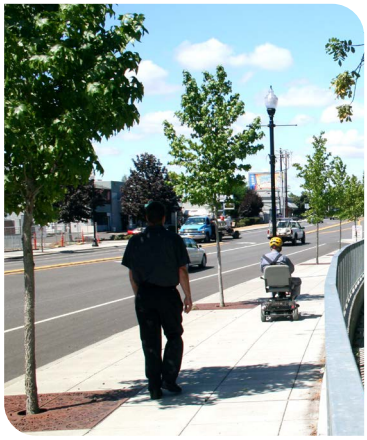

Washington County
Transportation System Plan

Effective May 2, 2024


TRIMET
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Preface

The transportation system in Washington County has developed incrementally over time, starting with the seasonal travels of the Kalapuya people throughout western Oregon. European settlers built upon these early routes, bringing successive layers of transportation innovations to connect farms and forests with local markets and beyond. Stage coach routes and plank roads gave way to river steamboats and railroads. Automobiles and paved roads now dominate the transportation system, supplemented by pedestrian, bicycle, transit and freight rail facilities. Much of the transportation network in Washington County is characterized by legacy rural routes and small, platted towns overlaid with incremental suburban development and several large-scale highway and transit investments. The sum of these parts is the transportation system now used every day by residents, workers and visitors throughout Washington County.

Today the Washington County transportation system faces new challenges. Many major roadways have failed to keep pace with the travel demand associated with population and employment growth. Alternatives to driving are increasingly in demand. People and companies are deciding where to locate or expand, and transportation plays a significant role. Washington County is presented with a complex and, at times, conflicting array of transportation challenges and opportunities. Among them:

- Washington County has outgrown the farm-to-market road system that serves as the basic network for our transportation system;
- Washington County is now a leader in employment opportunities in the Metro region, shifting the transportation needs of the commuter population to Washington County employment destinations;
- Urban traffic congestion related to continued employment and population growth;
- Older roads built without adequate pedestrian and/or bicycle facilities;
- Mobility challenges between sub-sections of the metropolitan area;
- Rural traffic growth, and urban traffic moving between urban areas;
- Maintenance obligations on existing transportation facilities;
- Increased demand for transit service during a time of transit funding challenges;
- The decreasing “buying power” of existing fuel taxes due to inflation and increased fuel efficiency;
- Uncertain federal and state transportation funding outlooks;
- Public health and safety concerns; and
- Evolving lifestyle and travel preferences due to shifting demographics and economics.

This Transportation System Plan (TSP) update takes into account these and other circumstances, challenges and opportunities. It provides direct guidance on how to build, operate and maintain Washington County’s major roadway network, while addressing complementary elements of the larger transportation system—including transit, multi-use trails, state highways and freight railroads—maintained by other entities. The TSP addresses a diversity of transportation needs while integrating social, economic, environmental and livability aspirations. It provides a framework for future transportation decisions, and makes strides toward county and regional transportation aspirations, goals and targets.

Washington County Department of Land Use & Transportation • Planning and Development Services Division

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Introduction

About This Plan

The Washington County Transportation System Plan (TSP) serves as the guiding document establishing the policies, projects and programs necessary to achieve Washington County's transportation goals. The TSP considers the diverse needs of all users of the transportation system and provides recommendations to meet them.

The previous comprehensive TSP update was adopted in 2002 and was based on anticipated growth and travel demand through the year 2020. This TSP update comprehensively reviews existing and expected future conditions, anticipating growth and travel demand through the year 2035 and beyond. The 2002 plan has been amended multiple times to respond to changes in growth patterns and policy. This update of the TSP restructures the plan to focus on key transportation policy concepts and to achieve consistency with recent state and regional transportation policy changes.

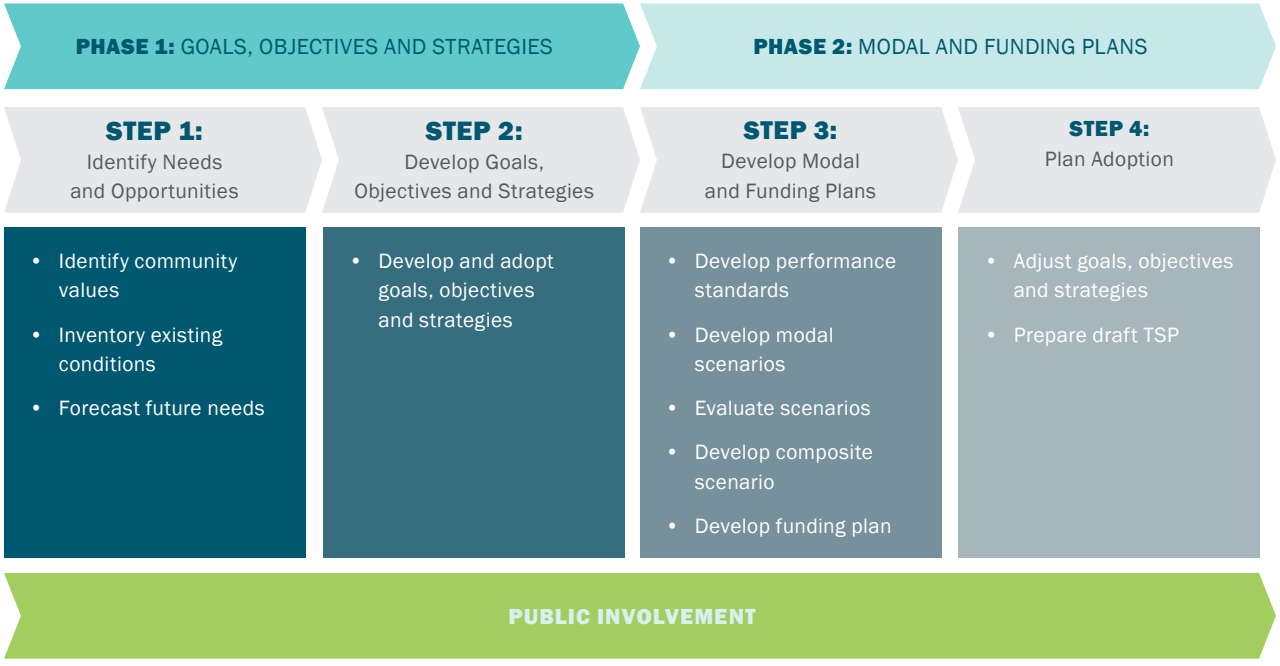
This plan has been prepared in compliance with state, regional and local plans and policies, including the Oregon Highway Plan (OHP), the state Transportation Planning Rule (TPR), Metro's Regional Transportation Plan (RTP), Metro's Regional Transportation Functional Plan (RTFP) and Washington County's Comprehensive Plan.

Plan Development Process

The TSP update process began in 2012. Given the range of issues involved and the desire to allow adequate time for review by the public and governing bodies, the County developed this update in two phases, with completion in 2014.

The two phases are illustrated below in Figure 1:

Figure 1: Planning Process



Phase I of the project consisted of a description of existing conditions accompanied by a more general identification of both existing and future needs on the transportation system. Phase I also included a reorganization of the plan's policy content. Policies from the 2020 plan were reviewed, modified and reorganized into a series of goals, objectives and strategies.

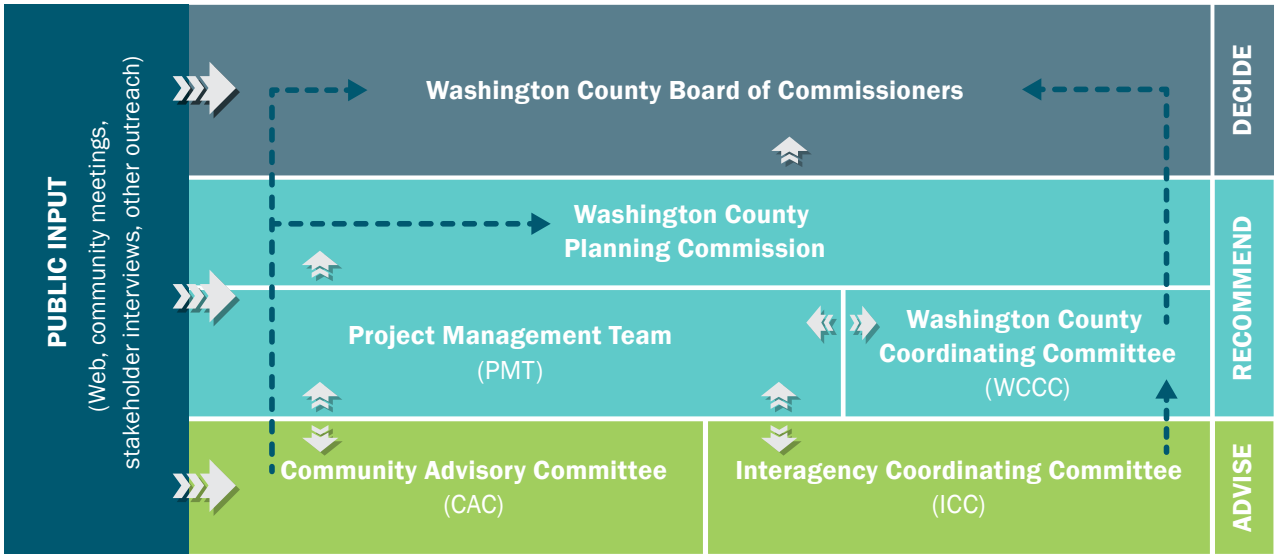
Phase II entails an analysis of future transportation needs, including development and evaluation of various alternative transportation scenarios. Phase II includes an assessment of future system performance based on a variety of performance measures and also includes an analysis of anticipated future revenues and projects, by modes. Phase II updates the map elements of the TSP and provides consistency with city and regional plans where appropriate.

Public Involvement Structure

Public involvement played a role throughout the planning process. The project team coordinated with two advisory committees appointed by the County Board of Commissioners for the duration of the planning process. The Community Advisory Committee (CAC), an 18-member group consisting of neighborhood, business and advocacy group representatives, provided input and advice during the development of the TSP. The Interagency Coordinating Committee (ICC), a technical committee consisting of representatives from local cities, Tualatin Hills Park & Recreation District (THPRD), TriMet, Metro, Port of Portland and Oregon Department of Transportation (ODOT), provided input and advice during the development of the TSP and considered the policy implications within the jurisdictions they represent. Regular meetings were held with both the CAC and ICC over the course of the plan update to review interim work products and to develop policy and technical direction for the TSP.

Other official bodies and entities involved in decision making for the TSP update included the Board, Planning Commission and the WCCC.

Figure 2: TSP Committee Structure and Decision Making Process



To gain an understanding of public perspectives on the transportation system, the project team held open houses at several locations throughout Washington County. Staff also attended a number of farmers markets, Citizen Participation Organization meetings, and interviewed and participated in briefing sessions with a variety of stakeholder groups including Adalante Mujures, Committee for Citizen Involvement, the Rural Road Operations and Maintenance Advisory Committee (RROMAC), the Urban Road Maintenance District Advisory Committee (URMDAC), Washington County Farm Bureau, Westside Economic Alliance and Westside

Transportation Alliance. The approach sought to engage people not historically involved in transportation planning. Informational material was translated into Spanish and distributed at events and posted on the project website. The project website also included a comment map where interested parties and citizens could identify transportation problems.

CAC work groups in fall 2013 helped determine transportation solutions for specific areas of the county.

The Draft Goals, Objectives and Strategies were reviewed by the CAC, ICC and other interested parties through May 2013. Based upon comments received during this period, staff revised the draft plan and developed ordinances to submit to the Planning Commission and Board of Commissioners for formal review.

During the summer and fall of 2013, an ordinance containing the Goals, Objectives and Strategies of the Transportation Plan, along with policy and regulatory provisions necessary to implement the plan, were considered by the Planning Commission and the Board through a series of public hearings. During these hearings Washington County residents and interested parties provided comments on the ordinance.

This Ordinance was modified during the hearings process and further modified during the development of the modal plans in Phase II to reflect the aspirations of the community. Such modifications were made based on the recommendations of Planning Commission at the direction of the Board.

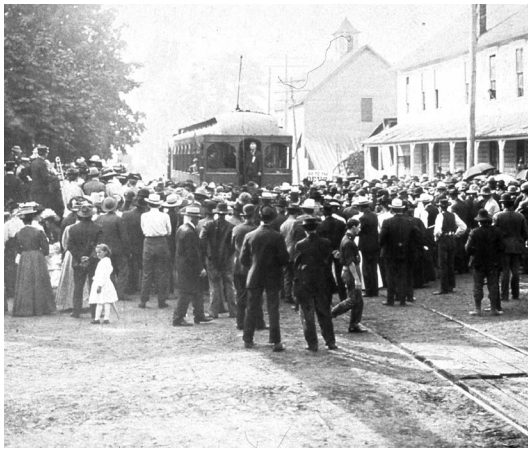
Transportation System Planning in Washington County

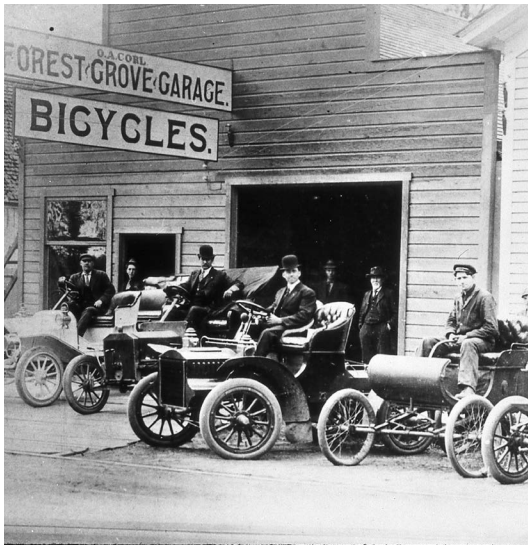
Transportation planning must recognize that transportation systems have significant impacts on the physical, social and economic characteristics of the areas they serve. In order to have an integrated and consistent plan for transportation, the transportation needs for the urban and rural areas are combined in a single document.

The TSP is a comprehensive analysis and identification of transportation needs associated with the implementation of development patterns described in the County Comprehensive Plan. The TSP addresses the major roadway system, transit, pedestrian, bicycle and freight transportation issues and focuses on specific system requirements. The TSP designates major transportation system elements and provides classifications indicative of their existing and/or planned function, right-of-way needs, general location and general size. Local street connections are addressed through connectivity strategies that reference Washington County's Community Development Code and Local Street Connectivity maps. These maps show required street and accessway connections in developable areas of unincorporated Washington County. Some new neighborhood routes may be prescribed through the TSP, while other neighborhood routes may be designated through the development review process.

The Department of Land Use & Transportation relies upon the Comprehensive Plan to carry out its mission. The TSP is an element of Washington County's Comprehensive Plan which is a set of documents that establishes general land use and transportation policies. These documents consider local concerns; social, economic, energy and environmental consequences; and the planning requirements of the region and the state. Other components of the Comprehensive Plan include the Comprehensive Framework Plan for the Urban Area, the Rural/Natural Resource Plan and the Community Development Code. In addition the Road Design and Construction Standards are set forth in the Washington County Code.

Background





This chapter provides a summary of existing conditions and background related to transportation planning in Washington County.

To understand existing and future travel demand in Washington County, it is important to look at the larger context, including population and employment trends and land use patterns. Changes in planning policy at the local, regional and state level also shape transportation outcomes.

Land Use Patterns

Since 1973, Washington County's urban growth and rural preservation has taken place in an efficient geographic pattern consistent with requirements in the State of Oregon's Urban Growth Management Program. Within the urban area, requirements that guide development patterns were further refined in 1994 through the Metro 2040 Growth Concept, which called for active centers connected by multi-modal transportation corridors. These planning concepts have helped contain and focus urban growth, and protect industrial and employment areas.

Washington County is one of the fastest growing areas in the Pacific Northwest. Planning actions have helped accommodate Washington County's strong ongoing demand for housing and employment land. Washington County collaborated on the regional Urban and Rural Reserve process to determine where future growth may take place over the next 40 to 50 years. The Transportation System Plan (TSP) is intended to respond to the Urban and Rural Reserve designations. The TSP focuses on accommodating future development within the adopted urban growth boundary, but does not ignore the possibility of future urban growth boundary expansions into the Urban Reserves. Furthermore, it is assumed that the land within Rural Reserves will not develop as urban areas within the planning horizon. Land use planning decisions, combined with population/employment forecasts, are critical to determining where and what type of transportation improvements are needed throughout Washington County. For travel demand forecasting purposes, it is assumed that by 2035, additional areas within the current urban growth boundary will have been developed. Infill development will have occurred in centers, corridors and other appropriate locations in the urban area and urban reserve areas will have been partially developed consistent with the assumptions in Metro's land use forecasts.

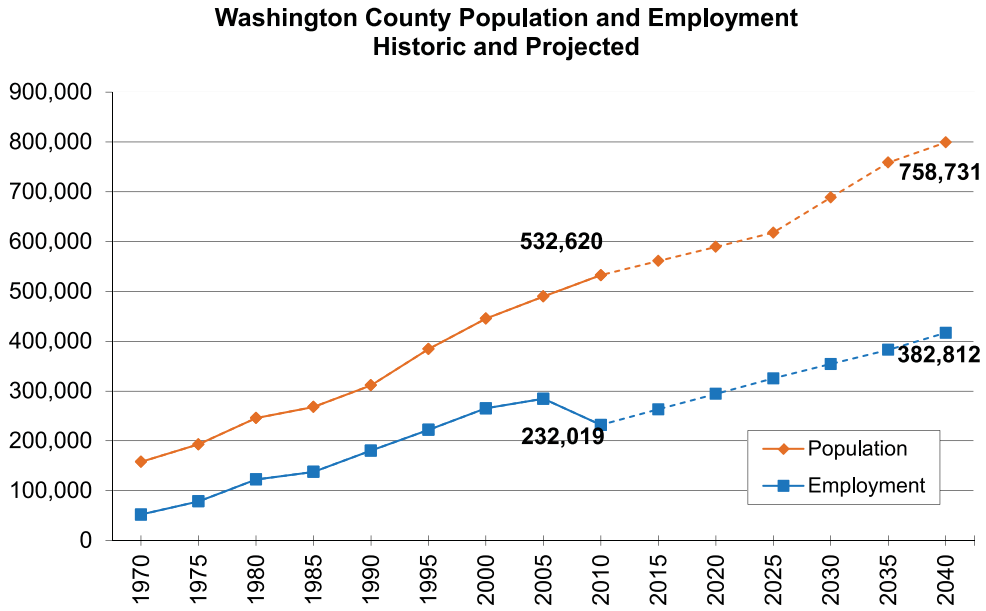
Population and Employment Trends

Washington County has grown considerably during the last 40 years. Since 1970, the population within Washington County has increased 71 percent, from 311,544 to 532,620. In the same four decades Washington County employment has grown from 180,302 to 232,019 jobs, a 29 percent increase. In the last decade (from 2000 to 2010), Washington County gained over 87,000 new residents, a 20 percent increase. Employment, however, suffered a 13 percent loss in this period. When measured from 2005 to 2010, job losses were 22 percent, or about 52,000 jobs.[1] Regardless of the recent trends and job losses, this planning effort envisions the continuation of the long-term growth trends. The recent loss of employment is viewed as a temporary adjustment in the larger national economy.

Washington County is expected to resume growth trends in population, employment and travel demand. By the year 2035, the population of Washington County is expected to increase to 758,500, an increase of 42 percent over 2010. Forecasted average annual growth is approximately 1.42 percent per year for the 25 year period. This is down significantly from the 2.8 percent annual average growth rate seen in the preceding 25 years, which is typical of more mature areas.

By 2035 the employment in Washington County is expected to increase to about 382,000 jobs. This would be an increase of about 150,000 jobs above the 2010 employment, or about 100,000 above 2005 employment. The forecasted average annual employment growth is approximately 2.02 percent per year for the 25 year period 2010–2035.

Figure 3: Washington County Population and Employment: Historic and Projected



Washington County has seen increases in ethnic and cultural diversity and shifts in age distribution. In 2010, the US Census reported that Washington County featured:

- A higher percentage of Asian or Pacific Islander residents (8.6 percent) compared to the state (3.7 percent).
- A higher percentage of Hispanic or Latino residents (15.7 percent) compared to the state (11.7 percent).

1 *Bureau of Labor Statistics and U.S. Census data as compiled by Washington County.*

- Almost double the proportion of foreign born residents (16.8 percent) than statewide (9.7 percent).
- A higher percentage of residents speaking a language other than English at home (22.7 percent) compared to the state (14.3 percent).
- Significant youth and senior populations, with 25 percent of residents under 18 years and 10 percent over 65 years of age.

Travel Demand

The growth envisioned in the 2035 population and employment forecast translates directly into transportation system needs. Of particular significance for the Washington County transportation system is employment growth and peak-hour travel demand. Washington County contains several regionally significant employment areas, including the high tech Sunset Corridor of Hillsboro and Beaverton, the Tigard Triangle, and the Tualatin-Sherwood industrial corridor.

Washington County estimates existing and future travel demand using a west side-specific version of the Regional Travel Demand Model. The model is calibrated with a number of inputs, including household activity surveys, traffic counts, land use policies and anticipated transportation investments. Table 1 below describes existing and forecasted travel demand in terms of total person trips, then by travel mode.

Table 1: Washington County Travel Demand (Average Weekday)[1]

Mode	2010	2035 RTP[6]	Percent Change
Total Person Trips	3,866,409	5,541,705	+43%
Auto	3,610,591	5,094,927	+41%
SOV[2]	1,861,046	2,680,680	+44%
Shared Ride[3]	1,749,546	2,414,247	+38%
Transit[4]	68,719	130,709	+90%
Pedestrian[5]	171,716	261,492	+52%
Bicycle[5]	35,383	54,577	+54%

1. All modes include all daily trips that either start or end within Washington County, including the rural areas outside the Metro Boundary.

2. SOV—Single Occupancy Vehicle, a vehicle in which the driver is traveling alone (this is a subset of the Auto category).

3. Shared Ride—Includes both the driver and other passengers (this is a subset of the Auto category).

4. Yellow school bus trips are not included.

5. Pedestrian and Bicycle trips do not include travel for the purpose of exercise.

6. Travel demand forecasts consistent with the Regional Travel Plan (adopted 2010).

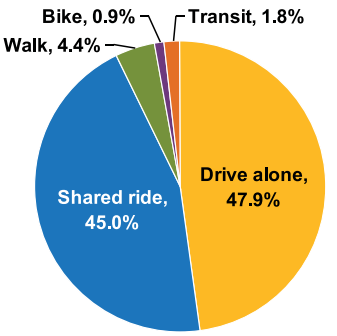
Another commonly used indicator of travel demand is vehicle miles traveled (VMT), or the total number of miles driven by all vehicles in a defined area. VMT estimates do not track miles driven outside Washington County by residents or employees, and does not include weekend or holiday travel. VMT within Washington County in 2010 is estimated at 8.4 million miles per weekday. Divided by Washington County's population, that is 15.76 miles per weekday per capita. VMT in 2035 is forecast to increase to 11.9 million miles per weekday, but population growth is expected to outpace it, resulting in a slightly lower per capita VMT of 15.71 miles per weekday per person.

Mode Share

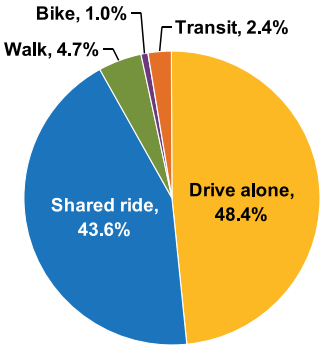
The Regional Travel Demand Model can estimate mode share, or the proportion of trips made using a certain means of travel. Figure 4 below shows estimated mode share for 2010, forecast mode share for 2035, and the target mode share urban Washington County needs to strive towards to be consistent with the RTP for 2035. Worth noting is that the RTP targets apply only to urban Washington County.

Figure 4: Washington County Mode Share

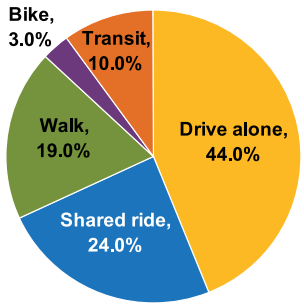
All trips, 2010 model. Source: Regional Travel Demand Model (Metro/Washington County)



All trips, 2035 forecast. Source: Regional Travel Demand Model. (Metro/Washington County)



Regional Transportation Plan targets for 2035 (Metro)



Another important travel characteristic of Washington County is its bi-directional commute patterns. Washington County has a strong jobs base that attracts workers from elsewhere in the Portland region. Washington County also has the more traditional suburban role of providing housing for people who commute to Portland. Commutes also include trips that remain entirely within Washington County. As shown in Table 2 below, nearly half of Washington County residents worked outside the county; and nearly half of employees that work within Washington County lived outside the county in 2010.

Table 2: Commuter Residence Characteristics — 2002 & 2010

Washington County	2002	2010
Employee Population (Residents)	215,901	216,424
Employment (Jobs)	213,028	222,588
Employees Living Outside of County	43.7%	48.8%
Residents Working Outside of County	44.5%	47.4%

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics

Plan Coordination and Consistency Requirements

Public policies at the state, regional, county and local levels provide policy direction and legal requirements for transportation planning in Washington County. Coordination and achieving consistency with other planning work is an important part of Transportation Plan development. In this regard, primary objectives of the TSP update included:

- Comply with the Oregon Transportation Planning Rule (TPR) requirements—Oregon Administrative Rule 660-012 is referred to as the Transportation Planning Rule (TPR). It implements Statewide Planning Goal 12: Transportation. The purpose of the TPR is to ensure adequate coordination of transportation

and land use planning both for TSPs and in project development. The TPR is the legislative mandate that requires Washington County to prepare and update its TSP.

- Coordinate with the Oregon Highway Plan (OHP)—The Oregon Highway Plan (OHP) sets visions, policies, and strategies for investing in state and federal highways in Oregon. Since adoption of the last Washington County TSP in 2002, there have been two major amendments to the OHP that affect Washington County. These amendments include amendments Policy 1B (land use and transportation policy) in 2005 and revisions to Policy 1F (highway mobility policy) in December 2011.
- Coordinate with the Regional Transportation Plan (RTP)—There are several key items in the RTP that affect transportation planning in Washington County. These include the designation of mobility corridors, performance targets, modal targets, and mobility standards. Desired outcomes for the RTP are as follows:
  - **Vibrant communities** — People live and work in vibrant communities where they can choose to walk for pleasure and to meet their everyday needs.
  - **Economic prosperity** — Current and future residents benefit from the region's sustained economic competitiveness and prosperity.
  - **Safe and reliable transportation** — People have safe and reliable transportation choices that enhance their quality of life.
  - **Leadership on climate change** — The region is a leader in minimizing contributions to global warming.
  - **Clean air and water** — Current and future generations enjoy clean air, clean water and healthy ecosystems.
  - **Equity** — The benefits and burdens of growth and change are distributed equitably.[2]
- Comply with the Regional Transportation Functional Plan (RTFP) adopted by Metro in 2010—The RTFP implements the goals, objectives and policies of the RTP, if a TSP is consistent with the RTFP then it is also consistent with the RTP. The cities and counties of the region are to carry these regional directives through the development and implementation of TSPs. The RTFP includes requirements for the design of streets, transit systems, pedestrian systems, bicycle systems, freight systems, and transportation system management and operations. The RTFP also includes specific requirements for the development and update of TSPs, the identification of transportation needs, assessment of solutions, and the use of performance targets and standards.
- Coordinate with adopted city Transportation System Plans (TSP)—Most cities in Washington County have adopted TSPs.
- Address planned growth in housing and employment, consistent with the adopted regional plans—Most of the adopted city TSPs and the Metro's RTP use 2035 as their plan horizon year and include some consideration of Urban Reserves adopted by Metro. Washington County's 2035 plan horizon year must be updated to match the RTP.
- Confirm sufficiency of existing programs—Strategies for capital improvements and system maintenance were reviewed to highlight where new strategies and priorities were required. The rural road system, in particular, was reviewed in terms of how the facilities were maintained and how growth in traffic volumes has heightened safety improvement needs.

2 *Metro 2035 RTP, page 2-2.*

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Part 2—General Transportation Policies for Washington County

This chapter includes overarching goals, objectives, and strategies affecting transportation in Washington County. These guiding principles provide the policy basis for the modal and implementation elements included in subsequent chapters of this document.

Guiding Principles

The guiding principles of the Transportation System Plan (TSP) reflect the mission of Washington County's Department of Land Use & Transportation:

- Building & Maintaining the Best Transportation System.
- Planning & Protecting the Uses of the Land.

The following four goals help to define that twofold mission (as illustrated in the Department's emblem), to provide safety, enhance community livability, protect the natural environment and support economic vitality within Washington County:

- **Goal 1:** Safety
- **Goal 2:** Economic Vitality
- **Goal 3:** Livability
- **Goal 4:** Natural Environment

These four goals—which are in no particular order—complement and balance each other. While at times, due to specific circumstances, choices may be necessary to establish the desired balance, on the whole the goals of safety, economic vitality, livability, and natural environment complement each other. This TSP intends to refine and apply these goals as the guiding principles for the planning, development and operation of the transportation system throughout Washington County.

General Policies

Safety

Transportation safety is a complex subject due to a variety of interacting factors. Road conditions, weather, driver ability and vehicle type are just some of the factors that come into play when considering the safety of a particular situation or location. Predictive models are available, along with anecdotal knowledge and experience with similar conditions. Traffic volumes, crash data, and citizen observations are just some of the ways that staff can analyze locations and corridors to determine what type of improvements or changes to transportation infrastructure would enhance safety. Each situation and location is unique, requiring engineering analysis and professional judgment. This section is intended to provide a broad explanation of safety trends and considerations for planning purposes.

In Washington County, new road construction, and the ongoing maintenance of the existing transportation system, uses modern techniques, industry standards, and best management practices. In addition, an active presence by law enforcement personnel reinforces the rules of the road. These roads are still subject to traveler behavior factors such as speeding, following too closely, drunk driving and walking or bicycling without appropriate visibility gear. Non-behavior factors may also play a role.

Tens of thousands of vehicles traverse Washington County roads on a daily basis and the vast majority of those trips are without incident. However, there are some locations that tend to have an increased rate

of crashes. Metro's State of Safety 2011 Report reveals that in 2007 through 2009, urban Washington County had the lowest rate of injuring crashes per capita, the lowest rate of fatal or incapacitating crashes per capita, and the lowest rate of fatal or incapacitating crashes per vehicle miles travelled, compared to urban Clackamas County, the City of Portland, and east Multnomah County.[1] Looking at trends over time, crash rates for all modes (except motorcycles) are continuing to decline locally, regionally and nationally after peaking in the 1990s.

Safety initiatives in the region, including various Safe Routes to School programs and Portland's High Crash Corridor program, typically dissect transportation safety into three or more components within which action may be taken. These are known as the three 'E's:

- **Engineering:** Physical enhancements to improve safety on a transportation facility.
- **Enforcement:** Partnering with law enforcement to identify and reduce violations of traffic laws.
- **Education:** Helping people understand the rules of the road and how to walk, bike or drive safely.

Some Safe Routes to School programs have added other 'E's—encouragement, evaluation and equity —that are useful tools in the broader context of transportation safety.

Evaluation is a particularly important function that Washington County undertakes. The Safety Priority Index System (SPIS) List is the primary tool for identifying intersections where crashes have been occurring frequently. SPIS, originally developed in 1986 by ODOT, assigns intersections a score based on crash frequency (total number of crashes), crash rate (number of crashes per entering vehicles) and crash severity (number of crashes involving injuries or fatalities), over a three-year period. Intersections with high SPIS scores may or may not have cost effective or feasible remedies to reduce the frequency or severity of crashes, but the SPIS tool is effective in helping identify safety issues in a strategic fashion.

Some safety concerns are difficult to measure. Issues of perceived safety and pedestrian/bicycle comfort and/or avoidance may not be evident in crash statistics, even though these issues may be detracting significantly from the use of certain modes or facilities. People may avoid walking or biking along certain roads that lack appropriate facilities to do so, regardless of the facility's statistical safety record. Absence of a facility may constitute a significant safety hazard.

Safety strategies in the TSP focus on:

- Engineering and maintenance solutions.
- Completing gaps in the pedestrian and bicycle network.
- Strategic evaluation of and response to crash patterns.
- Addressing safety deficiencies through development review.
- Education and enforcement initiatives.
- Lighting.

While the TSP cannot, in and of itself, reduce crashes, it provides a framework for systematically building, maintaining, operating and monitoring a safe transportation system for all users.

1 *Metro State of Safety 2011 Report, p 14, Metro.*

Goal 1: Safety

Provide a safe transportation system for all users.

Objective 1.1 Provide a transportation system that is structurally and operationally safe for all users and all modes.

- **Strategy 1.1.1** Plan, engineer, design and construct the transportation system using accepted design standards that promote safety and that provide the intended multi-modal function as indicated in the TSP and the Road Design and Construction Standards.
- **Strategy 1.1.2** Address safety concerns on county transportation facilities identified through the Operations & Maintenance Division Service Request System.
- **Strategy 1.1.3** Use the Maintenance Priority Matrix to help prioritize maintenance and safety expenditures.
- **Strategy 1.1.4** Where and when practicable, separate travel modes and minimize conflicts between and within modes.
- **Strategy 1.1.5** Prioritize missing or incomplete facilities as safety enhancements where appropriate.
- **Strategy 1.1.6** Limit sign clutter by utilizing the Manual on Uniform Traffic Control Devices or other appropriate standards for the design and placement of traffic signs.

Objective 1.2 Strategically monitor, evaluate and respond to crash patterns and safety concerns.

- **Strategy 1.2.1** Utilize and where practicable improve upon the Safety Priority Index System (SPIS) and other available data sources to identify locations on county roads where crash frequency, rate and severity is disproportionately high.
- **Strategy 1.2.2** Make improvements to existing transportation facilities to address SPIS findings, Bicycle and Pedestrian Improvement Prioritization Project findings, and other identified safety concerns, using appropriate and available funding sources.
- **Strategy 1.2.3** Identify appropriate safety solutions for designated truck routes to safely move freight and agricultural equipment amid other modes.
- **Strategy 1.2.4** Consider developing a Transportation Safety Action Plan for Washington County or subsections or corridors of Washington County.
- **Strategy 1.2.5** Develop crash reduction performance measures.

Objective 1.3 Review all development proposals, including those within incorporated areas, to continue the safe operation of county roads.

- **Strategy 1.3.1** Require development to address safety deficiencies identified on the SPIS List or in other sources, through the development review process described in the Community Development Code (CDC), as appropriate.
- **Strategy 1.3.2** Apply access management standards as set forth in the CDC in order to reduce traffic conflicts and improve safety.
- **Strategy 1.3.3** Consider an update to Resolution and Order 86-95, to implement safety improvements associated with new development and redevelopment.
- **Strategy 1.3.4** Consider Traffic Calming Devices during the land development process, when the County Engineer finds that safety related issues are likely to occur without the installation of such devices.

Objective 1.4 Coordinate with law enforcement and other safety related agencies and organizations to improve the safe operation of the transportation system by all modes.

- **Strategy 1.4.1** Coordinate with law enforcement agencies to reduce violations of traffic laws and to target violation problem locations.
- **Strategy 1.4.2** Consider security and law enforcement issues in the design and maintenance of transportation facilities, including "crime prevention through design" principles.
- **Strategy 1.4.3** Encourage educational programs that improve public understanding of safe use of the transportation system.
- **Strategy 1.4.4** Coordinate with and identify opportunities to advance the goals of Safe Routes to School programs in Washington County.

Objective 1.5 Illuminate the transportation system appropriately.

- **Strategy 1.5.1** Require new development and redevelopment in the urban area to install street lighting under the provisions identified in the CDC.
- **Strategy 1.5.2** Integrate street lighting into major county transportation improvement projects, where appropriate.
- **Strategy 1.5.3** Use the proposed Urban Streetscape Toolkit to explore a variety of lighting options and to identify appropriate contexts to use them.
- **Strategy 1.5.4** Consider street lighting designs and practices that limit impacts on neighborhoods and agriculture.

Economic Vitality

The transportation system plays a critical role in the economic vitality of Washington County. In 2013 Washington County was home to over 232,000 jobs and the highest average weekly wages in Oregon. Continued economic health depends on effectively serving the transportation needs of businesses large and small, including the people who work, shop and/or provide services. For the movement of goods, this means providing reliable freeway and arterial access to and from major employment areas, and helping railroad companies move goods efficiently and safely. Employers also need access to a sufficient labor market within a reasonable commute time and by multiple modes.

Economic vitality is addressed in the TSP in the following ways:

- Designating a safe, reliable network of truck routes, including routes for hazardous materials and over-dimensional vehicles.
- Working with private railroad operators to continue the efficient movement of rail freight.
- Ensuring that airports and pipelines are planned, sited and operated in accordance with all applicable regulations.
- Encouraging infrastructure investments in economic activity centers.
- Making sure employers have adequate access to the labor market.
- Promoting rural economic vitality by accommodating safe, reliable travel for the agricultural, forestry and tourism industries.

Additional considerations on the components of economic vitality are provided below.

Truck Routes

Most freight in Washington County is expected to be shipped by truck in the future. To provide for the most efficient transport of freight and to minimize impacts on residential neighborhoods, Truck Routes are

designated primarily on Arterial and Collector roads. The truck route designations encourage, but do not require, truck drivers to use these routes. The primary purpose of designating truck routes is to identify where future improvements on these roads should provide for the safe and efficient movement of trucks.

Hazardous Materials Trucking

The transport of hazardous materials is regulated by the Federal Motor Carrier Safety Administration under Title 49 Code of Federal Regulations, Parts 390-397, and is not governed by local jurisdictions. Hazardous materials include a variety of substances, ranging from radioactive and medical wastes to gasoline. The transport of non-radioactive hazardous materials requires that vehicles transporting these materials comply with any routing designations of a state, be placarded or marked and not go through or near heavily populated areas, places where crowds are assembled, tunnels, narrow streets or alleys, except where there is no practicable alternative. The transport of radioactive materials is generally restricted to designated preferred routes on interstate highways, beltways or bypasses, where alternative routes have not been designated by a state. The transport of hazardous materials is permitted on all Through Truck Routes within the county. However, the Vista Ridge Tunnel just east of Washington County on US 26 is closed to such traffic. As a result, hazardous materials are often transported via Cornelius Pass Road or OR 217.

Over-Dimensional Vehicles

Over-dimensional vehicles are trucks with wide or long loads that require a special permit. Washington County Operations Division maintains and annually updates a pre-approved over-dimension permit route map to facilitate such vehicles.

Freight Rail

While the role of railroads in Washington County's overall freight network is relatively small, a number of local firms continue to use them regularly, particularly in the forest products industry. Portland & Western is the primary operator of freight railroads within Washington County, with lines stretching from Banks to Wilsonville, and from Lake Oswego to Sherwood. The majority of roadway rail crossings in Washington County are at grade, posing potential conflicts and hazards. ODOT Rail Division authorizes new or modified rail crossings.

Air

Washington County's Comprehensive Plan identifies Public Use Airports and state-recognized Private Use Airports with land use overlay designations in the map elements of the Rural/Natural Resource Plan and/or Community Plans entitled Airport Overlay Districts. Land use related policies and strategies regarding the overlay-designated airport facilities are addressed in the Rural/Natural Resource Plan and in the Comprehensive Framework Plan for the Urban Area. Development standards for all airport and heliport related uses, including personal use airports and heliports, are outlined in the Community Development Code. Private use facilities fall under two general categories: private use airports identified by the Oregon Department of Aviation (pursuant to ORS 836.608(2)) that are subject to LCDC's Airport Planning Rule (OAR 660-013), and personal use facilities that are subject to local regulation.

Pipelines

Major high-pressure gas pipelines (60 pounds per square inch or greater) are shown in the TSP to highlight possible conflicts with future roadway extensions or expansions.

Economic Activity Centers

Economic Activity Centers include employment land (such as North Hillsboro and the Tualatin-Sherwood Corridor) and regional centers (including downtown Beaverton, downtown Hillsboro, Tanasbourne-Amberglen and Washington Square). Such areas are critical to the economy of Washington County and demand a commensurate level of transportation operational and/or capital improvements.

Access to Labor

For Washington County employers, having access to the regional labor market is just as important as moving goods or services. Part of a company's location decision is based on having a sufficient pool of talented workers be able to reach that location within a reasonable travel time of their homes, and by multiple modes if possible. Employers count on Washington County and its partner jurisdictions to provide an efficient, reliable transportation system so that employees are willing to take jobs here and are able to get to work on time. Roadway congestion and poor transit service can both negatively affect employers' access to labor.

Rural Economic Vitality

In rural Washington County, agriculture, forestry and tourism contribute significantly to the economy. Washington County ranks in the top five Oregon counties for gross sales of greenhouse/nursery products, wine grapes and cane berries, and hosts thousands of acres of timber and recreation land in the Coast Range.[2] Tourism augments these rural economic activities when people visit farmstands, wineries and recreational destinations. Transportation's role is to provide a safe, reliable network of roads for everyone who lives, works, visits or passes through the rural area. This includes managing conflicts between agricultural equipment, log trucks, cars and bicycles.

Goal 2: Economic Vitality

Provide a reliable transportation system that enhances the economic health of Washington County

Objective 2.1 Designate a roadway freight system that facilitates the efficient movement of goods, services and agricultural equipment.

- **Strategy 2.1.1** Coordinate planning, development, maintenance and operation of an efficient and safe roadway freight system with the private sector, ODOT, TriMet, Metro, the Port of Portland and the cities of Washington County.
- **Strategy 2.1.2** Improve monitoring, analysis and management of freight needs by maintaining a truck classification count database.
- **Strategy 2.1.3** Develop freight reliability criteria, including percentage reduction in delay per truck trip, for purposes of project prioritization.
- **Strategy 2.1.4** Proactively identify and correct roadway design, safety and operational deficiencies on truck routes to meet freight reliability targets.
- **Strategy 2.1.5** Coordinate with federal and state agencies as necessary for compliance with federal and state regulations pertaining to the safe transport of hazardous materials within and through Washington County.
- **Strategy 2.1.6** Designate and map over-dimensional truck routes, and identify where roadway improvement projects should not further restrict or limit over-dimensional vehicle operations, as appropriate.

2 Oregon Agriculture: Facts and Figures. National Agricultural Statistics Service and Oregon State University Extension Service, July 2012.

Objective 2.2 Encourage the safe, efficient operation of railroad, airport and pipeline facilities.

- **Strategy 2.2.1** Maintain or establish safe and effective rail crossing treatments through federal and state rail regulations.
- **Strategy 2.2.2** Protect active freight railroads from unregulated crossings and encroachment.
- **Strategy 2.2.3** Consider the needs of freight rail operators, including the practice of storing and staging longer freight trains between road crossings.
- **Strategy 2.2.4** Work with public and private sector partners to preserve existing railroads and railroad rights-of-way for transportation purposes or alternative public purposes, to the extent practicable.
- **Strategy 2.2.5** Coordinate with service providers to continue the safe operation and adequate maintenance of existing air, rail, and pipeline facilities; and protect such facilities from encroachment by incompatible land uses.
- **Strategy 2.2.6** Coordinate planning and development of new or expanded air, rail, and pipeline facilities and services consistent with federal, state and regional plans and regulations, including analysis of environmental and noise compatibility with surrounding land uses.

Objective 2.3 Invest in transportation to encourage economic development.

- **Strategy 2.3.1** Prioritize economic development-focused transportation investments within and connecting to regional centers, industrial areas, freight and passenger intermodal facilities.
- **Strategy 2.3.2** Facilitate a transportation system that provides employers access to an adequate labor pool.
- **Strategy 2.3.3** Recognize the economic benefits that active transportation and transit investments have for recruiting and retaining businesses, attracting talent, and reducing congestion that negatively affects roadway freight transport, and facilitate these investments appropriately.
- **Strategy 2.3.4** Consider the economic benefits of additional roadway capacity for the region, both in inter-urban and intra-urban areas.

Objective 2.4 Encourage rural economic vitality in Washington County.

- **Strategy 2.4.1** Facilitate the safe, efficient movement of agricultural and forest products, including agricultural machinery.
- **Strategy 2.4.2** Consider developing rural road safety strategies to address conflicts between agricultural equipment, log trucks, cars and bicycles on rural roads.
- **Strategy 2.4.3** Consider the transportation and land use needs of agricultural and forest industries when designing roadway improvements in the rural area.
- **Strategy 2.4.4** Facilitate safe travel for rural tourism traffic, including the safe operation of designated scenic driving and bicycling routes.

Livability

Livability means different things to different people, but most would agree that good transportation is a critical component of community livability. For some, a transportation system that supports a livable community means attractive streets and a variety of travel options; for others it means uncongested freeways and quick travel times. The transportation system provides connections—both literally and figuratively—between commonly-stated elements of livability: affordable housing, good jobs, strong schools, nearby shopping and a safe, healthy environment. A well-planned transportation system should meet the fundamental need of mobility while also providing the benefits of safe, livable and vibrant communities.

TSP livability strategies focus on:

- Reducing negative impacts on the human environment, which includes neighborhoods, business districts, farms, parks and other features that people value in the built environment.
- Coordinating land use and transportation planning.
- Recognizing and addressing the unique concerns of the rural area.
- Addressing social and geographic equity in transportation investments and impacts.

Additional context is provided below.

Land Use and Transportation Integration

The successful integration of land use and transportation planning can reduce the need for travel, promote fiscally responsible investment of public dollars, and create livable communities. Land use and transportation integration is well established in Washington County.

In 1995, Metro adopted the 2040 Growth Concept, the long-range plan for managing regional growth that "merged land use and transportation planning to reinforce the objectives of both.[3]" Washington County and the cities therein plan their land use designations and transportation investments in concordance with the 2040 Growth Concept, concentrating mixed-use and higher-density development into "centers," "station communities" and "main streets" and connecting them with multi-modal transportation corridors.

Livable Streets

"Livable streets" is a term used to reflect enhanced street design features that may encourage more walking, bicycling and transit use and foster economic development. Elements of livable streets such as trees, wider sidewalks, landscaped medians, enhanced pedestrian crossings and pedestrian-scale lighting, can help improve the vibrancy of communities. Careful consideration must be given as to the appropriate locations for enhanced street designs, and how the improvements will be maintained in the long term.

Enhanced street designs are encouraged in Regional Centers, Town Centers, Station Communities and Main Streets (as designated in the Metro 2040 Growth Concept) and in Pedestrian Districts identified in the Washington County TSP. These enhancements can help foster the land use, economic and transportation mode share targets envisioned for these areas.

Equity

Equity in transportation planning includes both social and geographic equity. Planning for equity often means examining socio-economic, demographic and geographic characteristics. Some demographic groups may not have been engaged in planning efforts in the past. Currently, a concerted effort is made to engage these historically underrepresented populations of Washington County—including low-income, minority, youth and low English proficiency residents—and provide them a voice throughout the planning process. A livable future is one that engages and benefits all residents and users of the transportation system.

Goal 3: Livability

Preserve and enhance Washington County's quality of life for all residents, workers and visitors.

Objective 3.1 Strive to maintain and enhance the livability of existing and future communities and neighborhoods.

- **Strategy 3.1.1** When considering transportation improvements that create new, expanded or extended roadways, evaluate and balance the needs of the traveling public with the livability and viability of neighborhoods, business districts, agricultural areas, historic places and other cultural resources.

3 *Metro Regional Transportation Plan, page 2–4, 2010.*

- **Strategy 3.1.2** Strive to limit inappropriate through-traffic and speeding in residential areas using the Neighborhood Streets Program, while maintaining adequate neighborhood and emergency access.
- **Strategy 3.1.3** Consider low-impact strategies to improve traffic flow including appropriate lane-markings, safety improvements, roundabouts and other operational devices.
- **Strategy 3.1.4** Identify scenic view corridors and vistas, and strive to maintain and enhance these visual resources for residents and users of the transportation system.
- **Strategy 3.1.5** Follow federal and state regulations and guidelines on reducing transportation-related noise.
- **Strategy 3.1.6** Work with appropriate entities to identify, avoid and/or mitigate negative impacts on the community from airport, rail freight, pipeline and electric transmission projects.
- **Strategy 3.1.7** Regulate the provision of parking as identified in the Community Development Code (CDC).

Objective 3.2 Coordinate transportation and land use planning.

- **Strategy 3.2.1** Plan and provide a multi-modal transportation system that encourages the land uses, mixes and densities indicated in the Comprehensive Plan, community plans and/or other applicable, adopted land use plans.
- **Strategy 3.2.2** Plan for the anticipated multi-modal travel demand generated by proposed development within and near Washington County.
- **Strategy 3.2.3** Explore opportunities to further improve accessibility, including jobs/housing balances, through integrated transportation and land use solutions.

Objective 3.3 Use transportation investments to enhance the viability of centers.

- **Strategy 3.3.1** Prioritize enhanced complete street and boulevard designs with wider sidewalks and a higher level of streetscape amenities within Metro 2040 Regional Centers, Town Centers, Station Communities and Main Streets, and consolidate the TSP overlay designations of these streets.
- **Strategy 3.3.2** Consider developing an Urban Streetscape Toolkit that illustrates and describes the palette of available design options for streetscape projects such as sidewalks, lighting, trees, landscaping and retaining walls
- **Strategy 3.3.3** Recognize the continued importance of adequate mobility for people and goods, to, from and between centers in order to create and sustain economic vitality.

Objective 3.4 Identify, limit and/or mitigate adverse impacts of transportation on rural, agricultural and resource areas in Washington County.

- **Strategy 3.4.1** Consider education, enforcement and engineering solutions to mitigate conflicts between motor vehicles, bicycles and agricultural equipment on rural roads.
- **Strategy 3.4.2** Involve affected property owners early in the project development process to address land use compatibility issues adjacent to roads that form the boundary between urban areas, urban reserves, rural areas and/or rural reserves on a case-by-case basis.
- **Strategy 3.4.3** During the concept planning of newly-designated urban areas, strive to design the transportation system so that the traffic associated with these areas may travel primarily through the existing urban area.

Objective 3.5 Distribute transportation benefits and impacts equitably among residents, businesses, workers and visitors in Washington County.

- **Strategy 3.5.1** Equitably distribute the benefits and impacts of transportation improvements, maintenance and operations activities geographically across Washington County.
- **Strategy 3.5.2** Identify, map and periodically update the locations of transportation disadvantaged/underrepresented populations, including concentrations of children, elderly, low-income, racial/ethnic minority, English as a second language (ESL) and zero-car households, and use this information to help inform transportation investment decisions.
- **Strategy 3.5.3** During transportation and land use planning and implementation, consider the share of household income spent on housing and transportation.

Natural Environment

All transportation modes, vehicle types and facilities—even electric vehicles and multi-use trails—have impacts on the natural environment, from localized habitat degradation caused by the horizontal footprint of a road or trail, to global climate change influenced by carbon emissions. The TSP divides environmental considerations into three categories: air and climate; land and water; and efficiency. (Impacts to the built environment are addressed under Goal 3: Livability.)

Air and Climate

The Portland Air Quality Maintenance Area currently meets all federal air quality health standards. However, in the past, the Portland Air Quality Maintenance Area did not meet the air quality health standards for ground-level ozone (smog) and carbon monoxide. Gasoline powered vehicles emit both carbon monoxide and ozone precursors. Therefore, the Oregon Department of Environmental Quality (DEQ) has established an emission budget for ozone precursors and carbon monoxide. These emission budgets include a mobile source (vehicle) category. For regional transportation planning purposes, the transportation network must demonstrate compliance with the mobile source emission budgets for these pollutants.

Ground-level ozone (smog) is a serious type of air pollution caused by a chemical reaction when nitrogen-oxides and volatile organic compounds are exposed to sunlight and warmer temperatures. Smog discolors the atmosphere and can harm human health. The ozone precursors of nitrogen-oxides and volatile organic compounds are criteria pollutants for air quality conformity determinations.

Carbon monoxide is a colorless, odorless gas that can lead to serious human health problems with prolonged exposure, or short term concentrated exposure. Carbon monoxide exposure issues may occur during winter conditions with both cold temperatures and stagnant air.

Both ground-level ozone and carbon monoxide are air quality pollutants monitored by DEQ. These and other emissions are measured hourly through an air quality surveillance network of established sites throughout the region that record the chemical composition of the air.

The transportation sector further affects air quality and climate through the emission of greenhouse gases such as carbon dioxide, airborne toxics such as benzene and particulate matter. Both air toxics and particulate matter are known or suspected to cause cancer or other health problems. In Oregon, an estimated 34 percent of greenhouse gas emissions—the largest single share—can be attributed to transportation related sources.[4] Recent data from DEQ also suggest that air toxics are disproportionately concentrated in urban Washington County due to stagnant air.[5]

4 Clean Fuels Program, Oregon Department of Environmental Quality, 2012 http://www.deq.state.or.us/aq/cleanFuel/index.htm

5 Portland Air Toxics Report, Oregon Department of Environmental Quality, 2012. http://www.deq.state.or.us/aq/planning/patsReport.htm

Clean air has been a federal mandate since the Clean Air Act of 1970. Clean Air Act Amendments in 1990 required metropolitan planning organizations to demonstrate air quality conformity in their transportation plans in order to receive federal transportation funds. The air quality/transportation connection is also part of Oregon's Statewide Planning Goal 6 (Air, Water and Land Resources Quality), and is enforced by DEQ through OAR 340-200-0040. By developing the Washington County TSP consistent with the Metro RTP (which complies with federal and state air quality conformity regulations), Washington County helps the region meet federal, state and regional air quality regulations.

Plan strategies that address air quality and climate change focus on (1) reducing vehicle trips and trip lengths by moving more trips to active (transit, walk and bike) modes, increasing shared ride trips and reducing travel demand through telecommuting and land use planning, and (2) increasing and encouraging the use of fuel efficient and zero-emission vehicles.

Land and Water

Washington County is host to significant terrestrial and aquatic resources, including the Tualatin River and its tributaries, a number of regionally-significant wetlands, some of the most productive agricultural lands in Oregon and upland areas of oak savanna and Douglas-fir forest. The value of these resources is multi-faceted: providing fish and wildlife habitat, filtering and cooling runoff, cleaning the air and adding unquantifiable aesthetic and economic value.

Washington County's Community Development Code Article VII specifically addresses the impacts of transportation projects on land and water resources, as well as other resources including cultural, visual and recreational resources. Transportation project applicants must describe anticipated impacts on the natural, built and planned environment, and propose potential mitigation measures. Land and water resources in Washington County are documented in the county's Rural/Natural Resource Plan, and in mapping associated with Metro's Functional Plan Title 3 and Oregon's Goal 5 (Natural Resources, Scenic and Historic Areas and Open Spaces).

Transportation improvement projects must demonstrate compliance with applicable environmental regulations pertaining to stormwater and aquatic resources. In many areas of the county, this includes a permit from Clean Water Services. Elsewhere, appropriate city, regional, state and/or federal regulations apply—particularly when a project may disrupt a waterway, floodplain or wetland. State land use regulations also apply in Exclusive Farm (State Goal 3) and Forest Districts (State Goal 4).

Plan strategies that address impacts to land and water resources focus on identifying natural resources through existing planning and regulatory mechanisms, avoiding impacts to these resources if possible and—if impacts are unavoidable—reducing and mitigating them through context-sensitive design features and enhancements.

Efficiency

The TSP addresses energy and resource conservation through vehicle fleet-based strategies such as encouraging the use of fuel-efficient or zero-emission vehicles and through the use of recycled or low-impact materials in transportation projects.

Goal 4: Natural Environment

Create and maintain a transportation system that first avoids, then minimizes, then mitigates impacts to the natural environment.

Objective 4.1 Reduce negative impacts of the transportation system on air quality and global climate.

- **Strategy 4.1.1** Meet regional air pollutant and greenhouse gas reduction performance targets by implementing the active transportation, travel demand management and accessibility strategies in this plan.
- **Strategy 4.1.2** Help the region meet the air quality emission budgets for mobile sources for carbon monoxide and ground-level ozone precursors.
- **Strategy 4.1.3** Using the Comprehensive Framework Plan and the Community Development Code, implement the Metro 2040 Growth Concept to create a compact urban form that increases the accessibility of destinations and reduces vehicle miles traveled.

Objective 4.2 Reduce and/or mitigate negative impacts of the transportation system on the natural environment.

- **Strategy 4.2.1** Identify, and first avoid, then limit and/or mitigate adverse impacts of transportation projects on mapped Significant Natural Resources.
- **Strategy 4.2.2** Transportation improvements are to be developed consistent with Oregon statewide planning goals and administrative rules, when establishing general transportation alignments, unless a special exception is allowed.
- **Strategy 4.2.3** Washington County's Department of Land Use & Transportation Project Review Committee shall review transportation project applications for completeness and compliance with applicable regulations.
- **Strategy 4.2.4** Consider the temporary and long-term impacts of construction and maintenance activities on the natural environment and adopt practices that mitigate these impacts.
- **Strategy 4.2.5** Consider and incorporate as appropriate context-sensitive design treatments that reduce and/or mitigate transportation impacts including surface stormwater management features and impervious surface reductions.
- **Strategy 4.2.6** In agricultural areas avoid and/or limit significant disruption of farming activities during both project implementation and maintenance, in accordance with Policy 15 of the Rural/Natural Resource Plan, as appropriate.
- **Strategy 4.2.7** Consider existing natural hazards, as well as potential future natural hazards, during the design and engineering of transportation improvements.

Objective 4.3 Reduce energy and resource consumption associated with transportation.

- **Strategy 4.3.1** Encourage the purchase of fuel-efficient vehicles when replacing county fleet vehicles to reduce energy consumption and help achieve greenhouse gas reduction goals.
- **Strategy 4.3.2** Encourage the use of recycled and other low-impact materials in the construction and maintenance of the transportation system.
- **Strategy 4.3.3** Coordinate with private and public sector partners to standardize, codify and incentivize technological solutions to reducing energy consumption, including the installation of additional electronic vehicle charging/parking spaces throughout Washington County.
- **Strategy 4.3.4** Encourage the use of native vegetation in the landscaping for transportation projects.

Part 3—Transportation Modal Elements

System Design

This section establishes the design and functional framework of the transportation system. A network of roads, freeways, trails, bicycle facilities and transit routes is envisioned to provide mobility, accessibility, connectivity and active transportation options throughout Washington County. The System Design element of the Transportation System Plan (TSP) states these concepts as goals:

- **Goal 5:** Mobility
- **Goal 6:** Accessibility
- **Goal 7:** Connectivity
- **Goal 8:** Active Transportation

The System Design goals, objectives and strategies help implement the Guiding Principles described in the previous section: safety, economic vitality, livability and a natural environment. The System Design goals outline and guide the development, design and management of the transportation system. Specific system solutions and performance measures will be described in the modal chapters to follow.

The System Design Goals establish a framework for a transportation system that:

- Provides a network of multi-modal transportation facilities and operational systems intended for travel between points A and B.
- Connects and integrates land use and transportation.
- Provides multiple travel routes and connections within and between parts of the community.
- Provides for travel by all modes including walking, bicycling and public transit.

New and improved connections, with rare exception, are to be implemented as “complete streets” within the urban area. Complete streets are roadways designed and operated with all users in mind—people walking, bicycling, using mobility devices, transit, cars and motorcycles and freight vehicles. Complete streets accommodate the safe, comfortable and convenient movement of people of all ages, abilities and means.

Transportation system design also must respond to land use patterns and community needs. Existing and future development patterns determine where homes, schools, work, shopping and other activities are located. The location and design of our communities can profoundly affect the way in which we move about. Clackamas, Multnomah and Washington Counties have recently collaborated with Metro on a regional effort to help determine the shape of the Portland region over the next 40 to 50 years. The adopted Urban and Rural Reserves are intended to provide greater predictability for the region as to where future growth may take place both inside and outside the current Urban Growth Boundary. The transportation system must be designed and planned with these areas and future growth in mind.

About the Modal Elements

The Washington County Transportation System Plan (TSP) describes an integrated multi-modal transportation network to meet the needs of Washington County residents, workers, businesses and visitors over the next 20 years. The Modal Elements each illustrate and describe a component of the whole transportation system envisioned for Washington County. Each Modal Element includes a system map or maps and accompanying text. The word “modal” refers to the different modes of travel that are

intended to be accommodated by the transportation system. These modes include automobile, freight, pedestrian, bicycle and transit. Also included in the Modal Elements are the system management and funding components necessary to illustrate and describe the complete system.

The Modal Elements implement the TSP Goals, Objectives and Strategies that were initially adopted by Ordinance 768 in October 2013. Each Modal Element describes transportation system components in terms of three characteristics:

- **Classification:** The intended character and function each component of the system is intended to serve.
- **General location:** The property or land that will be required to accommodate each component of the system.
- **General size and scope:** The amount and configuration of land necessary to accommodate each component of the system in the long term.

Together, the Modal Elements establish the framework of an integrated multi-modal transportation network. The backbone of this network is a system of arterial and collector complete streets, high capacity transit lines, freeways, freight railroads, multi-use trails, airports and pipelines that collectively provide for travel needs within Washington County.

While the Modal Elements identify specific attributes related to the individual modes, readers and users of this plan are encouraged to consider that each mode serves as a component of a system that combines and interacts with the other modes to create a complete, integrated transportation network.

Per state and regional policy, the TSP Modal Elements address all modes of travel for people and goods. The Modal Elements and maps are organized as follows:

Roadway Element

- Functional Classification Map
- Lane Numbers Map
- Special Area Streets Overlay Maps
- Long-Term Roadway Jurisdiction Map
- Rural Enhancement Study Corridors Map
- Refinement Areas Maps

Freight Element

- Roadway Freight System Map
- Aviation, Railroad and Pipeline System Map

Active Transportation Elements

1. Pedestrian Element
   - ➢ Pedestrian System Map
2. Bicycle Element
   - ➢ Bicycle System Map
3. Transit Element
   - ➢ Transit System Map

- Transportation System Management & Operations Element
- Funding Element

Mobility

Mobility means travel between points A and B. The mobility goal calls for providing a network of multi-modal roadways and operational systems. Achieving the mobility goal entails the effective and efficient management of the existing and future roadways, including the improvement of roadways to urban standards as complete and livable streets.

The four primary objectives of the design, implementation and management for the mobility functions of the roadway system include:

1. **Designation of an appropriate functional classification system and maps**
   The Transportation System Plan calls for developing an appropriate roadway functional classification system based on travel characteristics and community aspirations. This functional classification system describes appropriate operational attributes, as well as roadway design treatments and standards. Roadway functional classification definitions are described at the end of this section.

   Streets where Pedestrian Parkways or Streetscape Overlays are to be considered are shown on the Pedestrian System Map. These designations identify Arterial and Collector streets where certain design treatments may be used to enhance pedestrian, bicycle and transit functions while also seeking to provide adequate motor vehicle capacity resulting in safer, modally balanced streets. The Pedestrian System Map identifies Pedestrian/Bicycle Districts, Rural Pedestrian Activity Areas, Pedestrian Parkways and Streetscape Overlays. Design considerations associated with each designation are discussed in the Pedestrian Element of the Active Transportation section of this plan.

2. **Providing systems to manage and operate the roadway system efficiently**
   The plan also calls for improved systems to manage and operate roadways within a constrained urban context. Access management, traffic calming and facility design are important elements of managing the transportation system. Access management reduces conflicts between through movements and vehicles turning off and onto the roadway, as well as conflicts between motor vehicles and pedestrians or bicyclists. Facility design addresses roadway safety and operations with striping, geometry, turn movement channelization and other minor roadway reconstruction. Traffic calming devices may be applied to Local Streets and Neighborhood Routes to attempt to help protect neighborhoods from the intrusion of through-traffic, and from speed violations. Traffic calming techniques may include signage, curb extensions, traffic barriers, narrowed travel lanes, planted medians and other features.

   Programs that allow better use of the existing transportation system benefit all users and improve system capacity and efficiency. Transportation System Management (TSM) is a general term used to describe techniques for increasing the efficiency, safety and capacity of a transportation facility without major new capital improvements. This may include signal improvements, facility design treatments, access management, managed lanes, turn restrictions, ramp metering, incident response, targeted traffic enforcement and/or programs that smooth transit operations, among other treatments.

3. **Monitoring travel conditions with an appropriate level-of-service or other performance standard**
   The Transportation System Plan makes the presumption that building a roadway system to accommodate all motor vehicle traffic at desired standards during the peak travel period may not be practical. Certain project(s) necessary to provide desired peak-period motor vehicle performance would be extremely difficult to build for reasons of physical impacts, costs, and conflicts with other goals or community aspirations. In the meantime, the Interim Washington County Motor Vehicle Performance Measures will continue to fulfill the important role of evaluating target and acceptable motor vehicle performance. The Interim Washington County Motor Vehicle Performance Measures table is included at the end of this section in Table 4.

4. **Encouraging transportation demand management programs and partnerships**
   Transportation Demand Management (TDM) is the general term used to describe any activity that provides an alternative to single-occupant-vehicle trips. TDM encompasses a range of strategies such as carpooling, staggered work shifts and/or telecommuting. These strategies encourage ridesharing (e.g., car- or van-pooling), transit use (e.g., fare subsidies), bicycle commuting (e.g., on-site showers, lockers or bike parking), walking to work and/or flexible work hours. TDM strategies are relatively low-cost initiatives that can help reduce traffic congestion problems and improve overall mobility.

   As growth in Washington County occurs, the number of vehicle trips and travel demand in the area will also increase. The ability to provide alternatives may help accommodate this growth. TDM strategies and programs have taken on increased importance and emphasis recently. This is in part due to an increased interest in improving air quality and active transportation and health. TDM strategies are encouraged by a number of organizations for these reasons, as well as reducing the need and expense for additional vehicle capacity. The State of Oregon requires employers with more than 50 employees to have programs in place that reduce the percentage of employees who drive alone to work.

   Transportation Management Associations (TMAs) are typically public/private partnerships that have been established in some areas to coordinate and assist firms in complying with these regulations and to be advocates for activities that reduce demands on our roadway system. TMAs play a role in reducing single-occupant-vehicle trips, reduce green-house gas emissions, foster economic vitality, improve health and enhance the efficiency of our regional transportation network. Since 1997 the Westside Transportation Alliance (WTA) has worked with its partners and Washington County employers to offer workplace services and programs that help employees commute to work by transit, carpool, vanpool, walking and biking. More recently the WTA expanded its focus to include business services such as “last mile” connections and creation of bicycle parking resources.

Goal 5: Mobility

Promote the efficient and cost-effective movement of people, goods and services by all modes.

Objective 5.1 Provide a county roadway system that is cost-effective, designed to operate efficiently and serves all travel modes.

- **Strategy 5.1.1** Recognize that the functional classification system represents a continuum in which through traffic increases and provisions for vehicle access decrease in the higher classification categories (see figure 5). Designate a roadway Functional Classification Map utilizing some or all of the following criteria for defining or modifying the functional classification:

  A. Expected amount, type and characteristics of vehicle traffic.

  B. Distance between similar roadways within the system.

  C. Expected needs of the community and traveling public.

  D. Extent of appropriate access.

  E. Length of the roadway.

  F. Land use along the roadway.

  G. Neighborhood and community aspirations.

- **Strategy 5.1.2** Determine ultimate street design requirements and street profile for development review and/or public improvement based on the Functional Classification Map designation and/or Special Area Street Map designation; and utilize the Pedestrian System Map, the Bicycle System Map and the Lane Numbers Map to determine the appropriate right-of-way dedication and design treatment applicable within the currently adopted roadway standards (see table 3).

- **Strategy 5.1.3** Address potential impacts of long-distance trips on neighborhoods or communities by:

  A. Ensuring that the collectors and arterials of the transportation system are designed to adequately accommodate these trips.

  B. Designing and managing local streets to accommodate local trips and to discourage long-distance trips.

- **Strategy 5.1.4*** Prior to adding through travel lane capacity to the Lane Numbers Map, or elsewhere in the transportation system plan, consider the following strategies in the order listed below:

  A. Transportation System Management strategies, including Travel Demand Management, safety, operational and access management improvements.

  B. Bicycle and pedestrian system improvements.

  C. Appropriate lane-markings, safety improvements and other operational devices to improve traffic flow.

  D. Land Use strategies to reduce motor vehicle congestion and peak period demand.

  E. Parallel connections and local street connectivity improvements.

  **Strategy 5.1.4* has been developed based on and in response to the Regional Transportation Functional Plan requirements in Title 2, 3.08.220.

- **Strategy 5.1.5** Define and maintain a Long-Term Road Jurisdiction Map that is intended to serve major travel movements, and appropriate for long-term Washington County operation and maintenance. Maintain a map which identifies the Long-Term Road Jurisdiction of county and state facilities. Negotiate jurisdiction of facilities identified for long-term county operation and maintenance.

Objective 5.2 Provide systems to efficiently manage and operate the roadways.

- **Strategy 5.2.1** Identify, evaluate, develop and enhance transportation system management and operation technology and techniques that limit congestion and maximize transportation system operating efficiency.
- **Strategy 5.2.2** Implement intelligent/adaptive transportation system technologies and techniques that improve the efficiency and operation of the transportation system.
- **Strategy 5.2.3** Coordinate efforts with regional partners to cooperatively develop subregional arterial surface street management systems and programs that include, but are not limited to, signal system coordination and optimization, video data collection, data retrieval and archiving.
- **Strategy 5.2.4** Coordinate with TriMet, Metro, the Oregon Department of Transportation (ODOT) and other agencies to provide appropriate signal priorities along frequent and rapid bus transit routes.
- **Strategy 5.2.5** Investigate managed lane treatments and other priority treatments for freight, transit or other modes, in appropriate corridors and/or locations.
- **Strategy 5.2.6** Investigate the potential for public/private partnerships to provide driver information services (such as phone applications and/or social media).

Objective 5.3 Utilize the Interim Washington County Motor Vehicle Performance Measures to manage congestion (please note Interim Washington County Motor Vehicle Performance Measures will be the same as the volume to capacity ratio (V/C) standards adopted in 2002 (see table 4) until an analysis and update of performance standards has been completed and adopted).

- **Strategy 5.3.1** Provide a transportation system that accommodates travel demand consistent with applicable performance standards for all modes of travel where feasible.

- **Strategy 5.3.2** Provide a roadway system that meets the mobility needs of Washington County residents and businesses as defined by performance standards identified in Interim Washington County Motor Vehicle Performance Measures of this plan.
- **Strategy 5.3.3** Implement Washington County projects necessary to improve performance and reduce system design deficiencies in roadway corridors and segments that are operating or forecasted to operate at less than acceptable standards as identified in the Interim Washington County Motor Vehicle Performance Measures.
- **Strategy 5.3.4** Implement Washington County's Comprehensive Plan, including the review of development applications, as defined by the performance standards identified in the Interim Washington County Motor Vehicle Performance Measures of this plan.
- **Strategy 5.3.5** Help provide a roadway system that addresses travel demand associated with anticipated new development or redevelopment by applying appropriate access management standards as defined and required within the Community Development Code (CDC).
- **Strategy 5.3.6** Recognize that flexibility is necessary and it may not be desirable or practicable to meet the interim level-of-service standard in all cases.

Objective 5.4 Encourage Travel Demand Management efforts to reduce total vehicle travel and vehicle travel during peak hours.

- **Strategy 5.4.1** Develop and emphasize Travel Demand Management and reduction strategies as mechanisms for reducing vehicle trips and shifting travel to off-peak periods.
- **Strategy 5.4.2** Work with the Westside Transportation Alliance, major employers and business groups to develop and implement demand management programs to work towards the mode share targets adopted in this plan.
- **Strategy 5.4.3** Explore Washington County's role with partners in coordination and development of Transportation Demand Management programs.

Objective 5.5 Provide for efficient motor vehicle capacity to serve longer regional trips.

- **Strategy 5.5.1** Seek to identify and address motor vehicle capacity needs for the county, as a part of the region and the state.
- **Strategy 5.5.2** Coordinate with ODOT, cities, counties and other government agencies and work with the public and community groups to identify locations or corridors where additional roadway capacity is necessary.

Mobility Concepts

Functional Classification

This section elaborates on the functional classification system described by Strategy 5.1.1.

There are numerous ways in which the concept of roadway functional classification is defined and interpreted. Federal, state, regional and some city definitions within Washington County may differ from the classification scheme used here. This is not a problem in practice, because these classification systems reflect the general process described below.

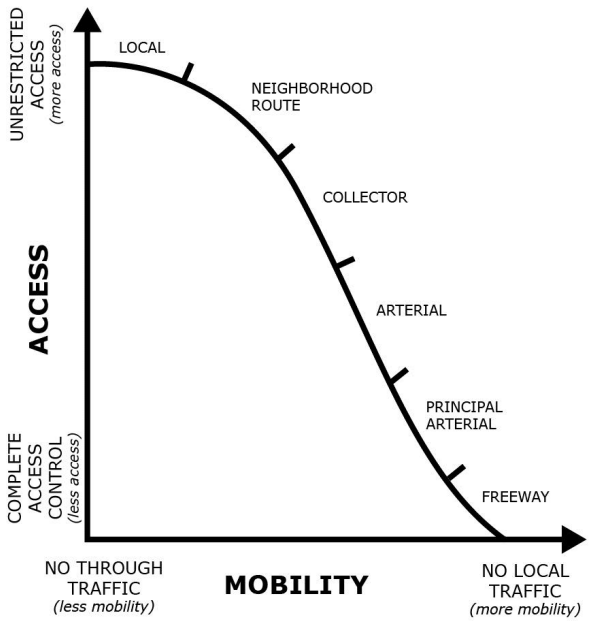
> Functional Classification introduces the two primary transportation functions of roadways, namely mobility and access, and describes where different categories of roadways fall within a continuum of mobility-access. Most travel occurs through a network of interdependent roadways, with each roadway segment moving traffic through the system towards destinations. The concept of functional classification defines the role that a particular roadway segment plays in serving this flow of traffic through the network. Roadways are assigned to one of several possible functional classifications within

a hierarchy according to the character of travel service each roadway provides. Planners and engineers use this hierarchy of roadways to channel transportation movements through a highway network efficiently and cost effectively. Roadways serve two primary travel needs: access to/egress from specific locations and travel mobility. While these two functions lie at opposite ends of the continuum of roadway function, most roads provide some combination of each.[1]

Both the Washington County Functional Classification System and Metro's Regional Transportation Plan Arterial and Throughway Network map describe a hierarchy of roadway types, their relative roles in the transportation system and provide direction with regard to appropriate classification criteria and facility design.

As depicted in Figure 5 below, roads perform two essential functions: they facilitate mobility and they provide access to individual properties. At the top end of the system, a Freeway's main function is to provide a continuous route that enables traffic to move easily over long distances. At the bottom end, a Local Street's primary function is to provide access to individual properties. Between these extremes, roadways provide access and mobility to varying degrees. In this manner, the functional classification system represents a continuum in which through-traffic increases and provisions for access decrease in the higher classification categories.

Figure 5: Relationship Between Functional Classification, Mobility, and Access



Functional Classification Definitions

Principal Arterials form the backbone of the road network and are generally labeled freeways and highways. These routes connect over the longest distance (miles) and are spaced less frequently than other Arterials. These freeways and highways generally span several jurisdictions and can have statewide importance. At a minimum, highways that are classified by ODOT as Interstate or Statewide Highways are considered Principal Arterials. General characteristics of Principal Arterials can include:

- Freeways have the highest level of access control, including grade separated interchanges. No at-grade driveways or connections are allowed.
- Highways generally have limited at-grade connections.
- Freeways and highways provide connections for the movement of people, services and goods between the central city, regional centers and destinations beyond the region.
- Principal Arterials that are not freeways are managed to minimize the degradation of capacity while providing limited access to abutting properties.

Arterial streets interconnect with the Principal Arterial highway system. Arterials provide general mobility for travel within the Washington/Multnomah/Clackamas County area. Correctly sized Arterials at appropriate intervals allow through-trips to remain on the Arterial system thereby discouraging use of Local Streets for cut-through traffic. Arterial streets link major commercial, residential, industrial and institutional areas. General characteristics of Arterials may include:

1 *FHWA Highway Functional Classification concepts, criteria and procedure, 2013*

- Arterials serve as primary connections to Principal Arterials, and connect to other Arterials, Collector and Local Streets where appropriate.
- Arterials in the rural area provide connections to neighboring cities and farm-to-market access between urban and rural areas. Most rural Arterials serve a mix of rural-to-urban and farm-to-market traffic. In some cases rural Arterials, especially in rural/urban fringe areas, accommodate significant amounts of urban-to-urban through-traffic during peak commuting time periods. This is not the intended function of the rural Arterial designation and is often the result of congestion on urban Arterials.
- Arterials may provide freight movement similar to Principal Arterials.
- Arterials have moderate access control for cross streets and driveways. Typically, residential driveways are not allowed access to Arterials.

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 Arterials, with reduced travel speeds. Collectors may serve as freight access routes providing local connections to the Arterial network. General collector characteristics can include:

- Collectors connect neighborhoods to nearby centers, corridors, station areas, main streets and nearby destinations in the urban area. Land development should not be sited to obstruct the logical continuation of Collector streets.
- In the rural area, Collectors are a primary link between the Local Street system and Arterials for freight, people, goods and services.
- Access control on Collectors is lower than on Arterials. Commercial, industrial and institutional uses will be eligible for direct access to Collectors in accordance with the provisions of Article V of the Community Development Code. Direct access to new residential lots is not permitted.

Neighborhood Routes are located in residential neighborhoods and provide connectivity to the Collector and Arterial system. They do not serve citywide or community circulation. Because traffic needs are greater than a Local Street, certain measures should be considered to retain the neighborhood character and livability of these routes. Neighborhood traffic management measures are allowed (including devices such as speed humps, traffic circles and other devices). New Neighborhood Routes that are not in this plan may be established via the land development process.

- The Neighborhood Route designation is appropriate for urban areas where neighborhood forms are more compact and the routes are much shorter than typically occur in the rural area.
- Traffic management or calming measures are allowed.

Commercial/Industrial Streets are a design variant of the Collector street designation and are intended to provide access to commercial or industrial properties. The application of this designation through the development review process may require a different design standard than the underlying functional classification designation.

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 can impact the effectiveness of the Arterial and Collector system when local trips are forced onto the Arterial Street network due to a lack of adequate Local Street connectivity. Local Street connectivity maps in the Community Plans identify new Local Street connections that are required by the Community Development Code in conjunction with development. New Local Streets that are not in this plan may be established via the land development process.

Rural Local Roads may be miles long because of large parcels and a relatively sparse street network. Many Rural Local Roadways are unpaved (gravel) and serviceability can vary with rainfall and maintenance. Rural Local Roads provide direct access to a variety of rural land uses including agriculture, forestry, quarry activities, low-density rural residential uses as well as rural commercial and industrial uses.

Rural Local Road characteristics include:

- Paved or unpaved surfaces.
- Narrow lane widths with roadside ditches to provide drainage.
- No access control and access points spaced far apart.
- Lack of traffic calming measures, sidewalks and illumination.

Urban Local Street characteristics include:

- Traffic calming measures are allowed.
- Access control is minimal with direct driveway connections permitted from all land use types.
- A connected network of Local Streets is required as set forth in the Local Street Connectivity Maps of the Community Plans and in the CDC.
- Sidewalks and street lighting.

Special Area Streets are sub-categories of Collector, Neighborhood Route, Commercial Street and Local Street underlying functional classification designations. Special Area street designations are most frequently applied in transit-oriented overlay districts within 2040 Center and Station Community Area designations. They are identified on the Special Area Street Overlay Map and also in the Community Plans. Special Area Street design standards are included in the Washington County Road Design and Construction Standards.

- **Special Area Collectors** are intended to link traffic from Special Area Local Streets, Special Area Neighborhood Routes, and some Special Area Commercial Streets to Arterials. Posted speeds are low to moderate. A moderate degree of non-transit oriented development traffic would be acceptable for these facilities.

  The design of a Special Area Collector provides multi-modal access to the Arterial system, station area employment and high density residential areas while discouraging traffic infiltration on local streets. In addition to autos, these facilities accommodate primary and secondary bus lines, bike lanes and sidewalks separated from the street by a landscape strip. Based on an engineering analysis, left turn lanes in medium and low density residential areas may be generally provided at intersections with Arterials.

  Developments which are oriented to Special Area Collectors are generally employment-based or multi-family residential. Single-family residential developments that abut a Special Area Collector are typically oriented away from road.

- **Special Area Neighborhood Routes** serve both a traffic collection and distribution function and provide access to adjacent properties. These facilities are intended to have less volume and less through-traffic than Special Area Collectors. Posted speeds are low and a limited amount of non-transit oriented development traffic is acceptable for these facilities. New Special Area Neighborhood Routes that are not in this plan may be established via the land development process.

The design of Special Area Neighborhood Routes emphasizes neighborhood orientation by accommodating on-street parking, transit service and bicycles in a relatively narrow paved width which includes the use of traffic calming measures. Exclusive turn lanes are not appropriate for these facilities unless needed for safety at intersections with Arterials. Special Area Neighborhood Routes primarily serve residential land uses. Development which includes small to medium scale mixed uses is also appropriate.

- **Special Area Commercial Streets** serve local access and service needs associated with urban high density residential, mixed use and employment-oriented land uses. These roads are not intended to serve through-trips but may have higher traffic volumes than Special Area Neighborhood Routes. The street may not exceed two travel lanes in each direction. Speeds should be low. New Special Area Commercial Streets that are not in this plan may be established via the land development process.
- **Special Area Local Streets** provide direct property access. They are not intended to serve through-traffic. Posted speeds are generally low. The design of Special Area Local Streets reflects the residential neighborhood function by accommodating on-street parking on a narrow paved width which can include traffic calming measures to slow down traffic. Special Area Local Streets should serve only low to medium density residential districts. New Special Area Local Streets that are not in this plan may be established via the land development process.

Table 3: Functional Classification Design Parameters*

Roadway Classification	Lanes[1]	Bike Lanes[2]	Max ROW[3]	Max Paved Width[3]
Principal Arterials & Arterials[4,5]	7	Yes	122 Feet	98 Feet
	5	Yes	98 Feet	74 Feet
	3	Yes	90 Feet	50 Feet
	2	Yes	90 Feet	48 Feet
Arterials with Streetscape Overlay[4,5,6]	5	Yes	102 Feet	74 Feet
	3	Yes	90 Feet	50 Feet
Arterials with Enhanced Major Street Bikeway[4,5,7]	5	Yes	102 Feet	78 Feet
	3	Yes	90 Feet	54 Feet
Arterials w/ Streetscape Overlay and Enhanced Major St Bikeway[4,5,6,7]	5	Yes	106 Feet	78 Feet
	3	Yes	90 Feet	54 Feet
Collectors[4]	5	Yes	98 Feet	74 Feet
	3	Yes	74 Feet	50 Feet
	2	Yes	74 Feet	50 Feet
Collectors with Streetscape Overlay[4,6]	5	Yes	102 Feet	74 Feet
	3	Yes	78 Feet	50 Feet
Collectors with Enhanced Major Street Bikeway[4,6,7]	5	Yes	102 Feet	78 Feet
	3	Yes	78 Feet	54 Feet
	2	Yes	74 Feet	38 Feet
Collectors w/ Streetscape Overlay & Enhanced Major St Bikeway[4,6,7]	5	Yes	106 Feet	78 Feet
	3	Yes	82 Feet	54 Feet
Special Area Collectors[5]	3	Yes	52 Feet	46 Feet
	2	Yes	40 Feet	34 Feet
Neighborhood Routes	2	No	60 Feet	36 Feet
Special Area Neighborhood Routes[5]	2	No**	44 Feet	38 Feet
Commercial/Industrial	4	No	70 Feet	50 Feet
	3	Yes	64 Feet	50 Feet
	2	No	64 Feet	34 Feet
Special Area Commercial Streets[5]	4	No**	70 Feet	64 Feet
	3	No**	58 Feet	52 Feet
	2	No**	46 Feet	40 Feet
Locals	24' Travel Way	No	60 Feet	32 Feet
Special Area Local Streets[5]	16' Travel Way	No	38 Feet	32 Feet

**Consult the roadway freight map for additional design considerations.*

***While these facilities do not include bike lanes, they do include wide travel lanes of 14 feet due to constrained right-of-way width—see Footnotes 2 and 5.*

Footnotes:

1. The maximum number of travel lanes that can be built without a plan amendment is identified on the "Road Lane Numbers" Map except for roads allowed to be built as provided by the Community Development Code (CDC). This plan-level decision establishes the transportation system capacity necessary to adequately serve future travel demand identified in the TSP. The number of lanes required to accommodate turning movements at intersections and interchanges will be determined through traffic analysis conducted during the transportation project development process. This project-level decision identifies physical improvements necessary at or near intersections and interchanges to safely and efficiently move toward attaining the system capacity identified in the TSP. Improvements may include turn lanes and auxiliary lanes adjoining the traveled roadway to accommodate weaving, merging, speed changes or other purposes supplementary to through traffic movement. Auxiliary lanes to address spot area capacity and safety needs may extend between intersections (including interchanges) and beyond an intersection. Opportunities for public participation are available as provided by the CDC.

2. Bikeways or bicycle lanes are required on all urban Collectors and Arterials, including Special Area Collectors. A Six-foot wide, striped and stenciled bike lane or other appropriate bicycle treatments shall be constructed along these facilities except where special constraints exist, as determined by the County Engineer. In those areas, five-foot wide bike lanes, 14-foot wide outside travel lanes or other appropriate facilities may be used and transitioned back to the appropriate bicycle facility when the constraint ends. The Bicycle Facility Design Toolkit should be referenced during the design of urban Collectors and Arterials. Outside of the UGB, refer to the Bicycle System Map and the Rural Roadway Enhancement Study Corridors Map to determine which facilities are intended to have bikeways. Rural bikeways may be a minimum of six-foot wide paved shoulders.

3. Minimum right-of-way and maximum paved widths identified here are, as a rule, the maximum that can be built on roadway segments without an amendment to the TSP. However, plan amendments will not be required when it is determined by the County Engineer during the project development or development review processes that these maximums should be exceeded. The reasons to exceed the maximums may include accommodation or topography or other project-level refinements associated with safety and/or wider bicycle and/or pedestrian facilities; transit facilities; on-street parking; project impact mitigation measures; and intersection, interchange or other project features identified as necessary for safe, efficient operation of the planned transportation system. All intersections along Arterials and Collectors shall be planned to include right-of-way necessary for turn lanes within 1,000 feet of intersections based on a 20 year analysis of intersection needs. Actual right-of-way requirements may be less than the maximums specified in the table based on roadway characteristics and surrounding land uses, as determined by the County Engineer. Such a determination can be made when there is a finding that a turn lane is reasonably unlikely to be needed based on anticipated future development and traffic analysis, and after consideration of other related transportation facilities including storm water quality facilities. Acquiring adequate right-of-way is important to avoid unnecessary and costly future improvement impacts. In all circumstances, Arterial, Collector and Neighborhood Route right-of-way shall be no less than the roadway width (curb to curb or back of shoulder to back of shoulder) plus 24 feet. In rural areas, the maximum right-of-way for Collectors shall be 60 feet. Article VII of the CDC identifies land use standards, public notice and involvement provisions and appeal opportunities that are provided in the land use permitting process.

4. On those roadways designated on the Pedestrian System Map as 'Pedestrian Parkway', 'Streetscape Overlay', or located within identified 'Pedestrian Districts', sidewalks widths and other design features such as planter areas and crosswalks should be determined based on the Washington County Pedestrian Enhancements Design Guidelines and/or applicable standards in the Community Plans and/or the CDC, as determined by the County Engineer. On those roadways designated on the Bicycle System Map as 'Enhanced Major Street Bikeway', buffered bike lanes and other bicycle treatments shall be determined based on the Bicycle Facility Design Toolkit and/or other applicable standards in the Community Plans and/or CDC, as determined by the County Engineer.

5. 'Special Area' streets (Collector, Neighborhood, Commercial or Local classifications) are shown on the 'Special Area Street Overlay' maps. Special Area Local Streets may also be designated in the appropriate Community Plans and/or by the CDC. Additional Special Area Neighborhood Routes and Special Area Local Streets may be designated using the development review process. Special Area Street designs will be determined via the development review process. While Special Area Commercial Streets do not include striped bicycle lanes, they shall include wide travel lanes of 14 feet to accommodate bicycle use. For Special Area Collectors, in addition to the right-of-way, a nine-foot minimum utility/sidewalk easement shall be dedicated on each side of the right-of-way. For Special Area Local streets, in addition to the right-of-way, a ten-foot minimum utility/sidewalk easement shall be dedicated on each side of the right-of-way. For Special Area Alleys, additional right-of-way may be required as part of development review. The right-of-way determination may include special consideration of other related transportation and water quality facilities, such as (but not limited to): low impact water quality treatment, parking, intersection bump outs, mid-block crossings and/or trail extensions.

6. Consult the Pedestrian System Map for the Streetscape Overlay definition and location.

7. Consult the Bicycle System Map for the Enhanced Major Street Bikeway definition and location. The design of Special Area Commercial Streets reflects intensive localized urban use by all modes. The road must accommodate autos, trucks, buses and bicycles while also providing transit stop amenities and frequent opportunities for pedestrian crossings. Sidewalks are wide and have tree wells to encourage walking.

Table 4: Interim Washington County Motor Vehicle Performance Measures

Maximum Volume to Capacity (V/C) Ratio Standards				
Location[2]	**AM/PM Peak Two-hour Period**			
	Target[1] Performance Measures[3]		**Acceptable[1] Performance Measures[3]**	
	First Hour[4]	**Second Hour[4]**	**First Hour[4]**	**Second Hour[4]**
Regional Centers Town Centers Main Streets Station Communities	.99 (E)	.9 (D)	.99 (E)	.99 (E)
Other Urban Areas	.9 (D)	.9 (D)	.99 (E)	.9 (D)
Rural Areas	.9 (D)	.9 (D)	.9 (D)	.9 (D)

1 For development review purposes, these performance standards will be used in assessing safety improvements. For plan amendment purposes, if a plan amendment is predicted to exceed the acceptable performance standard, the performance on applicable facilities will not be allowed to deteriorate further, and mitigation may be necessary. For project development purposes, these performance standards will be used to evaluate conditions beyond the transportation plan's planning horizon, as appropriate.

2 For location reference see 2040 Growth Concept Design Types Map.

3 Vehicle performance shall be determined by using volume-to-capacity ratios. Volume-to-Capacity equivalencies to Level of Service (LOS) are as follows: LOS C = V/C of 0.8 or lower; LOS D = V/C of 0.81 to 0.9; LOS E = V/C of 0.91 to 0.99. Further discussion of vehicle performance is provided in the Technical Appendix.

4 First Hour is defined as the highest hour of the day. Second hour is defined as the hour following the first hour.

Access Management

This section elaborates on the access management provisions described by Strategy 5.3.5

Roadway Access:

All developments shall have legal access to a county or public road. Access spacing shall be measured from existing or approved accesses on either side of a street or road. In general, no use is permitted to have direct access to a street or road except as specified below unless otherwise specified in the CDC.

Principal Arterials:

Principal Arterials shall be designed and developed as limited access facilities. Access to a Principal Arterial is subject to approval by ODOT through the State's Access Management Policy and its implementing measures.

Arterials:

Direct access to Arterial roads shall be from Collector or other Arterial roadways.

Collectors:

All commercial, industrial and institutional uses with one hundred fifty (150) feet or more of frontage will be permitted direct access to a Collector. Where a common access is available it shall be used, provided that such use will not result in serious operational or safety problems. Access shall be located to provide adequate left turn refuge as required by Resolution and Order No. 86-95 as modified or updated.

Neighborhood Routes:

All residential, commercial, institutional and industrial uses with seventy (70) feet or more of frontage will be permitted direct access to a Neighborhood Route. Uses with less than seventy (70) feet of frontage shall not be permitted a permanent single or separate direct access to a Neighborhood Route. Where a common access is available it shall be used, provided that such use will not result in serious operational or safety problems.

Local Streets:

Access points near an intersection of a Collector or Arterial shall be located beyond the influence of standing queues of the intersection in accordance with engineering standards.

Interim Access:

Interim access onto any county road in the unincorporated or incorporated urban area shall be permitted only upon issuance of an access permit. An access permit may only be issued upon demonstration of compliance with the provisions of the road standards and the standards of the CDC.

Accessibility

Accessibility provides the connection and integration between land use and transportation. The accessibility goal and its related objectives and strategies encourages Washington County to plan for equitable access and a barrier free transportation system, including compliance with the Americans with Disabilities Act (ADA). The transportation system should be designed to provide affordable and equitable access to travel choices that serve the needs of people and businesses, including those with low income, children, the elderly and people with disabilities. The transportation system is needed to provide access to and within all destinations, with particular emphasis on providing access to destinations essential for daily needs.

Accessibility can be measured by the ability to reach desired goods, services, activities and destinations with relative ease and within reasonable timeframes and costs. Many factors may affect accessibility (or physical access), including the quality, cost and affordability of transportation options, land use patterns, connectivity of the transportation system and the degree of integration between travel modes. The accessibility of a particular location can be evaluated based on distances and travel options and how well various modes serve that location.

The Regional Transportation Plan (RTP) calls for a measurement of “basic infrastructure.” This performance target is measured by the number of essential destinations accessible within 30 minutes by trails, bicycling and public transit or within 15 minutes by sidewalk. The RTP also calls for “access to daily needs” using the same measurement methodology, but specifically measures transportation disadvantaged populations. The RTP calls for monitoring of these performance targets to provide accountability. Decision-makers can use this information to adapt policies and investment strategies based on what is learned.

The Americans with Disabilities Act (ADA) of 1990 affects a great deal of transportation infrastructure. Many of the requirements have been implemented through the Uniform Building Code, which outlines the details of designing and implementing appropriate features for people with disabilities. Washington County sidewalks are now required to be implemented with curb cuts at intersections. As a component of ADA compliance, TriMet operates a paratransit service called LIFT. Registered customers who have a disability or disabling health condition that prevents independent use of TriMet buses and/or trains may use this shared-ride public transportation service. Rides are by advance reservation only. The origin and destination of a trip must be located within TriMet’s service boundary and within three-quarters of a mile of fixed route transit service. TriMet’s stops, stations and vehicles have accessibility features that help make it easier for people with disabilities to readily use TriMet.

Another form of accessibility is emergency response. Emergency response time for life-threatening emergencies is critical. Total response time for these events is measured in three elements:

- **Alarm processing** — the time interval from incident initiation (9-1-1 pickup) to dispatch.
- **Turnout** — the time interval from dispatch to vehicle enroute for first arriving unit.
- **Travel** — the time interval enroute to arrival of first responding unit.

Goal 6: Accessibility

Provide safe and efficient access to destinations within Washington County.

Objective 6.1 Provide an accessible, multi-modal transportation system that meets the needs of the community.

- **Strategy 6.1.1** Coordinate with private and public developers and the public to provide access via a safe, efficient and appropriately balanced system of complete streets.
- **Strategy 6.1.2** Encourage modifications that bring driveway and other access points into compliance or closer to compliance with applicable standards.
- **Strategy 6.1.3** As appropriate, require development adjacent to transit routes and within transit oriented districts to provide direct pedestrian and bicycle access to transit, including street crossings.
- **Strategy 6.1.4** Provide or encourage enhanced or improved pedestrian and bicycle street crossings in locations where demand for crossing is apparent, conflicts between vehicles and pedestrians or bicycles have been observed and safe operational conditions can be maintained for all modes after installation. Such crossings are preferred at intersections. Mid-block crossings of county roadways must meet applicable warrants.
- **Strategy 6.1.5** Develop performance measures that quantify the accessibility of essential destinations and work to increase the accessibility of those destinations.
- **Strategy 6.1.6** Consider all abilities and travel options when planning, designing and implementing transportation improvements.
- **Strategy 6.1.7** Provide adequate access for emergency service vehicles throughout the system. Coordinate with emergency service providers on proposed transportation improvements and/or design and placement of traffic calming devices. Consider emergency vehicle access during the review of proposed private development actions as required by the Community Development Code (CDC).
- **Strategy 6.1.8** Identify opportunities and consider actions to improve access in underserved communities.

Connectivity

Connectivity creates multiple opportunities for movement within and between neighborhoods as well as within areas of employment and other parts of the community. The connectivity goal encourages Washington County to plan for an interconnected transportation network. Connectivity focuses on an interconnected multi-modal local street network and provision of accessways for non-motorized modes where multi-modal street connections are impractical. This encourages local travel needs so that local trips are can be made easily and efficiently, without needing to use the Arterial or Collector street system. New development and redevelopment is required to meet connectivity standards.

This goal does not necessarily require a grid street system, but is intended to provide for a development and system pattern which provides choices and convenient circulation for pedestrians, bicyclists and transit users and motorists. The Community Development Code (CDC) requires appropriate neighborhood circulation. See the CDC for more information regarding requirements and standards for both on-site and off-site circulation.

Local Street Connectivity

Local Streets are intended to provide direct property access. Local Streets should provide routes for local trips to help keep through trips on Collector and Arterial streets. While Local Streets are not intended to serve through traffic, the aggregate effect of Local Street connectivity impacts the effectiveness of the Arterial and Collector system. Therefore, a connected Local Street system should be established in order to provide for local travel needs and to help preserve the capacity of the Arterial and Collector streets for longer or regional trips. Local Street connectivity requirements are defined within the CDC.

Community Plan Local Street Connectivity Maps

The Local Street system will provide a connected network that facilitates local travel needs, lands that have been determined to be of sufficient size and that are candidates for development or redevelopment, are identified on the Local Street Connectivity maps/Local Street Connective Maps and standards are used to meet Metro's street connectivity requirements, provide a generally direct and uncircuitous pattern of streets and to ensure the development will not preclude future street connections to lands not yet developed. The Local Street Connectivity Map indicates where, as part of development, Local Streets are required to connect to the existing system. Where it is impracticable to provide a Local Street connection based on criteria in the CDC, bicycle and pedestrian accessways are required instead. The general connectivity requirements of the CDC apply to lands not on these maps.

Washington County has identified potential Local Street Connectivity Lands. These lands are defined as contiguous vacant or underdeveloped urban lands of five acres or more. On these lands, new development would be subject to a shorter block length standard (530 feet vs. the existing 600 foot standard). In addition, cul-de-sacs are limited to no more than 200 (two hundred) feet and no more than 25 dwelling units are allowed on closed end streets that cannot be extended due to physical or environmental constraints. Within areas designated as Local Street Connectivity Lands, the connectivity standards are applicable to mixed use developments, including multi-family and/or commercial development. Street connections would be required where practicable on such lands.

Circulation System Design and Transit Oriented design principles

Throughout Washington County the design and location of the circulation system in a community is the key element for determining pedestrian connectivity and the arrangement of land uses. These principles and standards are of particular importance with Transit Oriented Districts. Within such Transit Oriented Districts, an urban scale block dimension and clearly delineated pedestrian system should provide direct connections to transit service. These direct pedestrian connections should be clearly marked and designed to avoid conflicts with vehicles. When developing the design, considerations may include the anticipated concentrations of employment or housing as well as public building and common open spaces.

Goal 7: Connectivity

Provide improved and new transportation connections within and between developed and developing areas.

Objective 7.1 Provide an interconnected transportation network that offers multi-modal travel choices and minimizes out-of-direction travel for all modes.

- **Strategy 7.1.1** Require development to provide an interconnected local street system as set forth in the Community Development Code and/or Community Plans, including a pedestrian and bicycle network. Require accessways in locations where street connections are undesirable or impracticable.
- **Strategy 7.1.2** Require development to provide connections to established or planned accessways, trails, easements and other non-motorized facilities.
- **Strategy 7.1.3** Require development to address connectivity standards on lands designated on the Local Street Connectivity Maps and/or within areas designated as Transit Oriented Districts.
- **Strategy 7.1.4** Prioritize projects that complete facility gaps and deficiencies as funding allows.
- **Strategy 7.1.5** Encourage the off-street trail networks to be integrated with on-street pedestrian and bicycle facilities.
- **Strategy 7.1.6** Encourage the development of a complete roadway network to serve travel needs, both in inter-urban and intra-urban areas.

Objective 7.2 Identify as Refinement Areas where new Arterial or Collector connections or other improvements are necessary, but the specific location, mode and/or function has not been determined.

- **Strategy 7.2.1** Within designated Refinement Areas, require that development demonstrate how the development proposal shall either accomplish or not preclude the needs identified by the Refinement Area.
- **Strategy 7.2.2** Seek to identify the specific location, mode and/or function within Refinement Areas, and amend the appropriate maps to remove the refinement area designation as funding and resources allow.

Objective 7.3 Consider new road alignments shown on the Functional Classification System Map and Community Plans to be general and subject to modification depending on impacts and issues assessed during the project development and development review process.

- **Strategy 7.3.1** Analyze and design new roads when development applications are received or funds become available.
- **Strategy 7.3.2** Provide flexibility at the plan and project development level to respond to location-specific considerations consistent with environmental, community and transportation system objectives.
- **Strategy 7.3.3** Identify on-site new and/or additional Neighborhood Routes and Special Area Local Streets through the development review process.
- **Strategy 7.3.4** Modify alignment of proposed roads as determined through project development and/or the development review process and consistent with the Implementation section of this plan.

Hall Boulevard Near Oak Street

Roadway Element

Washington County's transportation system includes over 1,300 miles of county roads, as well as nearly 1,000 miles of state or city roads, shared by motor vehicles, bicycles, pedestrians, trucks and public transit. The County's roadway system includes a wide variety of roadways—from major urban boulevards to gravel rural roads. The Roadway Element identifies an integrated multi-modal network of complete streets that provide an interconnected transportation system for all modes and users.

Functional Classification

The Functional Classification map identifies the classification for all County roadways. Each roadway's role in providing access to individual properties and mobility for travel on the network is defined by the Functional Classification designation. The Functional Classification system describes a hierarchy of road designations, which includes Principal Arterials, Arterials, Collectors, Commercial/Industrial Streets, Neighborhood Routes and Local Streets.

Interim functional classification designations:

Some roadways in Washington County have an interim Functional Classification designation. These are roadways where the designation is expected to change once planned elements of the system have been completed. These roadways/locations are described below.

- **Joss Avenue** — NW Joss Avenue is designated as an Interim Collector on the Functional Classification Map. It is anticipated that NW Joss Avenue ultimately will be reclassified to its expected function as a Neighborhood Route after the construction of Shackelford Road to NW 185th Avenue. See the Bethany Community Plan (Chapter 2: North Bethany Subarea Plan) for additional details.
- **Saltzman Road** — The segment of NW Saltzman Road between NW Laidlaw Road and NW Bayonne Lane is anticipated to be realigned west of the current alignment, to the intersection of NW Laidlaw Road at NW 130th Avenue. The realigned segment of Saltzman Road is designated on the Functional Classification Map as a Proposed Collector. Interim improvements to the existing alignment may be implemented to enhance the operation of the facility until the realignment has been completed. After the realignment of Saltzman Road is in place, it is anticipated that the current alignment of Saltzman will be reclassified consistent with its new function as either a Neighborhood Route or a Local Street. The appropriate classification will be determined based upon observed traffic operations and needs after the realignment is complete.

Lane Numbers & Right-of-Way Protection

The maximum number of lanes that can be built on individual roads without a plan amendment is identified on the Lane Numbers map. Intersections along Arterial and Collector roads shall be planned to include right-of-way for turn lanes within 1,000 feet of the intersections. Specific needs for turn lanes are determined through traffic analysis conducted at the time of development and/or during the transportation project development process (as described in Table 3: Functional Classification Design Parameters Goal 5: Mobility).

Special right-of-way needs:

Several roadways in Washington County have special designations, where performance monitoring over time is necessary or where additional right-of-way may be needed.

- **Jackson School Road** — Urban Growth Boundary (UGB) to Evergreen Road: Urban Improvements to Jackson School Road are to be within the UGB or existing right of way. Dedication of urban land necessary for urban improvements to the roadway must be to the eastern side of the right-of-way within the UGB. Urban improvements, and the dedication of land to accommodate urban traffic, need to be offset from the centerline to the east such that the roadway can be accommodated within the UGB or existing right of way. Continued operation and maintenance of the both the rural and urban portions of the roadway is unaffected.
- **Kaiser Road** — Springville Road to Bethany Boulevard: The intersections of Kaiser Road at Bethany Blvd and Springville Road control the operations of this segment of Kaiser Road. As development occurs in North Bethany and throughout the region, this section of Kaiser Road may require additional turn lanes and/or travel lanes beyond the three lane configuration identified on the TSP map.
- **Saltzman Road/130th Avenue** — Laidlaw to County line: This segment of Saltzman Road/130th Avenue represents a future opportunity for a north/south connection between Laidlaw Road and Springville Road. This connection is classified as a two-lane neighborhood route until such time that a reclassification is warranted. Additional travel lanes, turn lanes, bicycle facilities and right-of-way may be required to complete the transportation grid necessary to meet the future system needs of the traveling public.
- **Tualatin Valley Highway** — Maple Street to Cedar Hills Boulevard: As discussed in the refinement area section later in this document, a long-term transit solution for Tualatin Valley Highway has yet to be identified. In advance of this transit study involved jurisdictions should consider the preservation of land for Business Access Transit (BAT)/High Capacity Transit (HCT) uses. This land area is not intended to be used for general purpose through lanes.

Major Intersections

To a large degree, the motor-vehicle system functions only as well as its intersections. Intersections that are expected to serve very high motor-vehicle traffic volumes pose additional challenges. Intersection design, and the analysis necessary to support it, ordinarily is undertaken as part of an improvement project or land development process. The locations identified as major intersections are potential candidates for grade separation, additional at-grade turn lanes and/or other intersection design solutions. Additional right-of-way in the vicinity of major intersections may be needed to preserve options for long-term system needs. Major intersections should be evaluated with regard to the land use context and all the goals of the TSP. Particular attention should be given to multi-modal system accessibility and local connectivity within the vicinity of these intersections. The solution(s) identified should consider impacts on safety, economic vitality, livability and the natural environment.

Major Intersections are identified at the following locations:

- 170th Avenue @ Tualatin Valley Highway**
- 185th Avenue @ Baseline Road
- 185th Avenue @ Cornell Road
- 185th Avenue @ Evergreen Boulevard
- 185th Avenue @ Tualatin Valley Highway*
- 185th Avenue @ Walker Road
- Brookwood Parkway @ Evergreen Parkway
- Cornelius Pass Road @ Cornell Road
- Cornelius Pass Road @ Tualatin Valley Highway*
- Murray Boulevard @ Tualatin Valley Highway*

** Included in the TVCP*
*** Improvements recommended for beyond the time frame of the TVCP*

Major Intersections may serve as significant conflict points for all modes. Such intersections can easily become chokepoints or bottlenecks for motor-vehicle travel, and hazardous and/or intimidating for users of non motorized modes. Depending on the severity of the problems, the impacts to all modes can affect a large area beyond the intersection, and may cause problems that ripple throughout the transportation system, causing vehicle delay and/or intimidating barriers for bicycle and pedestrian travel. Impacts may be particularly problematic in areas where community design and land use goals could be compromised by the presence of a Major Intersection. This plan does not identify solutions to traffic problems at the Major Intersection locations. Those solutions can be studied through coordinated interagency planning efforts, which will determine the ultimate intersection design and define any associated right-of-way needs.

For intersections studied as part of the 2013 Tualatin Valley Highway Corridor Plan (TVCP), near-term improvements such as signal timing, transit prioritization, traffic operations monitoring and specific turn lane configurations have been identified. The TVCP intersection improvements (and/or other reasonable replacement improvements) are to be implemented and prioritized as funding allows. If, after the lifespan of the TVCP and/or the improvements consistent with the TVCP have been implemented, motor vehicle traffic congestion becomes unacceptable then these Tualatin Valley Highway intersections should be considered as candidates for grade separation and/or other intersection improvements to meet travel needs.

Roadway System Adequacy

The roadway system identified in this plan is a component of an integrated multi-modal network of complete streets. The Arterial and Collector roadway system identified by the lane numbers map constitutes an adequate system for meeting anticipated travel needs. In general, the planned roadway component of the network is anticipated to meet Oregon Highway Plan mobility targets and standards, as well as the Regional Transportation Functional Plan interim mobility deficiency thresholds and operating standards, except for the segments identified in the technical appendix. These standards are further identified by interim Washington County Motor Vehicle Performance Standards within Goal 5 (Mobility) of this TSP.

The technical appendix to this plan includes a list of project candidates, which may be implemented within reasonably achievable funding constraints. The technical appendix also identifies various locations that are forecast to exceed the motor vehicle performance standards after the implementation of planning improvements. These potential deficiency locations will require additional monitoring and system performance evaluation over time. For such locations, the ultimate decisions regarding the modes, functions, general locations of solutions and potential development of alternative mobility measures and standards, are deferred to future refinement planning to be incorporated into the next TSP update.

Special Area Streets

Special Area Streets are identified on the Special Area Street Overlay Maps as well as in the Community Plans. Special Area Street design standards are included in the Washington County Uniform Road Improvement Design and Construction Standards.

Long Term Roadway Jurisdiction

The Long Term Roadway Jurisdiction map identifies roadways that are considered to be appropriately under County jurisdiction in the long term, with remaining roadways either staying under state jurisdiction or becoming city roadways as currently unincorporated areas are annexed.

Rural Road Enhancement Study Corridors

The Rural Road Enhancement Study Corridors identify corridors where conflicting travel needs of different users must be considered and monitored. Many of these rural roadways were originally designed and built

to accommodate only local and agricultural-related traffic. Now they may host urban traffic, farm equipment and commercial freight traffic. The identified corridors may be accommodating travel beyond the scope or intensity intended or envisioned during their design. The travel needs for different users must be considered and monitored. Such users may include urban motor vehicle travelers using these routes as regional connections for cross-county or cross-region travel, farm equipment and commercial freight traffic as well as bicyclists using them for both recreational and commuting travel. Minor enhancements (consistent with OAR 660-012-0065) may be appropriate to consider along these corridors as resources allow.

Enhancement considerations should not be limited to motor vehicle traffic. The rural roadways of Washington County continue to be popular bicycle routes for both recreational and commuting travel. In addition, farm-machinery and farm related travel, as well as commercial freight travel, need to be considered.

A variety of agricultural resources and communities are located along these rural routes. The owners and operators of these resources and residences in these communities are likely to be most affected by any enhancement of these facilities. Furthermore, these parties may have considerable insight into how such enhancements could be most effective. Ongoing dialog and coordination with the affected parties should be conducted as part of the assessment of rural enhancement solutions.

Identification and evaluation of enhancement improvements should be considered as available funding is identified. Specific improvements are to be identified at the time of the evaluation. Some sample considerations may include:

- Sight distance improvements
- Pavement markings
- Advance curve warning signs
- Larger signs and/or reflective sign posts
- Intersection illumination
- Flashing beacon in advance of intersections
- Vegetation control
- Shoulder widening
- Other intersection improvements

Refinement Areas

Refinement Areas are locations that have been identified where further study is needed to determine the mode, function and/or general location of a future solution or transportation improvement. Further study of a Refinement Area may occur through a transportation planning process, capital project development or the land development process. Before development may occur on land within a Refinement Area, in addition to other requirements, the development application must demonstrate how potential solutions to the transportation need will (at a minimum) not be precluded by the proposed development.

NW 185th Avenue and OR Highway 26 Interchange Refinement Area:

The need for improvements to the 185th Avenue and Highway 26 Interchange has been identified as a potential future need. The design and other attributes of the interchange improvements require additional refinement.

185th Avenue Extension Refinement Area:

There is an identified potential future need for an extension of 185th Avenue connecting from SW Gassner Road to SW Kemmer Road. The extension would help relieve traffic congestion and improve traffic operations North-South. The refinement area is expected to be evaluated in conjunction with planning for the urban lands in the vicinity, particularly south of Kemmer Road.

Day Road Overcrossing Refinement Area:

The Basalt Creek Transportation Refinement Plan identified a potential need for a future Arterial corridor extending from the intersection of Boones Ferry Road and Day Road over Interstate 5 and connecting to Elligsen Road. The proposed Arterial is not intended to provide access to or from Interstate 5. This refinement area is intended to identify that a roadway alignment shall be evaluated prior to development or redevelopment occurring. The final alignment will be determined through concept planning after the refinement area has been brought into the Urban Growth Boundary.

I-5 to Highway 99W Refinement Area:

In 2009 the I-5 to 99W Connector study was completed and resulted in a recommendation that included a variety of transportation investments to improve the area's road, transit, bicycle, pedestrian and trail networks. The result of the project acknowledged a desire to distribute traffic across the network and established eight conditions that need to be addressed before the Southern Arterial can proceed to construction. These eight conditions are listed in the technical appendix to this plan. Issues that need to be examined in greater detail include:

- Evaluate alignment options and their environmental impact;
- Integrate the proposal with the concept plan and transportation system plan for the UGB area and any Urban Reserves designated in the area;
- Address any requirements that may result from adoption of an exception to Goal 14 (if needed) for an urban facility outside the UGB;
- Integrate the proposal with the regional mobility corridor between Tigard to Wilsonville to ensure these east-west arterials and I-5 itself could effectively function together; and
- Determine the most appropriate approach to connecting the Southern Arterial to I-5, including options for improvements to the I-5/North Wilsonville interchange, or consideration of extending the Southern Arterial east across I-5 to Stafford Road, thereby providing better access to I-205.

Many of the regional conditions can be met within the land use planning for the UGB expansion areas and/or Urban Reserves areas. Land use planning processes within the area may require additional transportation system refinement planning to integrate the plan with the I-5 to Highway 99W corridor strategy.

Since the completion of the I-5/99W Connector Study, Washington County led the Basalt Creek Transportation Refinement Plan along with Metro, ODOT and the Cities of Tualatin and Wilsonville. The purpose of this refinement plan was to determine the major transportation system to serve the Basalt Creek Planning Area. The plan sets the stage for land use concept planning and comprehensive plan development for the Basalt Creek area. The need to plan for the future transportation system was driven by future growth in the Basalt Creek area itself as well as almost 1,000 acres of future industrial development targeted for surrounding areas. This plan refined the recommendations from the I-5/99W Connector Study and the Regional Transportation Plan, generally for the area between 124th Avenue on the west, and I-5 on the east. As a result of this planning effort, agreement was reached regarding a set of roadway improvements including the extension of SW 124th Avenue, a new east-west roadway between that

extension and Boones Ferry Road, a new overcrossing of I-5 to Stafford, a new overcrossing of I-5 at Day Road and several upgrades to the existing roadway network between Tualatin and Wilsonville. The results of the Basalt Creek Transportation Refinement Plan have been incorporated into the multi-modal network of complete streets depicted on the various transportation maps in this TSP.

West of 124th Avenue and through the Brookman Addition Concept Plan area additional refinement effort is still needed. There continue to be concerns related to potential urban development, and the intersection of the Southern Arterial with Highway 99W. During the development of the Brookman Addition Concept Plan the ultimate location of the Southern Arterial was not known. The coordination of the two processes resulted in the recommendation of the Brookman Addition Concept Plan that the existing intersection of Brookman Road and Highway 99W be realigned to the north to avoid conflicts with a potential Southern Arterial alignment further south. The Brookman Addition Concept Plan indicated that Brookman Road would serve as a Collector roadway, to provide access to future development within the area. No identified location for the Southern Arterial has been established since the adoption of the Brookman Addition Concept Plan, the I-5 to 99W Connector Study and designation of Urban Reserves south of Brookman Road. Therefore, this area remains as a refinement area.

In the interim, consistent with conditions for strategic protection of right-of-way for the Southern Arterial in the I-5 to 99W connector study, Brookman Road has been designated as an Arterial with 5-lanes of right-of -way. It is recognized that changing the role and function of Brookman Road would require modifications to the Brookman Addition Concept Plan to determine how future development would occur. During the interim, while refinement planning has not yet been completed, access spacing and other requirements will need to be evaluated on a case by case basis at the time of any development application. The long-term intent is to reevaluate the Brookman Addition Concept Plan in the context of the Urban Reserve designation to the south. The evaluation would consider the refinement of both the location Southern Arterial, and a local Collector level roadway(s) to serve to the area. As the issues for the Southern Arterial are resolved (including the long-term alignment) appropriate changes to these interim designations should be considered.

Short-term regional strategy

- Identify transit improvements, specifically east-west connections between Tualatin and Sherwood though TriMet's Service Enhancement Plan.
- Upgrade existing streets to two lanes with turn lanes, traffic signal timing, bicycle lanes and sidewalks, including Herman Road, Tualatin-Sherwood Road and 95th Avenue.
- Add a lane to the southbound I-205 to southbound I-5 interchange ramp, extend the acceleration lane and add an auxiliary lane on southbound I-5 to Elligsen Road.
- Conduct more detailed project planning and begin construction of a two-lane extension of SW 124th Avenue from Tualatin-Sherwood Road to Grahams Ferry Road.
- Improve the intersection of Tonquin Road and Grahams Ferry Road.
- Continue Intelligent Transportation System improvements along Tualatin-Sherwood Road.
- Conduct more detailed planning to meet all the conditions placed in the proposed Southern Arterial, including:

  1. Conduct the I-5 to South Corridor Refinement Plan (includes I-5 from Portland to Tigard, I-5 from Tigard to Wilsonville and OR99W from I-5 through Tigard and Sherwood). Local jurisdictions will develop land use plans for areas added to the urban growth boundary. These planning efforts will include opportunities for further public participation and input.

2. Conduct a more detailed planning study on a potential Southern Arterial. This study will include impacts on existing development and the natural environment to refine the design and alignment location. These detailed planning studies will consider impact mitigation and coordinate with land use and transportation plans for the area. The studies will also include integration with land use plans for UGB expansion areas and Urban Reserves. The studies will consider access between I-5 and a Southern Arterial and the potential for the preferred alignment to address any conditions associated with land use goal exception appropriately for the Southern Arterial. These planning efforts will include opportunities for further public participation and input.

   In the recommended alternative, Tualatin-Sherwood Road is sized based upon the expectation there will be the Southern Arterial. Due to insufficient capacity, it is expected that Tualatin-Sherwood Road cannot meet regional mobility goals without the Southern Arterial. Further expansion of Tualatin-Sherwood Road is incompatible with the plans for both the Tualatin and Sherwood Town Centers. If the Southern Arterial is removed through future studies, there will be a significant unresolved mobility issue addressing east-west travel through this area—with resulting impacts on employment and economic vitality.

Medium-term regional strategy

- Widen existing streets to urban standards including turn lanes, traffic signal timing, bike lanes and sidewalks, including Tualatin-Sherwood Road, Roy Rogers Road, Boones Ferry Road and Herman Road.
- Widen and improve sidewalks and bike lanes on Day Road between Grahams Ferry Road and Boones Ferry Road.
- Widen Boones Ferry Road between Lower Boones Ferry Road and Martinazzi Avenue to add capacity for vehicles as well as bikes and pedestrians across the Tualatin River.
- Improve the roadway network in north Tualatin, including improvements to Cipole and Teton.
- Realign and widen Tonquin Road between Grahams Ferry Road and Oregon Street.
- Widen 124th Avenue to ultimate urban standard as a Complete Street with bicycle and pedestrian facilities between Tualatin-Sherwood Road and Grahams Ferry Road.
- Construct a new 5-lane Arterial with bike lanes and sidewalks between Grahams Ferry Road and Boones Ferry Road.
- Construct I-5 ramp improvements at the Boones Ferry/Elligsen Road Interchange.

Long-term regional strategy

- Conduct additional refinement planning and adopt land use plans for the designated urban reserves in the areas and program right-of-way acquisition for the Southern Arterial.
- Extend new Day Road overcrossing over I-5 from Boones Ferry Road to Elligsen Road (alignment to be determined through future concept planning).
- Extend new 4-lane overcrossing from Boones Ferry Road over I-5 into Urban Reserve areas east of I-5 (alignment to be determined through future concept planning).
- Construct the Southern Arterial between Highway 99W and 124th Avenue once the project conditions have been met and funding becomes available.

NW Marcotte Road Extension Refinement Area:

There is an identified need for a future full-street connection of NW Marcotte Road to NW Laidlaw Road. The extension of NW Marcotte Road would provide north-south connectivity between NW Thompson Road and NW Laidlaw Road, and improve operations on roadways in the area. Future development within the

Refinement Area shall avoid precluding the future NW Marcotte Road extension. A specific alignment will ultimately be determined by the county. Vacation of the existing NW Marcotte Road right-of-way within the Refinement Area may be considered when a specific alignment for the NW Marcotte Road extension is determined.

Mountainside Way Southern Extension Refinement Area:

There is a potential future need for a north-south Collector roadway to extend south from Bull Mountain Road west of Roy Rogers Road to connect to Roy Rogers Road at a point to be determined within the refinement area. The proposed Collector is intended to serve the developing lands as well as provide additional connectivity for the broader community. A demonstration of need for the roadway is to be determined through concept planning or other process, related to Urban Growth Boundary expansion and development in nearby areas.

North Bethany Neighborhood Route Refinement Area Map:

Refer to Area of Special Concern (ASC) 6B in the Bethany Community Plan, Chapter 2, North Bethany Subarea Plan—as amended.

NW Springville Road Extension Refinement Area:

There is a potential future need for an extension of Springville Road westward from 185th Avenue to West Union Road. The extension could help to relieve traffic at the intersection of 185th Avenue and West Union Road. The refinement area is expected to be evaluated in conjunction with the planning for the urban reserves in the area, and include an assessment of potential environmental issues.

Tile Flat Road Extension Refinement Area:

There is a future need for an extension of Tile Flat Road from its current terminus at Scholls Ferry Road to connect south to Vandermost Road. The future roadway will serve the developing community as well as provide additional connectivity for the broader community. A demonstration of need for the roadway, as well as the specific alignment and function of the roadway is to be determined through comprehensive planning and/or other processes related to planning for development in the vicinity or a future Urban Growth Boundary expansion.

Tile Flat Road / Mountainside Way Extension Refinement Area:

There is a potential future need for an extension of Tile Flat Road / Mountainside Way from Vandermost Road to the intersection of Bull Mountain Road and Roy Rogers Road. It is expected that the north-south Mountainside Way extension will be a City of Tigard facility. The potential future section of the roadway from Vandermost to Mountainside Way would serve the developing community as well as provide additional connectivity for the broader community. The specific alignment and function of the roadway will be determined through comprehensive planning in the vicinity.

Tualatin Valley Highway Refinement Area:

A refinement plan for Tualatin Valley Highway (Maple Street to Cedar Hills Boulevard) and surrounding areas called the TV Highway Corridor Plan (TVCP) was completed in 2013. The TVCP was a joint effort between ODOT, Metro, the City of Hillsboro, the City of Beaverton and Washington County that focused an examination of the transportation system to identify needs and recommend improvements for all modes of transportation. There are still two outstanding sections of the corridor left to be studied: within Beaverton (OR 217 to SW Cedar Hills Blvd) and from Hillsboro (west of SE 10th Avenue/Maple Street) to Forest Grove. A number of improvements have been identified in this corridor to address existing deficiencies and safety concerns and serve increased travel demand.

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

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

1. **Near Term Actions**
   - The proposed improvements described below will address existing needs, including multimodal system completeness and safety, and can reasonably be expected to be completed within the next 15 years with a strong commitment from one or more of the partner agencies that have jurisdiction over subject transportation facilities.
   - Complete detailed multi-agency study to determine future potential for high capacity transit solutions within the Tualatin Valley Highway corridor
   - Improve bus stops along Tualatin Valley Highway
   - More frequent bus service
   - Add street lighting on Tualatin Valley Highway
   - Improve Tualatin Valley Highway pedestrian crossings
   - Complete Planning and Conceptual design for a multi-use path
   - Fill gaps in sidewalks and add landscape buffers along Tualatin Valley Highway
   - Add directional wayfinding signs
   - Complete the (currently discontinuous and narrow) bike lanes on Tualatin Valley Highway
   - Improve bike crossings of Tualatin Valley Highway
   - Develop continuous east-west parallel bike routes north and south of Tualatin Valley Highway
   - Public community rail safety education
   - Support and promote employer incentive programs to reduce driving
   - Improve signal timing, transit prioritization and traffic operations monitoring
   - Signal prioritization for transit
   - Adaptive signal control (“smart signals” that adjust timing to congestion levels)
   - Improve operations at signalized intersections along Tualatin Valley Highway
   - Intersection modification to address safety and mobility
   - Left-turn signal improvements
2. **Opportunistic Actions**

   Understanding that funding opportunities (whether public funding or public funding in combination with private sources), may arise to pay for transportation improvements within the TVCP Project Area, this section includes projects that are important but whose implementation will be dependent on what funding is leveraged in the future. The recommendations discussed below include projects for partner agencies in the TVCP Project Area to work towards to meet the goals and objectives of the TVCP, while attempting to:

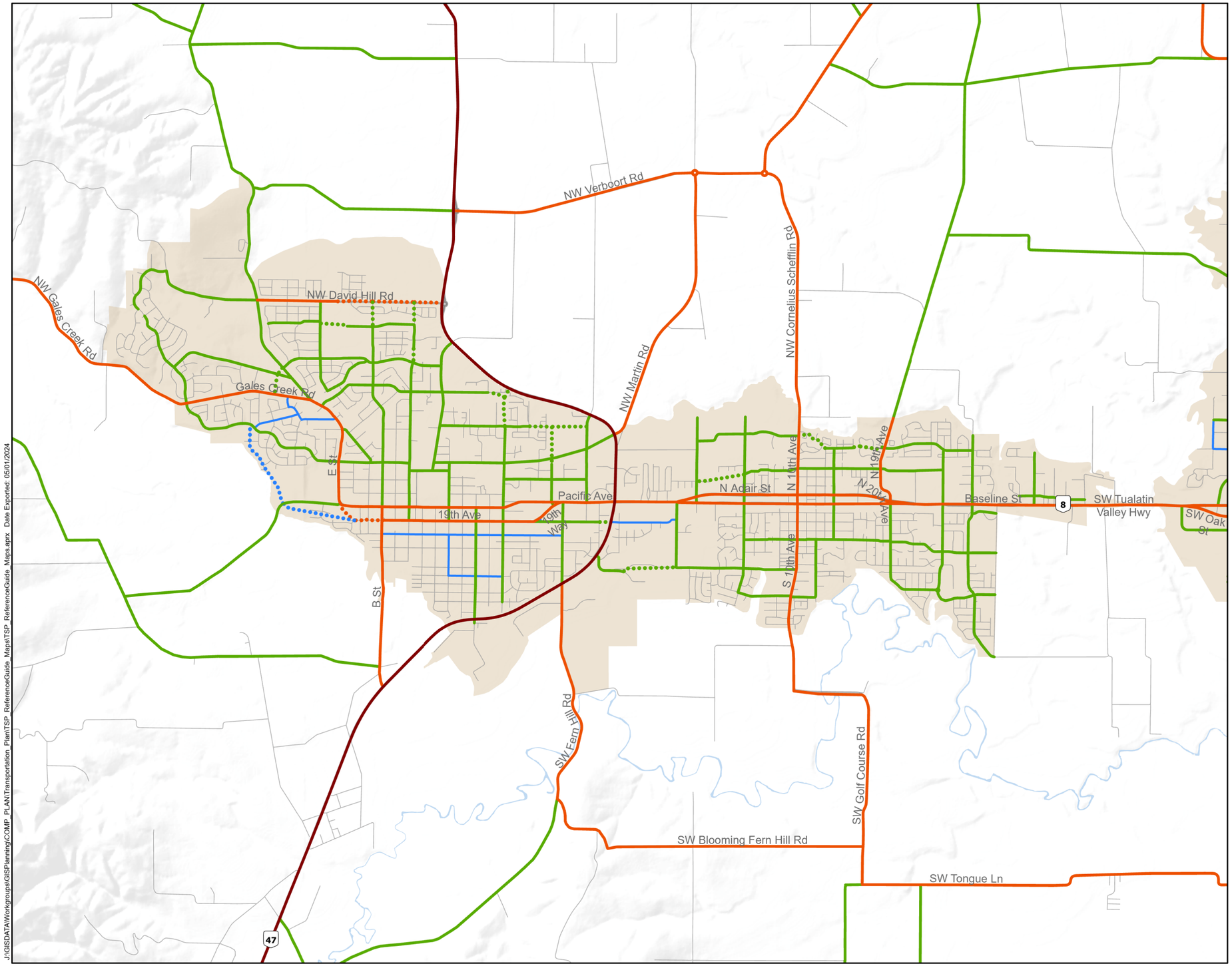
- Encourage private contributions by developers to implement the near term improvements, including reserving right-of-way for future transportation improvements (City of Hillsboro, City of Beaverton, Washington County).
- Consider the acquisition of land for the development of a westbound business access transit (BAT) lane as redevelopment opportunities arise on Tualatin Valley Highway. The City of Hillsboro may also require all half-street improvements be constructed to include the set-back curb, planter strip and sidewalk improvement to create an amenable environment for future transit solutions on Tualatin Valley Highway. This redevelopment should be consistent with ODOT standards.
- As projects arise from appropriate categories examine whether opportunities are available to use other funds to leverage this funding (e.g., safety) (ODOT, consulting with partners).
- As land use and transportation system conditions change and near term improvements are completed, consider the opportunity to update this adaptive corridor management strategy (all partners).
- Improve existing north-south routes for all modes to reduce travel demand on Tualatin Valley Highway and congestion at intersections. Improvements to roadways such as Brookwood Avenue, Century Boulevard, Cornelius Pass Road, 209th Avenue, 198th Avenue, 185th Avenue and 170th Avenue would provide the greatest benefit to the overall transportation system. Improvements on 198th Avenue south of Tualatin Valley Highway are scheduled in the next five years through Washington County's Major Streets Transportation Improvement Program. The other three corridors will require a more opportunistic approach, including working with developers of South Hillsboro to help improve 209th Avenue (City of Hillsboro, City of Beaverton, Washington County).

3. **Long Term Refinement Planning Needs**

- The refinement plan was unable to adequately address some longer term planning aspirations for the corridor. The following should be addressed as part of a future corridor refinement plan:
- If HCT is determined to be the preferred option, the location (e.g. on or adjacent to Tualatin Valley Highway) transit mode (e.g., bus rapid transit, express bus service, light rail, streetcar or commuter rail) and amount of right-of-way needed should be identified. This transit alternative analysis study may explore enhanced signal operations for transit and/or the viability of a Business Access Transit (BAT) lane in appropriate locations.
- The location of a multi-use pathway parallel to Tualatin Valley Highway.
- The location of new local street connections, in concert with access management along Tualatin Valley Highway.
- While grade separated intersections are not included in the plan, it is recognized that in the long term, all tools should be considered to maintain acceptable intersection performance to serve future transportation and community needs.

NW Wilkins Road Extension Refinement Area:

The Amberglen Community plan determined an extension of Wilkins Road, including a new bridge crossing Bronson Creek, from NW Stucki Avenue to NW 185th Avenue to be a potential future need. However, due to the unique uncertainty of the timing and level of future development in this area it is impractical to designate specific road alignment at this time.



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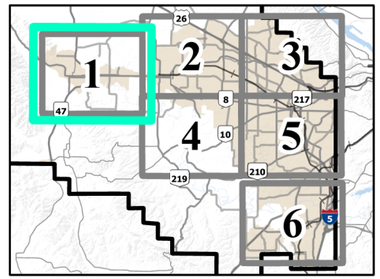
This map displays an unofficial representation of elements adopted as part of Washington County's Transportation Plan System. It is not to be considered as the official Washington County Transportation System Plan. Please contact Washington County Long Range Planning at (503) 846-3519 with any questions regarding this map.

Roadway Element



Functional Classification

Urban Area Map 1 of 6

- Freeway
- Principal Arterial
- Arterial
- Collector
- Neighborhood Route
- Proposed Arterial
- Proposed Collector
- Proposed Neighborhood Route
- Urban Area
- County Boundary
- Other Roads

0 2,000 4,000
Feet

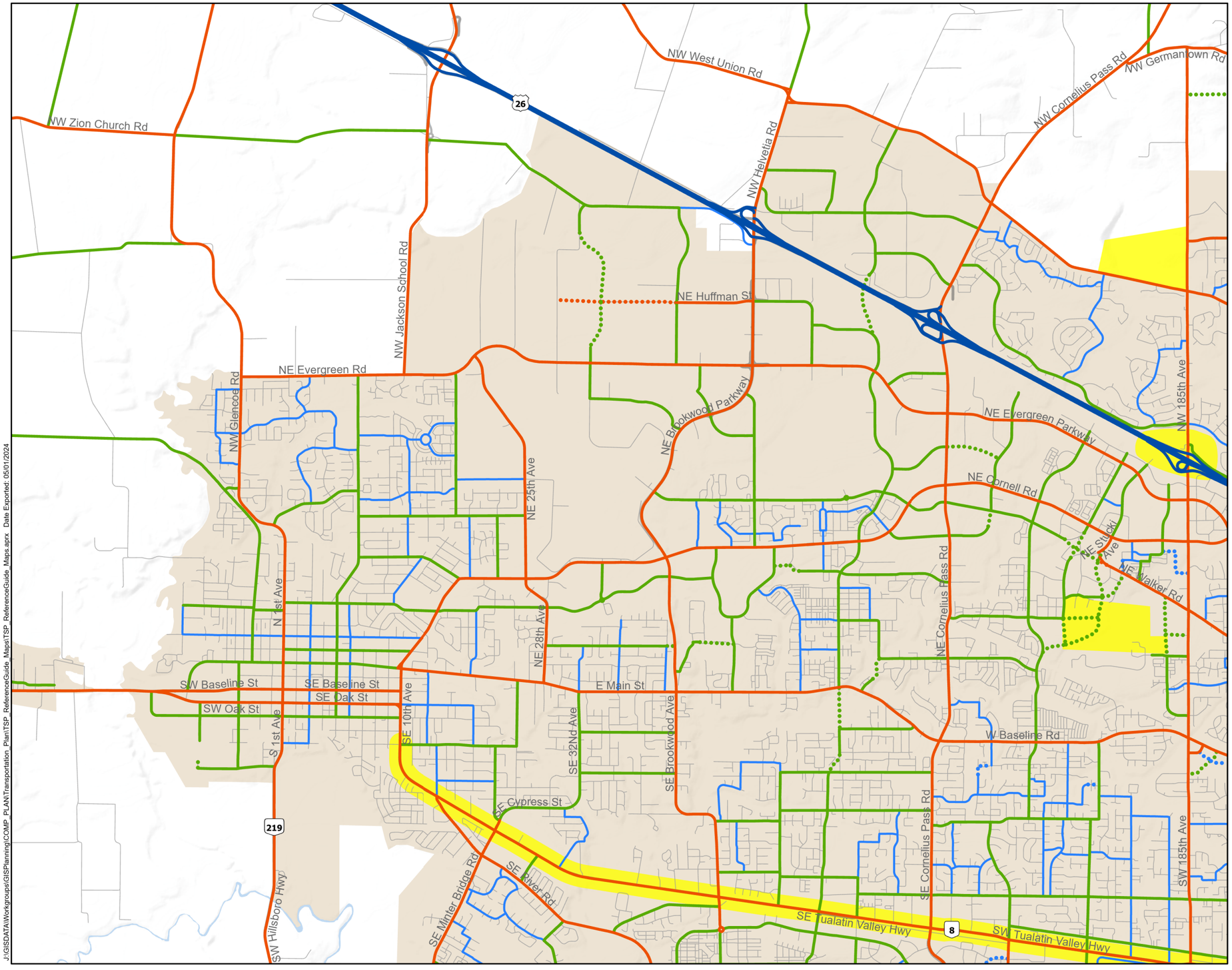
1 inch equals 3,500 feet

N

Online Map: https://bit.ly/FunctionalClass

Department of Land Use & Transportation
Division of Planning and Development Services

Effective: May 2, 2024



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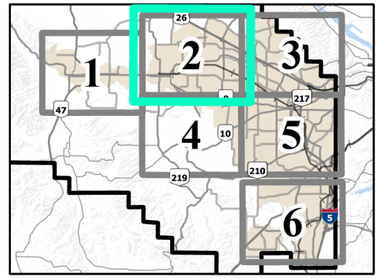
Roadway Element



Functional Classification

Urban Area Map 2 of 6

- Freeway
- Principal Arterial
- Arterial
- Collector
- Neighborhood Route
- Proposed Arterial
- Proposed Collector
- Proposed Neighborhood Route
- Refinement Area
- Urban Area
- County Boundary
- Other Roads

0 2,000 4,000
Feet

1 inch equals 3,500 feet

N

Online Map: https://bit.ly/FunctionalClass

Department of Land Use & Transportation
Division of Planning and Development Services

Effective: May 2, 2024

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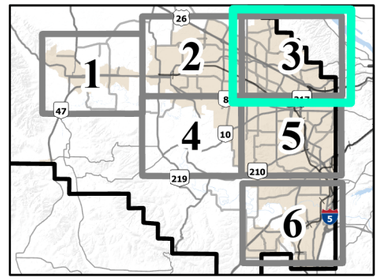
Roadway Element



Functional Classification

Urban Area Map 3 of 6

- Freeway
- Principal Arterial
- Arterial
- Collector
- Neighborhood Route
- Proposed Arterial
- Proposed Collector
- Proposed Neighborhood Route
- Refinement Area
- Urban Area
- County Boundary
- Other Roads

0 2,000 4,000
Feet

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N

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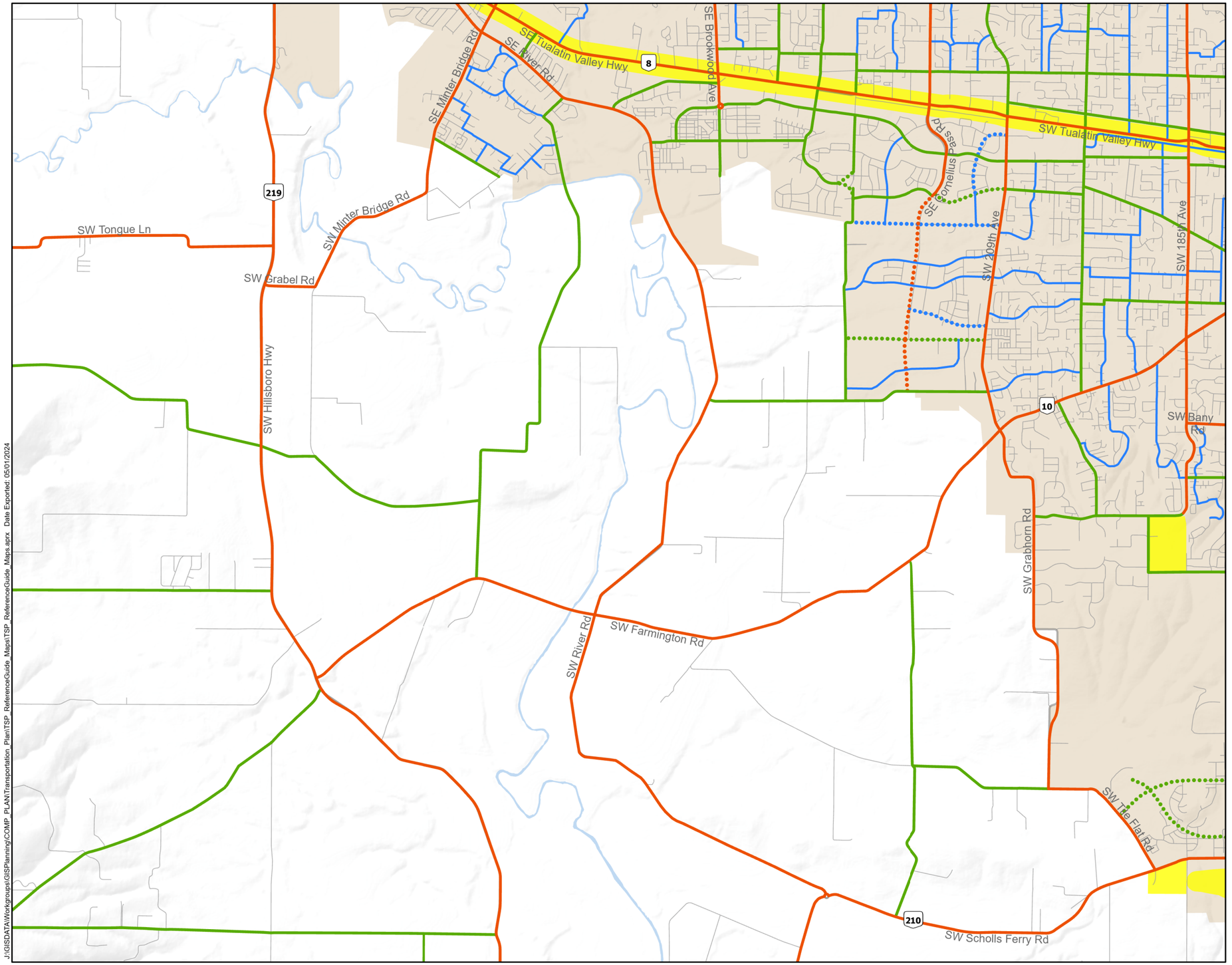

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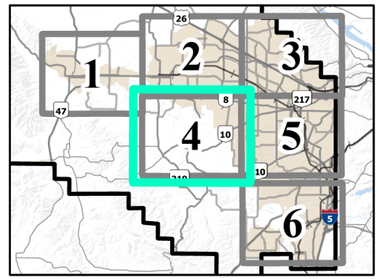
Roadway Element



Functional Classification

Urban Area Map 4 of 6

- Freeway
- Principal Arterial
- Arterial
- Collector
- Neighborhood Route
- Proposed Arterial
- Proposed Collector
- Proposed Neighborhood Route
- Refinement Area
- Urban Area
- County Boundary
- Other Roads

0 2,000 4,000
Feet

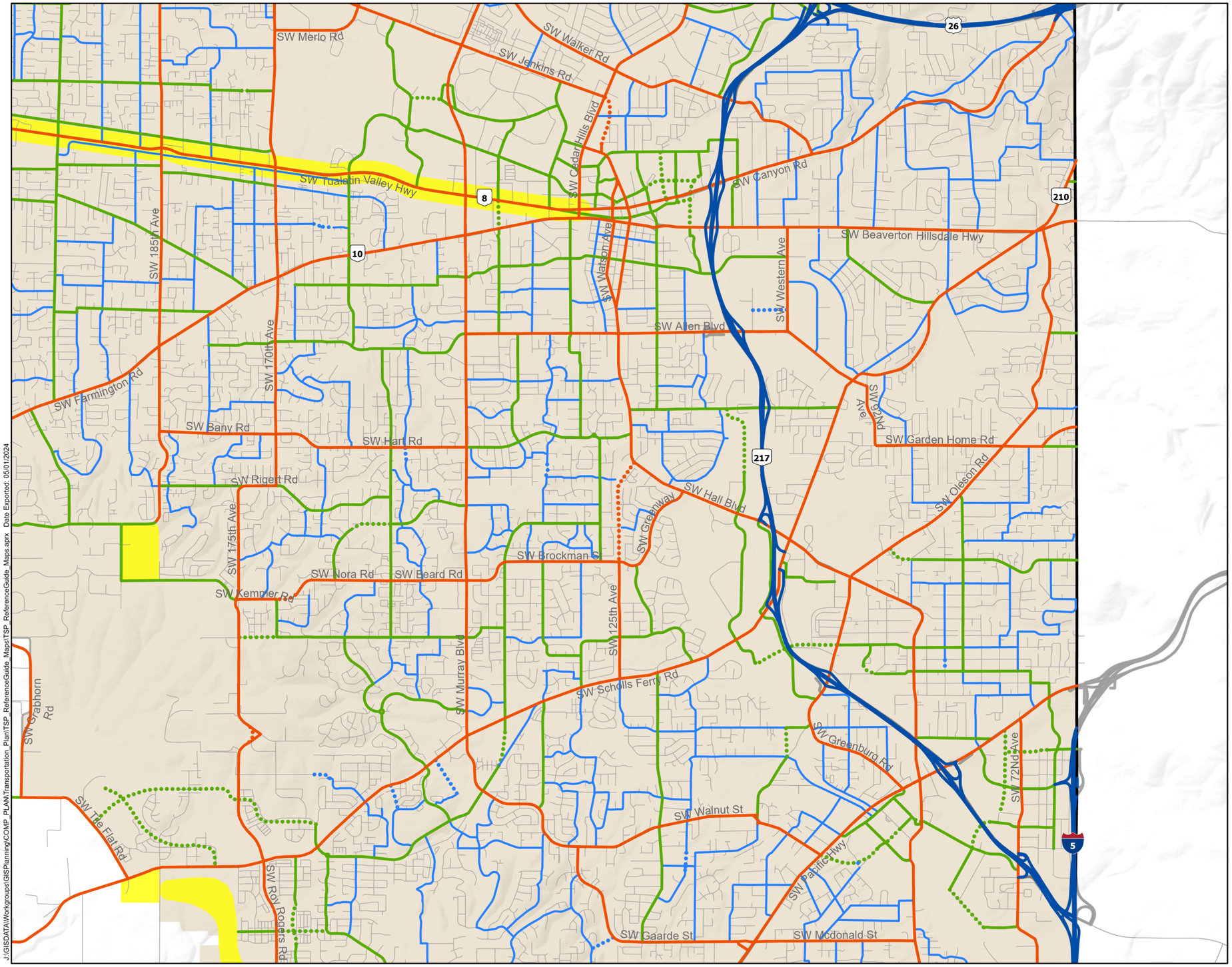
1 inch equals 3,500 feet

N

Online Map: https://bit.ly/FunctionalClass

Department of Land Use & Transportation
Division of Planning and Development Services

Effective: May 2, 2024



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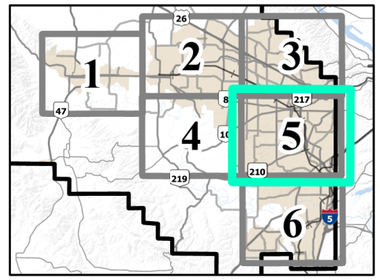
Roadway Element



Functional Classification

Urban Area Map 5 of 6

- Freeway
- Principal Arterial
- Arterial
- Collector
- Neighborhood Route
- Proposed Arterial
- Proposed Collector
- Proposed Neighborhood Route
- Refinement Area
- Urban Area
- County Boundary
- Other Roads

0 2,000 4,000
Feet

1 inch equals 3,500 feet

N

Online Map: https://bit.ly/FunctionalClass

Department of Land Use & Transportation
Division of Planning and Development Services

Effective: May 2, 2024

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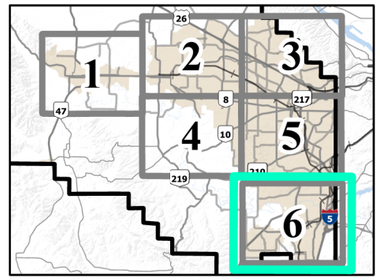
Roadway Element



Functional Classification

Urban Area Map 6 of 6

- Freeway
- Principal Arterial
- Arterial
- Collector
- Neighborhood Route
- Proposed Arterial
- Proposed Collector
- Proposed Neighborhood Route
- Refinement Area
- Urban Area
- County Boundary
- Other Roads

N

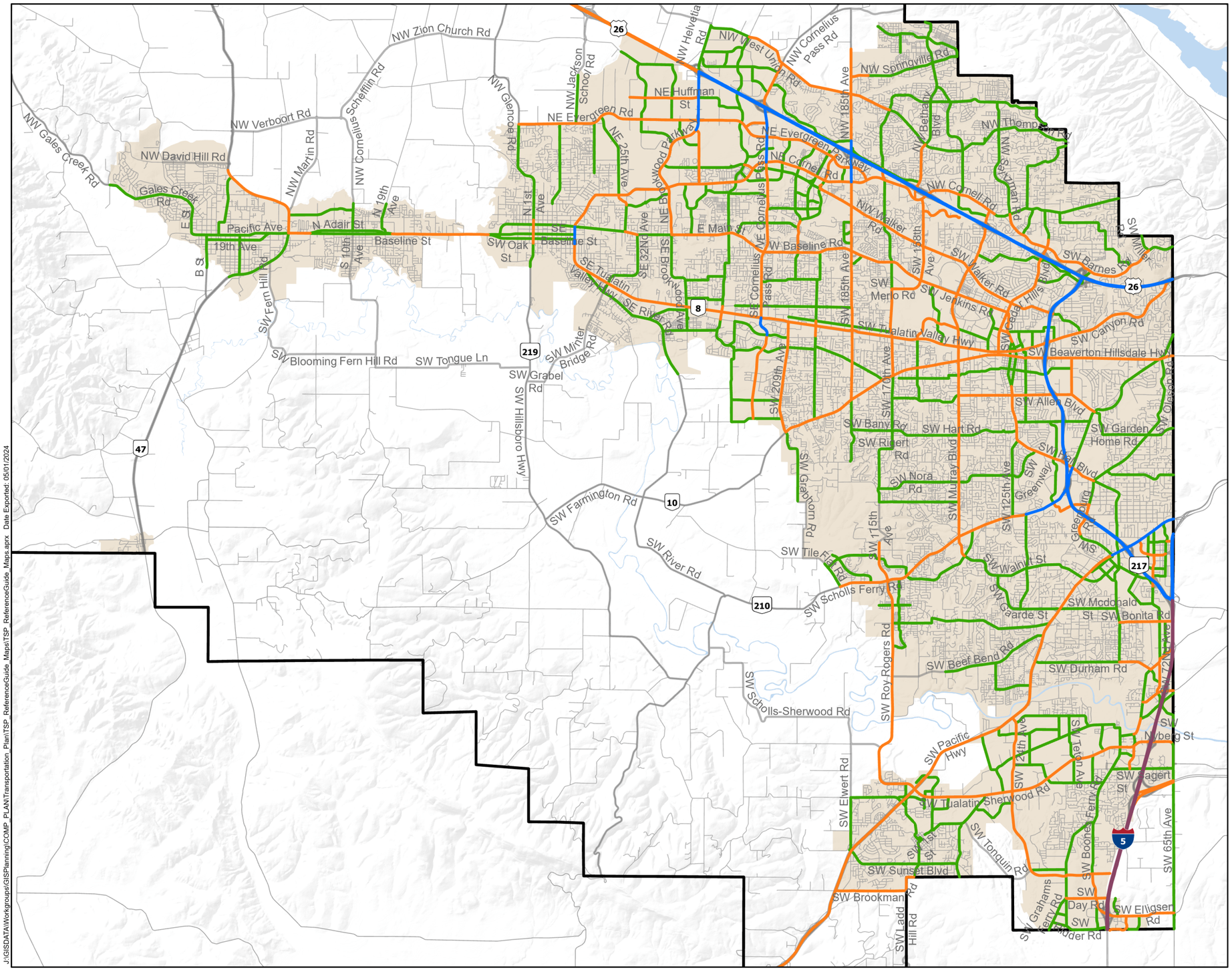
0 2,000 4,000
Feet

1 inch equals 3,500 feet

Online Map: https://bit.ly/FunctionalClass

Department of Land Use & Transportation
Division of Planning and Development Services

Effective: May 2, 2024



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Roadway Element

Lane Numbers

- 2-3 lanes
- 4-5 lanes
- 6-7 lanes
- 8 or more lanes
- Urban Area
- County Boundary
- Other Roads

0 1 2 Miles

N

1 inch equals 10,000 feet

Online Map: https://bit.ly/LaneNumbers

Department of
Land Use & Transportation
Division of Planning and Development Services

Effective: May 2, 2024

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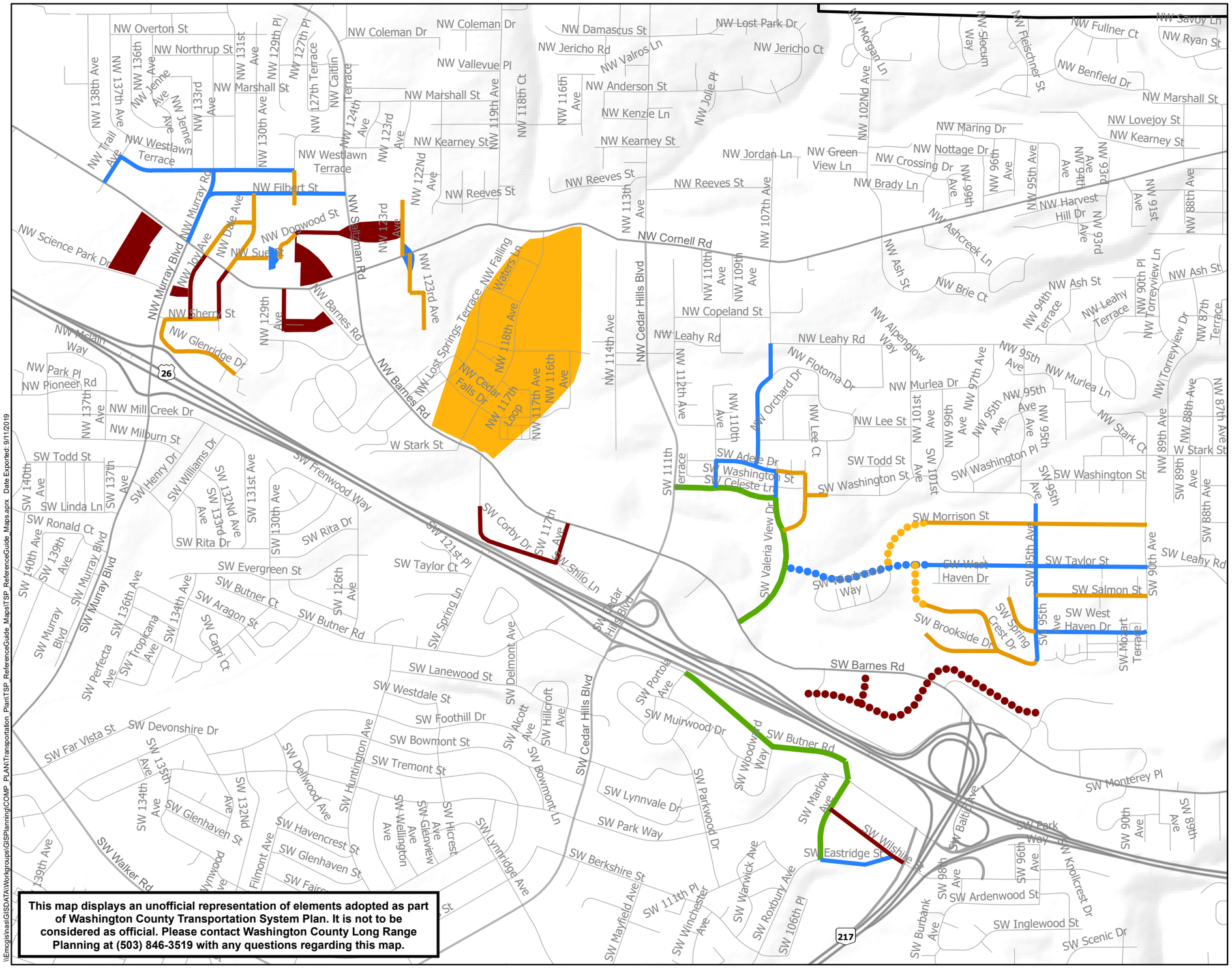


Roadway Element

Special Area Streets Overlay:

Cedar Hills and Sunset Station Area

- Special Area Collector
- Special Area Neighborhood Route
- Special Area Local Street
- Special Area Commercial Street
- Proposed Special Area Neighborhood Route
- Proposed Special Area Local Street
- Proposed Special Area Commercial Street
- Special Area Commercial Street Corridor
- Special Area Street Corridor
- Arterial Corridor
- County Boundary
- Other Roads

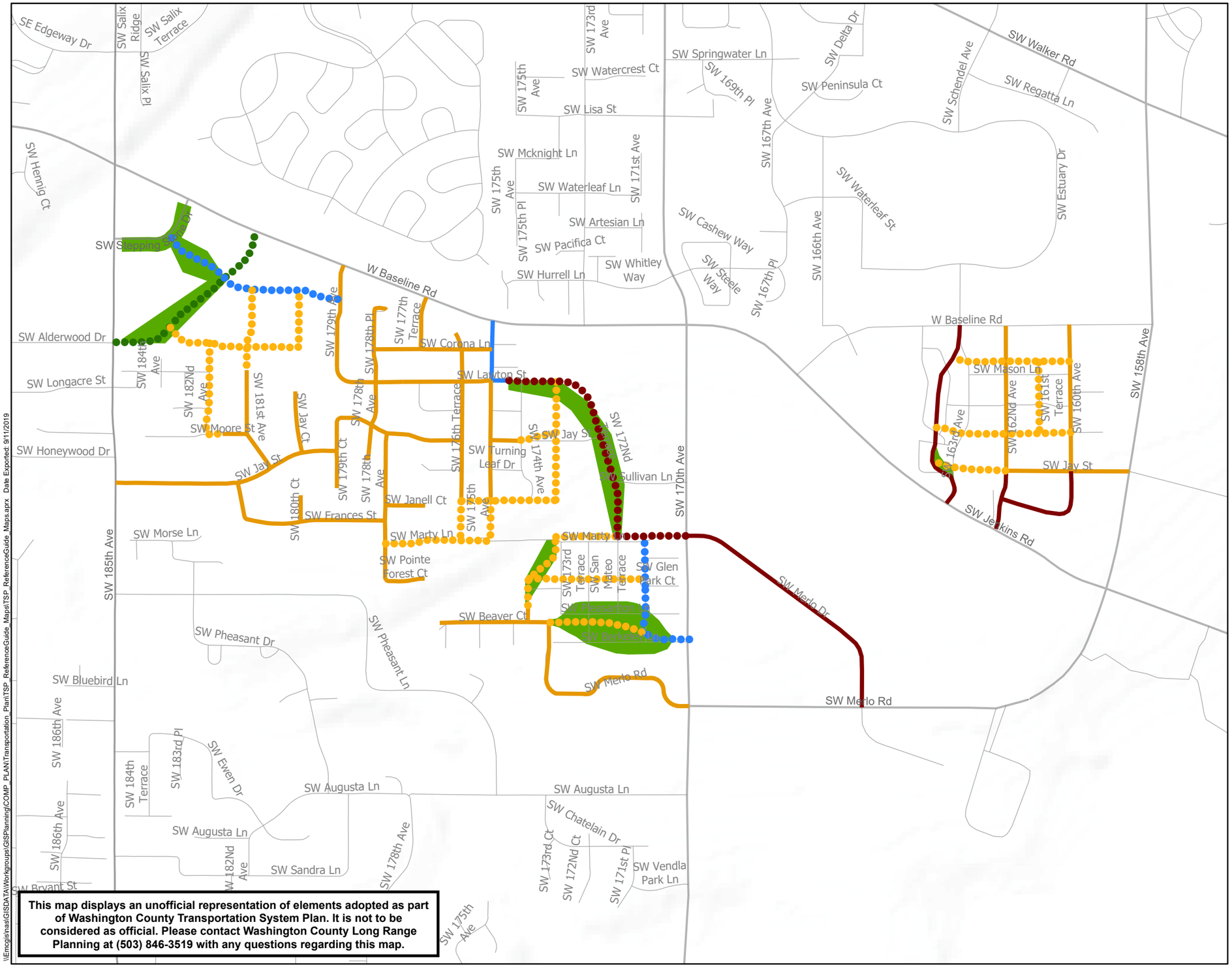
0 1,000 2,000
Feet

1 inch equals 1,200 feet

N

Online Map: http://bit.ly/SpecialAreaSts

Department of
Land Use & Transportation
Division of Planning and Development Services



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Roadway Element

Special Area Streets Overlay:

Willow Creek, Merlo, and Elmonica Areas

- Special Area Neighborhood Route
- Special Area Local Street
- Special Area Commercial Street
- Proposed Special Area Collector
- Proposed Special Area Neighborhood Route
- Proposed Special Area Local Street
- Proposed Special Area Commercial Street
- Corridor
- County Boundary
- Other Roads

0 500 1,000
Feet

1 inch equals 700 feet

N

Online Map: http://bit.ly/SpecialAreaSts

Department of
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Division of Planning and Development Services

Roadway Element

Rural Road Enhancement Study Corridors

- Rural Road Enhancement Study Corridor
- Urban Area
- County Boundary
- Other Roads

0 5,000 10,000
Feet

1 inch equals 10,000 feet

N

Online Map: http://bit.ly/RuralEnhance

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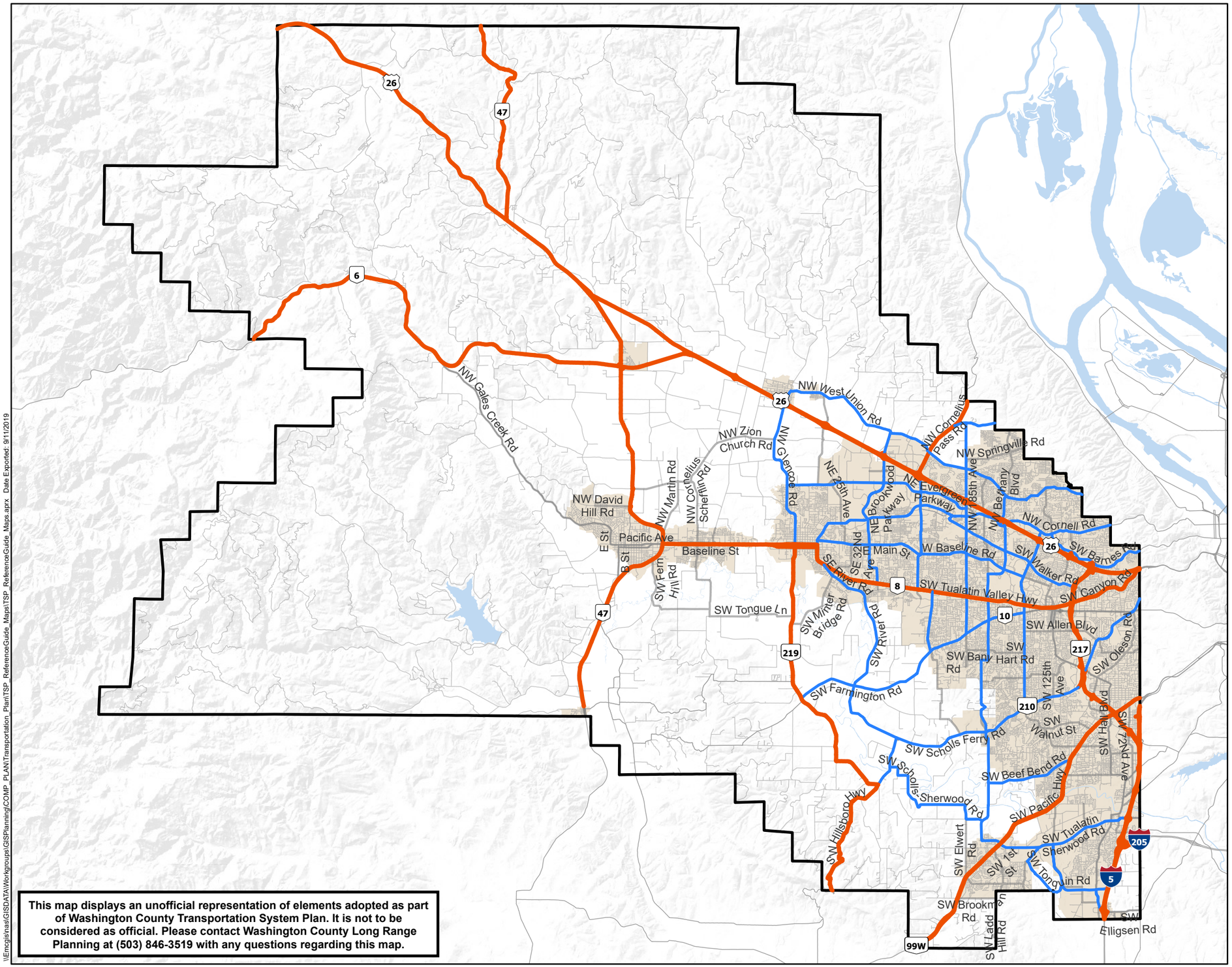

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Roadway Element

Long Term Roadway Jurisdiction

- Washington County – these roadways are proposed to be under county jurisdiction
- State – these roadways are proposed to be under state jurisdiction
- County Boundary
- Urban Area
- Other Roads

0 10,000 20,000
Feet
1 inch equals 18,500 feet

N

Online Map: http://bit.ly/LT-RdwyJuris

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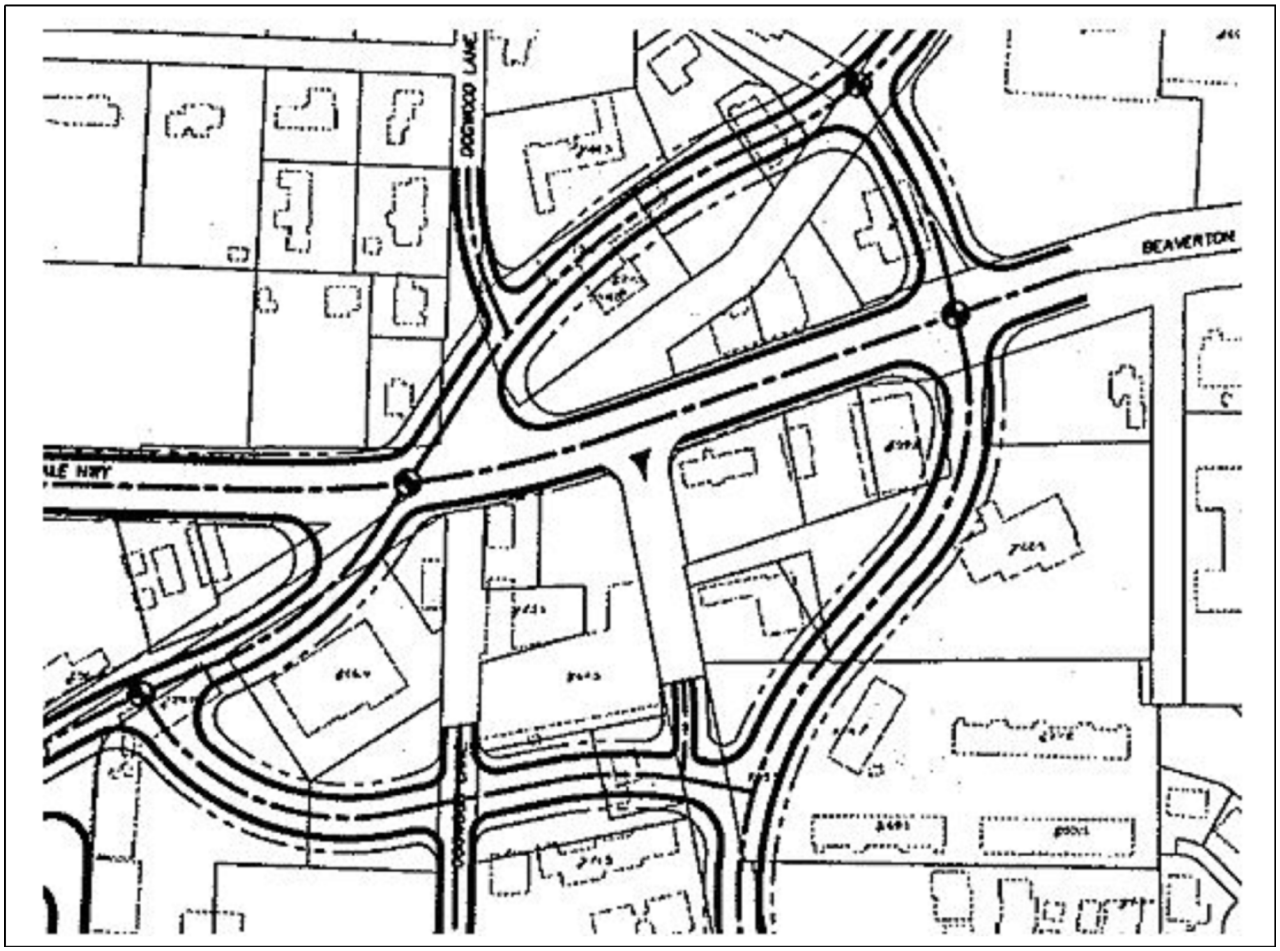
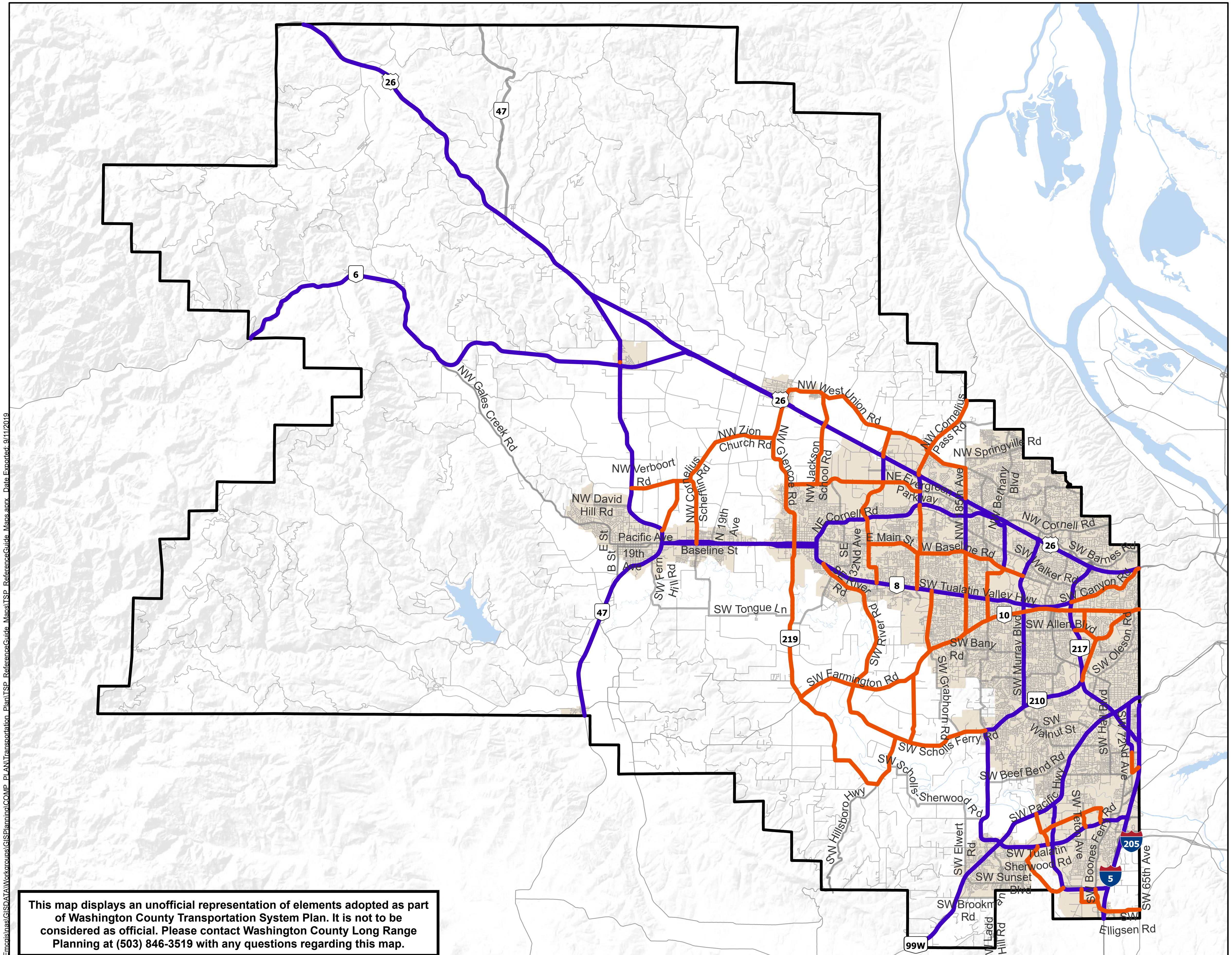


Special Area Street Overlay: Beaverton-Hillsdale/Oleson/Scholls Ferry Intersection

Washington County Transportation System Plan

Freight Element

Roadway Freight System



This map displays an unofficial representation of elements adopted as part of Washington County Transportation System Plan. It is not to be considered as official. Please contact Washington County Long Range Planning at (503) 846-3519 with any questions regarding this map.

- Over-Dimensional Truck Route
- Truck Route
- Urban Area
- County Boundary
- Other Roads

0 2 4
Miles
1 inch equals 18,500 feet
N

Online Map: http://bit.ly/RdwayFreight

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Department of Land Use & Transportation
Division of Planning and Development Services

Effective: November 23, 2018

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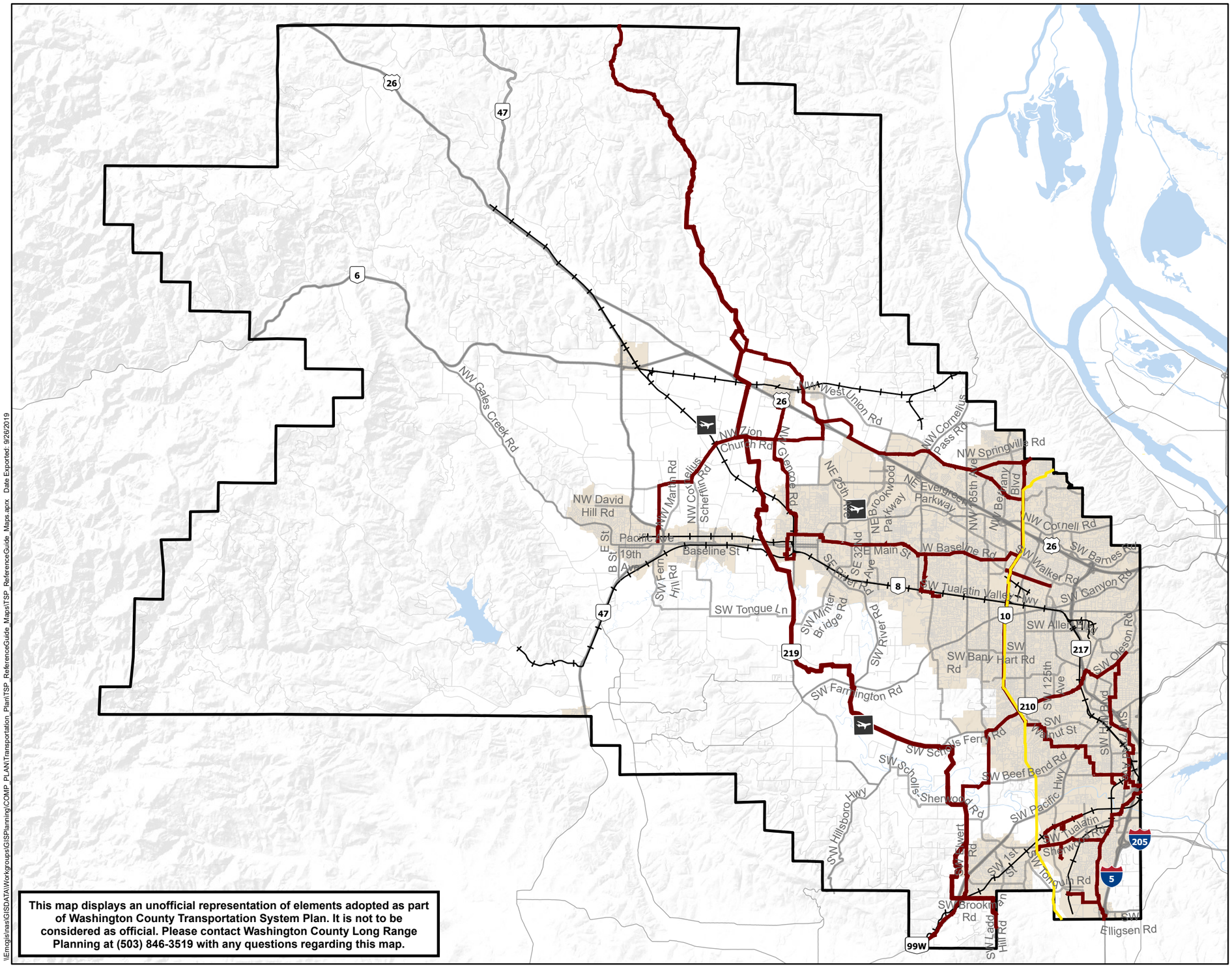
Freight Element

Aviation, Railroad, and Pipeline System



- Public Use Airports
- Natural Gas Pipeline Corridor
- Propane Pipeline Corridor
- TSP - Freight Rail
- Urban Area
- County Boundary
- Other Roads

0 10,000 20,000
Feet
1 inch equals 18,500 feet

N

Online Map: http://bit.ly/Aviat-Rail-PLine

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Portland & Western Railroad engine in Hillsboro

Freight Element

Given the close connection between freight movement and economic vitality, it is critically important for Washington County's transportation network to provide an efficient and reliable system for the transport of goods. The Freight Element describes the transportation facilities needed for the safe, efficient movement of goods and services throughout Washington County. The freight element is divided into two sections:

1. **Roadway Freight System**
2. **Aviation, Railroad and Pipeline Systems**

Roadway Freight System

The Roadway Freight System includes all roadways within Washington County and is necessary to provide both mobility and access for commerce throughout Washington County. The Roadway Freight System is intended to provide for efficient truck travel, while minimizing truck travel through residential neighborhoods. The primary purpose of designating truck routes in this TSP is to ensure that any future improvements on these roads provide for the safe and efficient movement of trucks. Truck route designations encourage the use of these routes for truck travel, but do not restrict trucks to these routes.

Roadway Freight System Map

The Roadway Freight System Map identifies truck routes and over-dimensional truck routes. These routes are on roadways where high volumes of freight traffic are anticipated, and where roadway system improvements should consider the needs of these vehicles as well as other modes using the facility.

Truck Routes

Truck Route designations are for planning purposes only and used to guide the design of road and bridge improvements to handle a greater frequency of truck and other heavy vehicle traffic. Truck routes are identified roadways where a high percentage of vehicles larger than personal vehicles are expected. These routes may connect freight corridors and/or serve industrial areas.

The design of improvements or changes to truck routes should consider the needs of large vehicles such as broader turn radii, wider lanes, acceleration/deceleration characteristics, longer turn pockets, longer start up and stopping time built into signal timing and high overhead clearance. It should be noted that all County roads are open to vehicles that do not exceed statutory or permitted weights and dimensions. It is

the responsibility of the vehicle's driver to operate the motor vehicle safely and legally, abiding by all posted limitations, temporary restrictions and/or emergency situations. Additionally, it is also the driver's responsibility to navigate the County's road network taking into consideration the geometry of the road.

Over-Dimensional Truck Routes

Certain truck routes routinely carry or have the ability to carry vehicles that exceed the statutory limits for weights and dimensions. These Over-Dimensional Truck Routes should be given special consideration for the operation of larger-than-standard vehicles.

When considering improvements or other actions within or adjacent to the right-of-way along Over-Dimensional Truck Routes, the design should not preclude the operation of larger vehicles. The design of improvements within or along these routes should consider (but is not limited to):

- Large turn radii;
- Mountable curbs and/or medians;
- Placement and/or type of street trees, street furniture and street lighting;
- Placement of sidewalks and design of pedestrian crossing treatments;
- Placement of signal poles, utilities and signage;
- Placement of planting strip, median design and vegetation treatments; and
- Building placement and setbacks.

Any new fixed object placed within the right-of-way should be evaluated for its effect on larger-than-standard vehicle operations.

The identification of these routes in this plan does not relieve a motor carrier from obtaining a trip permit. The route identification is solely intended for use in planning and design of roads and bridges.

Aviation, Railroad and Pipeline Systems

The Aviation, Railroad and Pipeline systems provide for the conveyance of good and services by air, rail and pipeline. These systems work in conjunction with the roadways system and deal with the movement of people, goods or services by these modes.

Aviation

The State Transportation Planning Rule (OAR 660-0012-020(2)(e)) requires the identification of existing and planned public use airports. There are currently three public use airports within Washington County:

1. Hillsboro Airport (HIO) is located northeast of downtown Hillsboro and operated by the Port of Portland. HIO is defined by the Federal Aviation Administration as a reliever airport for Portland International Airport (PDX). In this role, HIO's function is to preserve capacity at PDX by offering an alternative facility for general aviation aircraft, separate from commercial airline and air cargo activities. At the state level, the Oregon Aviation Plan defines HIO as a Category 2 airport that accommodates "corporate aviation activities, including business jets, helicopters, and other general aviation activities." HIO receives corporate air traffic associated with Intel and other large Washington County companies, while also accommodating personal aircraft. HIO features two runways, one 6,600 feet in length, the other 4,050 feet. In 2012, HIO had 277 "based aircraft"—meaning aircraft that are typically stored and flown from the airport—down from the upper 300s ten years prior. In 2008, HIO averaged 695 operations (takeoffs and landings) daily.

2. Twin Oaks Airpark is located approximately six miles south of Hillsboro, between the Tualatin River and River Road, and is privately owned and operated. Aircraft at this general aviation facility are limited to helicopters and small engine airplanes. The Twin Oaks Airpark has one runway, approximately 2,500 feet in length.
3. Skyport is the smallest public use airport in Washington County. This privately owned and operated facility is located approximately three miles north of Cornelius. Aircraft at this general aviation facility are limited to small engine airplanes. Skyport has one runway, approximately 2,000 feet in length.

In addition to these facilities, Washington County has 23 other private air facilities. These include small airstrips as well as helipad facilities at hospitals. No change to the operation of these airports is planned, and no additional public use airports are currently planned within Washington County.

Railroad Freight

Washington County hosts over 90 miles of active "short line" freight railroads and does not contain any Class I railroads, intermodal facilities or major rail yards. Commodities transported include aggregates, brick and cement, chemicals, construction and demolition debris, food and feed products, forest products, metallic ores and minerals, and steel and scrap. WES commuter rail service, as described in transit modal element, also operates on Railroad Freight facilities between Beaverton and Wilsonville.

Railroad Crossing Considerations

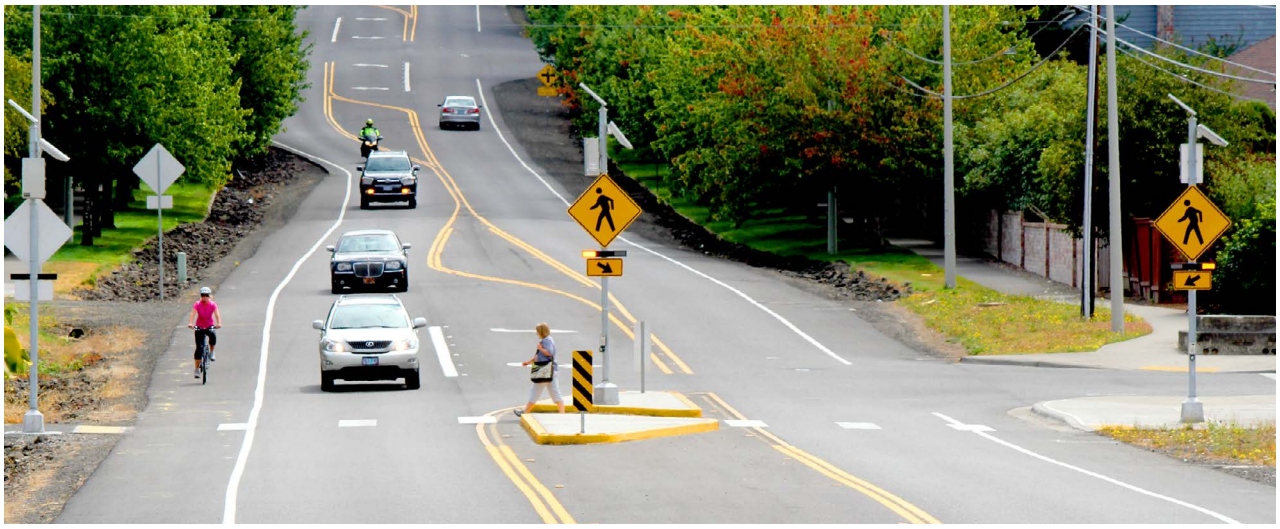
The majority of roadway rail crossings in Washington County are at grade, posing potential conflicts and hazards. The Oregon Department of Transportation Rail Division authorizes any new rail crossing, or any modification to an existing rail crossing. All authorized crossings are required to be marked with a passive stop sign and railroad crossing sign. Alternatively, an activated crossing guard arm may be implemented if the expected traffic at the crossing warrants this treatment.

Pipeline

Major pipelines that traverse Washington County are identified on the Non-Roadway Freight Map. The most significant pipeline within Washington County is the Kinder-Morgan gas pipeline that transports pressurized, refined petroleum products from a facility on the Willamette River in Northwest Portland to Eugene and points between. The pipeline generally follows a north-south BPA electric transmission line corridor through Bethany, Beaverton, Bull Mountain and Sherwood, portions of which also accommodate the Westside Regional Trail. Several natural gas pipelines also cross the county, including a north-south corridor from the Dairy Creek Valley to Sherwood, and several east-west routes.

For Washington County Department of Land Use and Transportation, the primary concerns with major pipelines are:

- Protecting the functionality of these pipelines as a mode of transporting products;
- Accounting for pipeline buffer corridors within planned development;
- Avoiding the high cost of relocating pipelines for transportation projects;
- Minimizing the community impacts of any future proposed pipelines, including liquefied natural gas (LNG) pipelines that have become more relevant in today's booming natural gas market;
- Minimizing impacts any future new pipelines would have on the community; and
- Minimizing impacts of new development on major pipeline corridors.



Pedestrian Crosswalk West Union Road

Active Transportation

Active transportation refers to human-powered travel, including walking and bicycling. Public transit is also a component of active transportation because accessing transit stops usually involves walking or bicycling. Widespread use of the term began as transportation policy placed increased emphasis on non-automobile modes and as the links between human health and transportation planning became more evident.

Active transportation modes are essential components of the overall transportation system, meeting a variety of societal, environmental and economic goals. These include:

- **Environmental stewardship and energy sustainability** Replacing gasoline-powered automobile trips with active trips reduces the emission of greenhouse gases, air toxins and particulates, helping to maintain air quality and address energy sustainability.
- **Congestion alleviation** People who walk, bike and use transit reduce the number of motor vehicles vying for space on roadways and in parking lots. The active mode share for commuting from Washington County is currently estimated to be about 11 percent for work-related trips.[8] Reduced congestion improves air quality, livability and economic vitality.
- **Health** "Obesity is one of the biggest public health challenges the country has ever faced."[9] The conditions in which we live explain in part why some Americans are healthier than others and why Americans are generally not as healthy as they could be. The social determinates of health include five key areas: Economic Stability, Education, Social and Community Context, Health Care and the Neighborhood and Built Environment. The TSP sets the framework for future decisions about the Neighborhood and Built Environment component. Due to the connection to public health and healthy outcomes, it is necessary that public health and active lifestyles are considered as we make these choices. The transportation system is necessary to provide access to health care and emergency services. Furthermore the transportation system provides the environment for an active lifestyle. Infrastructure that enhances pedestrian, bicycle and transit networks also enhances opportunities for physical activity within our communities. This may in turn help address obesity and other public health related issues.

8 *American Community Survey 2010 One-Year Estimates, U.S. Census Bureau, 2011.*
9 *F as in Fat: How Obesity Threatens America's Future 2010, a report from the Trust for America's Health.*

- **Safety** As walking and bicycling trips increase, so does the relative safety of those modes. In Portland, for example, the bicycle crash rate (reported crashes normalized by counted bicycle trips) has shown a general downward trend in the past decade, even as daily bicycle trips have more than doubled.[10] This can be partly attributed to increased attentiveness on the part of motorists as they see more bicyclists on the road. The same trend applies to pedestrian safety.
- **Efficient travel** For many trips, active transportation choices are the most sensible and efficient mode. For very short trips, such as a quarter-mile trip to a convenience store, walking can be the best choice. Trips in the one to five mile range are often ideal for bicycling.
- **Cost savings and social equity** Some people in Washington County and region-wide cannot afford to or choose not to own or operate a private vehicle. For those who need or want to reduce their transportation costs, active transportation is a common solution.
- **Attractive, efficient urban form** The popularity of neighborhoods designed around a higher density urban form with active transportation facilities shows this type of community is increasingly desirable. From the historic, tree-lined streets of Forest Grove to the rapidly growing Orenco Station neighborhood, active transportation facilities like sidewalks, bike lanes and frequent transit are drawing residents and businesses. Walkable neighborhoods tend to be compact, using urban land efficiently and helping to meet other land use policies such as agricultural preservation.

Washington County has conducted active transportation planning for several decades, responding to regional and state mandates as well as the needs and desires of its populace. In addition to pedestrian, bicycle and transit components found in every major update to the Washington County Transportation Plan, the County has pursued targeted planning efforts to address active transportation needs and opportunities including:

- The Washington County Pedestrian and Bicycle Plan (2010) which built upon the wealth of information collected in the 2020 Transportation Plan, this plan lists prioritizes and estimates costs for needed pedestrian and bicycle improvements.
- The Washington County Bicycle Facility Design Toolkit (2012) is a design guide that helps the County make informed decisions on how to incorporate context-specific bikeway facilities into roadway capital and other projects.
- The Washington County Bicycle and Pedestrian Improvement Prioritization Project (2013) performed a detailed gap analysis of sidewalks and bicycle facilities along Arterial and Collector roads, followed by a criteria-based prioritization of system deficiencies. This project was funded by a grant from the U.S. Department of Energy (DOE).
- The Washington County Neighborhood Bikeways Plan was developed concurrent with the TSP, and identifies low-volume, low-speed neighborhood streets in the urban unincorporated area that can accommodate a wide array of bicycle comfort levels.

Complete Streets:

- ORS, OAR and the Oregon Transportation Plan establish that bicycle facilities are required on all Collector or higher classification roadways (except freeways) when those roads are constructed or reconstructed. Exceptions are provided where a bikeway is not safe, where cost is excessively disproportionate to need or where there is an absence of need due to sparse population or other factors. Likewise these requirements include constructing sidewalks along new urban streets and along existing urban streets when they are reconstructed. Roadways within Washington County are required to be consistent with these complete street regulations. All projects are to be implemented in compliance with these and other applicable rules and regulations.

10 2011 Bicycle Counts Report, Portland Bureau of Transportation, 2012.

Goal 8: Active Transportation

Create a built environment and provide services that encourage safe, comfortable and convenient active transportation options that are viable for all users.

Objective 8.1 Provide an intergrated network of "complete streets" that safely and comfortably accommodate road users of all ages and abilities, including people walking, cycling, using mobility devices, taking transit and driving.

- **Strategy 8.1.1** Prioritize public active transportation projects that are effective at improving connectivity, filling gaps, expanding coverage of the active transportation network and positively influencing walk/bike/transit mode shares.
- **Strategy 8.1.2** Early in the project development process, solicit and consider input from active transportation advocates to help optimize the design of pedestrian, bicycle and access -to-transit projects.
- **Strategy 8.1.3** On existing substandard streets where the construction of full street improvements is not practicable within the foreseeable future, consider the construction of interim pedestrian and bicycle facilities, as available public funding allows.
- **Strategy 8.1.4** Require new development to provide multi-modal complete street connections as defined in the CDC.

Objective 8.2 Provide a pedestrian network that is safe, comfortable and convenient for people of all ages and abilities.

- **Strategy 8.2.1** Prioritize pedestrian projects that are technically and financially feasible and that also improve connectivity, fill gaps, and/or provide safe routes to schools, community facilities, commercial areas, transit stops or essential destinations.
- **Strategy 8.2.2** Prioritize pedestrian projects based on need; factors to consider may include: safety, density (residential and employment), access to essential destinations and transit and environmental justice factors, among others.
- **Strategy 8.2.3** Inside the Urban Growth Boundary, require that sidewalks are constructed along new or improved streets and along street frontages of new developments.
- **Strategy 8.2.4** Facilitate safe, convenient and comfortable pedestrian facilities through the provision of pedestrian scale amenities as deemed appropriate and in compliance with applicable regulations.
- **Strategy 8.2.5** Consider enhanced pedestrian crossings treatments at intersections and at other appropriate locations including school zones, commercial areas, major transit stops, trail crossings, Pedestrian Districts and warranted mid-block locations, using county-approved crossing treatments.
- **Strategy 8.2.6** In rural pedestrian activity areas, which includes recreational trail crossings, consider improvements that enhance pedestrian safety.
- **Strategy 8.2.7** On roadways designated on the Pedestrian System Map as 'Pedestrian Parkway' and/or 'Streetscape Overlay' and on roadways within identified Pedestrian Districts, enhanced pedestrian facility designs shall be considered based on applicable standards, land use context and physical constraints.

Objective 8.3 Expand and improve the quality of bicycling infrastructure.

- **Strategy 8.3.1** Refer to the guidelines set forth in the Washington County Bicycle Facility Design Toolkit when designing new or reconstructed urban and rural Principal Arterials (except for freeways), Arterials and Collectors, and implement treatments as deemed appropriate.

- **Strategy 8.3.2** Develop a system of neighborhood bikeways on appropriate low-volume streets (as defined in the Neighborhood Bikeways Plan) to supplement the system of bicycle lanes and paved shoulders on major streets.
- **Strategy 8.3.3** On those Arterials and Collectors designated on the Bicycle System Map as 'Enhanced Major Street Bikeway' buffered bike lanes and other bicycle treatments shall be considered based on the Bicycle Facility Design Toolkit and/or other applicable standards.
- **Strategy 8.3.4** Maintain and periodically revisit bicycle parking requirements in the CDC for applicable new development.
- **Strategy 8.3.5** Coordinate the development of the bikeway system with other local and regional agencies and integrate it with the delivery of other transportation services.
- **Strategy 8.3.6** Consider developing a rural road bicycle safety study that proposes solutions and strategies to increase the safety of recreational and utilitarian cycling in the rural area. Implement recommendations as appropriate.

Objective 8.4 Assist partners in developing and maintaining an off-street trail and accessway network that serves both recreational and transportation functions.

- **Strategy 8.4.1** Require new development and redevelopment to provide adequate neighborhood connectivity by constructing public accessways, both within the site and connecting to adjacent land uses, in cases where street connections are not possible or not desired.
- **Strategy 8.4.2** Ensure that new development and redevelopment does not preclude implementation of the planned off-street trail network shown in the TSP.
- **Strategy 8.4.3** Work with Metro, Tualatin Hills Park & Recreation District (THPRD), cities, private developers and other entities to plan, map and improve countywide trail connectivity, including filling gaps in existing regional trails and planning new trails in areas lacking in these facilities.
- **Strategy 8.4.4** Designate a functional classification of existing and planned trails consistent with Metro and THPRD trail planning activities.
- **Strategy 8.4.5** For appropriate multi-use trails that are intended to serve a utilitarian function, encourage trail design and management solutions that facilitate the safe and efficient movement of trail users, including, but not limited to, the following:

  A. Using surface materials that are durable, slip-resistant, watershed-friendly and resistant to ponding.

  B. Avoiding or addressing flood-prone areas.

  C. Minimizing sharp curves and out of direction travel that increase travel times and create blind spots.

  D. In higher-density areas, installing pedestrian-scale trail lighting sensitive to surrounding land uses and wildlife habitat.

  E. Keeping trails legally open during night hours.

  F. Regular maintenance, surface repairs and debris clearing by the responsible jurisdiction.

- **Strategy 8.4.6** Explore trail provision and management solutions for areas of Washington County that lack a recreation district, parks department or other provider of trails.

Objective 8.5 Make transit a seamless, integrated, affordable, safe, accessible and viable travel option for all people living, working and visiting Washington County.

- **Strategy 8.5.1** Provide safe, convenient pedestrian and bicycle access to existing and proposed transit stops, including pedestrian crossings and other appropriate features near Major Transit Stops.

- **Strategy 8.5.2** Coordinate with TriMet and other transit providers in their efforts to provide new or improved transit service to underserved locations where concentrations of households, jobs or transportation disadvantaged populations may warrant better service.
- **Strategy 8.5.3** Work with Metro, TriMet, ODOT and local jurisdictions to plan and implement new High Capacity Transit Corridors identified in the Regional High Capacity Transit System Plan.
- **Strategy 8.5.4** Improve the first and last leg of the transit trip between transit stops and locations beyond a reasonable walking distance.
- **Strategy 8.5.5** Coordinate with interregional bus and other transit providers to continue and enhance the operation of transit that facilitates connections into and out of the urban area.
- **Strategy 8.5.6** Coordinate with transit service providers, ODOT and local jurisdictions to ensure accessible transit stops, vehicles and the provision of on-demand mobility service operations.
- **Strategy 8.5.7** Develop and maintain the Washington County Transit Master Plan to guide project priorities to serve the rural and urban community and job connector service areas of Washington County.
- **Strategy 8.5.8** Secure sustainable funding to maintain and enhance public transit services consistent with the Washington County Transit Master Plan.
- S**trategy 8.5.9** Coordinate with TriMet, ODOT and local jurisdictions to implement transit service priority enhancements that improve the speed and reliability of transit at appropriate locations.

Objective 8.6 Encourage and promote the use of active transportation options through programmatic approaches.

- **Strategy 8.6.1** Work with transportation management associations, employers, schools, agencies that serve disadvantaged populations, and active transportation advocacy organizations, to promote walking, bicycling and transit options for residents and workers in Washington County.
- **Strategy 8.6.2** Consider developing a countywide Safe Routes to School program in partnership with school districts.
- **Strategy 8.6.3** Develop wayfinding signage guidelines in coordination with Metro, cities and THPRD, and incorporate signage into proposed Neighborhood Bikeway, trail, streetscape and other appropriate improvement projects as funding allows.
- **Strategy 8.6.4** Coordinate with the Washington County Department of Health and Human Services and other health organizations to promote and measure the public health benefits of active transportation.
- **Strategy 8.6.5** Develop active transportation performance measures, including mode share targets.

Active Transportation Elements

The Washington County Transportation System Plan (TSP) Active Transportation Elements consist of a Pedestrian Element, Bicycle Element and Transit Element. These elements collectively describe and illustrate the desired future network of routes and facilities that will help people safely, comfortably and conveniently walk, bike and take transit in Washington County over the next 20 years.

The Active Transportation Elements were informed by several recent or concurrent planning efforts, including Metro's 2014 Regional Transportation Plan and Regional Active Transportation Plan, TriMet's Westside Service Enhancement Plan and Southwest Service Enhancement Plan, the County's Bicycle and Pedestrian Improvement Prioritization Project and Bicycle Facility Design Toolkit and several trail planning efforts undertaken throughout the county. The Active Transportation Elements are largely consistent with the concepts in these plans, often using the same functional classifications and routes.

Any inconsistencies between this TSP and other relevant plans are typically the result of using different terminology or definitions, adding some network elements in response to identified needs or omitting some elements due to legal or jurisdictional concerns. These differences are further described in the individual modal elements.

Like the other TSP elements, the three Active Transportation Elements indicate the function, mode and general location of an ultimate network. Projects are not prioritized in this plan; however, particular needs have been identified in the TSP Existing Conditions and Future Needs Report and project candidates are addressed in the Capital Project List.

For areas within unincorporated Washington County, the Community Plans, Community Development Code, Rural/Natural Resources Plan and Road Design and Construction Standards shall be referenced to determine the manner in which the designations shown in the Active Transportations Elements are to be implemented. Some Active Transportation designations are shown on city and ODOT facilities; in these cases the administrating jurisdictions' adopted codes and plans supersede the designations shown. In situations where County or state roads pass through cities, implementation of the Active Transportation designations requires coordination among all affected jurisdictions. All trail alignments shown are general in nature; the exact location of the trails shall be determined by the public entity or entities that will build and maintain the trail.

Schools with grades Kindergarten through 12 are important considerations within the Active Transportation Elements because they are prominent attractors of pedestrian and bicycle trips. As resources allow, school districts are encouraged to develop and/or expand Safe Routes to School programs in partnership with Washington County and the cities. These programs identify engineering, enforcement, education, encouragement and evaluation initiatives to promote safe walking and biking to school. As part of the engineering component, the county, cities and school districts are encouraged to work together to identify and prioritize network deficiencies and seek funding for solutions.

Pedestrian Element

Washington County's urban pedestrian system consists of sidewalks, walkways and crossings along and across streets, as well as off-street trails and connections between streets. All roadways in the urban area, with the exception of freeways, are pedestrian routes. With few exceptions, within the urban area sidewalk installation is required by development when roadways are reconstructed for a development or capital project. Meanwhile, in the rural area, the pedestrian system consists of roadway shoulders and paved or unpaved off-street trails. Sidewalks are not required in the rural area.

Pedestrian System Map

The Pedestrian System Map identifies the future off-street trail network intended for utilitarian and recreational walking trips, indicates areas of above-average pedestrian activity in the urban unincorporated and rural areas and delineates particular roadways and roadway segments where enhanced pedestrian features are desired because of land use context and/or transit service.

Pedestrian System Classifications

Pedestrian/Bicycle District

Within the urban unincorporated area, a Pedestrian/Bicycle District identifies an area where high use by pedestrians and cyclists is either observed or intended. This activity may be due to a combination of existing and/or proposed land uses, density, land use mix, community design, availability of transit service and/or provision of pedestrian and bicycle facilities. Pedestrian-oriented design of streets, public spaces and land uses are generally required in these areas to provide a safe, direct, efficient, comfortable and

attractive walking environment. Secure short-term and long-term bicycle parking is generally required and supporting facilities such as lockers and showers are recommended at places of employment. Appropriate features and dimensions will vary by context and shall be determined through the project development and /or land development review process with consideration of other classifications and in reference to the Community Plans and Community Development Code. Pedestrian/Bicycle Districts cover the same geographic areas as Metro 2040 Growth Concept Regional Centers, Town Centers and Station Communities as adopted in the Washington County Comprehensive Framework Plan for the Urban Area.[11]

Rural Pedestrian Activity Area

A Rural Pedestrian Activity Area is a location outside the urban growth boundary with a concentration of pedestrian activity related to a village, crossroads, school, religious institution, community center, farmstand, recreation area, trail or other cultural feature. Treatments such as marked crosswalks, mid-block crossings, wide shoulders and warning signage may be appropriate in these locations, subject to engineering and policy review.

Pedestrian Parkway

A Pedestrian Parkway is a major urban thoroughfare (typically an arterial) that has the potential for significant pedestrian activity. This activity may be due to the provision of transit service, a relatively high intensity and mix of land uses and/or the continuous nature of the route as it passes through one or more communities. Enhanced pedestrian facilities are encouraged to facilitate a safe, direct, efficient, comfortable walking environment along and across these roadways. Enhanced pedestrian crossings are recommended to help people reach transit stops and other destinations from the opposite side of the street. Site-specific study is needed to determine the locations and design features for such crossings. Consideration of sidewalk widths greater than those shown in adopted road standards is recommended on a context-sensitive basis, particularly on Pedestrian Parkway segments that overlap with Streetscape Overlays. In all cases, appropriate features and dimensions will vary by context and shall be determined through the project development and/or land development review process with consideration of other classifications in this TSP and in reference to the Community Plans, Community Development Code as well as adopted city plans and codes. Pedestrian Parkways in the Washington County TSP are equivalent to on-street Pedestrian Parkways shown in the Metro Regional Transportation Plan.[12]

Streetscape Overlay

A Streetscape Overlay is a segment of urban roadway in which enhanced pedestrian features, expanded pedestrian facility dimensions and place-making amenities are encouraged to facilitate a comfortable and attractive walking environment and to leverage community and economic development. Streetscape Overlays include all Regional Boulevards and Community Boulevards shown on the Regional Design Classifications map in Metro's 2014 Regional Transportation Plan (RTP) within Washington County.[13] These

11 Metro's Regional Active Transportation Plan (RATP) and Regional Transportation Plan (RTP) show Pedestrian Districts and Bicycle Districts on separate maps, though they cover the same geography. The TSP does not show Pedestrian/Bicycle Districts within cities.

12 Unlike Metro's RATP/RTP Pedestrian Parkways, Washington County TSP Pedestrian Parkways do not include off-street trails. Trails and roadways are classified separately in the TSP due to the distinct differences in design, operation, maintenance and jurisdiction management between the two facility types. Off-street Pedestrian Parkways in Metro's RATP/RTP are included as Regional Trails in the TSP. On-street Regional Pedestrian Corridor—the second tier of pedestrian routes in Metro's RATP/RTP—are not included in the Washington County TSP because the county's Road Design & Construction Standards are mostly consistent with Metro's RATP design guidance for these routes, including provisions for planter strips.

13 Other street design classifications in Metro's 2014 RTP Regional Design Classifications map include Throughways, Regional Streets and Community Streets. Washington County design standards for Principal Arterials, Arterials and Collectors are consistent with the intent of these regional design classifications and are included in the Mobility section of the Washington County TSP Goals, Objectives and Strategies (Ordinance 768).

segments are typically located within Metro 2040 Growth Concept Regional Centers, Town Centers, Station Communities and Main Streets. Several additional Streetscape Overlay segments are shown in the urban unincorporated area based on Washington County community planning projects such as the Aloha-Reedville Study and Livable Community Plan and the North Bethany Subarea Plan.

On roadways with Streetscape Overlays, appropriate features and dimensions will vary by context and shall be determined through the project development and/or land development review process. These determinations shall consider the other modal classifications within this plan—particularly freight and transit—and refer to the Community Plans, Community Development Code and adopted city plans and codes. Features may include (but are not limited to): sidewalks with widths greater than those shown in the Washington County Road Design and Construction Standards, medians, narrower travel lanes and /or narrower pavement widths, curb extensions, on-street parking, pedestrian-scale lighting, enhanced pedestrian crossings, traffic calming, street trees, landscaping, street furniture and public art.

Regional Trail

Regional Trails are included in both the Pedestrian Element and the Bicycle Element. A Regional Trail is a multi-use pathway that accommodates regional and local utilitarian pedestrian and bicycle trips. Regional Trails include off-street Pedestrian Parkways and Bicycle Parkways as identified in Metro's RTP, along with several existing or proposed multi-use trails in the rural area and a limited number of short pedestrian/bicycle connections that facilitate access to the regional transportation network. Regional Trails serve a transportation function and are encouraged to be designed and constructed in ways that facilitate comfortable, convenient travel, including:

- Using surface and sub-grade materials and following grading and storm water management practices that result in a durable, slip-resistant, watershed-friendly surface throughout the year.
- Avoiding flood-prone areas and/or managing storm water to allow year-around operation.
- Providing adequate width, as context and circumstances allow, accommodating different trail users including people walking, running, cycling, skating, walking dogs and pushing strollers.
- Minimizing sharp curves and out-of-direction travel.
- In higher-density areas, installing pedestrian-scale trail lighting sensitive to surrounding land uses and wildlife habitat.
- Keeping trails legally open at all hours.
- Regular maintenance, surface repairs and debris clearing by the responsible jurisdiction.

Regional Trails in the urban area are intended to have paved surfaces; Regional Trails in the rural area are encouraged to have paved surfaces, but may have unpaved surfaces. Regional Trails that are routed along roadways may require further determination as to whether the trail will be separated from the roadway or employ a shared roadway design. When the location of a proposed Regional Trail is being determined in concert with a development proposal or transportation project, the County shall confer with the jurisdiction or special district that is responsible for maintaining that trail to ensure that the most up-to-date assumptions of that trail's location and design features are being considered.

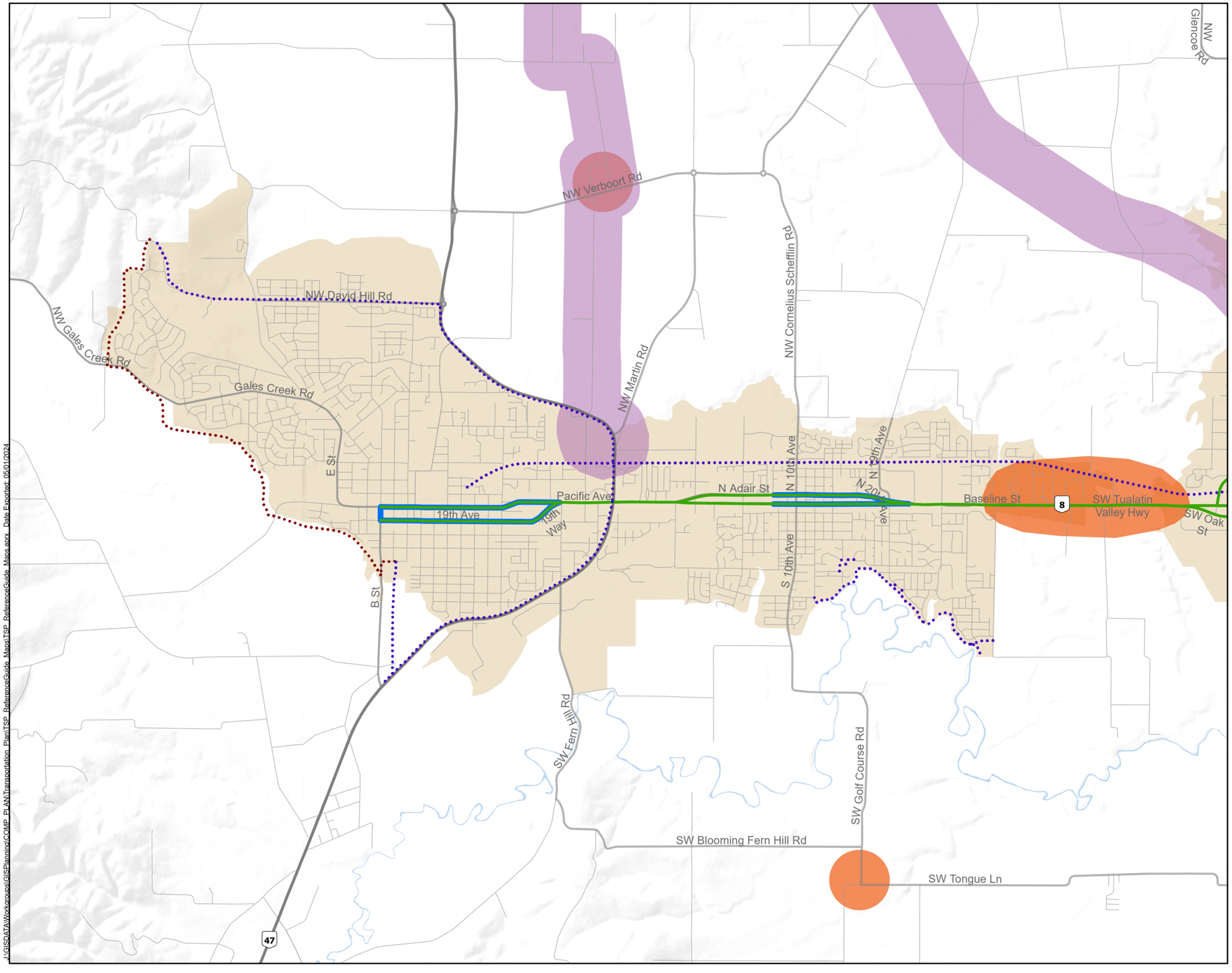
Trail Refinement Area

A Trail Refinement Area is an area where a Regional or Community Trail is planned conceptually but the specific alignment has not yet been determined. A feasibility study or master plan is necessary to determine the specific alignment. Before development may occur on land within a Trail Refinement Area, in addition to other requirements, the development application must demonstrate how the Regional or Community Trail will (at a minimum) not be precluded by the proposed development. Trail Refinement Areas include:

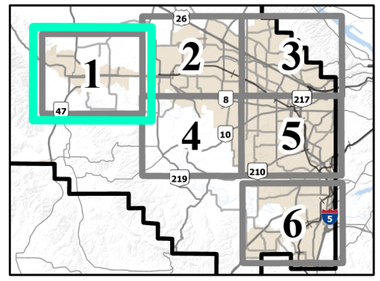
- Turf-to-Surf Trail between Banks and Beaverton: The Tualatin Valley Trail Concept Plan completed in 2021 considered the Turf-to-Surf Trail in the Aloha-Reedville area between SW 160th Avenue and SW 198th Avenue. The concept plan identified the Regional Trail alignment in the study area. In accordance with the concept plan, a Regional Trail is designated along SW Shaw Street between 160th and 198th Avenues. The Turf-to-Surf Regional Trail Refinement Area remains between SW Cedar Hills Blvd and SW 160th Avenue, and west of SW 198th Avenue, until further feasibility analysis is completed.
- Council Creek Trail between Banks and Forest Grove
- Cooper Mountain Trail
- River Terrace Trail
- Red Rock Greenway Trail across OR 217

Community Trail

A Community Trail is a pathway that accommodates shorter-distance utilitarian walking trips and may or may not accommodate bicycle trips. Community Trails serve as convenient walking connections between local destinations or as accesses to Regional Trails. Community Trails are not necessarily designed for 24-hour, all-weather use and may be constructed to different standards than Regional Trails. Community Trails include off-street Regional Pedestrian Corridors as indicated in Metro's RTP, in addition to selected community, local and other trails shown on trail maps by jurisdictions in Washington County. Community Trails that are routed along roadways require further determination as to whether the trail will be separated from the roadway or employ a shared roadway design. When the location of a proposed Community Trail is being determined in concert with a development proposal or transportation project, the County shall confer with the jurisdiction or special district that is responsible for maintaining that trail to ensure that the most up-to-date assumptions of that trail's location and design features are being considered. Community Trails appear only in the Pedestrian Element.



Pedestrian Element



Pedestrian System

Urban Area Map 1 of 6

- Regional Trail
- Community Trail
- Pedestrian Parkway
- Street Scape Overlay
- Trail Refinement Areas
- Rural Pedestrian Activity Areas
- Urban Area
- County Boundary
- Other Roads

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1 inch equals 3,500 feet

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Online Map: https://bit.ly/PedSystem

Department of Land Use & Transportation
Division of Planning and Development Services

Effective: May 2, 2024

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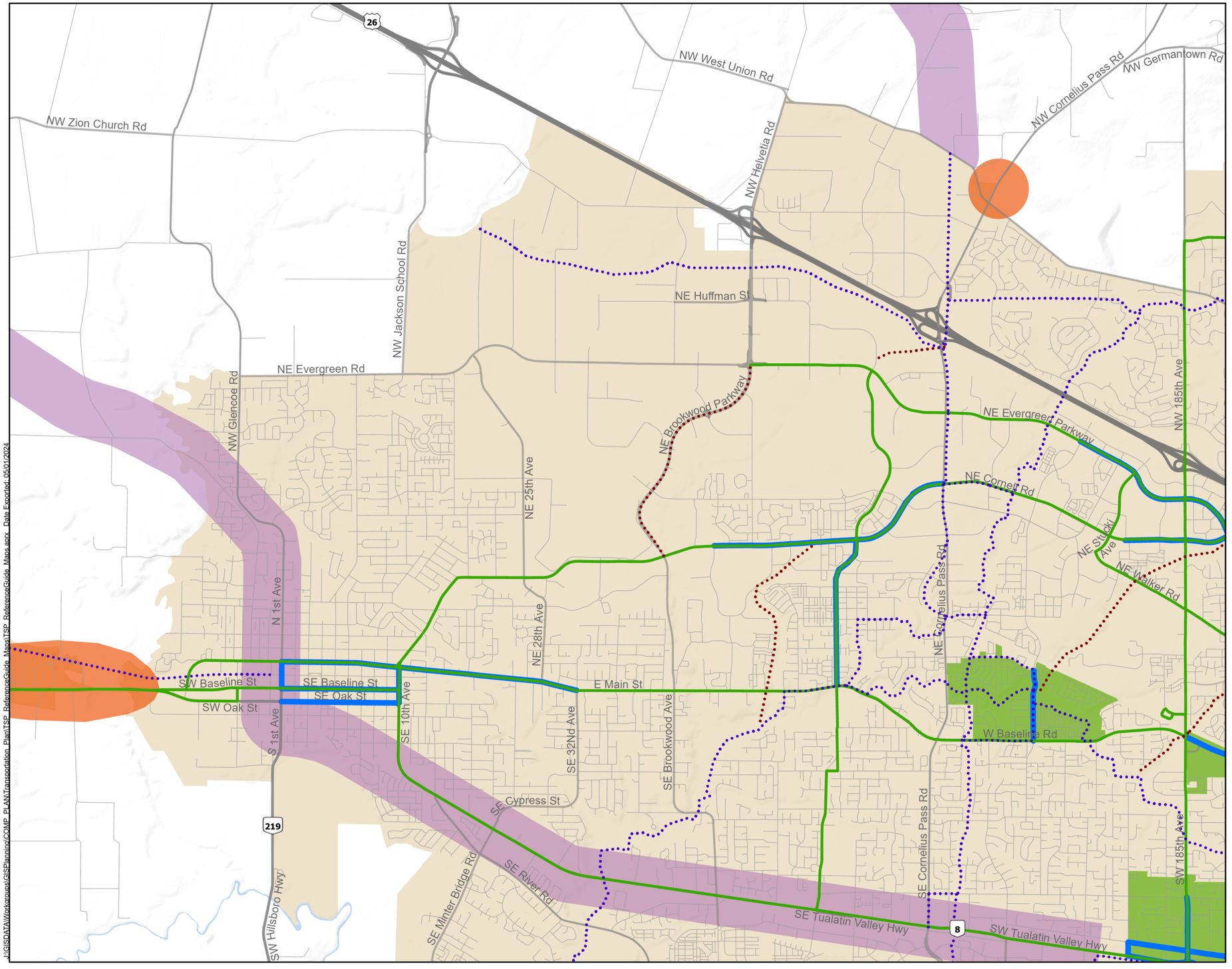

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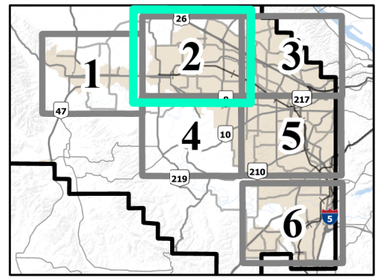
Pedestrian Element



Pedestrian System

Urban Area Map 2 of 6

- Regional Trail
- Community Trail
- Pedestrian Parkway
- Street Scape Overlay
- Trail Refinement Areas
- Pedestrian/Bicycle District
- Rural Pedestrian Activity Areas
- Urban Area
- County Boundary
- Other Roads

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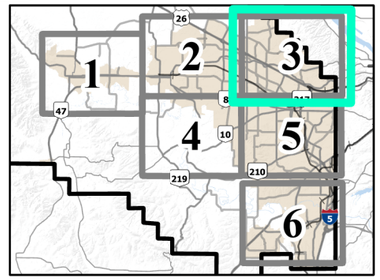

Pedestrian System

Urban Area Map 3 of 6

- Regional Trail
- Community Trail
- Pedestrian Parkway
- Street Scape Overlay
- Trail Refinement Areas
- Pedestrian/Bicycle District
- Urban Area
- County Boundary
- Other Roads

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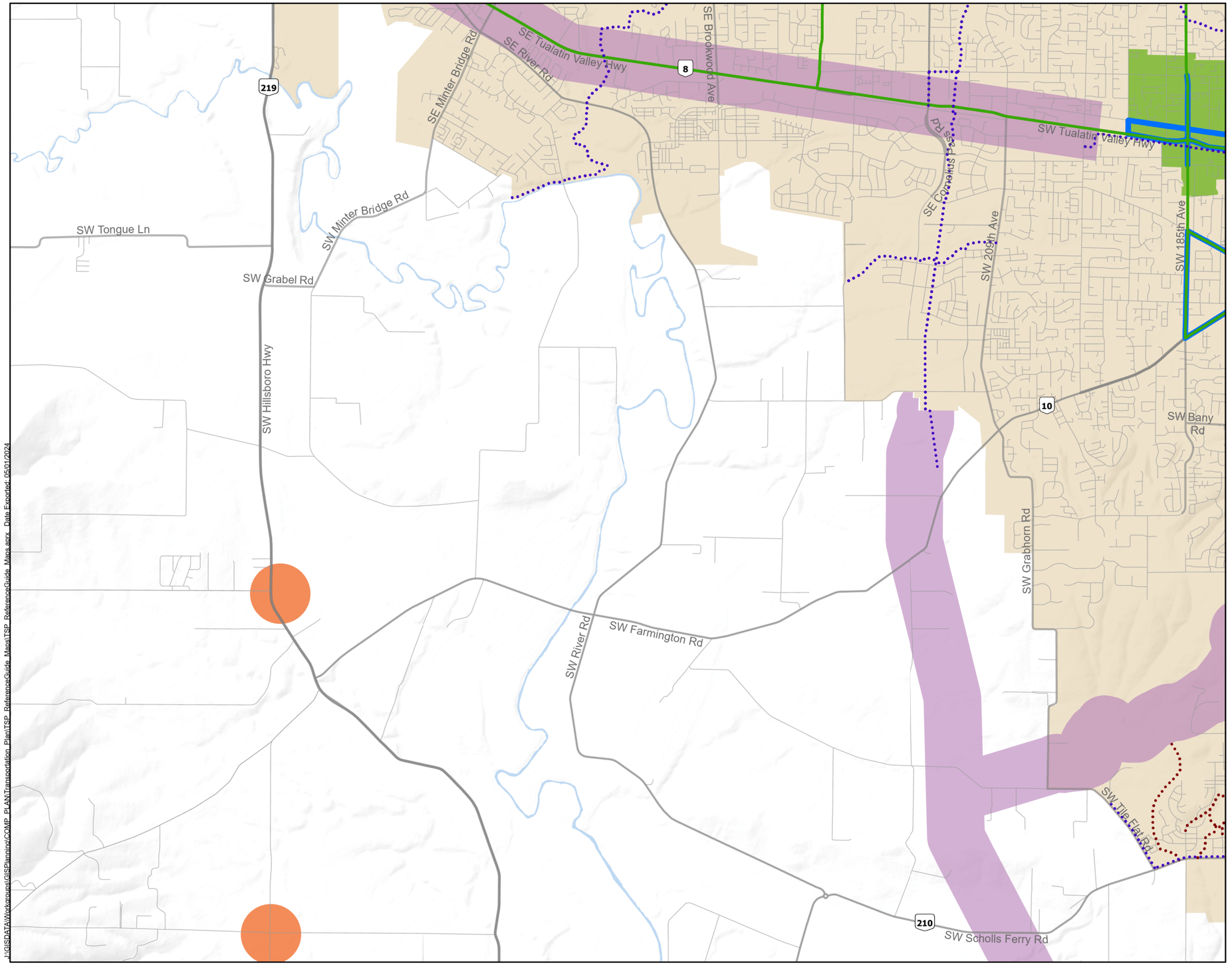

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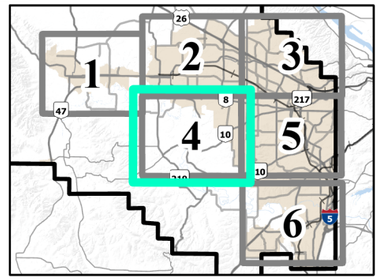

Pedestrian System

Urban Area Map 4 of 6

- Regional Trail
- Community Trail
- Pedestrian Parkway
- Street Scape Overlay
- Trail Refinement Areas
- Pedestrian/Bicycle District
- Rural Pedestrian Activity Areas
- Urban Area
- County Boundary
- Other Roads

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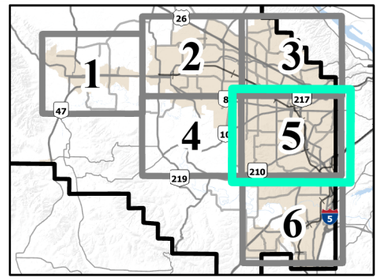

Pedestrian System

Urban Area Map 5 of 6

- Regional Trail
- Community Trail
- Pedestrian Parkway
- Street Scape Overlay
- Trail Refinement Areas
- Pedestrian/Bicycle District
- Urban Area
- County Boundary
- Other Roads

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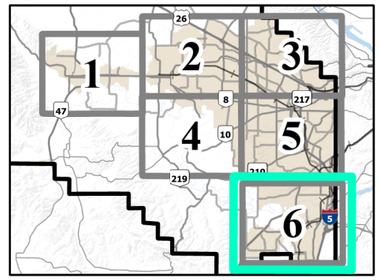

Pedestrian System

Urban Area Map 6 of 6

- Regional Trail
- Community Trail
- Pedestrian Parkway
- Street Scape Overlay
- Trail Refinement Areas
- Urban Area
- County Boundary
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People bicycling and driving on NW 185th Avenue

Bicycle Element

The Bicycle Element is intended to guide continued development of a system of on-street and off-street bikeways for everyday travel, and seeks to ensure that direct, comfortable and safe bicycle routes are planned.

Bicycle System Map

The Bicycle System Map identifies the planned bicycle network. All roadways in Washington County, with the exception of freeways, are on-street bikeways. State policy requires "bikeways" along urban Arterials and Collectors.[14] The Bicycle System Classifications provides guidance on the function of the future bicycle network. Inside the UGB on-street bikeways may consist of bike lanes, buffered bike lanes, cycle tracks and interim shared roadways along Arterials and Collectors, and shared roadways along Neighborhood Routes and Local Streets. Regional Trails are considered off-street bikeways as they are intended to serve a transportation function and are encouraged to be designed and constructed in ways that facilitate comfortable, convenient and utilitarian bicycle travel.

In the rural area, on-street bikeways may consist of wide shoulders or shared roadways. The Tualatin Valley Scenic Bikeway is also recognized in the Bicycle Element.

Bicycle System Classifications

Major Street Bikeway

All Arterials and Collectors in the urban area, both inside and outside cities, are designated as Major Street Bikeways unless they are further designated as Enhanced Major Street Bikeways. On Major Street Bikeways, a six-foot bike lane or buffered bike lane is generally considered sufficient to accommodate cyclists. Bicycle improvements to Major Street Bikeways should be consistent with the Washington County Road Design and Construction Standards and consider the Washington County Bicycle Facility Design Toolkit.

Urban Collectors that are currently not built to standard but have low traffic volumes and low speeds may employ an interim shared roadway design such as a neighborhood bikeway. Bikeway facility types and dimensions shall be context-sensitive and determined on a case-by-case basis through engineering review by the appropriate jurisdiction. Major Street Bikeways are not mapped in the adopted Bicycle System Map. Urban Arterial and Collector designations are adopted in the Roadway Element.

14 Oregon Administrative Rule 660-112-0045 (Transportation Planning Rule)

Enhanced Major Street Bikeway

An Enhanced Major Street Bikeway is an urban Arterial or Collector roadway that has, or is planned to have, buffered bike lanes or cycle tracks on one or both sides of the road as illustrated in the Washington County Bicycle Facility Design Toolkit. Enhanced Major Street Bikeways include particular roadways and roadway segments where enhanced bicycle features are desired based on land use context, access to transit service and roadway characteristics. Enhanced Major Street Bikeways may have higher traffic volumes, and higher speeds. In these circumstances users with diverse skill levels may desire additional separation between the bikeway and vehicular traffic. However, when separated facilities such as cycle tracks are pursued, particular attention to conflict points and sight distance is needed. Enhanced Major Street Bikeways are shown on County, state and city facilities. Designations applied to roads or other facilities not under county jurisdiction should be considered recommendations to the state, city or other jurisdiction with primary responsibility for the facility.

- Blanton Street: The Tualatin Valley Trail Concept Plan completed in 2021 developed the vision for the Turf-to-Surf Trail in the Aloha-Reedville area. The plan identified a near term improvement priority for complete street facilities on SW Blanton Street. The concept design incorporates physically separated bicycle lanes and is intended to provide a safer and more comfortable user experience that is suitable for all ages and abilities. In accordance with the concept plan, Blanton Street is designated an Enhanced Major Street Bikeway between 170th and 209th Avenues. In addition, the sections of Blanton Street from 209th Avenue to Cornelius Pass Road and Cornelius Pass Road from Blanton Street to TV Highway have been constructed with separated bicycle lanes as part of the South Hillsboro development and are also designated as Enhanced Major Street Bikeways.

Regional Trail

Regional Trails are defined in the Pedestrian Element.

Trail Refinement Area

Trail Refinement Areas are defined in the Pedestrian Element.

Rural Bikeway

The rural roadways of Washington County are popular bicycle routes for both recreational and commuting travel. Rural roadways have conflicting travel needs for different users that need to be considered and monitored. Minor enhancements (consistent with OAR 660-012-0065) may be appropriate along all major rural roadways (Arterials and Collectors), considering the following:

- Location of existing and committed bicycle facilities (wide shoulders and striped bike lanes);
- Location of rural cities and communities;
- Location of existing and plann ed recreational facilities (State, Regional or County parks);
- Existing and anticipated (year 2035) roadway volumes;
- Presence/absence of parallel routes consisting of other bicycle facilities or low traffic volume roadways;
- Known traffic and/or terrain characteristics such as the presence of significant hills and/or grades, high truck volume and or traffic speeds.

Rural Bikeways are not shown in the adopted Bicycle System Map. Rural Arterial and Collector designations are adopted in the Roadway Element.

Bicycle Element

BICYCLE SYSTEM
Countywide Map

- Tualatin Valley Scenic Bikeway
- Enhanced Major Street Bikeway
- Urban Area
- County Boundary

0 5,000 10,000
Feet

1 inch equals 11,250 feet

Online Map: https://bit.ly/3Xm2Kfq

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Division of Planning and Development Services

Effective: May 2, 2024

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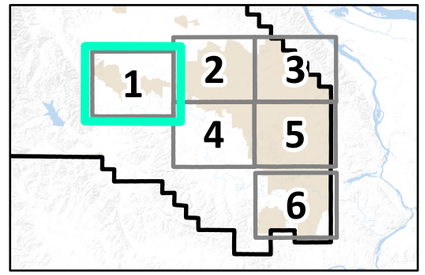
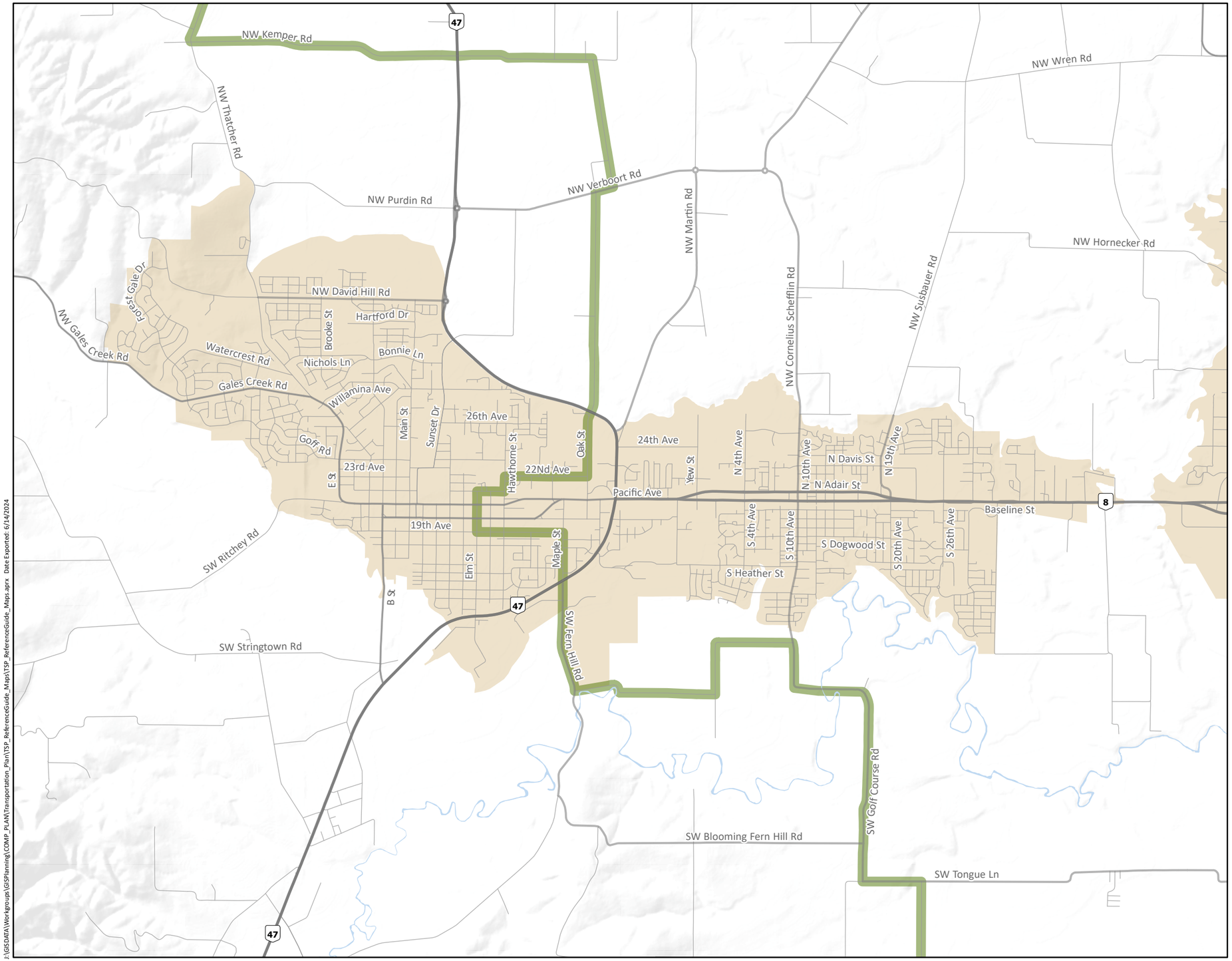
Bicycle Element



BICYCLE SYSTEM

Urban Area Map 1 of 6

- Tualatin Valley Scenic Bikeway
- Urban Area
- County Boundary
- Other Roads



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Online Map: https://bit.ly/3Xm2Kfq

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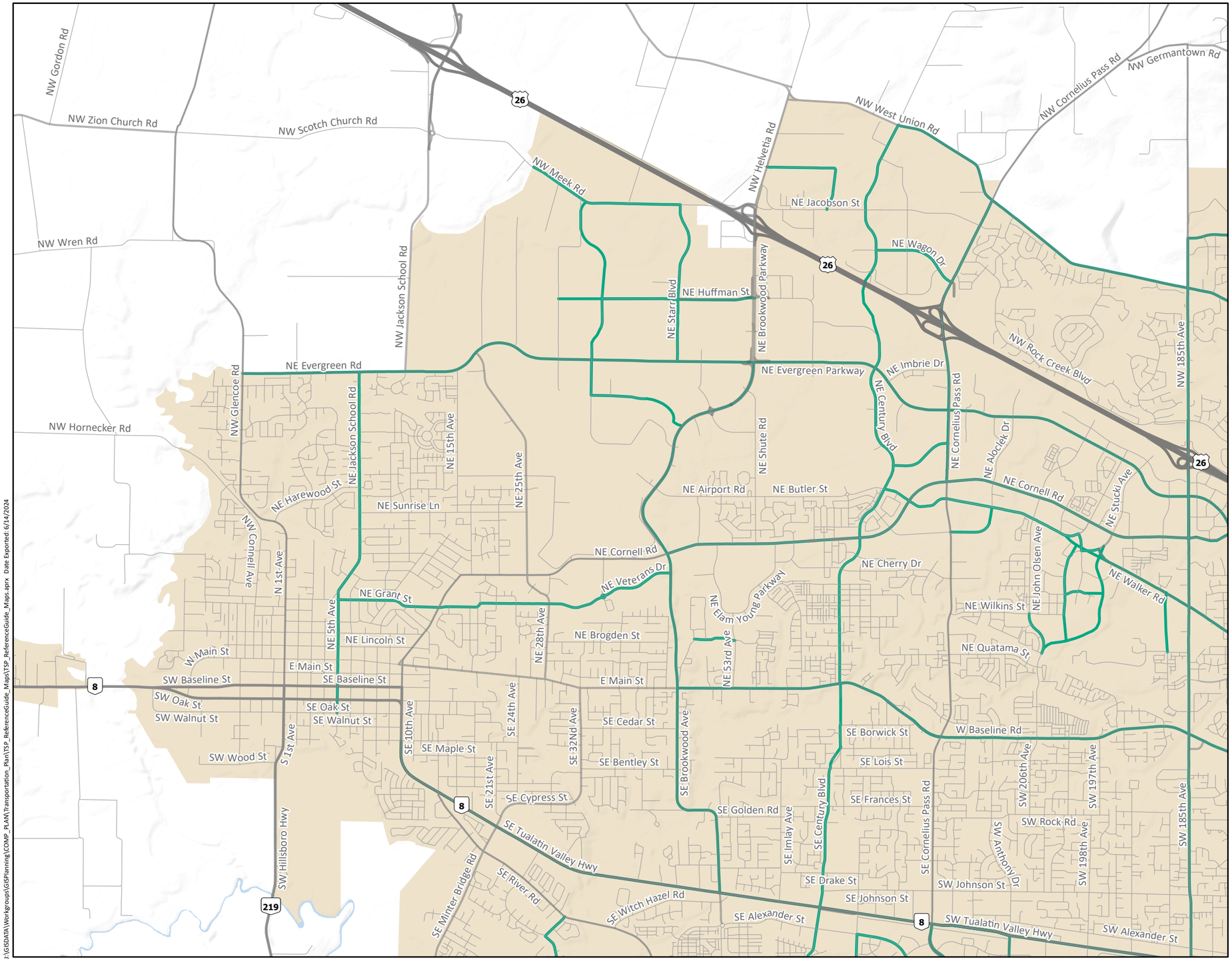

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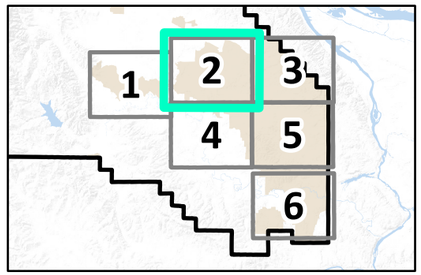
Bicycle Element



BICYCLE SYSTEM

Urban Area Map 2 of 6

- Enhanced Major Street Bikeway
- Urban Area
- County Boundary
- Other Roads

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Feet

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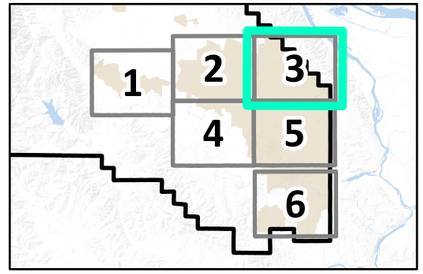
Bicycle Element



BICYCLE SYSTEM

Urban Area Map 3 of 6

- Enhanced Major Street Bikeway
- Urban Area
- County Boundary
- Other Roads

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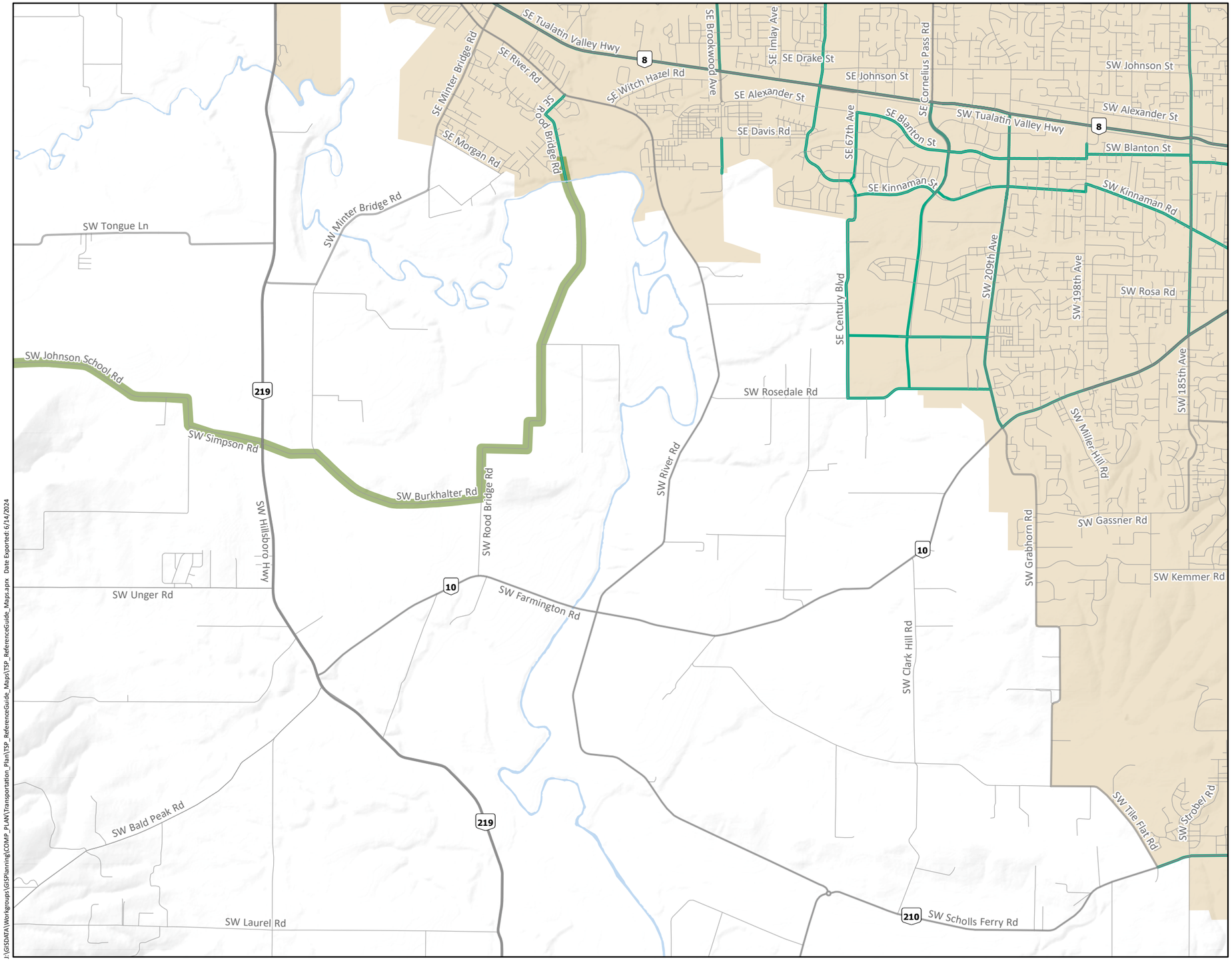

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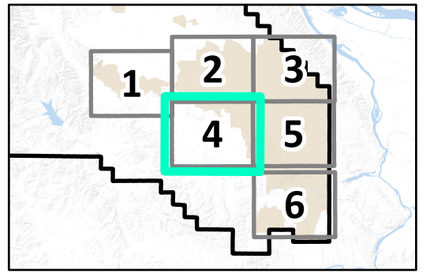
Bicycle Element



BICYCLE SYSTEM

Urban Area Map 4 of 6

- Tualatin Valley Scenic Bikeway
- Enhanced Major Street Bikeway
- Urban Area
- County Boundary
- Other Roads

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Feet

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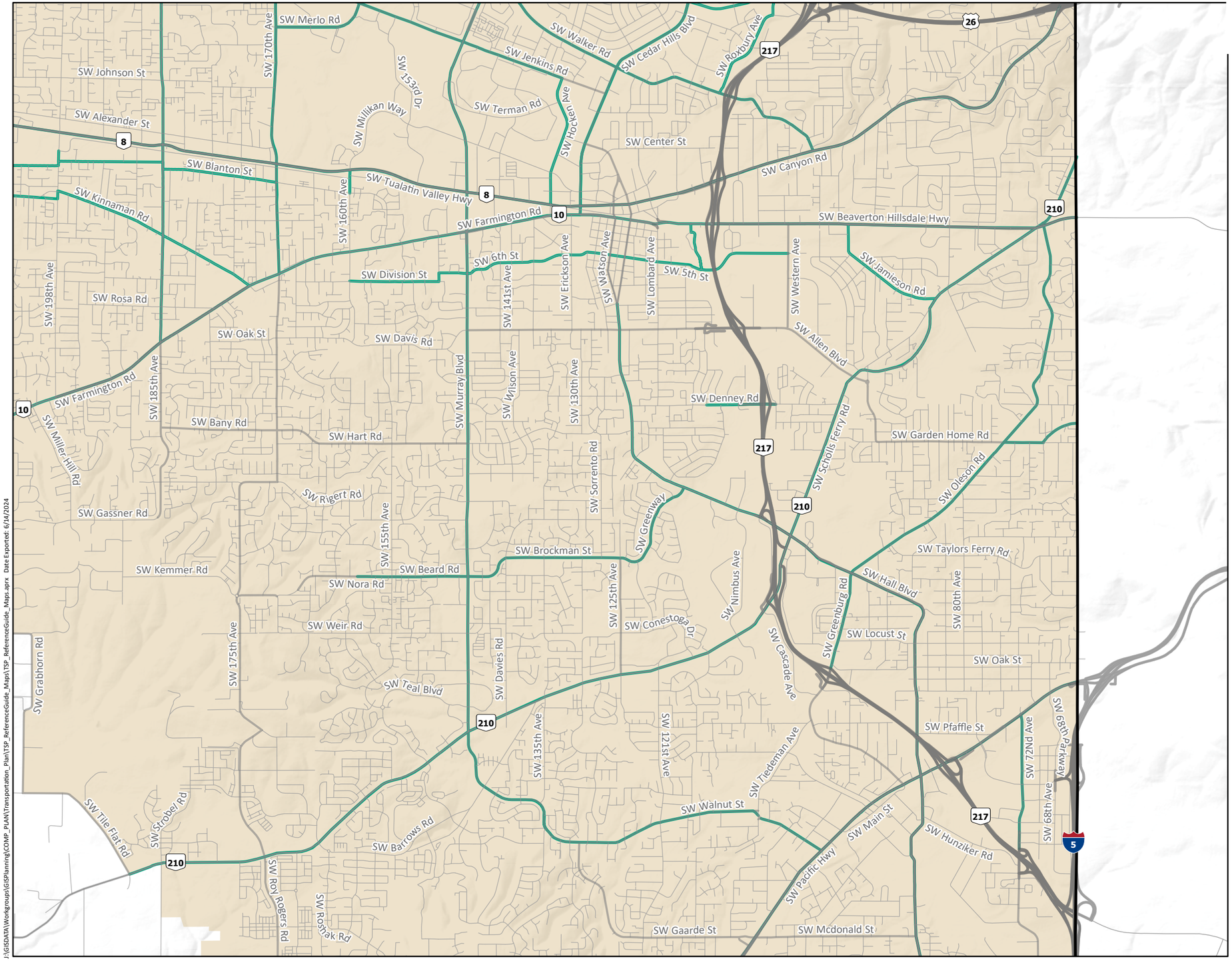

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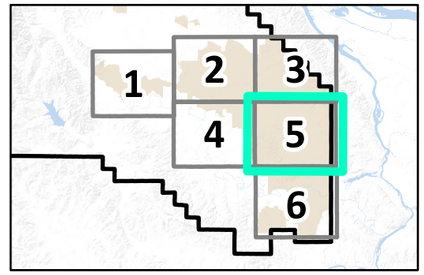
Bicycle Element



BICYCLE SYSTEM

Urban Area Map 5 of 6

- Enhanced Major Street Bikeway
- Urban Area
- County Boundary
- Other Roads

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Feet

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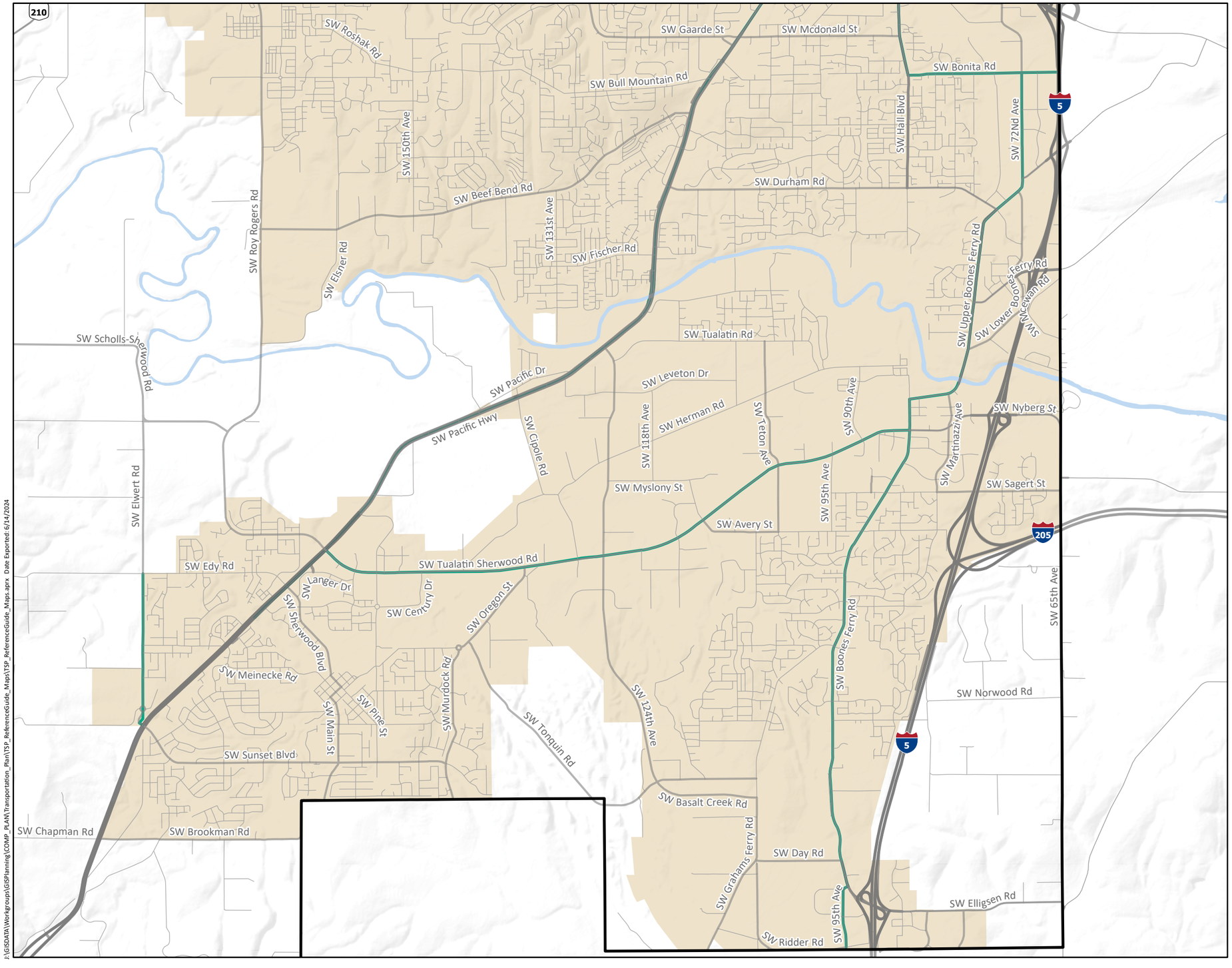

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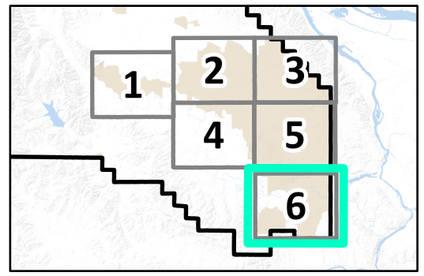
Bicycle Element



BICYCLE SYSTEM

Urban Area Map 6 of 6

- Enhanced Major Street Bikeway
- Urban Area
- County Boundary
- Other Roads

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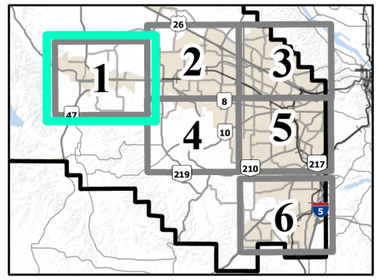
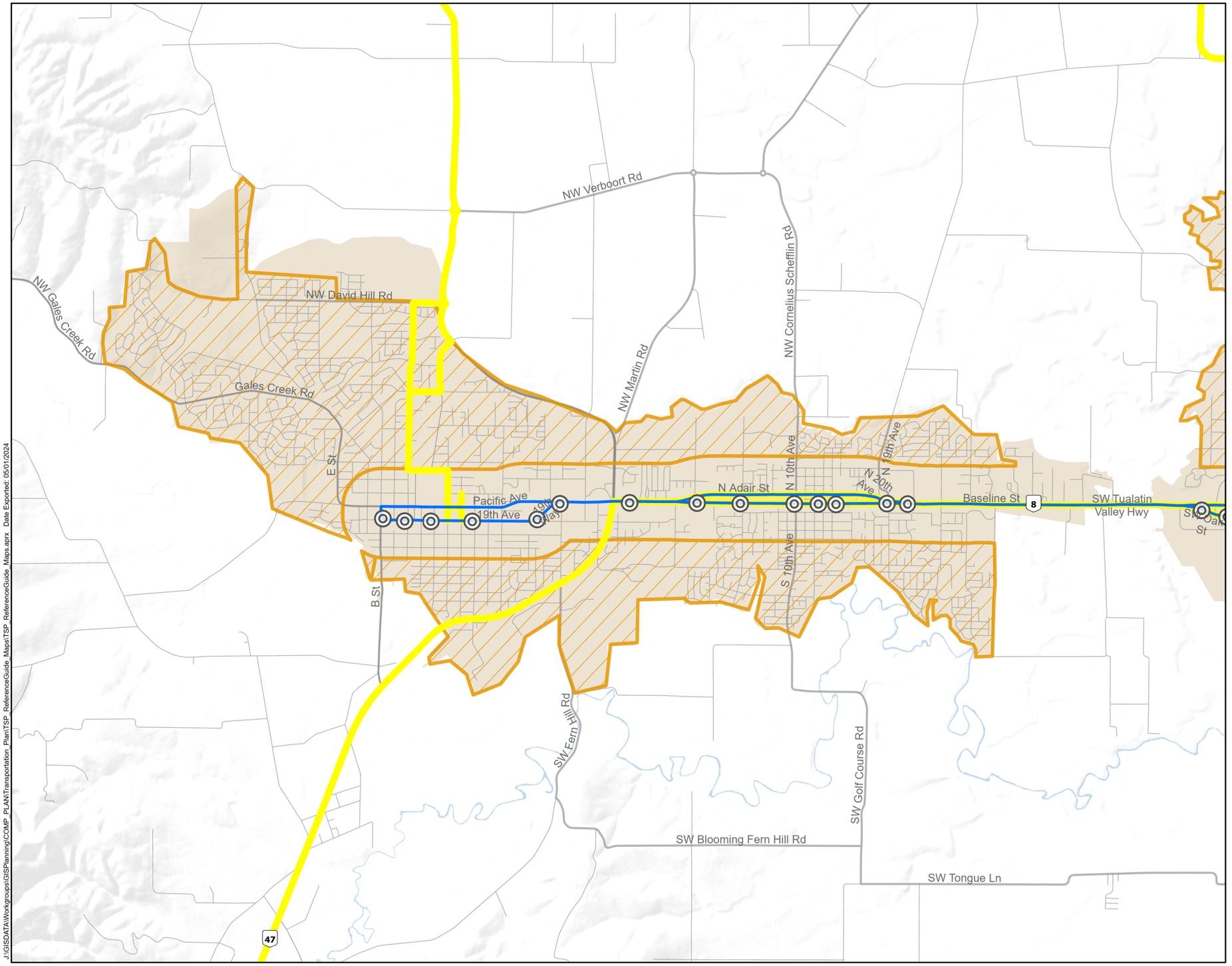
Transit Element



Transit System

Urban Area Map 1 of 6

- Major Transit Stop
- Frequent Bus Service
- Interregional Bus Service
- Community Connector Service Area
- Urban Area
- County Boundary
- Other Roads



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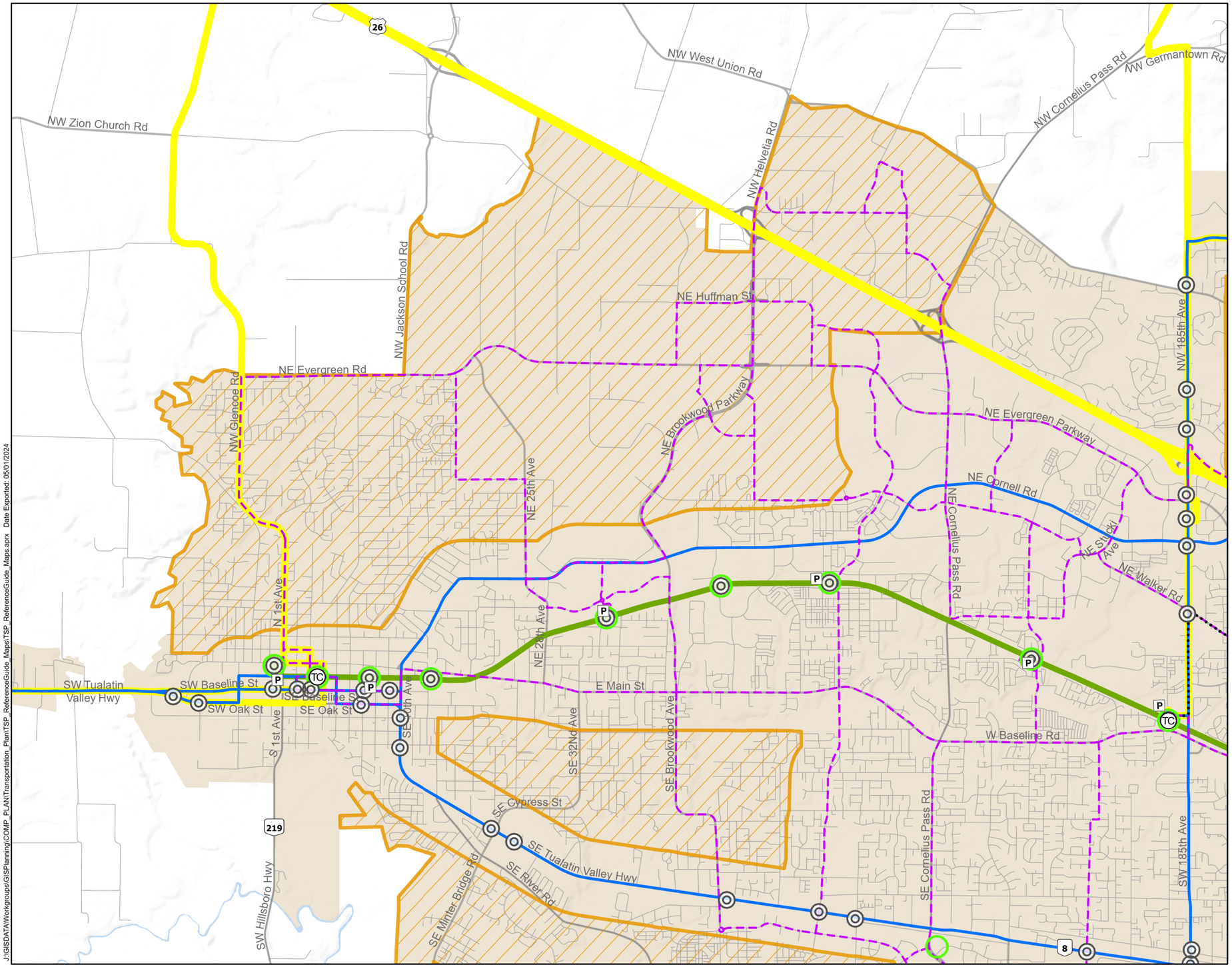

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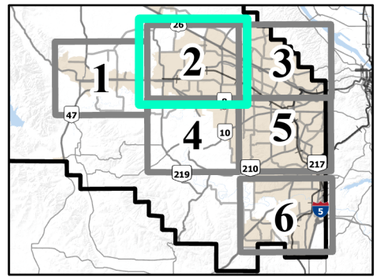

Transit System

Urban Area Map 2 of 6

- Major Transit Stop
- Transit Center (also classified as Major Transit Stop)
- Park and Ride
- Bicycle Transit Facility
- Existing High Capacity Transit
- Frequent Bus Service
- Interregional Bus Service
- Peak Period Bus Service
- Regular Bus Service
- Community Connector Service Area
- Urban Area
- County Boundary
- Other Roads

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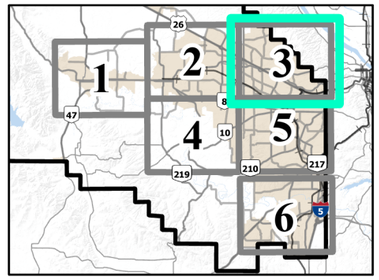

Transit System

Urban Area Map 3 of 6

- Major Transit Stop
- Transit Center (also classified as Major Transit Stop)
- Park and Ride
- Bicycle Transit Facility
- Existing High Capacity Transit
- Frequent Bus Service
- Interregional Bus Service
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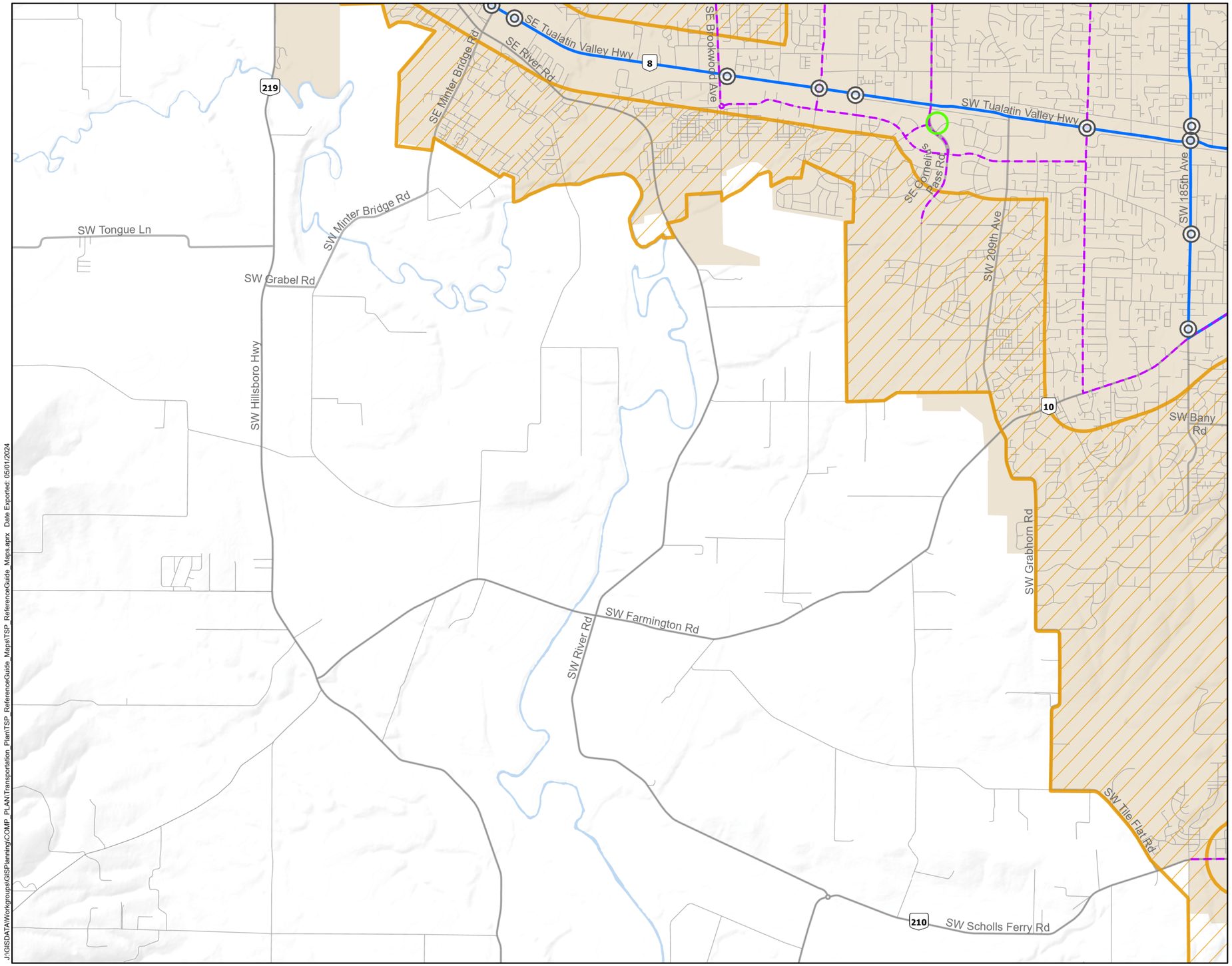

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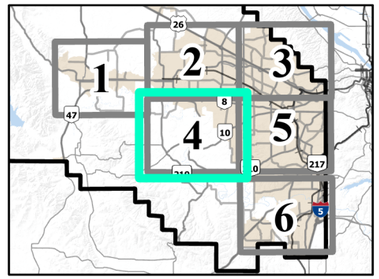

Transit System

Urban Area Map 4 of 6

- Major Transit Stop
- Bicycle Transit Facility
- Frequent Bus Service
- Regular Bus Service
- Community Connector Service Area
- Urban Area
- County Boundary
- Other Roads

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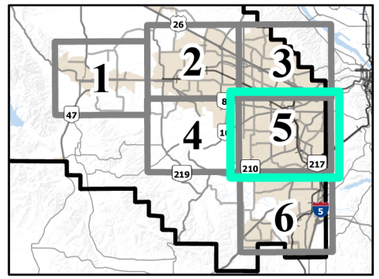

Transit System

Urban Area Map 5 of 6

- Major Transit Stop
- Transit Center (also classified as Major Transit Stop)
- Bus Terminal
- Park and Ride
- Bicycle Transit Facility
- Existing High Capacity Transit
- Frequent Bus Service
- Interregional Bus Service
- Peak Period Bus Service
- Regular Bus Service
- Community Connector Service Area
- Urban Area
- County Boundary
- Other Roads

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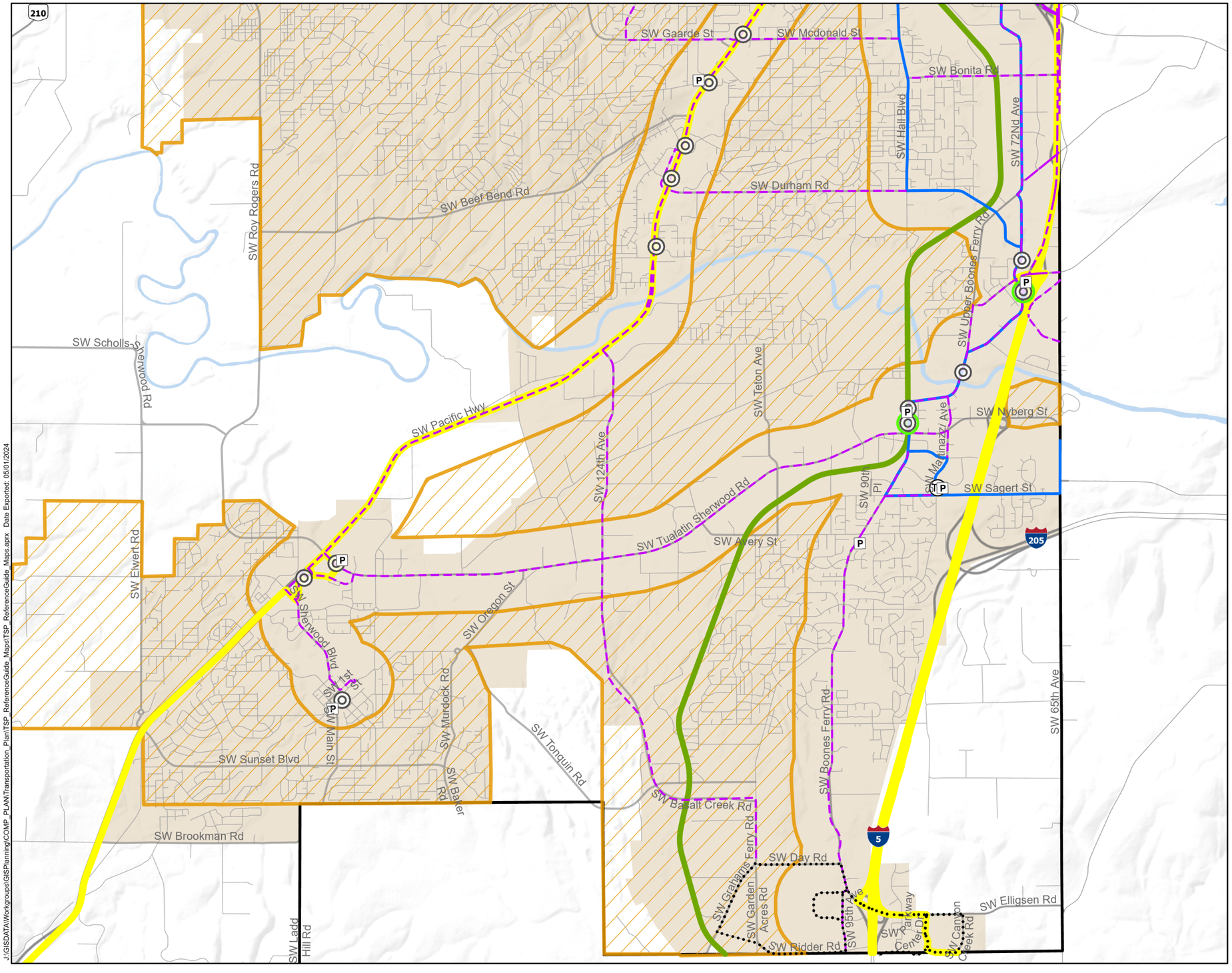

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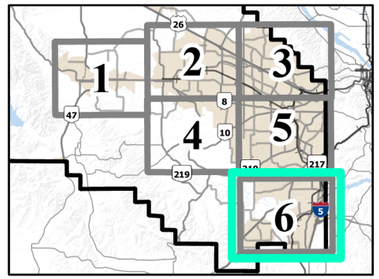
Transit Element



Transit System

Urban Area Map 6 of 6

- Major Transit Stop
- Transit Center (also classified as Major Transit Stop)
- Park and Ride
- Bicycle Transit Facility
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- Frequent Bus Service
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Rural Road Enhancement Study Corridor

Certain rural roads are designated as Rural Road Enhancement Study Corridors. Rural Road Enhancement Study Corridors are defined in the Roadway Element. Rural Road Enhancement Study Corridors are considered part of the Bicycle Element as they may address conflicts between cyclists, cars, trucks and farm equipment.

Tualatin Valley Scenic Bikeway

The Tualatin Valley Scenic Bikeway (TVSB) is a 30-mile on-road bicycle route connecting Rood Bridge Park and the Banks-Vernonia Trail through rural Washington County and the City of Forest Grove. The route was designated by the Oregon Parks and Recreation Department in partnership with Washington County and the Washington County Visitors Association. The TVSB consists of a signed route along existing roadways maintained by Washington County and other jurisdictions. A majority of the TVSB is a shared roadway facility in which cyclists and motorists share the same roadway space. Enhancements such as shoulder widening and intersection safety improvements may be appropriate at some locations along the TVSB, subject to engineering review.

The TriMet #57 bus route along TV Highway has the highest total ridership of all bus lines in Washington County.

Transit Element

Washington County's transit system, operated by several public transit agencies, consists of bus, light rail and commuter rail services as well as a number of community shuttle and paratransit services. Most transit service in Washington County is located within the urban growth boundary; however several rural and interregional routes are also available.

Transit System Map

The Transit Element identifies the future transit network as envisioned in the TriMet Westside Service Enhancement Plan, the draft TriMet Southwest Service Enhancement Plan and the Regional High Capacity Transit System Plan. It also responds to the Transit Service Needs Analysis (Figure 4-20) in the TSP Existing Conditions and Future Needs Report and assumes the continuation of existing transit services. The Transit Element also identifies a number of "point" features including Transit Centers, Park & Rides, Bicycle Transit Facilities and Major Transit Stops. The Transit Element does not identify or map paratransit services. However, it does identify potential areas for community shuttle service.

Transit System Classifications

Existing High Capacity Transit

High Capacity Transit (HCT) is a transit service that carries high volumes of passengers quickly and efficiently between locations. Defining characteristics of HCT include the ability to bypass traffic and avoid delay by operating in exclusive or semi-exclusive rights-of-way, faster overall travel speeds due to station spacing, frequent service, transit priority street and signal treatments, and premium station and passenger amenities. Transit modes most commonly associated with HCT include light rail, commuter rail, rapid rail, rapid streetcar and bus rapid transit. Existing HCT routes shown on the Transit Element include West Side MAX light rail (Blue and Red lines) and WES Commuter Rail.

High Capacity Transit Study Corridors

HCT Study Corridors represent future HCT routes as shown in Metro's Regional High Capacity Transit System Plan 2035, adopted in 2010. HCT Study Corridors require further refinement and coordination among all affected jurisdictions in order to determine the location, transit mode and right-of-way needs associated with each corridor. The Transit Element map shows HCT Study Corridors as wide lines that occasionally spread into larger areas in cases where multiple routes are possible.

Metro's Regional High Capacity Transit System Plan 2035 divides HCT corridors into four implementation tiers. Within Washington County, the tiers and proposed corridors are defined as follows[15]:

Near term regional priority corridors: Corridors currently most viable for implementation:

- **Corridor 11:** Portland to Sherwood in the vicinity of Highway 99W (the "Southwest Corridor").
- **Corridor 34:** WES commuter rail service improvements to 15-minute all-day service.

Next phase regional priority corridors: Corridors where future HCT investment may be viable if recommended planning and policy actions are implemented:

- **Corridor 17:** Sunset Transit Center to Hillsboro in the vicinity of Highway 26/Evergreen Parkway
- **Corridor 17D:** Tanasbourne/Amberglen extension
- **Corridor 28:** Clackamas Town Center to Washington Square in the vicinity of Portland & Western Railroad
- **Corridor 29:** Clackamas Town Center to Washington Square in the vicinity of I-205/Highway 217
- **Corridor 32:** Beaverton to Hillsboro in the vicinity of TV Highway

Developing regional priority corridors: Corridors where projected 2035 land use and commensurate ridership potential are not supportive of HCT implementation, but which have long-term potential due to political aspirations to create HCT-supportive built form:

- Corridor 12: Hillsboro to Forest Grove extension

Regional vision corridors: Corridors where projected 2035 land use and commensurate ridership potential are not supportive of HCT implementation:

- Corridor 38S: Sherwood to Tualatin

As of this writing, refinement planning is underway for the Southwest Corridor (Corridor 11). The exact location and transit mode of Southwest Corridor HCT is not yet identified. The Transit Element map shows a broad swath that includes the routes that are currently under consideration.

Refinement planning for HCT in the TV Highway Corridor between Hillsboro and Beaverton (Corridor 32) is a key recommendation of the 2013 TV Highway Corridor Plan. The Transit Element map shows the corridor as

15 Metro Regional High Capacity Transit System Plan 2035 Summary Report, 2010.

a wide line that includes TV Highway, the adjacent Portland & Western Railroad and several other potential routes. An HCT Study is needed to determine the transit mode, location and right-of-way needs for future HCT along TV Highway. This need for further study is also reflected in the Refinement Area shown in the Roadway Element.

Frequent Bus Service

Frequent Bus Service is fixed-route bus service with 15-minute or shorter headways (times between arriving buses) all day, seven days a week, with the potential exception of longer headways during early morning and late night hours.

Regular Bus Service

Regular Bus Service is fixed-route bus service with 15-minute headways during weekday peak periods and 20 to 30-minute headways at other times.

Peak Period Bus Service

Peak Period Bus Service is fixed-route bus service that operates during the weekday morning and evening peak periods only.

Community Connector Service Area

A Community Connector Service Area is an area that is currently served, or could potentially be served, by lower-cost fixed-route bus service or flexible-route shuttle service. These are areas where regular bus service may not be feasible due to lower densities and/or historically low transit ridership.

Interregional Bus Service

Interregional Bus Service provides longer-distance transit service that connects into and between the urban areas of Washington County from locations such as the rural area, Wilsonville, Yamhill County, Columbia County, and the Oregon Coast and beyond. Interregional bus service also provides connections between public transit service providers.

Transit Center and Bus Terminal

A Transit Center and/or Bus Terminal is a transit hub served by several bus routes and/or rail transit facilities. Transit Centers and Bus Terminals allow riders to transfer between different transit services and/or modes in a safe, comfortable environment. Typical features include shelters, benches, lighting, bicycle parking, traveler information and layover facilities for transit operators. Transit Centers and/or Bus Terminals may include automobile parking, drop-off zones and retail uses.

Park & Ride

A Park & Ride is a location where people are allowed to park private vehicles and access one or more transit services. A Park & Ride is typically a parking lot or parking structure adjacent to a transit stop. Most Park & Rides are on public property; however they also exist on private properties that allow parking through a lease or other agreement with the appropriate transit agency. As of 2013 there were 28 Park & Rides with more than 5,400 parking spaces combined in Washington County.

Bicycle Transit Facility

A Bicycle Transit Facility is an existing or planned location at or near a transit stop that provides secure, enclosed bicycle parking. The purpose of a Bicycle Transit Facility is to improve the viability and convenience of combining bicycle and transit modes for trips, and to link the first or last leg of the transit trip between transit stops and locations beyond a reasonable walking distance.

Major Transit Stops[16]

Major transit stops include:

- Existing High Capacity Transit stations
- Transit Centers
- Bus stops on existing or planned Frequent Bus Service lines that are intended to provide a higher degree of passenger amenities.

Major transit stops may include traveler amenities such as shelters, lighting, seating, bicycle parking, real-time traveler information and/or other passenger amenities. Major transit stops are intended to be highly accessible and visible to adjacent building, while providing for quick and efficient transit service. The role of Washington County is to facilitate safe, comfortable access to Major Transit Stops through pedestrian enhancements and through Community Development Code provisions that promote transit-oriented building and site designs. Supportive pedestrian enhancements near Major Transit Stops may include (but are not limited to) sidewalk infill, pedestrian crossings (compliant with R&O 10-107, the Washington County Mid-Block Crossing Policy), curb cuts, street lighting, concrete pads between the sidewalk and curb and improvements that provide compliance with the federal Americans with Disabilities Act (ADA).

Transportation System Management & Operations Element

The Transportation System Management and Operations element of the Transportation System Plan (TSP) identifies systems and operational strategies for Washington County to pursue over time. This section focuses on the provision of systems to improve the management and operation of the integrated multi modal network. Transportation System Management & Operations includes four functional areas:

- Multi-Modal Traffic Management
- Traveler Information
- Traffic Incident Response
- Transportation Demand Management

I. Multi-Modal Traffic Management, Operations and Traveler Information

Washington County's Intelligent Transportation System (ITS) plan has combined Multi-Modal Traffic Management and Operations with traveler information systems into a coordinated system management architecture. This section includes discussion of Traffic Control and Traveler Information systems as well as bicycle, pedestrian and rural systems.

Washington County, in partnership with numerous stakeholders, has developed an Intelligent Transportation System (ITS) Plan for the county's roadways. The ITS plan will guide the deployment of advanced technologies and management techniques to improve the safety and efficiency of the transportation system. The goals of the ITS Plan include:

16 Washington County Community Development Code Section 380—Convenient Access to Transit Overlay District—refers to Major Bus Stops. Provisions in Section 380 apply only to Major Bus Stops mapped in the Washington County Community Plans, not those mapped in the TSP. The Community Plans and/or Community Development Code may be updated in the future to include the Major Transit Stops as shown in the TSP.

- Improve the safety and security of our transportation system
- Improve the efficiency of the transportation system
- Provide improved traveler information
- Deploy functional and cost efficient ITS infrastructure
- Integrate regional ITS projects with local and regional partners

The ITS plan provides a framework of policies, procedures and strategies for integration of Washington County's existing resources to effectively meet future regional transportation needs and expectations. Key concepts include the following:

- The region cannot build itself out of congestion
- The region endeavors to maximize the efficiencies and improve the safety of the existing infrastructure
- The County strives to deliver better information about traffic conditions
- The plan fosters multi-agency coordination for system operations
- The Federal Highway Administration requires that all ITS projects funded through the Highway Trust Fund shall be in conformance with the National ITS Architecture and applicable standards

Washington County seeks to improve the safety, security and movement of goods, people and services for all modes of the transportation network by using advanced technologies, coordinated management techniques, and by providing real-time traveler information. Building and managing a smarter, more efficient transportation system requires cooperation between Washington County, ODOT and local agencies. Improving the management and operations of the integrated multi-modal network necessitates a combined strategy of capital projects, use of technology and public transportation. Many of these strategies may be used on corridors where Washington County operates the traffic signals. Washington County will lead these efforts and coordinate with local agencies and ODOT on the implementation as applicable.

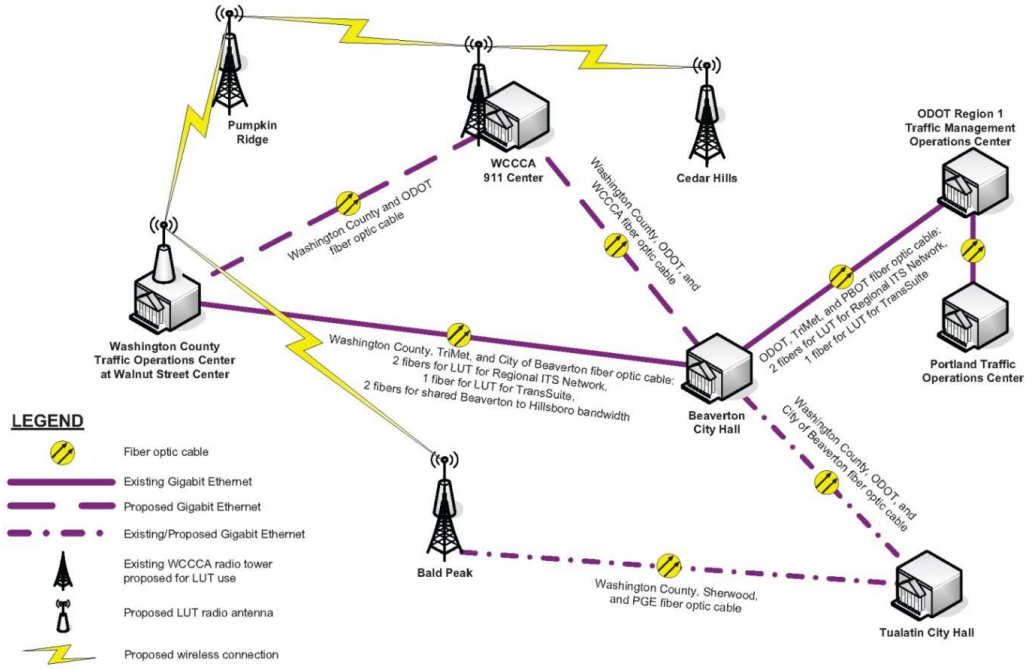
1. **Traffic Control & Traveler Information**
   The ITS plan focus on two major categories of systems:

   A. Communication Backbone & Centers

   B. Arterial Management System and traveler information systems

   A. Communications Backbone & Control Centers
   The following figure depicts the high-level network architecture for connecting the operations centers that are operated by Washington County, and connections to other regional operations centers operated by other agencies.

Communications Backbone



The four operations centers operated by Washington County are:

- Washington County Traffic Operations Center (TOC) at Walnut Street Center
- Washington County Consolidated Communications Agency (WCCCA) 911 Center
- Beaverton City Hall
- Tualatin City Hall

Regional operations centers operated by other agencies include:

- ODOT Region 1 Traffic Management Operations Center
- City of Portland Bureau of Transportation TOC

The backbone network uses a combination of fiber optic cable and wireless communications to connect the centers. The wireless paths shown in the following figure were identified through a planning level radio frequency analysis. In addition to center-to-center communications, several wireless paths were also identified to provide connectivity to some field devices based on line of sight analysis.

B. Arterial Management System and traveler information systems

Washington County has identified a number of ITS strategies for improving corridor management and operations over time. These strategies include:

- Routine traffic signal maintenance/operations
- Enhanced traffic signal timing operations
- Transit signal priority
- Traffic surveillance (cameras or detection)
- Trail counters
- Event management

- Arterial performance monitoring
- Real-time traffic flow conditions
- Fiber optic cable backbone

Arterial Management System

Washington County has deployed several arterial management projects. These ITS projects are aimed at improving the safety and operational efficiency of the existing transportation infrastructure. Potential benefits for the transportation system and travelers include:

- Improved travel time reliability
- Reduced travel delay
- Reduced fuel consumption and greenhouse gas emissions
- Reduced crashes and improved safety
- Comprehensive information for travelers to make informed decisions

2. **Bicycle & Pedestrian**

Bicycle and Pedestrian ITS strategies include information systems to collect data about bicycle and pedestrian travelers as well as operational systems to enhance the transportation network for these travelers.

Information systems may include:

- **Bicycle Detection** — Bicycle detection at traffic signals supports the operation of the signal and collects that the signal has responded to the detection (the presence of the cyclist is counted)
- **Trail Counters** — Washington County continues to work with Parks and Recreation departments to install bicycle and pedestrian counters where trails cross arterial roadways

System enhancements may include:

- **Pedestrian Signal Countdown Timers** — Pedestrian signal countdown timers can be installed based on the requirements of the Manual of Traffic Control Devices
- **Bicycle/Pedestrian Crossing Enhancements** — Enhance visibility of bicycles and pedestrians at crossings, pushbutton-activated beacons or traffic signals
- **Bicycle/Pedestrian Based Signal Timing** — Adjust signal timing to accommodate bicyclists and/or pedestrians. Include prohibiting flashing yellow arrow when there is a pedestrian call. Reduce pedestrian and bicycle delay at locations with high pedestrian and/or bicycle demand. Bicycles may require longer minimum green times and longer clearance intervals

3. **Rural**

Rural systems enhance the operation and safety of the roadways. These systems are often prioritized at locations with a higher number of collisions. Rural systems may include:

- **Weather Stations** — Monitor adverse conditions and provide traveler information
- **Intersection Warning Systems** — Notify drivers of an upcoming intersection or cross-traffic with active warning systems
- **Curve Warning Systems** — Notify drivers of an upcoming curve using active warning systems

- **Queue Warning Systems** — Notify drivers that a queue exists ahead using active warning systems
- **Size & Speed Warning Systems** — Notify drivers of height, length, width or speed restrictions, typically applied on roadways with compliance issues
- **Speed Feedback Systems** — Measure and display speed of approaching vehicles in advance of locations where a slower speed is appropriate

II. Traffic Incident Response

At this time, Washington County does not envision development of a traffic incident response program. Washington County coordinates with ODOT, which provides a dedicated and efficient incident response program (formerly known as Corridor Management Teams or COMET). Beyond the ODOT incident response program, Washington County relies on emergency services departments (such as the County Sheriff Office and Tualatin Valley Fire & Rescue) to respond to incidents throughout the transportation system.

III. Transportation Demand Management

Transportation Demand Management (TDM) is the general term used to describe any activity that provides an alternative to single occupant vehicle trips. Demand management encompasses a range of strategies such as carpooling, staggered work shifts or telecommuting. Strategies may encourage ridesharing (e.g., car- or van-pooling), transit use (e.g., fare subsidies), bicycle commuting (e.g., on site showers, lockers or bike parking), walking to work or providing flexible working hours. Such strategies are viewed as relatively low-cost initiatives that can help reduce traffic congestion and air quality problems. As growth in Washington County occurs, the number of vehicle trips and travel demand in the area will also increase. The ability to provide alternatives will help accommodate this growth. Travel demand management strategies and programs have taken on increased importance and emphasis over time, particularly as interest in green-house gas reductions have increased.

Employers with more than 100 employees at a single work site are subject to the Department of Environmental Quality's Employee Commute Options (ECO) rule. Such employers are required by state regulations to have programs in place intended to reduce the percentage of employees who drive alone to work, and to regularly survey their employees about their commute patterns. An employer participating in an equivalent commute trip reduction program who does not achieve its target auto trip rate by the target compliance date must demonstrate that a good faith effort was made to achieve the target rate.

Washington County coordinates with the Westside Transportation Alliance (WTA) on a variety of employer based TDM strategies. The WTA, the primary Transportation Management Association (TMA) within Washington County, works with its partners and Washington County employers to offer workplace services and programs that help employees commute to work by transit, carpool, vanpool, bicycling and walking. These services include transportation fairs, assistance with ECO Rule compliance, surveying, events, incentive programs and participation on local and regional planning committees.

Travel Demand Management programs may include a wide variety of commute options incentives, such as:

- Free TriMet passes for all employees
- Preferential parking for carpooling vehicles
- Bike storage and showers, and locker rooms
- Compressed work weeks
- Telecommuting
- Individual Marketing Programs

Part 4—Implementation and Funding

Ultimately, the value of the Transportation System Plan (TSP) will be determined by the success of its implementation. In order to assure that the transportation system effectively meets the needs of county residents and businesses, Washington County must make the commitments necessary to pursue implementation. How the provisions are carried out is at least as important as what is in the TSP. Among the most important provisions, the TSP stresses the need for efficient management of the system over time. The TSP implementation element consists of a number of interrelated activities and processes that should be carried out on a regular basis. Implementation objectives and strategies are addressed in the following three goals:

- **Goal 9 Coordination**
- **Goal 10 Funding**
- **Goal 11 Maintenance**

Many transportation system investments are completed by the development community as conditions of development approval. Implementing the TSP includes working with the development community to provide improvements proportional to the impacts of the development and transportation related conditions of development approval reflective of the aspirations of the community.

Public capital improvement programs cover a broad range of scale and type of improvements and funding categories. Development of capital improvement and maintenance programs rely heavily on the TSP monitoring activities. Information provided by regular system monitoring is needed in order to make informed decisions regarding selection of construction and maintenance projects. Coordination with state, regional and local jurisdictions and their planning processes is imperative in order to develop unified requests for funds and to help secure optimum benefits for the transportation systems within Washington County. A periodic review of funding and maintenance should include items such as an inventory of capital and maintenance expenditures, updates of planning-level project costs, estimates of anticipated revenues and an update of the long-term revenue forecasts.

Likewise, public involvement is critical during the development and implementation of the TSP. Such public involvement ensures that transportation needs are appropriately defined and met. Engagement of interested groups and members of the public in transportation planning, programming and project development activities ensures that system implementation is reasonably and fairly carried out.

Monitoring

Transportation system operating characteristics are influenced by a number of different factors which should be reviewed regularly to determine whether changes in project lists, prioritization or general plan policies are needed. Characteristics to monitor include population and employment growth, changes in travel patterns or modes, development activity, traffic volumes and accident analysis, transportation facility construction and condition and plan amendments that occur over time.

Periodic reviews of the TSP help Washington County achieve satisfactory transportation and land use benefits as well as progress towards achieving regional mode share targets. Amendments and administrative adjustments are necessary to enable Washington County to ensure implementation actions are consistent with and advancing Plan goals and objectives. Washington County amends and adjusts the TSP as necessary, according to the following procedural descriptions:

A. **Legislative Amendments:**

Changes which involve the creation, broad scale implementation or revision of public policy, including map changes where property owners are directly affected may be processed as legislative plan amendments, including public hearings as provided for in the Community Development Code (CDC). These include but are not limited to the Functional Classification Map and descriptions, Bicycle System Map (excluding alignment modifications to off-street pathways), Plan goals, objectives and strategies, modification to the general location of facilities identified in the Plan and selection of the general location of a facility in a Corridor Study Area.

B. **Quasi-Judicial Amendments:**

When property is proposed for development and is affected by (i.e., contiguous to or traversed by) a proposed road alignment as shown on the functional classification map, a modification to the proposed road alignment may be processed as a quasi-judicial plan amendment. Such quasi-judicial plan amendments are provided for in the CDC. Quasi judicial plan amendments may include a public hearing when the road alignment affects other properties in the immediate vicinity. Applications for quasi-judicial plan amendments may be initiated by the County Board of Commissioners, the Director of the Department of Land Use & Transportation or the owners of property affected by the proposed alignment. A quasi-judicial plan amendment may be approved only if all the following criteria are satisfied:

1. The new alignment maintains the intent and purpose of the proposed alignment as originally shown on the Plan maps;
2. The new alignment will not adversely affect the carrying capacity, safety or integrity of the transportation system;
3. The new alignment is necessary to preserve a significant natural feature, minimize engineering or construction constraints or would result in a significant enhancement of the development potential of the affected properties;
4. The new alignment will not significantly increase the cost or complexity of any off-site improvements;
5. The new alignment does not have significant adverse affects on nearby property; and
6. The new alignment does not render a parcel unbuildable unless the owner consents.

C. **Minor Adjustments include:**

1. Adjustments to reflect minor modifications of existing roads outside an Urban Growth Boundary (UGB) that are determined to comply with the provisions of OAR 660-12-065.
2. Adjustments to reflect minor modification of a proposed road alignment that is part of a proposed development action within the UGB when the proposed change is contained within the subject site and does not adversely affect an adjacent property.

When these criteria are met, the change in alignment may be processed as part of a development application without separate notice or hearing. The Minor Adjustment criteria does not apply to adjustments of Special Area Streets.

D. For Special Area Streets, adopt road alignment corridor maps in Community Plans which allow limited movement of road centerlines through a Type II process. Modifications to streets to a greater extent than is allowed through a Type II process may be allowed through a Type III process subject to the criteria in the CDC. Modifications that do not meet the Type III criteria shall be subject to a quasi-judicial or legislative plan amendment process.

E. The Director of the Department of Land Use & Transportation shall determine if a proposed road alignment modification is legislative, quasi-judicial or a minor adjustment.

Coordination

Public involvement

Engaging the general public, interested stakeholders and working with state, regional and local jurisdictions is imperative to assure that the transportation system effectively meets the needs of all county residents and businesses.

Public involvement is critical during the development of the TSP and in defining how the TSP should be implemented. Public involvement is intended to ensure that transportation related needs are appropriately defined and met. Methods for engaging the public, interested stakeholders and community groups are constantly evolving. This element of the TSP ensures individuals have the opportunity to be actively involved in all phases of the planning, programming and project development processes. In addition to other outreach efforts, Washington County has an active public involvement program used during all stages of transportation planning, programming and project development.

Agency coordination

In Washington County, where the State of Oregon, Metro, TriMet, 16 local governments, several special services districts, including Tualatin Hills Park & Recreation District (THPRD) and a number of private enterprises either provide or rely on the transportation system, coordination is essential.

Local governments in Washington County have been successful in coordinating and integrating transportation activities, programs and policies. Regular discussions at monthly meetings of local government leaders has strengthened consensus around identifying and responding to issues. The Washington County Coordinating Committee's (WCCC) primary purpose is to coordinate activities of Washington County local governments and to work toward positions of consensus on regional and state land use and transportation planning matters. The WCCC is composed of elected representatives from Washington County and an elected representative from each city within Washington County. The WCCC may be delegated the responsibility for reviewing and providing recommendations on local, regional and state transportation funding decisions. The WCCC is supported by the WCCC Transportation Advisory Committee (WCCC TAC), which is composed of senior staff representatives from local governments. Submission of transportation activities, programs and policies to the WCCC is voluntary and at the discretion of the elected representatives.

Programming and Development Review

Recognizing that many types of transportation improvements are defined by law as land use decisions, the County has adopted a specific land use review process and standards for review of transportation improvements within unincorporated Washington County. The review procedures and standards are included in the Community Development Code (CDC). Transportation development application notice requirements to the public and service providers are also listed in the CDC.

The CDC implements the Washington County Comprehensive Plan through the adoption and coordination of planning and development regulations which provide for the health, safety and general welfare of the citizens of Washington County. Standards and requirements of the Community Plans, the Rural/Natural Resource Plan and the TSP that are applicable to development applications, including, but not limited to, urban land divisions, are specified in the CDC.

In general, Article V of the CDC identifies those public facilities and services that are necessary at a minimum level to accommodate development, including transportation facilities. Land within

incorporated areas of Washington County may also be subject to Article V requirements depending on the location of the development and if access to county roadways is contemplated.

Article VII of the CDC identifies public transportation improvements authorized by the TSP that are subject to development review and establishes the standards and procedures for such review. A Project Review Committee consisting of Washington County Department of Land Use & Transportation (LUT) staff evaluates applications for completeness and provides a recommendation to the LUT Director and/or Hearings Officer.

Goal 9: Coordination

Implement the Transportation System Plan by working with the public, community groups, transit providers, cities and other government agencies.

Objective 9.1 Improve the effectiveness of the planning process by providing opportunities for the public to participate in the planning and development of transportation plans, processes and projects.

- **Strategy 9.1.1** Obtain a broad representation of public input and feedback on transportation system-related planning, capital improvement programming and project selection pursuant to Washington County's Citizen Involvement Program by:

  A. Proactively undertaking community visioning.

  B. Engaging citizens early and throughout the planning process.

  C. Utilizing Citizen Participation Organizations and the Committee for Citizen Involvement as the primary ongoing citizen outreach forums.

  D. Participating in and soliciting feedback from transportation-related interest groups.

- **Strategy 9.1.2** Utilize input from the Urban Road Maintenance District Advisory Committee (URMDAC) and the Rural Roads Operations and Maintenance Advisory Committee (RROMAC). Identify needs for advisory committee membership and fill the positions.
- **Strategy 9.1.3** Utilize existing information programs, newsletters and media outreach. Investigate and incorporate new technological solutions to improve public participation.
- **Strategy 9.1.4** Seek to involve and incorporate feedback from populations that are historically underserved by the existing transportation system or underrepresented in transportation planning in a culturally relevant and equitable manner.
- **Strategy 9.1.5** Ensure the availability and transparency of transportation related data resources as appropriate.

Objective 9.2 Improve internal consistency and coordination with other Washington County plans and regulations.

- **Strategy 9.2.1** Utilize the development review process to review development applications, apply transportation related standards (including parking and other requirements) and require transportation related improvements and/or right-of-way dedication.
- **Strategy 9.2.2** Resolve conflicts between the TSP and transportation elements of Community Plans or the Rural/Natural Resource Plan in favor of the TSP.
- **Strategy 9.2.3** Involve Project Review Committee in the project development and design process as appropriate and exempt from review those types of improvements which generally do not have significant impacts or which involve final engineering, design, construction, operation, maintenance, repair or preservation decisions.

- **Strategy 9.2.4** Require that project development and development review procedures are consistent with the goals of the TSP.
- **Strategy 9.2.5** When amending the TSP, utilize text in the Implementation section and use the land use ordinance process as described in Chapter X of the Washington County charter to engage the public in the Planning Commission and County Board of Commissioners hearing process.

Objective 9.3 Coordinate with cities and agencies of Washington County as well as regional agencies to cooperatively plan and operate a seamless network of transportation systems and services.

- **Strategy 9.3.1** Work with the Washington County Coordinating Committee (WCCC) and the County Board of Commissioners for countywide transportation coordination with cities in Washington County as needed.
- **Strategy 9.3.2** Work with cities and other agencies to plan for transportation systems that account for Urban and Rural Reserves. For Urban Reserves, coordinate concept plans to provide transportation systems for these areas, including finance strategies to implement these plans. Coordinate the transportation planning of the urban area to avoid and or limit impacts on Rural Reserves areas.
- **Strategy 9.3.3** Coordinate with cities and other agencies on the development of concept plans prior to annexation.
- **Strategy 9.3.4** Work with cities and agencies to operate the transportation system in a manner that is seamless to the traveling public. This includes, but is not limited to, design standards, the implementation of the advanced transportation control systems, operation and coordination of signal systems, signage, maintenance schedules and procedures and repairs.
- **Strategy 9.3.5** Coordinate with the cities to resolve conflicts and transfer roads to the appropriate jurisdiction as urban unincorporated areas are annexed and urban expansion occurs.
- **Strategy 9.3.6** Where appropriate, facilitate the annexation of Neighborhood Routes and Local Roads to cities by designating these roads as “local access” routes.
- **Strategy 9.3.7** Participate in the regional technical and policy decision-making processes.
- **Strategy 9.3.8** Coordinate with Metro to develop, update and comply with the Regional Transportation Plan and the Regional Transportation Functional Plan requirements.

Objective 9.4 Ensure consistency with state and federal guidelines, and coordinate planning activities, as appropriate, with state and federal agencies.

- **Strategy 9.4.1** Work jointly with Oregon Department of Transportation (ODOT) to identify and resolve state/county issues.
- **Strategy 9.4.2** Coordinate with ODOT and Department of Land Conservation and Development and others to comply with the requirements of the Oregon Statewide Planning Goals, other state requirements and review all plan amendment requests for consistency with the applicable provisions of the Transportation Planning Rule as set forth in OAR 660-12-060.

Funding Element

Goal 10 of the Transportation System Plan identifies the existing transportation funding framework within Washington County. The transportation plan Funding Element expands on the funding framework, goals, objectives and strategies identified in Goal 10. This transportation funding element identifies projected revenue sources and lists current transportation improvements and cost estimates necessary to implement this plan. Based on the identified projected revenue and estimated costs, the funding element also identifies the overall projected funding gap.

This document represents the funding conditions at the time this document was prepared (2014). The projected revenues and estimated costs are expected to change over time. Further, the list of transportation improvements is anticipated to evolve as development occurs and new opportunities and challenges develop.

This funding element is divided into two primary types of funding and expenditures: 1) capital and 2) maintenance. While these categories are not mutually exclusive, many funding sources are dedicated primarily toward one or the other. The Funding Element treats these categories separately.

Capital Funding Programs:

Capital projects include improvements that expand, enhance or extend the current transportation system. The TSP identifies projects consistent with Metro's financially constrained 2014 RTP. The TSP projects financial resources over the planning horizon. The resulting revenue forecast is compared to the identified project list and used to define the gap between project needs and forecasted funding.

Major Streets Transportation Improvement Program (MSTIP)

MSTIP is a property tax measure that was passed by Washington County voters three times during the 1980s and 1990s. Each of the three ballot measures identified a specific list of improvements that would be completed if the measure passed.

In the late 1990s two statewide tax reform measures led to MSTIP being rolled into the County's general property tax rate. Those property tax revenues support the County's General Fund, which is used at the discretion of the Board of Commissioners. Thus far, the Board of Commissioners has invested the property tax revenue generated by MSTIP in transportation improvements. The TSP funding structure assumes that MSTIP will continue to fund transportation improvements at the same rate.

Periodically there has been discussion of a new MSTIP ballot measure. A new measure could ask voters to increase the countywide property tax for additional transportation investments. A new MSTIP ballot measure or other MSTIP increase is not included in the assumptions for the TSP financial analysis, consistent with Metro's RTP.

Transportation Development Tax (TDT)

The TDT was based on the Traffic Impact Fee (TIF). The TIF was enacted in 1986 for unincorporated Washington County. In 1990, the TIF was enacted countywide including within cities. This was one of the first transportation related development impact fees in the nation. The TDT is imposed on all new development in Washington County. The TDT is collected prior to the issuance of a building permit; or in cases where no building permit is required (such as for golf courses or parks), prior to final approval of a development application.

North Bethany Roads

In addition to the existing funding sources, North Bethany has two additional funding programs: The North Bethany Transportation System Development Charge and the North Bethany County Service District for Roads. The funds collected under these programs are intended to provide additional revenue to fund specific capital improvements needed to serve the planned development. Together the funds collected under these programs are intended to raise over $35 million towards 14 specific transportation projects.

The timeline for the complete development of North Bethany is unknown. The funding strategy was designed to implement transportation improvements as development occurs and funding becomes available. These two funding programs are intended to sunset once the area has developed, and the specified improvements have been implemented and purchased.

New road districts are likely to be established in the future for other developing areas, and some of these may contribute financially to Washington County facilities. These districts have yet to be defined and therefore are not considered in this context.

Federal and State funding

Federal and State transportation capital improvement funds are awarded through a variety of competitive application processes. These funding programs allocate improvements to the most competitive projects based on needs, system benefits and available funding.

The MTIP includes all federally funded transportation projects in the Portland Metropolitan area, including projects planned by TriMet, the Oregon Department of Transportation and local agencies receiving federal funds allocated by Metro. Metro currently uses a process known as the Regional Flexible Fund Allocation (RFFA) to distribute funds from three federal programs: the Surface Transportation Program, the Congestion Mitigation/Air Quality Program and the Transportation Alternatives Program. The RFFA process identifies which projects in the RTP will receive funding. RFFA funds are allocated every two years. Project and program applications may be nominated by jurisdictions, transportation or transit agencies within the region. These funds can be spent on a number of different types of improvements, except local street construction.

The MTIP also incorporates the Statewide Transportation Improvement Program (STIP), which is Oregon's four-year transportation capital improvement program. The STIP includes projects on the federal, state, city and county transportation systems, multimodal projects (highway, passenger rail, freight, public transit, bicycle and pedestrian) and projects in the National Parks, National Forests and Native American tribal lands.

Capital Project Prioritization

The goals, objectives and strategies of the TSP (adopted in A-Engrossed Ordinance 768) identify funding priorities. These reflect a balance of different important criteria to consider when selecting projects for funding. Each funding program has different rules, criteria and/or criteria weighting; these rules and criteria may change over time. Such changes to the funding program rules and criteria are generally established through an independent process and are not directly linked to the TSP. Balancing proposed projects to meet different goals of the TSP must be based on the specific situations being addressed.

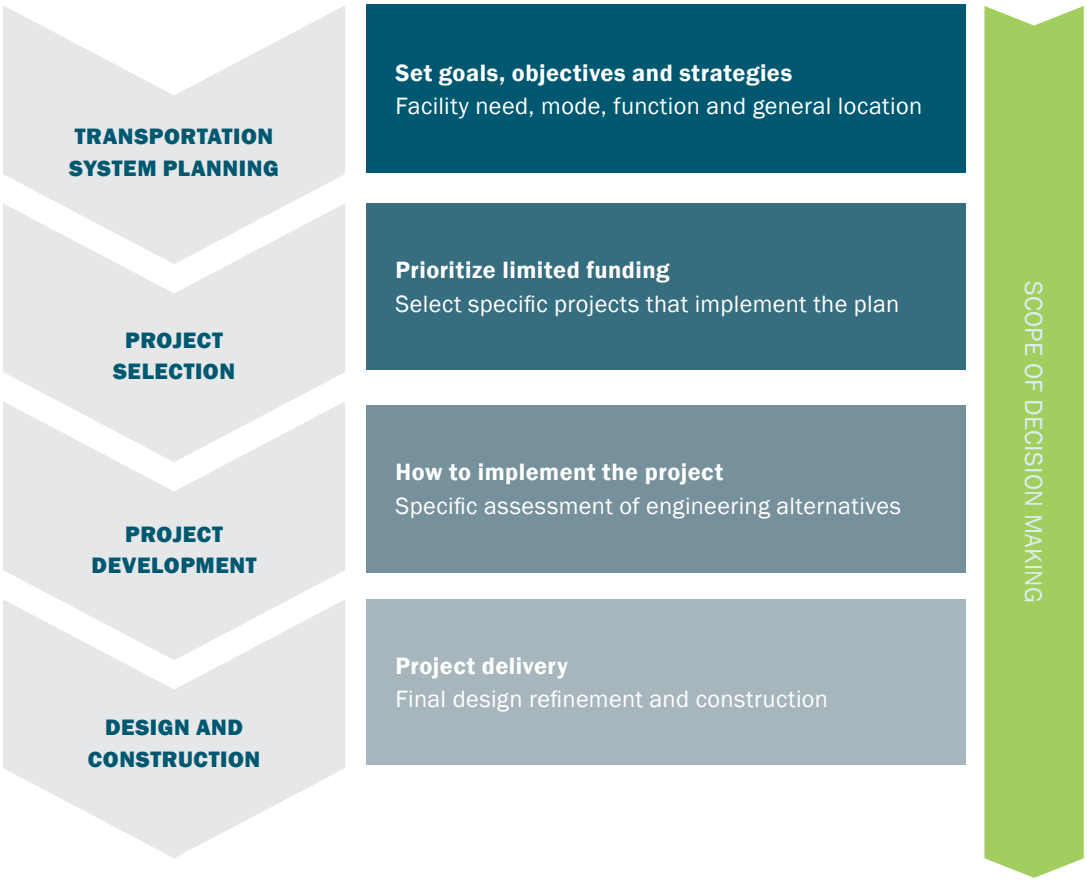
Therefore, the TSP must be flexible enough to respond to the rules and criteria established by the various funding programs. Identifying how a particular project may score within the established funding program rules and criteria is the task of recommending and/or applying for the funding program. In many cases, it is important to demonstrate within the funding application how a particular project is consistent with the goals of the TSP, while meeting the specific requirements of the funding source.

The TSP identifies the need, mode, function and general location of transportation systems, but does not establish specific project priorities. The Oregon Transportation Planning Rule (TPR) establishes that transportation planning shall be divided into two phases: Transportation System Planning and Transportation Project Development. Transportation System Planning is a land use action and establishes a network of facilities and service to meet overall transportation needs including their function, mode and general location. Transportation Project Development implements the TSP by determining the precise location, alignment and design of improvements included in the TSP. Projects authorized in an acknowledged TSP are not subject to further justification with regard to their need, mode, function or general location.

The figure below describes the Transportation Project Development process, from establishing the need, mode, function and general location of the facility within the TSP to implementing the project on the ground.

Transportation Project Development Process

The figure depicts the four basic steps in the Transportation System Planning and project lifecycle. Each stage of the process yields key decisions that shape the transportation system. The scope of decision-making becomes more narrowly focused as projects advance through these stages. Bigger picture decisions occur during the planning and project selection stages, and more specific project-level decisions occur in the project development and the design/construction stages. LUT staff strives to keep the public informed and involved as appropriate throughout each of the Transportation Project Development process steps.



Maintenance Funding Programs:

In order to maximize the effectiveness of maintenance related resources, the Board has adopted target service levels for all different types of assets. The primary tool used for selecting road maintenance activities has been the *Road Maintenance Priority Matrix* as described in TSP Goal 11 maintenance.

Urban Road Maintenance District (URMD):

The Urban Road Maintenance District (URMD) was created by the voters in urban unincorporated Washington County in 1987; voters approved funding the district in 1994. URMD provides preventive road maintenance services for public roads within URMD boundaries, except roads that are designated as arterials or collectors on the Washington County Transportation Plan, for which maintenance funding comes from the Road Fund described below.

In 2011 the Board expanded the services eligible for URMD funding to include construction of safety improvements. All roads under County jurisdiction within the District are eligible for safety improvements, including Arterials and Collectors.

Road Fund:

Washington County receives a portion of state highway funds generated by Oregon's 30-cents-per-gallon tax on gasoline, truck weight-mile fees and vehicle registration fees. Anyone who buys gasoline, drives a truck that meets requirements for weight-mile fees or registers a vehicle in Oregon pays the tax. This fund has historically been distributed 50 percent to the state, 30 percent to the county and 20 percent to the cities. Washington County also collects a local one-cent-per-gallon tax on gasoline. Anyone who buys gas/diesel in Washington County pays the tax. These revenues are used by Washington County to maintain roads under County responsibility. For the purpose of the Funding Element, no increases or other significant changes to the Road Fund are assumed.

Funding

The Transportation System Plan (TSP) reflects that transportation needs appear likely to outstrip available funding resources. The challenge then is two-fold: 1) to make the best use of existing resources and 2) generate the interest and support necessary to provide additional resources to implement the transportation systems and services that Washington County residents and businesses desire. The other sections of the TSP generally review the use of revenue sources; while this goal is generally focused on the revenue programs themselves.

Current Countywide Transportation Funding Strategy

Washington County's transportation system funding currently uses a variety of different measures. The main principle of these measures has been the creation of a sustainable funding program to implement improvements over time. The graphic below illustrates the current countywide transportation funding structure and recent program revenue streams.

Figure 6: Three Legged Stool

Washington County Transportation Funding Strategy

"Three Legged Stool"

Existing Safety/ Capacity Deficiencies

Property Taxes (MSTIP)

- MSTIP 1: $27 million (1986–1989)
- MSTIP 2: $60 million (1989–1995)
- MSTIP 3: $265 million (1995–2004)
- MSTIP 3b: $65 million (2004–2007)
- MSTIP 3c: $138 million (2007–2013)
- MSTIP 3d: $175 million (2013–2018) Approx. $35 million/year
- Total to date: $730 million
- MSTIP 3e: $175 million (2018–2023) Approx. $35 million/year

System Maintenance

Gas Tax and User Fees

- Road Fund: State and county fuel taxes, state vehicle registration fees and weight-mile tax
  Approx. $24 million/year for maintenance-related activities
  Prioritization policy focuses on major transportation system first
- Urban Road Maintenance District (Property tax) Approx. $4 million/year Unincorporated Area Local Streets

Keeping Up with Growth

- TIF/TDT: Average $13 million/year since 1990
- North Bethany Transportation SDC and County Service District
- Proposed Bonny Slope West Transportation SDC

Table 5: Countywide Transportation Funding Programs

Source	Use	2013 Estimated Amount
State and County Gas Tax	For maintenance and operation of Arterials and Collectors	$23 million annual
Urban Road Maintenance District (URMD)	For maintenance and operation of unincorporated neighborhood and local streets, plus minor safety improvements	$3.7 million annual property tax
Major Streets Transportation Improvement Program (MSTIP)	To meet existing deficiencies on Arterials, Collectors and other major system improvements as determined by the Board of Commissioners	$35 million annual property tax (enacted 3 times, due to state law changes is now part of the general fund)
Transportation Development Tax (TDT)	For future capacity primarily on Arterials, Collectors and other major system improvements	Tax on new development, used for future needs. Varies based on amount of development
Special District Funding Sources	Dedicated funding for specific improvements within, or that directly benefit, the special district.	Varies

Capital improvement projects may be funded from a variety of federal, state and local funding programs. There are also instances where private sector funding contributes. The ongoing countywide transportation funding programs, such as the Gas Tax, Urban Road Maintenance District (URMD) and Major Streets Transportation Improvement Program (MSTIP) are consistent sources of revenue that can be programmed over a period of time.

The MSTIP is an innovative pay-as-you-go program that is a key piece of Washington County's transportation funding strategy. MSTIP has been praised across the state as a smart and balanced response to transportation needs. By 2013, MSTIP will have built 111 multi-modal projects (totaling $555 million) that county residents and businesses rely upon every day. The program began as a series of serial levies (1986, 1989 and 1995), and statewide ballot measures rolled it into Washington County's fixed tax rate in the late 1990s.

The Transportation Development Tax (TDT), which replaced the previous charge known as Traffic Impact Fee (TIF) in 2009, is another voter-approved countywide program. This program collects charges from new development to help address the impacts of growth. The TDT is based on the estimated traffic generated by each type of development. The amount of TDT revenue generated varies by the amount and type of development that occurs during any given time frame. Revenue is held in a dedicated account and allocated toward transportation capital improvements as revenue becomes available.

The capital improvements must be designed to accommodate growth. Eligible projects are on major roads, including sidewalks and bike lanes, as well as transit capital projects (such as bus shelters).

New development not only pays the TDT, but also is responsible for improvements that serve the development. Such improvements often include new connections within and/or adjacent to the development, the frontage improvements along major roadways and safety improvements within the vicinity.

The North Bethany Transportation Funding Strategy is a special case. This funding strategy calls for a mixture of existing and new revenue sources to assure the funding for a complete transportation system for the North Bethany Subarea.

In addition to the countywide transportation funding programs, there are a number of dedicated programs within Washington County specifically targeted towards local improvements. Frequently, Local Improvement Districts (LIDs) are established to make improvements or changes to identified streets. These districts become part of the property tax dedicated to fund the improvements identified. These districts are often needed for paving or to otherwise maintain or preserve existing or new roadways. Such LIDs have been implemented in several areas to install or improve traffic management devices within neighborhoods.

Federal, state and other funding programs are often discretionary and targeted toward specific types of eligible improvements. Washington County continues to seek out these sources of funding. Often the allocation of these funds is targeted toward a specific improvement. This type of funding tends to be unpredictable from year-to-year. Local funding programs, such as TDT, are often used as matching funds for these types of programs.

Goal 10: Funding

Seek adequate and reliable funding for transportation.

Objective 10.1 Preserve existing transportation assets by providing adequate maintenance.

- **Strategy 10.1.1** Look for opportunities to reduce maintenance costs through cooperative partnerships with other agencies and private enterprises as well as periodic reviews and evaluations of best practices.
- **Strategy 10.1.2** Consider long-term maintenance liabilities when planning and designing new transportation facilities.
- **Strategy 10.1.3** Recognizing that recent declines in Gas Tax revenue are expected to continue, seek new or enhancement of existing funding sources for maintenance.

Objective 10.2 Promote equitable, sustainable and fiscally responsible transportation system funding.

- **Strategy 10.2.1** Strive to distribute funding so that it is balanced between the various needs of the community, including modal and geographic considerations.
- **Strategy 10.2.2** When considering the TSP or amendments to the plan, evaluate potential transportation system options with consideration for reasonable funding levels given existing and anticipated future funding sources.
- **Strategy 10.2.3** Regularly provide transparent reports on transportation funding sources and related investments.
- **Strategy 10.2.4** Prior to allowing urban development within urban growth boundary expansion areas, develop and implement financing strategies that provide adequate funding for the transportation systems and services necessary for the anticipated urban development as appropriate.

Objective 10.3 Monitor revenue sources to meet transportation system needs.

- **Strategy 10.3.1** Monitor Road Fund and Urban Road Maintenance District (URMD) revenue to anticipate the occurrence and magnitude of potential funding shortfalls.
- **Strategy 10.3.2** Monitor the Transportation Development Tax (TDT) and the proportion of the future growth needs being met by development related revenue and credits.

- **Strategy 10.3.3** Continue the commitment of the Major Streets Transportation Improvement Program (MSTIP) revenue to fund transportation needs.
- **Strategy 10.3.4** Rely upon the Road Fund to continue to maintain and operate the Arterial and Collector roadway system, as appropriate.

Objective 10.4 Strategically invest in the transportation system to accomplish the other goals within the TSP.

- **Strategy 10.4.1** Seek to establish new and/or enhance existing funding mechanisms to adequately support the capital and maintenance needs identified in the TSP.
- **Strategy 10.4.2** Work with regional and state partners to investigate alternatives to or enhancements of the Gas Tax, as appropriate.
- **Strategy 10.4.3** Seek non-traditional funding alternatives and sources to enhance the transportation system.
- **Strategy 10.4.4** Seek funding for active transportation projects and improvements (including off-street trails) from all appropriate sources of available funding.
- **Strategy 10.4.5** All funding decisions should be consistent with the TSP goals.

Objective 10.5 Seek adequate funding for transportation improvements that benefit Oregon as well as the Portland metropolitan region.

- **Strategy 10.5.1** Work with state, regional and local agencies and elected officials to leverage and increase state funding for transportation projects within Washington County.
- **Strategy 10.5.2** Coordinate with the Oregon Congressional Delegation to pursue adequate federal transportation funding for Oregon and the Portland metropolitan region
- **Strategy 10.5.3** Seek funding for transportation projects in Washington County through the Metro Transportation Improvement Program (MTIP) and Oregon Department of Transportation's (ODOT) Statewide Transportation Improvement Program (STIP).
- **Strategy 10.5.4** Coordinate with other agencies and organizations to establish adequate, uniform and equitable methods for funding local transportation system needs.

Washington County road maintenance crew

Maintenance

Preserving Washington County's investment in its transportation infrastructure is the fundamental purpose of maintenance. However, competing interests and limited funds present a challenging task for those who are charged with maintaining a complex network of static and dynamic features. The Operations & Maintenance Division (OPS) strives to apply the appropriate level of resources at the right time to provide the cost-effective use of available funds while achieving the best overall condition of our transportation system assets. Adequate maintenance is critical; it is much less expensive in the long run to maintain assets in a deliberate manner than to allow them to fail and be replaced prematurely. A well-maintained transportation system is also essential for the safety of its users.

With nearly 1300 centerline miles of paved and gravel roads, almost 200 bridges, over 3000 culverts, close to 900 miles of drainage ditches and numerous miles of roadside vegetation to maintain, achieving the best overall condition of our transportation system is a balancing act requiring cooperation, creativity, and collaboration. To help achieve this balance for roadway maintenance, OPS utilizes a variety of tools including policies, empirical analysis, professional judgment and citizen involvement to make decisions regarding road maintenance activities.

One of the important services that any transportation agency can provide is an efficient and well-maintained transportation system that serves the needs of its citizens including residents, businesses, commuters and tourists. This is a challenging task and civic leaders must often make difficult choices that are sometimes unpopular. Washington County's situation of an aging infrastructure coupled with a reduced revenue stream is not unique. In fact, the difficulties facing LUT are similar to other transportation agencies throughout the region and across the country.

Washington County's road and bridge maintenance budget is being strained by a number of competing factors. New construction and added programs are being pitted against the preservation and preventative maintenance of existing assets. Furthermore, Gas Tax revenue continues to diminish as fuel prices increase, drivers are encouraged to reduce their vehicular trips and cars are becoming more fuel efficient.

The maintenance goal of this TSP and LUT is to protect public safety and personal property, make effective use of available funds, and preserve the public and private investments in the transportation system. In addition, LUT also strives to preserve and protect the natural environment.

Maintenance Priorities

There are four different types of priorities associated with maintenance.

1. Emergencies/Hazards Work related to abating or managing an immediate threat to public safety, private property, or environmental resources. These occurrences may cause a road to become impassable, or an operator of a vehicle to lose control. These occurrences may require prompt action in order to protect human life or welfare and/or access.
2. Mandated Work related to regulatory or legislative requirements that require the agency to perform certain activities. The specific authorization may vary by the type of activity.

3. Essential Work that maximizes the efficiency of the transportation system but is not required, by law, to be performed. This can include general maintenance and preventative activities required to keep a road or other facility in good condition.
4. Non-Essential Work that is typically for aesthetic or non-functional enhancements as it relates to the movement of vehicles, bicycles and/or pedestrians. This can include both minor improvements and reconstruction. Minor improvements may go beyond general maintenance, but can be completed in conjunction with general maintenance activities. Reconstruction projects rebuild substandard or deteriorated facilities; such projects may be considered a comprehensive form of maintenance.

A long-standing tool used for selecting road maintenance activities has been the Road Maintenance Priority Matrix shown in Table 6. This guideline has been in place since adoption of the 1988 Transportation Plan and focuses on the functional classification of the roadway for the selection process.

Table 6: Road Maintenance Priority Matrix

	Road Classification/Priority*				
Activity	**Arterial**	**Collector**	**Rural Resource Route****	**Neighborhood Route**	**Local Road**
Emergencies/Hazards	1	1	1	1	1
Mandated	1	1	1	1	1
General Maintenance	2	3	4	5	8
Minor Improvements	6	7	11	13	14
Reconstruction	9	10	12	15	16

**"1" is the highest priority; "16" is the lowest.*

***Resource Routes are an identified network of rural local roads important to the economy and connectivity in the county. Their designation may be adjusted periodically as needed as part of the Board-adopted annual maintenance program.*

Target Service Levels

Each year LUT develops the Road Maintenance Program. The Board of Commissioners evaluates the transportation system based on available resources and risks and adopts the Road Maintenance Program. This program becomes LUT's plan for scheduled work during the fiscal year and focuses on preservation of the existing transportation assets and safety. The target service levels provide a guideline to use when establishing the Road Maintenance Program, responding to emergencies and service requests, selecting projects and developing budgets. The target service levels supplement the Maintenance Priority Matrix to improve the process for selecting maintenance activities. The major assets that represent the foundation of the transportation system generally fall into the following categories:

1. **Bridge:** A structure that typically consists of vertical supports and horizontal members connecting at least two segments that allows safe and efficient passage over an obstacle such as a body of water, a road or a railway. In some instances, large culverts are considered bridges.
2. **Culvert:** A structure underneath the roadway used to pass stormwater through a roadway fill section.
3. **Pavement:** The hard surface of a road or other facility. The pavement can be made of bituminous material (asphalt or chip seal) or Portland cement concrete.
4. **Gravel Road:** A facility that has crushed aggregate material as the wearing surface.
5. **Ditch:** An open channel adjacent to a roadway used for the collection and conveyance of storm runoff.
6. **Landscaped Area:** A region in the right-of-way with planted trees, shrubs and/or ground cover intended to provide erosion control, environmental mitigation, traffic calming and aesthetic value.

The target service levels are intended to provide staff with formal guidance associated with planning work on the transportation system. The target service levels are intended to be the nexus between the maintenance budget and the Road Maintenance Program to ensure the goals and priorities of the County Board of Commissioners are being realized. It is also important to note that the service levels identified are merely "targets" and not intended to imply that they are mandates.

Goal 11: Maintenance

Adequately maintain Washington County's transportation facilities.

Objective 11.1 Preserve the public's investment in transportation facilities.

- **Strategy 11.1.1** Inspect the transportation system as necessary to identify current and future roadway maintenance and reconstruction needs.
- **Strategy 11.1.2** Prioritize road maintenance and reconstruction expenditures using the Road Maintenance Priority Matrix as a guide, to be reviewed and approved by the County Board of Commissioners.
- **Strategy 11.1.3** Implement an asset management program to maintain an accurate inventory and condition rating of pavements (including sidewalks and bike lanes), bridges, culverts, gravel roads, roadside drainage facilities and landscape areas.
- **Strategy 11.1.4** Design projects considering future maintenance needs and costs, including landscaping.
- **Strategy 11.1.5** Evaluate best maintenance practices for financial efficiencies.
- **Strategy 11.1.6** Employ a right-of-way permitting program to protect and restore road assets to full functionality and service life thereby conserving maintenance dollars.

Objective 11.2 Program maintenance activities through the annual Washington County Road Maintenance Program.

- **Strategy 11.2.1** Utilize the asset management system to systematically select maintenance activities based on adopted service levels.
- **Strategy 11.2.2** Review maintenance service levels and Annual Road Maintenance Program with and seek feedback from the Urban Road Maintenance District Advisory Committee (URMDAC) and the Rural Roads Operations and Maintenance Advisory Committee (RROMAC).
- **Strategy 11.2.3** Annually program transportation maintenance expenditures as adopted by the Board of Commissioners.

Objective 11.3 Maintain transportation facilities, within funding limitations, to adequately protect public safety, private property and the environment and to provide a system that is structurally sound and reliable.

- **Strategy 11.3.1** Utilize URMDAC to assist in evaluating the cost effectiveness and efficiency of the Urban Road Maintenance District.
- **Strategy 11.3.2** Utilize RROMAC to assist with identifying and evaluating the cost effectiveness and efficiency of maintenance program activities in the rural area.
- **Strategy 11.3.3** Consult with both URMDAC and RROMAC to establish appropriate service levels for pavements (including sidewalks and bike lanes), bridges, culverts, gravel roads, roadside drainage facilities and landscape areas.

- **Strategy 11.3.4** Continue the practice of vegetation removal by county crews to address vegetation-related hazards and protect public safety.
- **Strategy 11.3.5** Strive to limit soil disruption and/or damage to drainage tiles when conducting maintenance activities in rural agricultural areas.

Objective 11.4 Monitor the efficiency and cost effectiveness of transportation maintenance procedures and revise as needed to provide effective use of available maintenance funds.

- **Strategy 11.4.1** Where practicable, limit construction maintenance related administrative costs.
- **Strategy 11.4.2** Where practicable, implement efficient and cost effective maintenance operations by efforts to:

  A. Consolidate maintenance activity geographically.

  B. Monitor, identify and correct failures.

  C. Determine cause and modify practices.

  D. Take advantage of opportunities to leverage resources through cooperative arrangements with other agencies, regional utilities, HOAs, adopt-a-road groups and local businesses.

Objective 11.5 Distinguish between countywide and local maintenance responsibilities. Address transportation system maintenance needs through mechanisms that recognize the primary responsibility of system users.

- **Strategy 11.5.1** Confine countywide road maintenance and reconstruction program (i.e. Road Fund) activities to roads that have been formally accepted as "County Roads". Limit expenditures on non-county roads (i.e. local access or public roads) to those prescribed by the Oregon Revised Statutes and the direction of the Board of Commissioners.
- **Strategy 11.5.2** Where appropriate, finance the reconstruction, minor improvement or maintenance of Neighborhood Routes and Local Streets through localized funding mechanisms, such as the Urban Road Maintenance District (URMD) or Local Improvement Districts (LIDs).

Objective 11.6 Work with partner jurisdictions and property owners to adequately maintain facilities intended for non-auto use.

- **Strategy 11.6.1** When and where appropriate, maintain elements of the transportation infrastructure intended for non-auto use by:

  A. Incorporating the non-auto facilities within the right-of-way into the regular maintenance program.

  B. Integrating pedestrian and bicycle improvements with road maintenance projects, such as resurfacing or shoulder widening, to take advantage of cost-sharing opportunities.

- **Strategy 11.6.2** Consider a maintenance program to keep pedestrian facilities along County roads in adequate condition.
- **Strategy 11.6.3** Consider developing supplemental funding sources for the maintenance of the non-auto system facilities.
- **Strategy 11.6.4** Encourage new development to form an HOA or other group with the responsibility to maintain landscaping frontage abutting Arterials and Collectors.

Appendices

Definitions

2040 Growth Concept

A long-range regional growth management and urban form concept adopted by Metro in 1995. The concept classifies land into ten urban form categories including intensely developed centers and corridors, open spaces and rural reserves intended for preservation and neighborhood areas that will remain mostly unchanged. Local comprehensive plans must demonstrate compatibility with the concept.

Access

The ability to have direct ingress and egress to or from a specific property or other location along a roadway. Local Streets providing direct access to individual properties generally have better access than Arterial roads or Freeways, whose primary purpose is to serve through travel. Access can also apply to non-roadway facilities such as trails.

Accessibility

The relative ease with which a given destination or land use can be reached by one or more modes of travel. Locations that can be accessed by many people using a variety of modes of transportation generally have high accessibility.

Access management

Measures that regulate or restrict access to roadways from private driveways, parking lots or other roadways. Measures may include but are not limited to restrictions on the siting and quantity of driveways, restrictions on the spacing and traffic control of intersections and use of physical devices such as medians and traffic signals to reduce the impacts of traffic intersecting or approaching the main facility.

Accessway

A paved pathway that provides pedestrian and bicycle access when a full street connection is not practicable.

Active transportation

Human powered travel, including walking, bicycling, skateboarding and the use of mobility devices such as wheelchairs (including motorized wheelchairs). Active transportation is considered to include public transit because accessing transit stops typically involves walking or bicycling.

Adaptive signal control

An intelligent transportation system technology that uses real-time traffic information collected from camera or other sensors to coordinate and optimize signal timing at multiple signalized intersections in a corridor. The primary goal of adaptive signal control is to reduce congestion, delay and travel times.

Advanced Traffic Management System (ATMS)

Traffic management techniques that use computer processing and communications technologies to optimize performance of motor vehicle, freight and public transportation systems.

American Community Survey

An ongoing statistical survey administered by the US Census Bureau that samples a small percentage of the population every year to provide demographic, socio-economic and other community information. Transportation-related data includes travel modes and travel times for the commute to work.

Americans with Disabilities Act (ADA)

Federal civil rights legislation enacted by Congress in 1990 that mandates equal opportunity for people with disabilities in employment, transportation, public accommodation, public services and telecommunications. Transportation implications of ADA include the design of sidewalks and curb cuts, accommodation of mobility devices on transit vehicles, provision of door-to-door paratransit service and availability of parking spaces for the disabled.

Arterial

A functional class of roadways 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 traffic. Arterials link major commercial, residential, industrial and institutional areas.

Average daily traffic (ADT)

The number of motor vehicles that pass through a particular point on a roadway during an average day. ADT is a relatively generic term that may refer to one of several federally-defined traffic volume indicators including annual average daily traffic (AADT) and annual average weekday daily traffic (AAWDT). Because a true 365-day, 24-hour counting process is not practical in most cases, ADT is typically sampled over the course of one or more days and repeated annually or on a regular basis.

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 facility

A general term denoting improvements and provisions made to accommodate or encourage bicycling, including on-street bikeways, multi-use trails, bicycle parking facilities and devices that allow bicycles to brought on transit vehicles.

Bike lane

A portion of a roadway that has been designated by striping, signing and pavement markings for the use of people riding bicycles. The Washington County Road Design and Construction Standards call for six-foot-wide bike lanes, though exceptions may be granted by the County Engineer for five- or four-foot-wide bike lanes in cases of constricted right-of-way.

Bikeway

A bikeway exists on any road that has the appropriate design treatment to accommodate bicyclists based on motor vehicle traffic volumes and speed. The basic design treatments used for bicycle travel on roads are shared roadways, shoulder bikeways and bike lanes. Enhanced versions of bikeways on roads include buffered bike lanes, cycle tracks and neighborhood bikeways (also called neighborhood greenways or bike boulevards). Off-street shared-use paths (also called multi-use trails) are also a type of bikeway.

Board of Commissioners (BC or Board)

The governing body of Washington County, Oregon, consisting of five elected members, including four district representatives and an at-large chair. Washington County has a council-manager form of government, giving the Board legislative responsibility and designating administrative authority to a Board-appointed professional county administrator. The commissioners also serve as the governing board for Clean Water Services, a public utility providing wastewater, stormwater and other services.

Buffered Bike Lane

A bike lane that is further separated from automobile traffic by a two- to three-foot wide painted buffer, typically with diagonal hatching. Buffered bike lanes may be appropriate on roadways with 10,000 or more average daily vehicles and speeds of 25 mph or greater.

Bus Rapid Transit (BRT)

An enhanced bus system that operates in exclusive lanes, or in mixed traffic with bypassing capabilities, in order to combine the flexibility of buses with the efficiency of rail. By doing so, BRT generally operates at faster speeds, provides greater service reliability and offers additional customer amenities compared to traditional bus service.

Business Access/Transit (BAT) Lane

A roadway travel lane with the dual purpose of allowing all vehicles to make turns into adjacent properties or onto intersecting streets allowing transit vehicles—typically buses or BRT vehicles—to proceed in the forward direction along the roadway and bypass traffic queues at intersections.

Capacity

The maximum number of vehicles (vehicle capacity) or people (person capacity) that can pass over a given roadway segment, intersection, transit line or pedestrian/bicycle facility in one or both directions during a given period of time under prevailing operating conditions.

Capital Improvements Program (CIP)

A document that lists projects to be undertaken in the next five- to ten-year timeframe, the estimated costs and funding sources for those projects. If funding has been committed to a project, a schedule for the funded work, which may be design, right-of-way acquisition, construction or all three, may be included on the project list.

Carpool/Vanpool

A group of two or more people who share the use and/or cost of a car or van for transportation to and from a destination.

Collector

Collector streets provide both access and circulation between residential, commercial, industrial and agricultural community areas and the Arterial system. Collectors tend to carry fewer motor vehicles than Arterials, with reduced travel speeds and may serve as freight access routes, providing local connections to the Arterial network.

Community Advisory Committee (CAC)

A group of community members representing various interests who volunteer (and in some cases are appointed) to advise the county on a specific issue, project or process. This TSP update included an 18-member CAC appointed by the County Board of Commissioners.

Community Development Code (CDC)

The component of the Washington County Comprehensive Plan that establishes standards that builders and developers must meet to protect the health, safety and welfare of citizens. Transportation facility standards are a major component of Article IV (Development Standards), Article V (Public Facilities and Services) and Article VII (Public Transportation Facilities).

Community Plans

Reflect the Comprehensive Framework Plan policies and strategies as applied to specific situations for each Community Planning Area. The Community Plans indicate the specific land uses, significant natural and cultural resources and circulation systems which have been determined necessary to meet the community needs.

Comprehensive Framework Plan for the Urban Area

The policies and implementing strategies related to citizen involvement, natural resources, urbanization, housing and public facilities and services. This plan is applicable to urban unincorporated areas within Urban Growth Boundaries. (A UGB is a line around the urban area that indicates land that already is or can be developed at urban densities.) Individual Community Plans require provision of necessary "urban" services—primarily sewer, water and a balanced transportation system—for built-up and developing areas outside cities.

Complete street

A street that is designed to serve all modes of travel, including bicycles, freight delivery vehicles, transit vehicles and pedestrians of all ages and abilities.

Corridor study

A study that is directed toward specifically defining projects and strategies for meeting identified needs in a transportation corridor. Also known as a corridor refinement plan.

County Road

A public road under the jurisdiction of Washington County that has been designated as a county road under ORS 368.016.

Cycle track

An on-street bikeway facility that provides the safety and comfort of a multi-use path within the road right-of-way. This is accomplished by combining a painted buffer with a physical barrier, a landscaped buffer or a parking lane. The added protection further separates motor vehicles and bicyclists where travel speeds and/or motor vehicle traffic volumes are high. Variations on cycle tracks include raised cycle tracks and two-way cycle tracks.

Deficiency

A performance, design or operational constraint that limits travel by a given mode.

Deficiency area

A location where certain transportation system elements (usually referring to roadways) are expected to exceed acceptable performance measures and no appropriate feasible solution has been identified. Deficiency areas are identified through evaluation of future travel conditions based upon the projects identified the TSP. Additional strategies to address the movement of people and goods in these areas will be approached on a case-by-case basis.

Development review

The process of reviewing a proposed development action for conformance with the county's Community Development Code (CDC) and the applicable standards and requirements of the Comprehensive Plan as specified by the CDC.

Director

The Director of Washington County's Department of Land Use & Transportation.

Environmental justice (EJ) populations

People living in poverty, people with low income as determined annually by the U.S. Department of Health and Human Services Low Income Index, including people of color, elderly, children, people with disabilities and other populations protected by Title VI and related nondiscrimination statutes.

Essential destinations

Locations where people typically go to meet basic needs including grocery stores, schools, hospitals, medical centers and social service providers.

Functional classification

A mechanism for classifying roadways according to the function they perform in the transportation system. Classifications typically range from Arterials, which are intended to facilitate relatively high speed traffic over long distances, to Local Streets, which facilitate access to properties. When properly combined, roadways with different functional classifications provide a system that meets both the access and mobility needs of the communities it serves.

Gap

Refers to a missing link or barrier in the transportation network for any mode where a connection would otherwise be expected to exist. A gap functionally prohibits travel or makes it significantly more difficult or less desirable to travel in that location.

High capacity transit (HCT)

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

High-occupancy vehicle (HOV)

A vehicle that is carrying two or more persons, including the driver. An HOV could be a carpool, vanpool, transit bus, private charter bus or any other vehicle that meets the minimum occupancy requirements of the specific facility. Some jurisdictions have established HOV lanes on freeways where only vehicles with two or more persons are allowed to occupy the lane during designated hours or at all times.

Intelligent Transportation System

The application of advanced technologies and proven management techniques to solve transportation problems, enhance safety, provide services to travelers and assist transportation system operators in implementing suitable management strategies. Intelligent Transportation Systems focuses on increasing the efficiency of existing transportation infrastructure.

Inter-agency Coordinating Committee (ICC)

A technical committee consisting of representatives from cities in Washington County, Tualatin Hills Park & Recreation District, TriMet, Metro, Port of Portland and Oregon Department of Transportation that provided input and advice during the development of the TSP and considered the policy implications within the jurisdictions they represent.

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.

Joint Policy Advisory Committee on Transportation

A committee of elected officials and representatives of agencies involved in transportation that make recommendations to the Metro Council on transportation needs in the Portland metropolitan region.

Lane numbers

The maximum number of vehicle travel lanes that can be built without a plan amendment as identified on the Road Lane Numbers Map in the TSP, and as subject to certain exceptions related to turn lanes and auxiliary lanes.

Level of Service (LOS)

A qualitative measure describing the operational conditions of a particular transportation facility or service based on the perception of users, and sometimes supported by quantitative measures. Motor vehicle LOS describes roadway operating conditions in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience and safety. A letter score of 'A' through 'F' is assigned based on these conditions. For motor vehicle LOS, the scores represent the following conditions on a roadway:

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

LOS can be applied to other modes as well, including pedestrian LOS, bicycle LOS and transit LOS.

Local Access Roads

A Public Road that is not a County Road, State Highway or Federal Road.

Local Improvement District (LID)

A method by which a group of property owners can share the cost of transportation infrastructure improvements such as building sidewalks. LIDs are typically created on a voluntary basis with the agreement of the majority of affected property owners. The cost of the improvements is split among these owners and typically assessed on property tax bills.

Local Street

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"; however, in the rural area local roads are sometimes the only facilities available for access to dispersed rural land uses.

Major bus stop

Includes most Frequent Service bus stops, most transfer locations between bus lines (especially when at least one of the bus lines is a frequent service line), stops at major ridership generators (e.g., schools, hospitals, concentrations of shopping, high density employment or employment) and other high ridership bus stops. These stops may include shelters, lighting, seating, bicycle parking or other passenger amenities and are intended to be highly accessible to adjacent buildings while providing for quick and efficient bus service.

Major Streets Transportation Improvement Program

A portion of the Washington County property tax used to construct major transportation improvements countywide. MSTIP projects commonly include road reconstructions to install pedestrian and bicycle facilities and additional travel or turn lanes, as well as new roadways to serve developing areas. MSTIP began as a series of serial levies (1986, 1989 and 1995) and voters rolled it into the county's fixed tax rate in the late 1990s. In 2013 the current installment of MSTIP funds is known as MSTIP 3d and will be used to construct transportation improvements through the year 2019. MSTIP 3d also includes an Opportunity Fund that can be used to match grants or other funds for transportation improvements or programs.

Major transit stop

Major bus stops, transit centers, light rail stations and commuter rail stations.

Metro

The regional government and designated metropolitan planning organization of the Portland metropolitan area. Metro is governed by a 7 (seven)-member Metro Council elected by and representing districts within Metro's jurisdictional boundaries—generally the urban portions of Clackamas, Multnomah and Washington counties. Metro is responsible for the Oregon Zoo, solid waste landfills, the Oregon Convention Center and the Portland Center for the Performing Arts. Metro also establishes and maintains the Urban Growth Boundary. Metro is responsible for regional transportation planning activities such as the preparation of the RTP and the planning of regional transportation projects including High-Capacity Transit.

Mid-Block Crossing

A rare and necessary link for our pedestrian and bike trails, mid-block crossings provide safer crossings for pedestrians and bicyclists between road intersections.

Minor Betterments

A Washington County transportation improvement program funded by an allocation from the Road Fund (gas taxes) and used to fund small-scale interim improvements which are beyond routine maintenance but not large enough to be programmed as capital improvements. Minor Betterment projects are site-specific enhancements to the county's transportation system. The projects are typically interim and are intended to supplement routine maintenance and capital improvements.

Minor modification

A minor modification to a roadway including channelization or realignment that does not have significant land use or traffic impacts beyond the immediate neighborhood.

Mobility

The ability to move people and goods to destinations efficiently and reliably.

Modal

Pertaining to the different modes of travel to be accommodated by the transportation system.

Mode

Means of travel, such as driving, walking, bicycling or taking transit.

Motor vehicle

This includes automobiles, motorcycles, recreational vehicles and all types of trucks including those used for freight. It does not include buses as those are considered an element of another mode (transit).

Multi-modal

Accommodating or pertaining to multiple means of travel including walking, bicycling, driving and taking transit.

Multi-use trail

A transportation facility that is physically separated from motor vehicle traffic by an open space or barrier for exclusive use by bicyclists and pedestrians including persons using mobility devices, skates and skateboards. Off-street trails may be located in a road right-of-way or within an independent right-of-way or public property.

Neighborhood Route

Neighborhood Routes are in residential neighborhoods and provide connectivity to the Collector and Arterial system. Because traffic needs are greater than a Local Street, certain measures should be considered to retain the neighborhood character and livability of these routes. Neighborhood traffic

management measures are allowed (including devices such as speed humps, traffic circles and other devices). New neighborhood routes may be established via the land development process.

Neighborhood bikeway

A low speed, low traffic Non-Arterial Street designated as a facility intended to accommodate bicyclists with a wide range of abilities and levels of experience. Neighborhood bikeways are also called neighborhood greenways and bike boulevards in other jurisdictions.

Paratransit

A shared-ride service for those unable to use regular buses and trains.

Peak two-hour period

The highest hour of motor vehicle travel demand on a given facility or segment and the hour immediately following the highest hour of demand. Known more generally as the "peak period," each weekday has a morning (AM) peak and an evening (PM) peak.

Pedestrian

A person on foot, in a mobility device such as a wheelchair or walking a bicycle.

Pedestrian facility

An improvement provided for the benefit of pedestrian travel including sidewalks, crosswalks, illumination, signals and benches.

Pedestrian-scale

Having a proportional relationship to human dimensions, in reference to elements of the built environment such as buildings, streets and street lights.

Performance measure

A measurement derived from technical analysis aimed at determining whether a planning policy is achieving the expected outcome or intent associated with the policy.

Person trips

The total number of discrete trips by individuals using any mode of travel.

Place-Making Amenities

Features intended to improve the quality of public spaces by creating active, unique, interesting and/or visually attractive locations. Such features may include public art, plazas, ornamental lighting, banners, seating areas, wayfinding signage, transit shelters and/or bicycle parking. These features are intended to work in tandem with building features to create locations that people care about and in which they want to live, work, learn and play.

Planning Commission

A nine-member volunteer commission that advises the Board on land use and transportation issues.

Planning period

The period to which the Plan applies.

Placeholder projects

A "placeholder" project is used as a surrogate for a project that has not yet been defined. Placeholder projects are generally used in study areas and serve primarily as mechanisms for estimating the impacts on the rest of the transportation system of a project that will be identified later as part of study area analysis.

Principal Arterial

Principal Arterials (Freeways and Highways) form the backbone of the motor vehicle network. These routes connect over the longest distance (often miles) and are spaced less frequently than other Arterials or Collectors. These highways generally span several jurisdictions and often have statewide importance. At a minimum, highways that are classified by ODOT as Interstate or Statewide Highways are considered Principal Arterials.

Project Review Committee

Project Review Committee (PRC) acts in a technical advisory capacity for the review of all public transportation improvement applications for completeness and conformance with the applicable requirements of Article VII of the Community Development Code, the applicable Community Plan or Rural /Natural Resources Plan and the Transportation Plan. The PRC consists of representatives of all affected Department of Land Use & Transportation divisions and may include representatives of other county departments and affected agencies as appropriate. The PRC provides recommendations to the Review Authority.

Public Road

A road over which the public has a right to use that is a matter of public record.

Public Transit Service Provider

A mass transit district, transportation district, Indian tribe, city, county, special district, intergovernmental entity or any other political subdivision or municipal or public corporation that provides transit services and/or programs.

Queue

A line of stopped vehicles in a roadway travel lane, typically delayed by congestion at an intersection, interchange or other element of the roadway system.

Refinement Area

Locations that have been identified where further study is needed to determine the mode, function and/or general location of a future solution or transportation improvement. Further study of a refinement area may occur through a transportation planning process, capital project development or the land development process. Before development may occur on land within a refinement area, the development application must demonstrate how potential solutions to the transportation need will (at a minimum) not be precluded by the proposed development.

Regional Transportation Functional Plan (RTFP)

The Regional Transportation Functional Plan codifies the requirements that local plans must comply with to be consistent with the Regional Transportation Plan.

Regional Transportation Plan (RTP)

The official intermodal transportation plan that is developed through a regional transportation planning process and adopted by Metro.

Right-of-Way (ROW)

Land or an easement over land dedicated for public road purposes. Including the right to construct, operate and maintain a public road, all customary associated uses and appurtenant facilities.

Road Design and Construction Standards

Standards set forth in the Washington County Code. The Road Design and Construction Standards set out engineering standards for road improvements and provide guidance for the design and construction of public roads and associated improvements to the county's transportation system.

Road Fund

The State Highway funds generated by the State gasoline tax and other revenues, allocated to unincorporated Washington County, plus the local Washington County gasoline tax. These funds are used for road maintenance.

Roadway segment

A portion of a street right-of-way developed for vehicular traffic.

Rural/Natural Resource Plan

A plan that guides development outside the UGB. The plan guides conservation and development according to the potential of the land and in accordance with state and regional requirements.

Rural Reserves

Land reserved to provide long-term protection for agriculture, forestry or important natural landscape features that limit urban development or help define appropriate natural boundaries of urbanization, including plant, fish and wildlife habitat, steep slopes and floodplains.

Rural Roads Operation and Maintenance Advisory Committee (RROMAC)

RROMAC works with county staff and advises the County Board of Commissioners on issues related to rural roads.

Safety Priority Index System (SPIS)

A method of compiling crash histories for identifying potential safety problems.

Service Request System

The County Operations & Maintenance Division relies on a complaint driven system, generally referred to as the Service Request System, to identify problems. A reported problem is documented in the system and forwarded for inspection to assess whether a repair is warranted.

Sidewalk

A walkway that is separated from the roadway by a curb, planter area or roadside ditch that is built to adopted standards.

Significant Natural Resource

Mapped components of the natural and built environments identified in the County's Comprehensive Plan. The mapped components include the Mineral Aggregate Overlay Districts, Water Areas and Wetlands, Wildlife Habitat, Water Areas, Wetland & Fish and Wildlife Habitat, Significant Natural Areas, Historic and Cultural Resources and Scenic Resources.

Single-occupancy vehicle

Vehicles that are carrying one person.

Social and Geographic Equity

Ensuring that the benefits and impacts of transportation projects do not accrue disproportionately on any particular demographic, socio-economic group or particular geographic area.

Special Area Street

A sub-category of Collector, Neighborhood Route, Commercial Street and Local Street underlying functional classification designations. Special Area street designations are most frequently applied in transit-oriented overlay districts within RTP 2040 center and station community area designations with good transit service. They are identified on the Special Area Street Overlay Map as well as in the Community Plans. Special Area Street design standards are included in the Washington County Uniform Road Improvement Design Standards.

State Highway

Any road or highway designated as such by law or by the Oregon Transportation Commission pursuant to law and including both primary and secondary State Highways.

Streetscape

The cross section design and features that make up a roadway. The streetscape includes the entirety of the public right-of-way and in some cases may include the visual aspects of private land and/or building facades adjacent to the public right-of-way.

System Development Charge (SDC)

A uniform framework for the imposition of growth and development charges that may be used for capital improvements.

Telecommute

A transportation demand management strategy whereby an individual substitutes working at home for commuting to a work site on either a part-time or full-time basis.

Traffic calming

Street design or operational features intended to maintain low motor vehicle travel speed to enhance safety for pedestrians, other non-motorized modes and adjacent land uses.

Traffic Impact Fee (TIF)

A former tax on development levied countywide, paid at the time of building permit and used toward traffic improvements. This was the precursor of the Transportation Development Tax.

Transit

Transportation services and programs that provide access and mobility to the general public on a regular and continuing basis including light rail, commuter rail, bus rapid transit, interregional bus, frequent service bus, regular bus, peak-period-only bus, paratransit, community connector service, park-and-rides, transit centers, bus terminals, major transit stops and bicycle transit facilities.

Travel Demand Management (TDM)

Actions which are designed to change travel behavior in order to improve performance of transportation facilities and to reduce need for additional road capacity. Methods may include, but are not limited to, the use of alternative modes, ride-sharing and vanpool programs and trip-reduction ordinances.

Transportation Development Tax (TDT)

A System Development Charge (SDC) levied countywide on development that replaced the Traffic Impact Fee, paid at time of building permit and used toward transportation capital improvements.

Transportation Disadvantaged

Individuals or communities that lack transportation options, or have difficulty accessing, using or affording transportation because of their race, age, income, limited English proficiency, and/or physical or mental disability.

Transportation Management Association (TMA)

Non-profit coalitions of local businesses and/or public agencies dedicated to reducing traffic congestion and pollution and improving commuting options for employees.

Transportation Planning Rule (TPR)

The implementing rule of statewide planning goal #12 dealing with transportation, as adopted by the state Land Conservation and Development Commission (LCDC). Among its many provisions, the rule includes requirements to preserve rural lands, reduce vehicle miles traveled (VMT) per capita by 20 percent in the next 20 years, reduce the number of parking spaces and to improve multi-modal transportation systems.

Transportation System Management and Operations (TSMO)

Strategies and techniques for increasing the efficiency, safety, capacity or level of service of a transportation facility without major new capital improvements. This may include signal improvements, intersection channelization, access management, HOV lanes, ramp metering, incident response, targeted traffic enforcement and programs that smooth transit operations.

TriMet

Tri-County Metropolitan Transportation District, which is the primary public transit service provider for most of the urban areas of Clackamas, Multnomah and Washington counties.

Tri-County Public Transportation Improvement Plan

A regional plan developed by TriMet and approved by the Oregon Transportation Commission in accordance with House Bill 2017 (Keep Oregon Moving Act) guiding five years of Statewide Transportation Improvement Fund revenues towards future transit capital, operations and program investments that increase service for low-income communities and improve connections between transit providers within Clackamas, Multnomah and Washington counties.

Urban Growth Boundary (UGB)

The legally defined boundaries adopted by Washington County, Metro or appropriate incorporated cities, and acknowledged by LCDC, which identify and separate urbanized land from rural and natural resource land.

Urban Reserves

Lands outside an urban growth boundary that will provide for: (a) future expansion over a long-term period; and (b) the cost-effective provision of public facilities and services within the area when the lands are included within the urban growth boundary.

Urban Road Maintenance District (URMD)

A county service district formed to provide road maintenance for Local Streets and Neighborhood Routes in urban unincorporated areas of Washington County. A portion of this fund has been set aside for safety improvements to any roadway with in the district boundary.

Urban Road Maintenance District Advisory Committee (URMDAC)

URMDAC works with county staff and advises the Board of Commissioners on issues related to services provided by the Urban Road Maintenance District (URMD).

Vehicle Miles Traveled (VMT)

Automobile vehicle miles of travel. Automobiles, for purposes of this definition, include automobiles, light trucks and other similar vehicles used for movement of people. The definition does not include buses, heavy trucks and trips that involve commercial movement of goods.

Walkway

A hard-surfaced transportation facility built for use by pedestrians including persons using wheelchairs, such as a sidewalk, off-street trail, accessway or path.

Washington County Coordinating Committee (WCCC)

A committee composed of elected representatives from Washington County and the cities within Washington County. WCCC's primary purpose is to coordinate activities of Washington County local governments and to work toward positions of consensus on regional and state land use and transportation planning matters.

Washington County Transit Master Plan

The plan that functions as the guiding document for developing and providing public transit priorities serving rural and urban communities and job connector service areas in Washington County.

Abbreviations, Acronyms and Initializations

ACS
American Community Survey

ADA
Americans with Disabilities Act

ADT
Average Daily Traffic

ATMS
Advanced Traffic Management System

BAT
Business Access/Transit (lane)

BC
Board of Commissioners

BRT
Bus Rapid Transit

CAC
Community Advisory Committee

CD
Collector/Distributor (road)

CDC
(Washington County) Community Development Code

CIP
Capital Improvements Program

DEQ
(Oregon) Department of Environmental Quality

DLCD
(Oregon) Department of Land Conservation and Development

EJ
Environmental Justice

EPA
Environmental Protection Agency

ESL
English as a Second Language

FHWA
Federal Highway Administration

FRA
Federal Railroad Administration

FTA
Federal Transit Administration

HCT
High Capacity Transit

HOV
High Occupancy Vehicle

I-5
Interstate 5

ICC
Inter-agency Coordinating Committee

ITS
Intelligent Transportation Systems

JPACT
Joint Policy Advisory Committee on Transportation

LCDC
(Oregon) Land Conservation and Development Commission

LID
Local Improvement District

LIFT
TriMet's paratransit service (not an acronym)

LOS
Level-of-Service

LUT
(Washington County) Department of Land Use and Transportation

MAX
Metropolitan Area Express (light rail)

MPH
Miles per Hour

MPO
Metropolitan Planning Organization

MSTIP
Major Streets Transportation Improvement Program

MTIP
Metropolitan Transportation Improvement Program

OAR
Oregon Administrative Rule

ODOT
Oregon Department of Transportation

OHP
Oregon Highway Plan

OPS
(Washington County) Operations and Maintenance Division

OR
Oregon

ORS
Oregon Revised Statute

PMT
Project Management Team

PRC
Project Review Committee

RFFA
Regional Flexible Fund Allocation

ROW
Right-of-Way

RROMAC
Rural Road Operations and Maintenance Advisory Committee

RTFP
Regional Transportation Functional Plan

RTP
Regional Transportation Plan

SDC
System Development Charge

SDL
Service District for Lighting

SPIS
Safety Priority Index System

STIP
Statewide Transportation Improvement Program

TDM
Travel Demand Management

TDT
Transportation Development Tax

THPRD
Tualatin Hills Park and Recreation District

TIF
Traffic Impact Fee

TMA
Transportation Management Association

TPR
Transportation Planning Rule

TriMet
Tri-County Metropolitan Transportation District

TSDC
Transportation System Development Charge

TSMO
Transportation System Management and Operations

TSP
Transportation System Plan

TV Highway
Highway Tualatin Valley Highway

UGB
Urban Growth Boundary

URMD
Urban Road Maintenance District

URMDAC
Urban Road Maintenance District Advisory Committee

US
United States

V/C
Volume to Capacity (ratio)

VMT
Vehicle Miles Traveled

WES
Westside Express Service (commuter rail)

WCCC
Washington County Coordinating Committee

WCCCTAC
Washington County Coordinating Committee Technical Advisory Committee

WTA
Westside Transportation Alliance

Washington County is committed to planning, building and maintaining a great transportation system, ensuring the safety of all roadway users, and operating the County roadway system in a cost-effective and environmentally responsible manner.

Department of
Land Use & Transportation
Division of Planning and Development Services

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