies.

7.8.11 Regional Transportation Demand Management Strategic Plan Update

The Metro Regional Travel Options (RTO) Program implements regional transportation demand management (TDM) policy and strategy to reduce reliance on the automobile and promote alternatives to driving for all trip purposes. While RTO stakeholders have been involved in this RTP update, the RTO Strategic Plan has not been updated since 2003. RTO has begun a four-month process with regional stakeholders to update the strategic plan in early 2008. The strategic plan will build on the program's past success with marketing; work with employers and residents; and, strategies to reduce the barriers and expand the benefits of non-drive-alone travel.

7.8.12 Transportation Finance

The system the region can afford with "expected revenue" is not expected to be sufficient to achieve the region's vision for the future. The region's funding gap is so significant, the region must use every tool at our disposal to address current and future transportation needs in support of the Region 2040 Growth Concept. The region needs a strategy that effective links land use and transportation investment decisions.

Community building investments are tied primarily to locally-generated growth-related revenues. In addition, new growth areas need seed money before system development charges can begin to be collected. Both short-term and long-term strategies are needed to raise new revenues to fund needed investments. The state component of the RTP update will, as a result, focus on identifying those investments that are needed to achieve the 2040 Growth Concept and RTP goals, and developing a funding strategy that supports implementation of the RTP over time.

GLOSSARY

Accessibility – The ability to reach desired goods, services, activities and destinations with relative ease, within a reasonable time, at a reasonable cost and with reasonable choices. Many factors affect accessibility (or physical access), including mobility, the quality, cost and affordability of transportation options, land use patterns, connectivity of the transportation system and the degree of integration between modes. The accessibility of a particular location can be evaluated based on distances and travel options, and how well that location serves various modes. Locations that can be accessed by many people using a variety of modes of transportation generally have a high degree of accessibility.

Access management – Measures regulating access to streets, roads and highways from public roads and private driveways. These measures include restrictions on the siting of interchanges, restrictions on the type and amount of driveway and intersection access to roadways, and use of physical controls, such as signals and raised medians, to reduce the impact of connecting road traffic on the main facility.

Alternative transportation mode – All passenger modes of travel except for single-occupancy vehicles, including bicycling, walking, public transportation, carpooling and vanpooling.

Americans With Disabilities Act (ADA) of 1990 – Civil rights legislation enacted by Congress in 1990 that mandates equal opportunities for persons with disabilities in the areas of employment, transportation, communications and public accommodations. Under this Act, most transportation providers are obliged to purchase lift-equipped vehicles for their fixed-route services and must assure system-wide accessibility of their demand-responsive services to persons with disabilities. Public transit providers also must supplement their fixed-route services with paratransit services for those persons unable to use fixed-route service because of their disability. TriMet's ADA transportation plan outlined the requirements of the ADA as applied to TriMet services, the deficiencies of the existing services when compared to the requirements of the new act and the remedial measures necessary to bring TriMet and the region into compliance with the act. Metro, as the region's metropolitan planning organization (MPO) is required to review TriMet's ADA Paratransit Plan annually and certify that the plan conforms to the Regional Transportation Plan. Without this certification, TriMet is not in compliance with the ADA. ADA also affects the design of pedestrian facilities being constructed by local governments.

Arterial – A class of street. Arterial streets interconnect and support the throughway system. Arterials are intended to provide general mobility for travel within the region. Correctly sized arterials at appropriate intervals allow through trips to remain on the arterial system thereby discouraging use of local streets for cut-through travel. Arterial streets link major commercial, residential, industrial and institutional areas. Major arterials serve longer distance through trips and serve more of a regional traffic function. Minor arterials serve shorter, more localized travel within a community. As a result, major arterials usually carry more traffic than minor arterials. Arterial streets are usually spaced about one mile apart and are designed to accommodate bicycle, pedestrian, truck and transit travel.

Asset management – A systematic process of maintaining, upgrading and operating physical assets cost-effectively. It combines engineering principles with sound business practices and economic theory, and it provides tools to facilitate a more organized, logical approach to decision-making. Asset management provides a framework for handling both short- and long-range planning. It is based on the process of monitoring the physical condition of assets, predicting deterioration over time and providing information on how to invest in order to maintain or enhance the performance of assets over their useful life.

Attainment area – An area considered to have air quality that meets or exceeds the U.S.

Environmental Protection Agency (EPA) health standards used in the Clean Air Act.

Barrier – A condition or obstacle that prevents an individual or a group from accessing the transportation system or transportation planning process. Examples include a physical gap or impediment, lack of information, language, education and/or limited resources.

Benchmark – A numerical goal or stated direction to be achieved for which quantifiable or directional targets may be set, assigning a value to what the RTP is trying to achieve. Benchmarks (also known as targets) are expressed in quantitative terms and provide an important measure of progress toward achieving different goals within a timeframe specified for it to be achieved.

Bicycle – A vehicle having two tandem wheels, a minimum of 14 inches in diameter, propelled solely by human power, upon which a person or persons may ride. A three-wheeled adult tricycle is considered a bicycle. In Oregon, a bicycle is legally defined as a vehicle. Bicyclists have the same right to the roadways and must obey the same traffic laws as the operators of other vehicles.

Bicycle boulevards - Sometimes called a bicycle priority street, a bicycle boulevard is a low-traffic street where all types of vehicles are allowed, but the street is modified as needed to enhance bicycle safety and convenience by providing direct routes that allow free-flow travel for bicyclists at intersections where possible. Traffic controls are used at major intersections to help bicyclists cross streets. Typically these modifications also calm traffic and improve pedestrian safety.

Bicycle facilities – A general term denoting improvements and provisions made to accommodate or encourage bicycling, including parking facilities, all bikeways and shared roadways not specifically designated for bicycle use.

Bike lane – A portion of a roadway that has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

Bikeway – Any road, street, path or right-of-way that is specifically designated in some manner as being open to bicycle travel, either for the exclusive use of bicycles or shared use with other vehicles or pedestrians.

Boulevards – Facilities designated in mixed-use areas (e.g., 2040 centers, station communities and main streets) that are designed to integrate motor vehicles, freight, transit, bicycle and pedestrian modes of travel, with an emphasis on pedestrian, bicycle and transit travel.

Branch railroad lines - Non-Class I rail lines, including short line or branch lines.

Bus Rapid Transit (BRT) - Bus rapid transit service 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. Stops are generally spaced one-quarter mile apart or more. Most stops have significant passenger infrastructure, including waiting areas that are weather protected. Additional passenger amenities at stops can include real-time schedule information, trip planning kiosks, ticket machines, special lighting, benches, and bicycle parking.

Capacity – A transportation facility's ability to accommodate a moving stream of people or vehicles in a given place during a given time period. Increased capacity can come from building more streets or throughways, adding more transit service, timing traffic signals, adding turn lanes at intersections or many other sources.

Carbon monoxide (CO) – An air pollutant that is a highly toxic, odorless and colorless gas, formed in lalrge part by incomplete combustion of fuel. Automobile emissions are the primary source of CO.

Carpool – An arrangement in which two to six people share the use and/or costs, of traveling

in privately owned automobiles between fixed points on a regular basis. See also vanpool.

Carsharing – A transportation demand management strategy wherein a group of people share a single vehicle. Benefits of this strategy include reduced vehicle ownership, parking needs and drive-alone trips, as well as improved accessibility. Implementation in the Portland region includes public/private partnerships and a private sector membership organization.

Central city – The downtown and adjacent portions of the city of Portland. See the 2040 Growth Concept map and text.

Clean Air Act – The Federal clean air act identifies "mobile sources" (vehicles) as primary sources of pollution and calls for stringent new requirements in metropolitan areas and states where attainment of federal air quality standards is or could be a problem.

Collector street – A class of street. Collector streets provide both access and circulation between residential, commercial, industrial and agricultural community areas and the arterial system. As such, collectors tend to carry fewer motor vehicles than arterial streets, with reduced travel speeds. Collector streets are usually spaced at half-mile intervals, midway between arterial streets. Collectors may serve as bike, pedestrian and freight access routes, providing local connections to the arterial street network and transit system. While the focus for collectors has been on motor vehicle traffic, they are developed as multi-modal facilities that accommodate bicycles, pedestrians and transit.

Community connector bikeway – Designated facilities that connect smaller town centers, main streets, station areas, industrial areas and other regional attractions to the regional bikeway system.

Commuter rail – 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 one or more miles apart, depending on the overall route length. Stations offer infrastructure for passengers, bus and LRT transfer opportunities and parking as supported by adjacent land uses. See also Inter-city rail.

Concept planning – A planning process to create a blueprint for the future of land brought inside the urban growth boundary for urbanization. The process is required to address the provisions listed in Title 11 of the Urban Growth Management Functional Plan. These provisions include a minimum level of residential units per acre, a diversity of housing stock, an adequate transportation system, protection of natural resource areas and needed school facilities.

Conformity – Process defined by the Clean Air Act to assess the compliance of any transportation plan, program or project with air quality implementation plans.

Congestion - A condition characterized by unstable traffic flows that prevents movement on a transportation facility at optimal legal speeds. Recurrent congestion is caused by constant excess volume compared with capacity. Nonrecurring congestion is caused by incidents such as bad weather, special events and/or traffic accidents.

Congestion management program - A federally mandated program directed at specific urbanized areas to systematically manage traffic congestion in metropolitan areas. The program provides information on transportation system performance and finds alternative ways to alleviate congestion and enhance the mobility of goods and people.

Corridors (2040 design type) – A type of land use that is typically located along regional transit routes and arterial streets, providing a place for somewhat higher densities than is found in 2040 centers. These land uses should feature a high-quality pedestrian environment and convenient access to transit. Typical new developments would include rowhouses, duplexes and one to three-story office and retail

buildings, and average about 25 persons per acre. While some corridors may be continuous, narrow bands of higher-intensity development along arterial streets, others may be more nodal, that is a series of smaller centers at major intersections or other locations along the arterial that have high quality pedestrian environments, good connection to adjacent neighborhoods and transit service.

Cross-regional travel – Longer trips that span the region, including interstate and intrastate travel, but occur within the larger metropolitan area.

Deficiency - Capacity or design constraints that limit, but do not prohibit the ability to travel by a given mode. Examples include locations where throughway capacity is less than six through lanes and arterial street capacity less than 4 lanes, or that have poor or substandard design features; at-grade rail crossings; height restrictions; bike and pedestrian connections that contain obstacles (e.g., missing curb ramps, distances greater than 330 feet between pedestrian crossings, absence of pedestrian refuges, sidewalks occluded by utility infrastructure, high traffic volumes and complex traffic environments); transit overcrowding or schedule unreliability and high crash locations).

Developed areas – Areas of the region that are primarily built-up, with most new housing and employment being primarily accommodated through infill, redevelopment and use of brownfields.

Developing areas – Areas of the region containing significant areas of developable and re-developable land, with most new housing and employment being primarily accommodated through a combination of greenfield development, infill and redevelopment.

Disability - The limitation of normal physical, mental, social activity of an individual. There are varying types (functional, occupational, learning), degrees (partial, total) and durations (temporary, permanent) of disability.

Emissions budget – The part of the State Implementation Plan (SIP) that identifies the allowable emissions levels, mandated by the National Ambient Air Quality Standards for certain pollutants emitted from mobile, stationary and area sources. The emissions levels are used for meeting emission reduction milestones, attainment or maintenance demonstrations.

Employee Commute Options (ECO) rules – The Employee Commute Options or "ECO" Program requires larger employers to provide commute options to encourage employees to reduce auto trips to the work site. ECO is one of several strategies included in the Ozone Maintenance Plan for the Portland Air Quality Maintenance Area. ECO applies to employers within the Portland Air Quality Maintenance Area (AQMA) with more than 50 employees at a work site. Employers must provide commute options that have the potential to reduce employee commute auto trips

Employment areas – Areas of mixed employment that include various types of manufacturing, distribution and warehousing uses, and may include commercial and retail development. Retail uses should primarily serve the needs of the people working or living in the immediate employment area. Exceptions to this general policy can be made only for certain areas indicated in a functional plan.

End-of-trip facilities – Parking facilities and other accommodations that meet the needs of bicyclists, walkers and carpoolers. Examples include parking spaces striped for rideshare vehicles only, bike parking, locker rooms and showers.

Environmental justice target areas –U.S. Census block groups that include two or more socio-economically sensitive populations with a population density greater than 2.5 times the regional average in 2000. This includes minorities, seniors, and people with disabilities, low-income, or who do not speak English.

Environmental Protection Agency – The federal regulatory agency responsible for administering and enforcing federal environmental laws,

including the Clean Air Act, the Clean Water Act, and the Endangered Species Act.

Equity – In transportation, a normative measure of fairness among transportation system users.

Facility – The fixed physical assets (structures) enabling a transportation mode to operate (including travel, as well as the loading and unloading of passengers). This includes streets, throughways, bridges, sidewalks, bikeways, transit stations, bus stops, ports, air and marine terminals and rail lines.

Equitable access – Equal opportunities low-income residents and people with disabilities to access the regional transportation system.

Federal Highway Administration (FHWA) - The federal agency responsible for administering roadway programs and funds. The FHWA implements transportation legislation approved at the congressional level that appropriates all federal funds to states and local governments.

Federal Transit Administration (FTA) - The federal agency responsible for administering transit programs and funds. The FTA works with state and local governments to select new transit systems for implementation and guides capital, operating, and transit methodology decisions.

Fiscal constraint – Making sure that a given program or project can reasonable expect to receive funding within the time allotted for its implementation.

Fixed-route transit – Regularly scheduled service operating repeatedly over the same street or throughway pattern on a determined schedule.

Freight intermodal facility – An intercity facility where freight is transferred between two or more modes (e.g., truck to rail, rail to ship, truck to air).

Freight mobility – The efficient movement of goods from point of origin to destination.

Frequent bus – Frequent bus service that runs more frequently than bus rapid transit, but is slower because it makes more stops, providing corridor service rather than nodal service along selected arterial streets. This service typically runs at least every 10 minutes and includes transit preferential treatments, such as reserved bus lanes and transit signal priority, and enhanced passenger infrastructure along the corridor and at major bus stops, such as covered bus shelters, curb extensions, special lighting and median stations.

Gap - Missing links or barriers in the "typical" urban transportation system for any mode that functionally prohibits travel where a connection might be expected to occur. A gap generally means a connection does not exist at all, but could also be the result of a physical barrier such as a throughway, natural feature, weight limitations on a bridge (e.g., Sellwood Bridge), or existing development. Investments to address system gaps include throughway, rail and stream over-crossings that help meet arterial network concept goals as appropriate; new arterial connections up to four lanes with turn lanes; new collector connections in the central city, regional centers and industrial areas; new bike and pedestrian facilities; regional multi-use trails with a transportation function; new transit service connections, new vanpool connections, individualized travel marketing programs.

Green street, throughway or parking lot - A transportation facility designed to:

- Integrate a system of stormwater management.
- Reduce the amount of water that is piped directly to streams and rivers.
- Be a visible component of a system of "green infrastructure" that is incorporated into the aesthetics of the community. Make the best use of vegetation for stormwater interception as well as temperature mitigation and air quality improvement.
- Ensure the roadway has the least impact on its surroundings, particularly at locations where it crosses a stream, wildlife corridor or other sensitive area. These facilities include features like

street trees, landscaped swales, pervious curb treatments and special paving materials to manage stormwater runoff.

Habitat Conservation Areas – Riparian habitat areas within the current urban growth boundary identified by the regional fish and wildlife protection program. Habitat Conservation Areas are to be protected by development standards contained in Title 13 of the Urban Growth Management Functional Plan or through equivalent approaches by local jurisdictions. As new areas are added to the urban growth boundary, highly valued upland habitat areas will also be identified as Habitat Conservation Areas, with their protection level adjusted depending on the area's economic importance to the region.

High capacity transit network –High capacity transit is characterized by carrying a larger volume of passengers using larger vehicles and/or more frequent service than a standard fixed route bus system. High-capacity transit can operate on exclusive rights-of-way such as a rail track or dedicated busway, or on existing streets mixed with traffic. High levels of passenger infrastructure are provided at transit stations and station communities, including real-time schedule information, ticket machines, special lighting, benches, shelters, bicycle parking, and commercial services. Speed and schedule reliability are preserved using transit signal priority at at-grade crossings and/or intersections. This network includes light rail, commuter rail, bus rapid transit and intermodal passenger facilities (e.g., Amtrak and Greyhound). High capacity transit provides the backbone of the transit network connecting the Central City, Regional Centers, and passenger intermodal facilities.

High-occupancy vehicle (HOV) lane – Highway and arterial lanes restricted for use to vehicles carrying more than two passengers with the exception of motorcycles.

Hours of delay - The aggregate time lost by all travelers in the region on all facilities due to congestion, as measured by the time to reach destinations at posted speed limits versus traveling at a slower congested speed.

Housing affordability – The availability of housing such that no more than 30 percent of monthly household income need be spent on shelter.

Impervious surfaces – Surfaces that do not allow water to infiltrate into the ground and rely on piped stormwater drainage systems that convey runoff directly to streams. The majority of impervious surfaces are roads, sidewalks, parking lots and driveways. A conventional stormwater management approach uses storm sewer pipes beneath the street to quickly convey storm runoff to stream channels that are also managed for stormwater conveyance.

Indicator - A categorical term for a particular feature of the transportation system that is tracked over time. Indicators are conceptual and qualitative and are tied to the plan's goals and objectives. Examples of indicators include access to jobs, access to market areas, reliability, mobility, travel options, equity, clean air and environmental stewardship.

Individualized marketing – A transportation demand management strategy that provides support programs and customized travel choice information based on a person's interest-level. Examples include TravelSmart™ and SmartTrips. A TravelSmart™ project in North and Northeast Portland provided transit information, bike and walking maps, guided walks and rides, customized trip planning and in-home assistance to help residents get started walking, biking, or riding transit.

Industrial areas – Areas set aside for industrial activities. Supporting commercial and related uses may be allowed, provided they are intended to serve the primary industrial users. Residential development and retail users whose market area is larger than the industrial area are not considered supporting uses.

Infrastructure –The fundamental physical facilities and systems required to provide a community with services it needs or wants, including transportation and communication

systems, power plants, sewer and water treatment systems, and schools, for example.

Inner neighborhoods – Areas in Portland and typically other older cities that are primarily residential, close to central employment and shopping areas, and have smaller lot sizes and higher population densities than in outer neighborhoods.

Intelligent transportation systems (ITS) - The application of a broad range of communications-based information, control and electronics technologies to improve the efficiency and safety of transportation systems. ITS can be integrated into the transportation system infrastructure and in vehicles to help monitor and manage traffic flow, reduce congestion, provide alternate routes to travelers, and improve safety.

Interchange area management plan (IAMP) - A joint ODOT and local government long-term (20+ years) transportation and land use plan to balance and manage transportation and land use decisions in interchange areas. The primary purpose of this planning tool is to protect the function, operations and safety of the interchange, the state highway, and the supporting arterial and local street network. This plan is required for new interchanges or as part of major changes to existing interchanges.

Intermodal facility – A transportation element that allows passenger and/or freight connections between modes of transportation. Examples include airports, rail stations, marine terminals, and railyards that facilitate the transfer of containers or trailers. See also passenger intermodal facility and freight intermodal facility definitions.

Inter-city bus – A mode of transit service that provides connections between cities, towns, and other places typically tens or hundreds of miles away. This type of service generally provides fewer bus stops than provided by local bus routes. Greyhound Bus Lines and private carriers operate inter-city buses. Some local transit systems offer bus lines to nearby cities or towns served by another transit agency. Intercity bus services provide important travel connections to smaller towns and rural areas that do not have airports or train service. Several private inter-city bus services are currently provided in the region.

Inter-city rail – Inter-city passenger rail that 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 should be integrated with other transit services within the metropolitan region with connections at passenger intermodal facilities.

Jurisdiction - Typically refers to a government or quasi-government agency or the authority of a government or quasi-government agency, including, for example, counties, cities, regional agencies, federal and state agencies and federally recognized tribes.

Level of service (LOS) – A tool for evaluating system performance and identifying deficiencies for roadways, transit and other motorized and non-motorized modes of travel. For example, roadway measures of level-of-service often assign criteria based on volume-to-capacity ratios. A qualitative measure describing operational conditions within a traffic stream from a motorist's point of view. A level of service definition describes conditions in terms of speed and travel time, freedom to maneuver, and traffic interruptions. LOS is rated on a scale of A through F:

LOS	Motor Vehicle Traffic Flow Characteristics
A	Virtually free flow; completely unimpeded
B	Stable flow with slight delays; reasonably unimpeded
C	Stable flow with delays; less freedom to maneuver
D	High density but stable flow
E	Operating conditions at or near capacity; unstable flow
F	Forced flow, breakdown conditions

> F	Severe congestion - demand exceeds roadway capacity, limiting volume than can be carried and forcing excess demand onto parallel routes and extending the peak period
Sources:	1985 Highway Capacity Manual (A through F descriptions) Metro (>F Description)

Light rail transit (LRT) – A frequent Light rail transit (LRT) is a system of modern passenger rail cars operating on a fixed guideway within an exclusive right-of-way, or in the street with mixed traffic, connecting the central city with regional centers. LRT also serves station communities and regional public attractions such as the Washington County Fair Grounds, Civic Stadium, the Oregon Convention Center, Oregon Zoo, Metropolitan Exposition Center and the Rose Garden. LRT service typically runs at least every 15 minutes during midday base periods with limited stops and operates at higher speed outside of downtown Portland. Light rail cars are commonly powered by overhead electric lines or 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 LRT can be maintained using transit signal priority at at-grade crossings and grade separation.

Local bus - Local bus lines provide access to public transit within neighborhoods, commercial districts and industrial areas, and often provide access to 2040 Target Areas and the regional transit system. Local transit services are characterized by frequent stops along the route. Service levels vary, but are typically every 30 minutes during the weekday base period in higher-density areas and may be more frequent as demand warrants. Weekend and evening service levels are typically policy, not demand based.

Local government – For the purpose of this plan, this term refers to a city or county within the Metro boundary.

Local streets – Local streets primarily provide direct access to adjacent land. While Local streets are not intended to serve through traffic, the aggregate effect of local street design impacts the effectiveness of the Arterial and Collector system when local travel is restricted by a lack of connecting routes, and local trips are forced onto the Arterial street network. In the urban area, local roadway system designs often discourage "through traffic movement." Regional regulations require local street connections spaced no more than 530 feet in new residential and mixed used areas, and cul-de-sacs are limited to 200 feet in length. These connectivity requirements ensure that a lack of adequate local street connections does not result in the arterial system becoming congested. While the focus for local streets has been on motor vehicle traffic, they are developed as multi-modal facilities that accommodate bicycles, pedestrians and sometimes transit.

Local transit network – The local transit network provides basic service and access to the regional and high capacity transit networks. It also offers coverage and access to primary and secondary land-use components. Transit preferential treatments and passenger infrastructure are appropriate at high ridership locations. Sidewalk connectivity and protected crosswalks are critical elements of the local transit network. This network includes tram, streetcar, local bus, mini-bus and para-transit.

Main roadway route – Designated freights routes that connect major activity centers in the region to other areas in Oregon or other states throughout the U.S., Mexico and Canada.

Main streets – Neighborhood shopping areas along an arterial street or at an intersection, having a unique character that draws people from outside the adjacent neighborhood. Northwest 23rd Avenue and SE Hawthorne

Boulevard in the city of Portland are examples of established main streets.

Maintenance area – Any geographic region in the U.S. previously designated non-attainment pursuant to the Clean Air Act (CAAA) Amendments of 1990 and subsequently redesignated to attainment subject to the requirements to develop a maintenance plan under section 175A of the CAA as amended.

Marine facility – A facility where freight is transferred between water-based and land-based modes.

Measurable objective- An intermediate, short-term desired outcome or result that must be realized within the timeframe of the RTP plan period to reach a longer-term goal. These objectives comprise four elements: (1) an objective statement, (2) an indicator, (3) a performance measure and (4) a benchmark.

Metropolitan Planning Organization (MPO) - A regional policy body, required in urbanized areas with populations more than 50,000 and designated by the governor of the state. MPOs are responsible, in cooperation with the state and other transportation providers for carrying out the metropolitan transportation planning requirements of federal highway and transit legislation. In 2007, Oregon had six designated MPOs– Bend, Corvallis, Eugene-Springfield, Medford, Portland and Salem-Keizer.

Metropolitan Transportation Plan (MTP) - A long-range intermodal transportation plan that is developed and adopted through the metropolitan transportation planning process for the metropolitan planning area. The plan guides future regional investments and responds to legal mandates contained in federal legislation such as SAFETEA-LU, the 1990 Clean Air Act. Under federal legislation, the RTP is a MTP.

Metropolitan Transportation Planning Process – A federally mandated decision-making framework used by MPOs to develop metropolitan transportation plans in consultation and coordination with federal, state, regional and local governments, and engagement of other stakeholders with an interest in or who are affected by the planning process. The process also includes opportunities for open, timely and meaningful involvement of the public.

Mini-bus – A transit service vehicle that provides coverage in lower density areas by providing transit connections to 2040 Target Areas or the regional transit system. Mini-bus services, which may follow fixed routes or respond to customer demand, include dial-a-ride, employer shuttles and bus pools. These services typically provide a 60-minute response time on weekdays. Weekend service is provided as demand warrants.

Mobility – The ability to move people and goods to destinations quickly.

Modal targets – Targets for increased walking, biking, transit, shared ride and other non-drive alone trips as percentages of all trips. The targets apply to trips *to, from and within* each 2040 Design Type. The targets reflect mode shares for the year 2040 needed to comply with Oregon Transportation Planning Rule objectives to reduce reliance on single-occupancy vehicles.

2040 Regional Non-SOV Modal Targets

2040 Design Type	Non-SOV Modal Target
Central city	60-70%
Regional centers Town centers Main streets Station communities Corridors Pasenger Intermodal Facilities	45-55%
Industrial areas Freight Intermodal facilities Employment areas Inner neighborhoods Outer neighborhoods	40-45%

Mode – A type of transportation distinguished by means used (e.g., such as walking, bike, bus, single- or high-occupancy vehicle, bus, train, truck, air, marine).

Mode choice – The ability to choose one or more modes of transportation.

Mode split – The proportion of total person trips using various modes of transportation.

Multi-modal – The movement of people or goods by more than one mode.

National Environmental Policy Act (NEPA) – Federal legislation that established a federal environmental policy requiring that any project using federal funding or requiring federal approval, including transportation projects, examine the effects of proposed and alternative choices on the environment before a federal decision is made.

National Highway System (NHS) - Title 23 of the U.S. Code section 103 states that the purpose of the NHS is to provide an interconnected system of principal routes that serve major population centers, international border crossings, ports, airports, public transportation facilities, intermodal transportation facilities, major travel destinations, meet national defense requirements, and serve interstate and inter-regional travel. Facilities included in the NHS are of regional significance.

Nonattainment – A geographic region of the U.S. that the EPA has designated as not meeting air quality standards.

Nonmotorized - Generally referring to bicycle, walking and other modes of transportation not utilizing a motor vehicle.

Off-peak period – The hours outside of the highest motor vehicle traffic period, generally between 9 a.m. and 3 p.m. and between 6 p.m. and 7 a.m.

Oregon Transportation Plan – The official statewide intermodal transportation plan that is developed through the statewide transportation planning process by ODOT.

Operator – An agency responsible for providing a service or operating a facility. ODOT is the operator of the state highway system. TriMet is an operator of elements of the regional transit system.

Outer neighborhoods – Areas in the outlying cities that are primarily residential and farther from employment and shopping areas. Outer neighborhoods generally exhibit larger average lot sizes and lower population densities than inner neighborhoods.

Ozone – An air pollutant that is a toxic, colorless gas which is the product of the reaction of hydrocarbons (HC) and oxides of nitrogen (NOx) in the presence of sunlight in the atmosphere. Motor vehicle emissions are the primary source of ozone precursors.

Para-transit - On-demand non-fixed route transit service that serves special transit markets, such as the elderly, people with disabilities or where demand is not sufficient to support fixed-route service. Components of this service are typically owned, operated, scheduled and dispatched by a combination of public and private entities. Vehicles are typically small buses (mini-buses) or vans, but may include contract taxis. Service may be door-to-door or fixed schedule/flexible route and can act as feeder service to the fixed-route transit system.

Park-and-ride – Parking areas or structures that are placed near transit stations or stops to enhance access to transit and other HOV-modes. Transit patrons typically drive private automobiles or ride bicycles to a park and ride facility, where they store their vehicles in facilities designed for that purpose before transferring to transit. Vanpools also use park-and-rides as a common meeting place and sometimes as a destination. Transit services, transit transfer, bicycle parking and passenger drop off and pick-up areas are incorporated in site design. Bicycle and pedestrian access is considered in the siting process of new park-and-ride facilities. Periodic evaluation is needed to determine how park-and-ride facilities can best support regional and local land use goals.

Parking cash-out – A transportation demand management strategy where the market value of a parking space is offered to an employee by the

employer. The employee can either spend the money on a parking space, or pocket it and use an alternative mode to travel to work. Measures such as parking cash-out provide disincentives for commuting by single-occupancy vehicles.

Passenger intermodal facilities – Facilities that accommodate or serve as transfer points to interconnect various transportation modes for the movement of people. Examples include Portland International Airport, Union Station, Oregon City Amtrak station and inter-city bus stations.

Passenger rail – Transit systems operating, in whole or part, on a fixed guideway.

Peak periods – The period of the day during which the maximum amount of travel occurs. It may be specified as the morning (A.M.) or afternoon or evening (P.M.) peak. Peak periods in the Portland metropolitan region are currently generally defined as from 7-9 AM and 4-6 PM.

Pedestrian – A person on foot, in a wheelchair or in another health-related mobility device.

Pedestrian connection – A continuous, unobstructed, reasonably direct route between two points that is intended and suitable for pedestrian use. Pedestrian connections include but are not limited to sidewalks, walkways, accessways, stairways and pedestrian bridges. On developed parcels, pedestrian connections are generally hard surfaced. In parks and natural areas, pedestrian connections may be soft-surfaced pathways. On undeveloped parcels and parcels intended for redevelopment, pedestrian connections may also include rights-of-way or easements for future pedestrian improvements.

Pedestrian district – A comprehensive plan designation or set of land use regulations designed to provide safe and convenient pedestrian circulation, with a mix of uses, density, and design that support high levels of pedestrian activity and transit use. The pedestrian district can be a concentrated area of pedestrian activity or a corridor. Pedestrian districts can be designated within the following 2040 Design Types: Central City, Regional and Town Centers, Corridors and Main Streets. Though focused on providing a safe and convenient walking environment, pedestrian districts also integrate efficient use of several modes within one area, e.g., auto, transit, and bike.

Pedestrian facility – A facility provided for the benefit of pedestrian travel, including walkways, crosswalks, plazas, signs, signals, illumination and benches.

Pedestrian plaza – A small semi-enclosed area usually adjoining a sidewalk or a transit stop which provides a place for pedestrians to sit, stand or rest. Plazas are usually paved with concrete, pavers, bricks or similar material, and include seating, pedestrian scale lighting and similar improvements. Low walls, planters, or landscaping are often used to separate the plaza from adjoining parking lots and vehicle maneuvering areas.Plazas connect directly to adjacent sidewalks, walkways, transit stops and building entrances. A 150-250 square foot plaza would be considered small.

Pedestrian-scale – An urban development pattern where walking is a safe, convenient and interesting travel mode. The following are examples of pedestrian scale facilities: continuous, smooth and wide walking surfaces, easily visible from streets and buildings and safe for walking; minimal points where high speed automobile traffic and pedestrians mix; frequent crossings; and storefronts, trees, bollards, on-street parking, awnings, outdoor seating, signs, doorways and lighting designed to serve those on foot; all well-integrated into the transit system and having uses that cater to pedestrians.

Performance measures – Indicators of how well the transportation system is performing that are used to evaluate the success of the objective with quantitative or qualitative data and provide feedback in the plan's decision-making process. Some measures can be used to predict the future as part of an evaluation process using forecasted data, while other measures can be used to monitor changes based on actual empirical or observed data. In both cases, they can be applied

at a system level and project level, and provide the planning process with a basis for evaluating alternatives and making decisions on future transportation investments. They can also be used to monitor performance of the plan in between updates to evaluate the need for refinements to the policy framework or other plan elements.

Person-Trip - Trip made by a person from one location to another, whether as a driver, passenger or pedestrian.

Place-making – A planning term that refers to the design of a building or area to make it more attractive to--and compatible with--the people who use it.

Posted speed – The posted speed limit on a given street or the legal speed limit, as defined in ORS 811.105 and 811.123 when a street is not posted.

Preliminary design – An engineering design that specifies in detail the location and alignment of a planned transportation facility or improvement.

Principal arterial – These facilities form the backbone of the motor vehicle network. These routes connect over the longest distance and are spaced less frequently than other Arterials or Collectors. These facilities form the primary connections between the central city, regional centers, industrial areas and intermodal facilities, as well as between neighboring cities and the metro region. Principal arterials generally span several jurisdictions and often are designated to be of statewide importance and serve as major freight routes.

Public participation – The active meaningful involvement of the public in the development of transportation plans and programs.

Ramp metering – Traffic signal control on an entry ramp to a freeway for regulating vehicle access.

Rail main line – Class I rail lines (e.g., Union Pacific and Burlington Northern/Sante Fe).

Reasonably direct – A route that does not require likely users to deviate from the most direct path to their destination.

Regional access bikeway – Designated facilities that provide access to and within the central city, regional centers and larger town centers. Bicyclist travel time to and from activity centers is an important consideration on regional access bikeways. Regional access bikeways generally have higher bicyclist volumes because they serve areas with higher population and employment density.

Regional bus – Bus service that operates on arterial streets with typical frequencies of 15 minutes during most of the day, and may operate seven days per week with conventional stop spacing along the route. Transit preferential treatments and passenger infrastructure such as bus shelters, special lighting, transit signal priority and curb extensions are appropriate at high ridership locations.

Regional centers – Compact, specifically-defined areas where higher density growth and a mix of intensive residential and commercial land uses exists or is planned. Regional centers are to be supported by an efficient, transit-oriented, multi-modal transportation system. Examples include traditional centers, such as downtown Gresham, and new centers such as Gateway and Clackamas Town Center.

Regional corridor bikeway – Designated facilities that function as longer distance routes that provide point-to-point connectivity between the central city, regional centers and larger town centers. Regional corridor bikeways are generally of longer distance than regional access bikeways and community connector bikeways. Regional corridor bikeways generally have higher automobile speeds and volumes than community connector bikeways.

Regional mobility corridors – Transportation corridors that center on state and interstate highways, but more broadly defined to include parallel high capacity transit, arterial streets, regional transit service and multi-purpose paths that combine to form a larger mobility corridor.

Regional multi-use trails with transportation function – Paved, off-street facilities connections that accommodate pedestrian and bicycle travel and meet the requirements of the Americans with Disabilities Act. These connections are likely to be used by people walking or bicycling to work or school, to access transit or to travel to a store, library or other local destination. Regional multi-use trails that support both utilitarian and recreational functions are included as part of the regional transportation system. These trails are generally located near or in residential areas or near mixed-use centers. Bicycle/pedestrian sidewalks on bridges are also included in this definition. Multi-use trails are physically separated from motor vehicle traffic by open space or a barrier. Bicyclists, pedestrians, joggers, skaters and other non-motorized travelers use these facilities.

Regional transit network – The network of transit operates primarily on arterial streets. Service operates at intervals of 15-minute frequencies or better (all day and weekends when possible) and is intended to operate at higher speeds to better serve longer trips. This network also includes preferential treatments, such as transit signal priority and queue bypasses. Supportive design treatments and enhanced passenger infrastructure such as covered bus shelters, curb extensions and special lighting are provided at regional transit stops and high ridership locations. This network includes: frequent bus, regional bus, streetcar, transit centers, park-and-ride lots and regional transit stops.

Regional transit stops – Transit stops that provide a high degree of transit passenger comfort and access. Regional transit stops are located at stops on light rail, commuter rail, rapid bus, frequent bus or streetcar lines in the central city, regional and town centers, main streets and corridors. Regional transit stops may also be located where bus lines intersect or serve intermodal facilities, major hospitals, colleges and universities. Regional transit stops may provide real-time schedule information, lighting, benches, shelters and trash cans. Other features may include real time information, special lighting or shelter design, public art and bicycle parking.

Regional transit system - The regional transit system includes light rail, commuter rail, bus rapid transit, frequent bus, regional bus, and streetcar modes.

Regional transportation plan (RTP) - The official multimodal transportation plan that is developed and adopted through the metropolitan transportation planning process for the Portland metropolitan region.

Regional transportation system – The regional transportation system is identified on the regional transportation system map(s) in Chapter 3. The system is limited to facilities of regional significance generally including regional arterials and throughways, high capacity transit and regional transit systems, regional multi-use trails with a transportation function, bicycle and pedestrian facilities that are located on or connect directly to other elements of the regional transportation system, air and marine terminals, as well as regional pipeline and rail systems.

Reliability – This term refers to consistency or dependability in travel times, as measured from day to day and/or across different times of day. Variability in travel times means travelers must plan extra time for a trip.

Reload facility – An intermediary facility where freight is reloaded from one land-based mode to another.

Rideshare – A transportation demand management strategy where two or more people share a trip in a vehicle to a common destination or along a common corridor. Private passenger vehicles are used for carpools, and some vanpools receive public/private support to help commuters. Carpooling and vanpooling provide travel choices for areas under-served by transit or at times when transit service is not available.

Right-of-way (ROW) – Land that is publicly-owned, or in which the public has a legal interest, usually in a strip, within which the entire road facility (including travel lanes, medians, sidewalks, shoulders, planting areas,

bikeways and utility easements) resides. The right-of-way is usually acquired for or devoted to multi-modal transportation purposes including bicycle, pedestrian, public transportation and vehicular travel.

Road – A generally gravel or concrete- or asphalt-surfaced facility. The term collectively refers to an arterial.

Road connector – Designated freight route that connects freight facilities or freight generation areas to a main roadway route.

Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) - Signed into federal law in 2005, SAFETEA-LU authorizes the federal surface transportation programs for highways, highway safety, and transit through 2009. SAFETEA-LU refined and reauthorized TEA-21.

Shared roadway – A roadway designed and designated to enable bicyclists and motor vehicles to share travel lanes.

Sidewalk – A walkway separated from the roadway with a curb, constructed of a durable, hard and smooth surface, designed for preferential or exclusive use by pedestrians.

Single-occupancy vehicle (SOV) – Vehicles that carry one person.

Stakeholders – Individuals and organizations with an interest in or who are affected by the transportation planning process, including federal, state, regional and local officials and jurisdictions, institutions, community groups, transit operators, freight companies, shippers, the general public, and people who have traditionally been underrepresented.

State Highways - State highways are important elements of the regional transportation system, functioning as the most important interstate, inter-regional, intra-regional and urban-rural connections for people and goods movement.

State Implementation Plan (SIP) – Air quality plan produced by the Department of Environmental Quality and required by the federal Clean Air Act. The plan contains procedures to monitor, control, maintain and enforce compliance with the NAAQS and must be taken into account in the transportation planning process. The RTP must conform to the SIP.

State Transportation Improvement Program – The funding and scheduling document for major street, highway and transit projects in Oregon for a four-year period. The document is produced by ODOT, consistent with the Oregon Transportation Plan (the statewide transportation plan) and planning processes as well as metropolitan transportation plans, MTIPs, and processes.

State Transportation Plan - The official statewide intermodal transportation plan that is developed through the statewide transportation planning process. See also Oregon Transportation Plan.

Station Communities Areas generally within a 1/4- to 1/2-mile radius of a light rail station or other high capacity transit stops that are planned as multi-modal, mixed-use communities with substantial pedestrian and transit-supportive design characteristics and improvements.

Street – A generally gravel or concrete- or asphalt-surfaced facility. The term collectively refers to arterial, collector and local streets that are located in 2040 mixed-use corridors, industrial areas, employment areas and neighborhoods. While the focus for streets has been on motor vehicle traffic, they are designed as multi-modal facilities that accommodate bicycles, pedestrians and transit, with an emphasis on vehicle mobility and special pedestrian infrastructure on transit streets.

Streetcar – Fixed-route transit service mixed in traffic for locally oriented trips within or between higher density mixed-use centers. Streetcar services provide local circulator service and may also serve as a potent incentive for denser development in centers. Service runs typically every 15 minutes and streetcar routes may include transit preferential treatments, such as transit signal priority systems, and enhanced passenger infrastructure, such as covered bus shelters, curb extensions and special lighting.

Stewardship – A planning and management approach that considers environmental impacts and public benefits of actions as well as public and private dollar costs.

Sustainable development – Development uses, develops and protects resources in a manner that enables people to meet current needs and provides that future generations can meet future needs, from the joint perspective of environmental, economic and community objectives.

Sustainability – Using, developing and protecting resources in a manner that enables people to meet current needs and provides that future generations can meet future needs, from the joint perspective of environmental, economic and community objectives. This definition of sustainability is from the 2006 Oregon Transportation Plan and ORS 184.421(4). The 2001 Oregon Sustainability Act and 2007 Oregon Business Plan maintain that these principles of sustainability can stimulate innovation, advance global competitiveness and improve quality of life in communities throughout the state.

System management - A set of strategies for increasing travel flow on existing facilities through improvements such as ramp metering, traffic signal synchronization and access management.

Telecommute – This term refers to a transportation demand management strategy whereby an individual communicates electronically (e.g., telephone, computer, fax, etc.) with an office either from home, or a satellite office located closer to home instead of traveling to it physically.

Throughways – 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.

Town centers – Areas of mixed residential and commercial land uses that serve tens of thousands of people. Examples include the downtowns of Forest Grove and Lake Oswego.

Traffic – Movement of motorized vehicles, unmotorized vehicles and pedestrians on transportation facilities. Often traffic levels are expressed as the number of units moving over or through a particular location during a specific time period.

Traffic calming – A transportation system management technique that aims to prevent inappropriate through-traffic and reduce motor vehicle travel speeds on a particular roadway. Traditionally, traffic calming strategies provide speed bumps, curb extensions, planted median strips or rounds and narrowed travel lanes.

Traffic signal coordination/synchronization – A process by which a number of traffic signals are synchronized to create efficient progression.

Transit-oriented development – A mix of residential, retail and office land uses designed with transit-supportive characteristics, and typically located near a regional transit stop to support a high level of transit use. The key features may include:

(a) A mixed-use center at the transit stop, oriented principally to transit riders and pedestrian and bicycle travel from the surrounding area;

(b) Relatively high density of residential development near the transit stop that is sufficient to support transit operation and neighborhood commercial uses within the TOD;

(c) A network of roads, and bicycle and pedestrian paths to provide a high level of access to and within the TOD.

Transit/mixed-use corridor – Designated facilities that generally correspond to the 2040 Corridor designation, and are a priority for pedestrian investments. The designation is applied to high-quality regional transit routes that will be redeveloped at densities that are somewhat more than today. These corridors have designs that promote pedestrian travel to enhance access to the regional transit system. These corridors will generate substantial pedestrian traffic near neighborhood-oriented

retail development, schools, parks and bus stops.

Transportation control measure (TCM) – Strategies that affect travel patterns or reduce vehicle use to reduce air pollutant emissions. These projects, programs or actions are identified in the State Implementation Plan to demonstrate attainment of national air quality standards. The RTP must include these strategies. Examples include HOV lanes, provision of bicycle and pedestrian facilities, telecommuting, rideshare and land use.

Transportation demand - The quantity of transportation services desired by users of the transportation system.

Transportation demand management (TDM) – A general term for any action or set of strategies designed to influence the intensity, timing and distribution of travel in order to make more efficient use of transportation infrastructure and services. Methods may include but are not limited to offering other modes of travel such as walking, bicycling, ride-sharing and vanpool programs, car sharing, providing opportunities to link or "chain" trips together, individualized marketing, and trip-reduction ordinances. Public and private partners of the Regional Travel Options (RTO) Program implement TDM.

Transportation disadvantaged/persons potentially underserved by the transportation system – Individuals who have difficulty in obtaining important transportation services because of their age, income, physical or mental disability.

Transportation Equity Act (TEA-21) - The Transportation Equity Act for the 21st Century was enacted June 9, 1998 as Public Law 105-178. TEA-21 authorizes the federal surface transportation programs for highways, highway safety, and transit for the 6-year period 1998-2003. TEA-21 refined and reauthorized ISTEA. See entry for SAFETEA-LU for updated federal transportation authorization.

Transportation facilities – Any physical facility that is used to accommodate the movement of people or goods, including facilities identified in OAR 660-012-0020 but excluding electricity, sewage and water systems.

Transportation Improvement Program (TIP) - The 4-year, specific multimodal program of regional transportation improvements for highways, transit and other travel modes. The TIP consists of projects drawn from the Regional Transportation Plan financially constrained system as well as local plans and programs.

Transportation management area (TMA) – Federally designated urbanized areas over 200,000 population that, among other activities, must have a congestion management program that identifies actions and strategies to reduce congestion and increase mobility.

Transportation management associations (TMA) – Formally designated non-profit coalitions of local businesses and/or public agencies dedicated to reducing traffic congestion and pollution and improving commuting options for employees.

Transportation service – A service that provides or supports the movement of people and goods, such as intercity bus service and passenger rail service.

Transportation system - Various transportation modes or facilities (aviation, bicycle and pedestrian, throughway, street, pipeline, transit, rail, water transport) serving as a single unit or system.

Transportation system management (TSM) – Strategies and techniques for increasing the efficiency, safety, capacity or level of service of a transportation facility without major new capital improvements. Examples include traffic signal improvements, traffic control devices such as medians, parking removal, channelization, access management, re-striping of HOV lanes, ramp metering, incident response, targeted traffic enforcement and programs that smooth transit operations.

Transportation System Management and Operations (TSMO) – An integrated "toolkit" of programs and strategies that will allow the region to more effectively and efficiently manage existing and new multi-modal

transportation facilities and services in the region to preserve capacity and improve security, safety, and reliability. TSMO has two components. The first component (transportation system management) includes strategies that focus on making the infrastructure better serve the users by improving efficiency, safety and capacity of the system. The second component (transportation demand management) includes programs and strategies seeking to modify travel behavior in order to make more efficient use of transportation infrastructure and services and enable the users to take advantage of everything the system has to offer.

Transportation system plan (TSP) – The transportation element of the comprehensive plan for one or more transportation facilities that is planned, developed, operated and maintained in a coordinated manner to supply continuity of movement between modes, and between geographic and jurisdictional areas. The TSP supports the development patterns and land uses contained in adopted community plans. The TSP includes a comprehensive analysis and identification of transportation needs associated with adopted land use plans. The TSP complies with Oregon's Transportation Planning Rule, as described in statewide planning goal 12.

Travel options – The ability range of travel mode choices available, including motor vehicle, walking, bicycling, riding transit and carpooling. Telecommuting is sometimes considered a travel option because it replaces a commute trip with a trip not taken.

Travel time – The measure of time that it takes to reach another place in the region from a given point for a given mode of transportation. Stable travel times are a sign of an efficient transportation system that reliably moves people and goods through the region.

Travel time contours – An analysis map that depicts the distance a given mode of transportation can travel within a specified travel time from a given point to show relative changes in accessibility over time within the region.

Travel time reliability – This term refers to consistency or dependability in travel times, as measured from day to day and/or across different times of day. Variability in travel times means travelers must plan extra time for a trip.

Trip - A one-way movement of a person or vehicle between two points. A person who leaves home on one vehicle, transfers to a second vehicle to arrive at a destination, leaves the destination on a third vehicle and has to transfer to yet another vehicle to complete the journey home has made four unlinked passenger trips.

Truck terminal – A facility that serves as a primary gateway for commodities entering or leaving the metropolitan area by road.

Undeveloped areas – Areas inside the urban growth boundary that are not currently developed with urban uses, or which are otherwise under-utilized.

Unified Planning Work Program (UPWP) – The management plan for the metropolitan planning program. Its purpose is to coordinate the planning activities of all participants in the metropolitan planning program.

Universal design – Transportation facilities designed to accommodate all users, including people who rely on mobility aids such wheelchairs and walkers.

Urban form – The spatial arrangement of land uses and supporting infrastructures within an urban area. Stating and pursuing urban form objectives generally provides the focal strategy for managing a region's growth

Urban growth boundary – The politically defined boundary around an urban area beyond which no urban improvements may occur. In Oregon, UGBs are defined so as to accommodate projected population and employment growth within a 20-year planning horizon. A formal process has been established for periodically reviewing and updating the UGB so that it meets forecasted population and employment growth.

Urban Growth Management Functional Plan – A regional functional plan regulating urban

development in the Metro region, as mandated by Metro's Regional Framework Plan. The plan addresses such issues as accommodation of projected regional population and job growth, regional parking management, water quality conservation, retail in employment and industrial areas and the regional fish and wildlife protection program.

Urbanized area – A federal designation of an area that contains a city of 50,000 or more population plus incorporated surrounding areas meeting size or density criteria as defined by the U.S. Census.

Vanpool - An organized ridesharing arrangement in which 7 to 15 people regularly commute together in a van. The van may be publicly owned, employer owned, individually owned, leased, or owned by a third party. Expenses are generally shared and there is usually a regular volunteer driver. See also carpool.

Value pricing - A demand management strategy that involves the application of market pricing (through variable tolls, variable priced lanes, area-wide charges or cordon charges) to the use of roadways at different times of day. Also called congestion pricing or peak period pricing.

Volume-to-Capacity Ratio - A measure of potential roadway capacity. A ratio expressing the relationship between the existing or anticipated volume of traffic on a roadway and the designed capacity of the roadway.

Vehicle miles of travel (VMT) – For purposes of this definition, "vehicles" include automobiles, light trucks, and other similar vehicles used for the movement of people. The definition does not include buses, heavy trucks and trips that involve commercial movement of goods. For regional planning purposes, VMT generally includes trips with an origin and a destination within the MPO boundary and excludes pass through trips (i.e., trips with a beginning and end point outside of the MPO) and external trips (i.e., trips with a beginning or end point outside of the MPO boundary). VMT is often estimated prospectively through the use of metropolitan area transportation models.

Walkway – A hard-surfaced transportation facility designed and suitable for use by pedestrians, including persons using wheelchairs. Walkways include sidewalks, hard-surfaced portions of accessways, regional trails, paths and paved shoulders.

Wide outside lane – A wider than normal curbside travel lane that is provided for ease of bicycle operation where there is insufficient room for a bike lane or shoulder bikeway.

ACRONYMS

ADA	Americans with Disabilities Act
ATMS	Advanced Traffic Management System
AQMA	Air Quality Maintenance Area
BRT	Bus rapid transit
CAAA	Clean Air Act Amendments of 1990
CMAQ	Congestion Mitigation / Air Quality Program
CMP	Congestion Management Program
DEIS	Draft Environmental Impact Statement
DEQ	Department of Environmental Quality
ECO	Employee Commute Options Rule
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HCT	High-Capacity Transit
HOV	High-Occupancy Vehicle
IAMP	Interchange Area Management Plan
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITS	Intelligent Transportation System
JPACT	Joint Policy Advisory Committee on Transportation
LCDC	Land Conservation and Development Commission
LRT	Light Rail Transit (MAX)
LOS	Level of Service
MCCI	Metro Committee for Citizen Involvement
MPAC	Metro Policy Advisory Committee
MPO	Metropolitan Planning Organization
MSTIP	Major Streets Improvement Program
MTAC	Metro Technical Advisory Committee
MTIP	Metropolitan Transportation Improvement Program
MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Protection Act
NHS	National Highway System
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
ORS	Oregon Revised Statutes
OTC	Oregon Transportation Commission
OTP	Oregon Transportation Plan
PE	Preliminary Engineering
PEF	Pedestrian Environmental Factors
RFP	Regional Framework Plan
PSU	Portland State University
ROW	Right-of-Way
RTC	Regional Transportation Council
RTP	Regional Transportation Plan
RUGGO	Regional Urban Growth Goals and Objectives
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SIP	Oregon State Implementation Plan
SMART	South Metro Area Rapid Transit
SOV	Single-Occupancy Vehicle
STIP	Statewide Transportation Improvement Program
STP	Surface Transportation Program
TAZ	Transportation Analysis Zones
TCM	Transportation Control Measures
TDM	Transportation Demand Management
TIP	Transit Investment Plan
TMA	Transportation Management Area
TMA	Transportation Management Association
TOD	Transit-Oriented Development
TPAC	Transportation Policy Alternatives Committee
TPR	Transportation Planning Rule
TriMet	Tri-County Metropolitan Transportation District
TSM	Transportation System Management
TSMO	Transportation System Management and Operations
TSP	Transportation System Plan
UGB	Urban Growth Boundary
USDOT	United States Department of Transportation
VMT	Vehicle Miles Traveled
WSDOT	Washington State Department of Transportation

Metro
People places • open spaces

Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and good transportation choices for people and businesses in our region. Voters have asked Metro to help with the challenges that cross those lines and affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to protecting open space, caring for parks, planning for the best use of land, managing garbage disposal and increasing recycling. Metro oversees world-class facilities such as the Oregon Zoo, which contributes to conservation and education, and the Oregon Convention Center, which benefits the region's economy.

Your Metro representatives

Metro Council President – David Bragdon
Metro Councilors – Rod Park, District 1; Carlotta Collette, District 2; Carl Hosticka, District 3; Kathryn Harrington, District 4; Rex Burkholder, District 5; Robert Liberty, District 6.
Auditor – Suzanne Flynn

Metro's web site: www.metro-region.org

Project web site: www.metro-region.org/rtp (Click on "2035 RTP Update)

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