Chapter 5: TRANSPORTATION SYSTEM PLAN

The Clackamas County Transportation System Plan (TSP) will guide transportation related decisions and identify the transportation needs and priorities in unincorporated Clackamas County from 2013 to 2033. The TSP has been created in coordination with the County's 16 cities, the State of Oregon, area transit providers, and other affected agencies and has been vetted through an extensive public process, including a series of public outreach events and twelve Public Advisory Committee meetings. The public and county staff worked together to develop the following vision for the TSP and six goals to guide implementation of this vision:

> *Building on the foundation of our existing assets, we envision a well-maintained and designed transportation system that provides safety, flexibility, mobility, accessibility and connectivity for people, goods and services; is tailored to our diverse geographies; and supports future needs and land use plans.*

TSP GOALS

- Goal 1: Provide a transportation system that optimizes benefits to the environment, the economy and the community
- Goal 2: Plan the transportation system to create a prosperous and adaptable economy and further the economic well-being of businesses and residents of the County.
- Goal 3: Tailor transportation solutions to suit the diversity of local communities.
- Goal 4: Promote a transportation system that maintains or improves our safety, health, and security.
- Goal 5: Provide an equitable transportation system.
- Goal 6: Promote a fiscally responsible approach to protect and improve the existing transportation system and implement a cost-effective system to meet future needs.

BACKGROUND AND ISSUES

The County's transportation system includes an extensive network of public and private transportation facilities, including roads, railways, airports, pipelines, waterways, and multi-use paths. The system is intended to allow people to travel where they need to go safely and efficiently, while also providing for efficient movement of goods. The County's transportation system is also intended to support sustainable land use patterns and policies to serve a multitude of public needs without sacrificing air and water quality or creating noise pollution.

Government agencies, public and private service providers, and developers are involved in building and maintaining the County's transportation system. Metro, Portland's metropolitan planning organization, sets general policy guidelines for design, distributes regional funding for certain types of projects within its boundary, and sets standards for the operation of the transportation system located within the Portland Metropolitan Urban Growth Boundary (UGB). All transportation facilities must conform to standards and guidelines outlined by federal, state and, in some cases, Metro regulatory documents.

Clackamas County faces several challenges as it attempts to continue to develop and maintain a safe and integrated transportation system, appropriate for and accessible to all potential users.

- Limited funding: Funding levels for roads, the backbone of the transportation system, have not kept pace with the mobility needs of our society. Limited funding makes it a challenge to balance the need for maintenance and management of existing facilities with the need for building new facilities to accommodate increased trip demand. As a result, the backlog of needed road maintenance and construction projects has grown larger.

- Reducing congestion: Community members help reduce traffic congestion when they choose to take the bus, join a carpool, or bicycle and walk to destinations. Reducing congestion decreases the need for costly road construction projects while improving air quality, neighborhood livability and access to goods, services and employment.

  Improving the relationship between land uses and transportation can also decrease reliance on automobiles and reduce congestion. Some ways to improve this relationship are to: alter the site design of new construction at or near major transit stops; increase connectivity in transportation systems; provide better pedestrian and bicycle facilities; use land more efficiently; and encourage mixed-use developments.

- Balancing needs: All land-based modes of travel, except rail and pipeline, must share the public rights-of-way. These modes includes autos, trucks, buses, bicycles, pedestrians and, in some localities, equestrians. Balancing the need for mobility (through movement of traffic) with the need for local movement and access to individual properties often creates design and safety challenges for roadways.

- Safety: From 2005 to 2009, there were approximately 160 fatalities and 1,245 serious injuries in Clackamas County due to traffic crashes. One of the County's goals is to improve the safety of its system for all users and reduce the number and severity of crashes for future years. Developing facilities to accommodate all modes of travel will help reduce conflicts that lead to safety problems for some users. The adopted Transportation Safety Action Plan calls for a 50 percent reduction of fatal and serious injury crashes by 2022.

- Fostering economic growth: Monitoring the effects of transportation on employment and economic activity is important during both good and bad economic times. Of particular significance are the ways transportation can be used as a tool to sustain and promote economic development both in the urban industrial and commercial centers and within the

county's distinctive rural economy, including agriculture, forestry and equestrian facilities.

- Addressing environmental impacts: Development of transportation infrastructure needs to be sensitive to potential impacts to neighborhoods and to the natural environment, in order to create and maintain livable communities, preserve air and water quality, and conserve energy.

  The northwest urban area of the County is within a designated Air Quality Maintenance Area (AQMA). Presently the AQMA meets state and federal air quality standards, but federal law requires the region to implement measures to maintain federal air quality standards. Federal law also prohibits significant degradation of air quality in the Mt. Hood Wilderness.

- Ensuring accessibility: In many areas of the County, transportation disadvantaged populations, such as the elderly, disabled or low-income residents, need improved access to public transit and special transportation services. Clackamas County will ensure that new and rebuilt roads are planned and designed to perform all necessary functions, including being accessible to those who choose not to drive or cannot drive.

- Maintaining and improving rural area roads: Clackamas County also is challenged by the responsibility to maintain and develop a safe and functional road network in rural areas. Upgrades to aging rural roadways are needed to enhance safety and accommodate different modes of travel.

TSP ORGANIZATION

To implement the vision and goals and to address the issues identified above, a series of policies have been created to direct the County in its efforts to build and maintain a multi-modal transportation system. Under each policy category, the countywide policies are listed first, followed by the urban policies, and the rural policies.

The policies are presented in this chapter by major topic or transportation mode as follows:

- **Foundation and Framework**: includes policies relating to coordination; safety; equity, health and sustainability; intelligent transportation systems; and transportation demand management
- **Land Use and Transportation**: includes policies relating to the integration of land use and transportation; parking; rural tourism; and scenic roads.
- **Active Transportation**: includes policies relating to pedestrian and bicycle facilities and multi-use paths.
- **Roadways**: includes policies relating to functional classification; urban and rural roadway considerations; project development; improvements to serve development; and performance evaluation and access standards.
- **Transit:** includes policies relating to transit and transit-supportive amenities.

- **Freight, Rail, Air, Pipeline and Water Transportation**: includes policies relating to general freight movement; freight trucking; rail; airports; pipelines; and water transportation.
- **Finance and Funding:** includes policies relating to funding capital transportation improvements and maintenance.
- **Transportation Projects and Plans:** includes policies relating to the 20-year and five-year capital improvement plans. Also identifies Special Transportation Plans that are adopted by reference as refinements of the TSP and plans or studies that need to be completed in the future to support the TSP.
- **Definitions:** relevant definitions for use within this chapter.

The TSP also contains the following components:

- The County's ***20-year Capital Improvement Plan:*** a complete list of needed transportation-related projects to address gaps and deficiencies in the transportation network (Tables 5-3[a-d]).
- **Tables, Maps and Figures** illustrating the transportation system and street cross sections, and presenting guidelines and standards for developing the system.
- **Background documents** including detailed findings and conclusions relating to the various components of the transportation system (Appendix B).

FOUNDATION AND FRAMEWORK

Clackamas County's transportation networks serve local communities and also tie into regional networks. Creating a transportation system that is safe and accessible for all users must be done within the context of federal, state, and regional regulations. The system needs to be responsive to new initiatives adopted by these regulatory bodies to ensure the development of a complete and sustainable transportation system. It needs to be responsive to new approaches, techniques and measures developed for assessing the performance of the system. Intelligent Transportation Systems (ITS) and Travel Demand Management (TDM) techniques are two such tools that can be effective in managing the costs of the system and enabling better performance.

Safety is consistently mentioned by citizens as one of the highest concerns related to the transportation system, regardless of individuals' preferred methods of travel. The accessibility of the transportation system for all individuals is also a primary concern. Therefore, prioritizing safety and accessibility is essential in the planning, design, operation and maintenance of the transportation system.

5.A Compliance and Coordination Policies

5.A.1 Support intergovernmental partnerships needed to promote coordination and address multi-jurisdictional transportation needs.

5.A.2 Work collaboratively with federal, state, regional, and local agencies and with County residents to pursue the County's road safety programs and plans.

5.A.3 Work with state and local partners to implement the Oregon Transportation Safety Plan.

5.A.4 Coordinate with the Oregon Department of Transportation (ODOT) in implementing the Oregon Transportation Plan (OTP), Oregon Highway Plan (OHP), Statewide Transportation Improvement Program (STIP), and with other state transportation planning policies, guidelines and programs.

5.A.5 Work with the Oregon Office of Emergency Management to ensure that the TSP supports effective responses to natural and human-caused disasters and emergencies and other incidents, and access during these incidents.

5.A.6 **Urban** Coordinate with Metro and local governments to implement the Regional Transportation Plan (RTP), Regional Transportation Functional Plan (RTFP), Urban Growth Management Functional Plan (UGMFP), and local transportation plans.

5.A.7 **Rural** Pursue formation of an Area Commission on Transportation (ACT) for the portions of Clackamas County outside the Portland Metropolitan Urban Growth

Boundary to facilitate a coordinated approach to addressing issues on the state transportation system.

5.B Road Safety Policies

5.B.1 Update the Clackamas County Transportation Safety Action Plan (TSAP) every five years to include necessary changes and document the progress toward the plan's goal of a 50 percent reduction in fatal and serious injury crashes by 2022.

5.B.2 Identify transportation system safety improvements that will reduce fatal and injury crashes for all modes of travel and meet the TSAP goal.

5.B.3 Address the County's top three crash cause factors of Aggressive Driving, Young Drivers (ages 15-25) and Roadway Departure utilizing education, emergency medical services, enforcement, engineering and evaluation.

5.B.4 Support programs, policies, regulations and actions that increase awareness and education about the safety of the transportation system for all users.

5.B.5 Support programs that utilize data-driven approaches to improve safety of the transportation system.

5.B.6 Align County departments, external safety groups, and other public agencies toward common transportation safety goals.

5.B.7 Integrate roadway, safety and traffic data management, health and emergency services data sources.

5.B.8 Integrate Highway Safety Manual (HSM) principles into the planning, engineering, design, operation and maintenance of the transportation system.

5.C Equity, Health and Sustainability Policies

5.C.1 Support programs and projects, such as pedestrian and bike connections to transit stops, that expand and improve transportation options for residents in areas with identified transportation-disadvantaged populations.

5.C.2 Protect neighborhoods, recreation areas, pedestrian facilities, bikeways and sensitive land uses (such as schools, daycare centers and senior centers whose users are more vulnerable to pollution) from transportation-related environmental degradation. Coordinate transportation and land use planning and use mitigation strategies, such as physical barriers and design features, to minimize transmission of air, noise and water pollution from roads to neighboring land uses.

5.C.3 Work with public agencies, private businesses and developers to increase and improve infrastructure necessary to support use of vehicles that use alternative fuels.

5.C.4 Ensure that programs to encourage and educate people about bicycle, pedestrian, and transit transportation options are appropriate for all County residents, particularly transportation-disadvantaged populations.

5.C.5 Build working partnerships between the County's Public Health and Transportation Divisions and utilize tools, such as health impact assessments, to better connect the effects of transportation projects with the health of communities.

5.C.6 Support the continued provision of public transportation services to County populations that are un-served or under-served, as well as the network of community-based, transportation services for seniors and persons with disabilities.

5.D Intelligent Transportation Systems (ITS) Policies

5.D.1 Implement a wide range of ITS strategies aligned with the TSP vision and goals by ensuring safe, efficient, and equitable mobility for people and goods.

5.D.2 Update the ITS Action Plan every five years as part of the County's 5-Year Capital Improvement Program.

5.E Transportation Demand Management (TDM) Policies

5.E.1 Implement Transportation Demand Management techniques—including education, encouragement, and enforcement—appropriate for all County residents , in order to increase efficient use of existing transportation infrastructure and minimize congestion and safety concerns by offering choices of mode, route, and time.

5.E.2 Support and participate in efforts by Metro, the Department of Environmental Quality (DEQ), transit providers, and any area Transportation Management Associations (TMAs) to develop, monitor and fund regional TDM programs.

5.E.3 Provide adequate bicycle and pedestrian facilities to employment areas to encourage use of bicycles or walking for the commute to work and to improve access to jobs for workers without cars.

5.E.4 Support programs that work with schools to identify safe bicycle and pedestrian routes to connect neighborhoods and schools. Seek partnerships and funding to support improvement of these routes.

5.E.5 **Urban** Work with County employers located in concentrated employment areas to develop Transportation Management Associations (TMAs) to coordinate and support private-sector TDM efforts and to work toward mode share targets (Table 5-1) adopted in this Plan.

5.E.6 **Urban** Establish the following year 2040 non-drive-alone targets for growth concept design types (as identified on Map 4-8):

TABLE 5-1
Year 2040 Non-Drive-Alone Modal Targets

Design Type	Non-Drive-Alone Modal Target
Regional Centers Station Communities Corridors	45-55% of all vehicle trips
Industrial Areas Employment Areas Neighborhoods Regionally Significant Industrial Areas	40-45% of all vehicle trips

5.E.7 **Rural** Encourage employers and schools outside urban growth boundaries to implement a range of TDM policies to help their employees and students reduce vehicle miles traveled, maximize use of existing transportation facilities, and increase walking, biking and transit use.

LAND USE AND TRANSPORTATION

Integrating transportation plans with land use plans is a key element in effective management and operation of the entire transportation system. Roads support the wide range of land activities that take place in both the urban and rural areas. Because of the diverse nature of activities and land use types found in Clackamas County, it is of particular importance that the transportation systems are designed to accommodate both urban networks and the different needs of rural area users, including providing safe routes for users of all modes to enjoy the rural area's scenic beauty, and for those participating in agri-tourism and activities related to forestry.

Planning for appropriate amounts of parking supports efficient development of the land within communities. Accommodating on-street parking and planning for off-street parking needs are Transportation System Management (TSM) techniques that are consistent with the Metro Region's 2040 Growth Concept, meet the objectives of the Transportation Planning Rule (TPR), and comply with DEQ's Air Quality Maintenance Plan.

5.F Integration of Land Use and Transportation Policies

5.F.1 Land use and transportation policies shall be integrated consistent with state law regarding preservation of farm and forest lands.

5.F.2 Support efforts to enhance and maintain the function of State highways and County arterials through land use policies, access management strategies, and roadway improvements.

5.F.3 Support and promote an integrated approach to land use and transportation planning and implementation that encourages livable and sustainable communities, decreases average trip length and increases accessibility for all modes.

5.F.4 Support and promote transportation investments that support complete and sustainable communities as a long-term strategy to reduce reliance on long commutes out of the County to employment destinations.

5.F.5 Recognize the County's rural economic engine and the importance of moving goods from rural businesses (including farms, nurseries, livestock, and lumber) to distribution centers.

5.F.6 Require changes in land use plan designation and zoning designation to comply with the Transportation Planning Rule [Oregon Administrative Rules (OAR) 660-012-0060].

5.F.7 **Urban** Require changes in land use plan designation within the Interchange Management Areas identified on Map 5-7 to be consistent with the Transportation Planning Rule (OAR 660-012-0060). If the land uses allowed by the new land use plan designation would cause the interchange mobility standards to be exceeded, either the

change shall be denied or improvements shall be made such that the mobility standards are met.

5.G. Parking Policies

5.G.1 Set minimum and, where appropriate, maximum limits on allowed off-street parking of motor vehicles relative to building size, location and use, and to adjacent land uses. In the urban area, parking standards shall be coordinated with regional parking requirements.

5.G.2 Require new multi-family, commercial and institutional development to provide bicycle parking.

5.G.3 Allow shared parking and, where appropriate, on-street parking to be used to comply with parking standards.

5.G.4 **Urban** Allow the removal of existing, on-street parking along arterials and collectors to create bikeways, construct travel or turning lanes, or increase sight distance.

5.G.5 **Urban** Increase area for on-street parking in residential zoning districts by minimizing the width of driveway accesses.

5.G.6 **Urban** Encourage off-street parking in commercial, industrial, and high density residential areas to be located at the sides or rear of buildings, where practical.

5.G.7 **Urban** Consider allowing for decreased parking area requirements for development that:

- provides housing in close proximity to a light-rail station; or
- is located along a transit route, if the development provides pedestrian, bicycle and transit amenities. See Map 5-8a.

5.G.8 **Urban** Consider requiring shared parking within mixed-use development and where adjacent land uses are compatible.

5.H Rural Tourism Policies

5.H.1 **Rural** Encourage agri-tourism and other commercial events and activities that are related to and supportive of agriculture, in accordance with the provisions of ORS 215. Mitigation of traffic impacts and other event impacts may be required to reduce the effects of these limited land uses on the County road system.

5.I Rural Scenic Roads Policies

5.I.1 Implement a County Scenic Road System that is safe and attractive for all users.

5.I.2 Promote the protection of recreation values, scenic features and an open, uncluttered character along designated scenic roads.

Developments adjacent to scenic roads shall be designed with sensitivity to natural conditions and:

5.I.2.1 Scenic roads shall have strict access control on new developments.
5.I.2.2 Scenic roads should have shoulders wide enough for pedestrians or bicycles, or a separated path where feasible and when funding is available.
5.I.2.3 Turnouts shall be provided where appropriate for viewpoints or recreational needs.
5.I.2.4 Design review of developments adjacent to scenic roads shall require visual characteristics and signing appropriate to the setting.
5.I.2.5 Buildings shall be set back a sufficient distance from the right-of-way to permit a landscaped or natural buffer zone.
5.I.2.6 Parking areas adjacent to scenic roads shall be separated from the right-of-way by a landscaped buffer.
5.I.2.7 Any frontage roads adjacent to scenic roads shall be separated by a vegetative buffer where feasible
5.I.2.8 Underground placement of utility service lines shall be required unless prohibited by the utility service provider.

5.I.3 The following facilities shall be designated scenic roads: *(see Map 5-1 Scenic Roads)*

- Wilsonville Road
- Stafford Road (City of Lake Oswego to Mountain Road)
- Schaeffer Road
- Pete's Mountain Road (Schaeffer Road to the Tualatin River)
- SW Mountain Road, Canby Ferry Road, N. Locust, NE 37th, and Holly Street
- Canby-Marquam Highway (City of Canby to Hwy 211)
- Clackamas River Drive
- Springwater Road (Clackamas River Drive to Hayden Road)
- Hayden Road
- Redland Road
- Fischer's Mill Road
- Marmot Road/Barlow Trail Road/
- Ten Eyck Road/SE Lusted Road from Ten Eyck Road to the County line.
- Lolo Pass Road
- Salmon River Road
- Still Creek Road
- Timberline Road and West Leg Road
- I-205 west of the Willamette River
- Highway 99E from Oregon City to New Era Rd
- Oregon City Bypass (Newell Creek Canyon segment)
- Highway 211 (Canby-Marquam Highway to Estacada)

- Highway 224 (Carver to Barton and south of Estacada)
- Highway 26 east of the City of Sandy
- Highway 35/Forest Service Road 386

5.I.4 Support implementation of the Oregon Scenic Byway System, including the Mt. Hood Scenic Byway and the West Cascades Scenic Byway.

ACTIVE TRANSPORTATION

Recognizing the increasing importance of having multiple ways to travel through a community and through the region has led to an increased awareness for designing transportation systems to safely enhance active transportation modes. "Active Transportation" is defined to include walking, bicycling, ~~and~~ horseback riding and other mobility options, including scooters and electric bicycles.

Walk Bike Clackamas (WBC), adopted by reference in Appendix A, is the county's combined pedestrian and bicycle master plan. The WBC Plan updates the 1996 Clackamas County Pedestrian Master Plan and the 1996 Clackamas County Bicycle Master Plan. The following six goals guided plan development and served as the basis for establishing the objectives, supportive actions and performance measures of the WBC Plan. ~~The County completed transportation systems planning for pedestrian and bicycle modes in 1995 to implement the state's Transportation Planning Rule (TPR), particularly the following TPR principles:~~

- Safety: Improve the safety of people walking and bicycling through safe street design and supportive programs. ~~Land use and transportation are intimately related.~~
- Accessibility: Ensure walkways and bikeways are accessible to people of all ages, abilities and incomes. ~~Over reliance should not be placed on any one transportation mode.~~
- Connectivity: Develop and maintain walking and biking routes that provide convenient and clear connections to important community destinations in Clackamas County.~~Walking and bicycling reduce the number of motorized vehicle trips~~.
- Sustainability: Overreliance should not be placed on any one transportation mode. Expand and promote walking and biking options that optimize the environment, the economy and community benefits. ~~Compact, mixed-use development encourages the use of non-motorized modes.~~
- Equity: Focus investments to ensure safe transportation alternatives regardless of age, race, income, gender and ability. ~~Well-planned, properly designed facilities will encourage people to make trips by non-motorized modes.~~
- Health: Plan and provide infrastructure that allows people to safely walk, run or bicycle for improved health. ~~Facilities for these non-motorized modes are essential for people not having access to an automobile, and constitute desirable elements in a well-designed community that are enjoyed by people who can drive, but choose to walk or bicycle.~~
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~~These principles underlie the development of the Clackamas County Pedestrian Master Plan and the Clackamas County Bicycle Master Plan, both of which are adopted by reference. Both master plans~~ The WBC Plan was~~were~~ prepared under the guidance of the 18-member Walk Bike Advisory Committee and Clackamas County Pedestrian and Bikeway Advisory Committee, which was guided by the following vision:

> *Walk Bike Clackamas is a comprehensive, long-term roadmap to improve opportunities for*

people of all ages and abilities walking and biking as they travel in the county. ~~*Create an environment which encourages people to bicycle and walk on networked systems that facilitate and promote the enjoyment of bicycling and walking as safe and convenient transportation modes.*~~

In addition, t~~T~~he Clackamas County Active Transportation Plan (ATP), adopted by reference in Appendix A, contains priority routes connecting communities in both the urban and rural portions of the County. Development of the principal active transportation routes described in the ATP would provide opportunities for residents to safely bicycle or walk to schools, parks, shopping, and employment centers.

5.J General Active Transportation Policies

5.J.1 Coordinate the implementation of pedestrian facilities and bikeways with neighboring jurisdictions and jurisdictions within the county.

5.J.2 Ensure an opportunity for a diverse and representative citizen involvement in the county pedestrian and bicycle planning process by ~~sponsoring~~ supporting the Clackamas County Pedestrian and Bikeway Advisory Committee (~~CC~~PBAC) as a forum for public input. Recruit representatives of Communities of Interest ~~transportation disadvantaged~~ populations as part of this process.

5.J.3 Monitor and update the Walk Bike Clackamas Plan ~~Clackamas County Pedestrian Master Plan, Bicycle Master Plan,~~ and Active Transportation Plan through data collection and evaluation, and review activities necessary to maintain and expand the programs established in these plans.

5.J.4 Support bicycle, pedestrian and transit projects that serve the needs of Communities of Interest ~~transportation disadvantaged~~ populations.

5.J.5 Coordinate with pedestrian, bicycle, and trail master plans, and with special transportation plans of the County, Oregon Department of Transportation, the United States Forest Service, Metro, and parks providers to achieve safe and convenient crossings and off-road, multi-use path and trail systems connecting to on-road pedestrian facilities and the bikeway networks.

5.J.6 Support the continuation of the “Bikes on Transit” program on all public transit routes.

5.J.7 Inform property owners of their responsibilities for the maintenance of sidewalks and pedestrian pathways.

5~~.J.8~~ ~~Identify low traffic volume streets that are appropriate for signing as bicycle routes to enhance safety and connectivity and to supplement the system of bikeways found on the major street system.~~

Support the county's Safe Routes to School to School program.

5.J.9 Use public service campaigns to heighten motorists' awareness of bicyclists and pedestrians' rights and responsibilities.

5.J.10 Seek funding to implement the Event, Campaign and Mode Shift programs identified in the Walk Bike Clackamas Plan.

5.J.~~9~~11 ~~**Rural**~~ Support bicycle and pedestrian projects that improve access to public transit stops and provide connections to significant local destinations.

5.K Design Policies

5.K.1 Require bikeways and pedestrian facilities for all new roadway construction or substantial reconstruction, allowing for flexibility to accommodate characteristics of terrain, scenic qualities, existing development, and environmental constraints.

5.K.2 Design and implement innovative bicycle and pedestrian facilities that improve the convenience and safety of these facilities. Use facility types described in the Walk Bike Clackamas Plan ~~Active Transportation Plan~~ and National Association of City Transportation Officials (NACTO) Urban Street Design Guide as a reference.

5.K.3 ~~**Urban**~~ Review development plans to ensure that they provide bicycle and pedestrian access.

5.K.~~3~~4 ~~Improve the safety and appeal of walking and biking by supporting the development of bikeways and pedestrian facilities and networks on low volume or local roads and off of existing street rights-of-way.~~

Identify locations along high traffic and high-speed streets where the existing bicycle facility is not protected or separated, or parallel facilities do not exist. Plan for a transition to protected or separated facility in these locations.

5.K.5 **Urban** Identify and implement a network of low automobile traffic volume Shared Streets that are appropriate for posted speed reduction and signing as shared pedestrian and bicycle routes to enhance safety and connectivity and to supplement the system of sidewalks and bikeways found on the major street system.

5.K.~~4~~6 **Urban** Identify pedestrian facilities and bikeway improvements necessary to ensure direct and continuous networks of pedestrian facilities and bikeways on the county road system.

5.K.~~5~~7 **Urban** Identify locations where bicycle and pedestrian access is blocked by rivers and other natural barriers and encourage the creation of bicycle and pedestrian facilities to extend across these barriers.

~~5.K.6 **Urban** Review development plans to ensure that they provide bicycle and pedestrian access.~~

5.K.~~7~~8 **Urban** Create a networked system of pedestrian facilities and bikeways connecting cities, neighborhoods, commercial areas, community centers, schools, recreational facilities, employment centers, other major destinations, regional and city bikeways and pedestrian facilities, and other transportation modes. Utilize separate accessways for pedestrian facilities and bikeways where street connections are impractical or unavailable.

5.K.~~8~~9 **Rural** Support the safe movement of equestrians in rural areas.

5.L Construction Policies

5.L.1 Construct all pedestrian facilities, bikeways, and multi-use paths according to the current County design standards and to the applicable cross section, allowing for flexibility to accommodate characteristics of terrain, scenic qualities, existing development, and environmental constraints, and different designs identified in adopted Special Transportation Plans.

5.L.2 Construct all pedestrian facilities, bikeways, and multi-use paths designated on the Planned Bikeway Network (Maps 5-2a and 5-2b); the Essential Pedestrian Network (Map 5-3); and the Active Transportation Plan (Maps 5-12a and 5-12b).

5.L.3 Construct interim pedestrian facilities and bikeways, as appropriate, on existing streets that are not built to the applicable cross section and where the construction of full street improvements is not practicable or imminent as determined by the County Planning Director and County Road Official or County Engineer.

5.L.4 Where possible enhance or add bikeway facilities during road resurfacing, re-stripping and maintenance projects.

5.L.~~4~~5 **Urban** Require that new development include construction of walkways and accessways within the development and between adjacent developments, where appropriate.

5.L.5 **Rural** In Unincorporated Communities, construct walkways adjacent to or within areas of development (such as schools, businesses, or employment centers) and at rural transit stops.

5.M Facilities Policies

5.M.1 Encourage the provision of appropriate, supportive facilities and services for bicyclists, including showers, lockers, bike racks on buses, bike repair stations, ~~and~~ maintenance information/clinics, charging stations for e-bikes ~~and~~ and secure ~~bicycle~~ parking.

5.M.2 Establish and maintain way-finding signage in both the urban and rural areas~~systems~~ to facilitate pedestrian and bicycle travel.

5.M.3 Install and maintain the signage and bicycle amenities identified in the Active Transportation Plan.

5.M.4 **Urban** Encourage the provision of street lighting to increase the visibility and personal security of pedestrians and bicyclists.

5.N Multi-Use Path Policies

5.N.1 Support acquisition and development of multi-use paths on abandoned public and private rights-of-way.

5.N.2 Collaborate with the appropriate service providers, such as park providers, to plan for multi-use paths that accommodate equestrian facilities where possible.

5.N.3 **Rural** Consider multi-use paths where travel lanes or wide paved shoulders along roadways may not provide adequate safety for pedestrians or bicyclists.

5.N.4 **Rural** Consider equestrian uses when designing and constructing multi-use paths. Work with local communities and interest groups to plan, develop and maintain multi-use paths that also provide equestrian features. Plan for parking areas at such multi-use paths that support parking needs of equestrians, as well as needs of other path users.

5.N.5 **Rural** Establish a program to plan, develop, and maintain multi-use paths in the rural part of the County.

ROADWAYS

The County's road system permits the movement of goods and people between communities and regions, using any of a variety of modes of travel. Roads provide access to virtually all property. They support established communities and serve new development. They connect rural communities and urban neighborhoods. Roads give structure to our urban form, define our commuting patterns and influence our perceptions of what is far away or close at hand.

Creating and maintaining a safe, continuous County-wide road system, which accommodates movement by all travel modes, means setting standards for development of new roads and redevelopment of existing roads, including design and access standards for urban and rural roads. To ensure roads continue to meet the transportation demands of the County, a method to measure the ongoing performance of the system is essential. In response to new technologies and financial constraints, recent changes have been made to these standards on the state and regional levels. These changes are reflected in this TSP.

5.O Functional Classification and Design Policies

5.O.1 Designate and develop roadways according to the functional classifications and guidelines illustrated in the County Road Typical Cross Sections (Figures 5-1a through 5-1f, and Figures 5-2a through 5-2f) while allowing flexibility to accommodate characteristics of terrain, scenic qualities, environmental constraints, existing development, and adopted Special Transportation Plans.

5.O.2 Designate freeways, arterials, collectors and connectors as shown on Map 5-4a and Map 5-4b. Roadways that do not presently exist but are shown on these maps are shown in approximate locations.

5.O.3 Maintain and improve roads consistent with their functional classification, and reclassify roads as appropriate to reflect function and use.

5.O.4 Develop and implement traffic calming strategies, appropriate for the road functional classification, that will improve the safety and convenience of travel by all modes, particularly in areas with high crash rates or high rates of bicycle and/or pedestrian activity.

5.O.5 **Urban** Consider the Metro Regional Street Design Classifications when designing new county roads or redesigning existing county roads, prior to construction or reconstruction. Map 5-5 shows which roads are designated by each Design Classification.

5.O.6 **Urban** Minimize impacts of managing storm water by allowing for Metro's alternative street standards, such as "green streets," as design alternatives.

5.O.7 **Urban** Design arterials and collectors to allow safe and convenient passage of buses, bicycles, and pedestrians.

5.O.8 **Urban** Streets, alleys, bikeways, pedestrian facilities, multi-use paths, trails and transit stops are allowed uses in all urban zoning districts. Consider all state and County policies relating to these facilities when widening, improving or constructing new transportation infrastructure.

5.O.9 **Rural** Plan to support the existing development pattern and through traffic needs of the rural communities, and not to support or promote urbanization.

5.O.10 **Rural** Consistent with ORS 215.283(3) and OAR 660, Division 12, County road capital improvement projects may be designed and constructed to improve safety and bring roads up to county standards outside the UGB. If the road capital improvement project is not otherwise allowed and would require expansion of right-of-way exceeding the road improvements allowed in the Agriculture or Forest districts, a goal exception would be required for such a project, as provided for in ORS 215.283(3).

5.O.11 **Rural** Streets, alleys, bikeways, pedestrian facilities, multi-use paths, trails and transit stops are allowed uses in all rural zoning districts with the exception of Agricultural and Forest Districts in which they are conditionally allowed by ORS 215.213, 215.283 or OAR Chapter 660, Division 6 (Forest Lands).

5.O.12 **Rural** Recognize the importance of resource-related uses such as agriculture and forestry to the local economy, and the need to maintain a transportation system that provides opportunities to harvest agricultural and forest products and deliver them to market.

5.O.13 **Rural** Design, construct and reconstruct rural arterials and collectors to allow safe and convenient passage of trucks, buses, pedestrians and bicyclists.

5.O.14 **Rural** Support the safe movement of agricultural equipment in rural areas by improving existing roads to county standards and considering design features such as signs, pull-outs for slow-moving vehicles, reduced speeds, and limiting curbs where equipment may move to the shoulder or out of the right-of-way.

5.P Project Development Policies

5.P.1 Before building new roads or adding capacity to existing roads, consider Transportation System Management (TSM) strategies for using the existing road system, including associated pedestrian and bicycle facilities, and system capacity most efficiently.

TSM strategies include:

- Access Management;
- Alternative/Modified Standards (Performance and/or Design Standards);
- Intelligent Transportation System (ITS) applications;
- Operational Improvements;
- Parking Standards;
- Enhanced Bicycle and Pedestrian Facilities; and,

- Road Diet *(For example, restriping a low volume, 4-lane road to a 3-lane configuration with bicycle and pedestrian facilities).*

5.Q Access Standard Policies

5.Q.1 Ensure safe and convenient access for bicyclists, pedestrians, and transit users for land uses that are open to the public. Apply access management in a flexible manner to allow reasonable access and balance the needs of all roadway users.

5.Q.2 Improve multimodal operations and safety by ensuring that Interchange Management Areas and other access plans and projects are coordinated with multimodal connectivity standards and are designed to support safe and convenient access and travel for all modes, when appropriate.

5.Q.3 Support the implementation of state access management standards (OAR Chapter 734, Division 51, as amended, and the Oregon Highway Plan) on state highway facilities and within Interchange Management Areas. Coordinate with the Oregon Department of Transportation for access control on state highways.

5.Q.4 If feasible, allow only collectors, connectors, or other arterials to intersect arterials.

5.Q.5 Access Standards shall be implemented through the Zoning and Development Ordinance and the County Roadway Standards. Where access management standards are adopted by the County in Special Transportation Plans, those standards shall apply.

5.Q.6 Developments should be designed to place driveway accesses on streets with the lowest functional classification or the lowest traffic volume.

5.R Policies on Improvements to Serve Development

5.R.1 Require new development to be served by adequate transportation facilities and access points that are designed and constructed to safely accommodate all modes of travel.

5.R.2 For new developments and land divisions, require right-of-way dedication, on-site frontage improvements to the applicable standards as shown in the roadway Cross Sections (Figures 5-1a through 5-1f and Figures 5-2a through 5-2f) and the County Roadway Standards, and off-site improvements necessary to safely handle expected traffic generated by the development and travel by active modes. Where roadway standards are adopted by the County in Special Transportation Plans, those standards shall apply.

5.R.3 Assess anticipated off-site traffic impacts caused by new developments. The developer may be required to participate financially or otherwise in the provision of off-site improvements, dedications or other requirements.

5.R.4 For new development proposed on a site identified on Map 5-6 (*Potentially Buildable Residential Sites >5 Acres in UGB*), require a conceptual street plan that is consistent with requirements of this section and provides for full street connections at intervals of no more than 530 feet, where feasible.

5.R.5 Require new development that will require construction of new streets to provide full street connections at intervals of no more than 530 feet, where feasible. If full street connections are not feasible at such intervals, require accessways for pedestrians, bicyclists or emergency vehicles at intervals of no more than 330 feet. Exceptions may be made where there are barriers, including topography, railroads, freeways, pre-existing development, existing easements, or environmental constraints such as streams and wetlands.

5.R.6 New development shall accommodate on-site traffic circulation within the boundaries of the site, not by circulating vehicles on and off the site through multiple access points using the public road system. Internal circulation plans should avoid relying on "backing out" maneuvers for new driveways onto all rural arterials and collectors.

5.R.7 **Urban** Require implementation of a road network for undeveloped sites illustrated on Map 5-6. Existing roads shall be extended to provide a direct, connected system.

5.R.8 **Urban** Where appropriate, develop and implement neighborhood traffic circulation plans for all modes intended to improve circulation while minimizing safety concerns and exposure to air and noise pollution.

5.R.9 **Urban** Discourage motor vehicle through-trips on local, connector and collector roads, and encourage bicycle and pedestrian travel on these roads.

5.R.10 **Urban** Allow flexible criteria and standards for local streets that are less than 200 feet in length, are expected to carry very low traffic volumes, and are not capable of being extended.

5.R.11 **Urban** Private streets may be appropriate in areas with topographic constraints that make construction of a road to County standards not feasible. Private roads are not classified as local roads and are not maintained by the County.

5.R.12 **Rural** Discourage through trips on rural local roadways.

5.S System Performance Policies

5.S.1 For County roads, evaluate transportation system performance and the impact of new development. Use the evaluation methodology in the County Roadway Standards.

5.S.2 Evaluate motor vehicle capacity needs for roadways within the urban area using the standards shown in Table 5-2a, except as established below.

Table 5-2a
MOTOR VEHICLE CAPACITY EVALUATION STANDARDS FOR THE URBAN AREA
Weekday Mid-day and Weekday PM Peak Periods

	Maximum Volume to Capacity (V/C) Ratio		
ODOT Roadways and Intersections	**Mid-day One-Hour Peak**	**1st Hour, PM Peak**	**2nd Hour, PM Peak**
OR 99E from OR 224 interchange north to county line OR 213 within the Clackamas Regional Center and the Fuller Road Station Community	0.99	1.1	0.99
I-205 I-5 OR 212 OR 224 OR 213	0.90	0.99	0.99
County Roadways and Intersections by Metro Urban Design Type *See Map 4–8*			
Regional Centers Town Centers Main Streets Station Communities	0.99	1.1	0.99
Corridors Neighborhoods Employment Areas Industrial Areas Regionally Significant Industrial Areas All Other Areas Outside of City Limits	0.90	0.99	0.99

5.S.3 Exceptions to the motor vehicle capacity evaluation standards for review of development proposed on property within Metro's boundary are established as follows:

5.S.3.1 Within the Clackamas Industrial Area, no motor vehicle capacity evaluation standards shall apply.

5.S.3.2 For the intersections of SE Park Avenue/OR 99E, SE Park Avenue/SE Oatfield Road, and SE Park Avenue/SE 27th Street, motor vehicle capacity evaluation standards of the Station Community Design Type shall apply.

5.S.4 Evaluate motor vehicle capacity needs for roadways in the rural area using the standards shown in Table 5-2b.

Table 5-2b
MOTOR VEHICLE CAPACITY EVALUATION STANDARDS FOR THE RURAL AREA
Weekday, AM and PM Peak Periods

	Maximum Volume to Capacity (V/C) Ratio	
ODOT Roadways and Intersections (based on posted speed and highway classification)[1]	**1st Hour, PM Peak Period**	**2nd Hour, PM Peak Period**
Unincorporated areas inside city UGBs	0.80 to 0.95	0.80 to 0.95
Inside Unincorporated Communities	0.70 to 0.80	0.70 to 0.80
All other rural areas	0.70 to 0.75	0.70 to 0.75
County Roadways and Intersections outside of Cities	**Minimum Level of Service (LOS) or Maximum Volume/Capacity Ratio; Weekday Peak Periods**	
	AM Peak Hour	**PM Peak Hour**
Road segments and unsignalized intersections	LOS E	LOS E
Signalized and roundabout intersections	0.90	0.90

[1] See Oregon Highway Plan for details.

5.S.5 Exception to the motor vehicle capacity evaluation standards for review of development proposed on property in the rural area is established as follows:

5.S.5.1 Within Government Camp Village, no motor vehicle capacity evaluation standards shall apply.

5.S.6 The maximum volume to capacity ratio for the ramp terminals of interchange ramps shall be v/c 0.85. (1999 Oregon Highway Plan, OHP Policy 1F Revisions, Adopted by OTC: Dec. 21, 2011).

5.S.7 Where more than one motor vehicle capacity standard would apply at an intersection, the standard allowing the higher level of congestion will be used, except for ramp terminal intersections.

TRANSIT

Public transit service is essential for the mobility of many County residents, and provides an affordable option for others who prefer to use it. The County contains five major public transportation systems. Tri-County Metropolitan Transportation District of Oregon (TriMet), the state's largest transit provider, serves generally the western, more urbanized part of the county. The County also is home to four rural transit providers: South Clackamas Transportation District (SCTD) serving the Molalla area, Sandy Area Metro (SAM), Canby Area Transit (CAT) and Wilsonville's South Metro Area Transit (SMART). Clackamas County also directly supports the Mountain Express service which provides public transit to the Hoodland area along the Highway 26 corridor east of the City of Sandy. All of these services provide public transit as well as specialized services for seniors and persons with disabilities (paratransit) as mandated by the American with Disabilities Act.

Clackamas County participates in the development and implementation of the Coordinated Human Services Transportation Plan which addresses the services available to vulnerable populations throughout the Portland metropolitan area.

The County can influence the type of service provided and the way new developments interface with transit and provide amenities for transit riders. Busses operated by the six districts, as well as each of the school districts in the county must safely share the county's roads with all other users.

5.T Transit Policies

5.T.1 Work with transit agencies to identify existing transit deficiencies in the County, needed improvements, and additional park-and-ride lots needed to increase the accessibility of transit services to all potential users.

5.T.2 Emphasize corridor or roadway improvements that help ensure reliable and on-time transit service in the County.

5.T.3 Encourage transit providers to restructure transit service to efficiently serve local as well as regional needs.

5.T.4 Emphasize transit improvements that improve east-west connections; improve service between the County's industrial and commercial areas and neighborhoods; and best meet the needs of all County residents, employees and employers, regardless of race, age, ability, income level and geographic location.

5.T.5 Coordinate with all applicable transit agencies on all new residential, commercial and industrial developments to ensure appropriate integration of transit facilities and pedestrian access to transit facilities.

5.T.6 Require major developments and road construction projects along transit routes to include provisions for transit shelters, pedestrian access to transit and/or bus turnouts, where appropriate.

5.T.7 Promote park-and-ride lots, transit shelters and pedestrian/bikeway connections to transit. Coordinate the location of these facilities with other land uses to promote shared parking and bicycle/ pedestrian-oriented transit nodes.

5.T.8 Coordinate and cooperate with transit agencies to provide transportation for seniors, people with disabilities, and other transportation-disadvantaged populations. Provide continued support for paratransit services as required within a three-quarter-mile distance from fixed-route transit stops.

5.T.9 Coordinate transit-supportive, roadway improvements with transit-providers to ensure financing and implementation of such improvements.

5.T.10 **Urban** Require pedestrian and transit-supportive features and amenities and direct access to transit for new development.

Pedestrian and transit supportive amenities may include pedestrian/bikeway facilities, street trees, outdoor lighting and seating, landscaping, shelters, kiosks, strict standards for signs, and visually aesthetic shapes, textures and colors. Buildings measuring more than 100 feet along the side facing the major pedestrian/transit access should have more than one pedestrian entrance**.** Pedestrian access should be provided to connect transit centers or transit stops on bus routes with centers of employment, shopping or medium-to-high density residential areas within one-quarter mile of these routes.

5.T.11 **Urban** Coordinate with transit providers to achieve the goal of transit service within one-quarter mile of most residences and businesses within the Portland Metropolitan UGB. Support more frequent service within Regional Centers, Town Centers, Station Communities, and Corridors and Main Streets.

5.T.12 **Urban** Work with federal, state and regional agencies to implement ~~high capacity~~high-capacity transit in the regional ~~High Capacity~~High-Capacity Transit (HCT) System Plan in order to help relieve traffic congestion, provide for transportation alternatives to the automobile, and promote the County's economy. See Map 5-8c for the HCT network in the County.

5.T.13 **Urban** Site new commercial, institutional, and multi-family buildings at major transit stops as close as possible to transit, with a door facing the transit street or side street, and with no parking between the building and front lot lines.

5.T.14 **Rural** Focus safety improvements near existing or planned transit stops.

FREIGHT, RAIL, AIR, PIPELINE AND WATER TRANSPORTATION

In 2009, Clackamas County adopted "Open for Business – Economic Development Plan (EDP)." This plan provides a comprehensive guiding policy document for the County to improve, diversify and grow the economy in Clackamas County. Crucial to economic development is the infrastructure that supports the businesses and the employees that work in those businesses. Specific goals and actions called out by the Economic Development Plan include:

- Maintain mobility for people and freight in the face of expected growth; and
- Respond to the opportunities and challenges faced by its cities and rural areas, and support them in their efforts to develop quality jobs and businesses,

Freight, rail, air, pipelines and water transportation make significant contributions to the movement of people and goods; improve the quality of life; and support economic development in Clackamas County.

Policies relating to the movement of freight via roads, rail, air, pipelines or water transportation must also respond to new regulations to ensure the highest level of safety.

5.U General Freight Policies

5.U.1 Coordinate the planning, development, maintenance and operation of a safe and efficient freight system for all freight modes in Clackamas County with the private sector, ODOT, Metro, the Port of Portland and the cities of Clackamas County.

5.U.2 Promote an inter-modal freight transportation strategy and work to improve multi-modal connections among rail, industrial areas, airports and regional roadways to promote efficient movement of people, materials, and goods.

5.U.3 Work with the private transportation industry, Oregon Economic Development Department, Port of Portland and others to identify and realize investment opportunities that enhance freight mobility and support the County, regional and state economy.

5.U.4 Make freight investments that, in coordination with the County's economic development strategies, help retain and grow the County's job base and strengthen the County's overall economy.

5.U.5 Ensure that freight rail lines and truck routes do not have disproportionately negative impacts on sensitive land uses (places where people with increased risk of adverse impacts from exposure to noise and air pollution are likely to gather, such as schools, senior centers, hospitals, parks, housing). Prioritize mitigation efforts for current sensitive land use areas near freight rail lines and truck routes. Mitigate impacts to sensitive land uses by using vegetative buffers, establishing rail "quiet zones," and coordinating land use plans.

5.V Freight Trucking Policies

5.V.1 Support the Truck Freight Route System, while not prohibiting the use of other roads for local pickup and delivery of goods and services. (See Maps 5-9a and 5-9b).

5.V.2 Improve and maintain the countywide Truck Freight Route System, the Regional Transportation Plan Freight Routes and Oregon Freight Plan Routes, as shown on Maps 5-9a and 5-9b.

5.V.3 Consider Heavy and Oversize Freight Movement requirements on State and County facilities when developing plans for transportation improvements and land use changes along freight routes designated as ORS 366.215 Corridors, as shown on Maps 5-9c and 5-9d.

5.V.4 Consider the safety of all travel modes that use the Truck Freight Route System when designing improvements to this system.

5.V.5 Accommodate freight travel on the Truck Freight Route System by improving facility design and operations.

5.V.6 Identify street improvements to reduce delays and to improve travel time reliability on roadways in the Truck Freight Route system

5.V.7 Work to improve the safety of Truck Freight Routes for all transportation modes.

5.V.8 Support the development of truck layover facilities/staging areas to reduce the conflicts between parked vehicles and adjoining land uses.

5.V.9 Utilize Intelligent Transportation Systems (ITS) solutions to improve safety and operations of freight movement.

5.W Rail Policies

5.W.1 Support the safe and efficient movement of goods by rail.

5.W.2 Support the reduction of the number of at-grade crossings of arterial and collector streets on main rail lines to reduce conflicts between rail use and other transportation modes, and improve safety.

5.W.3 On new or reconstructed arterials and urban collectors, prohibit at-grade crossings of main rail lines without traffic restrictive safety devices.

5.W.4 Support expansion and maintenance needed to establish reliable, higher speed (110-125 mph) freight rail service and intercity rail passenger service in the Willamette Valley.

5.W.5 Encourage the development of rail-accessible land uses within industrial areas adjacent to main rail lines.

5.W.6 Support the development of convenient inter-modal facilities such as ramp, terminal and reload facilities for transfers from truck to rail for long-haul freight movement.

5.W.7 Improve the safety and operations of rail transport at at-grade rail crossings and ensure that all at-grade crossings meet the best practices for facilitating safe, multi-modal crossings, as identified in the most recent version of the "Railroad-Highway Grade Crossing Handbook" (Federal Highway Administration [FHWA]).

5.W.8 Identify and protect existing and abandoned rail rights-of-way for future transportation facilities and services.

5.X Airport Policies

5.X.1 Coordinate with the Port of Portland, the Oregon Department of Aviation, and other affected agencies to implement the Mulino Airport Plan.

5.X.2 Coordinate with Marion County, the City of Wilsonville, the Oregon Department of Aviation, and other affected agencies to develop and implement the Aurora Airport Plan.

5.X.3 Allow new airports as conditional uses in appropriate zoning districts. Require new public use airports to be located within:

- one mile of an arterial roadway, and
- at least one mile away from urban residential areas.

5.X.4 Cooperate with the Oregon Department of Environmental Quality, Oregon Department of Aviation and Federal Aviation Administration to minimize conflicts between airports and uses of surrounding lands.

5.X.5 Require that new airports, airport expansions, or expansions of airport boundaries, except those limited to use by ultra-lights and helicopters, have a runway at least 1,800 feet long and control at least enough property at the end of each runway through ownership, aviation easement, or ~~long term~~long-term lease to protect their approach surfaces until the approach surfaces are 50 feet above the terrain. Require the runway to be located so as to achieve at least a 20-foot clearance of the approach surface over a county, city or public road.

5.X.6 Apply a Public-Use Airport and Safety overlay zoning district to public-use airports, consistent with ORS 836.600 through 836.630, and as shown on Map 5-10.

5.X.7 Apply a Private-Use Airport and Safety overlay zoning district to privately-owned, private-use airports that served as the base for three or more aircraft, consistent with ORS 836.600 through 836.630, and as shown on Map 5-10.

5.X.8 Recognize privately-owned, private-use airports that served as the base for one or two aircraft on December 31, 1994, as shown in the records of the Oregon Department of Transportation and as shown on Map 5-10.

5.X.9 Encourage establishment of heliports in industrial areas in conjunction with state and federal standards for heliport design and location.

5.X.10 Support the role Clackamas County airports serve in supporting emergency response and disaster assistance.

5.Y Pipeline Policy

5.Y.1 Work with state and federal regulatory agencies, affected communities and pipeline companies to provide safe, quiet, environmentally sensitive, and efficient transport of bulk commodities.

5.Z Water Transportation Policies

5.Z.1 Maintain safe and convenient, multi-modal land access to the Canby ferry, and to public and commercial docks and boat ramps

5.Z.2 Support efforts to minimize noise and negative impacts caused by river transportation on air and water quality and to habitat for fish migration.

5.Z.3 Support the continued operation and maintenance of the Willamette Falls Locks to facilitate water transportation on the Willamette River.

FINANCE AND FUNDING

The vast majority of surface transportation funding in the United States is derived from public sources at the federal, state, and local levels and primarily includes gas and vehicle taxes and fees. For a variety of reasons, including more efficient vehicles, trends toward shortening commutes or carpooling, and a general unwillingness to raise gas tax rates, jurisdictions across the nation are facing decreasing levels of available funding for transportation projects. That, combined with rising construction costs, leads to increasing challenges in finding available funds for all the improvements that are needed to the transportation system.

One way to control costs is to spend wisely by focusing on using and maintaining the transportation systems that exist. The County also is committed to identifying and pursuing potential new funding sources for transportation improvements.

5.AA General Finance and Funding Policies

5.AA.1 Support continuation of current (or equivalent) federal, state, and local funding mechanisms to construct and maintain County transportation projects. Identify and pursue new, permanent funding mechanisms to construct and maintain County transportation facilities and to support programs and projects identified in the TSP.

5.AA.2 Seek dedicated funding sources to implement active transportation projects.

5.AA.3 Establish funding for bicycle, pedestrian and transit projects that serve the needs of transportation disadvantaged populations.

5.AA.4 Consider a transportation system development charge methodology that calculates person trips to allow pedestrian, transit, and bicycle projects, as well as motor vehicle projects, to be funded by TSDCs.

5.AA.5 To the extent practical, invest unrestricted funding sources in a balanced manner between rural and urban areas.

5.AA.6 **Urban** Study creating a transportation facility funding program that establishes a "fee in lieu of" process that may be used by developers to pay for all on-site and off-site transportation facilities required as part of the land development process.

5.BB Maintenance Policies

5.BB.1 Emphasize maintenance of existing rights-of-way, with improvements where appropriate, to improve traffic flow and safety for all transportation modes at a reasonable cost.

5.BB.2 Determine road maintenance needs and priorities and develop an effective and efficient road maintenance program.

5.BB.3 Develop routine maintenance standards and practices for the transportation system, including traffic control devices.

TRANSPORTATION PROJECTS AND PLANS

The County's Capital Improvement Plan (CIP) includes a 20-year plan for needed transportation improvements and the 5-year programmed projects. The CIP was developed through concentrated and intense scrutiny by County staff and several advisory groups. Needed transportation projects were reviewed and analyzed with respect to how the transportation system is expected to function in 2035; how well each reflected the TSP vision and goals; and based on feedback from the public and several advisory committees. The Public Advisory Committee (PAC) developed the final recommendation to the Planning Commission on the project prioritization.

The purpose of the project prioritization was to identify a set of project that could reasonably be expected to be funded over the next 20 years. The funding forecast completed in 2012 indicates that only around 15% of the funding will be available to construct the needed projects. Therefore, the Capital Improvement Plan is divided into three project lists:

- *20-Year Capital Projects*: contains the prioritized list of needed transportation projects that can reasonably be undertaken given the current estimates of available funding.
- *Preferred Capital Projects*: contains a second group of needed, prioritized transportation projects that the County would undertake if additional funding becomes available during the next 20 years.
- *Long-Term Capital Projects*: contains the remainder of the needed transportation projects. Although these projects will be needed to meet the transportation needs of the County in the next 20 years, they are not expected to be funded or constructed by the County.

The CIP will be updated as needed, and additional studies will be completed to optimize the work completed in this TSP by finding new ways to address known problems that cannot be solved by the current CIP. Special Transportation Plans include policy recommendations for a specific geographic areas or transportation facilities within the County Where conflicts exist between provisions of Special Transportation Plans and provisions of Chapter 5, provisions in the Special Transportation Plans take precedence.

5.CC Capital Improvement Plan Policies

5.CC.1 Fund and build the transportation improvement projects identified as needed to accommodate and appropriately manage future transportation needs. These projects are found in the following lists: *20-Year Capital Projects* (Table 5-3a); *Preferred Capital Projects* (Table 5-3b); and Long-Term Capital Projects (Table 5-3c). Project locations are shown on Maps 5-11a through 5-11f.

5.CC.2 Maintain a current and complete 5-Year Capital Improvement Program (CIP), which contains the programmed transportation projects in priority order, with estimated costs and assigned responsibility for funding. Update and adopt the 5-Year Capital Improvement Program periodically.

5.CC.3 Support the construction of prioritized, major transportation improvements in the County as identified by other jurisdictions including the Oregon Department of Transportation, Metro, cities, transit agencies and park providers. The list of needed transportation projects to be built by other jurisdictions is located in Table 5-3d. The project locations are shown on Maps 5-11a through 5-11f.

5.DD Special Transportation Plans and Studies

5.DD.1 Designate the following as Special Transportation Plans:

- The SE 172nd Avenue/190th Drive Corridor Management Plan, adopted by reference in Appendix A;
- ~~The Clackamas County Pedestrian Master Plan, adopted by reference in Appendix A;~~
- ~~The Clackamas County Bicycle Master Plan, adopted by reference in Appendix A;~~
- The Walk Bike Clackamas Plan, adopted by reference in Appendix A
- The Clackamas County Airport Plan, adopted by reference in Appendix A;
- Transportation elements of the Community Plans and Design Plans included in Chapter 10;
- The Exception to Statewide Planning Goal 3 (Agricultural Lands), Goal 11 (Public Facilities & Services) and Goal 14 (Urbanization), pursuant to OAR 660, Division 12, to allow for the Arndt Road improvement, which is substantially complete; (For findings of fact and statement of reasons, see Board Order 2003-76.)
- The Exception to Statewide Planning Goal 3 (Agricultural Lands), Goal 11 (Public Facilities & Services) and Goal 14 (Urbanization), pursuant to OAR 660, Division 12, to allow for the Arndt Road improvement listed as project number 2029 on Table 5-3b and shown on Map 5-11e; (For findings of fact and statement of reasons, see Board Order 2003-104.)
- The Clackamas County Active Transportation Plan, adopted by reference in Appendix A; and
- The Clackamas Regional Center Pedestrian/Bicycle Plan, adopted by reference in Appendix A.

5.DD.2 Complete the following studies to develop solutions to previously identified problems.

5.DD.2.1 Conduct an alternatives analysis and land use study to identify and consider roadway improvements to address access to I-5 within the southwest portion of the County and capacity deficiencies along Arndt Road (project #1106).

5.DD.2.2 For the urban unincorporated area, develop a study to identify potential pedestrian, bicycle, and safety performance standards for use during development review.

5.DD.2.3 Develop a circulation study for the area west of the Clackamas Town Center and conduct a Transportation Infrastructure Analysis. (project #1018)

5.DD.2.4 Study the I-205 Multi-use Path gap to identify near term solutions for completing the path. (project #1026)

5.DD.2.5 Identify bicycle and pedestrian improvements to better connect OR 224 to the Clackamas Regional Center along 82nd Avenue**.** (project #1032)

5.DD.2.6 Work with ODOT and the City of Happy Valley to review the future need for the Sunrise Unit 2 (parallel to Highway 212, between 172nd Avenue and US 26), identified as a future, planned highway corridor.

5.DD.2.7 Work with ODOT, Metro, Oregon City, West Linn and any other affected jurisdiction to analyze and develop a solution to the transportation bottleneck on I-205 between Oregon City and the I-205 / Stafford Road Interchange. This process may include undertaking an Environmental Impact Statement to identify a preferred alternative that addresses the transportation congestion and facility operations issues on this portion of the I-205 corridor.

5.DD.2.8 Evaluate transitioning from transportation concurrency to safety analysis when a traffic impact study (TIS) is required of new development.

5.DD.2.9 Work with Metro and ODOT over five years to develop Alternate Road Capacity Performance Standards, required by Oregon Highway Plan Policy 1.F., to address the following five intersections. These intersections were forecast not to meet the capacity performance standards adopted in the 2013 TSP, and there were no projects identified that could make the intersections meet the standards.

- SE Harmony Road/SE Linwood Avenue
- OR 212/SE 172nd Avenue – ODOT Intersection
- OR 212/SE 282nd Avenue – ODOT Intersection
- OR 213/S. Henrici Road – ODOT Intersection (traffic signal or roundabout)
- OR 224/SE Lake Road/SE Webster Road – ODOT Intersection

5.DD.2.10 Plan for an all-ages and abilities network of active transportation corridors that are comfortable for children and seniors. Such a network would involve a focus on safe and low-stress facilities such as protected bikeways; multi-use pathways that are physically separated from traffic on busy streets.

DEFINITIONS

The following definitions apply to usage within Chapter 5.

Airport, Private Use: An airport restricted, except for aircraft emergencies, to use by the owner and his invited guests. The determination as to whether an airport is private or public use is made by the Oregon Department of Aviation.

Airport, Public Use: An airport that is open to use by the flying public, with or without a request to use the airport.

Bikeway: A paved facility provided for use by cyclists. There are five categories of bikeways.

- Shared Roadway: A type of bikeway where motorists and cyclists occupy the same roadway area. Shared lane markings should be provided in the roadway to designate the shared use of the roadway by bicyclists and motorists. On shared roadway facilities, bicyclists may use the full travel lane. Two types of shared roadway facilities are:
    - Shared Streets~~Bicycle Boulevard~~: A~~-~~ bicycle and pedestrian facility whereby speed limits on local roads are reduced to 20 mph~~in a network of connected low volume and low speed roads (typically local or connector roadways) where~~and bicycles and pedestrians share the roadway with ~~vehicles~~ vehicles. Additional elements may include pavement markings; signage; speed bumps and motor vehicle diversion.~~but bicycle movements are prioritized over vehicle movements~~.
    - Advisory Lanes: A bicycle facility where the center travel lane is shared by two-way automobile traffic and shoulder bikeways or bike lanes are provided on each side of the center lane. Vehicles may use the shoulder bikeways/bike lanes for passing but must yield to bicyclists and oncoming motorists.
- Shoulder Bikeway: A bikeway which accommodates cyclists on paved roadway shoulder.
- Bike Lane: There are three types of bike lanes:
    - Buffered Bike Lane: Bicycle lanes with a striped buffer providing greater separation from vehicles than a typical bike lane.
    - Protected Bike Lane: Bicycle lanes parallel to the roadway and separated from traffic by a buffer as well as by a barrier such as a landscaped buffer, parked cars, or flexible bollards.
    - Conventional Bike Lane: A section of roadway designated for exclusive bicycle use, at the same grade as the adjacent roadway.
- Bike Path: A bike lane constructed entirely separate from the roadway.
- Cycle Track: An exclusive "grade-separated" bike facility elevated above the street level using a low-profile curb and a distinctive pavement material. Two-way cycle tracks are

physically separated cycle tracks that allow bicycle movement in both directions on one side of the road.

Communities of Interest: Black people, Indigenous people, and People of Color (BIPOC); immigrants; people with limited English proficiency; low-income and low-wealth community members; low-and-moderate-income renters and homeowners; people with disabilities; youth and seniors.

~~**Truck Freight Route System:** A set of identified arterials, collectors and State facilities that support the efficient movement of goods throughout the County.~~

Functional Classification: The process by which streets and highways are grouped into classes, or systems, according to the character of traffic service that they are intended to provide. Functional classifications found in Clackamas County and typical characteristics of each classification follow:

- Principal Arterials: (Freeway/Expressway and other designated Principal Arterials). Serves interregional and intraregional trips and carries heavy volume at high speed. Primarily Interstate Freeways and State Highways but also includes other roads designated as Principal Arterials. These roads make up the National Highway System.
- Major Arterial: Carries local and through traffic to and from destinations outside local communities and connects cities and rural centers. Moderate to heavy volume; moderate to high speed.
- Minor Arterial: Connects collectors to higher order roadways. Carries moderate volume at moderate speed.
- Collector: Principal carrier within neighborhoods or single land use areas. Links neighborhoods with major activity centers, other neighborhoods, and arterials. Generally not for through traffic. Low to moderate volume; low to moderate speed.
- Connector: Collects traffic from and distributes traffic to local streets within neighborhoods or industrial districts. Usually longer than local streets. Low traffic volumes and speeds. Primarily serves access and local circulation functions. Not for through traffic in urban areas.
- Local: Provides access to abutting property and connects to higher order roads. New local roads should intersect collectors, connectors, or, if necessary, minor arterials. Not for through traffic.
- Alley: May be public or private, to provide access to the rear of property. Alleys should intersect local roads or connectors. Not for through traffic

Level of service (LOS): A performance measure that represents quality of service of an intersection or roadway segment, measured on an A–F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst.

Major Transit Stop: A transit center, major bus stop, or light rail stop, as identified on Comprehensive Plan Map 5-8a, *Transit, Urban*.

Major Transit Street: A street with a Frequent Service Bus Line, as identified on Comprehensive Plan Map 5-8a, *Transit, Urban*; existing or planned High Capacity Transit, as identified on Comprehensive Plan Map 5-8c, *High Capacity Transit (HCT) System Plan*; or both.

Mode (also "travel mode"): A particular form of travel, for example, walking, bicycling, traveling by automobile, or traveling by bus.

Multi-use Path: A paved path built for bicycle and pedestrian traffic that is physically separated from motor vehicle traffic, and can be either within the road right-of-way or within an independent right-of-way.

Pedestrian Facilities: Sidewalks, pedestrian pathways, or other facilities that are designed specifically for pedestrian use, as identified by functional classification in cross sections (Figures 5-1 through 5-3) or as determined appropriate by the County Planning Director and the County Road Official or County Engineer.

Principal Active Transportation (PAT) Route: Priority routes for pedestrian and bikeway facilities which form the "spine" of the County active transportation network that have been identified in the Active Transportation Plan. PAT Routes provide connection to key county destinations, link rural and urban communities, and connect to Parkways and Bikeways as identified in the Metro Regional Active Transportation Plan. Specifics about the appropriate bikeway and/or pedestrian facility treatments for the PAT Routes are included in the Active Transportation Plan.

Trail: A hard- or soft-surfaced facility for pedestrians, bicyclists, or equestrians that is separate from vehicular traffic. Trails often go through natural areas and are designed to have a minimal impact on the natural environment.

Transportation Demand Management (TDM): Strategies to achieve efficiency in the transportation system by reducing demand.

Transportation Disadvantaged: Persons who, because of physical or mental disability, income status, or age, are unable to transport themselves or to purchase transportation and are, therefore, dependent upon others to obtain access to health care, employment, education, shopping, social activities, or other life-sustaining activities, or children who are handicapped or high-risk or at-risk.

Truck Freight Route System: A set of identified arterials, collectors and State facilities that support the efficient movement of goods throughout the County.

Road: A public or private way created to provide ingress to, or egress from, one or more lots, parcels, areas or tracts of land, or that provides for travel between places by vehicles. A private way created exclusively to provide ingress and egress to land in conjunction with a forest, farm or mining use is not a "road." The terms "street," "access drive" and "highway" for the purposes of this Plan shall be synonymous with the term "road."

Roadway: That portion of a road or alley that has been improved for vehicular and pedestrian traffic.

Rural: Areas that are either (a) outside the Portland Metropolitan Urban Growth Boundary and outside city limits, or (b) inside the Portland Metropolitan Urban Growth Boundary and have a Comprehensive Plan designation of Agriculture, Forest, Rural, Rural Commercial, Rural Industrial or Unincorporated Community Residential.

Urban: Areas that are inside the Portland Metropolitan Urban Growth Boundary, except areas that have a Comprehensive Plan designation of Agriculture, Forest, Rural, Rural Commercial, Rural Industrial or Unincorporated Community Residential.

Volume-to-Capacity (v/c) Ratio: A volume-to-capacity ratio compares vehicle volumes (the roadway demand) with roadway supply (carrying capacity). Volume refers to the number of vehicles using a roadway at a specific time period (and length of time), while capacity is the road's ability to support that volume based on its design and number of lanes.

Appendix A

MAPS AND DOCUMENTS ADOPTED BY REFERENCE

The following maps and documents have been adopted by reference to the Comprehensive Plan. These documents are available for review at the Clackamas County Planning and Zoning Division.

NATURAL RESOURCES AND ENERGY

- Habitat Conservation Area Maps [Added by Order 2008-197, 1/5/09; Added by Ordinance ZDO-256, 7/18/16]
- Water Quality Resource Area Maps [Added by Order 2008-197, 1/5/09; Added by Ordinance ZDO-256, 7/18/16]
- Board Order 2014-14 (In the Matter of a Comprehensive Plan Amendment, Zone Map Amendment, and Site Plan Review request from Tonquin Holdings, LLC, on property described as T3S R1W Section 04A, Tax Lots 100 and 102) and All Attachments [Added by Order 2014-14, 2/27/14]
- Board Order 2020-16 (In the Matter of a Comprehensive Plan Amendment, Zone Map Amendment, and Site Plan Review request from Cadman Materials, Inc. on property described as T4S R1E Section 07, Tax Lots 500, 600, 700, 800, 801, 1002, 1003 & 1004) and all Attachments [Added by Order 2020-16, 3/12/20]

TRANSPORTATION

- ~~Clackamas County Pedestrian Master Plan [Added by Order 96-362, 5/23/96]~~
- ~~Clackamas County Bicycle Master Plan [Added by Order 96-362, 5/23/96]~~
- Walk Bike Clackamas Plan, January 2025 -[Added by Order 25-xxx, 6/xx/2025]
- Clackamas County Airport Plan [Added by Order 01-256, 11/1/01]
- SE 172nd Avenue/190th Drive Corridor Management Plan, February 2012, Revised January 2018 [Added by Ordinance ZDO-232, 3/12/12; Amended by Ordinance ZDO-255, 7/14/16; Amended by Ordinance ZDO-270, 11/27/18]
- Clackamas County Active Transportation Plan, June 1, 2015 [Added by Ordinance ZDO-251, 6/1/15]

COMMUNITY PLANS AND DESIGN PLANS, Clackamas Regional Center Area Design Plan

- Phillips Creek Greenway Framework Plan [Added by Order 98-308, 12/23/98]
- Clackamas Regional Center Pedestrian/Bicycle Plan [Added by Ordinance ZDO-238, 10/15/12]

Appendix B

SUMMARY OF SUPPORTING DOCUMENTS

CITIZEN INVOLVEMENT

Citizen and Agency Involvement Program.

Clackamas County Citizen Involvement Program. Comprehensive Plan Chapter 2.

Committee for Citizen Involvement Bylaws.

Committee for Citizen Involvement Roster.

Community Planning Organization Leaders. Lists and maps of CPO areas.

NATURAL RESOURCES AND ENERGY

Clackamas County Energy Project Publications, 1983:

- An Energy Anthology
- Clackamas County Energy Use and Supply Background Data
- Clackamas County Energy Management Plan
- Technical Memorandum, Energy Emergency Planning
- Technical Memorandum, County Buildings
- Technical Memorandum, County Motor Fleet
- Technical Memorandum, County Organization

Clackamas County Resources Atlas, Clackamas County Dept. of Environmental Services, Planning Division. Includes maps of the following:

- General Resources
- Agricultural Land Types and Major Production Areas
- Forest Zones and Vegetative Types
- Cubic Foot Forest Site Classes
- Forest Ownerships
- Urban Forest Cover
- Detailed SCS Soil Mapping Index
- Unique National and Scenic Features
- Open Urban Land Inventory

- Park and Recreation Facilities; Historic and Cultural Sites
- Fisheries and Wildlife Habitats
- Aggregate Sites
- Groundwater Studies Index
- Geologic Hazards, Northwest Clackamas County
- River Corridors, Existing Conditions and Management Strategies
- Precipitation and Physiography

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Planning Background Report, Energy; Clackamas County Dept. of Environmental Services, Planning Division.

Planning Background Report, Natural Hazards; Clackamas County Dept. of Environmental Services, Planning Division.

Planning Background Report, Natural Resources; Clackamas County Dept. of Environmental Services, Planning Division.

Planning Background Report, Rivers; Clackamas County Dept. of Environmental Services, Planning Division.

Preliminary Willamette River Greenway, Royston, Hanamoto, Beck and Abey, 1974.

Regional Urban Wildlife Habitat Maps, U.S. Army Engineer District Portland Corps of Engineers, 1978.

Review of Land, Water, Air Quality and Noise Control, 1980-88, Clackamas County Planning and Economic Development Division, 1988.

Rock Material Resources of Clackamas, Columbia, Multnomah and Washington Counties, Oregon, Oregon Dept. of Geology and Mineral Industries, 1978.

State Comprehensive Outdoor Recreation Plan, Technical Documents I, II, and III; ODOT, Parks and Recreation Branch.

Timber for Oregon's Tomorrow, Oregon State University School of Forestry, Beuter, John H.; Johnson, K. Norman; Scheurman, H. Lynn; Research Bulletin 19, January 1976.

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State of Oregon Bicycle Master Plan, Oregon Dept. of Transportation, Highway Division, March 15, 1988.

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SE 172nd Avenue/ SE190th Drive Corridor Management Plan, Appendix B – Analysis of Preferred Alternative

SE 172nd Avenue/ SE190th Drive Corridor Management Plan, Appendix C – 15% Design Plans, Alignment Alternative AT2, Clackamas County, October 24, 2011

SE 172nd Avenue/ SE190th Drive Corridor Management Plan, Appendix E – Corridor Centerline Survey, November 10, 2011

Clackamas County Active Transportation Plan, Appendices A through F

Damascus Mobility Plan, Kittleson & Associates, Inc., July 27, 2022

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Walk Bike Clackamas Plan

January 2025

NELSON NYGAARD

CLACKAMAS COUNTY

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The contents of this document do not necessarily reflect views or policies of the State of Oregon.


SAFEWAY
Foster Rd
NEXT SIGNAL

Land Acknowledgements

What we now call Clackamas County is the traditional lands and waterways of the Clackamas, Chinook Bands, Kalapuya, Kathlamet, Molalla, Multnomah, Tualatin, Tumwater, Wasco and many other tribes of the Willamette Valley and Western Oregon.

We honor the Native American people of Clackamas County as a vibrant, foundational, and integral part of our community here today. We respectfully acknowledge Wy'east, also known as Mount Hood, and Hyas Tyee Tumwater, also known as Willamette Falls, as sacred sites for many Native Americans.

We thank those who have connection to this land and serve as stewards, working to ensure our ecosystem stays balanced and healthy.

Table of Contents

Table of Figures

Executive Summary

Plan Process

Walk Bike Clackamas (WBC) is Clackamas County's first combined pedestrian and bicycle plan. WBC recommends future projects and programs to meet the county's transportation needs and updates goals and objectives to guide decision-making for active transportation investments in unincorporated Clackamas County.

WBC began in summer 2022 and extended through 2024. The project team included an 18-member Project Advisory Committee, a Project Management Team led by county staff, and a consultant team from Nelson\Nygaard, Toole Design, and Thuy Tu Consulting.

Walk Bike Clackamas Goals

The six WBC goals shown below guided plan development. They are the basis for establishing the objectives, policies and performance measures of this plan.

Safety

through safe street design and supportive programs

Sustainability

expand and promote travel options that benefit - the environment, economy, and community

Accessibility

to ensure people of all ages, abilities, and incomes can walk, bike, and roll

Equity

ensure safe alternatives to driving are available to everyone regardless of age, race, income, gender, and ability

Connectivity

provide convenient and clear links with schools, parks, shopping, and other important community destinations

Health

plan and provide infrastructure that allows people to safely walk, run, or bicycle, ensuring better health outcomes for all

CLACKAMAS COUNTY

Plan Topic Areas

- **Health Equity Framework and Existing Conditions:** Key population, demographic trends, existing transportation system, adopted transportation plans, policies, health and equity indicators impacted by transportation infrastructure.
- **Summary of Public Engagement Themes:** Walk Bike Advisory Committee (WBAC) meetings, along with virtual and in-person public events demonstrate the critical need for WBC implementation.
- **Goals, objectives, and performance measures:** Key goals and objectives to guide future decision-making and performance measures to track the plan implementation.
- **Supportive programs:** Recommendtions to encourage people in Clackamas County to walk, roll, or bike more, and help understand available transportation options.
- **Project identification and prioritization process:** WBC identifies over 400 projects to fill gaps and deficiencies in the County's networks, but prioritization process narrows the number to 236 projects to meet the County's goals.
- **Priority Projects:** The prioritization process identifies key linear and spot improvement projects that are critical to each planning area.
- **Shared Streets:** Potential high-use streets for people walking and bicycling in Clackamas County with speeds reduced to 20 mph to enhance public health, equity, and safety, particularly on streets connecting neighborhoods, shopping areas, and parks.
- **Facility Design Toolkit:** Provides a framework for County staff to design and construct walking and biking improvements.
- **Funding strategies:** To implement active transportation projects, WBC describes creative funding solutions stemming from County/local, regional and state, and federal opportunities.

Engagement Process

Stakeholder engagement was a critical aspect of the planning process. A combined resident and technical Walk Bike Advisory Committee (WBAC) guided project development and provided diverse perspectives. The WBAC met four times, with each meeting immediately preceding a public outreach event or survey.

Project Priorities

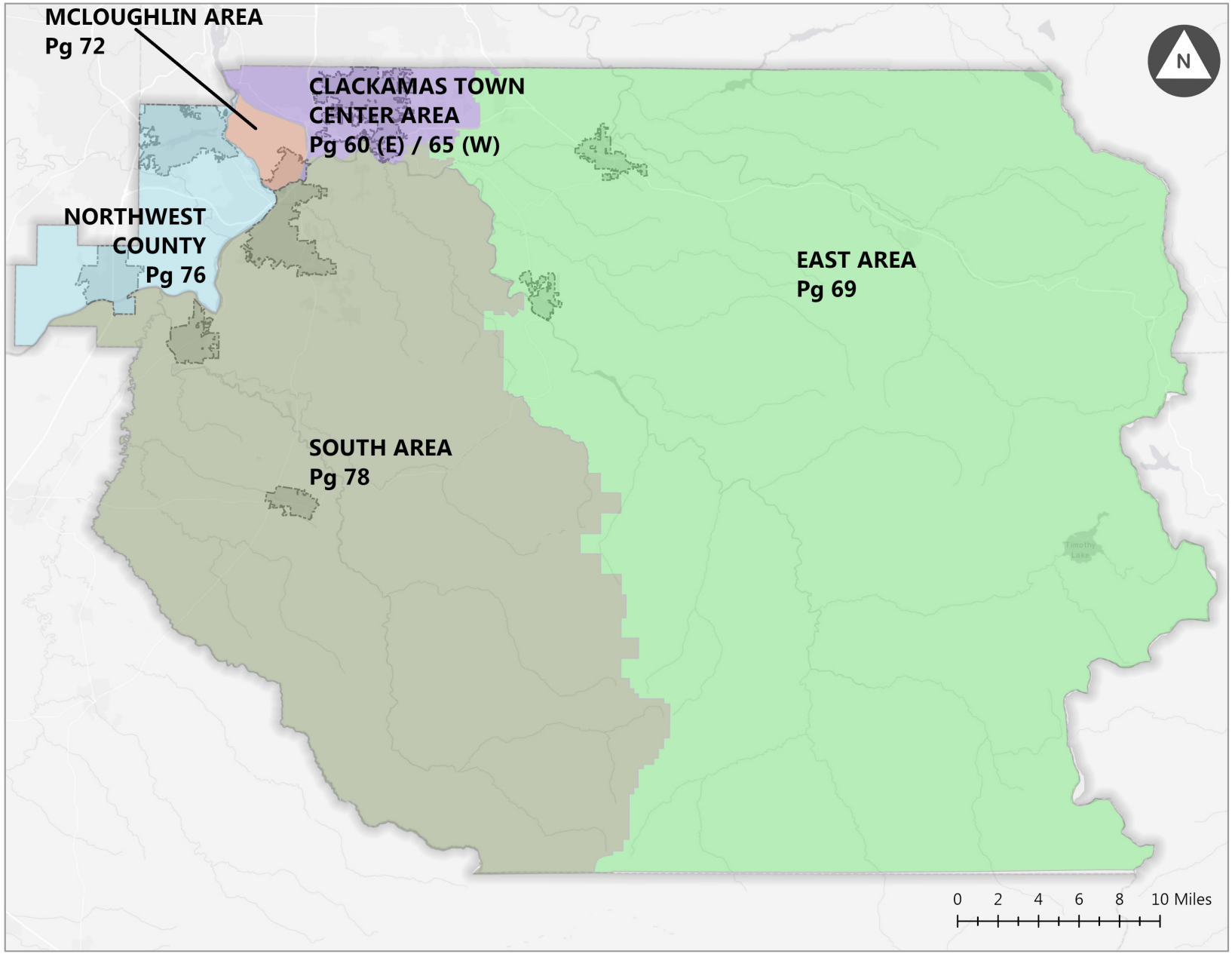
Public and WBAC input on prioritization criteria resulted in a goal-based scheme for ranking potential projects. Each identified goal had its own set of criteria. The projects are divided into three priority tiers, with Tier 1 being highest priority.

Overall, the Walk Bike Clackamas plan identifies over 500 miles of sidewalks, bikeways, and trails for development in unincorporated Clackamas County. To allow for a more nuanced analysis of conditions and investments in different parts of the county, WBC considers five "subareas" that follow development patterns as well as natural features such as waterways and topography. The planning subareas are seen in the following map.

The breakdown of this mileage by planning subareas is seen in the table below.

Area	Total Projects	Sidewalk Mileage*	Bikeway Mileage	Trail Mileage
Clackamas Town Center	103	33.5	56.1	38.7
East County	30	2.2	69.1	24.2
McLoughlin	40	34.3	29.7	-
Northwest County	19	6.9	25.5	9.0
South County	44	19.8	141.9	34.9
Total	**236**	**96.7**	**322.3**	**106.8**

* Includes other types of pedestrian facilities such as shared path adjacent to roadway


MCLOUGHLIN AREA
Pg 72
CLACKAMAS TOWN CENTER AREA
Pg 60 (E) / 65 (W)
NORTHWEST COUNTY
Pg 76
EAST AREA
Pg 69
SOUTH AREA
Pg 78
N
0 2 4 6 8 10 Miles

Top Priority Projects Within Right-of-Way

Based on scoring during prioritization process; community surveys and advisory committee input.

Project ID	Name	Description
CE102	SE 82nd Dr pedestrian facilities and bikeways	Fill gaps in pedestrian facilities and bikeways
CW117	SW Lake Rd pedestrian facilities and bikeways	Fill gaps in pedestrian facilities and bikeways
E108	SE Eagle Creek Rd paved shoulders	Add paved shoulders
E111	E Barlow Trail Rd / E Lolo Pass Rd paved shoulders	Add paved shoulders
M106	SE Concord Rd pedestrian facilities and bikeways	Fill gaps in pedestrian facilities and bikeways
M114	OR 99E (McLoughlin Blvd) / SE Jennings Ave bike crossing	Construct bike signal at SE Jennings / OR 99E / Trolley Trail intersection
N104	SW Childs Rd pedestrian facilities and bikeways	Fill gaps in pedestrian facilities and bikeways
N106	SW Borland Rd pedestrian facilities and bikeways	Add pedestrian facilities and bikeways
S106	S Leland Rd paved shoulders	Add paved shoulders
S108	S Henrici Rd paved shoulders	Add paved shoulders

Top Priority Trail Projects (Outside of Right-of-Way)

Based on scoring during prioritization process; community surveys and advisory committee input.

Project ID	Name	Description
N107	Tonquin Trail	Construct bike / pedestrian facilities pursuant to the Tonquin Trail Master Plan
M104	Trolley Trail - Arista Drive segment	Pilot for advisory bike lane, or shared street/greenway
CE107	Scouters Mountain / Mt Scott Loop Trail	Construct multi-use path in accordance with the Active Transportation Plan
S204	Molalla Forest Rd	Pave to provide bicycle access in accordance with the Active Transportation Plan
E103	Cazadero Trail	Construct Multi-use path

Program Priorities

WBC also identifies supportive programs to complement capital infrastructure investments. Potential WBC programs are categorized into three groups: events, campaigns, and mode shift.

Events	**Open Streets**	Events that close a portion of a road to cars to allow people to walk, bike, skateboard, scoot, and have fun with friends, family, and neighbors
Campaigns	**School Zone Safety**	Promote safe driving behaviors for parents and other adults, and safe walking and bicycling access to schools for students
	Bicycle-Friendly Drivers	Build driver awareness of how to safely drive on roads with bike lane and other facilities, and rights and responsibilities of people bicycling and driving
	No Parking in Bike Lane	Target illegal car/truck parking in bike lanes to ensure lanes remain open and usable to people bicycling
Mode Shift	**Micromobility**	Offer shared services -- such as short-term bike, electric bike, or electric scooter rentals -- to give people travel options for short trips
	Bicycle and Pedestrian Counts	Gather data about the number of people walking and biking at key locations to learn what's working and what needs to be done
	Street Painting Program	Develop street painting program to allow for neighborhood groups to install street murals to foster lower speeds and solidify shared streets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1. Introduction

1.1 Plan Purpose

Walk Bike Clackamas (WBC) is Clackamas County's first combined pedestrian and bicycle plan. It recommends future projects and programs to meet the county's transportation needs and updates policy priorities to guide decision-making for active transportation investments.

Why now?

Since the Bicycle Master Plan and Pedestrian Master Plan were last updated in 2003, the county's transportation system has drastically changed. WBC accounts for the changing physical, demographic, and technological landscape, and responds to the State of Oregon requirement to develop balanced transportation systems. Regular updates are needed to be eligible for funding opportunities. Moreover, Clackamas County has:

1

AMBITIOUS CLIMATE GOALS

The Board of County Commissioners has set a goal for the county to be carbon neutral by 2050, which means balancing greenhouse gas emissions to capture as much as is emitted. Safe and convenient options to reduce reliance on single-occupancy vehicle trips can help meet climate goals.

2

NEW MOBILITY OPTIONS

Planning for active transportation opportunities such as bike share, e-bikes, protected bike lanes, e-scooters, and other advancements were not included in past plans.

3

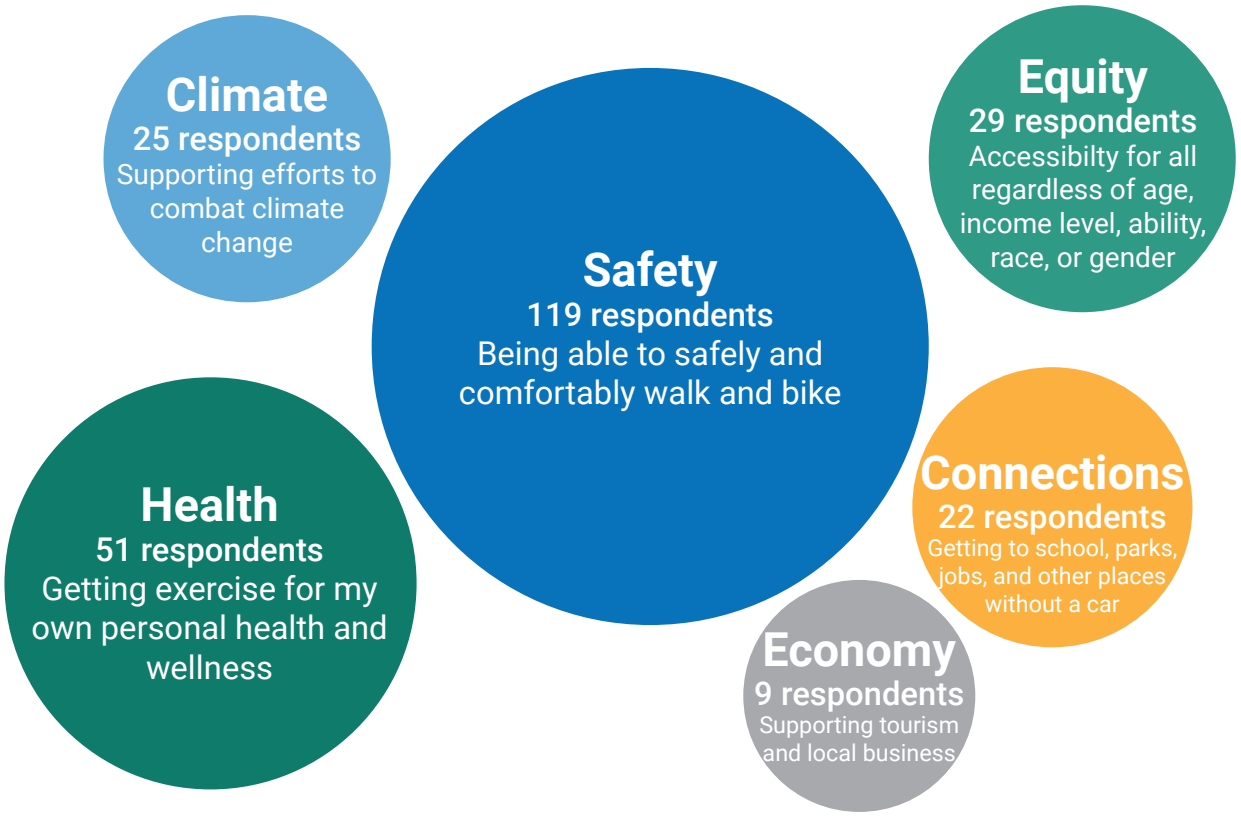
NEW POLICY DIRECTION

The county has prioritized transportation options that consider health outcomes and equity, with a Performance Clackamas goal that 100% of residents have access to safe and affordable multimodal infrastructure. County Planning and Public Health staff jointly crafted the approach to WBC to ensure this is reflected in the planning process and outcomes.

Guiding Principles

To initiate the Walk Bike Clackamas project and develop a framework to guide the planning work, the project team asked community members at the 2021 Clackamas County Fair what was most important to them in terms of walking and biking. As shown in Figure 1, the top three responses were safety, health and equity. These priorities helped shape the plan vision and served as guiding principles during the two-year planning process.

Figure 1 Public Priorities

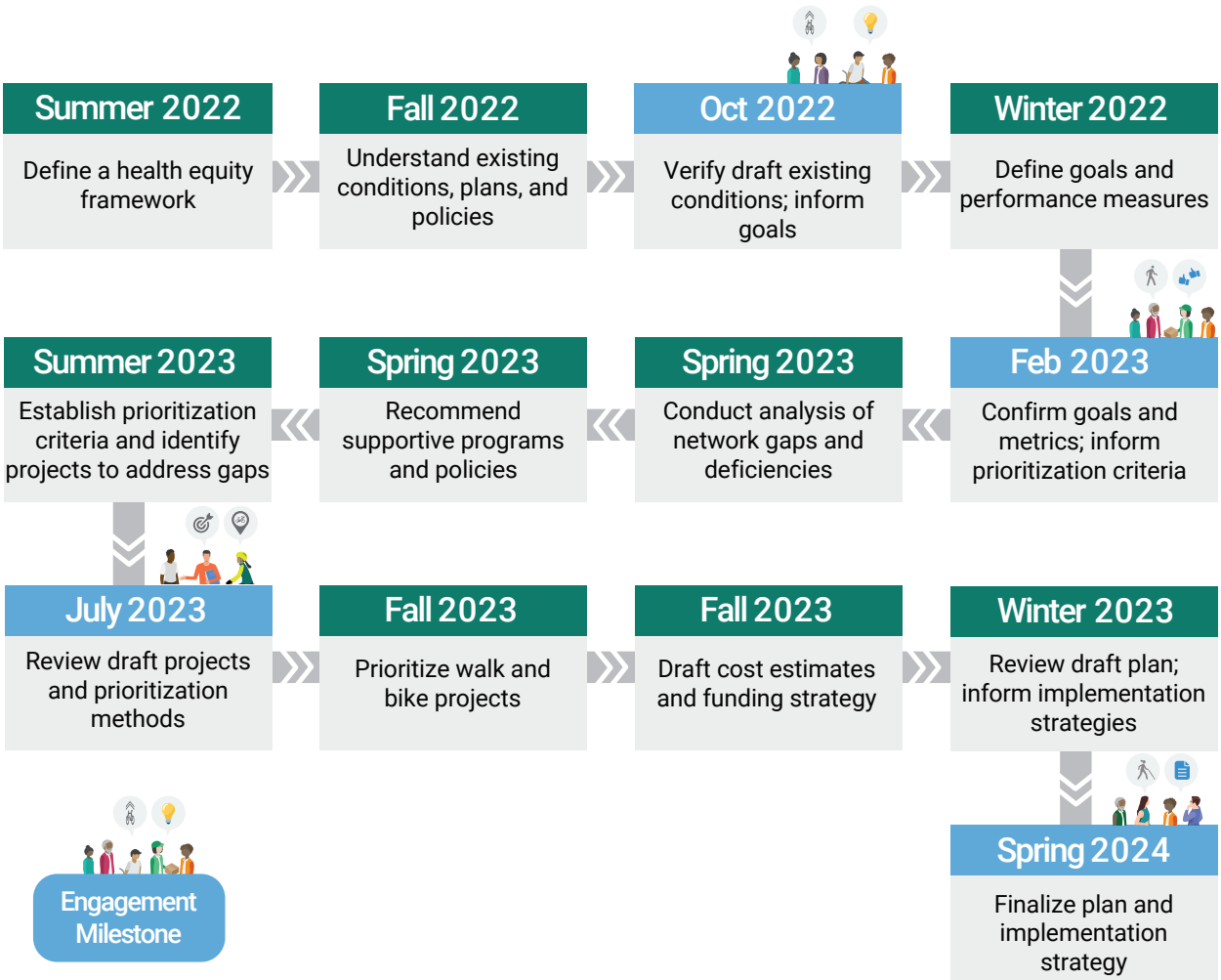


1.2 Plan Development

WBC began in summer 2022 and extended through 2024.

The project team included an advisory committee, Project Management Team led by county staff, and a consultant team from Nelson\Nygaard, Toole Design, and Thuy Tu Consulting. Stakeholder engagement was a critical aspect of the planning process. The Walk Bike Advisory Committee (WBAC) met four times to guide project direction. Each meeting immediately preceded a public outreach event or survey.

Project Process:

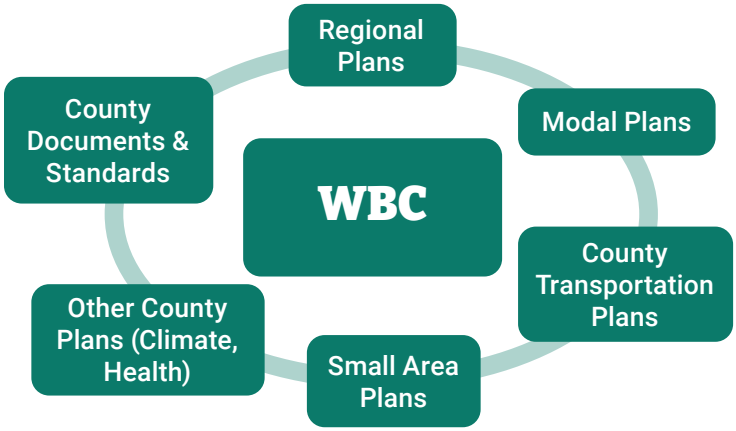


1.3 Building off Other Plans

WBC builds on previous County and regional planning efforts. Plans and policies relevant to the creation of WBC were reviewed to identify key themes moving forward, which helped lay the project foundation. Relevant plans are summarized in detail in **Appendix E: Technical Memorandum 3: Plan Review**.

Plans that helped shape and inform WBC include:

- Regional Plans: Metro Regional Transportation Plan
- Modal Plans: Clackamas County Transit Development Plan
- County Transportation Plans: Clackamas County Transportation System Plan
- Area Plans: Safe Routes to School Action Plans
- Other County Plans: Climate Action Plan and Active Transportation Plan
- County Documents & Standards: Roadway Standards



The plan review identified opportunities to better align with current best practices:

	Opportunity	Detail
	Strive for Safe Systems approach …	… in all transportation plans and projects to eliminate traffic fatalities and injuries
	Better integrate equity…	… into engagement, technical analysis, design and implementation guidance
	Include clear design guidance…	… that is evidence-based and increases safety for the most vulnerable road users
	Document County program priorities…	…to clarify the County's goals and roles in supporting capital investments
	Identify new funding sources…	…to leverage new federal, state, and regional funding available for active transportation projects
	Describe actions for implementation…	…that specify the role of the County and jurisdictional partners in implementing active transportation projects


LOCAL IMPROVEMENT

2. Existing Conditions

An initial assessment of active transportation conditions countywide identified locations where potential projects could make the biggest impact in meeting transportation needs. The existing conditions analysis also included an assessment of community health and the creation of a Transportation Equity Index.

2.1 Active Transportation: Health and Equity

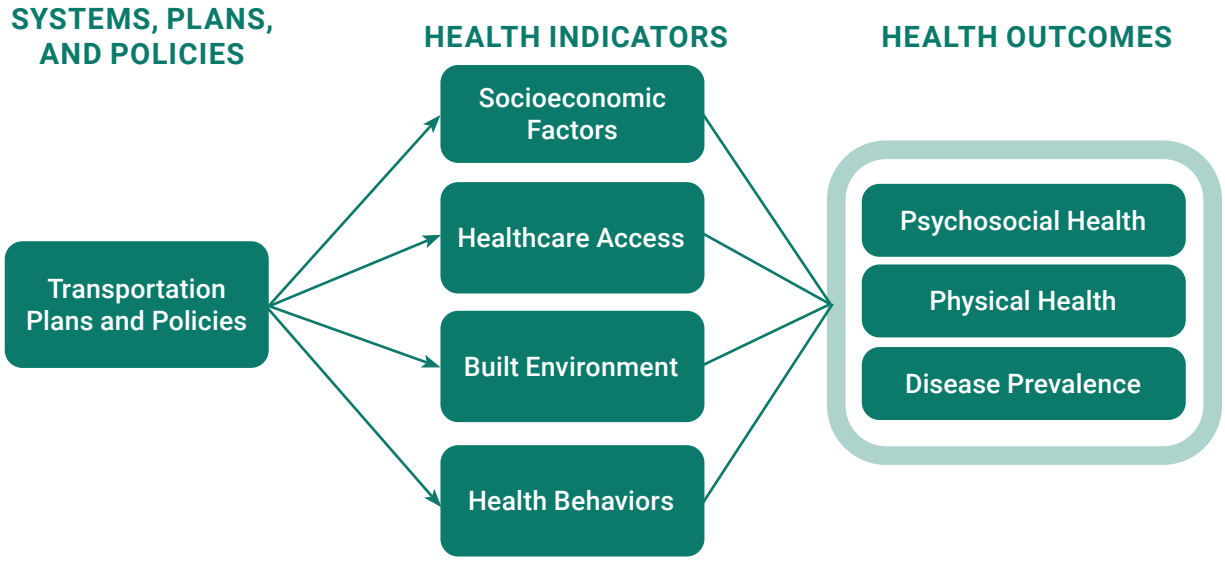
Safe opportunities for physical activity can have a positive impact on an individual's physical and mental health. Presence of safe and complete infrastructure, like sidewalks, bike lanes and safe crossings, help to reduce barriers to walking and biking and create access to goods, services, jobs, and transit for people who depend on alternative transportation modes . Studies show that people who live near (within 1/2 mile or 15 minutes walking) safe, high-quality biking and walking infrastructure tend to get more exercise than people who don't, particularly among participants without a car.*

Applying Health

The health and active transportation connection can also be illustrated in the Health Pathway Diagram (Figure 2). Someone's health is dependent, in large part, on a number of social determinants, or conditions in the physical, social, and economic environment, such as education, economic, housing, and transportation opportunities.

*American Journal of Public Health, "New Walking and Cycling Routes and Increased Physical Activity",2014, https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2014.302059

Figure 2 Health Pathway Diagram



Transportation Plans and Policies

Transportation plans and policies are considered the upstream components of the health pathway. They determine how transportation investments are made and can help shape how community members reach important destinations such as schools, work, and health services. For example, more investments in multimodal transportation systems may give people the opportunity to choose different travel options, including walking, biking or using transit.

Health Indicators

Indicators that impact personal health include socioeconomic factors (education, race, place of birth, employment, income), healthcare access (can those without a vehicle access the care they need?) and quality of built environment (sidewalks, bike paths, safe crossings, lighting and parks for recreation). Personal behaviors such as participating in physical activity such as walking or biking are also a factor. If people perceive pedestrian or biking infrastructure as unsafe, they will not use it.

Health outcomes

Health outcomes are the psychosocial and physical conditions resulting from the various health indicators and transportation plans and policies. They include conditions such as diabetes, obesity and cardiovascular disease. To better understand Clackamas County community health and how health considerations could be incorporated into the planning process for Walk Bike Clackamas, the team conducted a Baseline Health

Conditions analysis. The analysis included both local and federal data sources. Significant findings and trends from the analysis include:

- Eighty-five percent of adults are in "good" health, and 25% met Center for Disease Control (CDC) guidelines for physical activity.* However, chronic disease rates are on the rise, including psychosocial health and chronic conditions like asthma, cancer, cardiovascular disease, and obesity.
- People with chronic conditions are largely concentrated near urban areas or within city limits.
- Rates for psychosocial health outcomes such as mental distress and poor mental health days are increasing.
- The percentage of adults engaging in physical activity in the county is decreasing.
- People in the county have lower rates of walking and biking to work than compared to the state of Oregon.
- Encouraging walking and biking through infrastructure and built environment improvements helps the population reach their daily physical activity requirements, and ultimately improves health outcomes.

To inform the WBC process and help guide where active transportation investments could be allocated to improve community health, criteria that focused on health-related considerations were used in the project prioritization process. In addition, specific health considerations were included in WBC performance measures, which will be used to track plan progress related to various targets and health outcomes.

See **Appendix D: Technical Memorandum 2: Baseline Health Conditions** for a more detailed description of the health indicators and outcomes and how Clackamas County compares to the state of Oregon as a whole.

*CDC Behavioral Risk Factors Surveillance System (BRFSS), 2016-2019 age-adjusted percent.

Equity and Communities of Interest

While data demonstrates that a safe, connected active transportation network benefits community health, we also know that transportation investments have not been made equally in the past. Communities of Interest* tend to live in places that lack robust safe walking and biking infrastructure and therefore often face greater barriers to walking and biking and tend to experience worse health outcomes compared to county averages. In response to these disparities, WBC developed a Transportation Equity Index to help us understand where Communities of Interest are living across Clackamas County and assist project prioritization.**

The Transportation Equity Index uses the following inputs to identify Communities of Interest:

- Black people, Indigenous people, and People of Color (BIPOC)
- Immigrants
- People with limited English proficiency
- Low-income and low-wealth community members
- Low- and moderate-income renters and homeowners
- People with disabilities
- Youth and seniors

Census block groups with a **Transportation Equity Index score** above the county average across are called **Equity Focus Areas**.***

Applying Equity

To ensure safe walking and biking options are available for everyone regardless of age, ability, race, income, gender and background, equity was incorporated into the Walk Bike Clackamas plan as follows:

1 Valuing Community Expertise

Clackamas County recognizes the lived experiences and time of our Walk Bike Advisory Committee members are valuable. The project team worked with the Oregon Department of Transportation to ensure WBAC members were offered stipends to compensate them for their contributions.

*Communities of Interest: Black people, Indigenous people, and People of Color (BIPOC); immigrants; people with limited English proficiency; low-income and low-wealth community members; low- and moderate-income renters and homeowners; people with disabilities; youth and seniors. For more detail, see the Walk Bike Clackamas Title VI and Equity Assessment Memo.

** Technical Memorandum 1: Health Equity Framework describes how health factors are influenced by systems, environments, and individual factors.

*** For more information on the Equity Index Methodology, see Technical Memorandum #4: Existing Conditions Analysis.

2 Meeting People Where They Are and When They Can Attend

Community Conversations and Public Engagement Events were located at events and destinations where residents already gathered to reach people where they are. The website, on-line survey, and digital campaigns provided the opportunity for people to weigh in whenever they had availability.

3 Leading with a Health Equity Framework

Health and equity are foundational elements of this planning process. The project team consulted the County's Health, Housing, and Human Services Department on available data to assess baseline health conditions and crafted a Health Equity Framework to understand this project's potential and responsibility to advance equity and improve health outcomes.

4 Integration with Plan Goals

This ensures that equity is embedded into plan objectives and performance measures and establishes equity as a key criterion for project prioritization and ongoing decision-making.

5 Prioritizing Projects in Places with the Greatest Need

The transportation equity index measure identified the distribution of race, ethnicity, linguistic isolation, low income, limited transportation resources, older adults, youth, and disability. By including a quantitative measure reflecting the concentration of these groups, locations with higher concentrations scored higher during project prioritization. Figure 3 illustrates the areas with the highest scores on the equity index in red.

6 Supportive Programs for Walking and Biking

Programs that support the choice to walk and bike can have positive impacts on expanding transportation options for Communities of Interest based on

What is Equity?

Equity: Providing varying levels of support – based on specific needs – to achieve greater fairness of treatment and outcomes.

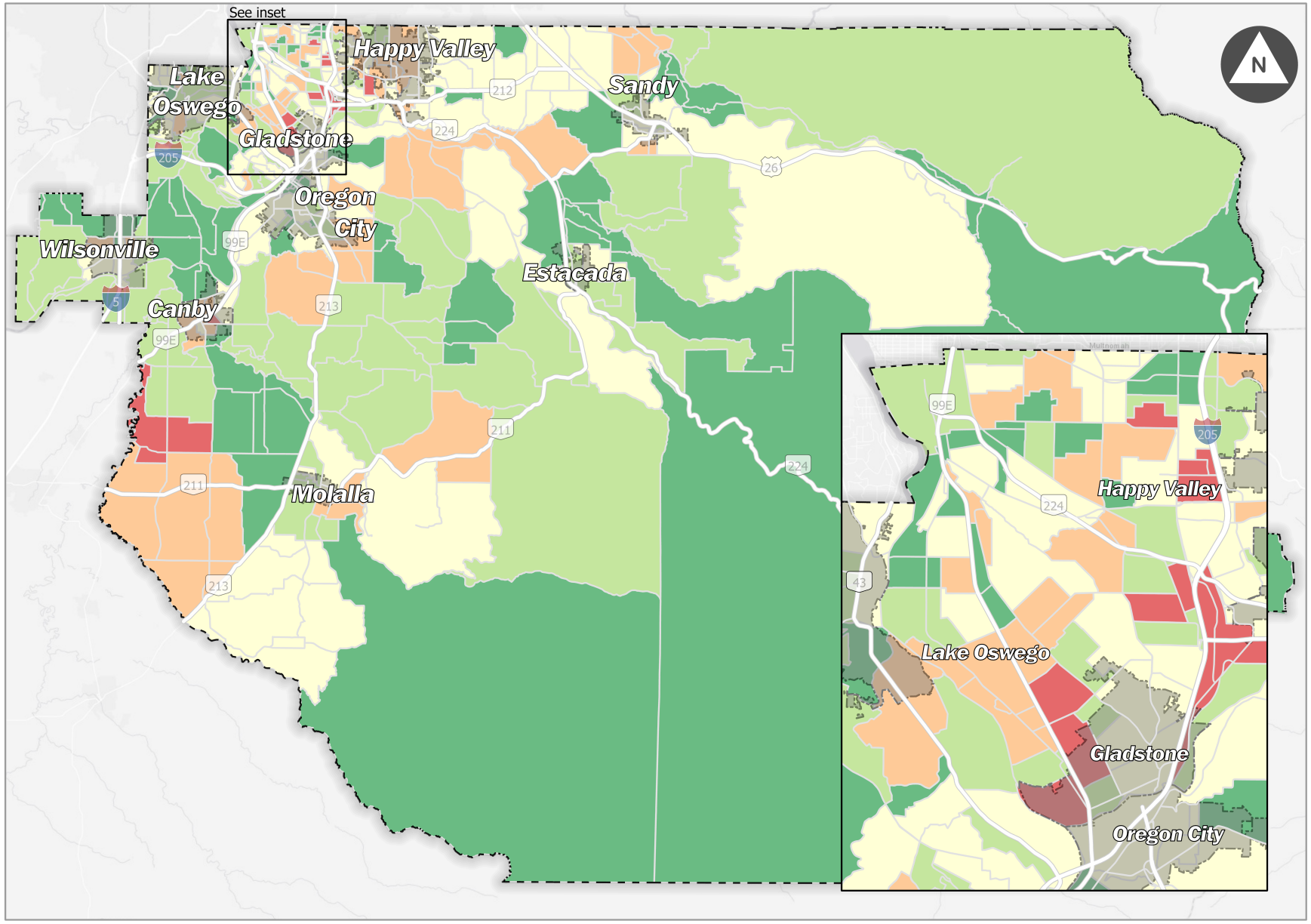
Definition derived from language in the State of Oregon Equity Framework

how programs are implemented and where programs are focused. Program delivery can build community partnerships and provide extra support, such as translations and language interpretations.

7 Securing and Directing Funding

Certain funding sources, such as Safe Streets and Roads for All (SS4A), Reconnecting Communities and Neighborhoods, are dedicated to improving transportation access within Communities of Interest. Securing this funding not only increases the transportation options of these communities, but the broader population as well.

Figure 3 Transportation Equity Index Map



2.2 Planning Subareas

Given the county's vast geography, five plan subareas were developed at the start of the project. Figure 4 illustrates the five planning subareas, which allow for a more nuanced analysis of conditions and investments in different parts of the county. These areas follow development patterns, as well as natural features such as the Willamette and Clackamas rivers and the general topography. This section describes existing conditions related to population and demographic trends within each subarea.

Figure 4 Clackamas County Planning Subareas

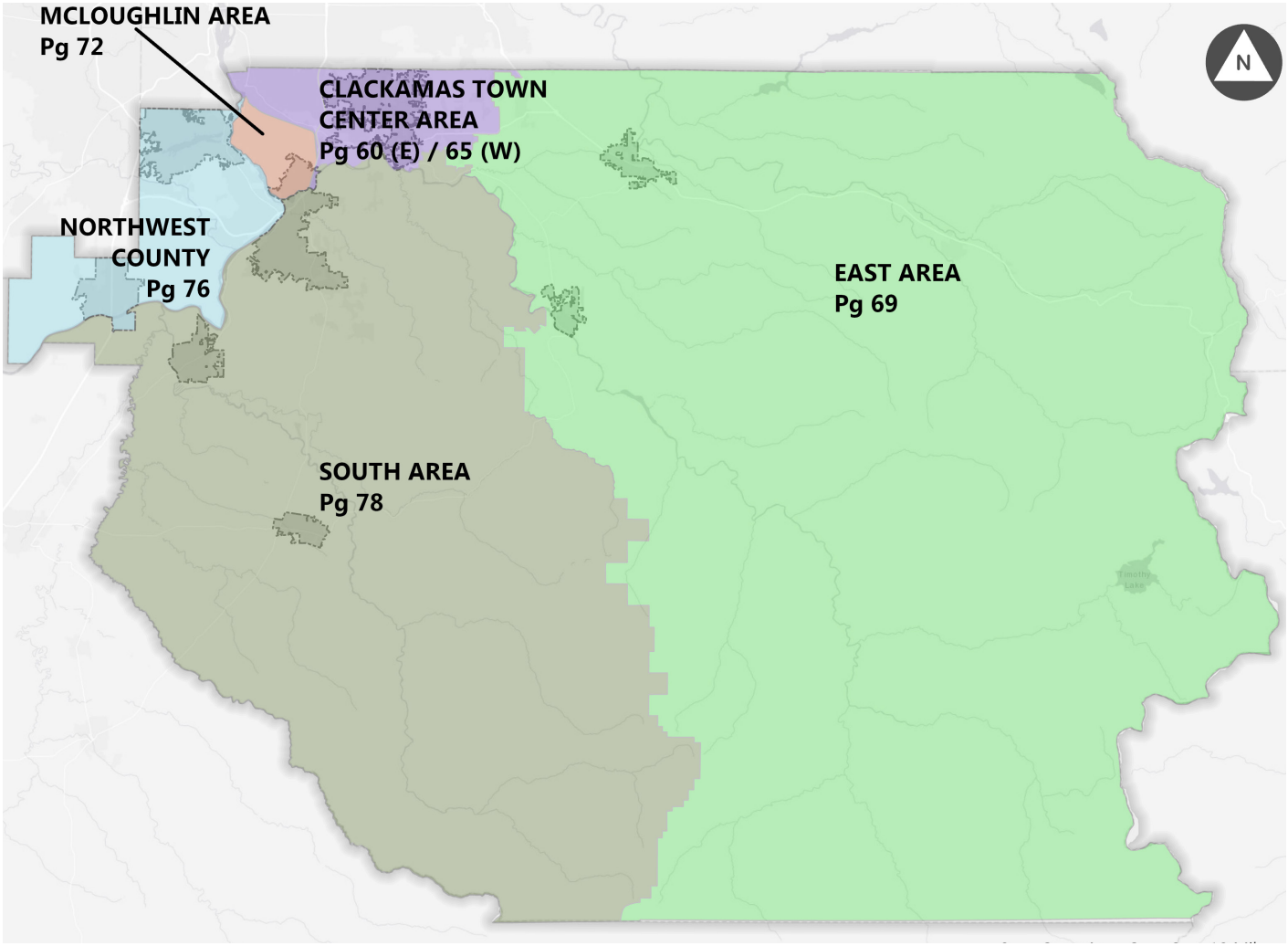


Figure 5 Land and Population by County Planning Subarea

Area	Countywide			Unincorporated County		
	Population	Acreage	Median Residential Density (people/acre)	Population	Acreage	Median Residential Density (people/acre)
Northwest County	104,336	43,124	2.42	19,876	26,978	0.74
Greater McLoughlin Area	49,615	6,820	7.28	36,351	5,217	6.97
Clackamas Town Center Area	101,780	27,255	3.73	53,889	16,469	3.27
South County*	113,285	400,164	0.28	66,463	389,153	0.17
East County**	45,917	716,737	0.06	38,869	712,998	0.05
Countywide	**414,933**	**1,194,099**	**0.35**	**215,448**	**1,150,815**	**0.19**

*83.0 square miles, or 13.2%, of Southwest County is Federal land.

** 578.6 square miles, or 51.4%, of East County is Federal land.

2.3 Pedestrian and Cyclist-involved Crashes

Clackamas County has a goal to eliminate fatal and serious injury crashes on its roads by 2035.

Between 2016 and 2022, 93 people were killed or seriously injured in pedestrian or bicyclist-involved crashes in Clackamas County, with the most crashes involving pedestrians. The areas of the county with the highest and lowest population densities (Greater McLoughlin Area and East County, respectively) had the highest proportions of fatal or serious pedestrian-involved crashes.

Figure 6 Crashes between 2016-2020 by Transportation Planning Subareas

Area	Pedestrian involved crashes			Bicyclist involved crashes		
	All crashes	Fatal or Serious Injury Crashes	Percentage Fatal or Serious Injury Crashes	All crashes	Fatal or Serious Injury Crashes	Percentage Fatal or Serious Injury Crashes
Northwest County	50	10	20%	39	0	0%
Greater McLoughlin Area	21	16	76%	35	1	3%
Clackamas Town Center Area	90	25	28%	75	11	15%
South County	68	16	24%	52	5	10%
East County	19	9	47%	8	0	0%
Countywide	**278**	**76**	**-**	**199**	**17**	**-**

Data Source: ODOT Crash Data Viewer

2.4 Active Transportation Conditions

Existing pedestrian network snapshot

Sidewalks are key to increasing walking as a mode of transportation, but most roads in unincorporated Clackamas County do not have any sidewalks.

In unincorporated Clackamas County, streets without sidewalks account for nearly 93% of the total roadway centerline mileage. This is in large part because sidewalks are required in urban areas, but not in rural areas. Sidewalk availability is highest in Clackamas Regional Center area and least common in Southwest County.

Figure 7 Sidewalks in Clackamas Regional Center Area

PEDESTRIAN NETWORK FACTS

Major Streets

- Four percent of major and five percent of minor arterials have sidewalks on at least one side
- Eight percent of principal arterials have sidewalks on both sides

Local Streets

- Eight percent of local streets have sidewalks on both sides

Existing bicycle network snapshot

Clackamas County has over 100 miles of bikeways in unincorporated areas, yet much of the network has gaps and inconsistencies.

There are 102 miles of bikeways on unincorporated Clackamas County roads and 29 miles of multi-use paths. While most current county bikeways are traditional bike lanes, the planned bikeways include protected bike lanes, shoulder bikeways, shared streets, and off-street facilities such as hard surface multi-use paths. (County data on existing bikeways data does not distinguish between striped bike lanes, buffered bike lanes, and separated bike lanes.)

Figure 8 Hard Surface Trail on SE Monroe St between SE Fuller Rd and SE 82nd Ave

BICYCLE NETWORK FACTS

- Most of the on-street bikeways in the County are in the Clackamas Regional Center Area and the McLoughlin Area
- Nearly two-thirds of the existing multi-use paths are in East County or in the Clackamas Regional Center Area

Figure 9 Existing Transportation Infrastructure within Planning Subareas

Area	Number of Centerline miles	On-street bikeway facility mileage	Multi-use path* mileage	Sidewalk Mileage		
				Both sides of street	One side of street	Neither side
Northwest County	138.4	2.0	3.8	2.5	4.4	131.6
Greater McLoughlin Area	130.1	23.8	5.4	15.5	15.2	99.4
Clackamas Town Center Area	226.5	33.5	9.3	62.7	28.5	135.3
South County	770.7	33.1	0.8	0.9	2.3	767.5
East County	554.7	9.3	9.5	0.9	1.1	552.7
Countywide	**1,820.3**	**101.7**	**28.9**	**82.4**	**51.5**	**1,686.4**

*Sometimes referred to as off-street bikeway facility.

2.5 Current Walking and Bicycling Levels

The percentage of workers who walk and bike to work in Clackamas County is less than the percentage in Oregon overall.

Figure 10 Workers who Bike and Walk to Work*

	Clackamas County	State of Oregon
Bike mode share to work	0.6%	2.0%
Walk mode share to work	2.1%	3.7%

* Data Source: American Community Survey (ACS) 5-year percentage data for 2015-2019


Walk Bike Clackamas
Open House
Comment Cards
CLACKAMAS
COUNTY
Walking & Biking
Campaigns
Open Streets
Safety
Walking & Rolling
Health & Climate
Potpourri

3. Public Engagement

Stakeholder engagement was a critical element of the Walk Bike Clackamas process and recommendations.

The Walk Bike Plan was guided by four engagement milestones consisting of touchpoints with an advisory committee, traditional and non-traditional open house events and public surveys. The engagement milestones were timed to inform each of the following elements of the plan:

- Existing conditions
- Goals and objectives
- Needs and potential projects and programs to satisfy them
- Moving to implementation

Figure 11 Clackamas County Staff at a Pop-up Outreach Event in December 2022

3.1 Walk Bike Advisory Committee

The Walk Bike Advisory Committee (WBAC) guided the plan by advising the county at key milestones and providing input on project deliverables at four meetings.

The 18 WBAC members represented a wide range of community values and interests including community and professional representatives. WBAC membership consisted of a balance of geographic and special interests, gender, age, and ability to ensure representation among groups historically under-represented.

Figure 12 WBAC Summary of Activity

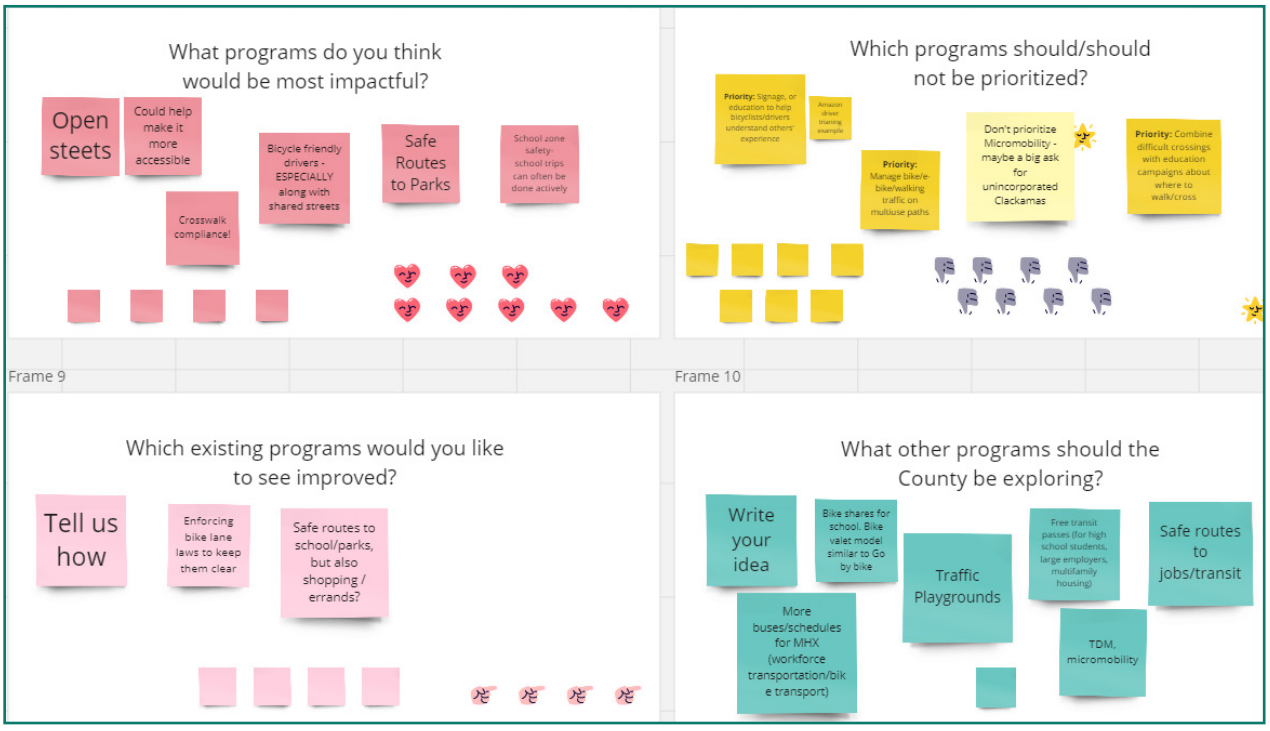
	WBAC #1	WBAC #2	WBAC #3	WBAC #4
Date	10/26/22	2/8/23	7/26/23	4/16/24
# of WBAC Attendees	14	13	16	12
Topics Covered	• Project purpose and need • WBAC member expectations	• Existing conditions summary • Process and outcomes from Public Engagement #1 • Defining project success • Shared Streets • Supportive bike and pedestrian programs	• Agency Partner Workshop Recap • Gap and Deficiencies Analysis highlights • Project identification and prioritization framework	• Overview of public draft plan • Review project maps and tables • Discuss planned public engagement activities
Key Decisions and Outcomes	• What affects one's experience walking, rolling, and biking in Clackamas County; how to improve on this experience	• Metrics for successful project goals • Possible locations for Shared Streets • New programs that would be most impactful in the county and existing programs that should be improved	• Prioritization criteria adjustments • Project identification confirmation	• Options for reaching out to stakeholders to encourage commenting on the final plan • Discussion about final draft plan and value of the information for future county transportation planning

What we heard

The WBAC identified the following key elements for the final plan:

- Personal safety and comfort accessing transit stops , sidewalks, and bicycle networks.
- Collaboration between the county and cities.
- A focus on public engagement.
- Use of Shared Streets to connect with the larger active transportation network.
- Installation of infrastructure to expand Safe Routes to School and connections to other everyday destinations.
- Explicit descriptions of how equity will be integrated in project identification and scoring.
- Include facility maintenance into project recommendations.
- Safety as an important overarching goal.
- Equitable distribution of projects among all five planning subareas.

Figure 13 Miro Board from WBAC Meeting #2 with Input on Programs



3.2 Public Events Summary

Public engagement included Community Conversation pop-up events, a virtual interactive map, three public surveys, social media posts, interested parties list with email blasts, presentations to community groups and in-person and virtual open houses.

By the Numbers:

Milestone #1	Milestone #2	Milestone #3	Milestone #4
Late Fall 2022	February 2023	August 2023	2024
Community Conversations	Virtual interactive map and survey	Open House event & survey	Public input on draft report and virtual open house
110 participants	~200 survey respondents	416 participants	660 survey respondents

Milestone #1: Community Conversations: Project Kick-off

The first round of public engagement in late fall 2022 included four in-person Community Conversations held throughout the county and a corresponding online survey, with over 110 total participants. Community Conversations is a public engagement technique centered around holding events and open houses in locations where people are already gathering. "Bringing information to residents" can allow for more meaningful dialogue and wider dissemination of information. Engagement Milestone #1 was designed to build awareness and support for WBC, including:

- Understand what people like and dislike about walking, rolling, and biking in Clackamas County.
- Begin to identify gaps and deficiencies in the walking, rolling, and biking networks.
- Understand community priorities to inform project goals and objectives.

What we heard

- Clackamas County needs more active transportation and multimodal infrastructure improvements.
- People want to use Active Transportation in all parts of Clackamas County but don't, because they are concerned about safety due to lack of infrastructure and proximity to vehicle traffic.
- County needs more separated and/or protected bike lanes

Milestone #2:
Interactive Map Survey: Opportunities and Barriers

The second round of public engagement consisted of a virtual open house and interactive map-based survey.

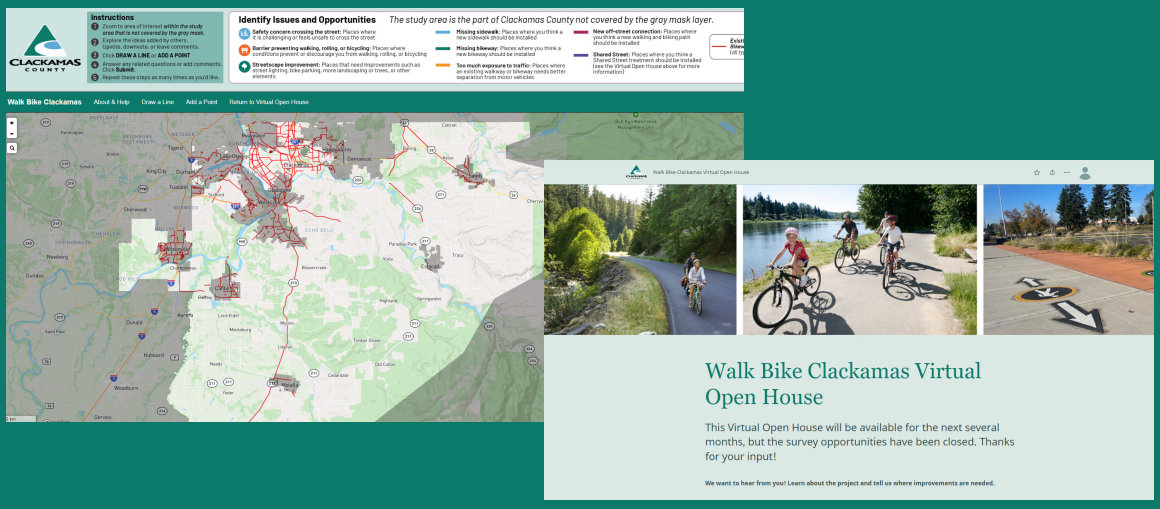
Engagement Milestone #2 was designed to:

- Explain the project to members of the public.
- Solicit feedback on opportunity locations for new and /or enhanced facilities.
- Share and request feedback on draft goals.
- Solicit feedback on challenges and barriers to walking and bicycling.
- Gather suggestions on needed bikeway, sidewalk and crosswalk locations.
- Introduce the concept of Shared Streets and gather suggestions on potential locations.

The Virtual Open House webpage received more than 900 page views, more than 200 people responded to the surveys and shared nearly 800 written comments, and participants shared 270 submissions to the online map tool highlighting barriers and opportunities for active transportation.

What we heard

- Survey respondents:
  - Supported the draft goals and the Shared Streets concept.
  - More than 70% indicated strong support for all six goals; safety had the most support, while equity had the least.



Milestone #3:
Open House and Survey: Project Priorities

Public Engagement Milestone #3 consisted of an in-person open house at North Clackamas Parks & Recreation District's (NCPRD) Movies in the Park at North Clackamas Park, multi-day tabling at the Clackamas County Fair, and an online survey. The purpose was to:

- Share findings from the gaps and deficiencies analysis.
- Present and gather reactions to recommended program priorities.
- Obtain feedback on draft pedestrian and bicycle projects, and priority improvements.

The two in-person events attracted 416 visitors. The online survey received 202 responses, with each planning subarea receiving 40 to 100 comments.

What we heard

Themes from this engagement milestone reinforced the WBC goals, and suggested key projects and preferences for types of investments:

- Safety for active transportation remains a concern.
- Participants at in-person events voiced the need for separated pedestrian and bicycle facilities, and/or paved shoulders in rural areas, and at other specific locations.
- There are network gaps between destinations. There are many destinations, but walking and biking connections between them are inadequate and feel unsafe.
- Survey respondents emphasized the importance of maintenance on county roadways.

Among the recommended programs, people expressed the most support for School Zone Safety campaigns, Open Streets events, Bicycle-Friendly Drivers campaign, and a No Parking in the Bike Lane campaign.

Milestone #4:
Online Survey: Draft Final Report Recommendations

Public Engagement Milestone #4 consisted of five online surveys, available in both English and Spanish, from July 16-August 15, 2024. The purpose was to give the public the opportunity to view and express their views on the draft final plan, including:

- Which proposed projects and programs are most important to them, and
- Specific pedestrian and bike infrastructure needs

Each survey focused on and included proposed projects and programs relevant to one of five areas of unincorporated Clackamas County: McLoughlin, Clackamas Town Center, Northwest County, East County and South County. People were able to respond to as many surveys as they wished.

What we heard

- •There were 660 survey respondents.
- •Approximately 2/3 responded from a mobile device.
- •Consistent with what we had been hearing from the public since the project began, safety was the funding priority throughout the county.
- •Large loop trails seemed particularly popular in rankings of specific projects by area.
- •In the McLoughlin area, there were many requests for improvements around Concord Avenue.
- •Many people expressed an interest in a pedestrian/bicycle bridge across the Willamette River between Oak Lodge and Lake Oswego.

Project preferences by subarea are listed below, sorted by project number. Respondents were asked to choose from the identified Tier 1 choices, but Tier 2 and 3 projects were also shown for reference.

Figure 14 Survey Respondents' Preferred Projects

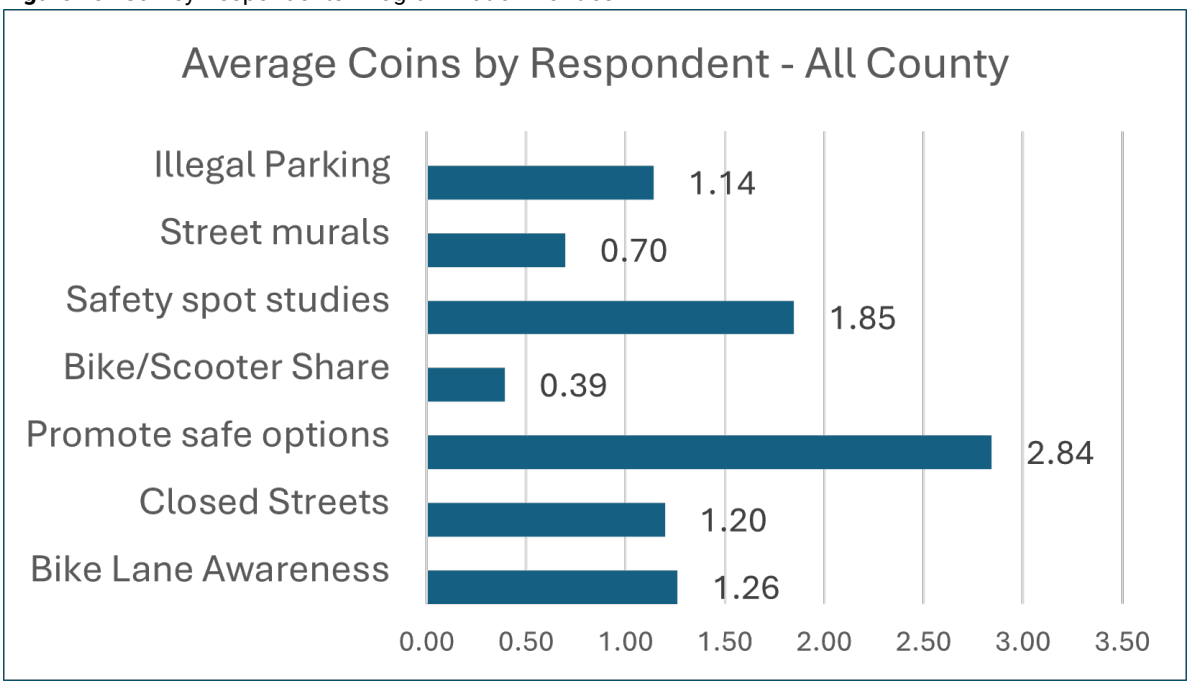
Subarea	Project	Project ID
South Area	S Leland Road paved shoulders	S106
South Area	Newell Creek / Oregon City Loop Trail	S107
South Area	S Henrici Road paved shoulders	S108
South Area	Beavercreek Multi-Use Path	S109
McLoughlin Area	OR 99E (McLoughlin Blvd) pedestrian facilities & bikeways	M103
McLoughlin Area	Oatfield Road pedestrian facilities & bikeways	M108
McLoughlin Area	Thiessen Road pedestrian facilities & bikeways	M110
McLoughlin Area	OR 99E (McLoughlin Blvd) / SE Jennings Ave bike crossing	M114
Clackamas Town Center Area	OR 224 Multi-Use Path	CW115
Clackamas Town Center Area	Harmony Road pedestrian facilities & bikeways	CW116
Clackamas Town Center Area	SE Lake Road pedestrian facilities	CW117
Clackamas Town Center Area	SE Lake Road pedestrian facilities and bikeways	CW118
Clackamas Town Center Area	SE 82nd Avenue Multi-Use Path connection	CW120
Clackamas Town Center Area	SE 82nd Drive pedestrian facilities and bikeways	CE102
Clackamas Town Center Area	Sunrise Multi-Use Path	CE106
Clackamas Town Center Area	Scouters Mountain / Mt Scott Loop Trail	CE107
Clackamas Town Center Area	OR 224 bikeways	CE118
Northwest Area	Willamette River Greenway	N102
Northwest Area	Lake Oswego to Milwaukie Bridge (OGLO)	N103
East County Area	Tickle Creek Trail	E104
East County Area	Cazadero Trail	E107
East County Area	OR211 paved shoulders	E109

Respondents were given 10 coins and asked to assign them based on their preference for seven possible programs:

- Close streets for community events
- Promote safe driving and walking options
- Build awareness about safe driving near bike lanes
- Target illegal parking in bike lanes
- Provide shared bike or scooter rentals
- Study key locations for safety solutions
- Support neighborhood street murals to calm traffic

The results reaffirmed previous findings that safety is a top priority across the county.

Figure 15 Survey Respondents' Programmatic Priorities



3.3 Other Engagement Tools

The following tools were used to solicit public and stakeholder input throughout the course of WBC.

- **Project website:** to make it easy for people to learn more about the project and access meetings and material.
- **Fact sheet:** to summarize the project purpose, desired outcomes, schedule, and opportunities on a single page.
- **Interested parties list:** for anyone who signed-up online or at in-person events to receive project updates and notifications by email.
- **Briefings at monthly PBAC meetings:** to inform the Pedestrian and Bicycle Advisory Committee (PBAC) about the study process and key decisions.
- **Agency Partner Workshop:** to coordinate pedestrian, bicycle, and other transportation efforts between Clackamas County and cities in the county. In the Workshop, we:
  - Introduced WBC
  - Learned about projects being planned by other agencies
  - Identified places where Clackamas projects would extend connectivity between unincorporated and incorporated areas
- **News releases and social media:** to share information about project outreach opportunities and meetings with the general public.
- **Community Planning Organizations (CPO) meetings:** to inform residents of project and obtain feedback.

Appendix B: Public Involvement Plan describes the tactics in more detail.

Figure 16 WBC Website

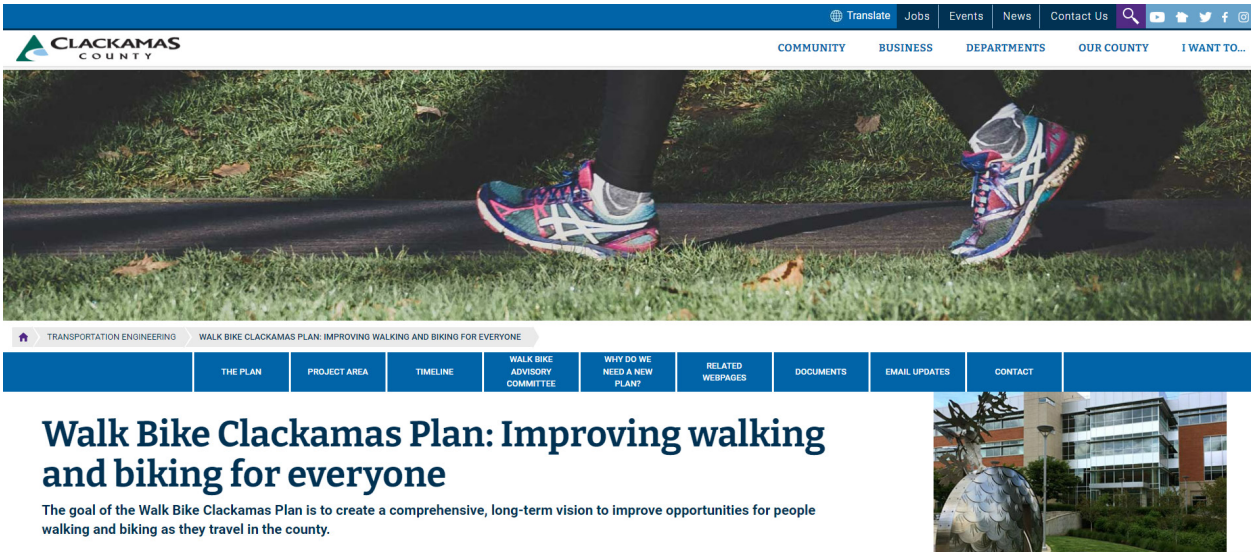
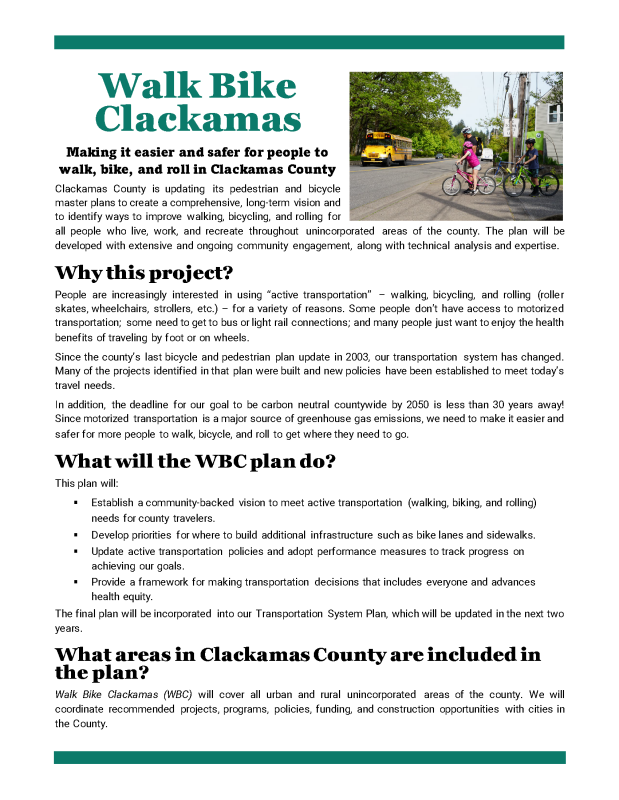


Figure 17 Fact Sheet



Walk Bike Clackamas

Making it easier and safer for people to walk, bike, and roll in Clackamas County

Clackamas County is updating its pedestrian and bicycle master plans to create a comprehensive, long-term vision and to identify ways to improve walking, bicycling, and rolling for all people who live, work, and recreate throughout unincorporated areas of the county. The plan will be developed with extensive and ongoing community engagement, along with technical analysis and expertise.

Why this project?

People are increasingly interested in using "active transportation" – walking, bicycling, and rolling (roller skates, wheelchairs, strollers, etc.) – for a variety of reasons. Some people don't have access to motorized transportation; some need to get to bus or light rail connections; and many people just want to enjoy the health benefits of traveling by foot or on wheels.

Since the county's last bicycle and pedestrian plan update in 2003, our transportation system has changed. Many of the projects identified in that plan were built and new policies have been established to meet today's travel needs.

In addition, the deadline for our goal to be carbon neutral countywide by 2050 is less than 30 years away! Since motorized transportation is a major source of greenhouse gas emissions, we need to make it easier and safer for more people to walk, bicycle, and roll to get where they need to go.

What will the WBC plan do?

This plan will:

- Establish a community-backed vision to meet active transportation (walking, biking, and rolling) needs for county travelers.
- Develop priorities for where to build additional infrastructure such as bike lanes and sidewalks.
- Update active transportation policies and adopt performance measures to track progress on achieving our goals.
- Provide a framework for making transportation decisions that includes everyone and advances health equity.

The final plan will be incorporated into our Transportation System Plan, which will be updated in the next two years.

What areas in Clackamas County are included in the plan?

Walk Bike Clackamas (WBC) will cover all urban and rural unincorporated areas of the county. We will coordinate recommended projects, programs, policies, funding, and construction opportunities with cities in the County.

How will public input be used to create the plan?

Walk Bike Clackamas will keep community voices in the center of the process in every step of plan development.

- **The Walk Bike Advisory Committee (WBAC):** Community members and technical experts will review project work and advise the project team.
- **Public engagement:** A variety of activities and processes will make sure the project team hears from county residents at community events, libraries, senior centers, and other places people visit every day. The team will seek your questions, concerns, and ideas about walking, biking, and rolling in Clackamas County, and work to provide the information you need to help create a meaningful, workable plan. The plan will also prioritize in-person outreach in areas with concentrations of communities of interest.
- **Community survey and web map:** A virtual mapping tool and survey will be used to invite public input to identify walking and biking needs, and project ideas; comparable materials will be used to invite input from people with limited access to technology.

A health equity lens will be used in the project

A person's health is strongly influenced by their race, income, and home zip code. Investing in active transportation infrastructure and programs in areas with the greatest need can help reduce disparities in physical activity, related health indicators, and exposure to air and noise pollution.

What's the schedule?

This project began in August 2022 and is expected to be completed in early 2024. There are several key milestones for public input:

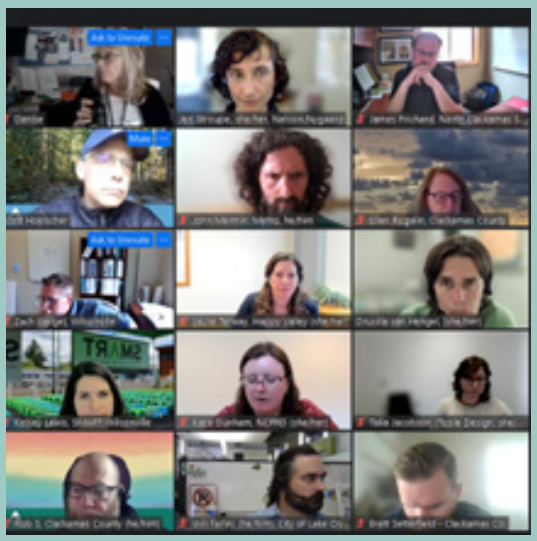
Fall 2022	Winter-Summer 2023	Fall-Winter 2023-24
Setting the stage: Existing conditions, goals, and objectives	**Developing strategies:** Needs assessment and recommended projects	**Moving to implementation:** Draft and final plan, and regulatory amendments

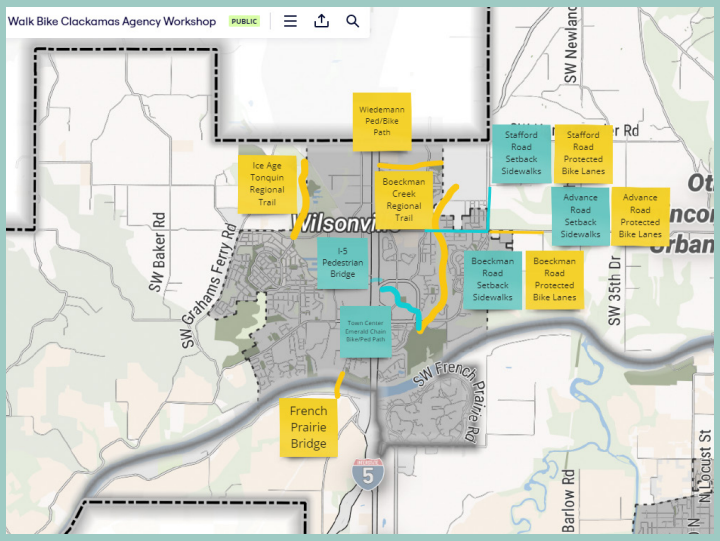
Have questions? Want to follow our progress?

Visit the project website to learn more and sign up for updates:
Clackamas.us/engineering/bikewalk
Contact Scott Hoelscher, Project Manager
503-742-4533 | ScottHoe@clackamas.us

CLACKAMAS COUNTY

Figure 18 Agency Partner Workshop and Miro Board





CLACKAMAS COUNTY

4. Goals and Objectives

4.1 Overall Plan Vision

Walk Bike Clackamas is a comprehensive, long-term roadmap to improve opportunities for people of all ages and abilities walking and biking as they travel in the county.

4.2 Goals and Objectives

Goals are general statements of what the community wants to achieve.

Objectives are steps needed to realize goals.

Supportive actions are specific concrete steps county can take to advance the goals and objectives.

Performance measures are specific outcomes that can be monitored and measured to track progress towards WBC goals.

The following goals, objectives, supportive actions, and performance measures are based upon TSP active transportation policies, best practices, survey results, and WBAC input.

See **Technical Memorandum 5: Pedestrian and Bicycle Goals and Objectives** for a list and description of previous plans that informed the vision and goals.

Figure 19 Goals and Objectives

Goal	Objective
Safety Improve the safety of people walking and bicycling through safe street design and supportive programs.	Support safe walking and bicycling by: • Separating people walking, rolling, and bicycling from cars and trucks. • Improving street crossings. • Adding lighting to high-volume pedestrian areas and trails. • Providing dedicated space for people moving at different speeds, especially on shared paths with both people walking and using electric devices. • Promote and sustain Safe Routes to School programs in all Clackamas County school districts.

Goal	Objective
 **Accessibility** Ensure walkways and bikeways are accessible for people of all ages, abilities, and incomes.	• Repair and maintain existing sidewalks, trails, bikeways, ramps and wayfinding signs. • Define an all-ages and abilities network for walking and biking through places with a concentration of community destinations. • Create comfortable walking and biking connections to public transit. • Provide end-of-trip and streetscape amenities to support people walking and bicycling.
 **Connectivity** Develop and maintain walking and biking routes that provide convenient and clear connections to important community destinations in Clackamas County.	• Form connected networks of trails, sidewalks, and bikeways, including street crossings near places with concentrations of community destinations such as parks, natural areas, schools, commercial districts, and other destinations. • Coordinate with and connect to existing and planned active transportation projects in incorporated areas within the county. • Recognize the different facility design that may be needed in rural areas. • Design bicycle facilities considering the land use context and adjacent motor vehicle speeds and volumes.
 **Sustainability** Expand and promote active travel (walking and biking) options that optimize the environment, the economy, and community benefits.	• Encourage and support active transportation mode shift with educational campaigns, incentive programs, or community events. • Include Complete Streets elements in street design and project delivery. • Increase tree canopy and native, climate adapted and low impact development plantings along walkways and bikeways.* • Develop a travel options program to focus on strategies to manage transportation choices and increase the appeal of walking, bicycling, and other non-single occupancy vehicle modes.
 **Equity** Focus investments to ensure safe transportation alternatives regardless of age, race, income, gender, and ability.	• Provide equitable access to active transportation facilities for all communities, especially Communities of Interest. • Improve access to job opportunities, medical care, local commercial services, and neighborhoods within Communities of Interest. • Integrate equity into all aspects of the planning, development, financing, and implementation of projects and programs.
 **Health** Plan and provide infrastructure that allows people to safely walk, run or cycle for improved health.	• Prioritize active transportation networks and corridors that connect residents to medical care facilities, schools, parks and recreation facilities, and transit facilities. • Encourage physical activity through active transportation for recreation, commutes, and other trips. • Design and construct active transportation facilities that encourage an active lifestyle that will improve residents' physical and mental health.

*U.S. Environmental Protection Agency. Urban Runoff: Low Impact Development: https://www.epa.gov/nps/urban-runoff-low-impact-development

4.3 Supportive Actions

The following actions are concrete steps the county can take to meet plan goals.

Safety

- Provide safe and convenient crossings by coordinating with pedestrian, bicycle, and trail master plans, as well as special transportation plans of the county, Oregon Department of Transportation, the United States Forest Service, Metro, and parks providers.
- Ensure coordinated connections between off-road multi-use path and trail systems and on-road pedestrian facilities and bikeway networks.
- Construct shared streets to enhance safety and connectivity, and to supplement the existing bikeway network.
- Pilot new and innovative pedestrian and bicycle treatments that allow for cost-effective solutions, such as advisory bike lanes.
- Optimize crossing times for pedestrians at signals.
- Reduce turning movement conflicts at intersections.
- Develop street painting program guidelines to foster lower speeds through neighborhood intersections.
- Construct bicycle facilities separated or protected from vehicle traffic whenever possible.

Accessibility

- Direct transportation investment to adequately maintain walking and biking facilities.
- Pair infrastructure changes with enforcement activities and messaging to communicate the importance of safety and access to all travelers.
- Install/pilot new public e-Bike charging and parking stations.

Connectivity

- Coordinate the development of pedestrian facilities and bikeways with neighboring jurisdictions and jurisdictions within the county.
- Install bikeways and informal walkways as part of the ongoing pavement maintenance program.
- Support bicycle and pedestrian projects that improve access to public transit stops and to significant local destinations.
- Identify primary connections in rural areas for bikeways.

Sustainability

- Improve connection between plans for multi-use paths and county Zoning and Development Ordinance (ZDO) requirements for construction.
- Collect bicycle and pedestrian travel counts to gather data on active transportation usage over time. Develop and pilot new methods and technologies for these travel counts to do so more cost-effectively.
- Continue urban bicycle wayfinding program and add new signage when bicycle and pedestrian facilities are constructed.

Equity

- Define data-based equity focus areas/geographic zones in which projects should be prioritized.
- Develop equitable engagement protocol that includes people of all races, incomes, ages, and abilities; consider an equity task force for active transportation projects.

Health

- Identify policies to improve air quality and reduce health risks in Communities of Interest by investing in public facilities and promoting physical activity.

4.4 Performance Measures

Figure 20 WBC Performance Measures

Performance Measures	Safety	Accessibility	Connectivity	Sustainability	Equity	Health
Number of traffic crashes resulting in serious injuries and fatalities to people walking and biking, both inside and outside of areas with concentrations of Communities of Interest	✓				✓	
Number of projects supporting Safe Routes to School plans	✓		✓	✓	✓	✓
Number of miles of designated walkways and bikeways, by facility type	✓	✓	✓	✓	✓	✓
Number/proportion of public transit stops and stations with walkway, bikeway, and crossing connections	✓	✓	✓	✓	✓	✓
Increase in active transportation trips as a proportion of all trips in accordance with the draft Climate Action Plan targets (see mode share callout below)				✓	✓	✓

Performance Measures	Safety	Accessibility	Connectivity	Sustainability	Equity	Health
Number of short- and long-term secure bike parking spaces at significant local destinations	✓		✓	✓		✓
Percentage of population living within ¼-mile of All Ages and Abilities (AAA) bike network*		✓			✓	
Number of Safe Routes to School action plans completed	✓	✓	✓	✓	✓	✓
Proportion of priority projects in areas with Communities of Interest above county average			✓		✓	
Number of schools with a bike education program			✓		✓	✓
Rates for psychosocial health indicators, e.g., poor mental health days		✓			✓	✓
Rates of adults engaging in regular physical activity						✓
Volumes at local trail counters		✓		✓		✓
Number of priority projects in poor health outcome areas based on Health Outcomes Index (Figure 10, Tech Memo 2).						✓

*Contextual Guidance for Selecting All Ages & Abilities Bikeways: https://nacto.org/publication/urban-bikeway-design-guide/designing-ages-abilities-new/choosing-ages-abilities-bicycle-facility/

Active Transportation in the Climate Action Plan

The Clackamas County Climate Action Plan describes the goal to shift transportation from vehicles to transit, active transportation and carpooling by 2040.

The Climate Action Plan Draft Final Report includes six categories of strategies for implementation:

- Advocate for transit expansion and employer-run commute options programs.
- Educate people on travel options and their benefits, and how they are supported by the County (e.g., Safe Routes to School program, events, and giveaways).
- Implement recommended infrastructure improvements from the county's Active Transportation Plan, Bicycle Master Plan, and Pedestrian Plan.
- Incentivize mode shift through safe and connected trails, development requirements, and regulated rideshare destinations.
- Adjust policy to eventually eliminate minimum parking requirements for new and existing developments.
- Use programs such as park and ride at county and public facilities for rideshare, carpooling, or shared micromobility services.


SCHOOL BUS

5. Approach

Walk Bike Clackamas capital projects help address the gaps and deficiencies in the County's active transportation network.

5.1 Project Identification

Projects were identified from past plans, public feedback, and new analyses.

Figure 21 Project Identification

Existing Projects from Past Plans

- Transportation System Plan
- Safe Routes to School action plans
- Active Transportation Plan

Public Feedback

- Online open house
- Interactive map
- In-person open house
- WBAC input
- Community conversations

New Analyses

- Bicycle Level of Traffic Stress (BLTS)
- Bicycle Network Analysis (BNA)
- Pedestrian Level of Traffic Stress (PLTS)

Then we prioritized projects based upon weighted criteria related to the project goals.

Previously identified projects

Projects were pulled from the Transportation System Plan and Safe Routes to School action plans to form a starting point for the network. Additional projects were generated from public input on an interactive map during engagement milestone #2. Priority Active Transportation Routes and newly proposed Shared Street candidates also informed the initial project list.

Below is a breakdown of the projects by source and by road ownership. The process for prioritizing these projects is described in Chapter 6.

Figure 22 Source and Number of Identified Projects

Source	Projects on Clackamas County Roads	Cross-Jurisdictional Projects	Total
Transportation System Plan (2013)	146	25	171
Safe Routes to Schools Action Plans (2016-2022)	24	0	24
Newly identified projects	33	8	41
Total	198	33	236

Analysis

We focused on three key aspects of analysis:

1. **Bicycle Level of Traffic Stress (BLTS):** measures roadway characteristics and stress of bicycling based on separation from traffic and traffic speeds. The spectrum below illustrates the range of BLTS from low stress (BLTS 1) to high stress (BLTS 4). New projects (to fill gaps) and improved bikeway projects (to correct deficiencies and improve the user experience) will create low stress conditions that will be suitable for riders of all ages and abilities, not simply people who are very comfortable riding with traffic.

Figure 23 BLTS Low Stress to High Stress

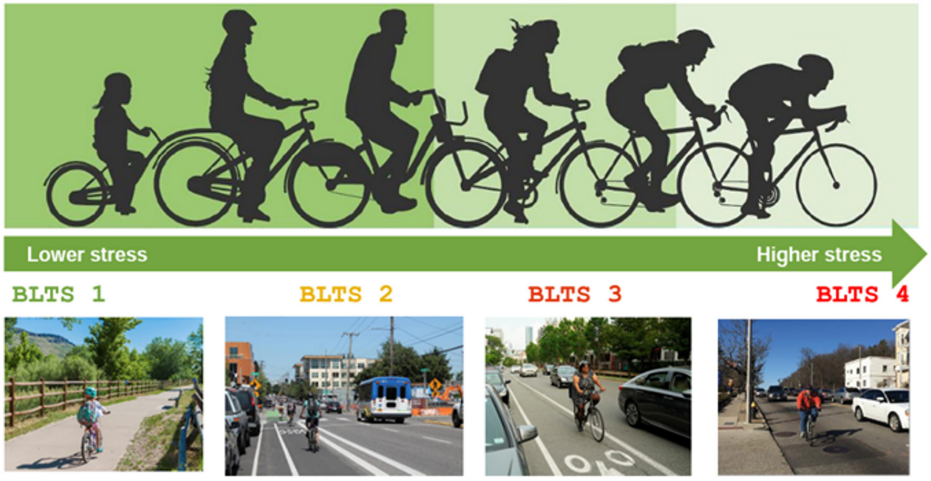
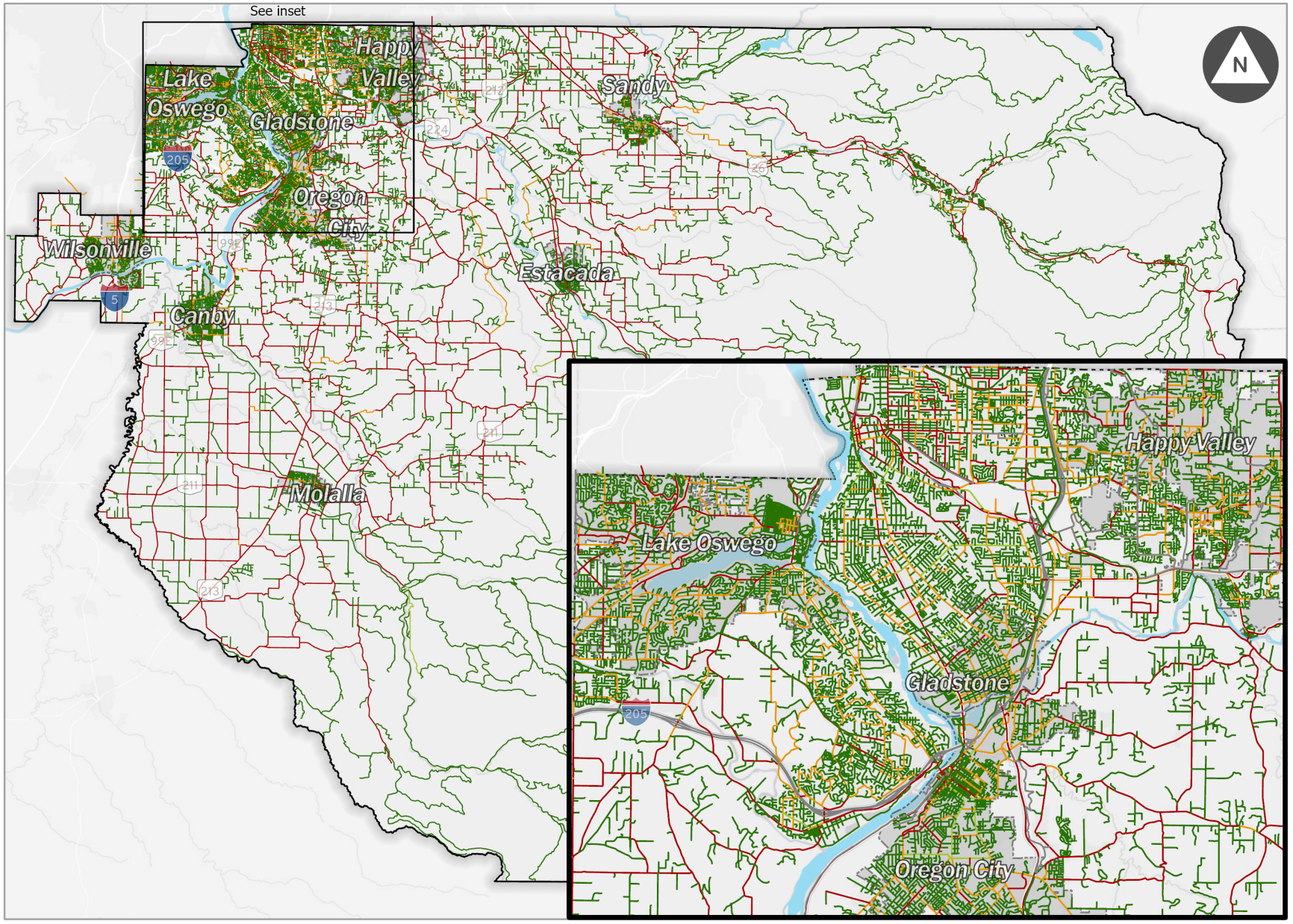


Figure 24 Bicycle Level of Traffic Stress



Bicycle Level of Traffic Stress

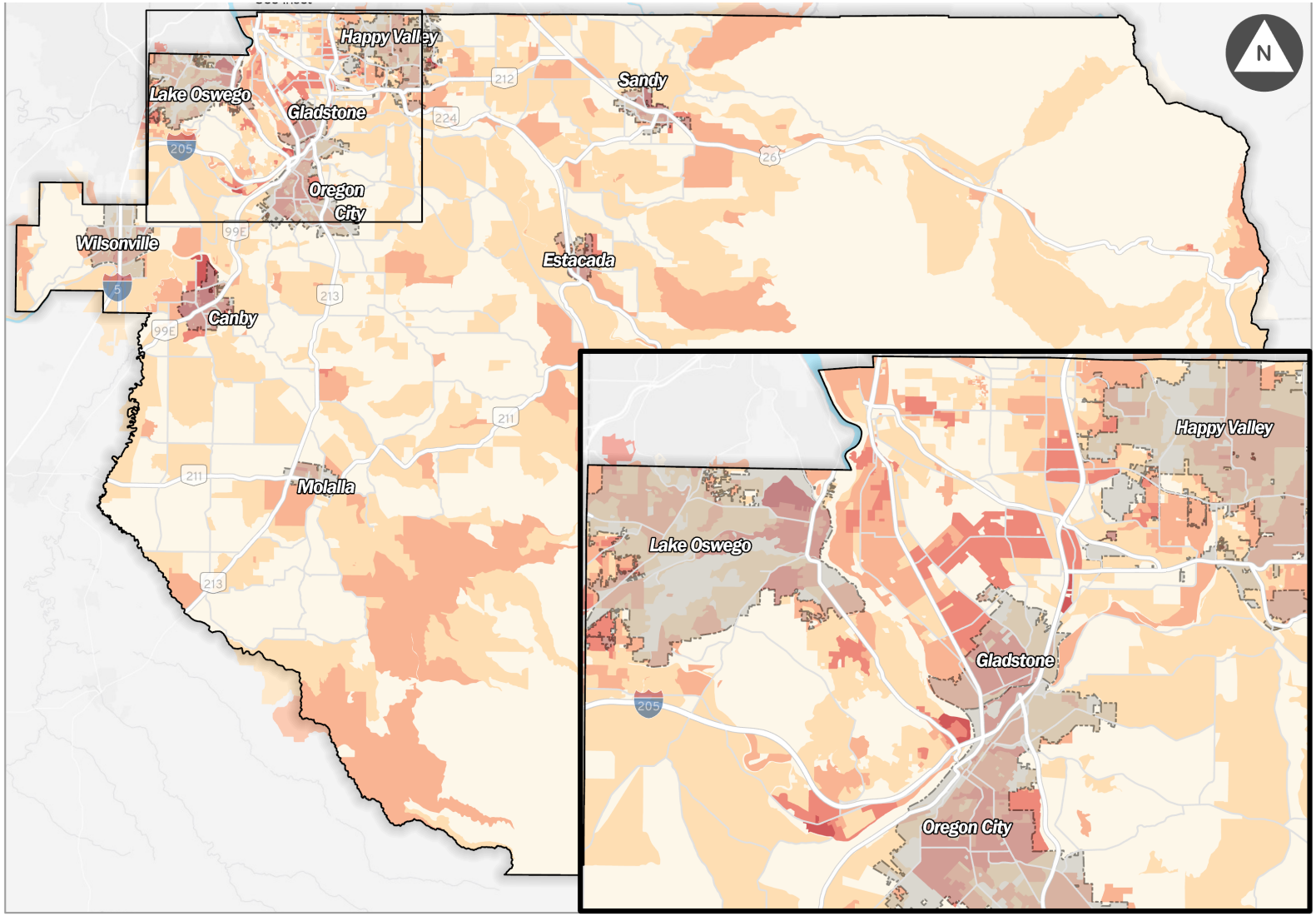
- LTS 1
- LTS 2
- LTS 3
- LTS 4

Generally, roads throughout Clackamas County were identified as either BLTS 1(low stress) or BLTS 4 (high stress); very few were BLTS 2-3. Most higher classification and higher volume roads are BLTS 4. Rural roads outside of incorporated areas that connect incorporated cities or activity areas were majority BLTS 4, leaving few convenient and direct low stress connections across the County.

2

Bicycle Network Analysis (BNA): measures the connectivity to destinations on low-stress roads on the Census block level. This informed potential locations to connect the existing network of bikeways. Lower BNA scores equate to areas with worse connectivity. On the map, the darker colors represent areas with better connectivity, relative to other areas of the county.

Figure 25 Bicycle Network Analysis



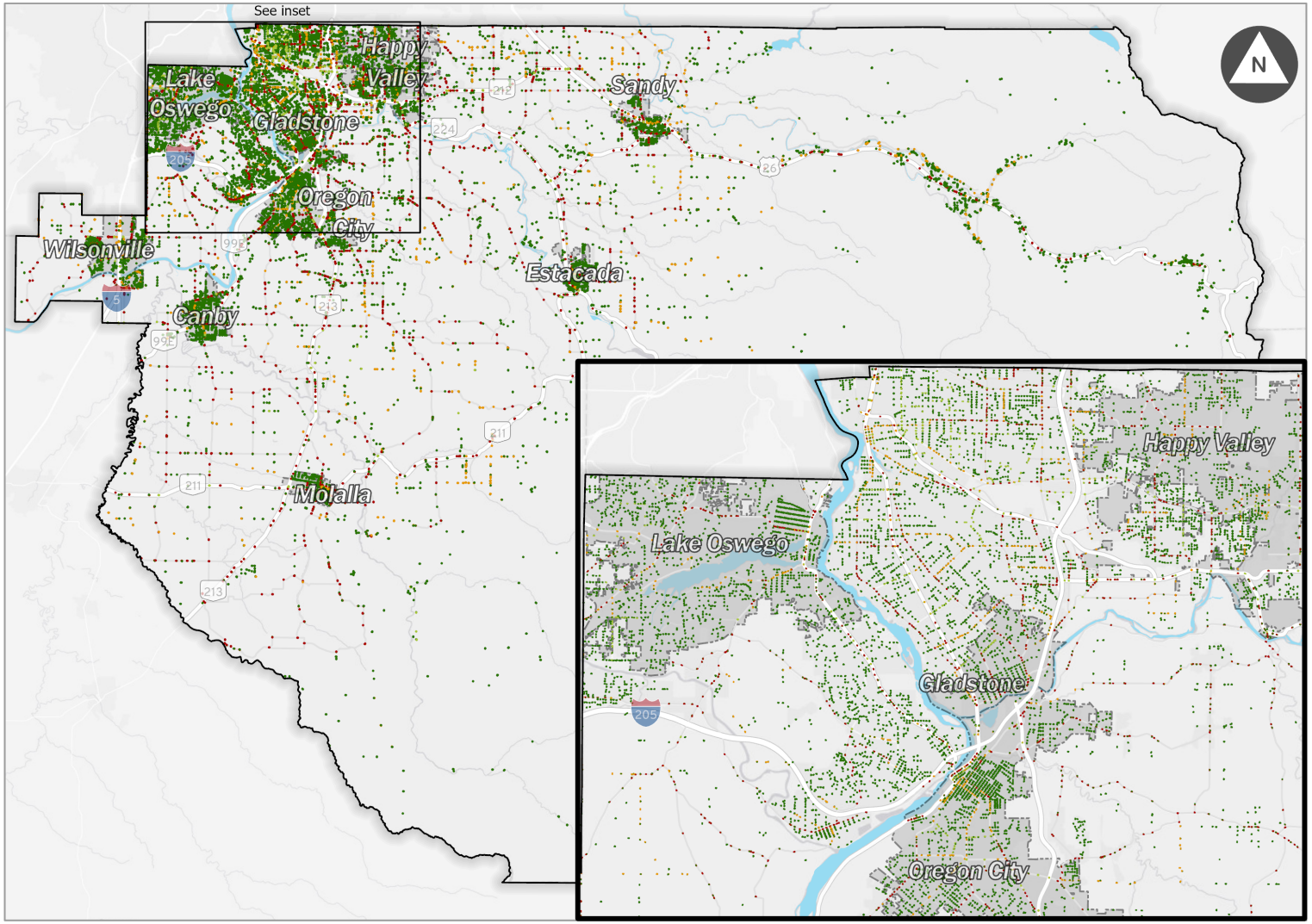
Bicycle Network Analysis Score

0 - 5	30 - 50
5 - 15	50 - 100
15 - 30	

Much of Clackamas County is not well connected via low-stress routes, and relies on high stress routes to connect between destinations. Higher density low-stress connections are present on the outskirts of incorporated areas in the Northwest, McLoughlin, and Clackamas Town Center Areas. In the Southwest Area, there is a higher concentration of low-stress connections southeast and south of Molalla. areas were majority BLTS 4, leaving few convenient and direct low stress connections across the County.

3 **Pedestrian Level of Traffic Stress (PLTS):** measures stress based on roadway characteristics when pedestrians cross at roadway intersections and where trails and multi-use paths intersect streets. PLTS informed opportunities to improve walking infrastructure along and across roadways. A PLTS of 1 represents little to no traffic stress and requires little attention to the traffic situation. A PLTS of 4 represents high traffic stress. Only able-bodied adults with limited route choices would use this facility.

Figure 26 Pedestrian Level of Crossing Stress



Crossing stress scores are generally high on higher classification and higher volume roads throughout the county. Even where adjacent lower classification streets may offer lower-stress alternatives, the high stress crossings on the county's major corridors represents a barrier to encouraging walking and active travel.

Defining Gaps and Deficiencies

The three analyses of BLTS, BNA, and PLTS are tools to identify gaps and deficiencies. In these analyses, gaps are defined as a break in the network. A deficiency refers to the quality of the facility. The following table breaks down the connection between the analyses and how they reveal gaps and deficiencies.

Figure 27 Analyses to Inform Gaps and Deficiencies

	Output Scores	Gap	Deficiency
Bicycle Level of Traffic Stress	BLTS 1-4; 4 is higher stress	BLTS 4 conditions reveals high-stress bicycling conditions with no bicycle facility, or a poor quality facility.	BLTS 3 conditions are high stress bicycling conditions due to poor quality bikeway facilities
Bicycle Network Analysis	0-100; lower scores mean poorer connectivity to low stress facilities	Lower BNA scores reveal a geographic area with insufficient low-stress bikeway connections. Since the output of this analysis is based on Census tracts, it informs both gaps and deficiencies at a different scale of detail compared to BLTS and PLTS.	
Pedestrian Level of Traffic Stress	PLTS 1-4; 4 is higher stress	PLTS 4 reveals high stress crossing conditions due to the lack of crossing infrastructure or the roadway conditions	PLTS 3 or 4 reveals poor quality crossing conditions due to the lack of crossing infrastructure

6. Projects

Given limited resources, we prioritized projects with the most potential to meet WBC goals.

The prioritization criterion and methods described in this chapter illustrate how projects were organized into priority tiers and across planning areas.

6.1 Prioritization Methodology

Public and WBAC input on prioritization criteria resulted in a goal-based scheme for ranking potential projects. Proposed projects were scored based on weighted criteria to create a list of high, medium, and low priority pedestrian and bicycle projects. The criteria are based on the WBC plan goals, with higher consideration given to goals as identified as key project values, indicated in the table below.

Figure 28 Key Project Values

Walk Bike Clackamas Plan Goals	Key Project Value
Safety	✓
Accessibility	
Connectivity	✓
Sustainability	
Equity	✓
Health	✓

Figure 29 Prioritization Criterion by Goal*

Goal	Criterion
Safety	• Proximity to historic pedestrian or bicyclist-involved crashes • Crossing improvements • Safe Routes to School Plan project • Responsive to community concern
Accessibility	• Walkway improvement within ½ mile of one or more destinations • Bikeway or walkway improvement within 1 mile of one or more destinations • Bikeway or walkway improvement within ½ mile of bus stop • Bikeway or walkway improvement within 1 mile of MAX light rail stop • Bikeway or walkway improvement within the Clackamas Regional Center Area or within a Rural Community • Addresses concern expressed through public comment
Connectivity	• Fills a missing bikeway segment along a high level-of-stress road • Expands miles of bikeways along a road that scored as highly stressful • Overlaps the Essential Pedestrian Network • Completely or partially fills a missing sidewalk gap on one or both sides of an arterial or collector • Responsive to community concern
Equity	• 50% or more of the project is in census block group(s) with “above average” or “well above average” equity index score
Health	• Improvement within a ½ mile radius of a park, hospital or medical clinic, long-term care facility, pharmacy, grocery store, public elementary or middle school, or a daycare • Responsive to community concern

*Sustainability was not included as a criterion given the goal focuses on expanding and promoting active travel options rather than adding or improving infrastructure.

6.2 Prioritization Results

There were 236 projects identified countywide, including 76 high priority projects. Projects by planning subarea are quantified in Figure 30. Tier 1 projects are the highest scoring projects based on the analysis and considered high priority needs. Medium priority needs are classified as Tier 2, while the remainder of the projects are assigned Tier 3 status.

Figure 30 Projects by Planning Subarea

Area	Total Projects	Sidewalk Mileage*	Bikeway Mileage	Trail Mileage
Clackamas Town Center Area	103	33.5	56.1	38.7
East County Area	30	2.2	69.1	24.2
McLoughlin Area	40	34.3	29.7	-
Northwest County Area	19	6.9	25.5	9.0
South County Area	44	19.8	141.9	34.9
Total	**236**	**96.7**	**322.3**	**106.8**

6.3 Prioritized Projects by Planning Subarea

Projects include **linear projects** that are proposed along a length of roadway or trail and **spot improvement projects** that are proposed at individual locations. The following maps illustrate each of the projects by subarea by tier, and as either linear or spot improvement projects.

Linear projects

Examples include new bike lanes or new sidewalks.

Spot improvement projects

Examples include crosswalk improvements, intersection upgrades, and new curb ramps.

Clackamas Town Center Area

Figure 31 Linear and Spot Improvement Projects in Clackamas Town Center Area East

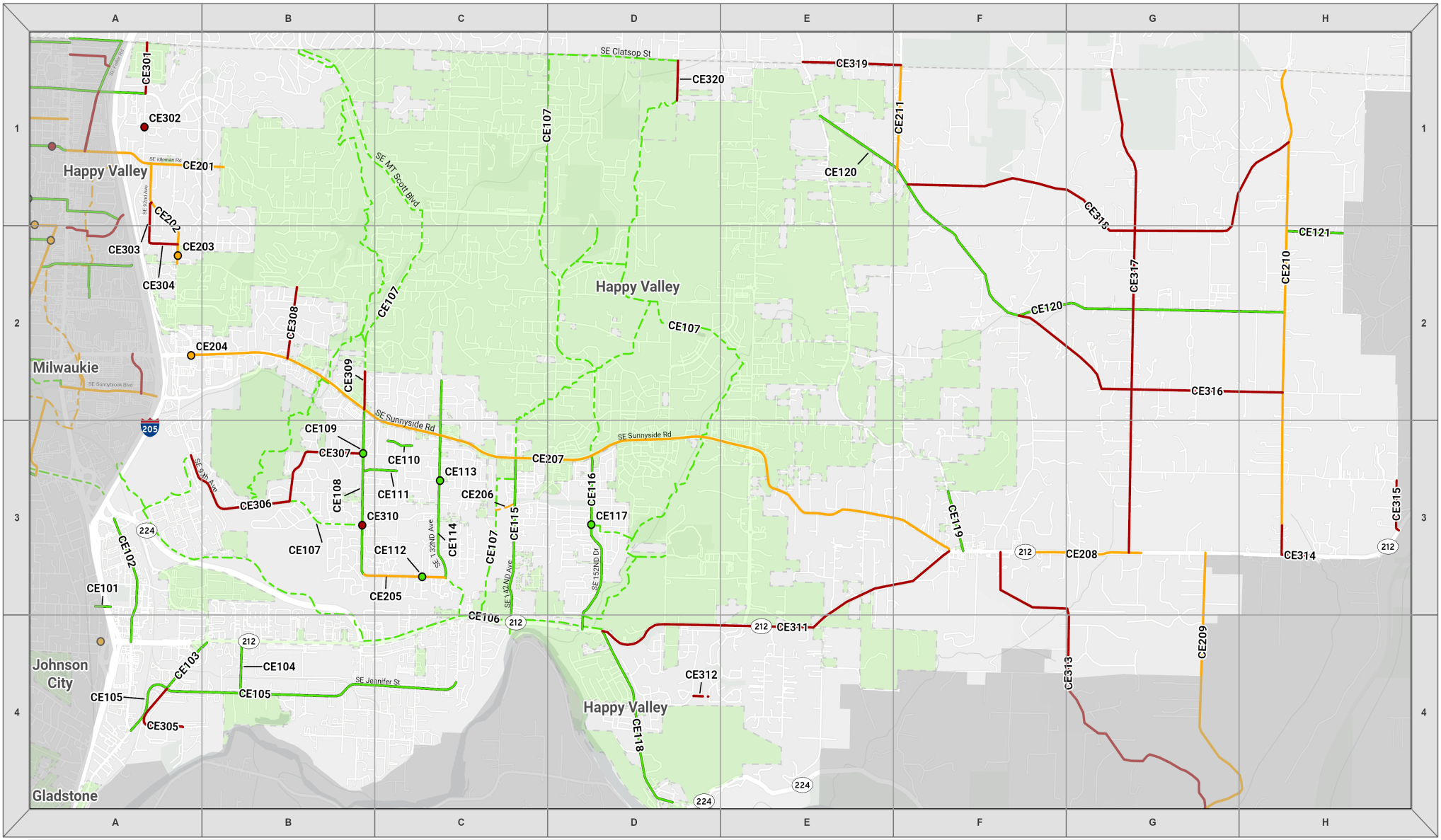


Figure 32 Projects in Clackamas Town Center Area East

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
CE101	Linear	I-205 Multi-Use Path bike-ped bridge	West side of I-205	East side of I-205	Construct bike/pedestrian bridge over I-205 in vicinity of Clackamas Road / Jannsen Road	0.1	1	CTC East	A-3	Cross-Jurisdictional
CE102	Linear	SE 82nd Dr pedestrian facilities and bikeways	OR 212	I-205 Multi-Use Path	Fill in bikeways and pedestrian facilities gaps	0.8	1	CTC East	A-3	Clackamas County
CE103	Linear	SE Evelyn St pedestrian facilities and bikeway	OR 224	Jennifer St	Fill gaps in bikeways and pedestrian facilities	0.39	1	CTC East	A-4	Clackamas County
CE104	Linear	SE 106th Ave pedestrian facilities and bikeways	OR 212	SE Jennifer St	Fill in gaps in pedestrian facilities and bikeways	0.32	1	CTC East	B-4	Clackamas County
CE105	Linear	SE Jennifer St pedestrian facilities and bikeways	SE 82nd Dr	SE 135th Ave	Fill in pedestrian facility gaps and bikeway	2.38	2	CTC East	B-4	Clackamas County
CE106	Linear	Sunrise Multi-Use Path	OR 224	Rock Creek Junction	Construct multi-use path from 122nd to Rock Creek Junction parallel to the Sunrise corridor project	1.6	1	CTC East	C-4	ODOT
CE107	Linear	Scouters Mountain / Mt Scott Loop Trail	Loop trail through Happy Valley, Damascus, Clackamas County and Portland		Construct multi-use path in accordance with the Active Transportation Plan	27.63	1	CTC East	AREAWIDE	Clackamas County
CE108	Linear	SE 122nd Ave pedestrian facilities	SE Sunnyside Rd	SE Hubbard Rd	Fill gaps in pedestrian facilities, consider turn lanes at SE Mather Rd	1.03	1	CTC East	B-3	Clackamas County
CE109	Point	SE 122nd Avenue / SE Mather Rd crosswalk	SE Mather Rd	SE 122nd Ave	Install new crosswalk		1	CTC East	B-3	Clackamas County
CE110	Linear	SE Opal Way pedestrian facilities	SE 125th Ave	SE 128th Ave	Add pedestrian facilities	0.17	1	CTC East	C-3	Clackamas County
CE111	Linear	SE Huron Street sidewalk	30 ft east of SE 122nd Ave	SE 126th Ave	Install sidewalk	0.22	1	CTC East	C-3	Clackamas County
CE112	Point	SE Hubbard Rd / SE 130th Dr crosswalk	SE Hubbard Rd	SE 130th Dr	Install new crosswalk		1	CTC East	C-3	Clackamas County
CE113	Point	SE 132nd Ave / SE Normandy Dr crosswalk	SE 132nd Ave	SE Normandy Dr	Install crosswalk at Normandy Dr		1	CTC East	C-3	Clackamas County
CE114	Linear	SE 132nd Ave / SE 135th Ave sidewalk and bikeways	OR 212	SE Woodland Circle	Fill sidewalk gaps and bikeways and explore turn lanes at major intersections	1.55	1	CTC East	C-3	Clackamas County
CE115	Linear	SE 142nd Ave pedestrian facilities and bikeways	SE Sunnyside Rd	OR 212	Add bikeways and pedestrian facilities	1.03	1	CTC East	C-3	Clackamas County
CE116	Linear	SE 152nd Ave pedestrian facilities and bikeway	Sunnyside Rd	OR 212	Fill in gaps in pedestrian facilities and bikeway	1.14	1	CTC East	D-3	Clackamas County

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
CE117	Point	SE 152nd Dr / SE Pioneer Dr crosswalk	SE 152nd Dr	SE Pioneer Dr	Construct new crosswalk with pedestrian median, RRFB and advance warning signs at intersection with SE 152nd Ave		1	CTC East	D-3	Clackamas County
CE118	Linear	OR 224 bikeways	OR 212	SE Midway St	Add bikeways	1.22	1	CTC East	D-4	ODOT
CE119	Linear	SE Foster Rd shoulder widening	Happy Valley city limits	OR 212	Widen shoulder based on operational and safety analysis during project development	0.38	1	CTC East	F-3	Clackamas County
CE120	Linear	SE Tillstrom Rd shoulder widening	SE Foster Road	SE 242nd Avenue	Widen shoulder based on operational and safety analysis during project development	3.61	1	CTC East	G-2	Clackamas County
CE121	Linear	SE Sunshine Valley Rd shoulder widening	SE 242nd Ave	SE 250th Place	Widen shoulder based on operational and safety analysis during project development	0.36	1	CTC East	H-2	Clackamas County
CE201	Linear	SE Idleman Rd pedestrian facilities and bikeways	SE 92nd Ave	SE Westview Ct	Fill gaps in bikeways and pedestrian facilities	0.53	2	CTC East	A-1	Clackamas County
CE202	Linear	SE Stevens Rd / SE Stevens Way pedestrian facilities and bikeways	SE Causey Ave	SE Idleman Rd	Fill in pedestrian facility gaps and bikeway	0.7	2	CTC East	A-1	Clackamas County
CE203	Point	SE Stevens Road crosswalk	SE Stevens Rd	Mount Scott Elementary School	Add a raised median pedestrian refuge at the mid-block crossing in front of the school		2	CTC East	A-2	Clackamas County
CE204	Point	Sunnyside Hospital / SE Sunnyside Rd / SE Stevens Rd intersection	SE Sunnyside Rd	SE Stevens Road	Install protected bikeway intersection, consider leading pedestrian interval (LPI) for walking signal and signage to allow bicyclists to cross with LPI		2	CTC East	A-2	Clackamas County
CE205	Linear	SE Hubbard Rd pedestrian facilities	SE 122nd Ave	SE 132nd Ave	Fill gaps in pedestrian facilities	0.53	2	CTC East	C-3	Clackamas County
CE206	Linear	Pfieifer Park Multi-Use Path	SE Territory Dr and SE 142nd Ave	Pfeifer Park	Construct multi-use path from SE 142nd Ave and SE Territory Dr to Pfeifer Park, with crosswalk and signage at intersection	0.13	2	CTC East	C-3	Cross-Jurisdictional
CE207	Linear	SE Sunnyside Rd pedestrian facilities and bikeway	SE Stevens Rd	OR 212	Fill gaps in pedestrian facilities and bikeways	5.87	2	CTC East	D-3	Clackamas County
CE208	Linear	OR 212 pedestrian facilities	SE Old Barn Lane	SE Regner Terrace	Improve pedestrian facilities and add lighting	0.79	2	CTC East	G-3	ODOT

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
CE209	Linear	SE 232nd Dr shoulder widening	OR 212	OR 224	Widen shoulder based on operational and safety analysis during project development	1.9	2	CTC East	G-4	Clackamas County
CE210	Linear	SE 242nd Ave shoulder widening	County line	OR 212	Widen shoulder based on operational and safety analysis during project development	3.02	2	CTC East	H-2	Clackamas County
CE211	Linear	SE 190th Dr shoulder widening	County line	SE Tillstrom Road	Widen shoulder based on operational and safety analysis during project development	0.64	2	CTC East	F-1	Clackamas County
CE301	Linear	SE 92nd Ave pedestrian facilities	SE Johnson Creek Blvd	SE Clatsop St	Fill gaps in pedestrian facilities	0.31	3	CTC East	A-1	Cross-Jurisdictional
CE302	Point	SE 92nd Ave / SE Phillips Pl crosswalk	SE 92nd Ave	SE Phillips Pl	Install a pedestrian crossing near Phillips Pl		3	CTC East	A-1	Clackamas County
CE303	Linear	SE 92nd Ave sidewalk	SE Stevens Way	SE Hillcrest Rd	Construct sidewalks with ADA-compliant curb cuts on the east and west side of SE 92nd Ave between SE Hillcrest Rd and SE Stevens Way	0.25	3	CTC East	A-2	Clackamas County
CE304	Linear	SE Hillcrest St pedestrian facilities	SE 92nd Ave	SE Stevens Rd	Add pedestrian facilities	0.19	3	CTC East	A-2	Clackamas County
CE305	Linear	SE Evelyn St / SE Mangan Dr pedestrian facilities and bikeway	SE Jennifer St	SE Water Ave	Add pedestrian facilities and bikeways	0.24	3	CTC East	A-4	Clackamas County
CE306	Linear	SE 97th Ave / SE Mather Rd pedestrian facilities and bikeways	SE Lawnfield Rd	SE Summers Ln	Add bikeways and fill in gaps in pedestrian facilities	0.85	3	CTC East	B-3	Clackamas County
CE307	Linear	SE Mather Rd pedestrian facilities and bikeways	SE Summers Ln Rd	SE 122nd Ave	Add bikeways, pedestrian facilities and eastbound left turn lanes at Mather Rd / 122nd Ave	0.71	3	CTC East	B-3	Clackamas County
CE308	Linear	SE Valley View Terrace pedestrian facilities and bikeways	SE Sunnyside Rd	SE Otty Rd	Add bikeways and pedestrian facilities	0.45	3	CTC East	B-2	Clackamas County
CE309	Linear	SE 122nd Ave pedestrian facilities and bikeways	SE Sunnyside Rd	SE Timber Valley Dr	Add bikeways, fill in gaps in pedestrian facilities, add turn lanes at major intersections	0.24	3	CTC East	B-2	Clackamas County
CE310	Point	SE 122nd Ave/SE Summers Ln crosswalk	SE Summers Lane	SE 122nd Ave	Install new crosswalk		3	CTC East	B-3	Clackamas County
CE311	Linear	OR 212 shoulder widening	OR 224	SE Sunnyside Road	Add pedestrian and bicycle facilities	2.49	3	CTC East	E-4	ODOT
CE312	Linear	SE Bolivar Street Multi-Use Path	SE Eckert Lane	SE Anderegg Pkwy	Install pedestrian and bicycle connection via SE Bolivar St	0.1	3	CTC East	D-4	Clackamas County

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
CE313	Linear	SE Royer Rd shoulder widening	OR 212	OR 224	Widen shoulder based on operational and safety analysis during project development	2.59	3	CTC East	G-4	Clackamas County
CE314	Linear	SE 242nd Ave / Clackamas-Boring Hwy sidewalk	SE Hollyview Lane	Lewis and Clark Montessori Charter	Install sidewalk	0.4	3	CTC East	H-3	Cross-Jurisdictional
CE315	Linear	SE 257th Avenue shoulder widening	SE Hoffmeister Rd	OR 212	Widen shoulder based on operational and safety analysis during project development	0.32	3	CTC East	H-3	Clackamas County
CE316	Linear	SE Bohna Park Rd shoulder widening	SE Tillstrom Road	SE 242nd Avenue	Widen shoulder based on operational and safety analysis during project development	1.92	3	CTC East	G-2	Clackamas County
CE317	Linear	SE 222nd Dr shoulder widening	County line	OR 212	Widen shoulder based on operational and safety analysis during project development	3.02	3	CTC East	G-2	Clackamas County
CE318	Linear	SE Borges Rd shoulder widening	SE Tillstrom Road	SE 242nd Avenue	Widen shoulder based on operational and safety analysis during project development	2.93	3	CTC East	G-2	Clackamas County
CE319	Linear	SE Cheldelin Rd pedestrian facilities and bikeways	SE Foster Rd	SE 190th Dr	Add bikeways and pedestrian facilities	0.65	3	CTC East	E-1	Clackamas County
CE320	Linear	SE 162nd Ave pedestrian facilities and bikeways	SE Sager Rd	County line	Add bikeways, pedestrian facilities, turn lanes at major intersections	0.25	3	CTC East	D-1	Clackamas County

Figure 33 Linear and Spot Improvement Projects in Clackamas Town Center Area West

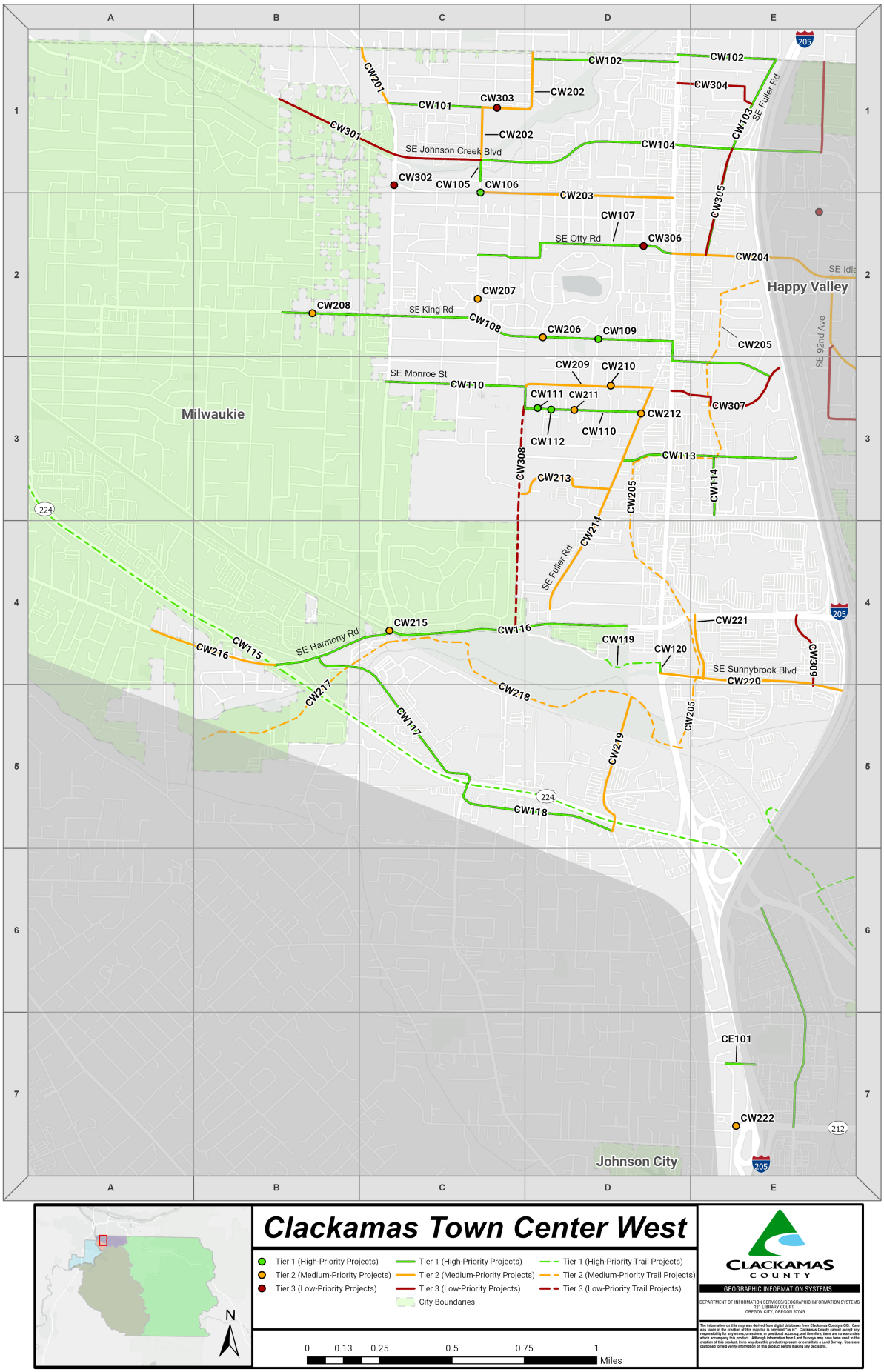


Figure 34 Projects in Clackamas Town Center Area West

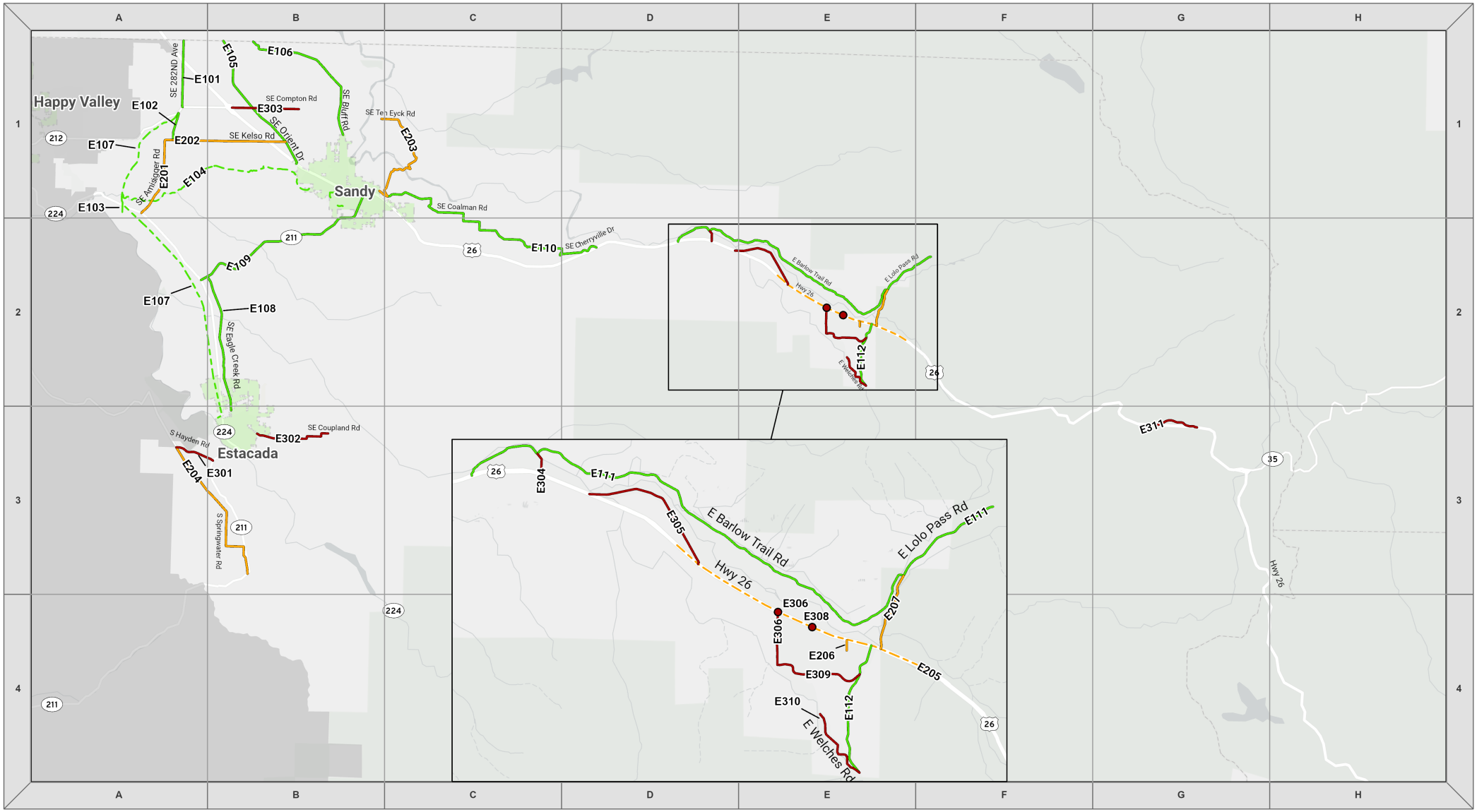
Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
CW101	Linear	SE Alberta Ave pedestrian facilities and bikeways	SE Bell Ave	SE Flavel Dr	Add bikeways and pedestrian facilities	0.34	1	CTC West	C-1	Clackamas County
CW102	Linear	SE Clatsop St / SE Luther Rd pedestrian facilities and bikeways	SE 72nd Ave	SE Fuller Rd	Add pedestrian facilities and bikeways, consider associated intersection improvements at SE 82nd Ave	0.84	1	CTC West	D-1	Clackamas County
CW103	Linear	SE Fuller Rd pedestrian facilities and bikeways	SE Johnson Creek Blvd	County line	Fill in gaps in pedestrian facilities and bikeways	0.73	1	CTC West	E-1	Clackamas County
CW104	Linear	SE Johnson Creek Blvd pedestrian facilities and bikeway	SE Bell Ave	SE 92nd Ave	Fill gaps in pedestrian facilities and upgrade bikeway	1.19	1	CTC West	D-1	Clackamas County
CW105	Linear	SE Bell Ave pedestrian facilities and bikeways	SE Johnson Creek Blvd	SE May St	Add bikeways and pedestrian facilities	0.18	1	CTC West	C-1	Clackamas County
CW106	Point	SE Overland St/SE Bell Ave crosswalk	SE Bell Ave	SE Overland St	Install new crosswalk		1	CTC West	C-1	Clackamas County
CW107	Linear	SE Drew Ave / SE 73rd Ave / SE Otty St pedestrian facilities and bikeways	SE Bell Ave	SE 82nd Ave	Fill gaps in pedestrian facilities and bikeways	0.45	1	CTC West	D-2	Clackamas County
CW108	Linear	SE King Rd pedestrian facilities	Milwaukie city limits	SE Spencer Dr	Fill gaps in pedestrian facilities	1.79	1	CTC West	C-2	Clackamas County
CW109	Point	SE King Rd / SE 77th Ave crosswalk	SE King Rd	SE 77th Ave	Install new high visibility crosswalk and ADA compliant curb ramps, with potential RRFB or HAWK signal and green crossbike.		1	CTC West	D-2	Clackamas County
CW110	Linear	SE Monroe St / SE 72nd Ave / SE Thompson Rd pedestrian facilities	Linwood Ave	Fuller Rd	Add bikeways and pedestrian facilities	0.96	1	CTC West	C-3	Clackamas County
CW111	Point	SE Thompson Rd Radar Speed Monitor	SE Thompson Rd	SE 72nd Ave	Install radar speed monitor	0	1	CTC West	D-3	Clackamas County
CW112	Point	SE Thompson Rd / SE 74th Ave crosswalk	SE Thompson Rd	SE 74th Ave	Install school zone flashing beacon		1	CTC West	D-3	Clackamas County
CW113	Linear	SE Causey Ave bikeways	SE Fuller Rd	I-205	Add bikeways	0.6	1	CTC West	D-3	Clackamas County
CW114	Linear	SE 85th Ave pedestrian facilities and bikeways	SE Causey Ave	SE Monterey Ave	Add sidewalks and bikeways and consider crosswalk improvements	0.21	1	CTC West	E-3	Clackamas County
CW115	Linear	OR 224 Multi-Use Path	SE 17th Ave	I-205	Construct multi-use path as parallel route to OR	4.03	1	CTC West	B-4	ODOT
CW116	Linear	SE Harmony Rd pedestrian facilities and bikeways	Clackamas Community College	OR 224	Fill gaps in bikeways and pedestrian facilities and improve pedestrian crossings	1.25	1	CTC West	C-4	Clackamas County
CW117	Linear	SE Lake Rd pedestrian facilities	Milwaukie city limits	OR 224	Fill gaps in pedestrian facilities	0.74	1	CTC West	C-5	Clackamas County

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
CW118	Linear	SE Lake Rd pedestrian facilities and bikeways	Johnson Rd	Webster Rd	Fill gaps in pedestrian facilities and bikeways	0.58	1	CTC West	D-5	Clackamas County
CW119	Linear	Southwest Connector Multi-Use Path	North Clackamas Aquatic Center access road	SE 82nd Ave	Construct multi-use path	0.21	1	CTC West	D-4	Cross-Jurisdictional
CW120	Linear	SE 82nd Ave multi-use path connection	North Clackamas Regional Park Multi-Use Path (proposed)	SE Sunnybrook Blvd	Connect proposed North Clackamas Regional Park Multi-Use Path to bicycle and pedestrian facilities on SE Sunnybrook Blvd via 82nd	0.04	1	CTC West	D-4	ODOT
CW201	Linear	SE Flavel Dr bikeways	SE Alberta Ave	County line	Add bikeways	0.22	2	CTC West	C-1	Clackamas County
CW202	Linear	SE Bell Ave / SE Alberta St / SE 72nd Ave pedestrian facilities and bikeways	SE Johnson Creek Blvd	County line	Add bikeways and pedestrian facilities	0.55	2	CTC West	D-1	Clackamas County
CW203	Linear	SE Overland St pedestrian facilities and bikeways	SE 82nd Ave	SE Bell Ave	Add bikeways and pedestrian facilities	0.66	2	CTC West	D-2	Clackamas County
CW204	Linear	SE Otty Rd pedestrian facilities and bikeways	OR 213	SE 92nd Ave	Improve consistent with Fuller Road Station Plan including bikeways and pedestrian facilities. Install pedestrian crossing between Fuller Rd and I-205 and near 91st Ave	0.52	2	CTC West	E-2	Clackamas County
CW205	Linear	Phillips Creek Multi-Use Path	SE Causey Ave	North Clackamas Regional Parks Trail	Construct multi-use path in accordance with the Active Transportation Plan	2.13	2	CTC West	E-2	Clackamas County
CW206	Point	SE King Rd/SE Cook Ct crosswalk	SE King Rd	SE Cook Ct	Install new high visibility crosswalk and ADA compliant curb ramps, with potential RRFB or HAWK signal and green crossbike.		2	CTC West	D-2	Clackamas County
CW207	Point	SE Bell Ave / SE Sandview St crosswalk	SE Bell Ave	SE Sandview St	Install new crosswalk with RRFB	0	2	CTC West	C-2	Clackamas County
CW208	Point	SE King Rd/SE Stanley Ave crosswalk	SE Stanley Ave	SE King Rd	Install new crosswalk		2	CTC West	B-2	Cross-Jurisdictional
CW209	Linear	SE Monroe St pedestrian facilities and bikeways	SE 72nd Ave	SE Fuller Rd	Add bikeways and pedestrian facilities	0.44	2	CTC West	D-3	Cross-Jurisdictional
CW210	Point	SE Monroe St gap connection	SE Monroe St	SE 78th Ave / SE 79th Ave	Formalize a paved path connection for pedestrians and bicyclists		2	CTC West	D-3	Cross-Jurisdictional
CW211	Point	SE Thompson Road traffic calming	SE Thompson Rd	SE 74th Ave	Install traffic calming (speed cushions)		2	CTC West	D-3	Clackamas County
CW212	Point	SE Thompson Rd / SE Fuller Rd crosswalk	SE Fuller Rd	SE Thompson Rd	Install new crosswalk		2	CTC West	D-3	Clackamas County
CW213	Linear	SE Michael Dr pedestrian facilities	SE 72nd Ave	SE Fuller Ave	Fill gaps in pedestrian facilities	0.36	2	CTC West	D-3	Clackamas County

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
CW214	Linear	SE Fuller Rd pedestrian facilities and crosswalks	SE Boyer Dr	SE Sunnyside Dr	Install pedestrian facilities and new crosswalks along segment	0.86	2	CTC West	D-3	Clackamas County
CW215	Point	SE Linwood Ave/SE Harmony Rd/SE Railroad Ave	SE Harmony Rd	SE Harmony Rd/ SE Linwood Rd	Upgrade crosswalks and curb ramps for ADA compliance, install sidewalk to access bus stops. Install lead pedestrian intervals for cross signal.		2	CTC West	C-4	Cross-Jurisdictional
CW216	Linear	SE Lake Rd pedestrian facilities and bikeways	OR 224 west	Milwaukie city limits	Add pedestrian facilities and fill bikeway gaps	0.45	2	CTC West	B-4	Clackamas County
CW217	Linear	North Clackamas Regional Park Multi- Use Path	SE Linwood Ave	North Clackamas Park Complex	Construct multi-use path	0.76	2	CTC West	B-5	Cross-Jurisdictional
CW218	Linear	North Clackamas Regional Park Multi- Use Path	OR 213	North Clackamas Park Complex	Construct multi-use path	1.26	2	CTC West	C-5	Clackamas County
CW219	Linear	SE Johnson Rd pedestrian facilities and bikeways	SE Lake Rd	North Clackamas Park Trail	Fill gaps in pedestrian facilities and bikeways	0.5	2	CTC West	D-5	Cross-Jurisdictional
CW220	Linear	SE Sunnybrook Blvd bikeway	OR 213	I-205	Install protected bikeway, green crossbike treatments, and left turn boxes at major intersections	0.74	2	CTC West	E-4	Clackamas County
CW221	Linear	SE 84th Ave pedestrian facilities and bikeways	SE Sunnyside Rd	SE Sunnybrook Blvd	Fill in pedestrian facility gaps and bikeway	0.23	2	CTC West	E-4	Clackamas County
CW222	Point	I-205 / OR 212/224 Interchange bike connection	In vicinity of Roots Rd and McKinley Ave		Create new bikeway connections to facilitate movement from I-205 path to local street network		2	CTC West	E-7	ODOT
CW301	Linear	SE Johnson Creek Blvd pedestrian facilities and bikeway	SE 55th Ave	SE Bell Ave	Add bikeways and pedestrian facilities	0.74	3	CTC West	B-1	Clackamas County
CW302	Point	SE Linwood Ave / SE Overland St crosswalk	SE Linwood Ave	SE Overland St	Install enhanced crosswalk	0	3	CTC West	C-1	Clackamas County
CW303	Point	SE Alberta Ave/SE 70th Ave crosswalk	SE Alberta Ave	SE 70th Ave	Install new crosswalk		3	CTC West	C-1	Clackamas County
CW304	Linear	SE Cornwell Ave pedestrian facilities	OR 213	SE Fuller Rd	Add pedestrian facilities; connect to I-205 Multi-Use Path	0.31	3	CTC West	E-1	Clackamas County
CW305	Linear	SE Fuller Rd pedestrian facilities and bikeways	SE Otty St	SE Johnson Creek Blvd	Fill in gaps in pedestrian facilities and bikeways	0.38	3	CTC West	E-2	Clackamas County
CW306	Point	SE Otty St / SE 80th Ave crosswalk	SE Otty St	SE 80th Ave	Install new crosswalk		3	CTC West	D-2	Clackamas County
CW307	Linear	SE Boyer Dr / SE 85th Ave / SE Spencer Dr bikeway	OR 213	I-205 bike path	Add bikeways	0.47	3	CTC West	E-3	Clackamas County
CW308	Linear	72nd Ave Multi-Use Path	SE Thompson Rd	SE Harmony Rd	Construct multi-use path	0.78	3	CTC West	C-3	Cross-Jurisdictional
CW309	Linear	SE 93rd Ave bikeways	SE Sunnyside Rd	SE Sunnybrook Blvd	Upgrade bikeways	0.27	3	CTC West	E-4	Clackamas County

East County Area

Figure 35 Linear and Spot Improvement Projects in East County Area



East Area

- Tier 1 (High-Priority Projects)
- Tier 2 (Medium-Priority Projects)
- Tier 3 (Low-Priority Projects)
- Tier 1 (High-Priority Projects)
- Tier 2 (Medium-Priority Projects)
- Tier 3 (Low-Priority Projects)
- Tier 1 (High-Priority Trail Projects)
- Tier 2 (Medium-Priority Trail Projects)
- City Boundaries

N

0 0.5 1 2 3 4 Miles

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Figure 36 Projects in East County Area

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
E101	Linear	SE 282nd Ave paved shoulders	OR 212	County line	Add paved shoulders	1.99	1	East	A-1	Clackamas County
E102	Linear	SE Richey Rd paved shoulders	SE Kelso Rd	OR 212	Add paved shoulders	0.83	1	East	A-1	Clackamas County
E103	Linear	Barton Multi-Use Path	Cazadero Trail	Barton Park	New multi-use path along Bakers Ferry Rd	0.2	2	East	A-1	Clackamas County
E104	Linear	Tickle Creek Trail	Cazadero Trail	Sandy city limits	Construct multi-use path	7.8	1	East	B-1	Clackamas County
E105	Linear	SE Orient Dr paved shoulders	US 26	County line	Add paved shoulders	4.44	1	East	B-1	Clackamas County
E106	Linear	SE Bluff Rd paved shoulders	Sandy city limits	County line	Add paved shoulders	4.63	1	East	B-1	Clackamas County
E107	Linear	Cazadero Trail	Boring city limits	Estacada city limits	Construct multi-use path	10.75	1	East	A-2	Cross-Jurisdictional
E108	Linear	SE Eagle Creek Rd paved shoulders	OR 211	Estacada city limits	Add paved shoulders	4.11	1	East	B-2	Clackamas County
E109	Linear	OR 211 paved shoulders	OR 224	Sandy city limits	Add paved shoulders and bikeways	0.74	1	East	B-2	Cross-Jurisdictional
E110	Linear	SE Coalman Rd / SE Cherryville Dr paved shoulders	SE Ten Eyck Rd	US 26	Add paved shoulders	7.85	1	East	C-2	Clackamas County
E111	Linear	E Barlow Trail Rd / E Lolo Pass Rd paved shoulders	US 26	End of County-maintained road	Add paved shoulders	10.73	1	East	CALLOUT	Clackamas County
E112	Linear	E Salmon River Rd pedestrian facilities and bikeways	US 26	E Welches Rd	Add bikeways and pedestrian facilities	2	1	East	CALLOUT	Clackamas County
E201	Linear	SE Amisigger Rd / SE Kelso Rd paved shoulders	OR 224	SE Richey Rd	Add paved shoulders	2.64	2	East	A-1	Clackamas County
E202	Linear	SE Kelso Rd paved shoulders	SE Richey Rd	SE Orient Dr	Add paved shoulders	3.38	2	East	B-1	Clackamas County
E203	Linear	SE Ten Eyck Rd paved shoulders	SE Lusted Rd	Sandy city limits	Add paved shoulders	7.14	2	East	C-1	Clackamas County
E204	Linear	S Springwater Rd paved shoulders	S Hayden Rd	OR 211	Add paved shoulders	4.85	2	East	B-3	Clackamas County
E205	Linear	US 26 Multi-Use Path	E Miller Road	E Faubion Loop	Construct multi-use path parallel to US 26	4.33	2	East	CALLOUT	ODOT
E206	Linear	E Woodsey Way paved shoulders	US 26	East Cedar Hill Terrace	Construct/improve sidewalks connecting to the school	0.15	2	East	CALLOUT	Clackamas County
E207	Linear	E Lolo Pass Rd paved shoulders	US 26	E Barlow Trail Rd	Add paved shoulders	1.16	2	East	CALLOUT	Clackamas County
E301	Linear	S Hayden Rd paved shoulders	S Springwater Rd	OR 211	Add paved shoulders	1.2	3	East	A-3	Clackamas County
E302	Linear	SE Coupland Rd paved shoulders	Estacada city limits	SE Divers Rd	Add paved shoulders	2.3	3	East	B-3	Clackamas County
E303	Linear	SE Compton Rd paved shoulders	US 26	SE 352nd Ave	Add paved shoulders	2.01	3	East	B-1	Clackamas County
E304	Linear	E Sleepy Hollow Rd paved shoulders	E Barlow Trail Rd	US 26	Add paved shoulders	0.32	3	East	CALLOUT	Clackamas County

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
E305	Linear	E Brightwood Loop Rd paved shoulders	US 26	US 26	Add paved shoulders	2.19	3	East	CALLOUT	Clackamas County
E306	Linear	E Arrah Wanna Blvd paved shoulders	US 26	E Fairway Ave	Add paved shoulders	0.77	3	East	CALLOUT	Clackamas County
E306	Point	US 26 / E Arrah Wanna Blvd crosswalk	US 26	E Arrah Wanna Blvd	Install enhanced crosswalk		3	East	CALLOUT	ODOT
E308	Point	US 26 / E Welches Rd crosswalk	US 26	E Welches Rd	Install enhanced crosswalk		3	East	CALLOUT	ODOT
E309	Linear	E Fairway Ave paved shoulders	E Arrah Wanna Blvd	E Salmon River Rd	Add paved shoulders	1.35	3	East	CALLOUT	Clackamas County
E310	Linear	E Welches Rd paved shoulders	E Birdie Ln	E Salmon River Rd	Add paved shoulders or multi-use path	1.16	3	East	CALLOUT	Clackamas County
E311	Linear	Government Camp Loop bikeways	US 26	US 26	Add bikeways	1.3	3	East	G-3	ODOT

Greater McLoughlin Area

Figure 37 Linear and Spot Improvement Projects in Greater McLoughlin Area

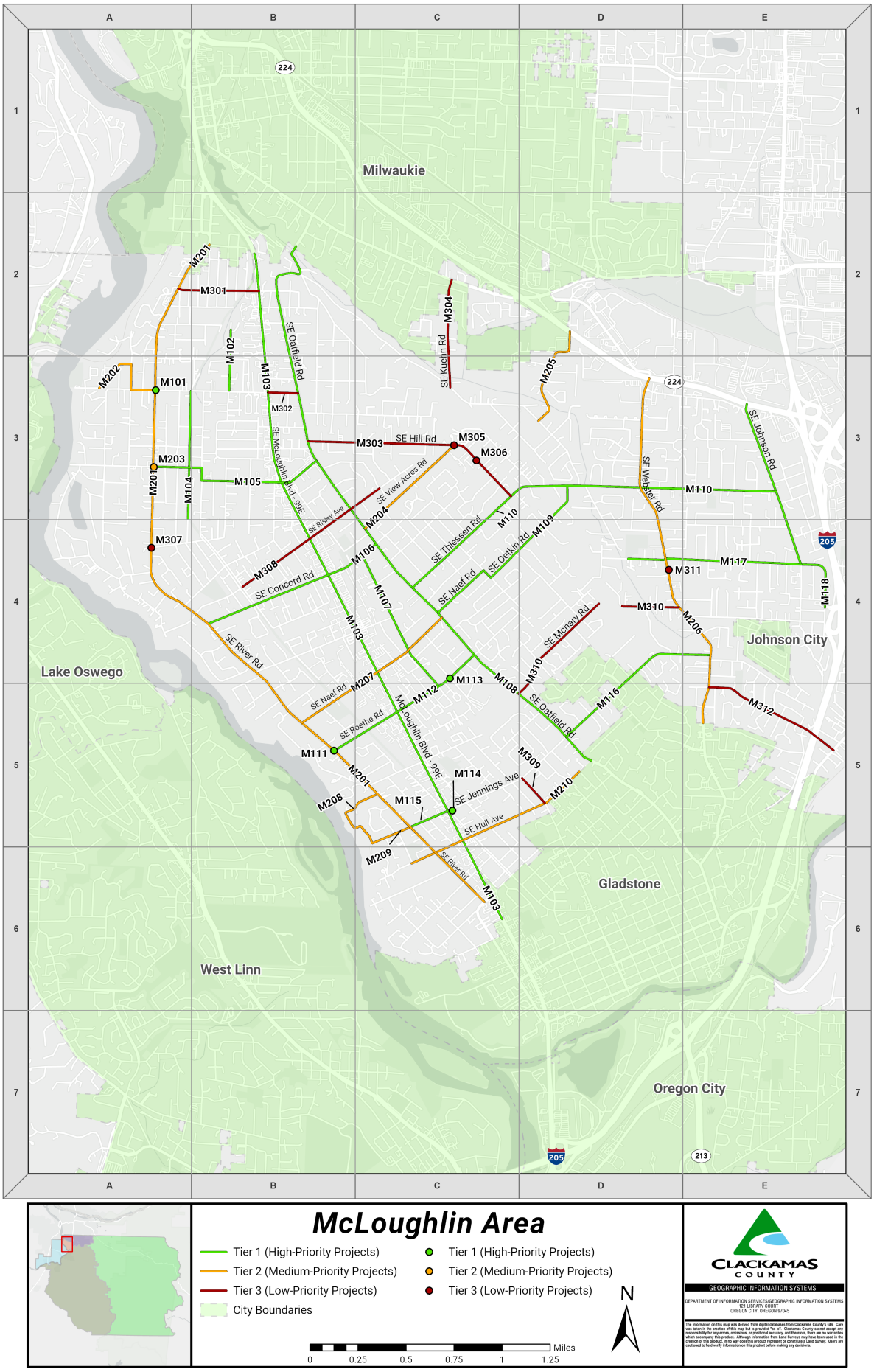


Figure 38 Projects in Greater McLoughlin Area

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
M101	Point	SE Courtney Road / SE River Rd crosswalk	SE Courtney Ave	SE River Rd	Install new crosswalk		1	McLoughlin	A-3	Clackamas County
M102	Linear	SE Linden Ln shared street	SE Linden Pl	SE Courtney Ave	Install shared street	0.32	1	McLoughlin	B-3	Clackamas County
M103	Linear	OR 99E (McLoughlin Blvd) pedestrian facilities and bikeways	Milwaukie city limits	Gladstone city limits	Fill gaps in pedestrian facilities and bikeways, install additional crosswalks, install pedestrian refuge medians	3.75	1	McLoughlin	B-3	ODOT
M104	Linear	SE Arista Drive bikeway	SE Courtney Ave	Trolley Trail	Pilot for advisory bike lane or shared street/ greenway	0.65	1	McLoughlin	A-3	Clackamas County
M105	Linear	SE Oak Grove Blvd pedestrian facilities and bikeways	SE Oatfield Rd	SE River Rd	Fill gaps in pedestrian facilities and bikeways	0.96	1	McLoughlin	B-3	Clackamas County
M106	Linear	SE Concord Rd pedestrian facilities	SE River Rd	SE Oatfield Rd	Fill gaps in pedestrian facilities	0.97	1	McLoughlin	B-4	Clackamas County
M107	Linear	SE Harold Ave pedestrian facilities	SE Concord Rd	SE Roethe Rd	Add pedestrian facilities and traffic calming	0.8	1	McLoughlin	C-4	Clackamas County
M108	Linear	SE Oatfield Rd pedestrian facilities and bikeways	Milwaukie city limits	Gladstone city limits	Fill gaps in pedestrian facilities and bikeways	3.4	1	McLoughlin	C-4	Clackamas County
M109	Linear	SE Oetkin Rd / SE Naef Rd shared street	SE Thiessen Rd	SE River Rd	Implement shared street	1.97	1	McLoughlin	D-3	Clackamas County
M110	Linear	SE Thiessen Rd pedestrian facilities and bikeways	SE Oatfield Rd	SE Johnson Rd	Add bikeways and pedestrian facilities	2.1	1	McLoughlin	C-3	Clackamas County
M111	Point	SE Roethe Rd / SE River Rd crosswalk	SE River Rd	SE Roethe Rd	Install new crosswalk		1	McLoughlin	B-5	Clackamas County
M112	Linear	SE Roethe Rd pedestrian facilities and bikeways and traffic calming	SE River Rd	SE Oatfield Rd	Fill in gaps in bikeways and pedestrian facilities, add RRFB crosswalks, implement traffic calming	0.88	1	McLoughlin	C-5	Clackamas County
M113	Point	SE Roethe Rd / SE Austin St crosswalk	SE Roethe Rd	SE Austin St	Install new crosswalk with RRFB		1	McLoughlin	C-4	Clackamas County
M114	Point	OR 99E (McLoughlin Blvd) / SE Jennings Ave bike crossing	OR 99E / SE Jennings Ave / Trolley Trail intersection		Construct bike signal at SE Jennings / OR 99E / Trolley Trail intersection		1	McLoughlin	C-5	Clackamas County
M115	Linear	Jennings Southwest pedestrian facilities and bikeways	SE River Rd	OR 99E	Add bikeways and fill in gaps in pedestrian facilities	0.21	1	McLoughlin	C-5	Clackamas County
M116	Linear	Jennings Northeast pedestrian facilities and bikeways	SE Oatfield Rd	SE Webster Rd	Add bikeways and fill in gaps in pedestrian facilities	1.13	1	McLoughlin	D-5	Clackamas County

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
M117	Linear	SE Clackamas Rd pedestrian facilities and bikeways	Ann-Toni Schreiber Park	SE McKinley Ave	Fill gaps in bikeways and pedestrian facilities, potentially utilizing Safe Routes to Parks funds	0.97	1	McLoughlin	E-4	Clackamas County
M118	Linear	SE Johnson Rd / SE McKinley Rd pedestrian facilities and bikeways	OR 224	I-205 Multi-Use Path	Fill in gaps in pedestrian facilities and bikeways	1.22	1	McLoughlin	E-4	Clackamas County
M201	Linear	SE River Rd pedestrian facilities and bikeways	Milwaukie city limits	SE Glen Echo Ave	Fill gaps in bikeways and pedestrian facilities	4.1	2	McLoughlin	A-2	Clackamas County
M202	Linear	SE Bluff Rd / SE Denny St / SE Laurie Ave / SE Courtney Ave shared street	SE Courtney Ave	SE River Rd	Install shared street to provide access to Rivervilla Park	0.48	2	McLoughlin	A-3	Clackamas County
M203	Point	SE Oak Grove Blvd / SE River Rd crosswalk	SE Oak Grove Blvd	SE River Rd	Install crosswalk		2	McLoughlin	A-3	Clackamas County
M204	Point	SE View Acres Road	SE Hill Rd	SE Oatfield Rd	Implement shared street		2	McLoughlin	C-3	Clackamas County
M205	Linear	SE Rusk Rd pedestrian facilities and bikeways	OR 224	SE Aldercrest Rd	Add bikeways and pedestrian facilities	0.57	2	McLoughlin	D-3	Clackamas County
M206	Linear	SE Webster Rd pedestrian facilities and bikeways	OR 224	Gladstone city limits	Fill gaps in bikeways and pedestrian facilities	1.91	2	McLoughlin	D-3	Clackamas County
M207	Linear	SE Naef Rd pedestrian facilities and bikeways	SE Oatfield Rd	SE River Rd	Add bikeways and pedestrian facilities	0.91	2	McLoughlin	C-4	Clackamas County
M208	Linear	SE Jennings Ave / SE Willamette Dr shared street	SE Morse St	SE River Rd	Implement shared street extending around SE Jennings St and SE Willamette Dr	0.65	2	McLoughlin	B-5	Clackamas County
M209	Linear	SE Jennings Ave pedestrian facilities	SE Morse St	SE River Rd	Add sidewalks extending west from SE River Rd to SE Morse St	0.09	2	McLoughlin	C-5	Clackamas County
M210	Linear	SE Hull Ave pedestrian facilities	SE Wilmot St	SE Tims View Ave	Fill gaps in pedestrian facilities	1.09	2	McLoughlin	D-5	Clackamas County
M301	Linear	SE Park Ave pedestrian facilities	SE River Rd	OR 99E (McLoughlin Blvd)	Fill sidewalk gaps	0.42	3	McLoughlin	B-2	Clackamas County
M302	Linear	SE Courtney Ave pedestrian facilities and bikeways	OR 99E (McLoughlin Blvd)	SE Oatfield Rd	Fill gaps in pedestrian facilities and bikeways	0.16	3	McLoughlin	B-3	Clackamas County
M303	Linear	SE Hill Rd pedestrian facilities and bikeways	SE Oatfield Rd	SE Thiessen Rd	Add bikeways and pedestrian facilities	1.17	3	McLoughlin	C-3	Clackamas County
M304	Linear	SE Kuehn Rd shared street	SE Aldercrest Road	SE Lake Road	Implement shared street	0.56	3	McLoughlin	C-2	Clackamas County
M305	Point	SE Hill Rd / SE View Acres Rd crosswalk	SE Hill Road	SE View Acres Road	Install new crosswalk with RRFB		3	McLoughlin	C-3	Clackamas County
M306	Point	SE Hill Rd / SE Bramble Ct crosswalk	SE Hill Rd	SE Bramble Ct	Install new crosswalk with RRFB		3	McLoughlin	C-3	Clackamas County

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
M307	Point	SE River Rd / SE Creighton Ave crosswalk	SE River Rd	SE Creighton Ave	Install new crosswalk		3	McLoughlin	A-4	Clackamas County
M308	Linear	SE Risley Ave pedestrian facilities	SE Arista Dr	SE Hager Rd	Fill gaps in pedestrian facilities	0.88	3	McLoughlin	B-4	Clackamas County
M309	Linear	SE Portland Ave pedestrian facilities	SE Jennings Ave	SE Hull Ave	Fill gaps in pedestrian facilities	0.31	3	McLoughlin	D-5	Clackamas County
M310	Linear	SE McNary Rd / SE Mabel Ave pedestrian facilities and bikeways	SE Oatfield Rd	SE Webster Rd	Add bikeways and pedestrian facilities	0.93	3	McLoughlin	D-4	Clackamas County
M311	Point	SE Webster Rd radar speed sign	SE Webster Rd	100 ft north of SE Bixel Way	Install permanent radar speed sign		3	McLoughlin	D-4	Clackamas County
M312	Linear	SE Strawberry Ln pedestrian facilities and bikeways	SE Webster Rd	SE 82nd Dr	Add pedestrian facilities and fill bikeway gaps	0.74	3	McLoughlin	E-5	Clackamas County

Northwest County Area

Figure 39 Linear and Spot Improvement Projects in Northwest County Area

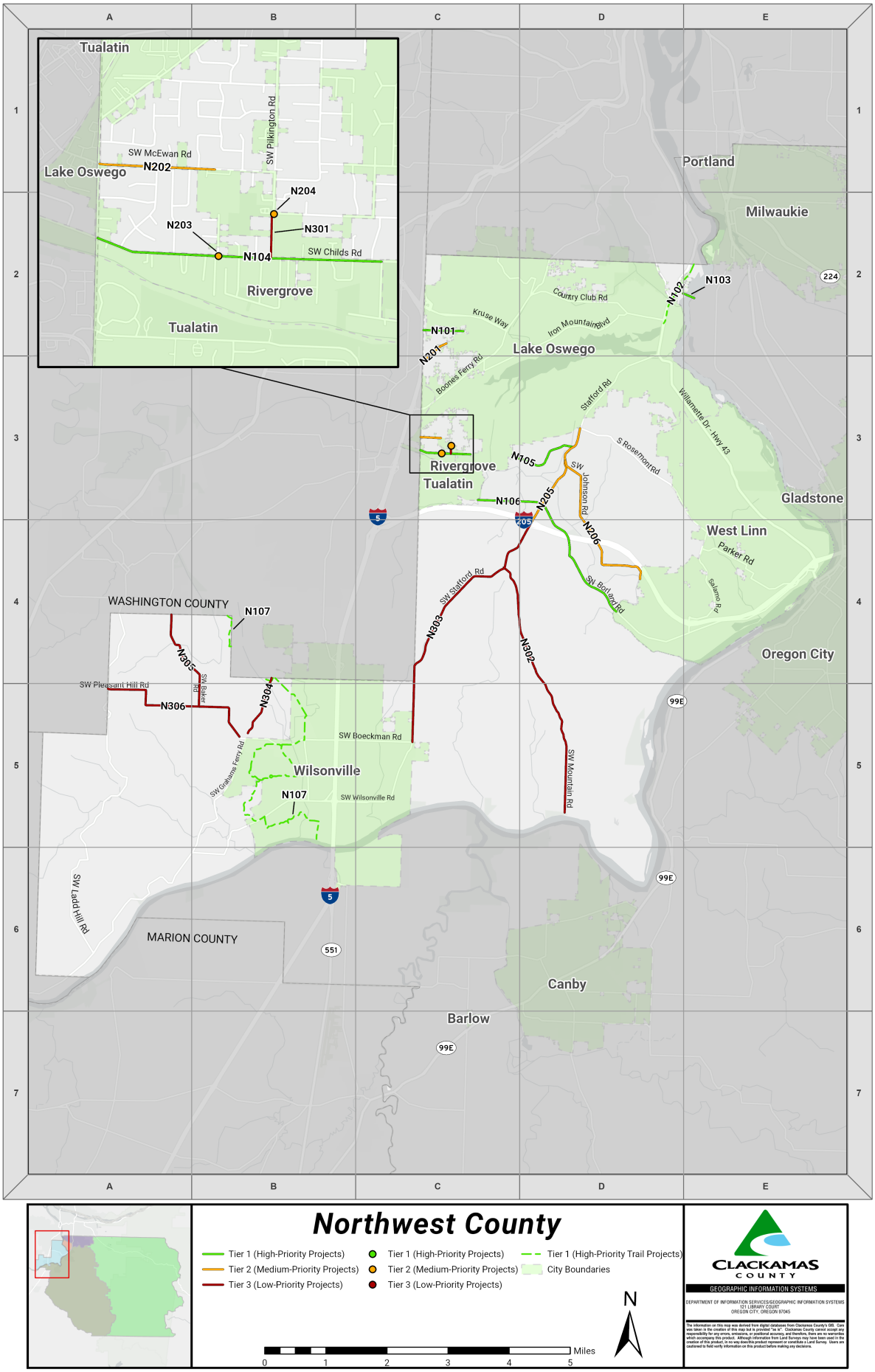


Figure 40 Projects in Northwest County Area

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
N101	Linear	Bonita Rd pedestrian facilities and bikeways	Carman Dr	I-5	Add bikeways and pedestrian facilities	0.65	1	Northwest	C-2	Clackamas County
N102	Linear	Willamette River Greenway	Lake Oswego north	County line	Construct multi-use path	1.11	1	Northwest	D-2	ODOT
N103	Linear	Oak Grove to Lake Oswego bridge	Oak Grove	Lake Oswego	Construct bike/pedestrian crossing over the Willamette River	0.2	1	Northwest	E-2	Cross-Jurisdictional
N104	Linear	SW Childs Rd pedestrian facilities and bikeways	County line	Sycamore Ave	Fill in gaps in pedestrian facilities and bikeways	0.83	1	Northwest	CALLOUT	Clackamas County
N105	Linear	SW Childs Rd pedestrian facilities and bikeways	SW Stafford Rd	Lake Oswego city limits	Add pedestrian and bicycle facilities	1.19	1	Northwest	D-3	Clackamas County
N106	Linear	SE Borland Rd pedestrian facilities and bikeways	Tualatin city limits	West Linn city limits	Add pedestrian facilities and bikeways	3.3	1	Northwest	C-3	Clackamas County
N107	Linear	Tonquin Trail	Willamette River	County line	Construct multi-use path pursuant to the Ice Age Tonquin Trail Master Plan	7.73	1	Northwest	B-5	Clackamas County
N201	Linear	Carman Dr pedestrian facilities and bikeways	Lake Oswego city limits	SW Roosevelt Ave	Add pedestrian and bicycle facilities	0.4	2	Northwest	C-2	Clackamas County
N202	Linear	SW McEwan Rd pedestrian facilities	SW 65th Ave	SW Benfield Ave	Install sidewalks from Longfellow Ave to 65th Ave along south side of road	0.41	2	Northwest	CALLOUT	Clackamas County
N203	Point	SW Childs Rd / SW Benfield Ave crosswalk	SW Childs Road	SW Benfield Ave	Install new crosswalk with RRFB		2	Northwest	CALLOUT	Clackamas County
N204	Point	Pilkington Rd / SW Dawn St crosswalk	Pilkington Rd	SW Dawn St	Install new crosswalk with RRFB		2	Northwest	CALLOUT	Clackamas County
N205	Linear	Stafford Rd paved shoulders	Rosemont Rd	I-205	Add paved shoulders	1.83	2	Northwest	D-3	Clackamas County
N206	Linear	SW Johnson Rd paved shoulders	SW Stafford Rd	West Linn city limits	Add paved shoulders	2.87	2	Northwest	D-4	Clackamas County
N301	Linear	Pilkington Rd pedestrian facilities	SW Dawn St	SW Childs Rd	Add pedestrian facilities	0.13	3	Northwest	CALLOUT	Clackamas County
N302	Linear	SW Mountain Rd paved shoulders	SW Stafford Rd	Canby Ferry	Add paved shoulders	4.28	3	Northwest	D-4	Clackamas County
N303	Linear	Stafford Rd paved shoulders	I-205	Boeckman Rd / SW Advance Rd	Add paved shoulders	4.47	3	Northwest	C-4	Clackamas County
N304	Linear	SW Grahams Ferry Rd paved shoulders	County line	SW Westfall Rd	Add paved shoulders	1.01	3	Northwest	B-5	Clackamas County
N305	Linear	SW Baker Rd paved shoulders	SW Tooze Rd	County line	Add paved shoulders	1.71	3	Northwest	A-4	Clackamas County
N306	Linear	SW Pleasant Hill Rd / SW McConnell Rd / SW Tooze Rd paved shoulders	SW Ladd Hill Rd	SW Westfall Rd	Add paved shoulders	2.76	3	Northwest	A-5	Clackamas County

South County Area

Figure 41 Linear and Spot Improvement Projects in South County Area

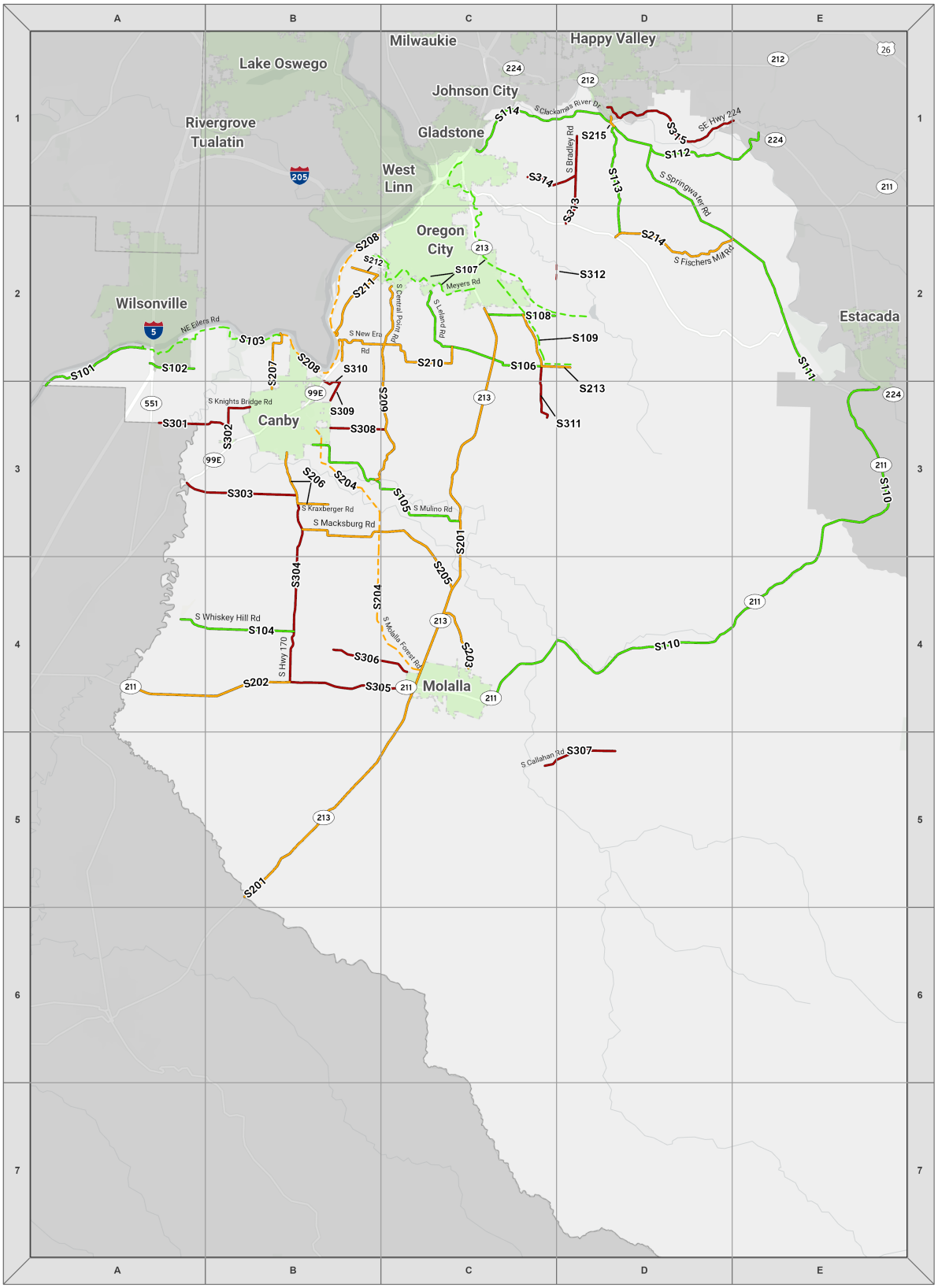


Figure 42 Projects in South County Area

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
S101	Linear	Butteville Rd NE paved shoulders	Boones Ferry Rd NE	County line	Add paved shoulders	3.28	1	South	A-2	Clackamas County
S102	Linear	SE Miley Rd paved shoulders	Butteville Rd NE	NE Eilers Rd	Add paved shoulders	1.46	1	South	A-2	Clackamas County
S103	Linear	Willamette River Greenway	Canby Ferry	Wilsonville city limits	Construct multi-use path	5.08	1	South	B-2	Clackamas County
S104	Linear	S Barnards Rd / S Whiskey Hill Rd paved shoulders	Meridian Rd	OR 170 (Canby-Marquam Hwy)	Add paved shoulders	3.41	1	South	B-4	Clackamas County
S105	Linear	S Mulino Rd / SE 13th Ave paved shoulders	Canby city limits	OR 213	Add paved shoulders	5.88	1	South	B-3	Clackamas County
S106	Linear	S Leland Rd paved shoulders	Oregon City line	S Beavercreek Rd	Add paved shoulders	4.88	1	South	C-2	Clackamas County
S107	Linear	Newell Creek Trail / Oregon City Loop Trail	Loop around the perimeter of Oregon City		Construct Oregon City Loop Trail and Newell Creek Trail in accordance with the Active Transportation Plan	16.81	1	South	C-2	Cross-Jurisdictional
S108	Linear	S Henrici Rd paved shoulders	OR 213	S Ferguson Rd	Add paved shoulders and turn lanes at major intersections	1.98	1	South	C-2	Clackamas County
S109	Linear	Beavercreek Multi-Use Path	Loder Rd	S Yeoman Rd	Construct multi-use path consistent with the Beavercreek Road Concept Plan	3.73	1	South	C-2	Clackamas County
S110	Linear	OR 211 paved shoulders	Molalla city limits	S Hayden Rd	Add paved shoulders	19.65	1	South	D-4	ODOT
S111	Linear	S Springwater Rd paved shoulders	S Clackamas River Dr	S Hayden Rd	Add paved shoulders	1.34	1	South	E-2	Clackamas County
S112	Linear	S Bakers Ferry Rd paved shoulders	S Springwater Rd	OR 224	Add paved shoulders	3.98	1	South	E-1	Clackamas County
S113	Linear	Carver Rd / S Hattan Rd paved shoulders	S Redland Schools Rd	S Springwater Rd	Add paved shoulders	3.31	1	South	D-2	Clackamas County
S114	Linear	S Clackamas River Dr bikeway	Oregon City limits	S Springwater Rd	Add bikeway	4.94	1	South	C-1	Clackamas County
S201	Linear	OR 213 pedestrian facilities and bikeways	Oregon City city limits	County line	Fill bikeway and pedestrian facility gaps	18.66	2	South	C-3	ODOT
S202	Linear	OR 211 paved shoulders	County line	OR 170 (Canby-Marquam Hwy)	Add paved shoulders	4.96	2	South	B-4	ODOT
S203	Linear	S Molalla Ave paved shoulders	OR 213	Molalla city limits	Add paved shoulders	2	2	South	C-4	Clackamas County
S204	Linear	Molalla Forest Rd Multi-Use Path	Canby city limits	Molalla city limits	Construct multi-use path	8.68	2	South	B-4	Clackamas County
S205	Linear	S Macksburg Rd paved shoulders	OR 170 (Canby-Marquam Hwy)	OR 213	Add paved shoulders	5.46	2	South	C-4	Clackamas County
S206	Linear	OR 170 (Canby-Marquam Hwy) / S Kraxberger Rd paved shoulders	Canby city limits	S Harms Rd	Add paved shoulders	2.47	2	South	B-3	Clackamas County

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
S207	Linear	N Holly St / NE 37th Ave / N Locust St / Ferry Rd paved shoulders	NE Territorial Rd	Canby Ferry	Add paved shoulders	1.88	2	South	B-2	Clackamas County
S208	Linear	Willamette River Greenway	Oregon City city limits	Canby city limits	Construct multi-use path	6.13	2	South	B-2	ODOT
S209	Linear	S Central Point Rd paved shoulders	Parrish Rd	S Mulino Rd	Add paved shoulders	6.22	2	South	C-3	Clackamas County
S210	Linear	S New Era Rd paved shoulders	OR 99E	S Leland Rd	Add paved shoulders	4.94	2	South	C-2	Clackamas County
S211	Linear	South End Rd paved shoulders	Oregon City city limits	OR 99E	Add paved shoulders	1.54	2	South	B-2	Clackamas County
S212	Linear	S Beutel Rd shared street	South End Rd	S Beutel Rd	Install shared street	0.79	2	South	B-2	Clackamas County
S213	Linear	Beavercreek Rd paved shoulders	Henrici Rd	Yeoman Rd/ Steiner Rd	Add paved shoulders in accordance with the Active Transportation Plan.	2.47	2	South	C-2	Clackamas County
S214	Linear	S Fischers Mill Rd paved shoulders	S Redland Rd	S Springwater Rd	Add paved shoulders	3.94	2	South	D-2	Clackamas County
S215	Linear	S Springwater Rd pedestrian facilities	OR 224	S Hattan Rd	Add pedestrian facilities	0.35	2	South	D-1	Clackamas County
S301	Linear	S Knights Bridge Rd / S Barlow Rd / S Arndt Rd bikeway	Canby boundary	S Airport Rd	Fill in gaps in bikeway	3.27	3	South	A-3	Clackamas County
S302	Linear	S Barlow Rd paved shoulders	S Arndt Rd	OR 99E	Add paved shoulders	0.67	3	South	B-3	Clackamas County
S303	Linear	S Lone Elder Rd paved shoulders	County line	OR 170 (Canby-Marquam Hwy)	Add paved shoulders	3.3	3	South	B-3	Clackamas County
S304	Linear	OR 170 (Canby-Marquam Hwy) paved shoulders	S Kraxberger Rd	OR 211	Add paved shoulders	4.56	3	South	B-4	Clackamas County
S305	Linear	OR 211 paved shoulders	OR 170 (Canby-Marquam Hwy)	Molalla city limits	Add paved shoulders	3.39	3	South	B-4	ODOT
S306	Linear	Toliver Rd paved shoulders	S Dryland Rd	Molalla city limits	Add paved shoulders	2.32	3	South	C-4	Clackamas County
S307	Linear	Callahan Rd S / S Ramsby Rd paved shoulders	S Dickey Prairie Rd	S Fernwood Rd	Add paved shoulders and turn lanes at major intersections	2.28	3	South	D-5	Clackamas County
S308	Linear	S Township Rd paved shoulders	S Central Point Rd	Canby city limits	Add paved shoulders	1.61	3	South	B-3	Clackamas County
S309	Linear	S Haines Rd paved shoulders	S Bremer Rd	SE Territorial Rd	Add paved shoulders	0.61	3	South	B-3	Clackamas County
S310	Linear	SE Territorial Rd bikeways	S Haines Rd	OR 99E	Add bikeways	0.51	3	South	B-2	Clackamas County
S311	Linear	S Kamrath Rd paved shoulders	S Leland Rd	S Spangler Rd	Add paved shoulders	1	3	South	C-3	Clackamas County
S312	Linear	Ferguson Multi-Use Path	S Thayer Rd	S Ferguson Rd	Construct multi-use path to connect Ferguson Rd to Thayer Rd	0.51	3	South	C-2	Cross-Jurisdictional
S313	Linear	S Bradley Rd paved shoulders	S Gronlund Rd	S Redland Rd	Add paved shoulders	2.68	3	South	D-1	Clackamas County

Project ID	Type	Name	Extent 1	Extent 2	Description	Miles	Tier	Area	Map Locator	Jurisdiction
S314	Linear	S Holcomb Blvd paved shoulders	S Edenwild Ln	S Bradley Rd	Add paved shoulders	1.56	3	South	C-1	Clackamas County
S315	Linear	OR 224 paved shoulders	S Springwater Rd	SE 232nd Dr	Add paved shoulders	4.71	3	South	D-1	ODOT

6.4 Shared Streets

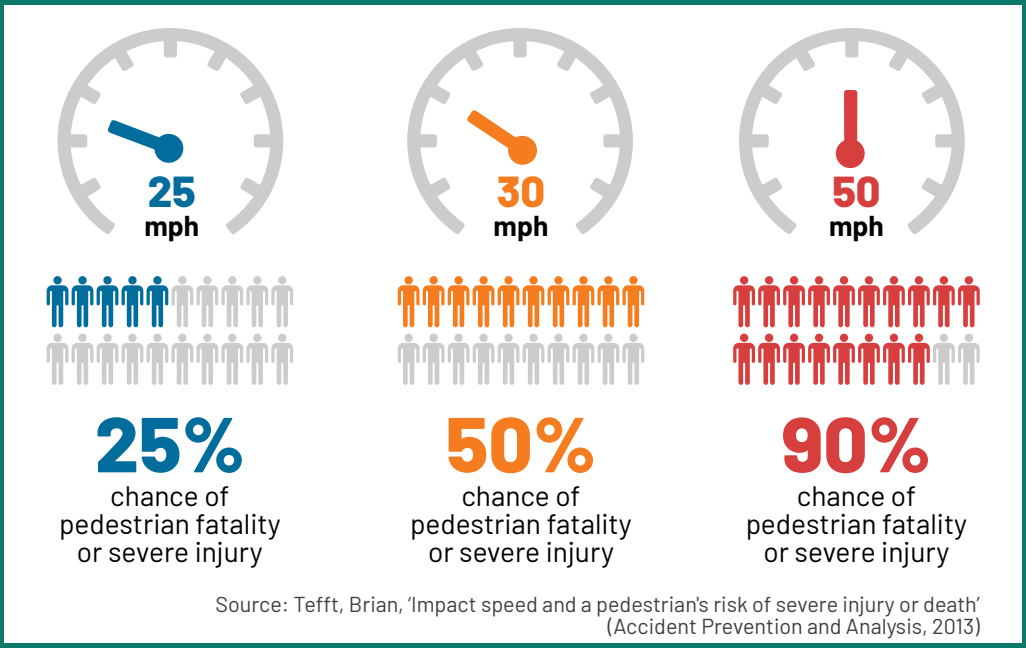
Shared Streets help connect the active transportation network by encouraging slow speeds that make walking and bicycling on streets safer.

WBC identifies candidate Shared Streets, which would have speed limits reduced to 20 mph to enhance public health, equity, and safety, particularly on streets connecting neighborhoods, shopping areas, and parks.*

Why does speed matter?

Public feedback and experience from Clackamas County Planning and Traffic Engineering indicates vehicle speeding is an issue on roadways throughout the county.

Having the ability to set the speed limit on certain local roads under ORS 810.180 provides an opportunity to designate streets as places to walk, ride bicycles, roll, and recreate, especially in places without dedicated walkways or bike lanes.



Source: Tefft, Brian, 'Impact speed and a pedestrian's risk of severe injury or death' (Accident Prevention and Analysis, 2013)

Shared Streets do not form a network on their own, but rather constitute one project type among the many walking and biking improvements noted in this plan.

Cities around the country installed Shared Streets during the COVID-19 pandemic to address many active transportation challenges including:

- Creating more space for people to safely walk or bike.
- Facilitating essential trips and access to essential services.
- Limiting overcrowding in popular public spaces, on multiuse paths, or on narrow sidewalks.
- Addressing non-motorized network gaps.
- Slowing vehicle speeds.

*Oregon Statute ORS 810.180(10) provides agencies the authority to post 5 mph below that statutory when certain criteria are met.

Figure 43 Shared Streets Screening and Selection Process

Step 1: Shared Streets minimum requirements	Step 2: Gather public input	Step 3: Implementation screening factors
• Posted speed of 25 mph • Local street functional classification • No transit service • <2,000 ADT	• Wikimapping exercise • Online survey • Collection of comments	• Connections to bikeways • Connections to destinations • SRTS designated corridor • Alignment with equity areas • Sidewalk presence

The development of the draft Shared Street network consisted of a three-step process. First, initial screening to identify eligible Shared Street segments was conducted. Local roads posted at 25 mph with average daily traffic (ADT) less than 2,000 and no transit service were identified as candidate Shared Streets. Second, in conjunction with Engagement Milestone #2, the public was surveyed and asked to identify candidate locations. 41 people responded to Shared Street survey, with 90% supportive of the program. Through this process, 26 candidate Shared Streets segments were identified (see map and table on following pages). Future Step 3: Implementation will consist of applying screening factors such as connectivity to significant destinations and alignment with a Safe Routes to School project to identify the highest priority segments. (See Figure 43). As funding becomes available, the priority streets from Step 3 will be implemented first. Potential treatments are shown in Figure 44.

Figure 44 Shared Streets Elements

Primary Shared Street Elements	Feature Description
	**Pavement marking** Pavement markings allow roadway users to fully understand the purpose of the road, the primary user of the road, and any information about special conditions ahead. The pavement marking in the photo to the left shows roadway users that this is a Shared Street where people on bikes and on foot share the road with people driving.
	**Entry treatment** Entry treatments such as signs or traffic cones give roadway users information about the Shared Street before entering.
	**Signs along Shared Streets** Shared Streets signs remind people of the purpose of the roadway.

Additional Elements for Consideration	Feature Description
	**Speed hump** Speed humps are small, raised areas built across a road to slow vehicles.
	**Motor vehicle diversion** Motor vehicle diversions lower traffic volumes by limiting vehicle entry or turns, while people walking and rolling can continue to move along the street without a detour.
	**Mini traffic circles** Mini traffic circles are small islands that must be maneuvered around by motor vehicles to go straight or turn. They are installed to reduce traffic speeds.
	**Trees and landscaping** Landscaping is used to visually narrow the width of the roadway and sometimes limit where vehicles can enter. Landscaping is used to slow or reduce traffic.
	**Wayfinding signs** Wayfinding signs point people walking, biking, and rolling toward key destinations.

Figure 45 Shared Streets Candidate Locations

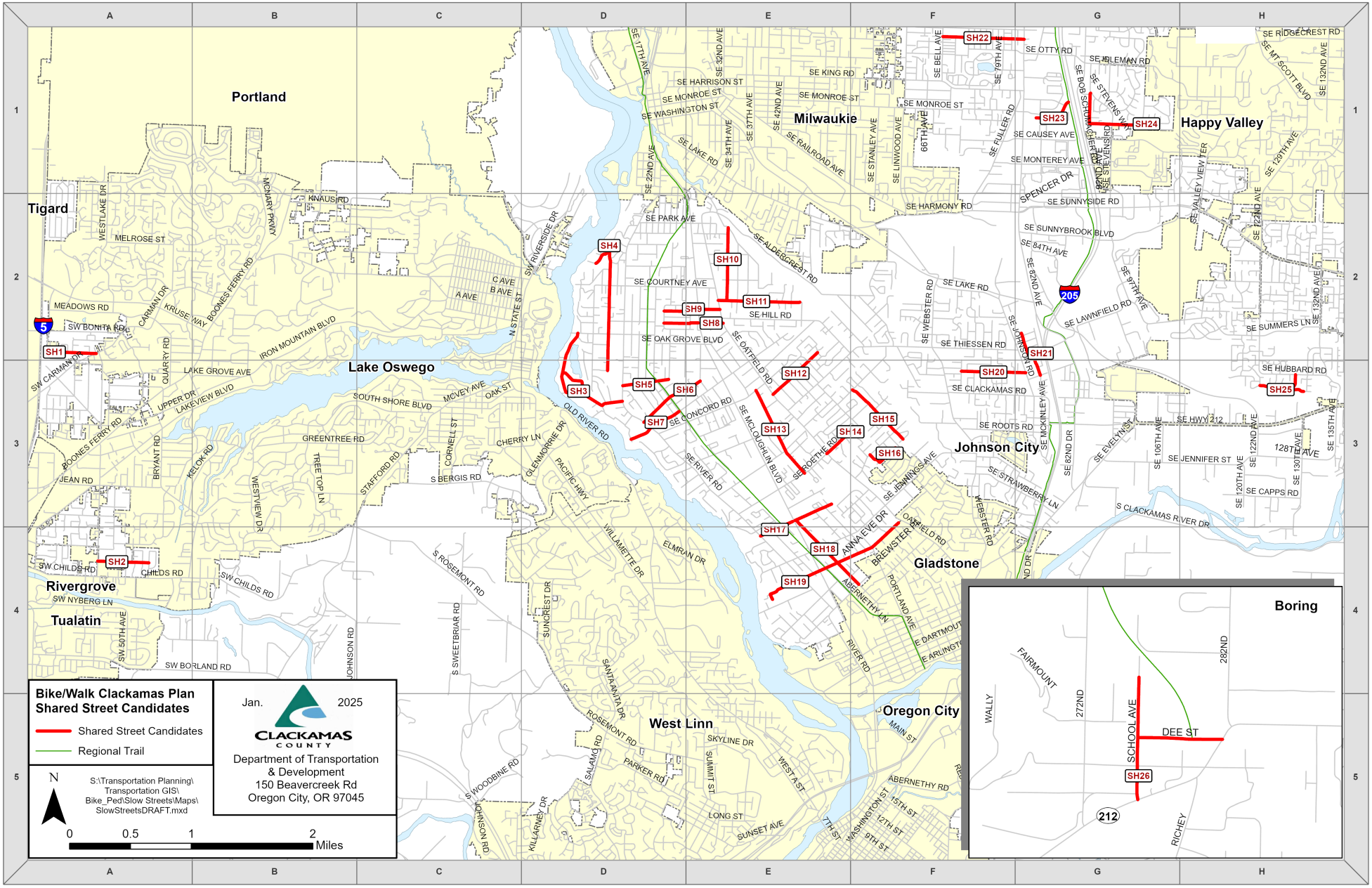


Figure 45 shows Shared Streets candidate locations in the County. Figure 46 details these candidate locations. These corridors were selected using the screening factors in Figure 44. Additional streets may be added as changes in land use occur throughout the County.

Figure 46 Shared Street Candidate List

Shared Street Candidate Identifier	Street Name(s)	Extent 1	Extent 2	Miles	Area	Map Locator
SH1	Burma Rd	Bangy Rd	Carman Dr	0.39	Northwest	A-3
SH2	Dawn St	SW Pilkington Rd	SW Indian Springs Rd	0.42	Northwest	A-4
SH3	SE River Forest Dr / SE River Forest Ct / SE River Forest Rd	SE River Rd	SE Oak Grove Blvd	1.30	McLoughlin	D-3
SH4	SE Laurie Ave	SE Anspach St	End of County Maintenance	1.13	McLoughlin	D-2
SH5	SE Creighton Ave	SE Arista Dr	SE Linden Ln	0.37	McLoughlin	D-3
SH6	SE Swain Ave	SE River Rd	SE East Ave	0.57	McLoughlin	D-3
SH7	SE Risley Ave	SE Oak Shore Ln	Trolley Trail	0.47	McLoughlin	D-3
SH8	SE Maple St	SE Bunnell St	SE Oatfield Ave	0.47	McLoughlin	E-2
SH9	SE Chestnut St / SE Pine Ln	SE Bunnell St	SE Oatfield Ave	0.43	McLoughlin	E-2
SH10	SE Briggs St	SE Pinehurst Ave	SE Nixon Ave	0.60	McLoughlin	D-2
SH11	SE Pinehurst Ave	SE Oatfield Rd	SE Piper Cub Way	0.67	McLoughlin	E-2
SH12	SE Robin Rd	SE Oatfield Rd	SE Wanda Dr	0.50	McLoughlin	E-3
SH13	SE Harold Ave	SE Roethe Rd	SE Concord Rd	0.79	McLoughlin	E-3
SH14	SE Roethe Rd	SE Oatfield Rd	SE Byron Dr	0.32	McLoughlin	E-3
SH15	SE Cordova Ct / SE Norma Rd	SE Oetkin Rd	SE Norma Cir	0.58	McLoughlin	F-3
SH16	SE Anna Eve Dr / SE Brewster Pl	SE McNary Rd	End of County Maintenance	0.28	McLoughlin	F-3
SH17	SE Boardman Ave	SE River Rd	SE Boardman Ct	0.62	McLoughlin	E-4
SH18	SE Addie St	SE Boardman Ave	Gladstone city limits	0.74	McLoughlin	E-4
SH19	SE Hull Ave	SE Water Edge Way	End of County Maintenance	1.27	McLoughlin	E-4
SH20	SE Cypress Ave	SE Johnson Rd	SE Del Rey Ave	0.53	McLoughlin	F-3
SH21	SE Orchid Ave	SE Carnation St	SE Jannsen Rd	0.37	McLoughlin	G-2
SH22	SE Lamphier St	SE Bell Ave	SE 82nd Ave	0.67	CTC West	F-1
SH23	SE Spencer Dr	SE 85th Ave	I-205 Multi-Use Path	0.33	CTC West	G-1
SH24	SE 92nd Ave / SE Hillcrest Rd	SE Stevens Way	SE 102nd Ave	0.68	CTC East	G-1
SH25	SE Bluff Dr / SE 128th Ave	SE Hubbard Rd	SE 130th Dr / SE Lostine Dr	0.50	CTC East	H-3
SH26	SE Dee St / SE School Ave	OR212	OR212 / Kipers Ln	0.73	East	

7. PROGRAM RECOMMENDATIONS

While infrastructure improvements are an important part of making walking and biking safer and more comfortable, supportive programs help build awareness, use, and safety of these investments.

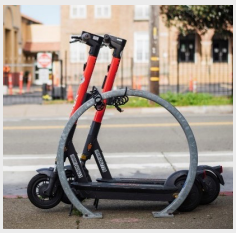
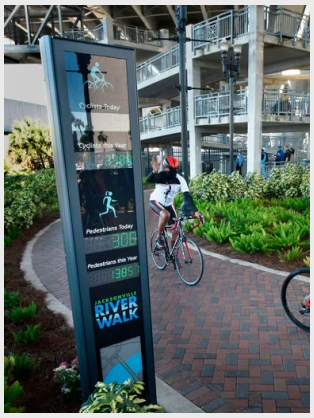
7.1 Proposed New Programs

Clackamas County already has programs that support walking and bicycling, but several new programs could help address community desires and complement infrastructure investments. Potential programs for the WBC plan are categorized into three groups: events, campaigns, and mode shift. Not all programs need funding and resources in place to be included in the plan; some programs may be included in the plan for future implementation.

Program success is amplified when partnerships are leveraged. These partnerships could include local jurisdiction planning and public works departments, police and sheriff departments, Clackamas County Public Health, and advocacy/support organizations. Existing county programs are described in **Appendix G: Technical Memorandum 6: Supportive Programs**.

Figure 47 Programs

	Program	County Role	Level of Effort	Impact
Events	 **Open Streets** Events that close a portion of a road to cars to allow people to walk, bike, skateboard, scoot, and have fun with friends, family, and neighbors	Lead/Support Partner with nonprofits	Medium-High	High
Campaigns	 **School Zone Safety** Promote safe driving behaviors for parents and other adults, and safe walking and bicycling access to schools for students	Lead Partner with local agencies and nonprofits	Low	Medium
	 **Bicycle-Friendly Drivers** Build driver awareness of how to safely drive on roads with bike lane and other facilities, and rights and responsibilities of people bicycling and driving	Lead Partner with local agencies and nonprofits	Medium	Low
	 **No Parking in Bike Lane** Target illegal car/truck parking in bike lanes to ensure lanes remain open and usable to people bicycling	Lead Partner with local agencies and nonprofits	Low	Low

	Program	County Role	Level of Effort	Impact
Mode Shift	 **Micromobility** Offered shared services -- such as short-term bike, electric bike, or electric scooter rentals -- to give people travel options for short trips	Lead/Support Partner with Metro, local agencies	High	Medium
	 **Bicycle and Pedestrian Counts** Gather data about the number of people walking and biking at key locations to learn what's working and what needs to be done	Lead/Support Partner with Metro, local agencies	Medium-High	High
	 **Street Painting Program** Develop street painting program to allow for neighborhood groups to install street murals to foster lower speeds and solidify shared streets	Lead Partner with nonprofits	Medium	Medium


INTERSTATE
205

8. Bicycle and Pedestrian Facility Design Toolkit

A Bicycle and Pedestrian Facility Design Toolkit provides a framework for county staff to identify and design bicycling and walking improvements with consistency.

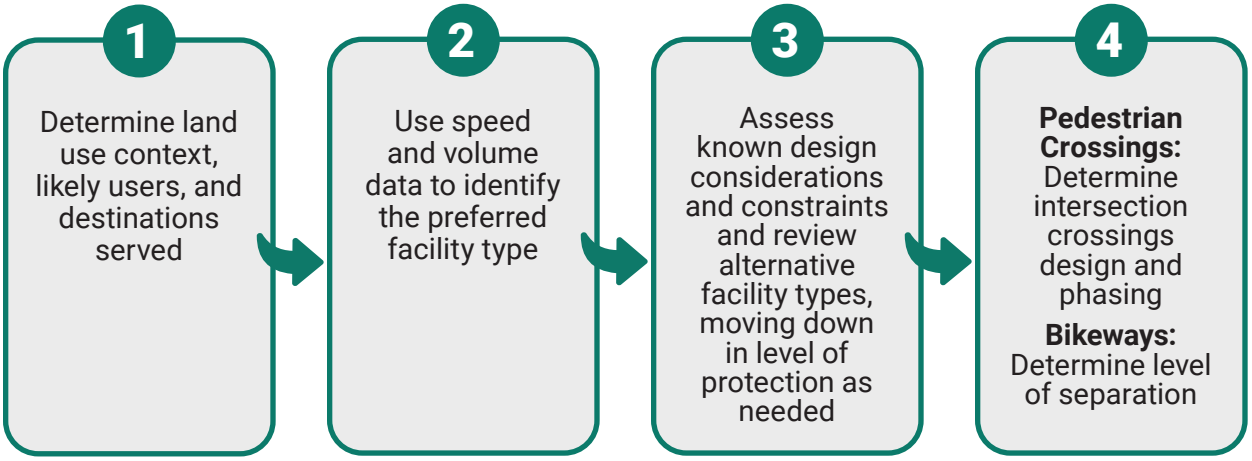
An updated Bicycle and Pedestrian Facility Design Toolkit expands options for active transportation in Clackamas County. It provides:

- A process to support decision-making
- Design guidance for new types of walking and bicycling facilities

8.1 Decision Making

Many of the proposed projects in this plan include new or upgraded crossings, paths, or lanes. The variety of road types and land uses throughout the County means that there is not a one size fits all solution for how to fill a gap or improve the quality of a location. The Toolkit provides a process to support decision making, illustrated in Figure 48.

Figure 48 Facility Selection Process



8.2 Key Facility Types and Design Elements

Certain facility types and design elements are key to advancing priority WBC projects. These elements – which are described in more detail below -- provide guidance on supportive treatments for conflict areas or other locations to increase comfort and safety for people walking and biking:

- Mid-block Crossings
- Uphill/downhill Markings
- Bicycle Box
- Bicycle Ramps
- Two-stage Left-turn Markings
- Bicycle Signals
- Vehicle Parking
- Vertical Separation for Bike Lanes
- Shy Zones
- Bicycle Crossing Markings - Colored Pavement in Conflict Zones

Mid-Block Crossings

Intersection and mid-block crossings can serve as key connections in the active transportation network. Mid-block crossings often connect multi-use path segments or commonly used paths to key destinations like schools, libraries, public institutions, etc.

Uphill/Downhill Markings

Uphill bicycle lane and downhill shared lane markings can be used in constrained rights-of-way to provide separate space for uphill bicyclists that travel significantly slower than vehicle traffic while alerting drivers that the downhill lane is shared with (faster-moving) bicyclists.

Bicycle Box

A bicycle box is a designated area on the approach to a signalized intersection consisting of an advanced stop line and bicycle symbols. Bike boxes are primarily used to reduce conflicts between through bicyclists and right-turning motorists at the beginning of the green signal phase.

Bicycle Ramps

Bicycle ramps can be used to transition bicyclists from on-street bicycle facilities (e.g., shared lanes, bicycle lanes, and shoulders) to off-street facilities (e.g., sidewalk-level protected bike lanes and multi-use paths).

Two-Stage Left-Turn Markings

A two-stage bicycle turn box designates an area at an intersection where bicyclists can wait for traffic to clear or for the signal to change before proceeding across the intersection (i.e., performing a two-stage turn). It may be used for left or right turns (i.e., turning right off of a two-way bikeway on the opposite side of the street). Research shows that this treatment is preferred by most bicyclists over a bicycle box for left turns.

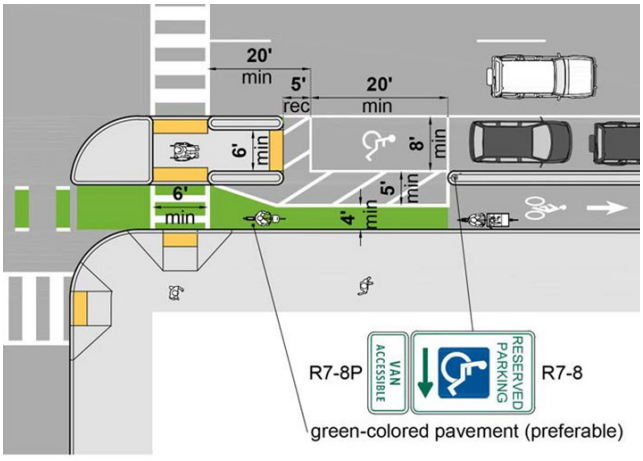
Bicycle Signals

Bicycle signals provide a dedicated signal phase for bicyclists to move across an intersection when cars are not – in particular right-turning vehicle traffic -- or to facilitate a diagonal crossing of an intersection for a multi-use path.

Vehicle Parking

On-street parking may serve residents or street-oriented businesses. On-street parking can provide a buffer for bicyclists and pedestrians, improving their comfort and safety, by placing moving automobiles further away. The presence of parking may also reduce automobile traffic speeds on the street.

The need for on-street parking is often a consideration in reallocating road space for enhanced pedestrian facilities and higher-quality bikeways.



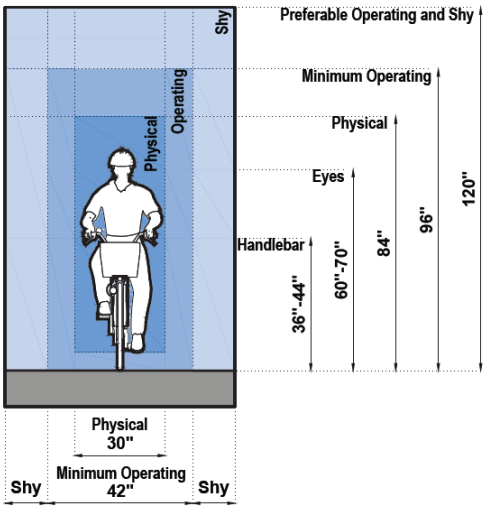
Vertical Separation for Bike Lanes

Protected bike lanes, raised cycle tracks, and multi-use paths all benefit from continuous or intermittent vertical elements in the street buffer to provide separation between motor vehicle traffic and the bikeway operating zone, and to discourage or prevent motor vehicle encroachment into the bikeway.

Examples of vertical elements include, but are not limited to, raised medians, textured pavement, flexible delineator posts, precast curbs (or parking stops), mountable curbs, planter boxes, parked cars, concrete barriers or rigid bollards, and landscaping/stormwater treatment facilities.

Shy Zones

Shy zone distance is the distance from which bicyclists feel comfortable riding next to physical (often vertical) elements. Bicyclists shy away from other bicyclists and vertical obstructions to avoid handlebar and pedal strikes. Shy distance plus operating space should be considered in the design of bikeways.



Bicycle Crossing Markings – Colored Pavement in Conflict Zones

Careful consideration for addressing potential motorist/pedestrian/bicyclist conflict areas at intersections, crossings, and transitions between facility types should be part of the facility design process. Conflict areas pose significant deterrents for many users and can result in a decision not to walk or bike.


9000 Block
NORTH
Portland
ONLY
Sunnyside
Road
SOUTH
Oregon City
ONLY
40

9. MOVING FORWARD

Implementation will require community support and political leadership in addition to funding for both initial investments and ongoing maintenance.

This chapter outlines potential funding sources, implementation pathways, and accountability strategies.

9.1 Funding the Plan

Implementing a connected bicycle and pedestrian network in Clackamas County will take many years. It will require a variety of funding sources and creative collaborative efforts among various agencies to fund and build the network of walkways and bikeways, starting with the Tier 1 projects within each planning area.

Potential funding sources for active transportation are shown in the table below.

Figure 49 Funding Sources

	Common Funding Sources
County/local	• Urban Renewal District (Tax Increment Financing and Capital Projects Funds) • Community Road Fund • Fee in Lieu of (FILO) • Transportation System Development Charge (SDC)
Regional & State	• Regional Flexible Fund Allocation (RFFA) • Statewide Transportation Improvement Program (STIP) • Oregon Safe Routes to School (SRTS) • Oregon Community Paths (OCP) • Recreational Trails Program (RTP) through Oregon Parks and Recreation Department • Oregon Transportation Infrastructure Bank

	Common Funding Sources
Federal	• Rebuilding American Infrastructure with Sustainability and Equity (RAISE) • Federal Lands Access Program (FLAP) • Safe Streets and Roads for All (SS4A) Grant Program • Reconnecting Communities and Neighborhoods Grant Program (RCP) • New Federal Funding Sources Established by the Bipartisan Infrastructure Law (BIL) – Carbon Reduction Program – PROTECT Formula Program – Active Transportation Infrastructure Investment Program

9.2 Implementation

Projects have multiple pathways to implementation. Projects may be implemented through processes internal to the County or rely on external partnerships, through private developer requirements or partnerships with other agencies. Leveraging various implementation approaches and programs creates diverse opportunities to get projects off the ground.

Transportation Maintenance

The Clackamas Transportation Maintenance Division is responsible for the upkeep and repair of county roads and bridges, road-related infrastructure implementation. In addition to regular yearly maintenance, the division addresses over 5,000 maintenance requests from the public annually.

Hot Spot Programming

The Active Transportation Hot Spot program is a community-led effort by the county's Pedestrian and Bikeway Advisory Committee (PBAC) to identify and solve bicycle and pedestrian safety issues. These "hot spots" are specific locations on the road where there is a safety risk for people walking and biking. The program addresses these issues to reduce crashes involving people walking or bicycling. These problems are more significant than routine maintenance but not large enough for inclusion in broader transportation projects. Low-cost, hot spot projects are an easy way to advance small active transportation efforts. County should continue to support the Hot Spot program and advance implementation of solutions identified by the PBAC.

Private Developer Requirements

Encouraging or requiring private developers to complete local bicycle and pedestrian facilities is essential for connecting and enhancing bicycle and pedestrian access to key community destinations and closing gaps in the active transportation network. When local authorities collaborate with private developers to integrate walk- and bike-friendly amenities into new developments, they can create well-connected residential and business areas that support active transportation. Providing developers options to pay fees instead of building necessary active transportation facilities allows local government to allocate funding towards high priority active transportation near the new development.

Regional or State Partnerships

Exploring opportunities for collaboration with regional and state partners, such as the Oregon Department of Transportation (ODOT), North Clackamas Parks & Recreation District (NCPRD), Oregon State Parks, and municipal partners, can help Clackamas County advance larger-scale active transportation efforts that are challenging to fund locally. The County might consider leveraging these partnerships to group multiple projects under a single grant. A comprehensive network of improvements often yields a better return on investment during Benefit Cost Analysis than individual projects.

9.3 Accountability Strategies

Project implementation will be best supported by one or a combination of the strategies below:

- Ongoing financial and staff support for the county's Pedestrian and Bikeway Advisory Committee (PBAC)
- A quarterly agency partner workshop focusing on active transportation
- Additional staffing

10. APPENDICES

A. Fact Sheet

B. Public Involvement Plan

C. Title VI Equity Assessment Memorandum

D. Technical Memorandum 1: Health Equity Framework

E. Technical Memorandum 2: Baseline Health Conditions

F. Technical Memorandum 3: Plan Review

G. Technical Memorandum 4: Existing Conditions Analysis

H. Technical Memorandum 5: Pedestrian and Bicycle Goals

I. Technical Memorandum 6: Supportive Programs

J. Technical Memorandum 7: Shared Streets

K. Technical Memorandum 8: Gaps and Deficiencies Analysis

L. Technical Memorandum 9: Project Prioritization Methodology

M. Technical Memorandum 10: Pedestrian and Bicycle Project Identification

N. Technical Memorandum 11: Pedestrian and Bicycle Priority Project Recommendations

O. Cost Estimate Methodology

P. Funding and Implementation Strategy (December 2023)

Q. Engagement #1 Summary (Winter 2022)

R. Engagement #2 Summary (Spring 2023)

S. Engagement #3 Summary (Summer 2023)

T. Engagement #4 Summary (April 2024)


CLACKAMAS
COUNTY