Active Transportation Elements

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% for work-related trips. Reduced congestion improves air quality, livability and economic vitality.

- **Health**: “Obesity is one of the biggest public health challenges the country has ever faced.” 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 determinants 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.

- **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. 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 nationwide 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. A younger millennial generation that is less interested in cars and driving than their parents were.

- **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 regional land use policies such as agricultural preservation.

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7 F as in Fat: How Obesity Threatens America’s Future 2010, a report from the Trust for America’s Health.
ACTIVE TRANSPORTATION PLANNING CONTEXT

State of Oregon

Active transportation is a critical component of transportation planning at all levels of government in Oregon. The Oregon Statewide Planning Goal 12 (Transportation) states, among other things, that a transportation plan must:

- Consider all modes of transportation,
- Avoid principal reliance on any one mode,
- Conserve energy, and
- Meet the needs of the transportation disadvantaged.

Mandates for active transportation are found explicitly and implicitly throughout other State of Oregon transportation plans and policies, as summarized below.

- The **Transportation Planning Rule** (1991) requires local jurisdictions to include a bicycle/pedestrian component in their transportation system plans, and to establish a network of walking and biking facilities throughout the plan area.
- The **Oregon Transportation Plan** (2006) calls for a “balanced” transportation system and communities that provide “transportation choices.”
- The **Oregon Highway Plan** (1999) requires state highways to accommodate alternative modes.
- The **Oregon Bicycle and Pedestrian Plan** (1995) calls for the integration of bicycle and pedestrian modes into all transportation planning and design activities, and provides design guidelines for bicycle and pedestrian facilities.

**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.

**Metro**

Metro’s **2014 Regional Transportation Plan** relies heavily on active transportation modes to achieve regional land use and transportation goals. RTP Goal 3 – Expand Transportation Choices – includes the following objectives:

- Achieve modal targets for increased walking, bicycling and use of transit (19 percent, 3 percent and 10 percent mode shares, respectively) and reduced reliance on automobile and drive alone trips;
- Reduce vehicle miles traveled per capita; and
- Provide affordable and equitable access to travel choices and serve the needs of all people and businesses, including people with low income, children, elders, and people with disabilities, to connect with jobs, education, services, recreation, social, and cultural activities.

The 2014 RTP designates preferred networks for pedestrian, bicycle, and transit modes across the region. In Washington County, the regional pedestrian network focuses on mixed-use corridors, existing and planned regional trails, and pedestrian districts. The regional bicycle network includes many of these same corridors and trails, but adds “community bikeways” that would take the form of lower-traffic bike boulevards. The regional transit network includes existing...
transit routes, potential future bus routes in growing areas, and a separate High Capacity Transit System Plan that prioritizes the next corridors for light rail, commuter rail, or bus rapid transit.

The 2014 RTP also includes a Regional Street Design Overlay for arterial streets. These designations – Regional Boulevards, Regional Streets, Community Boulevards, and Community Streets – encourage street designs that are conducive to active transportation and that support implementation of the Metro 2040 Growth Concept. The Regional Street designation overlaps with nearly all of Washington County’s arterial roadways outside of industrial areas, and includes most of the 2040 mixed-use corridors. The less common Boulevard designation is found primarily along arterials within regional and town centers. Boulevards should include wide sidewalks, safe crosswalks, planter strips, medians, ample trees, and vegetation and other pedestrian-friendly design features.

A separate-but-related Metro initiative examines demographic and socio-economic data to identify areas with disproportionate concentrations of poverty, minority residents, older adults, youth, and low-English proficiency, as measured by the U.S. Census. “Environmental Justice” (EJ) scores indicate, among other things, where active transportation investments may have a particularly high benefit. Areas with higher EJ scores generally correlate with lower rates of automobile availability, usage, and affordability, potentially putting residents at a transportation disadvantage. In these areas, active transportation investments such as sidewalks, bike lanes, and transit service are particularly critical. Washington County contains several areas with high EJ scores, including the Aloha-Reedville area, downtown Hillsboro, downtown Beaverton, and a majority of the City of Cornelius.

**Washington County**

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.

**Cities and Other Jurisdictions**

Each city in Washington County has a transportation system plan with pedestrian, bicycle, and transit components. Tualatin Hills Parks and Recreation District (THPRD) has a district-wide trails plan as well as several specific trail feasibility or master plans. TriMet, through its service enhancement plans, studied population, employment, socio-economic, and ridership trends to determine potential service enhancements in Washington County. All of these plans help Washington County provide accurate and concurrent recommendations within the respective jurisdictions.
ACTIVE TRANSPORTATION TRENDS AND FORECASTS

Due in part to the benefits associated with walking and biking, and the County’s transportation policies, a growing proportion of Washington County residents are using active transportation modes for some or all of their trips. According to the U.S. Census Bureau, about 11 percent of workers who live in Washington County walked, biked, or took transit to work in 2010, compared to about 8 percent in 2000. With an estimated 249,753 workers in Washington County, that amounts to approximately 27,000 commuters using active transportation modes. Bicycling saw the greatest increase, quadrupling from 0.4 percent of commutes in 2000 to 1.6 percent in 2010. Commuting by transit, 5.7 percent of all trips, remained flat between 2000 and 2010. Washington County active transportation mode shares are lower than the tri-county average (Clackamas, Multnomah and Washington counties), but higher than national rates. The tri-county average is heavily influenced by Portland, where nearly a quarter of people commute by active modes, including a 6 percent bike commute mode share – the highest of any large American city. Conversely, only 5 percent of Clackamas County workers use active travel modes – less than half of the Washington County rate.

Comparing different trip types and locations reveals additional distinctions. In general, transit rates are lower and walking rates are higher for non-work trips, compared to work trips. This reflects a general tendency to use transit more for commuting and less for mid-day errands, as well as the convenience of walking for short trips. Comparing urban and rural portions of Washington County reveals an expected contrast in active travel mode usage. Rural walking and biking rates are roughly 2/3 of the urban rates; transit is less than half. The data does not reflect potentially thousands of recreation or exercise trips that begin and end at the same point, e.g., going for a jog or bike ride.

The past decade also saw a slight increase in households with no vehicles available, from 5.6 to 6.2 percent of households. Though small as a percentage, the 2010 figure represents about 12,000 households across the County that do not have access to a personal vehicle, and must rely on active transportation modes or transportation provided by family and friends to get around.
Future Demand
Forecasting future active transportation demand is challenging. Modelers must make assumptions about a number of future conditions, from land use and density patterns to fuel and parking prices. The Regional Travel Demand Model estimates future mode share for each traffic analysis zone based on these and other factors. The mode share forecast for Washington County in 2035 predicted very small gains in active transportation mode share (Figure 1-4). Walking, bicycling and transit usage rates increased by just a few tenths of a percentage point in all categories and geographies. In the urban area, the share of trips that use active transportation modes is projected to increase from 7.1 percent to 8.1 percent. By contrast, applying Metro’s 2014 RTP performance target for active transportation modes would result in 22 percent (14 percent walk, 3 percent bike and 5 percent transit). Despite the current forecasts, Washington County is in a good position for growth in travel by active transportation modes as summarized below.

- Information technology workers, many of whom are employed in Washington County’s growing “Silicon Forest,” tend to demand quality-of-life amenities in the places where they choose to live. This includes access to good transit and opportunities to walk or bike for transportation and/or recreation. Increasing active transportation options, along with other quality-of-life amenities, may convince more high-tech workers to live near where they work in Washington County and bike or walk to work, or use light rail in conjunction with “last mile” solutions such as bike share.
- Across all professions, younger workers are driving less and using active transportation modes more, compared to their older co-workers.
- Washington County is home to Nike, whose products focus on active pursuits like running; and whose presence may have a spillover effect on the local population, such as spurring increased interest in running and fitness.
- Portland, a well-known hub of active transportation use, has an undeniable influence on Washington County. Washington County, by virtue of its close proximity to Portland and strong jobs base, also experiences much of this active transportation culture.
- The relatively flat terrain of the Tualatin Valley, combined with an ever increasing mileage of “complete streets”, multi-use trails and high capacity transit routes, creates a favorable environment for increased use of active transportation travel modes. Washington County has the potential to become a North American model for suburban active transportation utilization.

Community Comments about Active Transportation
Active transportation themes were prevalent throughout the public involvement process for the 2014 TSP update. One of the seven “community values” developed by the TSP Community Advisory Committee is to have a transportation system that “makes it safe and convenient to get around by biking, walking or taking transit.” Stakeholder interviews (representing diverse interests from large private sector employers to environmental advocacy groups), and community input revealed similar support for an enhanced active transportation network. Frequently-cited priorities included:

- Improving transit service to better serve suburb-to-suburb trips within Washington County;
- Developing comfortable and convenient walking and biking facilities that connect homes, businesses and transit;
- Provision of pedestrian and bicycle facilities that provide greater separation from automobile traffic and safer crossings of busy roads;
- Completing identified gaps in the pedestrian and bicycle networks;
- Expanding and improving the multi-use trail network in the county; and
- Making sure that bicycle facilities serve a variety of cyclist types - from young children to “strong and fearless” adults.
ACTIVE TRANSPORTATION GOALS, OBJECTIVES AND STRATEGIES

Goal 8: Active Transportation

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

Objective 8.1  Provide an integrated 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.

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 or transit stops.
- 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, 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 and provisions for bicycle parking in 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:
  › Using surface materials that are durable, slip-resistant, watershed-friendly and resistant to ponding.
  › Avoiding or addressing flood-prone areas.
  › Minimizing sharp curves and out-of-direction travel that increase travel times and create blind spots.
  › In higher-density areas, installing pedestrian-scale trail lighting sensitive to surrounding land uses and wildlife habitat.
  › Keeping trails legally open during night hours.
  › 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.

• Strategy 8.4.7 Seek funding for Regional Trails from transportation related funding sources including the Transportation Development Tax.

Objective 8.5 Improve access to and encourage the enhancement of transit service in 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 in the urban area where concentrations of households, jobs or transit-dependent populations may warrant better service.

• Strategy 8.5.3 Work with Metro, TriMet and the cities to plan and implement new high capacity transit corridors identified in the Regional High Capacity Transit System Plan.

• Strategy 8.5.4 Work with employers, Westside Transportation Alliance, TriMet and other transit providers to identify creative solutions to bridge the “last mile” from transit stop to workplace.

• Strategy 8.5.5 Encourage Ride Connection, Yamhill County Transit, Columbia County Transit and other transit providers to continue and potentially enhance operation of rural transit where it is cost-effective and warranted by demand.

• Strategy 8.5.6 Encourage TriMet LIFT service operations and the provision of accessibility features at transit stops and on transit vehicles.

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.
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 ultimate network facilities. 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 Transportation elements are to be implemented. Some Active Transportation designations are shown on city and ODOT facilities; in these cases the administrating jurisdiction’s 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 on the maps 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

Walking, the most basic form of human travel, plays a fundamental role in the transportation system and has many advantages: travel times are predictable, expenses are minimal, and health benefits are proven. For Washington County, a shift to more walking trips could reduce the need for and/or scope of roadway and parking facilities, especially in regional and town centers. Compared to facilities for other modes, walkways are easy to maintain and inexpensive to install. A good pedestrian network also supports and leverages investments in transit. Walking plays an important role in community design, and vice versa. Put simply, places designed for walking usually result in more walking. Researchers generally agree that most people are willing to walk between a quarter and a half mile to reach destinations like stores and transit stops, and up to a mile to reach schools. Neighborhoods that include these mixed uses and that have safe, convenient, and attractive walking facilities tend to encourage walking. Regionally and nationwide, walkable neighborhoods increasingly rank among the most desirable and economically vibrant areas within urban regions.

The RTP and Metro’s Regional Active Transportation Plan (ATP) include a Regional Pedestrian Network identifying where investments in pedestrian facilities make the most sense – in mixed-use centers, along major mixed-use corridors, and as a component of regional trails. Regional Centers, Town Centers, and Station Communities in the Metro 2040 Growth Concept are designated as Pedestrian/Bicycle Districts in the RTP, reflecting the important role of a walkable environment in supporting land use and urban form goals. The Washington County TSP Pedestrian Element contains similar facility and area designations consistent with the RTP and ATP.

Sidewalks

Washington County’s urban pedestrian system consists of sidewalks, walkways, and crossings along and across streets, as well as off-street trails, and accessways\(^9\) between streets. Supporting facilities that make walking safer include street lighting and pedestrian signals. Prior to 1980, provision of sidewalks was largely a function of developer preferences, local codes and covenants, urban/rural location, and historical period. As a result, the County has a mixture of suburban communities with and without sidewalks, surrounded by rural areas largely without sidewalks. Since 1980 Washington County has required the provision of concrete or other hard-surface walkways within new development and on road projects in the urban area. Currently all roadways in the urban area, with the exception of freeways, are pedestrian routes. With few exceptions, sidewalk installation is required when urban roadways are reconstructed for a development or capital project. 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. Today sidewalks are usually built in one of three contexts:

- Within and/or alongside new development,
- As part of a major road expansion or safety project funded by MSTIP\(^10\), TDT, or federal or state grants, or
- As an interim improvement funded through the county’s Minor Betterments program.

Through these efforts, the County and its partner jurisdictions have made significant progress in adding sidewalks and walkways to major roads. As of 2014, 81 percent of Arterials and Collectors in the urban area have a walkway facility on one or both sides of the road. Table 3.11 includes information about existing sidewalk and walkway coverage in the urban portion of Washington County. Sidewalk and walkway coverage is illustrated in Figure 3-22.

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\(^9\) Accessway is the term used in the Community Development Code for pedestrian/bicycle only connections.

\(^10\) MSTIP is the county’s Major Streets Transportation Improvement Program and TDT is the Transportation Development Tax.
Table 3.11: Arterial/Collector Sidewalk Coverage - Urban Washington County

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Facility Location</th>
<th>Miles</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard sidewalk</td>
<td>Both sides of road</td>
<td>245.4</td>
<td>56.1%</td>
</tr>
<tr>
<td>Standard sidewalk</td>
<td>One side of road</td>
<td>103.9</td>
<td>23.7%</td>
</tr>
<tr>
<td>Interim walkway</td>
<td>Both sides of road</td>
<td>0.5</td>
<td>0.1%</td>
</tr>
<tr>
<td>Interim walkway</td>
<td>One side of road</td>
<td>3.6</td>
<td>0.8%</td>
</tr>
<tr>
<td>No walkway facilities</td>
<td>N/A</td>
<td>84.2</td>
<td>19.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>437.5</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Summary Date: 03/26/14 – Source: Washington County Land Use & Transportation

**Sidewalk Standards**

In urban unincorporated Washington County, sidewalks are required along both sides of new public streets, new private commercial streets, and new private residential streets that access nine or more residential units. Most development must provide “half street improvements” along existing, adjacent roads that do not already meet County road standards. Half street improvements include a sidewalk, planter strip, street lighting, and – if along an Arterial or Collector – a bike lane, as well as any associated dedication of public right-of-way. Sidewalks must be a minimum of five feet wide, and separated from the roadway by a planter strip at least four feet, six inches wide. Sidewalks also must be designed for people of all abilities. To aid people who use mobility devices such as wheelchairs, this means minimizing cross slope, limiting the impact of driveway crossings, and installing curb ramps with level landings at every street crossing. For people who are blind or have low vision, accessibility is enhanced by establishing a clear path of travel and tactile warnings at curb ramps.

**Streetscape Enhancements**

Wider pedestrian corridors provide the opportunity for streetscape improvements such as pedestrian-scale lighting, additional street trees, landscaping, benches, public art, and space for store displays or café seating. Cornell Road in Cedar Mill Town Center is an example where Washington County constructed an enhanced streetscape to promote commercial redevelopment and a safe and inviting pedestrian environment. Generally speaking, enhanced streetscapes are most appropriate within Metro 2040 centers, where aesthetic and safety improvements can help foster growth and economic development.

**Arterial/Collector Sidewalk Needs**

As shown in Table 3.11 above, approximately 84 miles of arterial or collector roads in Washington County – representing 19 percent of those roadway types – do not have separated walkway facilities. The Washington County Bicycle and Pedestrian Prioritization Project of 2013, funded by a U.S. Department of Energy grant, took inventory of these gaps and used weighted criteria to prioritize which ones have the highest need to be filled. Criteria included density and mix of land uses, observed safety issues and crash rates, street network connectivity, and social equity. A subsequent round of analysis determined which of those high-scoring projects are most feasible from a technical and financial standpoint. Priority sidewalk gaps are listed in Table 3.12. These gaps total 8.7 miles.

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11 Table 4.8 from TSP 2035 Existing Conditions and Future Needs Report, 2013
Table 3.12: Identified Arterial/Collector Sidewalk Needs

<table>
<thead>
<tr>
<th>Roadway</th>
<th>From</th>
<th>To</th>
<th>Total Length (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>92nd Avenue</td>
<td>Garden Home Road</td>
<td>Allen Road</td>
<td>2,115</td>
</tr>
<tr>
<td>92nd Avenue</td>
<td>Garden Home</td>
<td>Scholls Ferry</td>
<td>5,310</td>
</tr>
<tr>
<td>143rd Ave</td>
<td>Cornell Road</td>
<td>West Union Rd</td>
<td>8,889</td>
</tr>
<tr>
<td>158th Ave/Merlo</td>
<td>Jenkins Road</td>
<td>170th Ave</td>
<td>6,682</td>
</tr>
<tr>
<td>170th Avenue</td>
<td>150' south of Heritage Court</td>
<td>Augusta Street</td>
<td>2,353</td>
</tr>
<tr>
<td>170th Avenue</td>
<td>Merlo Road</td>
<td>Alexander St</td>
<td>8,448</td>
</tr>
<tr>
<td>170th Avenue</td>
<td>150' S. of Heritage Ct</td>
<td>Augusta Ln</td>
<td>2,353</td>
</tr>
<tr>
<td>174th Avenue</td>
<td>Bronson Road</td>
<td>Madras Court</td>
<td>1,621</td>
</tr>
<tr>
<td>197th Avenue</td>
<td>100’ south of Alderwood Court</td>
<td>Baseline Road</td>
<td>726</td>
</tr>
<tr>
<td>1st Avenue</td>
<td>Grant Street</td>
<td>south of Tiffany Lane</td>
<td>501</td>
</tr>
<tr>
<td>Glencoe Road</td>
<td>400’ north of Tiffany Street</td>
<td>150’ north of Cody Court</td>
<td>904</td>
</tr>
<tr>
<td>209th Avenue</td>
<td>160’ south of RR</td>
<td>300’ north of Blanton Street</td>
<td>910</td>
</tr>
<tr>
<td>209th Avenue</td>
<td>250’ south of Stoddard Drive</td>
<td>McInnis Lane</td>
<td>286</td>
</tr>
<tr>
<td>209th Avenue</td>
<td>Carlin Boulevard</td>
<td>Manor Way</td>
<td>600</td>
</tr>
<tr>
<td>209th Avenue</td>
<td>Martini Court</td>
<td>208th Terrace</td>
<td>1,093</td>
</tr>
<tr>
<td>209th Avenue</td>
<td>Blanton Street</td>
<td>Kinnaman Road</td>
<td>1,015</td>
</tr>
<tr>
<td>Alexander Street</td>
<td>170th Ave</td>
<td>178th Ave</td>
<td>1,208</td>
</tr>
<tr>
<td>Alexander Street</td>
<td>172nd Avenue</td>
<td>173rd Avenue</td>
<td>160</td>
</tr>
<tr>
<td>Alexander Street</td>
<td>173rd Avenue</td>
<td>178th Avenue</td>
<td>1,048</td>
</tr>
<tr>
<td>Alexander Street</td>
<td>178th Avenue</td>
<td>182nd Avenue</td>
<td>468</td>
</tr>
<tr>
<td>Barnes Road</td>
<td>Cedar Hills Blvd</td>
<td>117th Avenue</td>
<td>1,145</td>
</tr>
<tr>
<td>Boones Ferry Road</td>
<td>250’ north of Norwood Road</td>
<td>Horizon Comm. Church</td>
<td>904</td>
</tr>
<tr>
<td>Bronson Road</td>
<td>174th Avenue</td>
<td>179th Avenue</td>
<td>1,768</td>
</tr>
<tr>
<td>Bronson Road</td>
<td>185th Ave</td>
<td>Bethany</td>
<td>15,565</td>
</tr>
<tr>
<td>Brookwood Parkway</td>
<td>Huffman Street</td>
<td>Meek Road</td>
<td>2,162</td>
</tr>
<tr>
<td>Bull Mountain</td>
<td>Hazeltree Terrace</td>
<td>120th Place</td>
<td>939</td>
</tr>
<tr>
<td>Cedar Hills Boulevard</td>
<td>Butner Road</td>
<td>WB Sunset-Cedar Hills Off Ramp</td>
<td>865</td>
</tr>
<tr>
<td>Cornell Road</td>
<td>99th Avenue</td>
<td>102nd Avenue</td>
<td>711</td>
</tr>
<tr>
<td>Evergreen Pkwy</td>
<td>Cornelius Pass</td>
<td>215th Ave</td>
<td>1,214</td>
</tr>
<tr>
<td>Farmington Road</td>
<td>171st Avenue</td>
<td>173rd Avenue</td>
<td>778</td>
</tr>
<tr>
<td>Farmington Road</td>
<td>176th Avenue</td>
<td>185th Avenue</td>
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</tr>
<tr>
<td>Farmington Road</td>
<td>300’ east of 188th Court.</td>
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<td>768</td>
</tr>
<tr>
<td>Fischer Road</td>
<td>131st Ave</td>
<td>Pacific Hwy</td>
<td>6,916</td>
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<tr>
<td>Garden Home Road</td>
<td>77th Avenue</td>
<td>92nd Avenue</td>
<td>3,147</td>
</tr>
<tr>
<td>Johnson Street</td>
<td>95’ west of 214th Avenue</td>
<td>214th Avenue</td>
<td>95</td>
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<tr>
<td>Johnson Street</td>
<td>204th Avenue</td>
<td>85’ east of 203rd Avenue</td>
<td>389</td>
</tr>
<tr>
<td>Johnson Street</td>
<td>174th Avenue</td>
<td>180th Terrace</td>
<td>632</td>
</tr>
<tr>
<td>Kinnaman Rd</td>
<td>185th Ave</td>
<td>Farmington Rd</td>
<td>7,392</td>
</tr>
<tr>
<td>Locust Street</td>
<td>80th Avenue</td>
<td>Hall Boulevard</td>
<td>1,392</td>
</tr>
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<td>Meadow Drive</td>
<td>Trout Creek Lane</td>
<td>Surrey Street</td>
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<td>Murray Blvd</td>
<td>TV Hwy</td>
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<td>Rock Creek Boulevard</td>
<td>Malhuer Avenue</td>
<td>Rock Creek Drive</td>
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<tr>
<td>Rock Creek Boulevard</td>
<td>West of 185th Avenue</td>
<td>Columbia Drive</td>
<td>808</td>
</tr>
</tbody>
</table>

Note: Italic projects are included in the Bicycle and Pedestrian Improvement Prioritization Project (February 2013): Top 30 Gaps
## PART 3: TRANSPORTATION MODAL ELEMENTS

**Effective November 27, 2015**

<table>
<thead>
<tr>
<th>Roadway</th>
<th>From</th>
<th>To</th>
<th>Total Length (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saltzman Road</td>
<td>Cornell Rd</td>
<td>Barnes Rd</td>
<td>1,709</td>
</tr>
<tr>
<td>Scholls Ferry Road</td>
<td>S. of Merry Ln</td>
<td>McKay Elementary</td>
<td>970</td>
</tr>
<tr>
<td>Scholls Ferry Road</td>
<td>Heather Lane</td>
<td>McKay Elementary</td>
<td>440</td>
</tr>
<tr>
<td>Scholls Ferry Road</td>
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<td>395’ east of Northvale Way</td>
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<tr>
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<td>Heather Lane</td>
<td>South of Merry Lane</td>
<td>530</td>
</tr>
<tr>
<td>Scholls Ferry Road</td>
<td>90th Avenue</td>
<td>235’ southwest of 86th Avenue</td>
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</tr>
<tr>
<td>Scholls Ferry Road</td>
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<td>250’ east of 155th Terrace</td>
<td>504</td>
</tr>
<tr>
<td>Springville Road</td>
<td>178th Avenue</td>
<td>181st Avenue</td>
<td>439</td>
</tr>
<tr>
<td>Springville Rd</td>
<td>185th Ave</td>
<td>Joss Ave</td>
<td>8,085</td>
</tr>
<tr>
<td>Taylors Ferry Road</td>
<td>80th Avenue</td>
<td>75th Place</td>
<td>612</td>
</tr>
<tr>
<td>Thompson Rd</td>
<td>Bronson Creek Rd</td>
<td>143rd Avenue</td>
<td>1,091</td>
</tr>
<tr>
<td>Walker Rd</td>
<td>173rd Ave</td>
<td>185th Ave</td>
<td>7,548</td>
</tr>
<tr>
<td>Walker Road</td>
<td>240’ west of Bronson Creek</td>
<td>248’ east of Bronson Creek</td>
<td>488</td>
</tr>
<tr>
<td>Walker Road</td>
<td>180th Avenue</td>
<td>178th Avenue</td>
<td>572</td>
</tr>
<tr>
<td>Walker Road</td>
<td>183rd Avenue</td>
<td>180th Avenue</td>
<td>746</td>
</tr>
<tr>
<td>West Union Rd</td>
<td>Cornelius Pass</td>
<td>185th Ave</td>
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<tr>
<td>West Union Road</td>
<td>LDS Church Property</td>
<td>203rd Place</td>
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<td>West Union Road</td>
<td>185th Ave</td>
<td>Bethany Blvd</td>
<td>16,558</td>
</tr>
<tr>
<td>West Union/ Thompson Road</td>
<td>Banff Drive</td>
<td>147th Place</td>
<td>422</td>
</tr>
<tr>
<td>West Union/ Thompson Road</td>
<td>Bronson Creek Drive</td>
<td>143rd Avenue</td>
<td>1,091</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>45,962</strong></td>
</tr>
</tbody>
</table>
This page is intentionally blank.
This map displays reference information that is not adopted by Washington County ordinance. 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.

Online Map: http://arcg.is/1PXWrUr

Figure 3-22

Pedestrian Element

Sidewalk Inventory

Existing Both Sides
Existing One Side
Substandard Both Sides
Substandard One Side
No Sidewalks
Other Roads
Urban Area
County

Effective: November 27, 2015

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. Care was taken in the mapping but there are no warranties for this product. However, notification of any errors will be appreciated.
Pedestrian Crossings

Street crossings form critical connections in the pedestrian network, facilitating the simple but sometimes risky act of walking to destinations across the street. Crossings are particularly important for accessing transit, since a round trip usually involves crossing the road at one end of the journey. Bicyclists also use crossings, especially in circumstances where they are not mixed with traffic, such as at a trail crossing. By state law, every intersection is a legal crosswalk, even if it is not marked. In practice, this law is not sufficient to ensure safe passage across many urban arterial roads. The difficulty and danger of crossing a road increases with roadway width, volume, and traffic speed. Arterials like TV Highway, 185th Avenue, and Pacific Highway statistically pose a higher risk to pedestrians than streets with fewer lanes, slower travel speeds, and lower functional street classifications. The most difficult roads to cross often have the highest pedestrian crossing demands, due to high concentrations of businesses, multi-family housing, and public transit stops along the roadway.

Marked crosswalks in Washington County are mostly limited to the nearly 600 signalized intersections in Washington County. Most, but not all, signalized intersections in the county feature delineated crosswalks and walk signals. Outside of major road intersections, jurisdictions including THPRD and ODOT are increasingly targeting crossing improvements at mid-block locations and minor intersections that have a high pedestrian crossing demand.

Mid-Block Pedestrian Crossing Policy

In November 2010 Washington County adopted standards for evaluating and approving mid-block crossings of County roadways (Resolution and Order 10-107). Each mid-block crossing must be evaluated based on existing and planned roadway characteristics, observed traffic speeds, and volumes, nearby pedestrian trip generators, proximity of existing traffic signals to the location, sight distance, topography, and other considerations. At-grade crossings are not permitted within 300 feet of an existing signalized intersection. Specific crossing design features are selected from a tiered selection of improvements based on roadway lane numbers. The tiers are detailed in Table 3.13.

<table>
<thead>
<tr>
<th>Tier</th>
<th>Standard Treatments</th>
<th>Additional Treatments To Be Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1</td>
<td>Crosses a 2-lane road with or without an island refuge. Install high visibility mounted signs and markings.</td>
<td>Refuge islands, curb extensions, staggered pedestrian refuges.</td>
</tr>
<tr>
<td>Tier 2</td>
<td>Crosses a 3-lane road with island refuge. Install high visibility signs and markings.</td>
<td>Flashing beacons, pedestrian actuated signal/beacon.</td>
</tr>
<tr>
<td>Tier 3</td>
<td>Crosses a 3-lane road without island refuge or 4-lane road with island refuge. Install high visibility signs and markings or pedestrian actuated signal.</td>
<td>Pedestrian actuated signal/beacon.</td>
</tr>
<tr>
<td>Tier 4</td>
<td>Crosses a 4-lane or greater road without an island/refuge. Install pedestrian actuated signal or beacon.</td>
<td>Pedestrian actuated signal, pedestrian over- or undercrossing.</td>
</tr>
</tbody>
</table>
Spacing Considerations for Pedestrian Crossings

Other than the requirement to avoid establishing at-grade crossings within 300 feet from an existing traffic signal, the County’s mid-block crossing policy does not provide guidance on the overall desired spacing of crossings on urban roadways. In the aggregate, crossings must carefully balance pedestrian safety and convenience with other modal needs, including vehicular traffic flow. Several County and state policies provide implicit guidance:

- Per the Washington County Community Development Code (CDC), block faces in development along Arterials and Collectors cannot be longer than 600 feet. For those that are, an accessway must be provided every 400 feet. Within designated “Connectivity Lands,” these maximums are reduced to 530 and 330 feet. These standards may result in pedestrian crossing demand where local streets and accessways meet the arterial/collector.

- Also per the CDC, direct access to an Arterial shall be from other Arterials or Collectors, unless access is granted through a Type II land use review process, in which case that access can be no less than 600 feet from another vehicular access point. While R&O 10-107 may still allow a crossing within 300 feet of a signalized intersection, the CDC requirement essentially establishes a de facto minimum spacing of 600 feet between Arterial pedestrian crossings.

- ODOT recommends traffic signal spacing between 1,100 and 4,840 feet on urban arterials, depending on posted speed and length of signal phase. These distances are too great to foster a well-connected pedestrian network, but they provide a starting point for establishing crossings in locations where there may be none for long distances.

How to best integrate and implement these standards depends largely on context. For example, downtown Beaverton features crossings every 264 feet (0.05 mile) on Hall Boulevard and Watson Avenue, corresponding with the area’s compact street grid and dense land uses. By contrast, the TV Highway Corridor Plan recommends enhanced pedestrian crossings or fully signalized intersections approximately every 0.3 mile in the more suburban Aloha area.

Existing signalized intersections can also be made safer and more convenient for pedestrians by delineating standard crosswalks if they are missing, adding countdown walk signals, allowing a two-second advance phase for pedestrians, and making physical improvements such as curb extensions and refuge islands.

Pedestrian Crossing Needs

Figure 3-23 shows urban Washington County corridors where new, additional, or enhanced pedestrian crossings should be evaluated and potentially provided. These corridors, many of them four or more lane arterials with transit service, were compiled from the Washington County Transportation System Plan Background Report, TriMet’s 2011 Pedestrian Network Analysis document, and public comments received during the development of the 2014 TSP update. A finer scale analysis of each corridor is recommended before pursuing crossing projects.

Other transportation facilities, such as railroads and freeways, also present barriers to pedestrians who need to cross them. The Portland & Western Railroad (PNWR), that parallels TV Highway between Beaverton and Hillsboro, is a barrier for people from adjacent residential areas south of the tracks accessing the #57 bus stops and businesses along TV Highway. Pathways worn into the ground indicate that many people trespass across the railroad tracks rather than walk out of direction to the nearest legal crossing. Sunset Highway (U.S. 26) is a major physical and psychological barrier that effectively defines the northern area of Washington County. Between Highway 217 and Brookwood Parkway, the average interchange spacing is about 1.4 miles; and few roads or trails cross in between these locations. Several planned transportation corridors would provide additional crossings of Sunset Highway: Century Boulevard/229th Avenue, 173rd Avenue/174th Avenue/Bronson Creek Trail, 143rd Avenue/Meadow Drive/Westside Trail, and the North Johnson Creek Trail. Highway 217 imposes a north-south barrier between intensely developed areas on either side of the freeway. One location of particular concern in this corridor is the Washington Square Regional Center, where the shopping mall and bus transit center sit opposite the WES Commuter Rail station and the Nimbus Avenue employment corridor. The 2014 RTP proposes construction of a pedestrian bridge in this location.
Trails
Trails offer the greatest protection for pedestrians from motorized traffic. Often associated with recreational pursuits, trails also offer transportation utility for short walking trips and longer bicycling trips. Washington County has an ever-expanding network of trails for walking, running, skating, bicycling, and other forms of non-motorized human travel. As of 2012, 69 miles of trails traversed the County, including 36 miles in the urban area and 33 miles in the rural area. An additional 164 miles of trails are in the planning stages Countywide.

Trail planning in Washington County occurs at state, regional, and local levels. The State of Oregon is involved through its stewardship of the Banks-Vernonia Trail and nearby soft-surface trails within Stub Stewart State Park and Tillamook State Forest. *Metro’s 2004 Regional Trails and Greenways Vision* established a strong conceptual framework for trail development in the urban portion of the County, which has since been embellished by more specific trail plans from Tualatin Hills Parks and Recreation District (THPRD) and city jurisdictions. THPRD’s 2006 trail plan laid out a bold vision for trails in the central part of Washington County, with regional trails further connected by community trails and on-road segments.

Trail construction and maintenance responsibilities in the urban area typically fall on local jurisdictions. THPRD has taken a lead in trail development in the past decade through its voter approved bond funding. Cities from Tualatin to Forest Grove also have made significant trail investments. Funding assistance often comes from regional and state grants, including Metro’s natural area bond and ODOT’s bike/pedestrian grants (the latter now included in the Statewide Transportation Improvement Program “Enhance” category). Washington County has a limited role in trail development, focusing its efforts on inter-jurisdictional coordination of trail planning and facilitation of road crossings. The loop trail around Henry Hagg Lake west of Gaston is the County’s only major trail asset.

Private development is responsible for yet more trails in the county. From the mid-century Oak Hills subdivision to the latest Peterkort development projects, developers have provided local trail networks that provide a public amenity while also helping market their properties. Commercial developers have followed suit, as seen on the Nike campus and in Hillsboro’s Dawson Creek Industrial Park. However, not all privately owned trails are open to the public.

Table 3.14 identifies the major existing and proposed Regional Trails in Washington County. Regional Trails are typically longer than other trails and help build out the *Metro Regional Trail and Greenway Vision*. Community Trails are shorter, often connecting neighborhoods or parks within a single jurisdiction. Regional and Community Trails are included in the TSP Pedestrian System Maps in Figures 3-24 and 3-25. Shorter, localized trails and accessways are located throughout the County, but are not included in Table 3.14 or any TSP maps.
### Table 3.14: Existing and Planned Trails in Washington County

<table>
<thead>
<tr>
<th>Trail Name, Description and Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Banks-Vernonia Trail.</strong> Stretching through farms and forests between the namesake towns, this State Parks-operated rail-trail is a major regional recreation destination. A substantial portion of the trail is within Washington County. The trail was recently improved within Stub Stewart State Park, including asphalt surfacing and the Tophill Trestle bypass. Washington County extended the southern end of the trail to Sellers Road and provided a trailhead. In the long term, the trail is envisioned to connect to Hillsboro by either continuing along the Portland &amp; Western Railroad or using the proposed Council Creek Regional Trail.</td>
</tr>
<tr>
<td><strong>Beaverton Creek Trail.</strong> Originally envisioned as a conservation greenway, THPRD completed a 2007 feasibility study that proposed a trail along Beaverton Creek from the Fanno Creek Greenway Trail at Denny Road and Highway 217, northwestward to Arleta Park at SW 194th Place and Willow Creek Drive. A more recent iteration of the trail combines it with the adjacent Fanno Creek Greenway Trail in a multi-jurisdictional trail completion initiative called the Crescent Connection.</td>
</tr>
<tr>
<td><strong>Burlington Northern Rail Trail.</strong> This rail corridor between North Plains and US 30 is occasionally discussed as a potential rail-trail. However, trail development is unlikely in the near term as freight trains still actively use this line.</td>
</tr>
<tr>
<td><strong>Cooper Mountain Trail.</strong> This trail would provide an east-west connection from the Westside Trail to Cooper Mountain Nature Park, then northwestward to the South Hillsboro area.</td>
</tr>
<tr>
<td><strong>Council Creek Regional Trail.</strong> A master planning process begun in 2012 is studying potential trail alignments in a corridor connecting Hillsboro, Cornelius, Forest Grove and Banks. The trail would provide a key active transportation link between the four cities and effectively extend the Banks-Vernonia Trail to the urban area. One potential route follows the namesake creek along the north edges of Cornelius and Forest Grove, and then turns northward along the Highway 47 corridor.</td>
</tr>
<tr>
<td><strong>Fanno Creek Greenway Trail.</strong> One of the first paved multi-use trails in Washington County, the Fanno Creek Greenway forms a major spine of active transportation connecting Tigard, Beaverton and Portland. Several sections remain to be done, including a short segment in downtown Tigard and a longer extension from Bonita Road southward to the Ki-a-Kuts Bike-Ped Bridge over the Tualatin River. These missing sections are part of the Crescent Connection initiative that bundles the Fanno Creek Greenway and Beaverton Creek trails.</td>
</tr>
<tr>
<td><strong>Hagg Lake Greenway.</strong> A greenway and potential trail is envisioned between Henry Hagg Lake and the Tualatin River, following the Scoggins Creek Valley and adjacent railroad corridor.</td>
</tr>
<tr>
<td><strong>Ice Age Tonquin Trail.</strong> A three-pronged network of trails will eventually connect Tualatin, Sherwood and Wilsonville. One section has been completed within Metro's Graham Oaks Nature Park in Clackamas County. The northern prong of the trail would connect with the Westside Trail at a proposed ped/bike bridge over the Tualatin River. A finished section extends eastward from the railroad, connecting to the Rock Creek Trail. Both segments provide a trail connection to Liberty High School.</td>
</tr>
<tr>
<td><strong>Oregon Electric Trail.</strong> An abandoned railroad extends from the Cornelius Pass / Sunset Highway interchange northward to Helvetia. A finished section extends eastward from the railroad, connecting to the Rock Creek Trail. Both segments provide a trail connection to Liberty High School.</td>
</tr>
<tr>
<td><strong>Path to the Pacific.</strong> Also called the Turf-to-Surf Trail, Portland-to-Coast Trail, and (in one segment) the TV Highway Trail, this ambitious concept aims to connect the Portland region with the Oregon Coast through a series of off-road and on-road connections. Multiple route alternatives through Washington County have been studied. A northern route would use the aforementioned Burlington Northern Railroad and US 26 right-of-way. A southern route would follow TV Highway and either the unfinished portion of the Banks-Vernonia Trail or the proposed Council Creek Trail. Both proposed routes converge in Manning, with hopes of using the Port of Tillamook Railroad (which was irreparably damaged in a 2007 winter storm) to reach the coast near Manzanita.</td>
</tr>
<tr>
<td><strong>Pearl-Keeler Power Line Trail.</strong> This trail, shown in Hillsboro’s 2009 Parks and Trails Master Plan as the BN Powerline Trail, would diverge southward from the Rock Creek Trail at Orchard Park, following BPA's Pearl-Keeler transmission line through the Reedville area. Portions of the trail exist within Paula Jean and Trachsel Meadows parks, but are deficient by modern regional trail standards. Recent planning for South Hillsboro continues the trail corridor south of TV Highway along the BPA line to Rosedale Road and potentially beyond.</td>
</tr>
<tr>
<td><strong>River-to-River Trail.</strong> This proposed route, mostly within Clackamas County, would connect Tualatin with Lake Oswego using the Portland &amp; Western Railroad corridor.</td>
</tr>
<tr>
<td><strong>Rock Creek Trail.</strong> This trail uses a combination of stream valleys and power line corridors to travel southwestward from Bethany to Hillsboro. With some minor exceptions, the trail is complete north of Wilkins Street. Major gaps exist southward to TV Highway.</td>
</tr>
<tr>
<td><strong>Sunset Highway Trail.</strong> A utilitarian bike-pedestrian trail parallels Sunset Highway from Highway 217 eastward and uphill to the Oregon Zoo. From the zoo, numerous low-traffic streets and trails provide pedestrian/bike connections to downtown Portland.</td>
</tr>
<tr>
<td><strong>Tualatin River Greenway Trail.</strong> This riverside trail would extend from the Tualatin River National Wildlife Refuge eastward through downtown Tualatin, underneath Interstate 5 and into Clackamas County, where it would enter the Stafford urban reserve.</td>
</tr>
</tbody>
</table>
Trail Name, Description and Status

**Washington Square Loop Trail.** A proposed loop trail would encircle Washington Square Regional Center and connect to the Fanno Creek Greenway Trail at two points.

**Westside Trail.** Generally following a north-south power line corridor across Washington and Multnomah counties, the Westside Trail will eventually connect the Tualatin River near King City with the Willamette River in far northwest Portland. Many portions are complete between Barrows Road in Tigard and TV Highway in Beaverton. Major challenges in the remaining sections include steep topography on Bull Mountain, and costly crossings of Sunset Highway and the Tualatin River.

**Yamhelas Westsider Trail.** The Yamhelas Westside Trail Coalition is working to acquire an abandoned Union Pacific railroad connecting McMinnville and Carlton in Yamhill County with Gaston in Washington County. The abandoned segment stops just east of Hagg Lake.

**Future Trail Needs**

In terms of identifying and prioritizing trail needs, the County largely defers to the jurisdictions that would build and maintain these trails. Washington County policy (included under TSP Objective 8.4) supports filling gaps in existing regional trails, since these projects would have a greater potential to improve countywide trail connectivity. The Crescent Connection (Beaverton Creek and Fanno Creek Greenway trails) and Westside Trail are probably the best examples of this. However, County policy also supports new trail development efforts in areas that lack them, including the Ice Age Tonquin Trail, Council Creek Trail, and Yamhelas Westsider Trail. Because the County’s role in trail planning focuses more on transportation and less on recreation, County policy tends to support trail projects that provide active transportation access to major employment hubs, transit stops, and mixed-use centers. Similarly, County residents, and workers involved in the 2014 TSP update voiced a strong interest in building trails for transportation, not just recreation. This means facilitating efficient and safe movement of people 24 hours a day, all year long, on appropriate urban trails. Design and management solutions to achieve this goal include:

- Avoiding flood-prone areas (horizontally or vertically) and using pervious asphalt to provide a surface that is durable, watershed-friendly, and resistant to ponding during the region’s rainy winters;
- Minimizing sharp curves and out-of-direction travel that slow down travel times and create blind spots;
- Considering trail lighting in appropriate urban areas;
- Keeping trails legally open during night hours to facilitate all types of commuting schedules; and
- Ensuring regular maintenance and debris clearing by the responsible jurisdiction.

Not all trails would be appropriate for this level of service. For example, soft surface nature trails are typically not intended for commuting.

**Rural Pedestrian Considerations**

Walking as a means of transportation is less common in rural areas of Washington County. Distances between destinations are typically too long to feasibly walk between them. However, rural residents still have plenty of reasons to walk or run along rural roads – among them, exercise, visiting a neighbor, making an on-road trail connection, or getting to a reasonably close destination such as a farm stand, school, or church.

**Rural Walking Facilities**

There are very few designated facilities for walking in the rural area. Sidewalks are not required along rural roads in Washington County, and the intensity of land development that would trigger a need for sidewalks is limited by land use policies for the rural area. Many rural roads in Washington County are narrow, forcing pedestrians to share the roadway with automobile traffic. A limited number of rural roads, including Roy Rogers Road and Cornelius-Schefflin Road, have been intentionally improved with wide shoulders to accommodate farm equipment and bicyclists. These roads can also safely accommodate pedestrians. Additionally, portions of some rural arterials have reasonably sized shoulders (four feet or more) that can facilitate walking or running, such as Highway 47 between Forest Grove and Gaston, and Scholls Ferry Road west of Roy Rogers Road. The *Oregon Bicycle and Pedestrian Plan* recommends that shoulders to accommo-
date pedestrian and bicycle travel on state roads be a minimum of six feet wide. Perhaps the most significant and well-developed pedestrian facility in rural Washington County is the Banks-Vernonia Trail, which extends 21 miles between the namesake towns, and connects to Stub Stewart State Park. More rugged trails can be found at Henry Hagg Lake and in the Tillamook State Forest.

**Rural Pedestrian Activity Areas**
Several locations in rural Washington County attract or generate a small number of localized walking trips. These Rural Pedestrian Activity Areas include small villages with clusters of houses, businesses, or public uses like schools, churches, and social halls. Also included are road segments that connect nearby urban area and major recreational destinations such as regional parks and trails. Rural Pedestrian Activity Areas, mapped in the Pedestrian System Maps in Figures 3-24 and 3-25, include:

- The Villages of Blooming, Buxton, Cherry Grove, Dilley, Farmington, Gales Creek, Glenwood, Greenville, Groner, Helvetia, Kinton, Laurel, Laurelwood, Manning, Midway, Roy, Scholls, Verboort and West Union;
- The half-mile rural section of Highway 8 between Hillsboro and Cornelius;
- The intersection of B Street, Highway 47, and adjacent multi-use trails south of Forest Grove;
- The area surrounding Farmington View School along Highway 219 south of Hillsboro;
- Henry Hagg Lake County Park;
- L.L. Stub Stewart State Park, which includes multiple trail crossings of Highway 47;
- Tualatin River National Wildlife Refuge, which straddles Highway 99W; and
- A 2½ mile stretch of Highway 6 in the Tillamook State Forest between Gales Creek Campground and the Coast Range Summit, featuring a parallel hiking trail, a scenic viewpoint, and several parking areas for other trails.

**Rural Pedestrian Needs**
Existing and future needs for walking in the rural area vary, and are largely dependent on context. Installing walkway facilities in rural villages should be approached on a case-by-case basis. Village areas are not likely to see major growth due to land use regulations, but traffic passing through them may increase as housing and employment grows in nearby urban areas. Some villages may exhibit enough pedestrian demand and automobile traffic conflict to warrant building walkway facilities. Villages with schools, such as Groner, provide additional rationale for walkways. However, construction of sidewalks or walkways could have unwanted impacts on the aesthetics of a village. Enhanced crosswalks, which have fewer property impacts, may be more appropriate in some locations. Coordination with village residents, business owners, and school officials is the best way to determine these needs.

Use of major recreation facilities such as Stub Stewart State Park and the Banks-Vernonia Trail are likely to increase as population grows in the Portland region. Supportive pedestrian facilities on County roads may be needed, such as enhanced crosswalks, where trails cross roads. Rural areas that are close to urban areas may have urban levels of pedestrian demand. The most significant example is the half-mile stretch of Highway 8 between Hillsboro and Cornelius, which includes bus service. Public comment revealed a need for better walking facilities along this stretch, especially at the bridge over Dairy Creek.
**Pedestrian System Map**

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.

The Pedestrian System Maps, included as Figures 3-24 and 3-25, identifies the future off-street trail network intended for utilitarian, recreational, and other types of walking trips. The map also 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. Specific pedestrian classifications shown on the map are described in the following paragraphs.

### 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*.

#### 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, 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 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*.

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13 *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.*
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.14

**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 in order 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.25 These 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 the characteristics summarized below.

- 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 surrounding context and circumstances allow, accommodating different trail users including people walking, running, cycling, skating, walking dogs and pushing strollers.

14 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 Corridors – 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.

15 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).
• 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 paved or 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.

Regional Trail Refinement Area
A Regional Trail Refinement Area is an area where a Regional 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 Regional Trail Refinement Area, in addition to other requirements, the development application must demonstrate how the Regional Trail will (at a minimum) not be precluded by the proposed development. Regional Trail Refinement Areas include:

• Turf-to-Surf Trail between Banks and Beaverton
• Council Creek Trail between Banks and Forest Grove and between Forest Grove and Hillsboro
• Cooper Mountain Trail
• River Terrace Trail
• Fanno Creek Greenway Trail between Bonita Road and the Tualatin River.

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 will 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.
This map displays an unofficial representation of elements adopted as part of Washington County Ordinance No. 783. It is not to be considered as the official Washington County Transportation System Plan. Please contact Washington County Long Range Planning at (503) 846-3319 with any questions regarding this map.

Figure 3-24

Online Map: http://arcg.is/1ED2hD6

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Online Map: [http://arcg.is/1ED2hD6](http://arcg.is/1ED2hD6)

Effective: November 27, 2015

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BICYCLE ELEMENT

Bicycle planning in Washington County began in earnest following the passage of the Oregon Bicycle Law in 1971. The Washington County Bicycle Pedestrian Pathway Master Plan soon followed and was adopted in 1974. The master plan proposed an extensive network of on-street and off-street bicycle routes and a point system to prioritize routes for construction. By 1983 approximately seven miles of pathways had been completed. In 1986, the County adopted bikeway standards as part of the Uniform Road Improvement Design Standards calling for “a six-foot-wide bicycle lane constructed adjacent to the curb within the pavement area.” The 1988 Washington County Transportation Plan notes that 15 miles of bike lanes built to design standards and 14 miles of substandard bicycle paths existed on, or adjacent to, County roads. By 2002 that number had grown to more than 64 miles of existing on-street bikeway facilities, as a result of adding more than 2.5 miles of bikeways to the system annually between 1988 and 2002 in conjunction with the Major Streets Transportation Improvement Program. Today, the County’s major street network (Arterials and Collectors) has more than 91 miles of on-street urban bikeway (6’ bicycle lanes and minimum 4’ width paved shoulders) and 36 miles of rural on-street bikeways (minimum 4’ width paved shoulders).

Bicycle Trip Characteristics

Bicycling is an important mode of transportation, whether used separately or with other travel modes such as transit. Bicycling is the most efficient form of transportation and is considered particularly well suited for shorter trips, typically less than three miles. A recent study that tracked cyclists’ activity in the Portland metropolitan region, including Washington County, found the median length of bicycle trips of study participants was 2.8 miles. However, it was found that participants were willing to travel further from home to work; the median single trip distance was 3.8 miles with an average trip length of 5.2 miles. Acceptable trip length can vary greatly depending on the skill and fitness level of the cyclist.

The bicycle can be used for a variety of uses and trip purposes. Bicycle trips in Washington County include trips to work, school, shopping, and for recreational purposes. The study noted above found that other than riding to home, riding to work was the most frequent trip purpose (25 percent), with approximately 18 percent for shopping/dining out/or other personal business, and 12 percent for social or recreation purposes (such as going to the movies, the gym, or visiting friends). Nationally, approximately 39 percent of all bicycle trips are less than two miles. This suggests that with improved access to safe and comfortable bikeways, bicycling can be a feasible option for many people.
Types of System Users
An important consideration in preparing a bicycle plan is to recognize the primary types of cyclists and their differing needs. Generally, bicyclists fall into three categories:

- **Strong and Fearless or Type A (Advanced)** – This group includes bicyclists who are comfortable riding on busy roads with a low level of separation from traffic and navigating in traffic when necessary to reach destinations. This group makes up a small percentage of cyclists and the population.

- **Enthused and Confident or Type B (Basic)** – This group includes utilitarian and recreational riders who will ride on busy streets if bike lanes or other facilities are provided, but may deviate from the most direct route to ride on low-traffic streets or shared-use paths.

- **Interested, but Concerned or Type C (Concerned)** – This group includes a wide range of people of all ages who enjoy bicycling occasionally, but may only ride on shared use paths, protected on-street facilities, or low-traffic local streets. The majority of the population falls into this category.

Achieving regional active transportation performance targets will require attracting a wider range of users. A variety of factors limit bicycling by Type B and C cyclists, including adjacent vehicle speeds (>35 mph), adjacent vehicle volumes (>3,000 ADT), and freight conflicts. Some jurisdictions are responding to these issues by increasing the separation between vehicle and bicycle travel through enhanced bicycle facility design. The **Washington County Bicycle Facility Design Toolkit** provides detailed design considerations intended to provide safe and convenient bikeways that will be especially beneficial to Type B and C bicyclists.

Bikeway Facilities
The following section describes the spectrum of existing and potential separated on-street bikeway facilities.

- **Shoulder Bikeways**: On rural roads or interim urban roads with a large shoulder, shoulder bike-ways can accommodate bicycle travel. Shoulder bikeways are generally used by commuter and long-distance recreational riders, rather than families with children or more inexperienced riders.

- **Bike Lanes**: Designated exclusively for bicycle travel, bike lanes are separated from vehicle travel lanes with striping and pavement stencils. Bike lanes are most appropriate on arterial and collector streets where higher traffic volumes and speeds warrant greater separation. Bike lanes also increase safety and reduce wrong-way riding. This treatment is required on arterials and collectors when roads are newly constructed or reconstructed, per Washington County’s existing Road Design Standards.

- **Buffered Bike Lanes**: Buffered bike lanes are designed to increase the space between the bike lane and the travel lane or parked cars. They allow motorists greater separation from bicyclists in the bike lane (as travel speeds increase greater separation is needed) and provide space for cyclists to pass one another without encroaching into the travel lane. Buffered bike lanes are not currently addressed in the Washington County Road Design Standards. Two pilot projects have been constructed that demonstrate the use of buffered bike lanes on NW 185th Avenue and SW Tualatin-Sherwood Road.
• **Cycle Tracks**: Cycle tracks provide added protection by separating motor vehicles and bicyclists where travel speeds and/or motor vehicle traffic volumes are high. This type of facility appeals to a wider range of bicycle users than a conventional bike lane. Cycle tracks are not currently addressed in the *Washington County Road Design Standards*. However, the *Washington County Bicycle Facility Design Toolkit* identifies three types of cycle tracks:

  › Protected cycle tracks are on-street bikeway facilities that provide the safety and comfort of multi-use paths within the road right-of-way. This is accomplished by combining a painted buffer with a physical barrier such as flexible bollards, a landscaped buffer, or a parking lane.

  › Raised cycle tracks are grade separated. Commonly located above the adjacent travel lane and below the sidewalk, they can also be found at sidewalk grade.

  › Two-way cycle tracks allow for bicycle travel in two directions on the same side of the road.

## Existing Bicycle Facility Network

Today the County’s major bikeway system is comprised of a variety of facilities and treatments on Collector and Arterial roadways. As in many growing areas, bicycle facilities in Washington County are still developing. In some cases there are complete, continuous bike lanes; while in others, significant gaps exist in connections between facilities. The *Regional Transportation Functional Plan* requires an inventory of existing facilities that identifies gaps and deficiencies in the bicycle system. Washington County performed a complete inventory of the County’s existing on-street bicycle facilities between 2011-2012 for the *Bicycle and Pedestrian Improvement Prioritization Project*. The study examined all urban Arterial and Collector streets using the latest aerial imagery to identify the presence/absence of on-street bicycle lanes five- to six-feet wide, and paved shoulders at least four-feet wide. The inventory was reviewed by the public using an online interactive map that allowed visitors to the project’s website to review the mapped inventory and comment on its accuracy, as well as provide other information like system needs and route preferences. The following section provides a descriptive analysis of the existing bicycle network.

### Arterials and Collectors

There are a total of 438 centerline miles of urban Arterial and Collector roadways throughout Washington County, including city, County and state facilities. Bicycle lanes exist on a number of these major routes including Baseline Road, Evergreen Road/Parkway, Scholls Ferry Road, Tualatin-Sherwood Road, Murray Boulevard, Oregon Highway 99W and other major roadways. However, many major roads – particularly Collectors – lack bike lanes. As indicated in Table 3.15 and illustrated in Figure 3-26, approximately 38% of urban Arterials and Collectors have five- or six-foot bike lanes on both sides of the roadway, while 53% of Arterials and Collectors have no bikeway facilities. Table 3.16 shows that 11 miles of roadway feature enhanced bikeway facilities such as buffered bike lanes or cycle tracks. These facilities provide greater separation between bicycles and motor vehicles and have the potential to attract more cyclists. Table 3.17 includes information on bikeways in the rural areas of Washington County. While more than three quarters of rural Arterial and Collector roadways have no bikeway facilities, there are nearly 150 miles of rural roads with wide shoulders or bike lanes, including Roy Rogers Road, Cornelius-Schefflin Road and Oregon Highway 47 (south of Forest Grove).

### Table 3.15: Arterial/Collector Bikeway Coverage, Urban Washington County

<table>
<thead>
<tr>
<th>Existing Bike Lanes</th>
<th>Facility Location</th>
<th>Miles</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-6-foot marked bike lane</td>
<td>Both sides of road</td>
<td>164.9</td>
<td>37.6%</td>
</tr>
<tr>
<td>5-6-foot marked bike lane</td>
<td>One side of road</td>
<td>24.2</td>
<td>5.5%</td>
</tr>
<tr>
<td>Shoulder suitable for bikes (4-foot+)</td>
<td>Both sides of road</td>
<td>9.5</td>
<td>2.2%</td>
</tr>
<tr>
<td>Shoulder suitable for bikes (4-foot+)</td>
<td>One side of road</td>
<td>8.1</td>
<td>1.9%</td>
</tr>
<tr>
<td>No bikeway facilities</td>
<td>N/A</td>
<td>231.3</td>
<td>52.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>438.1</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

**PART 3: TRANSPORTATION MODAL ELEMENTS**

*Effective November 27, 2015*
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Online Map: http://arcg.is/1PXZuMo

Effective: November 27, 2015
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Table 3.16: Enhanced Bikeways in Urban Washington County

<table>
<thead>
<tr>
<th>Road</th>
<th>Jurisdiction</th>
<th>From</th>
<th>To</th>
<th>Type of Facility</th>
<th>Approximate Extent (centerline miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW 155th Ave</td>
<td>City of Beaverton</td>
<td>Rigert Rd</td>
<td>Sexton Mountain Dr</td>
<td>Raised cycle tracks</td>
<td>0.3</td>
</tr>
<tr>
<td>NW 185th Ave</td>
<td>Washington County</td>
<td>West Union Rd</td>
<td>Westview High School</td>
<td>Buffered bike lanes</td>
<td>0.6</td>
</tr>
<tr>
<td>NE Brookwood Pkwy</td>
<td>Washington County</td>
<td>Evergreen Pkwy</td>
<td>Cornell Rd</td>
<td>Multi-use paths</td>
<td>1.6</td>
</tr>
<tr>
<td>NW Evergreen Rd</td>
<td>Washington County</td>
<td>25th Ave</td>
<td>Brookwood Pkwy</td>
<td>Buffered bike lanes</td>
<td>1.8</td>
</tr>
<tr>
<td>Oregon Highway 47</td>
<td>ODOT</td>
<td>Pacific Ave</td>
<td>B St</td>
<td>Multi-use path</td>
<td>2.0</td>
</tr>
<tr>
<td>SW Scholls Ferry Rd</td>
<td>Washington County</td>
<td>Roy Rogers Rd</td>
<td>Teal/Horizon Blvds</td>
<td>Buffered bike lanes</td>
<td>1.3</td>
</tr>
<tr>
<td>SW Tualatin-Sherwood Rd</td>
<td>Washington County</td>
<td>Baler Way</td>
<td>Teton Ave</td>
<td>Buffered bike lanes</td>
<td>3.0</td>
</tr>
<tr>
<td>NE Veterans Dr</td>
<td>City of Hillsboro</td>
<td>28th Ave</td>
<td>Brookwood Pkwy</td>
<td>Raised cycle tracks</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total 11.4</td>
</tr>
</tbody>
</table>

Table 3.17: Arterial/Collector Bikeway Coverage, Rural Washington County

<table>
<thead>
<tr>
<th>Bikeway Facility Needs</th>
<th>Lane miles: Rural area</th>
<th>% of rural area total</th>
<th>Washington County Maintained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bike lanes on both sides of road</td>
<td>6</td>
<td>1%</td>
<td>0</td>
</tr>
<tr>
<td>Bike lane on one side of road</td>
<td>0</td>
<td>0%</td>
<td>1</td>
</tr>
<tr>
<td>Shoulder suitable for bikes (both sides)</td>
<td>134</td>
<td>19%</td>
<td>66</td>
</tr>
<tr>
<td>Shoulder suitable for bikes (one side)</td>
<td>9</td>
<td>3%</td>
<td>2</td>
</tr>
<tr>
<td>No separated bikeway facilities</td>
<td>532</td>
<td>77%</td>
<td>466</td>
</tr>
<tr>
<td>Total mileage of arterials/collectors</td>
<td>681</td>
<td>100%</td>
<td>545</td>
</tr>
</tbody>
</table>

Bikeway Facility Needs

Bicyclists are very sensitive to the distance between destinations, so strategies that reduce the distance between origins and destinations can make bicycling more attractive. Mixing compatible land uses can make biking more attractive for errands, and the creation of more direct routes to job centers and schools can reduce the travel time between those places by bicycle. Providing a safe, well-connected system of bicycle and pedestrian routes, as well as other bicycle facilities, can significantly increase bicycling. The National Bicycling and Walking Study found that “cities with higher levels of bicycle commuting have on average 70 percent more bikeways per roadway mile and six times more bike lanes per arterial mile.” Equally important is how well connected available bikeways and bike lanes are. Gaps in the system of bicycle routes, and obstacles such as tunnels and bridges, can make bicycling much less feasible.

The County’s major streets evolved from “farm-to-market” roads at a time when principal markets and employment centers were located in Portland. The resulting system primarily serves east-west travel needs. This historic trend, as well as topographic conditions, has resulted in a street pattern that, for the most part, has not developed into an interconnected, grid pattern. Grid pattern street systems provide multiple routes for bicycle travel on parallel roadways, some of which typically carry lower traffic volumes with lower travel speeds, making them particularly suitable for bicycle travel. Although the County has undertaken an ambitious program to improve the road system in recent years, it continues to lack adequate peak-hour capacity, and includes many substandard roadways that are more costly to maintain than roads built to County and city design standards. Because of the lack of north-south routes, the County’s road system does not serve demand for north-south travel well.
Urban Bikeway Needs
Obstacles to bicycle travel in urban Washington County include physical gaps in facilities, lack of regular maintenance of bike lanes, inadequate funding for bicycle-related improvements, historic development patterns where there is poor local-street connectivity, and the presence of flood plains and topographic constraints. Intersections that are not designed for current and future traffic volumes, such as Beaverton-Hillsdale Highway at Scholls Ferry Road, and missing links in facilities such as those found along Canyon Road, 170th Avenue and other locations, are obvious obstacles to bicyclists.

Bikeways on the major street system provide direct connections for bicyclists, making them the logical choice for longer trips. At the same time, the high traffic volumes, greater speeds and the potential for conflicting turning movements at intersections, which are common on the major street network, may be considered as obstacles by some bicyclists. Identification of low-traffic-volume streets for use as “neighborhood bikeways” may be possible in some areas of the county at relatively low cost. However, many areas of Washington County lack well-connected, low-traffic-volume streets for such a system.

Due to the reality of incremental expansion and improvement of Collector and Arterial roadways, it is unlikely a complete bicycle and pedestrian system will be realized in the near term. Adopting strategies to support bicycle travel is consistent with the goals and desired outcomes of the 2014 RTP. The 2014 RTP recognizes the important role that active transportation modes play in achieving regional objectives such as: Increasing non-SOV mode share, reducing vehicle miles traveled, reducing the cost of transportation, improving public health, and meeting state goals for greenhouse gas reduction. Goals included in the 2014 RTP call for tripling the mode share of bicycling and walking for commuting over the next 25 years.

The County’s TSP must comply with Metro’s Regional Functional Transportation Plan Section 3.08.140, which directs local jurisdictions to pay particular attention to bicycle access to transit and essential destinations. The RTFP defines “essential destinations” as hospitals, medical centers, grocery stores, schools, and social service centers with more than 200 monthly LIFT pick-ups. A County study for the Bicycle and Pedestrian Improvement Prioritization Project (2012) compared the existing and planned urban bicycle network (Collector and Arterial roadways) to determine how to optimize the planned bicycle system improvements. Table 3.18 includes the prioritized list of bike lane needs identified for collectors and arterials in Washington County.16

Neighborhood Routes and Local Streets
Washington County also has an extensive system of local roadways. While these streets are not signed for bicycle routes, and bikeway facilities are not developed on these roads, they may be and are used as shared roadways by bicycles. It may be possible to identify areas where good local street connectivity has been established and appropriately sign these areas as secondary bicycle routes (neighborhood bikeways or bike boulevards), to supplement the primary system of bikeways on the Arterial and Collector street network. In October 2012, Washington County received an ODOT Transportation and Growth Management (TGM) grant to develop a neighborhood bikeways study that looked into these opportunities.

Rural Bikeway Needs
Outside of the Urban Growth Boundary (UGB), obstacles to bicycle travel are different than in the urban portions of the County. Although bicycling as a means of transportation is less common in rural areas of Washington County because distances between destinations are typically too long to feasibly bike between them, many rural roads are attractive riding areas for recreational cyclists. While traffic volumes are generally much lower in most of the rural area, many rural roads have narrow travel lanes with steep ditches for drainage, little or no shoulders, high vehicle speeds and occasional poor sight distance due to vertical and horizontal curves. Even with the lower traffic volumes, these conditions can create hazards for cyclists.

16 Bicycle improvements will be implemented as funding allows, and as opportunities develop through private development or roadway improvement projects.
In the rural area, improvement projects for major roadways typically include wide shoulders (four-six feet) to accommodate wide and slow-moving farm equipment. While not specifically designated as bike lanes, these wide shoulders serve as shared-roadway bikeways and are considered part of the rural bikeway system. Approximately 23 percent of the major rural road network is improved with wide shoulders (four-six feet). The majority of rural bikeway facilities (81 lane miles) are located on state highways. The portions of the state highway system that have reasonably sized shoulders (four feet or more) that can facilitate bicycling include Highway 47 between Forest Grove and Gaston, and Highway 99W between Tigard and the County line. A limited number of County rural roads, including Roy Rogers Road and Cornelius-Schefflin Road, have been improved with wide shoulders. In total, there are approximately 69 lane miles of existing rural bikeways (minimum four-foot-wide paved shoulders) on County facilities. Washington County has jurisdiction over 548 lane miles of rural arterial and collector roads; therefore the County’s rural bikeway system is approximately 13 percent complete.

Table 3.18: Identified Bike Lane Needs in Washington County*

<table>
<thead>
<tr>
<th>Road Name</th>
<th>From</th>
<th>To</th>
<th>Total Length (lane feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Avenue</td>
<td>Baseline Road</td>
<td>500’ north of Grant</td>
<td>7,174</td>
</tr>
<tr>
<td>65th Avenue</td>
<td>Sagert Street</td>
<td>Nyberg Street</td>
<td>2,466</td>
</tr>
<tr>
<td>92nd Avenue</td>
<td>Garden Home</td>
<td>Scholls Ferry</td>
<td>5,310</td>
</tr>
<tr>
<td>143rd Avenue</td>
<td>Cornell Road</td>
<td>West Union Road</td>
<td>8,889</td>
</tr>
<tr>
<td>158th Avenue/Merlo</td>
<td>Jenkins Road</td>
<td>170th Avenue</td>
<td>6,682</td>
</tr>
<tr>
<td>170th Avenue</td>
<td>Merlo Road</td>
<td>Alexander Street</td>
<td>8,448</td>
</tr>
<tr>
<td>170th Avenue</td>
<td>150° S. of Heritage Ct</td>
<td>Augusta Lane</td>
<td>2,353</td>
</tr>
<tr>
<td></td>
<td>Baseline Road</td>
<td>Merlo Road</td>
<td>2,918</td>
</tr>
<tr>
<td></td>
<td>Cornell Road</td>
<td>Walker Road</td>
<td>7,956</td>
</tr>
<tr>
<td></td>
<td>Laidlaw Road</td>
<td>Bronson Road</td>
<td>8,192</td>
</tr>
<tr>
<td></td>
<td>Alexander Street</td>
<td>Blanton Street</td>
<td>1,966</td>
</tr>
<tr>
<td></td>
<td>Quatama Street</td>
<td>Baseline Road</td>
<td>4,664</td>
</tr>
<tr>
<td></td>
<td>TV Highway</td>
<td>Farmington Road</td>
<td>11,036</td>
</tr>
<tr>
<td></td>
<td>160° S. of Rail Road</td>
<td>300’ N. of Blanton St</td>
<td>910</td>
</tr>
<tr>
<td>Alexander Street</td>
<td>178th Avenue</td>
<td>170th Avenue</td>
<td>4,880</td>
</tr>
<tr>
<td>Barnes Road</td>
<td>St. Vincent’s Medical Center</td>
<td>Leahy Road</td>
<td>8,617</td>
</tr>
<tr>
<td>Baseline Road</td>
<td>158th Avenue</td>
<td>Jenkins Road</td>
<td>4,712</td>
</tr>
<tr>
<td>Beef Bend Road</td>
<td>150th Avenue</td>
<td>Pacific Highway</td>
<td>20,868</td>
</tr>
<tr>
<td>Bronson Road</td>
<td>185th Avenue</td>
<td>Bethany Boulevard</td>
<td>15,565</td>
</tr>
<tr>
<td>Bull Mountain</td>
<td>Hazeltree Terrace</td>
<td>120th Pl</td>
<td>939</td>
</tr>
<tr>
<td>Brookwood Parkway</td>
<td>Evergreen Parkway</td>
<td>Sunset Highway</td>
<td>7,467</td>
</tr>
<tr>
<td>Cedar Hills Blvd</td>
<td>Butner Road</td>
<td>Sunset-Cedar Hills Off Ramp</td>
<td>865</td>
</tr>
<tr>
<td>Cornell Road</td>
<td>Main Street</td>
<td>25th Avenue</td>
<td>12,124</td>
</tr>
<tr>
<td>Cornell Road</td>
<td>99th Avenue</td>
<td>102nd Avenue</td>
<td>711</td>
</tr>
<tr>
<td>Evergreen Parkway</td>
<td>Cornelius Pass Road</td>
<td>215th Avenue</td>
<td>1,214</td>
</tr>
<tr>
<td>Farmington Road</td>
<td>198th Avenue</td>
<td>176th Avenue</td>
<td>6,348</td>
</tr>
<tr>
<td>Farmington Road</td>
<td>171st Ave</td>
<td>173rd Ave</td>
<td>1,214</td>
</tr>
<tr>
<td>Fischer Road</td>
<td>131st Avenue</td>
<td>Pacific Highway</td>
<td>6,916</td>
</tr>
<tr>
<td>Garden Home Road</td>
<td>77th Ave</td>
<td>92nd Ave</td>
<td>3,147</td>
</tr>
<tr>
<td>Glencoe Road</td>
<td>Cody Court</td>
<td>Tiffany Street</td>
<td>2,984</td>
</tr>
<tr>
<td>Glencoe Road</td>
<td>Cory Street</td>
<td>Camp Ireland Street</td>
<td>1,600</td>
</tr>
<tr>
<td>Greenburg Road</td>
<td>Hall Boulevard</td>
<td>Oak Street</td>
<td>5,540</td>
</tr>
<tr>
<td>Johnson Street</td>
<td>198th Avenue</td>
<td>185th Avenue</td>
<td>7,000</td>
</tr>
</tbody>
</table>
Road Name | From | To | Total Length (lane feet)
--- | --- | --- | ---
Johnson Street | Cornelius Pass | 198th Avenue | 10,873
Johnson Street | 185th Avenue | 170th Avenue | 5,801
Kinnaman Road | 185th Avenue | Farmington Road | 7,392
Kinnaman Road | 198th Avenue | 185th Avenue | 6,720
Langer Drive | Langer Drive | Roy Rogers Road | 3,428
Murray Boulevard | TV Highway | Farmington Road | 1,138
Oregon Street | Tualatin-Sherwood | 300’ east of Tonquin Road | 3,563
River Road | TV Highway | Rood Bridge Road | 12,488
Roy Rogers Road | Borchers Drive | Pacific Highway | 2,198
Saltzman Road | Cornell Road | Barnes Road | 1,709
Scholls Ferry road | S. of Merry Ln | McKay Elementary | 970
Scholls Ferry road | 75’ W. of Northvale Way | 395’ E. of Northvale Way | 472
Springville Road | 185th Avenue | Joss Avenue | 8,085
Thompson Road | East of 143rd Avenue | Saltzman Road | 8,873
Thompson Road | Bronson Creek Dr | 143rd Ave | 1,091
Tualatin-Sherwood | Boones Ferry | I-5 Interchange | 4,824
Walker Road | 173rd Avenue | 185th Avenue | 7,548
Walker Road | 185th Avenue | Von Neumann Drive | 4,186
Walker Road | 180th | 183rd Ave | 746
Walker Road | 178th Ave | 180th Ave | 572
Walker Road | 240’ W. of Bronson Creek | 248’ E. of Bronson Creek | 488
West Union Road | Cornelius Pass Road | 185th Avenue | 15,367
West Union Road | Church Property | 203rd Pl | 2,577
West Union Road | 185th Ave | Bethany Blvd | 16,558
West Union Road | 185th Avenue | Bethany Boulevard | 16,558
West Union Road | Helvetia Road | Cornelius Pass Road | 16,996

Total 349,811

*Bicycle improvements will be implemented as funding allows, and as opportunities occur through the development process.

Note: Locations in italic are included in the Bicycle and Pedestrian Improvement Prioritization Project (February 2013) Top 30 Gaps.

Bicycle Parking
Bicyclists often note that improved facilities, such as improved bicycle parking and showers at workplaces, would make bicycling more attractive as a commute option. People may be discouraged from using a bicycle to make an otherwise appropriate trip if secure bicycle parking is not available at the destination. Bicyclists’ needs for bicycle parking range from a convenient piece of street furniture that can be used to secure their bicycle, to bicycle lockers that provide weather, theft, and vandalism protection, gear storage space, and 24-hour personal access.

The County’s existing Community Development Code includes bicycle parking requirements for new development. While bicycle parking has been required in new developments since 1994 by Section 429 of the Community Development Code, little or no baseline information is available on the amount or quality of existing bicycle parking. However, Washington County’s Development Standards for Bicycle Parking are comprehensive, with provisions in the Code for development of minimum bicycle parking facilities in conjunction with multi-family developments of four units or more, retail, office, institutional, and industrial development, transit centers, and park-and-ride lots.
For those cyclists needing to dress more formally, travel longer distances, or cycle during wet or hot weather, the ability to shower, change, and store clothing can be as critical as bicycle storage. Larger employers may choose to provide additional amenities as part of the Department of Environmental Quality’s Employee Commute Options (ECO) program.

**Bicycles and Transit**

Another important factor in encouraging bicycle travel is the connection between the bicycle and transit systems. Linking bicycles with transit mitigates some obstacles to bicycling such as lengthy trips, personal security concerns, riding at night, poor weather, or steep topography. Using a combination of bicycling and transit can enable a cyclist to avoid barriers, or facilitate longer-distance trips. Several options are available for combining bicycle and transit trips. Bike parking is available at most MAX and WES stations. Secure, enclosed parking with keycard access is provided at Sunset and Beaverton transit centers, and bicycle racks are provided at transit stations. TriMet and SMART buses have bike racks on the front of the buses that can carry two bikes; and bicyclists can bring their bike onboard MAX, WES, and the Portland Streetcar, if room is available in one of the designated bike spaces. Connections to WES and MAX are as important as connections to regional bus routes. Table 4.21 in the Existing Conditions Report (page 4-61 – 4-66) provides an assessment of bicycle accessibility to MAX and WES stations within Washington County, including stops within incorporated cities, along with other information about bicycle accessibility.

**Bicycle System Map**

Figure 3-27 shows the bicycle-system classifications for specific facilities using the classifications described in the following section.

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. The Bicycle System Classifications provide 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, 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, 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 should consider the Washington County Bicycle Facility Design Toolkit.

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17 Oregon Administrative Rule 660-112-0045 (Transportation Planning Rule)
Urban Collectors that are currently not built to standard, but have low traffic volumes and low travel 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 on the adopted Bicycle System Map. Urban Arterial and Collector designations are included in the Roadway Element.

**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 the land use context, access to transit service, and roadway characteristics. Enhanced Major Street Bikeways may have higher traffic volumes, higher travel speeds, and/or are designated for three or more lanes. 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.

**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.
Regional Trail Refinement Area
A Regional Trail Refinement Area is an area where a Regional 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 Regional Trail Refinement Area, in addition to other requirements, the development application must demonstrate how the Regional Trail will (at a minimum) not be precluded by the proposed development. Regional Trail Refinement Areas include:

- Turf-to-Surf Trail between Banks and Beaverton
- Council Creek Trail between Banks and Forest Grove and between Forest Grove and Hillsboro
- Cooper Mountain Trail
- River Terrace Trail
- Fanno Creek Greenway Trail between Bonita Road and the Tualatin River

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 planned 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.

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 where 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.
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This map displays an unofficial representation of elements adopted as part of Washington County Ordinance No. 783. 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.
TRANSIT ELEMENT
Washington County’s location in the Portland region makes it part of one of the most successful and pioneering public transportation systems in the nation. Transit is a critical component of the County transportation system, reducing automobile trips and congestion, providing travel options for people without vehicles or those who choose not to drive, curbing greenhouse gas and other emissions, and reducing transportation costs for individuals and families. The American Public Transportation Association reports that residents of the Portland region save an average of $867 per month if they use transit instead of owning and driving a car. This section provides an overview of existing and planned transit service, transit stop access and amenities, and an assessment of transit needs in Washington County.

Transit Providers
The following five public transit operators provide transit service in Washington County:

- Tri-County Metropolitan Transit District of Oregon (TriMet),
- South Metro Area Regional Transit (SMART),
- Yamhill County Transit Area,
- Columbia County Transit Division, and
- Tillamook County Transportation District.

Six private, non-profit, or employer-based transit services also operate in Washington County, including:

- Ride Connection, a non-profit that provides rural transit and urban paratransit services;
- OC&W Coachways, operator of the Northwest Point inter-city bus service between Portland, Cannon Beach, and Astoria;
- Tualatin Chamber of Commerce, operator of the Tualatin Shuttle;
- Intel employee shuttles
- Nike employee shuttles; and
- Portland Community College buses

TriMet
TriMet is the principal public transit provider in Washington County, with 30 bus routes, one light rail line (including two routes), a commuter rail line, and nearly 2,000 transit stops. The TriMet service district extends west to Forest Grove, north to Bethany, and south to Sherwood. In spring 2012, TriMet recorded an average of 114,331 weekday boardings and alightings (“ons/offss”) at Washington County transit stops during its quarterly passenger census, accounting for 17 percent of system wide ons/offs. TriMet transit routes in Washington County generally exhibit a radial pattern following major corridors from downtown Portland or Beaverton, along with several north-south “cross-town” routes and localized loop routes. Two rail lines and four bus lines provide “frequent service,” with 15-minute or better peak-hour headways and late-night service on all or portions of their alignments. These routes are shown in bold type in Table 3.19. Table 3.19 provides further details on all TriMet rail and bus routes in Washington County, including: route name and number, terminus location, approximate service headways, and days of service.
In addition to the fixed routes described in Table 3.19, TriMet provides LIFT paratransit service - a shared ride advance-reservation service for people who cannot use regular buses or trains due to a disability or disabling health condition. Users must meet ADA eligibility criteria and be registered with TriMet. The LIFT vehicle fleet includes small buses, vans, and taxis, serving the area generally extending 0.75 miles beyond the outer limits of TriMet bus and MAX lines, but no further than the TriMet service district boundary. The nonprofit Ride Connection, described later, offers paratransit service in a larger area of Washington County.

Systemwide, TriMet has seen year-to-year ridership increases in all but two years since 1999; there were decreases in 2006 and 2010. In fiscal year 2012, TriMet boardings surpassed 102 million, an all-time high. Between 2000 and 2010, boardings increased 23 percent, significantly higher than the tri-county population increase of 14 percent during the same decade. Between 2011 and 2012, the greatest gains by service type occurred on WES Commuter Rail, with a 13 percent increase in boardings, compared to a two percent increase on MAX and bus lines. The highest weekday ridership figures occurred on lines that offer frequent service and have long routes, such as the MAX Blue Line and Route 57-TV Highway.

All TriMet buses have ramps or lifts to accommodate persons who have difficulty with steps or who use mobility devices. As of 2012, low-floor buses with ramps make up about two-thirds of the fleet. On MAX, every train has at least one low-floor car to accommodate people with disabilities. All WES commuter trains have accessible level boarding from station platforms. TriMet records the location and frequency of all bus ramp/lift deployments to understand where additional bus stop or other access improvements may be needed.

TriMet bus stops range from signposts along unimproved road shoulders to more functional and fully-accessible stops with sidewalk connections, concrete pads, bus shelters, benches, trash cans and lighting. MAX and WES stations and transit centers generally have more amenities than individual bus stops, with shelters and seating, real-time arrival displays, bicycle parking, public art, and at some locations, food vendors. TriMet has guidelines and standards for bus stops and amenities. Due to budget limitations TriMet typically provides shelters and benches only at the highest ridership bus stops (and at all rail stations). Out of 1,993 transit stops in Washington County in spring 2012, 318 (16 percent) had a shelter, bench and trash can. Several “major bus stops” (stops with 100 or more boardings during an average weekday) have no amenities; many of these deficient stops are on busy roadways like Cedar Hills Boulevard or Hall Boulevard.

In Table 3.19, TriMet Transit Routes Serving Washington County:

<table>
<thead>
<tr>
<th>Route (Weekday frequent service routes in bold)</th>
<th>Terminus (outbound)</th>
<th>Terminus (inbound)</th>
<th>Headways (weekday peak/ mid-day, minutes)</th>
<th>Days of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX Blue Line</td>
<td>Hillsboro</td>
<td>Gresham</td>
<td>7/15</td>
<td>7 days</td>
</tr>
<tr>
<td>MAX Red Line</td>
<td>Beaverton/Hillsboro</td>
<td>Portland Airport</td>
<td>15/15</td>
<td>7 days</td>
</tr>
<tr>
<td>Westside Express Service (WES) Commt Rail</td>
<td>Wilsonville</td>
<td>Beaverton</td>
<td>30/NA</td>
<td>M-F peak</td>
</tr>
<tr>
<td>12 – Barbur/Sandy Blvd</td>
<td>Tigard TC</td>
<td>Parkrose-Summer TC</td>
<td>15/15</td>
<td>7 days</td>
</tr>
<tr>
<td>20 – Burnside/Stark</td>
<td>Beaverton TC</td>
<td>Gresham TC</td>
<td>15/40</td>
<td>7 days</td>
</tr>
<tr>
<td>36 – South Shore</td>
<td>Tualatin Park &amp; Ride</td>
<td>Lake Oswego TC or Portland</td>
<td>30/90</td>
<td>M-F</td>
</tr>
<tr>
<td>37 – Lake Grove</td>
<td>Tualatin Park &amp; Ride</td>
<td>Lake Oswego TC</td>
<td>45/90</td>
<td>M-F</td>
</tr>
<tr>
<td>38 – Boones Ferry Rd</td>
<td>Tualatin Park &amp; Ride</td>
<td>Portland City Center</td>
<td>30/NA</td>
<td>M-F peak</td>
</tr>
</tbody>
</table>

Table 3.19: TriMet Transit Routes Serving Washington County
<table>
<thead>
<tr>
<th>Route (Weekday frequent service routes in bold)</th>
<th>Terminus (outbound)</th>
<th>Terminus (inbound)</th>
<th>Headways (weekday peak/mid-day, minutes)</th>
<th>Days of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>43 – Taylors Ferry Rd</td>
<td>Washington Square TC</td>
<td>Portland City Center</td>
<td>50/60</td>
<td>M-F</td>
</tr>
<tr>
<td>45 – Garden Home</td>
<td>Tigard TC</td>
<td>Portland City Center</td>
<td>20/60</td>
<td>7 days</td>
</tr>
<tr>
<td>46 – North Hillsboro</td>
<td>Hillsboro TC</td>
<td>Shute/Dawson Creek Rd.</td>
<td>60/60</td>
<td>M-F</td>
</tr>
<tr>
<td>47 – Baseline/Evergreen</td>
<td>Hillsboro TC</td>
<td>PCC Rock Creek</td>
<td>15/30</td>
<td>M-F</td>
</tr>
<tr>
<td>48 – Cornell</td>
<td>Hillsboro TC</td>
<td>Sunset TC</td>
<td>30/30</td>
<td>7 days</td>
</tr>
<tr>
<td>50 – Cedar Mill (loop)</td>
<td>Sunset TC</td>
<td>Sunset TC</td>
<td>45/NA</td>
<td>M-F peak</td>
</tr>
<tr>
<td>52 – Farmington/185th</td>
<td>PCC Rock Creek</td>
<td>Beaverton TC</td>
<td>10/20</td>
<td>7 days</td>
</tr>
<tr>
<td>53 – Arctic/Allen</td>
<td>Beaverton TC</td>
<td>Beaverton TC</td>
<td>30/NA</td>
<td>M-F peak</td>
</tr>
<tr>
<td>54 – Beaverton-Hillsdale Hwy*</td>
<td>Beaverton TC</td>
<td>Portland City Center</td>
<td>30/30</td>
<td>7 days</td>
</tr>
<tr>
<td>55 – Hamilton</td>
<td>Raleigh Hills</td>
<td>Portland City Center</td>
<td>60/NA</td>
<td>M-F</td>
</tr>
<tr>
<td>56 – Scholls Ferry Rd*</td>
<td>Washington Square TC</td>
<td>Portland City Center</td>
<td>30/30</td>
<td>7 days</td>
</tr>
<tr>
<td>57 – TV Hwy/Forest Grove</td>
<td>Forest Grove</td>
<td>Beaverton TC</td>
<td>15/15</td>
<td>7 days</td>
</tr>
<tr>
<td>58 – Canyon Rd</td>
<td>Beaverton TC</td>
<td>Portland City Center</td>
<td>20/30</td>
<td>7 days</td>
</tr>
<tr>
<td>59 – Walker/Park Way</td>
<td>Willow Creek TC</td>
<td>Sunset TC</td>
<td>60/NA</td>
<td>M-F peak</td>
</tr>
<tr>
<td>61 – Marquam Hill/Beaverton</td>
<td>Beaverton TC</td>
<td>Marquam Hill</td>
<td>15/NA</td>
<td>M-F peak</td>
</tr>
<tr>
<td>62 – Murray Blvd</td>
<td>Washington Square TC</td>
<td>Sunset TC</td>
<td>30/30</td>
<td>7 days</td>
</tr>
<tr>
<td>64 – Marquam Hill/Tigard</td>
<td>Tigard TC</td>
<td>Marquam Hill</td>
<td>20/NA</td>
<td>M-F peak</td>
</tr>
<tr>
<td>67 – Bethany/158th</td>
<td>PCC Rock Creek</td>
<td>Merlo Rd / SW 158th</td>
<td>15/30</td>
<td>M-Sat</td>
</tr>
<tr>
<td>76 – Beaverton/Tualatin*</td>
<td>Legacy Meridian Park Hospital</td>
<td>Beaverton TC</td>
<td>30/30</td>
<td>7 days</td>
</tr>
<tr>
<td>78 – Beaverton/Lake Oswego*</td>
<td>Lake Oswego TC</td>
<td>Beaverton TC</td>
<td>30/30</td>
<td>7 days</td>
</tr>
<tr>
<td>88 – Hart/198th</td>
<td>Willow Creek TC</td>
<td>Beaverton TC</td>
<td>30/30</td>
<td>7 days</td>
</tr>
<tr>
<td>92 – South Beaverton Express</td>
<td>Murrayhill</td>
<td>Portland City Center</td>
<td>20/NA</td>
<td>M-F peak</td>
</tr>
<tr>
<td>93 – Tigard/Sherwood</td>
<td>Sherwood</td>
<td>Tigard TC</td>
<td>30/45</td>
<td>7 days</td>
</tr>
<tr>
<td>94 – Pacific Hwy/Sherwood</td>
<td>Sherwood</td>
<td>Tigard TC or Portland</td>
<td>7/45</td>
<td>M-F</td>
</tr>
<tr>
<td>96 – Tualatin/I-5</td>
<td>Commerce Circle</td>
<td>Portland City Center</td>
<td>10/NA</td>
<td>M-F peak</td>
</tr>
</tbody>
</table>

Source: TriMet, December 2015

*Only the shared portion of lines 54 and 56 on Beaverton-Hillsdale Highway have frequent service.
**Park and Ride Lots**

In the suburban setting that characterizes much of Washington County, park-and-ride lots provide a convenient option for people who are not within reasonable walking or bicycling distance of a transit stop, but have access to an automobile. TriMet provides designated automobile parking at a majority of its rail stations in Washington County, on property either owned or leased by TriMet. Park-and-ride lots are available at other locations through leases and agreements with churches, businesses, and shopping centers. Many of these secondary locations are available Monday through Friday only. Table 3.20 lists TriMet-approved park-and-ride lot locations, which provide a total of 5,447 parking spaces.

**Transit and Bicycles**

Bicycling is a convenient method of traveling to and from transit stops that may be too far to reach by walking, or inconvenient to reach by car. Bicyclists may bring their bicycle aboard the transit vehicle, or park the bicycle at the transit stop. All regular TriMet buses and full-size SMART buses are equipped with retractable bike racks on the front of the vehicle, with room for two bicycles. MAX and WES cars also provide designated space for standard-size bicycles. Demand exceeds capacity on many trains serving Washington County, especially during peak hours. Most MAX and WES stations feature staple or loop-style bicycle racks – the most secure type of non-enclosed bicycle parking. TriMet also offers bicycle lockers at every MAX and WES station in Washington County, except at Tuality Hospital/SE 8th Avenue. As of October 2012, all TriMet bike lockers in Washington County were rented, with waiting lists in effect. In addition, TriMet recently installed electronic bike lockers at the Tigard WES Station and the Orenco MAX Station, which are available on demand as opposed to in six-month cycles for keyed bike lockers. The Sunset and Beaverton transit centers offer European-style bicycle parking facilities called bike-and-rides. These enclosed, secure facilities are accessed through a digital key card.

**Table 3.20: TriMet Park and Ride Locations in Washington County**

<table>
<thead>
<tr>
<th>Location (West to east, then north to south)</th>
<th>Parking Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hillsboro Parking Garage (Hatfield Government Center)</td>
<td>250</td>
</tr>
<tr>
<td>Hillsboro Intermodal Transit Facility (Tuality Hospital/SE 8th Ave)</td>
<td>85</td>
</tr>
<tr>
<td>Fair Complex/Hillsboro Airport MAX station</td>
<td>396</td>
</tr>
<tr>
<td>Orenco Station/NW 231st Ave MAX station</td>
<td>180</td>
</tr>
<tr>
<td>Quatama/NW 205th Ave MAX station</td>
<td>310</td>
</tr>
<tr>
<td>Willow Creek/NW 185th Ave Transit Center</td>
<td>595</td>
</tr>
<tr>
<td>Elmonica/SW 170th Ave MAX station</td>
<td>430</td>
</tr>
<tr>
<td>Beaverton Creek MAX station</td>
<td>417</td>
</tr>
<tr>
<td>Millikan Way MAX station</td>
<td>400</td>
</tr>
<tr>
<td>Sunset Transit Center</td>
<td>627</td>
</tr>
<tr>
<td>Hall/Nimbus WES station</td>
<td>50</td>
</tr>
<tr>
<td>Tigard Transit Center (Tigard WES station)</td>
<td>100</td>
</tr>
<tr>
<td>Tualatin South Park &amp; Ride* (Tualatin WES station)</td>
<td>147</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3,987</strong></td>
</tr>
</tbody>
</table>
At Other Locations

<table>
<thead>
<tr>
<th>Location</th>
<th>Parking Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bethel Congregational Church* 5150 SW Watson Ave</td>
<td>50</td>
</tr>
<tr>
<td>Boones Ferry Community Church* 20500 SW Boones Ferry Rd</td>
<td>20</td>
</tr>
<tr>
<td>Cedar Hills United Church of Christ* 11695 SW Park Way</td>
<td>46</td>
</tr>
<tr>
<td>Cedar Mill Bible Church* 12208 NW Cornell Rd</td>
<td>16</td>
</tr>
<tr>
<td>Christ the King Lutheran Church* 11305 SW Bull Mountain Rd</td>
<td>30</td>
</tr>
<tr>
<td>Mohawk Park &amp; Ride SW Martinazzi &amp; Mohawk</td>
<td>232</td>
</tr>
<tr>
<td>Progress Park &amp; Ride SW Scholls Ferry &amp; Hwy 217</td>
<td>122</td>
</tr>
<tr>
<td>Seventh Day Adventist Church* 14645 SW Davis St</td>
<td>113</td>
</tr>
<tr>
<td>Sherwood Park &amp; Ride* SW Main &amp; Railroad</td>
<td>30</td>
</tr>
<tr>
<td>Sherwood Regal Cinemas* 15995 SW Tualatin-Sherwood Rd</td>
<td>50</td>
</tr>
<tr>
<td>Somerset Christian Church* 16255 NW Bronson Rd</td>
<td>30</td>
</tr>
<tr>
<td>Southminster Presbyterian Church* 12250 SW Denney Rd</td>
<td>20</td>
</tr>
<tr>
<td>Tigard Park &amp; Ride SW 74th &amp; Pacific Hwy</td>
<td>220</td>
</tr>
<tr>
<td>Tualatin Park &amp; Ride SW 72nd &amp; Bridgeport</td>
<td>466</td>
</tr>
<tr>
<td>Valley Community United Presbyterian Church,* 8060 SW Brentwood St</td>
<td>15</td>
</tr>
</tbody>
</table>

**TOTAL 1,460**


*Parking available Monday through Friday only.

Other Public Transit Providers

**SMART**

South Metro Area Regional Transit (SMART) operates seven fixed-route bus or shuttle routes in the Wilsonville area. Two SMART routes have stops in Washington County. Route 2X connects the Wilsonville WES station and Wilsonville Civic Center area with TriMet’s Tualatin Park-and-Ride Lot in Washington County and Barbur Transit Center in southwest Portland. Route 5 has a northern terminus at SW Commerce Circle near the I-5/Elligsen Road interchange in Washington County. This location provides connections to TriMet’s #96 express buses to downtown Portland. Route 5 proceeds southward on SW 95th Avenue through a major Wilsonville employment area, ultimately terminating at the Wilsonville WES commuter rail station. Route 6 connects the Canyon Creek Business Park east of I-5 with the Wilsonville WES station. Other SMART bus routes provide service to Washington County residents by offering connections from the Wilsonville WES station to other locations in Wilsonville, as well as to Salem and Canby. For example, Washington County residents can commute to State of Oregon jobs in Salem using a combination of WES commuter rail and SMART’s 1X express bus.

**Yamhill County Transit Area**

The Yamhill County Transit area (YCTA) provides a hub-and-spoke network of bus routes centered in McMinnville. Two YCTA routes extend into Washington County. Route 33 connects McMinnville, Carlton, Yamhill, Gaston, Forest Grove, and Hillsboro. The 99W Link consists of three related bus routes that connect McMinnville, Lafayette, Dayton, Dundee, Newberg, Sherwood, and Tigard. The 99W Link service terminates at Tigard Transit Center, providing connections to TriMet’s WES and bus #12-Barbur/Sandy.

**Columbia County Transit Division**

Columbia County operates a system of shuttle buses collectively called the “CC Rider,” including two routes that extend southward into Washington County. The Nehalem Valley Route provides service between Vernonia, Stub Stewart State Park, Staley’s Junction, and TriMet’s Willow Creek Transit Center, generally following Highway 47, Highway 26, and 185th Avenue. The St Helens/Scappoose to Hillsboro/Beaverton route connects St Helens and Scappoose in Columbia County with destinations in central Washington County, including the Portland Community College Rock Creek Campus, the Tanasbourne Regional Center, and Willow Creek Transit Center.
Tillamook County Transportation District
Tillamook County's bus service, known as “The Wave,” includes a route from Tillamook to the Portland metro area. Route 5 Tillamook-Portland provides two round trips per day, seven days a week, with stops at the Tillamook Forest Center, Banks, North Plains, Tanasbourne, and the Sunset Transit Center. The route continues to Union Station in downtown Portland.

Private and Non-Profit Transit Providers
Ride Connection
Ride Connection, a Portland-based non-profit organization, provides several kinds of service in Washington County: door-to-door paratransit for seniors and people with disabilities; rural transportation for the general public; rural and urban job access for transportation-disadvantaged commuters; circulator routes for seniors in King City and Beaverton; and four fixed-route transit services. The latter services consist of GroveLink serving Forest Grove, the Washington County Community Bus connecting Forest Grove, North Plains, Banks and Hillsboro, the Tualatin Shuttle, and North Hillsboro Link. Ride Connection also offers a number of educational programs intended for older adults and people with disabilities, including one-on-one travel training and group travel training. Ride Connection is funded through an agreement with TriMet, and with grants from federal, state, foundation, corporate and individual entities. In 2011 Ride Connection provided over 416,000 rides, and offered travel training to over 1,000 participants in 2011.

OC&W Coachways
Northwest POINT (Public Oregon Intercity Transit) is one of three inter-city shuttle bus routes in Oregon operated by the private sector OC&W Coachways, with supplemental funding from ODOT. This particular route -provides twice-daily round trips between Portland Union Station, Cannon Beach, and Astoria. The service includes a “flag stop” in Manning along Highway 26 in western Washington County.

Employee and Student Shuttles
Washington County’s two largest employers, Intel and Nike, each operate fleets of employee shuttles. In addition to transporting employees between various corporate campuses in the County, the shuttles also provide connections to public transit. The shuttles are a valuable service, encouraging employees to use transit instead of driving, and reducing the inconvenience of the “last mile” gap between transit and the workplace. The most significant employee shuttles that connect with transit are:
  - The Intel shuttle connecting Orenco Station MAX station with Ronler Acres campus;
  - The Intel shuttle connecting Fair Complex MAX station with Jones Farm campus; and
  - A group of Nike shuttles that connect to Millikan Way, Beaverton Creek, and Elmonica MAX stations. Nike reported 84,000 person trips on its five employee shuttles in fiscal year 2012 (roughly 350 trips per average weekday).
Ridership data on Intel shuttles was not available, but the company provides:

- 16 scheduled morning trips from Orenco Station MAX to Ronler Acres;
- 18 scheduled evening trips from Ronler Acres to Orenco Station MAX;
- 19 scheduled morning trips from Fair Complex MAX to Jones Farm; and
- 12 scheduled evening trips from Jones Farm to Fair Complex MAX.

Portland Community College (PCC) operates free shuttles for students, faculty, and staff traveling between different campuses. The shuttles operate weekdays only, and do not run during the summer term. Two PCC shuttles operate within Washington County:

- The PCC Blue Line shuttle provides 11 weekday round trips between PCC Rock Creek Campus, Sunset Transit Center and PCC Sylvania Campus in southwest Portland.
- The PCC Red Line shuttle provides 10 roundtrip weekday round trips between PCC Rock Creek Campus, Sunset Transit Center and PCC Cascade Campus in North Portland.

System wide ridership of PCC's shuttles has doubled in the past five years, totaling 265,190 trips in Fiscal Year 2011-12.

Transit Needs
While Washington County enjoys a relatively robust transit system compared to other suburban/rural American counties, plenty of transit service and amenity needs remain. As Washington County continues to grow, new transit service improvements and expansions will be necessary. This section summarizes existing and future transit needs based on public comment, technical analysis, and planning efforts undertaken by other agencies.

Public Comments about Transit
Public involvement conducted for the TSP Update, combined with community input from other planning projects (including the Aloha-Reedville Study and Livable Community Plan and TV Highway Corridor Plan), revealed a variety of concerns about transit service, amenities, and safety in Washington County. Major themes and particular concerns raised during the public involvement process are summarized below:

- The TriMet network in Washington County disproportionately accommodates travel to and from downtown Portland, while inadequately serving trips within Washington County.
- It is often difficult to reach major employment areas by transit.
- Better north-south service is needed, particularly along the Cornelius Pass Road/Century Boulevard corridor.
- Southern Washington County has poor transit service, including the Tualatin-Sherwood employment area and southern Tigard.
- Transit service in Forest Grove is lacking beyond the terminus of the #57 bus downtown.
- Transit service is needed on Cooper Mountain as it becomes increasingly developed.
- Better transit service is needed in the rural area, including service to Gaston.
- Direct bus service between Bethany Town Center and Sunset Transit Center would be more convenient than the current connection to MAX at Merlo Road.
- Bus stop amenity and access improvements are needed along busy, wide roads like TV Highway, Hall Boulevard and Evergreen Parkway.
- Future MAX or other rail service has public support in Forest Grove and Cornelius.
- Bad behavior and crimes occur on MAX, potentially due to the isolation of the operator.
- SMART, with its smaller vehicles, may be a good example of more flexible, community-serving transit.
Analysis of Transit Service and Density

A geographic analysis of transit service and land-use patterns informs the discussion of transit deficiencies and future needs. Figure 3-28 compares existing transit service with household and employment distributions anticipated in 2035, based on the assumptions and methodologies described in the following paragraphs.

A location is considered to be “served by transit” if it is within reasonable walking distance of a transit stop. Commonly used thresholds to define walking distance to transit are one-fourth mile for bus service and one-half mile for rail service. This analysis follows suit, except that one-half mile is also used for frequent service bus routes (those with 15-minute peak headways). The analysis uses Euclidean (straight line) buffers of bus routes (lines) and rail stations (points), rather than network distance and individual bus stops. This means that transit service areas may be overrepresented in some locations, especially near major linear barriers such as freeways and creeks.

Transit frequency level of service (LOS) is defined by weekday peak-hour headways on each existing transit route. LOS classes are customized to TriMet’s current portfolio of service frequencies and differ from guidelines in the Highway Capacity Manual published by the Transportation Research Board. LOS delineations for the purposes of this transit analysis are provided below:

- **LOS A:** 1 – 8.99-minute headways (includes routes with 7.5-minute or more frequent service)
- **LOS B:** 9 – 17.99-minute headways (includes 15-minute service)
- **LOS C:** 18 – 25.99-minute headways (includes 20-minute service)
- **LOS D:** 26 – 36.99-minute headways (includes 30-minute service)
- **LOS E:** 36-minute or greater headways (includes 45 and 60-minute service)
- **LOS F:** No regular service available.
Transit-supportive densities are based on the number of households and jobs per acre in traffic analysis zones (TAZs) as forecast for 2035 in the Regional Travel Demand Model. The generally accepted minimum density needed to support regular transit service is three households per acre or four jobs per acre. This analysis goes further, matching increasing densities with more frequent transit service. First, households and jobs are combined into a single unit of measurement — “household/job equivalent units” (HHJEUs) — by multiplying the number of jobs in a TAZ by 0.75 and then adding them to the number of households in that TAZ. Dividing the resulting number by the gross acreage of the TAZ results in density; which is then assigned to one of the following classes:

- 0 – 2.99 HHJEU/acre: not a transit-supportive density,
- 3 – 5.99 HHJEU/acre: appropriate for LOS E (45-60-minute or less frequent headways),
- 6 – 8.99 HHJEU/acre: appropriate for LOS D (30-minute headways),
- 9 – 11.99 HHJEU/acre: appropriate for LOS C (20-minute headways),
- 12 – 19.99 HHJEU/acre: appropriate for LOS B (15-minute headways), or
- 20 HHJEU/acre or greater: appropriate for LOS A (7.5-minute or more frequent headways).

Transit service areas, classified by frequency level of service, are overlaid with TAZs, classified by households and jobs per acre. The two measures are compared by performing a spatial join. Any given location can then be described as not served, underserved, appropriately served, or well served by transit. These conditions are illustrated in Figure 3-29. According to the analysis, areas that would be underserved by existing transit service in 2035 include:

- Northwestern Forest Grove (prior to the implementation of GroveLink service)
- Most of job-rich north Hillsboro, from Brookwood Parkway eastward to the Tanasbourne/Amberglen area,
- The entire urban portion of the Cornelius Pass Road corridor, from West Union to South Hillsboro,
- Areas of Bethany that are not near the town center or Bethany Boulevard, including North Bethany, Laidlaw Road (east of Bethany), and 174th Avenue,
- Cedar Mill Town Center,
- The 158th Avenue corridor from Sunset Highway to Jenkins Road,
- Raleigh West industrial area in Beaverton, centered on the intersection Western Avenue and Allen Boulevard,
- Washington Square Regional Center on both sides of Highway 217,
- Progress Ridge, Bull Mountain and urban reserves to the north and west,
- The Tigard Triangle and 72nd Avenue employment areas near the I-5/217 interchange,
- Southern areas of Tigard, especially along Durham Road,
- The Tualatin-Sherwood industrial employment area, and
- Southern and western neighborhoods of Sherwood.

Many of these areas are underserved based on present densities and transit service. Areas shown as well-served include less-densely developed places than what a high-frequency transit route would typically serve. Such areas often correspond with single-family neighborhoods and suburban retail areas near frequent service transit lines including MAX, bus #57 – TV Highway and bus #52 – Farmington/185th. Portions of Aloha, Cornelius, Rock Creek, and Raleigh Hills meet this description and benefit from it. Being well served by transit does not mean that transit service should be reduced or that transit headways should be longer in these locations. It may indicate where denser development could be feasible, if a number of other criteria were met, including support by the community and local officials. Many other factors play a role in transit demand and ridership, including the demographic and socio-economic characteristics of neighborhoods (especially income and age), the safety and “walkability” of areas near transit stops, the reliability of transit service, and qualitative perceptions about the transit experience.
This map displays reference information that is not adopted by Washington County ordinance. 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.
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TriMet Service Enhancement Plans

In 2012, TriMet began a study of transit service needs throughout the Portland region, starting with the Westside and Southwest Service Enhancement Plans, which collectively cover TriMet’s entire service district within Washington County. Data collection included a public survey of resident and worker travel habits and perceptions, interviews with study-area stakeholders, and a geographic analysis of residential concentrations, employment hubs, and commuting travel patterns. TriMet’s findings reveal existing or future needs for transit service in many of the areas described in Washington County’s analysis above, including:

- Laidlaw Road and 174th Avenue in Bethany,
- 170th Avenue south of Elmonica MAX station,
- Century Boulevard (including present-day 229th and 231st avenues and a future bridge over Rock Creek) from Gordon Faber Recreation Complex to the South Hillsboro plan area,
- Brookwood Parkway/Avenue from Fair Complex or Hawthorne Farm MAX station to the South Hillsboro/Witch Hazel area,
- Evergreen Road/Parkway, Shute Road and Butner Road in north Hillsboro,
- Horizon Boulevard and Barrows Road in the Progress Ridge area of south Beaverton,
- Durham Road in Tigard, and
- Tualatin-Sherwood Road.

For many of the corridors listed above, significant development and infrastructure investment would need to occur before TriMet provides new service. For example, a route along the Century Boulevard corridor would likely be prompted by major development in the South Hillsboro plan area and construction of the Century Boulevard Bridge over Rock Creek. In the near term, TriMet plans to focus largely on restoring more frequent service on existing bus routes that were impacted by prior service cuts. TriMet’s service enhancement plan recommendations are incorporated into the Transit System Map with a small number of minor differences.

Bus Stop Amenity Needs

As mentioned earlier, TriMet does not have sufficient resources to provide the full array of amenities (shelters, benches, trash cans) at every bus stop. TriMet works with partner jurisdictions including Washington County to appropriately match amenities with transit patronage at each stop. TriMet generally does not provide shelters and benches at locations that lack sidewalks and curbs. The geographic comparison of major bus stops and stops without amenities reveals stops that may warrant amenity improvements. Concentrations of such stops include:

- Baseline Street in Cornelius,
- TV Highway between River Road and Brookwood Avenue in Hillsboro,
- Cedar Hills Boulevard between Sunset Highway and Hall Boulevard,
- Beaverton-Hillsdale Highway between Lombard Street and Oleson Road,
- Hall Boulevard in the Washington Square Regional Center,
- Downtown Hillsboro, and
- Downtown Beaverton.

Access to Transit Needs

TriMet’s 2011 Pedestrian Network Analysis Project assessed the availability of pedestrian amenities, such as sidewalks and crosswalks, near high-ridership transit stops throughout the region. Locations with a significant concentration of high-ridership transit stops, a relatively high density and mix of land uses, and an observed deficiency of pedestrian facilities, were advanced as “focus areas” for further site study and consideration of solutions. According to the analysis,
Washington County contains four focus areas where safer access to transit should be prioritized. The analysis recommends specific solutions to address these needs, including wider sidewalks, enhanced and more frequent pedestrian crossings, pedestrian pathways, and bus shelters. Each focus area includes at least a one-half-mile buffer around the location listed in the table. The focus areas are:

- SW Farmington Road and Murray Boulevard,
- Tanasbourne Regional Center,
- Tigard Transit Center, and
- SW Beaverton-Hillsdale Highway and Scholls Ferry Road.

Detailed recommendations for each site are included in the Existing Conditions & Future Needs Report.

**Other Transit Needs**

Based on observed conditions and public input, other transit needs in Washington County are summarized below:

- Additional and higher-quality bicycle parking at MAX and WES stations, including more bicycle lockers, bike-and-ride facilities, or other secure bike parking solutions. Based on ridership and major employment locations, bicycle parking improvements could particularly benefit MAX stations at Willow Creek, Millikan Way, Hatfield Government Center, Orenco Station, and Fair Complex. Outside of Washington County, a bike-and-ride at Goose Hollow MAX station in Portland would provide significant utility for travelers who commute from Portland to Washington County, and could potentially reduce demand for bringing bikes aboard MAX.

- Bus pull-outs or other operational treatments at in-lane bus stops on roadways with congestion problems, including TV Highway and 185th Avenue; companion solutions may also be helpful, such as queue-jump lanes in which buses can proceed through an intersection using a right-turn lane before or after a bus stop. Transit signal priority is another tool that can improve transit service reliability along with general traffic operations. It extends a traffic signal green phase by a few seconds if an approaching bus is observed to be running behind schedule.

- Real-time transit arrival displays at any rail stations that lack them, and at appropriate major bus stops.

- A comprehensive look at park-and-rides, including demand, capacity, pricing, redevelopment considerations, and structured parking. The most obvious location where demand exceeds capacity is at the Sunset Transit Center. Car parking here is usually unavailable after 7:30 AM on weekdays, which may discourage some transit use.

- A comprehensive rider’s guide for the many overlapping transit services in Washington County. Information about other services is posted on the TriMet website at: [http://trimet.org/schedules/othertransit.htm](http://trimet.org/schedules/othertransit.htm).

**High Capacity Transit Planning**

Metro completed a Regional High Capacity Transit (HCT) System Plan in 2010; the first comprehensive HCT vision for the Portland region since 1982. The HCT Plan explored the feasibility of new light rail, commuter rail, rapid streetcar, or bus rapid transit lines in the region to improve mobility and transit performance, and to support land use goals set out in the Metro 2040 Growth Concept. HCT routes are envisioned to connect the region’s centers - those areas with higher densities, mixed land uses, walkable streets, and higher expectations for non-automobile modal targets. Metro developed the HCT Plan in coordination with TriMet, counties, cities, and a range of private stakeholders. The HCT Plan also included public workshops in communities throughout the region.

Starting with 55 potential HCT corridors collected from past plans, stakeholder interviews and public workshops, the project team used a screening process based on ridership, cost, environmental constraints, equity, connectivity, congestion, land use and travel demand. This resulted in 18 refined HCT corridors divided into four tiers. Eight proposed HCT corridors are located within Washington County. The tiers and proposed corridors are described in the Transit System Map section and mapped in Figure 3-28. In 2013 planning began on the Southwest Corridor HCT connecting Tualatin, Tigard and Portland.
Transit System Map

The Transit Element identifies the future transit network as envisioned in the TriMet Westside Service Enhancement Plan and Southwest Service Enhancement Plan and the Metro Regional High Capacity Transit System Plan. It also responds to the Transit Service Needs Analysis (Figure 3-28 in this User’s Guide) included 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-and-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. Figure 3-29 includes the Transit System Map.

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:

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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.

18 Metro Regional High Capacity Transit System Plan 2035 Summary Report, 2010
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 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 and Air Service
Interregional Bus and Air Services provide for longer-distance transit service that connects Washington County with locations outside of the immediate Portland metropolitan region, such as Yamhill County, Columbia County and the Oregon Coast and beyond. Interregional bus and air services and routes are not identified on the transit system map.

Transit Center and Bus or Air Terminal
A Transit Center and/or Bus or Air Terminal is a transit hub served by several bus routes and/or air or rail transit facilities. Transit Centers and Bus or Air Terminals allow riders to transfer between different transit services and/or modes in a safe, comfortable environment. Typical features of include shelters, benches, lighting, bicycle parking, traveler information and layover facilities for transit operators. Transit Centers and/or Bus or Air Terminal 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 a location at or near a transit stop that provides secure, enclosed bicycle parking accessed by a key card or other technology. The purpose of a Bicycle Transit Facility is to improve the viability and convenience of combining bicycle and transit modes for trips, and to address the “last mile” connection between a transit stop and a residence, place of employment or other location. Existing Bicycle Transit Facilities are found at Beaverton Transit Center and Sunset Transit Center. Proposed Bicycle Transit Facility locations are recommended in the TriMet Westside Service Enhancement Plan and include facilities at eight additional MAX stations, at Portland Community College Rock Creek Campus and in the proposed South Hillsboro town center.

Major Transit Stops
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).

19 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.
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This map displays an unofficial representation of elements adopted as part of Washington County Ordinance No. 783. 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.

Online Map: http://arcg.is/1ED3I4g

Effective: November 27, 2015

Department of Land Use & Transportation Planning and Development Services Division

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. Care was taken in the mapping but there are no warranties for this product. However, notification of any errors will be appreciated.

Figure 3-29

Transportation System Plan
User’s Guide

Transit Element

- Air Terminal
- Bus Terminal
- Transit Center
- Major Transit Stop
- MAX w/ Bike Facility
- Bicycle Transit Facility
- Park and Ride
- Peak Period Bus Service
- Regular Bus Service
- Frequent Bus Service
- Existing High Capacity Transit
- High Capacity Transit Study Corridor
- Community Connector Service Area
- Other Roads
- County
- Urban Area
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