

## **Chapter 5: TRANSPORTATION SYSTEM PLAN**

The Clackamas County Transportation System Plan (TSP) will guide transportation 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 \_\_ open houses and \_\_ meetings with members of three advisory groups. Staff and the public 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, waterways, multi-use paths and trails. 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 be support sustainable land use patterns and policies to serve a multitude of public needs without sacrificing air and water quality or creating noise pollution.

Agencies, public and private service providers, and developers are involved in building and maintaining the County’s transportation system. Metro, the Portland metropolitan region’s governing body, coordinates transportation financing for many projects, sets priorities for expenditures, and sets standards for the operation and design of regional elements 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 proliferation of motor vehicles, housing and businesses, which increase the demand for road miles. 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: In order to decrease road congestion and reduce energy consumption, greater reliance on transit, bicycles, foot traffic, carpools, and other transportation modes may be necessary, along with decreased average trip length. Use of these modes will decrease the need for costly road construction projects and improve 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.
- Fostering economic growth: In the current uncertain economy, monitoring the effects of transportation on employment and economic activity is especially important. Of particular significance are the ways transportation can be used as a tool to promote and even stimulate economic development both in the urban industrial and commercial centers and within the county's distinctive rural economy, including agriculture, forestry and equestrian facilities.
- Minimizing 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 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 degrading of air quality in the Mt. Hood Wilderness.

- Improving accessibility: In many areas of the County, transportation disadvantaged populations like elderly, disabled or low-income residents need better access to public transit and/or special transportation services. Improving roads to perform all the necessary functions and be accessible to those who choose not to drive or cannot drive is an important consideration for the County's transportation system.
- 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. There may be the need to expand a formerly rural road network to a full-service urban transportation system in newly-urbanizing areas.

## **TSP ORGANIZATION**

To implement the vision and goals and address the issues identified above, a series of policies have been created to direct the county in its efforts to build and maintain a truly multi-modal transportation system. The policies are presented in this chapter by major topic or mode as follows:

- 6. Foundation and Framework**: includes policies relating to coordination; safety; equity, health and sustainability; intelligent transportation systems; and transportation demand management
- 7. Land Use and Transportation**: includes policies relating to the integration of land use and transportation; parking rural tourism; and scenic roads.
- 8. Active Transportation**: includes policies relating to coordination for and design and construction of pedestrian and bicycle facilities and multi-use paths.
- 9. Roadways**: includes policies relating to functional classification; urban and rural roadway considerations; project development; improvements to serve development; and performance evaluation and access standards.
- 10. Transit**: includes policies relating to coordination with transit providers and development providing transit-supportive amenities.
- 11. Freight, Rail, Air, Pipeline and Water Transportation**: includes policies relating to general freight movement; freight trucking; rail; airports; pipelines; and water transportation.
- 12. Finance and Funding**: includes policies relating to funding transportation improvement and maintenance.

**13. Capital Improvement Plan:** includes policies relating to the 20-year and 5-year capital improvement plans and other special transportation plans and studies.

**14. 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 (Table 5-1).
- **Tables, maps and cross sections** illustrating the transportation system and presenting guidelines and standards for developing the system (Tables 5-nn, Maps 5-nn, Figures 5-nn).
- Special Transportation Plans and other Plans that **are adopted by reference as refinements of the TSP** are included in Appendix A.
- **Background documents (title)** including detailed findings and conclusions relating to the various components of the transportation system (Appendix B).

*TRANSPORTATION SYSTEM PLAN POLICIES*

In each set of policies, the “countywide” policies are listed first, followed by the urban policies, and the rural policies. To distinguish these subgroups, the word **Urban** or **Rural** begins the policies that are applied specifically to one or the other area. If a policy statement does not begin with either Urban or Rural, then the policy applies countywide.

## **6. FOUNDATION AND FRAMEWORK**

Clackamas County’s transportation networks serve local communities and also tie into the region 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 to enhance views of what a complete and sustainable transportation system contains. It needs to be responsive to new approaches, techniques and measures developed for assessing the performance of the system. Utilizing 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 the individuals’ preferred methods of travel. The accessibility of the transportation system for all individuals, regardless of age, income or nationality is also a primary concern. Safety and accessibility must always be forefront in the minds of those planning transportation improvements and new systems to provide for equity, healthy communities and sustainable outlook on how to manage our resources.

### **6.1 Compliance and Coordination**

- 6.101 Support intergovernmental partnerships needed to promote coordination and solve multi-jurisdictional transportation needs in rural and urban areas.
  - 6.102 Work collaboratively with federal, state, regional, and local agencies and with County residents to pursue the County's road safety programs and plans.
  - 6.103 Work with state and local partners to implement the Oregon Transportation Safety Plan.
  - 6.104 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.
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- 6.105 Work with the Oregon Office of Emergency Management and Clackamas County Emergency Management to ensure that the TSP supports effective responses to natural and human-caused disasters and emergencies, and access during these incidents.
  - 6.106 **Urban** Coordinate with Metro and local governments to implement the Regional Transportation Plan (RTP), the Regional Transportation Functional Plan (RTFP), Urban Growth Management Functional Plan (UGMFP), and local transportation plans.
  - 6.107 **Rural** Pursue formation of an Area Commission on Transportation (ACT) for the portions of Clackamas County outside the Metro Urban Growth Boundary to facilitate a coordinated approach to addressing issues on the state transportation system.
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## **6.2 Road Safety**

- 6.201 The Clackamas County Safety Action Plan is adopted as a supporting document (adopted?) to the Transportation System Plan. The County shall periodically shall update and amend the Clackamas County Safety Action Plan to reflect any needed changes.
  - 6.202 Identify transportation system safety improvements that will help decrease the number of fatalities and injuries for all travel modes. Focus improvements on high crash locations and rights-of-way within 1/4 mile of schools
  - 6.203 Reduce inter-modal conflicts by providing new signalized pedestrian/bike crossings, grade-separated facilities, new route designations, or other strategies.
  - 6.204 Work to ensure that posted traffic speeds are compatible with adjacent land uses and support safety for all modes of travel.
  - 6.205 Increase awareness of traffic safety (?) within the County through actions, regulations, policies and practices at all levels.
  - 6.206 Align County departments and external safety groups to work toward common state, regional, county and city safety goals.
  - 6.207 Integrate roadway, safety and traffic data management sources.
  - 6.208 Integrate Highway Safety Manual (HSM) principles into transportation investment decisions. (*what/where are these?*)
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## **6.3 Equity, Health and Sustainability**

- 6.301 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.. (*add location of map to definitions*)
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- 6.302 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 to minimize the proximity of sensitive land uses to high traffic roads, 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.
  - 6.303 Work with public agencies, private businesses and developers to increase and improve infrastructure necessary for supporting use of vehicles that use alternative fuels.
  - 6.304 Support the continued provision of public transportation services to county populations that are un-served or under-served. Evaluate proposals to shift public transportation resources that serve un-served or under-served populations to another transport mode from the perspective of transportation equity and the long-term sustainability of the transportation system. *(need to clarify)*
  - 6.305 Support the network of community-based, transportation services for seniors and persons with disabilities.
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#### **6.4 Intelligent Transportation Systems (ITS)**

- 6.401 Develop a County Intelligent Transportation System (ITS) Action Plan to implement portions of the Regional Transportation System Management and Operations (TSMO) Plan and to direct the County ITS Program.
  - 6.402 Support the use of a wide range of ITS projects to improve mobility, accessibility and connectivity for people, goods and services.
  - 6.403 Adopt and periodically update an ITS Action Plan as part of the County's 5-Year Capital Improvement Program.
  - 6.404 Encourage the interconnection of the County ITS System and rail crossing traffic safety devices. **FHWA Rail Safety reference (Check reference and original language)**
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#### **6.5 Transportation Demand Management (TDM)**

- 6.501 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..
  - 6.502 Provide adequate bicycle and pedestrian facilities to employment areas of Clackamas County to encourage use of alternative modes for the commute to work and to improve access to jobs for workers without cars.
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- 6.503 **Urban (?)** Work with Clackamas 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 adopted in this Plan.
  - 6.504 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.
  - 6.505 Ensure that all Transportation Demand Management (TDM) programs are appropriate for all Clackamas County residents, including transportation disadvantaged populations. *(combined with next)*
  - 6.506 Transportation Demand Management techniques used by the County should be appropriate for all County residents and include education, encouragement, and enforcement programs designed to increase efficient use of existing transportation infrastructure and minimize congestion and safety concerns by influencing people’s choice of mode, route, and time. *(suggest moving up to first policy)*
  - 6.507 **Urban** Establish the following Year 2040 Non-Drive Alone targets for Regional 2040 Design Types:

2040 Design Type		Non-Drive Alone Modal Target
Regional Centers	Town Centers	45-55%
Main Streets	Station Communities	
Corridors		
Industrial Areas	Inter-modal Facilities	40-45%
Employment Areas	Inner and Outer	
Neighborhoods		

- 6.508 **Urban** Work with and support Transportation Management Associations, major employers and business groups to develop and implement demand management programs to work towards mode share targets adopted in this Plan. *(combine with 6.503)*
  - 6.509 **Rural** Encourage employers and schools outside urban growth boundaries in Clackamas County to implement a range of TDM policies to help their employees and students reduce VMT, maximize use of existing facilities, and increase walking, biking and transit use.
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## 7. 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 system design be flexible and able to accommodate both urban networks and the different needs of rural area users, including preserving scenic roads and adjacent land use to provide safe roads for users of all modes to enjoy the rural area's scenic beauty.

Emphasize forestry and agricultural as potential for rural tourism. Relates to policy 7.201 which is specific to ORS about agri-tourism in EFU. *(not sure how this ties in here)*

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

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### 7.1 Integration of Land Use and Transportation

- 7.101 Encourage a relationship between land use and roadways which decreases average trip length and increases accessibility for all modes. Land use and transportation policies shall be integrated consistent with state law regarding preservation of farm and forest lands.
  - 7.102 Support efforts to enhance and maintain the function of State highways and County arterials through land use policies, access management strategies and roadway improvements.
  - 7.103 Support and promote an integrated approach to land use and transportation planning and implementation that encourage livable and sustainable communities.
  - 7.104 **Urban** Support transportation planning and implementation that encourage livable and sustainable urban communities. *(combined with 7.103)*
  - 7.105 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.
  - 7.106 **Rural** Support and promote an integrated approach to land use and transportation planning to help create livable and sustainable rural communities to reduce reliance on long commutes *(combined with 7.105)*.
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## 7.2 Rural Tourism

- 7.201 **Rural** In rural areas, 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 shall be required to reduce the effects of these limited land uses on the County road system.
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## 7.3 Parking Policies

- 7.301 Set minimum and, where appropriate, maximum limits on allowed off-street parking of motor vehicles relative to building size, location use, and to adjacent land uses. In the urban area, parking standards shall be coordinated with regional parking requirements.
- 7.302 On-street parking may be prohibited in front of schools, as needed, to ensure student safety and school security and shall be reviewed on a school-by-school basis.
- 7.303 Require new multi-family, retail, office and institutional development to provide short-term and long-term bicycle parking, as appropriate. For development inside the Metro UGB, bicycle parking standards shall comply with Title 4 of the RFTP.

### Urban Parking Policies

- 7.304 **Urban** Existing, on-street parking along arterials and collectors may be removed to stripe bike lanes, construct travel or turning lanes, or increase sight distance.
- 7.305 **Urban** Increase on-street parking in residential areas by minimizing the width of driveway curb cuts.
- 7.306 **Urban** Require off-street parking in commercial, industrial, and high density residential areas to be located at the sides or rear of buildings where practical.
- 7.307 **Urban** Allow for decreased parking area requirements for development along transit routes, if the development provides pedestrian and transit amenities.
- 7.308 **Urban** Allow for decreased parking area requirements for commercial and industrial development if they provide and maintain ridesharing programs.  
*Ridesharing affecting parking is not required in RFTP or TPR. (delete – not feasible)*
- 7.309 **Urban** Require shared parking where feasible, such as within mixed-use development and where adjacent land uses are compatible. Shared parking can be used to comply with parking standards.
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## 7.4 Rural Scenic Roads

- 7.401 Implement a County Scenic Road System that is safe and attractive for bicyclists as well as for motorists.
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- 7.402 The Scenic Road designation is intended to protect 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:
- a) Scenic roads shall have strict access control on new developments.
  - b) Scenic roads shall have shoulders wide enough for pedestrians or bicycles, or a separated path where feasible and when funding is available.
  - c) Turnouts shall be provided where appropriate for viewpoints or recreational needs.
  - d) Design review of developments adjacent to scenic roads shall require visual characteristics and signing appropriate to the setting.
  - e) Buildings shall be set back a sufficient distance from the right-of-way to permit a landscaped or natural buffer zone.
  - f) Parking areas adjacent to scenic roads shall be separated from the right-of-way by a landscaped buffer.
  - g) Any frontage roads adjacent to scenic roads shall be separated by a vegetative buffer where feasible.
  - h) Underground placement of utilities shall be encouraged.

7.403 The following facilities shall be designated scenic roads: **(see Map SCENIC ROADS)**

<b>County Facilities</b>
1 Wilsonville Road
2 Stafford Road (Lake Oswego to Mountain Road)
3 Schaeffer Road
4 Pete’s Mountain Road (Schaeffer Road to Tualatin River)
5 SW Mountain Road, Canby Ferry Rd, N. Locust, NE 37th, and Holly Street
6 Canby-Marquam Highway (Canby to Hwy 211)
7 Clackamas River Drive
8 Springwater Road (Clackamas River Dr to Hayden Rd)
9 Hayden Road
10 Redland Road
11 Fischer’s Mill Road
12 Marmot/Barlow Trail Road

13	Lolo Pass Road
14	Salmon River Road
15	Still Creek Road
16	Timberline Road and West Leg Road
<b>State or Federal Facilities</b>	
A	I-205 west of the Willamette River
B	Highway 99E from Oregon City to New Era Rd
C	Oregon City Bypass (Newell Creek Canyon segment)
D	Highway 211 (Canby-Marquam Highway to Estacada)
E	Highway 224 (Carver to Barton and south of Estacada)
F	Highway 26 east of Sandy
G	Highway 35/FS 386

7.404 Support implementation of the Oregon Scenic Byway System including the Mt. Hood Scenic Byway and the West Cascades Scenic Byway.

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## 8. 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 the likelihood of people travelling by active transportation modes. “Active Transportation” historically is defined to include only walking and bicycling. For the purposes of this TSP, the definition has been expanded to include equestrians, where appropriate. Including consideration for equestrians stems from the understanding that there are different demands on the roads, paths and trails in the rural area than in the urban areas and those demands need to be accommodated differently by the system.

The County completed transportation systems planning for pedestrian and bicycle modes in 1995 to implement the state’s Transportation Planning Rule (TPR). The TPR is grounded by the principles that:

1. Land use and transportation are intimately related.
2. Over reliance should not be placed on any one transportation mode.
3. Walking and bicycling reduce the number of motorized vehicle trips.
4. Compact, mixed-use development encourages the use of non-motorized modes.
5. “Well-planned”, properly designed facilities will encourage people to make trips by non-motorized modes.
6. 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.

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 as supporting documents. Both master plans were prepared under the guidance of the Clackamas County Pedestrian and Bikeway Advisory Committee, which was guided by the following vision:

*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.*

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### 8.1 Coordination

- 8.101 Coordinate the implementation of pedestrian facilities and bikeways with neighboring jurisdictions and jurisdictions within the county.
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- 8.102 Ensure an opportunity for a diverse and representative citizen involvement in the county pedestrian and bicycle planning process by sponsoring the Clackamas County Pedestrian and Bikeway Advisory Committee (CCPBAC) as a forum for public input. Recruit representatives of transportation disadvantaged populations as part of this process.
  - 8.103 Monitor and update the Clackamas County Pedestrian Master Plan and Bicycle Master Plan through data collection and evaluation, and review activities necessary to maintain and expand the programs established in these plans.
  - 8.104 Prioritize bicycle, pedestrian and transit projects that serve the needs of transportation disadvantaged populations.
  - 8.105 Coordinate with pedestrian, bicycle, and trail master plans, the County’s Special Transportation Plans and the Oregon Department of Transportation, the United States Forest Service, Metro, parks districts and parks departments to achieve a safe and convenient off-road multi-use path and trail system connecting to the on-road pedestrian facilities and bikeway network.
  - 8.106 Support the continuation of the “Bikes on Transit” program on all public transit routes.
  - 8.107 Establish a program to inform property owners of their responsibilities for the maintenance of sidewalks and pedestrian pathways. *(delete)*
  - 8.108 **Urban** Coordinate with cities to 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.
  - 8.109 **Rural** Support bike and pedestrian projects that improve access to public transit stops in networked rural areas of the County and provide connections to significant local destinations.
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## 8.2 Design

- 8.201 The implementation of bikeways and pedestrian facilities shall be required where feasible for all new collector or arterial construction or substantial reconstruction, even if not designated on the Planned Bikeway Network (Maps V-7a, V-7b), and on the Essential Pedestrian Network (Map V-8).
  - 8.202 **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.
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- 8.203 **Urban** Identify pedestrian facilities and bikeway improvements necessary to ensure direct and continuous networks of pedestrian facilities and bikeways on the county road system.
- 8.204 **Urban** Promote grid-street development patterns to provide direct and convenient routes from neighborhoods to destinations frequented by pedestrians and bicyclists.
- 8.205 **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.
- 8.206 **Urban** Review development plans to ensure that they provide bicycle and pedestrian access from secondary streets and off street rights-of-way.
- 8.207 **Rural** Improve the safety and appeal of walking and biking by supporting the development of bicycle and pedestrian facilities and networks on low volume or local roads and off of existing street rights-of-way. Review development plans to ensure that they provide bicycle and pedestrian access to low volume or local roads, when appropriate and feasible.
- 8.208 **Rural** Support the safe movement of equestrians in rural areas.
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### 8.3 Construction

- 8.301 Construct pedestrian facilities and bikeways designated in this Plan and any other proposed pedestrian facilities, according to the current County design standards, the American Association of State Highway and Transportation Officials (AASHTO) standards, *Oregon Bicycle and Pedestrian Plan*, and the Americans with Disabilities Act (ADA) standards.
- 8.302 **Urban** Construct all bikeways designated in this Plan and any other proposed bikeways according to the current standards in the *Oregon Bicycle and Pedestrian Plan* and the *American Association of State Highway and Transportation Officials* (AASHTO) standards. (*combined with 8.301*)
- 8.303 **Urban** Construct all pedestrian facilities, bikeways, multi-use paths and trails as designated on **Maps V-7a, V-7b, and V-8**, and as adopted in Special Transportation Plans.
- 8.304 **Urban** To increase active transportation options, require that new development include construction of pedestrian facilities and bikeway connections within the development and between adjacent developments..
- 8.305 **Urban** Construct interim pedestrian facilities and bikeways, as appropriate, on existing streets that are not built to ultimate standards and where the construction of full street improvements is not practicable or imminent as deemed by the County Engineer and the County Planning Director.
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- 8.306 **Urban** Construct pedestrian facilities and bikeways adjacent to or within areas of development, such as schools, businesses, or employment centers, near or along highways.
- 8.307 **Rural** In Unincorporated Communities, construct pedestrian facilities and bikeways adjacent to or within areas of development (such as schools, businesses, or employment centers and at rural transit stops.
- 8.308 **Moved to 8.208 Rural** Support the safe movement of equestrians in rural areas.
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#### 8.4 Facilities

- 8.401 Encourage the provision of appropriate, supportive facilities and services for bicyclists, including showers, lockers, bike racks on buses, bike repair and maintenance information/clinics, and secure bicycle parking.
- 8.402 Establish and maintain way-finding systems to facilitate bicycle travel in the urban and rural areas of the County.
- 8.403 **Urban** Encourage the provision of street lighting to increase the visibility and personal security of pedestrians and bicyclists.
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#### 8.5 Multi-Use Paths

- 8.501 Support acquisition and development of multi-use paths on abandoned public and private rights-of-way.
- 8.502 Ensure that programs to encourage and educate people about bicycle, pedestrian, and transit transportation options are appropriate for all Clackamas County residents, particularly transportation disadvantaged populations. (move to 6.306)
- 8.5021 Support equestrians by collaborating with the appropriate service providers, such parks districts, to plan for multi-use paths that accommodate equestrian facilities where possible.
- 8.503 **Rural** Construct separate multi-use paths in rural areas according to American Association of State Highway and Transportation Officials (AASHTO) standards where travel lanes or wide paved shoulders along roadways may be unacceptable to pedestrians or bicyclists.
- 8.504 **Rural** Consider equestrian uses when designing and constructing multi-use paths. Work with the local communities and interest groups to plan, create 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.
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## 9. ROAD POLICIES

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 old 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 the development of new roads and redevelopment of existing roads, including design standards for both urban and rural roads, access standards and \_\_\_\_ (?) To ensure roads continue to meet the transportation demands of the County in the future, there needs to be a way to measure the ongoing performance of the system. Performance evaluation measures set the standards, but advancing technology has and the recognition of the need for efficiency in using existing system under financial constraints has led to changes in the performance evaluation standards, as is reflected in this TSP.

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### 9.1 Functional Classification

- 9.101 Designate and develop roadways according to the functional classifications and guidelines listed in Tables V-2 and V-3 (County Road Typical Cross Sections) while allowing flexibility to accommodate characteristics of terrain, scenic qualities, existing development, and adopted Special Transportation Plans. **Add subsections that apply to county road cross sections – i.e. notes**
  - 9.102 Designate freeways, arterials, collectors and connectors as shown on Maps V-2a and V-2b. Roadways that do not presently exist but are shown on these maps are shown in approximate locations.
  - 9.103 Maintain and improve roads consistent with their functional classification, and reclassify roads as appropriate to reflect function and use.
  - 9.104 As much as possible, preserve the efficient function of the regional transportation system in development of any new roads.
  - 9.105 Limit zone change approvals to those that will not require a roadway as planned in the Capital Improvement Plan to be redesigned or increased to a higher functional classification in order to maintain the minimum acceptable performance evaluation level. In review of zone change applications, State transportation facilities shall be evaluated according to the Oregon Highway Plan, Regional Transportation Plan, Transportation Planning Rule, and other applicable state requirements.
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## 9.2 Urban Roadway Policies

- 9.201 **Urban** The County shall consider the Regional Street Design Concepts when designing new county roads or redesigning existing county roads, prior to construction or reconstruction. **Map V-3** shows which roads are designated by each Design Concept.
- 9.202 **Urban** To minimize impacts of managing storm water, allow for the integration of Metro’s alternative street standards as design alternatives in the county road standards.
- 9.203 **Urban** Design arterials and collectors to allow safe and convenient passage of buses, bicycles, and pedestrians in urban areas.
- 9.204 **Urban** Streets, alleys, bikeways, pedestrian facilities, multi-use paths, trails and transit stops are allowed uses in all urban zoning districts. All state and County policies relating to these facilities shall be considered when widening, improving or constructing new transportation infrastructure.
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## 9.3 Rural Roadway Policies

- 9.301 **Rural** Road projects located outside urban growth boundaries shall be planned to support the existing development pattern and through traffic needs of the rural communities, and not planned to support or promote urbanization. Such road projects shall comply with Statewide Goal 12 (Transportation) to provide a safe and efficient transportation system meeting the needs of the rural area.
- 9.302 **Rural** Consistent with ORS 215.283(3), outside the UGB, county road capital improvement projects may be designed and constructed to improve safety and bring roads up to county standards when such road projects are:
- Climbing or passing lanes within current rights-of-way;
  - Reconstruction or modification of roads within current rights-of-way, including the addition of travel lanes;
  - Minor improvement of existing public road and highway-related facilities, such as maintenance yards, weigh stations and rest areas, within existing right of way;
  - Construction of additional passing and travel lanes that require acquisition of right of way, but do not result in the creation of new land parcels;
  - Road-related facilities and facilities provided in ORS 215.283(1) and (2) that have no conflicts with Statewide **Goals 3 or 4**.

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 as provided for in ORS 215.283(3).

- 9.303 **Rural** Pursuant to OAR 660, Division 12 that requires an exception to Statewide Planning Goal 3 (Agricultural Lands), Goal 11 (Public Facilities & Services) and Goal 14 (Urbanization) for constructing new arterial roads on EFU lands, an exception has been taken to allow for Arndt Road improvement listed as **project numbers nn and nnn on Table V-1**. For findings of fact and statement of reasons, see File ZDO 194.
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- 9.304 **Rural** Pursuant to OAR 660, Div 12 that requires an exception to Statewide Goal 3 (Agricultural Lands), Goal 11 (Public Facilities & Services) and Goal 14 (Urbanization) for constructing new arterial roads on EFU lands, an exception has been taken to allow for the Arndt Road improvement listed as project numbers nn and nnn on Table V-1. For findings of fact and statement of reasons, see File ZDO 195.
- 9.305 **Rural** Roads and multi-use paths 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).
- 9.306 **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.
- 9.307 **Rural** Design, construct and reconstruct rural arterials and collectors to allow safe and convenient passage of trucks, buses, pedestrians and bicyclists.
- 9.308 **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.
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#### 9.4 Project Development Policies

- 9.401 **Countywide** 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 its system capacity most efficiently.

TSM strategies include:

1. Access Management;
  2. Alternative/Modified Standards (Performance and/or Design Standards);
  3. Intelligent Transportation System (ITS) applications;
  4. Operational Improvements;
  5. Parking Standards;
  6. Enhanced Bike and Pedestrian Facilities; and,
  7. Road Diet (*Restriping low volume 4 lane road to a 3 lane configuration with bicycle and pedestrian facilities*).
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#### 9.5 Improvements to Serve Development

- 9.501 For new developments and land divisions, require right-of-way dedication, on-site frontage improvements to the applicable roadway standards as shown on Tables V-2 and V-3, (Road Cross Sections) and off-site improvements necessary to safely handle expected traffic generated by the development and travel by active modes. Where
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- roadway standards are adopted by the County in Special Transportation Plans, those standards shall apply.
- 9.502 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.
- 9.503 Develop and implement neighborhood traffic calming strategies that will improve the safety and convenience of travel by all modes, particularly in areas with high crash rates and high rates of bicycle and/or pedestrian activity.
- 9.504 **Urban** Require implementation of a road network for undeveloped sites illustrated on Map V-4. Existing roads shall be extended to provide a direct, connected system.
- 9.505 **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.
- 9.506 **Urban** Discourage motor vehicle through-trips on local, connector and collector roads, and encourage bicycle and pedestrian travel on these roads.
- 9.507 **Urban** Develop and implement a traffic calming program, appropriate for the road functional classification, in the urban area.
- 9.508 **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.
- 9.509 **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.
- 9.510 **Urban** Require that changes to Comprehensive Plan land use designations within the Interchange Management Areas identified on [Map V-12](#) be consistent with Oregon Administrative Rules 660-012-0060.
- 9.511 **Urban** Rights-of-way for urban arterials and collectors shall be adequate to accommodate all required road improvements including bike ways, pedestrian facilities, and drainage facilities.
- 9.512 **Rural** Rights-of-way for rural arterials and collectors, where possible, shall be adequate to accommodate all required road improvements including bikeways, shoulders, and drainage facilities.
- 9.513 **Rural** Discourage through trips on rural local roadways.
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- 9.514 **Rural** New rural area development shall accommodate on-site traffic circulation within the boundaries of the site, not by circulating 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.
- 9.515 **Rural** Dedication of adequate right-of-way and construction of road improvements may be required to serve traffic that will be generated by new development.

**9.6 Performance Evaluation Measures**

- 9.601 For County roads, establish the method of calculating roadway capacity and the impact of new development on that capacity in the County Roadway Standards.

- 9.602 **Table X-X**

**CAPACITY PERFORMANCE EVALUATION MEASURES  
PM 2-Hour Peak - Performance Standards**

<b>URBAN AREA</b>		
	<b>Maximum Volume to Capacity (V/C) Ratio</b>	
<b>Arterial and Collector Roads, by Land Use Type (Comprehensive Plan Map IV – 8)</b>	<b>1<sup>st</sup> Hour</b>	<b>2<sup>nd</sup> Hour</b>
<i>Central City    Regional Centers    Town Centers Main Streets    Station Communities</i>	<i>1.1</i>	<i>0.99</i>
<i>Corridors    Industrial Areas    Intermodal Facilities Inner and Outer Neighborhoods Employment Areas</i>	<i>0.99</i>	<i>0.99</i>
<b>Other Principal Arterials</b>		
<i>OR 99E (from Lincoln Street to OR 224 interchange)</i>	<i>1.1</i>	<i>0.99</i>
<i>Other Principal Arterial Routes I-205<sup>B</sup>    I-5 (Marquam Bridge to Wilsonville)<sup>B</sup> OR 212    OR 224 OR 213</i>	<i>0.99</i>	<i>0.99</i>
<b>RURAL AREA</b>		
<b>Rural County Road and ODOT Facility Intersections (based on posted speed and highway classification)</b>		
	<b>Maximum Volume to Capacity (V/C) Ratio</b>	

	1 <sup>st</sup> Hour	2 <sup>nd</sup> Hour
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
<b>Rural County Road Intersections</b>		
	<b>Minimum Level of Service (LOS)</b>	
<b>Rural Roads )</b>	<b>1<sup>st</sup> Hour</b>	
All rural areas	LOS D	

- 9.6021 The intersections of Park Avenue/OR 99E (SE McLoughlin Boulevard) and Park Avenue/Oatfield Road shall be evaluated according to the standards for a Station Community until such time as the boundary for the Park Avenue Station Community is finalized and adopted. **Goes in ZDO 1007.09(D)**
- 9.603 The County shall evaluate requiring a safety analysis, using a methodology such as the Predictive Method analysis (as described in the Highway Safety Manual), as part of traffic impact studies of impacted roadway facilities along with a capacity analysis. **ALTERNATIVE: The County shall evaluate requiring a safety analysis for a traffic impact study (TIS) required of new development, with the goal to transition away from requiring a capacity analysis.**
- 9.604 Where an intersection is located in several land use design types, each of which specifies performance evaluation measures such as a volume/capacity ratio, the intersection performance shall be evaluated against the highest measure. *(need to clarify and move up to follow table)*
- 9.605 The County will work with Metro and ODOT to develop Alternate Road Capacity Performance Standards to address the following 5 intersections that were forecast not to meet the Capacity Performance Standards (mobility targets) in the (date) TSP update.
- SE Harmony Rd/SE Linwood Ave
  - OR 224/SE Lake Rd/SE Webster Rd – ODOT Intersection
  - OR 212/SE 172nd Ave– ODOT Intersection
  - S. Henrici Rd/OR 213– ODOT Intersection (traffic signal or roundabout)
  - OR 212/SE 282nd Ave– ODOT Intersection
- These Alternate Road Capacity Performance Standards are required under the provisions of the Oregon Highway Plan Policy 1.F. **-- this is a 1<sup>st</sup> draft of this policy**

## 9.7 Access Standards

- 9.701 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.

9.702 Based on the requirements/guidelines in Table XXX (below), plan and control access, for both new and existing uses, onto County roads. Coordinate with the Oregon Department of Transportation for access control on state highways. Where access management standards are adopted by the County in Special Transportation Plans, those standards shall apply.

**Table XXX.**

**Clackamas County**

**Access Requirements (Guidelines?) by Functional Classification**

STREET TO STREET INTERSECTIONS	Functional Classification				
	Major Arterial	Minor Arterial	Collector	Connector	Local
Street Access Allowed to Arterials	Yes	Yes	Yes	Yes	No
Street Access Allowed to Collectors			Yes	Yes	Yes
Street Access Allowed to Connectors				Yes	Yes
Street Access Allowed to Local					Yes

STREET TO STREET INTERSECTION DISTANCES	Functional Classification				
	Major Arterial	Minor Arterial	Collector	Connector	Local
<b>URBAN AREAS (Inside UGB)</b>					
Minimum Distance Between Non-Signalized Intersection and an Existing or Planned Roadway Intersection, Signal or Roundabout*	400'	300'	150'	100'	100'
Minimum Distance <u>Between</u> Signals or Roundabouts	1,000'	1,000'	1,000'		
Minimum Pedestrian/Bicycle Accessway Spacing if Preferred Spacing Not Met	330'	330'	330'	330'	330'
<b>RURAL AREAS (Outside UGB)</b>					
Minimum Distance Between Non-Signalized Intersection and an Existing or Planned Roadway Intersection, Signal or Roundabout*	1,000'	500'	250'	100'	100'
Minimum Distance <u>Between</u> Signals or	2,000'	2,000'	2,000'		

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Roundabouts					
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The preferred distance between roadway and driveways is 530 feet. Specific driveway standards are found in (ZDO Section \_\_\_\_ OR Roadway Standards?).

- 9.703 Access Standards in Tables XX (above) shall be implemented through the Zoning and Development Ordinance and the County Road Standards.
- 1.) These implementing documents may provide a greater level of guidance for the purpose of designing transportation facilities and access to the county transportation system but they shall broadly conform to the standards set out in Tables XX.
  - 2.) It is not the intent of this Plan to limit the flexibility needed in the engineering design process to produce a safe and efficient transportation system. Therefore, the County Roadway Standards will include a process for evaluating and granting engineering design exceptions that are necessary to successfully design and implement the construction of the County’s transportation system.
- 9.704 Support the implementation of state access management standards (OAR Chapter 734, Division 51, and the Oregon Highway Plan) on state highway facilities and within Interchange Management Areas.
- 9.705 Ensure safe and convenient access for bicyclists, pedestrians, and transit users for land uses that are open to the public.
- 9.706 **Rural** In rural areas, proposed new access locations on County facilities shall be evaluated by county Engineering based on: 1) road functional classification; 2) traffic volume; 3) road speed; 4) adjoining land uses; and 5) location of adjacent intersections and driveways. If the recommended minimum sight distance cannot be achieved along the property frontage due to topographical or other constraints, the access should be located along the site frontage where sight distance is maximized. *5 evaluation measures are from Engineering*
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## **10. TRANSIT**

Public transit service is essential for the mobility of many County residents, and provides an attractive option for others who prefer to use it. The county has five separate 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 is also home to four rural transportation 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 directly supports the Mountain Express service which provides public transit to the Hoodland area along the Highway 26 corridor east 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 tri-county area.

While the County provides no transit service directly, it has some influence over the type of service provided and the way new developments interface with transit and provide amenities for transit riders. Busses operated by the five districts, as well as each of the school districts in the county must safely share the county's roads with all other users.

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### **10.1 Countywide Transit**

- 10.101 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.
- 10.102 Emphasize corridor or roadway improvements that help ensure reliable and on-time transit service in the County.
- 10.103 Encourage transit providers to restructure transit service to efficiently serve local as well as regional needs.
- 10.104 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..
- 10.105 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.
- 10.106 Major developments or road construction projects along transit routes shall be required to include provisions for transit shelters, pedestrian access to transit and/or bus turnouts, where appropriate.

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- 10.107 Promote park-and-ride lots, bus 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.
- 10.108 Coordinate and cooperate with transit agencies to provide transportation for seniors, people with disabilities, and other transportation-disadvantaged populations. Provide continued support for para-transit services, as required within a 3/4-mile distance from fixed-route transit stops.
- 10.109 Require pedestrian and transit-supportive features and amenities and direct access to transit through the Development Review Process.
- 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.
- 10.110 Roadway improvements to support transit will be coordinated with transit providers to ensure financing and implementation of such improvements.
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## 10.2 Urban Transit

- 10.201 Coordinate with transit providers to achieve the goal of transit service within ¼ mile of most residences and businesses within the Portland Metropolitan UGB. More frequent service should be provided within Regional Centers, Town Centers, Station Communities, and Corridors and Main Streets.
- 10.202 Work with federal, state and regional agencies to implement high capacity transit in the regional 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. **Map #**
- 10.203 **Major Transit Streets**, for the purpose of setting standards for orientation of development to transit, shall be those streets planned for High Capacity Transit and Frequent Bus as shown on Map V-6, as well as any other street that receives 20 minute or better service at the PM traffic peak. (moved to definitions)
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10.204 **Major Transit Stops** shall be any transit stop along a Major Transit Street where that stop is within 250 feet of the centerline of an intersection with a public or private street. (moved to definitions)

Orientation of buildings at or near Major Transit Stops shall include siting new commercial and multi-family buildings 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 property lines.

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### **10.3 Rural Transit**

10.301 **Rural** Focus safety improvements in rural areas near existing or planned transit stops.

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## 11. FREIGHT, RAIL, AIR, PIPELINE AND WATER TRANSPORTATION

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

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. A few of the specific goals and actions called out by the Economic Development Plan include:

- Maintain mobility for people and freight in the face of expected growth
- 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

The EDP notes in Infrastructure Guiding Principles, that *“Achieving a balance that provides adequate transportation mobility while controlling the causes of congestions will be critical to the success of economic development efforts 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 highest level of safety.

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### 11.1 General Freight

- 11.101 Coordinate the planning, development, maintenance and operation of an efficient and safe 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.
  - 11.102 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.
  - 11.103 Promote an inter-modal freight transportation strategy and work to improve multi-modal connections among rail, industrial areas, airports and regional roadways.
  - 11.104 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.
  - 11.105 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.
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- 11.106 Ensure that freight rail lines and truck routes do not disproportionately or adversely impact 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: 1. Using vegetative buffers; 2. Establishing rail "quiet zones"; and 3. coordinating land use plans.

**11.2 Freight Trucking**

- 11.201 Improve and maintain the countywide Truck-Freight Route System and Oregon Highway Plan ORS 366.215 Freight Corridors, as shown on Map V-10A Urban Area and Map V-10B Rural Area. Need to add maps Map V-10C Urban Area and Map V-10D Rural Area for ORS 366 Corridors – should probably also include the National Highway System
- 11.202 Consider Heavy and Oversize Freight Movement requirements on State facilities when developing plans for transportation improvements and land use changes along freight routes designated as ORS 366.215 Corridors.
- 11.203 Consider the safety of all travel modes that use the Truck Freight Route System when designing improvements to this system.
- 11.204 The Truck Freight Route System consists of a set of identified arterials, collectors and State facilities that support the efficient movement of goods throughout the county, while not prohibiting the use of other roads for local pickup and delivery of goods and services.
- 11.205 Accommodate freight travel on the Truck Freight Route System by improving facility design and operations.
- 11.206 Identify street improvements to reduce delays and travel time reliability on roadways in the Truck Freight Route system
- 11.207 Work to improve the safety of freight trucking for all modes.
- 11.208 Support the creation of truck layover facilities/staging areas to reduce the conflicts between parked vehicles and adjoining land uses.

**11.3 Rail**

- 11.301 Support the safe and efficient movement of goods by rail.
- 11.302 Support the reduction of the number of at-grade crossings of arterial and collector streets on major rail lines to reduce conflicts between rail use and other transportation modes, and improve safety.
- 11.303 On new or reconstructed arterials or urban collectors, prohibit at-grade crossings of main rail lines without traffic restrictive safety devices.
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- 11.304 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.
- 11.305 Encourage the development of rail-accessible land uses within industrial areas adjacent to major rail corridors.
- 11.306 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.
- 11.307 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 crossing, as identified in the most recent version of the “Railroad-Highway Grade Crossing Handbook” (FHWA). Need to use this reference in safety
- 11.308 Identify and protect existing and abandoned rail rights-of-way for future transportation facilities and services.
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#### **11.4 Airports**

- 11.401 Coordinate with the Port of Portland, the Oregon Department of Aviation, and other affected agencies to implement the Mulino Airport Plan.
- 11.402 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.
- 11.403 New airports may be allowed as a conditional use in appropriate zoning districts. New public use airports shall be located within:
- one mile of an arterial roadway, and
  - at least one mile away from urban residential areas.
- 11.404 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.
- 11.405 New airports, airport expansions, or expansions of airport boundaries, except those limited to use by ultra-lights and helicopters, shall have a runway at least 1,800 feet long and shall control at least enough property at the end of each runway through ownership, aviation easement, or long term lease to protect their approach surfaces until the approach surfaces are 50 feet above the terrain. The runway shall be located so as to achieve at least a 20-foot clearance of the approach surface over a county, city or public road.
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- 11.406 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-XX.
  - 11.407 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-XX.
  - 11.408 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-XX.
  - 11.409 Encourage establishment of heliports in industrial areas in conjunction with state and federal standards for heliport design and location.
  - 11.410 Support the role Clackamas County airports serve in supporting emergency response and disaster assistance.
  - 11.411 Support and improve connections to Clackamas County airports. (delete – not sure what it means)
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**11.5 Pipelines**

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

**11.6 Water Transportation**

- 11.601 Maintain safe and convenient multi-modal land access to ferry terminals, docks, boat ramps and shippers using waterways for transportation.
  - 11.602 Support efforts to minimize noise and negative impacts on air and water quality and habitat for fish migration caused by river transportation.
  - 11.603 Support the continued operation and maintenance of the Willamette Falls Locks to facilitate water transportation on the Willamette River.
  - 11.604 Ensure safe and convenient multi-modal access to the Canby ferry.
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## 12. FINANCE AND FUNDING

The vast majority of surface transportation funding in the U.S. is derived from public sources at the federal, state, and local level and primarily include gas and other 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 what exists. The County also is committed to identifying and pursuing potential new funding sources for transportation improvements.

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### 12.1 Finance and Funding Policies

- 12.101 Support continuation of current (or equivalent) federal, state, and local funding mechanisms to construct county transportation projects. Identify and pursue approaches to new, permanent funding for these facilities.
- 12.102 Develop dedicated funding sources to implement Active Transportation Projects in the urban and rural areas of the County.
- 12.103 Identify stable, diverse, long-term cost-effective funding sources to support freight, rail, air and water transportation. (*why just these? Combine with 12.101?*)
- 12.104 Establish funding for bicycle, pedestrian and transit projects that serve the needs of transportation disadvantaged populations.
- 12.105 Consider a Transportation System Development Charges methodology that calculates person trips to allow pedestrian, transit, and bicycle projects, as well as vehicle projects, to be funded using TSDC funds.
- 12.1051 To the extent practical, invest unrestricted funding sources in a balanced manner between rural and urban areas.
- 12.106 **Urban** Evaluate 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.

### Maintenance

- 12.107 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.
- 12.108 Determine right-of-way maintenance needs and priorities and develop an effective and efficient right-of-way maintenance program.



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- 12.109 Develop routine maintenance standards and practices for the transportation system, including traffic control devices.
  - 12.110 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 districts. The list of these transportation projects prioritized by other jurisdictions is located in Table V-1d. The project locations are shown on Maps V-1c and V-1d.
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### **13. CAPITAL IMPROVEMENT PLAN**

The County’s Capital Improvement Plan (CIP) includes a 20-year plan for needed improvements and the 5-year programmed projects. The CIP was developed through concentrated and intense scrutiny by County staff and several advisory groups. Because of funding constraints, not every project identified as needed over the next 20 years can be built. Therefore, the identified projects were prioritized into three Tiers, as identified in Table 5-1 at the end of this chapter.

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 problem that cannot be solved by the current CIP.

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#### **13.1 Capital Improvement Plan Policies**

13.101 Fund and build the roadway prioritized transportation improvement projects needed to accommodate and appropriately manage future transportation needs and to reduce fatality and serious injury crashes of all modes as identified for the next 20 years based on the estimated funding available as described below. The list of these projects follows as Table V-1. Project locations are shown on **Maps V-1a and V-1b**.

- The 20-Year Capital Projects List (**Table V-1a**) contains the prioritized list of transportation projects that can reasonably be undertaken given the current estimates of available funding.
- The Preferred Capital Projects List (**Table V-1b**) contains a second group of needed, prioritized transportation projects that the County would undertake if additional funding becomes available during the next 20 years.
- The Long-Term Capital Projects List (**Table V-1c**) contains the remainder of the needed transportation projects identified in the TSP. 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.

#### **13.2 The 5-Year Capital Improvement Program**

13.201 Maintain a current and complete 5-year Capital Improvement Program (CIP). It shall contain the programmed transportation projects in priority order, with estimated costs and assigned responsibility for funding. It should be updated and adopted periodically by the Board of County Commissioners.

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### 13.3 Special Transportation Plans and Studies

This section lists the existing special transportation plans that are adopted by reference and therefore made part of the Comprehensive Plan.

- 13.301 The SE 172<sup>nd</sup> Avenue/ SE 190th Drive Corridor Management Plan is adopted by reference as part of Chapter 5 of the Clackamas County Comprehensive Plan.
- 13.302 The Clackamas County Pedestrian Master Plan is adopted by reference as part of Chapter 5 of the Clackamas County Comprehensive Plan.
- 13.303 The Clackamas County Bicycle Master Plan is adopted by reference as part of Chapter 5 of the Clackamas County Comprehensive Plan.
- 13.304 **Urban** The County shall study and analyze the greater Clackamas Regional Center/Fuller Road Station Area to determine if this area should be designated as a multimodal mixed-use area (MMA) as provided in the Transportation Planning Rule (OAR 660-012-0060). If the County determines that this is necessary, a Special Transportation Plan will be developed to implement these findings.
- 13.305 **Urban** The County shall study alternative mobility standards and development review framework within the Clackamas Regional Center and/or Clackamas Industrial Area. If the County determines that this is necessary, a Special Transportation Plan will be developed to implement these findings.
- 13.306 The following future Special Transportation Plans, Studies and Programs should be studied and added to the TSP by reference if the County determines that a special transportation plan is needed to address the identified transportation issues.
- A. Southwest County Access to I-5 - Corridor Analysis
  - B. Clackamas Regional Center Design Area - Alternative Performance Standards and Multimodal Mixed Use Area Analysis
  - C. Clackamas Regional Center Design Area - Circulation Study and Transportation Infrastructure Analysis
  - D. I-205 Multiuse Path Gaps Analysis (TSP Project U939)
  - E. Clackamas Regional Center SW Corridor - Bike/Pedestrian Connections to OR 224 Analysis (TSP Project 2055)
- 13.307 Previous analysis has identified the Sunrise Corridor (parallel to Highway 212, between 172nd Avenue and US 26) as a future, planned highway corridor. The future need for this highway corridor should be reviewed.
- 13.308 The Clackamas County Airport Plan is adopted by reference as part of
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Chapter 5 of the Clackamas County Comprehensive Plan. *(move up in this section with other adopted plans)*

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**DEFINITIONS** (SHOULD WE REPEAT SOME OF THE DEFINITIONS FOUND IN THE ZDO OR JUST REFERENCE IT?)

The following definitions apply to usage within Chapter 5.

**AIRPORT, PERSONAL-USE:** (ZDO) An airstrip restricted, except for aircraft emergencies, to use by the owner and, on an infrequent and occasional basis, by his invited guests, and to commercial activities in connection with agricultural operations only.

**AIRPORT, PRIVATE USE:** (ZDO) 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:** (ZDO) An airport that is open to use by the flying public, with or without a request to use the airport.

**Bikeway** (in ZDO)

**Deficiency:** a performance, design or operational constraint that limits travel by a given mode. Examples may include unsafe designs, bicycle and pedestrian connections that contain obstacles inadequate transit frequency; and roads that do not meet the standards outlined in this Chapter.

**Design Type:** means the conceptual areas depicted on the Metro 2040 Growth Concept Map and described in the RFP including Central City, Regional Center, Town Center, Station Community, Corridor, Main Street, Inner Neighborhood, Outer Neighborhood, Regionally Significant Industrial Area, Industrial Area and Employment Area.

**Gap:** a missing link or barrier in the “typical” urban transportation system for any mode that functionally prohibits travel where a connection might be expected to occur. There is a gap when a connection does not exist but also if a physical barrier, such as a throughway, natural feature, weight limits on a bridge or existing development, interrupts a system connection.

**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.

**Principal Arterials:** (Freeway/Expressway and other designated Principal Arterials). Serves interregional and intraregional trips. Carries heavy volume at high speed. Primarily Interstate Freeways and State Highways but also includes other roads designated as Principal Arterials. These roads are 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 :** Principle 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. New collectors should intersect minor arterials rather than major arterials.

**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. Traffic calming measures may be appropriate. A connector should connect to a collector or minor arterial.

**Local:** Provides access to abutting property and connects to higher order roads. New local roads should intersect collectors, connectors, or, if necessary, minor arterials. Traffic calming measures may be appropriate. 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, 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 Street:** For the purpose of setting standards for orientation of development to transit, those streets with High Capacity Transit and/or Frequent Service Bus (streets with 20 minute or better service at the PM Peak traffic peak) service, as shown on **Map V-6.**

**Major Transit Stop:** For the purpose of setting standards for orientation of development to transit, includes transit centers, high capacity transit stations, and major bus stops, as shown on Map V-6.

**Major Bus Stops:** include most Frequent Service bus stops, most transfer locations between bus lines, stops at major ridership generators (e.g. schools, hospitals, concentrations of shopping of high density employment), *per Metro Regional Transportation Plan (RTP)*

**“At” a major transit stop:** a parcel of ownership that is adjacent to or includes a major transit stop, generally including portions of such parcels or ownerships that are within 200 feet of a major transit stop.

**“Near” a major transit stop:** a parcel or ownership that is within 300 feet of a major transit stop.

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

**Multi-use Path** (need definition)

**Trail** (need definition)

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

**Transportation Disadvantaged:** need definition

**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 designed, or ordinarily used for vehicular travel and parking lanes but exclusive of the sidewalk, berm, or shoulder.

**Rural:** Outside the Portland Metropolitan Urban Growth Boundary and outside rural city limits

**Urban:** Inside the Portland Metropolitan Urban Growth Boundary

**Volume-to-Capacity (v/c) Ratio:** The ratio of flow rate to capacity for a system element.

**Chapter 5 Maps and Tables**

<b>MAPS</b>	<b>Section in Draft 5</b>
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Planned Bikeway Network (urban and rural)	8.201
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Rural Area Transit	
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