

Yamhill County Transportation System Plan



Prepared for



Prepared by



Adopted by Ordinance 895
November 5, 2015

Acknowledgements

This report was prepared through the collective effort of the following people:

Yamhill County

John Phelan, Public Works Director

Bill Gille, County Engineer

Oregon Department of Transportation

Terry Cole, Region 2 Lead Planner

Dorothy Upton, Region 2 Traffic Engineer

Consultant Team

Bob Schulte, Project Manager

Julie Sosnovske, Transportation Planner

Road Improvement Advisory Committee (RIAC)

Gordon Cook, Chairman

DJ Martsolf

Michal Wert

Matt Dunckel

Tony Roos

Rocky Losli

Phillip Cleys

Table of Contents

Section 1. Executive Summary	6
<i>Transportation System Needs</i>	6
Roadway Needs	6
Bicycle and Pedestrian Needs	8
Corridor Health	8
Transit Needs	8
<i>Funding Analysis</i>	9
<i>Goals, Objectives, and Evaluation Criteria</i>	10
<i>Management Systems and Tools</i>	11
<i>Public Process</i>	12
<i>Recommended Transportation System Improvements</i>	13
Roadway Projects	14
Bicycle and Pedestrian Improvements	14
Transit Improvements	15
Air, Rail, and Pipeline Improvements	15
Implementation of Recommended Improvements	15
Section 2. Introduction	18
<i>Study Area</i>	19
Section 3. Roadway Functional Classification and Standards	21
<i>Functional Classification</i>	21
<i>Roadway Standards</i>	24
Section 4. Existing Conditions	28
<i>Existing Transportation Conditions and Needs</i>	29
Existing Roadway Needs	29
Existing Bicycle and Pedestrian Needs	36
Existing Corridor Health	38
Existing Transit Needs	41
Existing Air, Rail, Pipeline, and Waterway Needs	42

Section 5. Future Conditions	43
<i>Future Transportation Conditions and Needs</i>	43
Roadways	43
Future Bicycle and Pedestrian Needs	49
Future Transit Needs	49
Future Air, Rail, Pipeline, and Waterway Needs	50
Section 6. Transportation Funding	51
Section 7. Goals, Objectives, and Evaluation Criteria	55
<i>Goal 1: Provide for Efficient and Convenient Motor Vehicle Travel</i>	55
<i>Goal 2: Provide for the Safety of All Transportation Modes</i>	56
<i>Goal 3: Provide an Equitable, Balanced and Connected Multi-modal Transportation System</i>	56
<i>Goal 4: Increase the Quality and Availability of Pedestrian and Bicycle Facilities</i>	57
<i>Goal 5: Work with Transit Service Providers to Provide Transit Service and Amenities that Encourage and Increase Ridership</i>	57
<i>Goal 6: Manage the Transportation System to Support a Prosperous and Competitive Economy</i>	58
<i>Goal 7: Provide Transportation Facilities and Services that are Fiscally Responsible and Economically Feasible</i>	58
<i>Goal 8: Provide a Transportation System that Conserves Energy and Protects and Improves the Environment</i>	59
<i>Goal 9: Coordinate with Local and State Agencies and Transportation Plans</i>	59
Section 8. Management Systems and Tools	61
<i>Mitigation of Traffic Diversion from State Highways to County Roads</i>	61
<i>Designation of Scenic Routes</i>	62
<i>Designation of Truck/Hazardous Materials Routes</i>	65
<i>Project Prioritization Process</i>	66
<i>Ranking of Safety Problem Locations</i>	67
<i>Gravel Road Condition Rating System</i>	67
<i>Prioritization of Paving of Gravel Roads</i>	68
<i>Road Ownership Transfer</i>	68

Section 9. Public Process	69
Proposed Bicycle and Pedestrian Improvements	77
Community Preferred Options	78
Section 10. Recommended Transportation System Improvements	80
<i>Roadway Projects</i>	80
<i>Bicycle/Pedestrian Improvements</i>	89
<i>Transit Improvements</i>	89
<i>Air, Rail, Pipeline, and Waterway Improvements</i>	92
Appendix A: Roadway Standards	98
Appendix B: Existing Transportation Conditions	99
Appendix C: Summary of Reported Needs	100
Appendix D: Future Transportation Conditions	101
Appendix E: Funding Table	102
Appendix F: Goals, Objectives and Evaluation Criteria	103
Appendix G: Management Systems and Tools	104
Appendix H: Summary of Public Involvement Activities	105
Appendix I: Analysis of Preliminary Alternatives	106
Appendix J: Selection of Recommended Alternatives	107

Table of Tables

Table 1: Overall Corridor Health	41
Table 2: Roadway Improvement Options	74
Table 3: Recommended Roadway Improvements.....	82
Table 4: Recommended Bicycle and Pedestrian Improvements	90

Table of Figures

Figure 1: Yamhill County TSP Study Area.....	20
Figure 2: Functional Classification System.....	23
Figure 3: Yamhill County Roadway Standards – New Construction/Reconstruction Projects.....	26
Figure 4: Yamhill County Roadway Standards – Maintenance Projects.....	27
Figure 5: Existing Crash Rates	32
Figure 6: Lane and Shoulder Width Deficiencies	35
Figure 7: Existing Bicycle and Pedestrian Needs.....	39
Figure 8: Existing Corridor Health	40
Figure 9: Future Mobility Needs	45
Figure 10: Future Traffic Operations Needs	46
Figure 11: Future Geometric Needs	48
Figure 12: Traffic Diversion Routes	63
Figure 13: Priority Improvement Locations	72
Figure 14: Potential Commuter Rail.....	93

Section I. Executive Summary

The Yamhill County Transportation System Plan (TSP) provides a guide for decision-making about future investments in the County's transportation system. The plan was prepared following a process of identifying existing and future system needs, developing improvement options to address the needs, and defining recommended improvements based on public and county staff input. The study area for the plan is the rural (unincorporated) portion of the County.

Transportation System Needs

Transportation system needs were analyzed for both existing and future conditions. Future conditions were considered for a 20-year planning horizon for the Year 2035.

Roadway Needs

Prior to roadway needs analysis, the County's existing roadway functional classification system and standards were updated. The functional classification system describes the hierarchy of roadway types and their relative roles in the system, and provides criteria for classifying specific roadways. Roadway standards provide guidance for Yamhill County staff when either constructing or reconstructing county roadways.

Roadway needs were analyzed in the areas of congestion/mobility, traffic operations, safety, geometrics, access, and bridges. Daily, non-seasonal congestion is not an issue on most state highways and county roads. The only chronic problem areas are on OR 99W between Newberg and Dundee and between Dundee and OR 18 and at the intersections of OR 18/OR 154/Lafayette Hwy., OR 99W/OR 47, and OR 99W/Fox Farm Rd.

Traffic operations needs were identified where left-turn lanes or right-turn lanes may be needed at unsignalized intersections. Most of the turn lane needs are on state highways and near urban areas where traffic volumes are higher.

With regard to safety, a crash rate analysis indicated that there are multiple roadway segments with crash rates of 200% or more of the statewide average for similar facilities. Most of these are on county roadways. There are also 13 locations on state highways with crash rates within the top 10% of all locations statewide. A majority of the locations are at intersections. OR 18 and OR 99W have the largest number of sites.

Geometrics describe the physical features of the roadway. Roughly 70% of the county roadways classified as minor collector or above do not meet the lane width standards and about 30% do not meet the shoulder width standards. For state highways, the shoulder width standard is not met along more than 50% of the total mileage within the study area. A number of state highway and county road intersections were also found to have geometric deficiencies.

Similar to many state highways that serve both through traffic demand and provide access to adjacent property, there are several state highways in the study area with high concentrations of access points. OR 47 and OR 240, in particular, have relatively large numbers of access points.

Based on their sufficiency rating, 60% of the ODOT bridges and 36% of the county bridges are eligible for either rehabilitation or replacement.

To serve as the basis for the future roadway needs analysis, traffic forecasts were prepared for both county roads and state highways. The analysis reflects the construction of Phase One of the Newberg-Dundee Bypass. Most of the future traffic growth will occur on state highways, with relatively low growth on county roadways. Future needs will be similar to existing needs, with most of the additional needs related to mobility and traffic operations along state highways.

Bicycle and Pedestrian Needs

Bicycle needs exist where there are higher bicycle and vehicle volumes and the roadway shoulders are either too narrow or not paved. These conditions exist along portions of OR 47, OR 99W, OR 154/Lafayette Hwy., Westside Rd., and Old Sheridan Rd. Pedestrian needs exist where the shoulder width standards are not met. Because bicyclists and pedestrians share the roadway with traffic, the needs at these locations will increase as traffic volumes grow in the future.

Corridor Health

A measure of the combined need of each roadway segment was developed by applying a Corridor Health Tool. The corridor health concept is based on the idea of measuring the “health” of each corridor segment within several different categories of performance, and then combining the measurements to obtain a picture of overall corridor health. For existing conditions, most corridor segments fall within the good and fair categories. Future corridor health would remain the same for all county roadways and most state highways.

Transit Needs

Existing transit service needs within the study area include the lack of evening and weekend service, the need for more bus stops, and expanded to service to large employers and outlying areas. Transit facility needs consist of the lack of designated bus stops with signs/schedules, transit shelters, sidewalks, curb cuts, loading spaces, and ADA-compliant facilities. Based on the anticipated slow rates of population and employment growth within the rural portion of the County, the type and level of future transit needs will likely be similar to the existing needs.

Air, Rail, Pipeline, and Waterway Needs

No air, waterway, or pipeline needs were identified. The *Oregon State Rail Plan*¹ indicates that the Hampton Railway, which operates freight service between Fort Hill and Willamina, is considered at-risk for abandonment, with zero percent of the line meeting the minimum standard for which larger railcars can be sustainably accommodated. There is also a potential need for a passenger rail connection between the Yamhill County and the Portland metropolitan area.

Funding Analysis

Funding for capital improvement projects to address the transportation system needs is expected to be very limited over the next 20-year period. Therefore, existing and potential future funding sources were explored to determine an approximate budget for future transportation improvements.

Historically, the County has received nearly all of its transportation funding from the State Highway Fund. This funding has been spent mainly on maintenance and operation of the road system, with the remaining amount used for capital improvement projects. County staff expects that the share of the revenue to be spent on capital improvement projects will increase in the future, to about \$300,000 per year or \$6M over the 20-year planning horizon. ODOT's funding for improvements to the state highway system comes from a variety of federal programs. Based on the continuation of current funding levels, for planning purposes ODOT estimates² that total funding for state highway improvements in Yamhill County over the next 20 years could be in the \$10-15M range.

¹ Oregon Department of Transportation, *Oregon State Rail Plan*, 2014.

² The State has not committed any future funding for projects in Yamhill County. This estimate is based on the assumption that Yamhill County will receive a reasonable share of the state/federal funding projected to be available over the 20-year planning horizon in Region 2 and based on ODOT sustaining their current revenue structure. It is used to illustrate the degree of financial constraints faced by ODOT as of the writing of this document. Actual funding through state and federal sources may be higher or lower than the range of this estimate. This estimate does not include projects that might be funded through the federal Highway Safety Improvement Program (HSIP).

In addition to the State Highway Fund, other local transportation funding mechanisms were investigated as potential sources of additional revenue to the County. All of these mechanisms are authorized by the Oregon Revised Statutes. Two mechanisms that have been successfully used by other Oregon counties similar to Yamhill County are property taxes and local improvement districts. Additional funding mechanisms available to the County are transportation utility fees, franchise fees, and county road districts.

Goals, Objectives, and Evaluation Criteria

A set of goals and objectives reflecting Yamhill County's values was developed to guide the preparation and implementation of the TSP. The goals describe the desired outcomes of future transportation improvements in the County. The objectives identify actions to be taken to accomplish the goals. More broadly, the goals and objectives will be used to guide the County's future transportation system management decisions.

The recommended improvements in the TSP must be consistent with the goals and objectives. To accomplish this, evaluation criteria reflecting the goals and objectives were developed for selecting the recommended improvements from a set of improvement options. The evaluation criteria are measurable factors used in determining the extent to which an improvement will meet the goals and objectives.

The goals are:

- 1.** Provide for efficient and convenient motor vehicle travel.
- 2.** Provide for the safety of all transportation modes.
- 3.** Provide an equitable, balanced and connected multi-modal transportation system.
- 4.** Increase the quality and availability of pedestrian and bicycle facilities.
- 5.** Work with transit service providers to provide transit service and amenities that encourage and increase ridership.
- 6.** Manage the transportation system to support a prosperous and competitive economy.

7. Provide transportation facilities and services that are fiscally responsible and economically feasible.
8. Provide a transportation system that conserves energy and protects and improves the environment.
9. Coordinate with local and state agencies and transportation plans.

Management Systems and Tools

The County has several management systems and tools in place to support decision-making about expenditures for capital improvements and maintenance for the County's roadway system:

- Project prioritization – the County's Road Maintenance/Reconstruction Prioritization Policy is used to identify annual road maintenance and reconstruction improvements.
- Ranking of safety problem locations – a system developed and implemented by the County's Road Improvement Advisory Committee (RIAC) is used for ranking safety problem locations based on multiple criteria.
- Gravel road condition rating - the County uses an informal Gravel Road Condition Rating System to calculate a gravel condition index (GCI) value for gravel roads.
- Prioritization of paving of gravel roads- the County's Gravel Collector Roads Upgrade Prioritization System is used to rank collector roadways considered as potential candidates for paving.
- Road ownership transfer - the County follows a policy that encourages the expeditious transfer of jurisdiction of roadways to incorporated cities in conjunction with annexation.

Because the TSP should provide not only recommendations about future capital improvement projects, but also guidance on the on-going, day-to-day management of the transportation system, the development of management approaches in the following additional areas was investigated:

- Mitigation of traffic diversion from state highways to county roads
- Designation of scenic routes
- Designation of truck/hazardous materials routes

There are three primary traffic diversion routes in the County that involve drivers trying to avoid congestion on OR 99W. An effective way to decrease the amount of diverted traffic along these routes is to improve the OR 99W corridor. In addition to Phase I of the Newberg-Dundee Bypass, several improvements are recommended in the TSP that will enhance the attractiveness of OR 99W.

Both objective and subjective criteria should be used in identifying potential scenic routes. The recommended criteria are related to roadway characteristics and crash history, as well roadside features and the level of local support.

Because information on truck and hazardous routes in Yamhill County is already available and well-defined for both state highways and county roads, no additional management systems or tools are recommended in this area.

Public Process

Development of the TSP was a collaborative process among the County, ODOT, RIAC, key stakeholders, and the community. Several methods were used to engage the community, including stakeholder interviews, an online survey, and two public open house meetings. Public involvement was carried out according to the Title VI requirements and guidance found in ODOT's *Guidelines for Addressing Title VI and Environmental Justice in Transportation Planning*.³

The first open house was held on August 8, 2013. The purpose of the meeting was to provide the public an opportunity to review information on existing and future projected transportation

³ Oregon Department of Transportation, [Guidelines for Addressing Title VI and Environmental Justice in Transportation Planning](#), 2015.

conditions in the County and obtain comments on key transportation issues. Comments were received from the public about several local road problem locations and potential improvements. There was also general interest in ensuring that bicycle and pedestrian improvements would be included in the TSP. A second open house was held on December 11, 2014 to provide an opportunity to the public to comment on proposed improvement options for 21 priority roadway improvement locations and a list of proposed bicycle/pedestrian improvements.

The improvement options were developed to address the needs identified in the existing and future conditions analysis and by the RIAC, stakeholders, and public. Prior to the second open house, the options were screened using the evaluation criteria and the findings were reviewed with the County, ODOT, and RIAC. There was general agreement about the improvement concepts and the results of the evaluation.

Public input was obtained at the second open house on several of the roadway improvement options. There were also several comments about general importance of adequate shoulders and the need to safely accommodate bicyclists.

Recommended Transportation System Improvements

Based on the public input received at the second open house, evaluation results, and input from the RIAC and county staff, recommended improvements were selected that best meet the goals, objectives, and needs for the County's transportation system. The recommended improvements also recognize the future funding constraints for both county and state transportation facilities. None of the improvements are expected to have disproportionately negative impacts on Title VI populations. Rather, these improvements will benefit the entire population.

Roadway Projects

The recommended roadway improvements are in the form of projects, which consist of a bundle of one or more individual improvements that address both the primary and secondary needs at a location. The recommendations describe the type of improvements to be implemented, not their specific design characteristics or features. These would be determined at the time of project development.

Improvement projects are recommended for nine county roadway locations. Almost all of the projects are at intersections and primarily address safety needs and substandard geometric features, such as skewed intersection angle, poor sight distance, and narrow lanes and shoulders. The general improvement types at these locations are realignment of the intersection, removal of sight distance obstructions, and lane and shoulder widening.

There are 12 recommended projects for state highways, primarily along OR 99W and OR 18. Similar to the county roadways, these projects address safety and geometric needs. Because of the higher traffic volumes on state highways, however, they also address mobility and traffic operations needs at several locations. The mobility and traffic operations improvements include roundabouts and the installation of intersection turn lanes. Prior to implementation of the roundabouts, further analysis would be required by ODOT to determine their feasibility and desirability.

Bicycle and Pedestrian Improvements

The recommended bicycle and pedestrian improvements are located throughout the County and consist mainly of shoulder widening and/or paving to accommodate bicycle and pedestrian use. In some cases, lane widening is also recommended because having adequate lane width for vehicular traffic also improves safety for bicyclists and pedestrians. In addition to the shoulder and lane widening improvements, the Yamhela's Westsider Trail is also recommended, which will run parallel to OR 47 between OR 99W and Gaston.

Transit Improvements

The recommended transit improvements address the needs identified in the existing and future transportation conditions analysis. The general transit service improvements include increased evening and weekend service, more bus stops, and expanded to service to large employers and outlying areas. The transit facility improvements consist of designated bus stops with signs/schedules, transit shelters, sidewalks, curb cuts, loading spaces, and ADA-compliant facilities.

Air, Rail, and Pipeline Improvements

No significant improvements are planned for the McMinnville Municipal Airport or the Sportsman Airpark within the 20-year planning horizon. No freight rail improvements are identified in *Oregon State Rail Plan*;⁴ however, the plan does indicate that there is potential for a passenger rail connection between the County and Portland metropolitan area. No changes are expected for the existing gas transmission pipelines.

Implementation of Recommended Improvements

Implementation of the recommended projects, both for county and state facilities, will be significantly constrained by the anticipated future funding amounts. For the County, this is estimated to be roughly \$300,000 per year or \$6M over the 20-year planning horizon. For planning purposes, a total of \$10-15M in state and federal funding administered by ODOT is estimated to be available for capital improvements on state highways over the 20-year period.⁵

⁴ Oregon Department of Transportation, *Oregon State Rail Plan*, 2014.

⁵ The State has not committed any future funding for projects in Yamhill County. This estimate is based on assuming that Yamhill County will receive a reasonable share of the state/federal funding projected to be available over the 20-year planning horizon in Region 2 and based on ODOT sustaining their current revenue structure. It is used to illustrate the degree of financial constraints faced by ODOT as of the writing of this document. Actual funding through state and federal sources may be higher or lower than the range of this estimate. This estimate does not include projects that might be funded through the federal Highway Safety Improvement Program (HSIP).

County Projects

The county roadway projects are recommended for implementation in the short-term, medium-term, or long-term based, primarily, on whether the needs exist today or are expected in the future with traffic growth. No additional prioritization is recommended for the county roadway projects. Implementation of specific projects can occur as funding becomes available or other opportunities arise during each budget cycle. Similarly, all of the recommended bicycle and pedestrian improvements address existing needs and therefore can be considered equally important, with implementation based on funding availability or as other opportunities arise during each budget cycle. Retaining this flexibility will enable the County to best address those issues that are affordable and of greatest concern during each budget cycle.

ODOT Projects

Some of the projects on ODOT facilities are recommended as priority projects because there are mobility needs at these locations that must be addressed to meet the State's mobility targets. The following priority projects are considered "reasonably likely" by ODOT to be funded based on the estimated 20-year funding amount available for state highways in Yamhill County:⁶

- OR 18 from Ash Rd. to OR 154/Lafayette Hwy. - Close Ash Rd. north and south of OR 18, install a multi-lane roundabout at the OR 18/OR 154/Lafayette Hwy. intersection, and widen Lafayette Hwy. and OR 154 near the intersection.
- OR 47/OR 99W intersection - merge the eastbound and westbound roadways on OR 99W into a single roadway and install a multi-lane roundabout; widen shoulders on OR 47 in the vicinity of the intersection.

⁶ The State has not committed any future funding for projects in Yamhill County. This estimate is based on assuming that Yamhill County will receive a reasonable share of the state/federal funding projected to be available over the 20-year planning horizon in Region 2 and based on ODOT sustaining their current revenue structure. It is used to illustrate the degree of financial constraints faced by ODOT as of the writing of this document. Actual funding through state and federal sources may be higher or lower than the range of this estimate. This estimate does not include projects that might be funded through the federal Highway Safety Improvement Program (HSIP).

In addition, there are several other state highway locations where there are existing and/or future mobility needs, but improvements are considered not reasonably likely to be funded.

These are:

- OR 99W/OR 18/McDougall Rd. intersection (Location #4)
- OR 18 west of Dayton
- OR 18 west of McMinnville
- OR 99W – Dundee to OR18 (Location #8)
- OR 99W/Fox Farm Rd. intersection

In lieu of improvements, Yamhill County supports the Oregon Transportation Commission (OTC) adopting alternate mobility targets for these locations to ensure that state mobility standards reflect the State and County's mutual expectations for highway operational performance over the planning horizon given the likely financial constraints.

All of the other ODOT projects, including the bicycle/pedestrian improvements, can be treated in a similar manner to the recommended county projects, with no specific prioritization. These can be implemented as funding becomes available or as other opportunities arise.

Section 2. Introduction

The Yamhill County Transportation System Plan identifies how to best improve or preserve existing and future county roadway and state transportation facilities in the unincorporated portion of Yamhill County. The plan assesses the current and future function of the transportation system, identifies how to improve operations and safety, and preserves the transportation system's functional integrity.

The plan is intended to provide transportation options for the County over the next 20 years. Recommended improvements are identified that can be implemented after project funding, programming, and design have been completed.

The plan reflects the outcomes of the following study tasks:

- Public and stakeholder involvement
- Review land use and transportation plans and policies
- Update roadway functional classification system and roadway classifications
- Update roadway standards
- Assess existing transportation conditions
- Assess future transportation conditions
- Conduct funding analysis
- Develop goals, objectives and evaluation criteria
- Analyze and refine improvement options
- Recommend improvements
- Prepare Draft TSP and Final TSP

Study Area

The study area, shown in Figure 1, is the rural portion of Yamhill County. It does not include the incorporated areas or county roads within these areas. Within the study area, agriculture is the predominant land use, with some commercial and residential development. The wine industry is a significant component of the agricultural sector. Over 80 wineries and 200 vineyards represent the largest concentration of wine growers and producers in Oregon.

Yamhill County is adjacent to Tillamook, Washington, Clackamas, Marion, and Polk Counties. There is a significant amount of commute traffic between the incorporated areas of the County, such as Newberg and McMinnville, and the Portland metropolitan and Salem areas. The primary commute routes are OR 99W, OR 47, and OR 221. OR 99W and OR 18 also serve as one of the main routes for recreational travel from the Portland area to the Oregon coast.

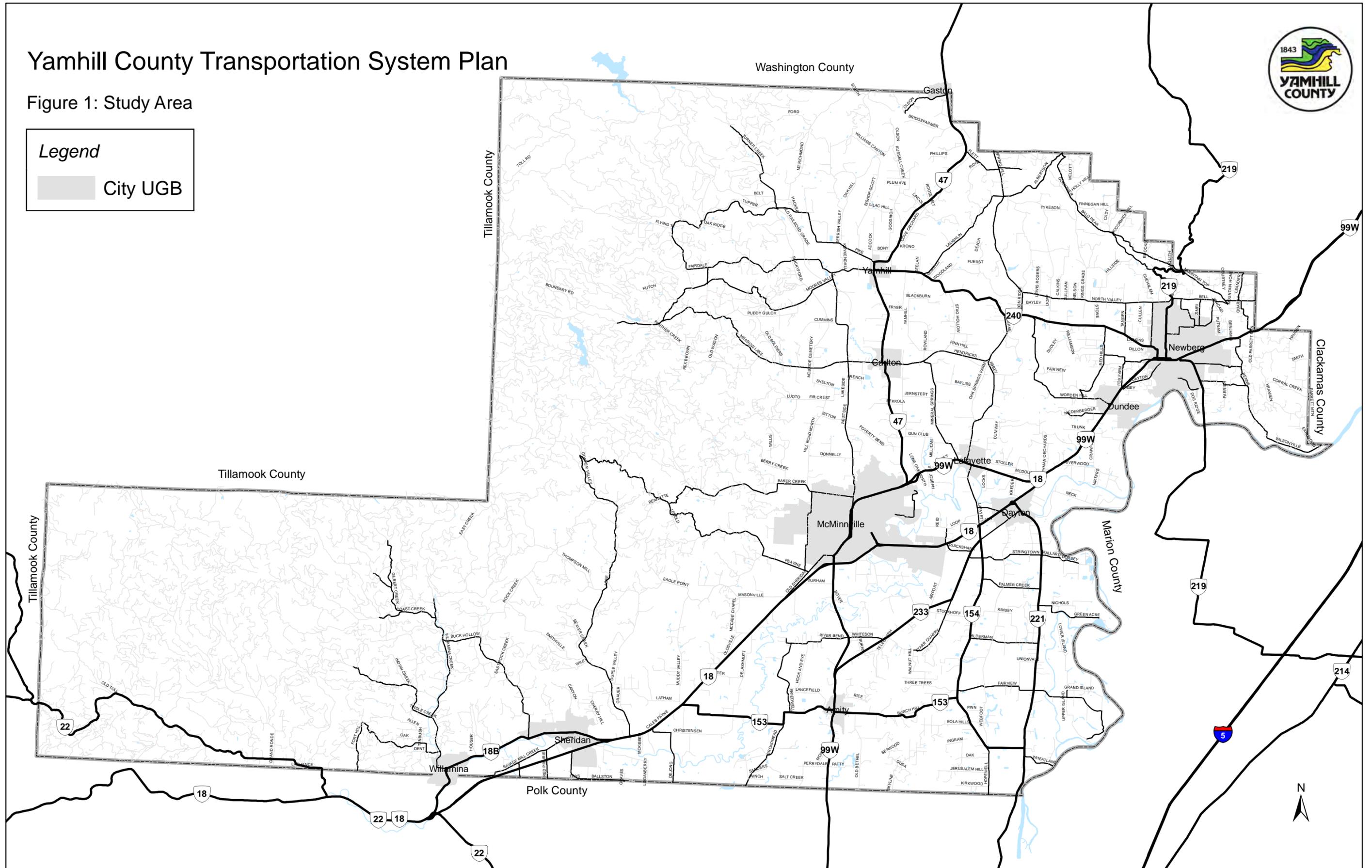
Yamhill County Transportation System Plan

Figure 1: Study Area



Legend

- City UGB



Section 3. Roadway Functional Classification and Standards

Functional Classification

The functional classification system describes the hierarchy of roadway types and their relative roles in the system, and provides criteria for classifying specific roadways. The classifications provide guidance for the design standards to be applied when a roadway is improved and, for county roads, prioritization of improvement and maintenance projects (described further in Section 8: Management Systems and Tools). The County's design standards are applied for county roads and ODOT's design standards are applied for state highways.

The roadway network performs two essential functions: to facilitate mobility and provide access to property. Higher-classified roadways (e.g., arterials) primarily provide mobility, while lower-classified roadways such as local roads primarily provide land access. Intermediate classifications (e.g., collectors) serve both mobility and access needs.

Principal Arterial

- Carries substantial volume of statewide or interstate travel; and
- Penetrates urban boundaries or comes within 10 miles of the center of an urban area.

Minor Arterial

- Links cities, larger towns, and other major traffic generators, providing interregional and intercounty service;
- Serves travel flows of greater length and density than those served by lower-classified roads;
- Connects state highways; and
- Typically carries an average daily traffic (ADT) volume of 2,000 vehicles or higher.

Major Collector

- Provides service to larger towns not served by higher-classified roads. Also serves schools, county parks, and important agricultural areas;
- Connects these places with nearby larger towns or cities or with arterials; and
- Serves intra-county travel.

Minor Collector

- Collects traffic from local roads;
- Provides service to remaining smaller communities; and
- Serves locally important traffic generators.

Resource Roads

- Provides a connection between resource areas and the remaining roadway network; and
- Facilitates movement of goods and services.

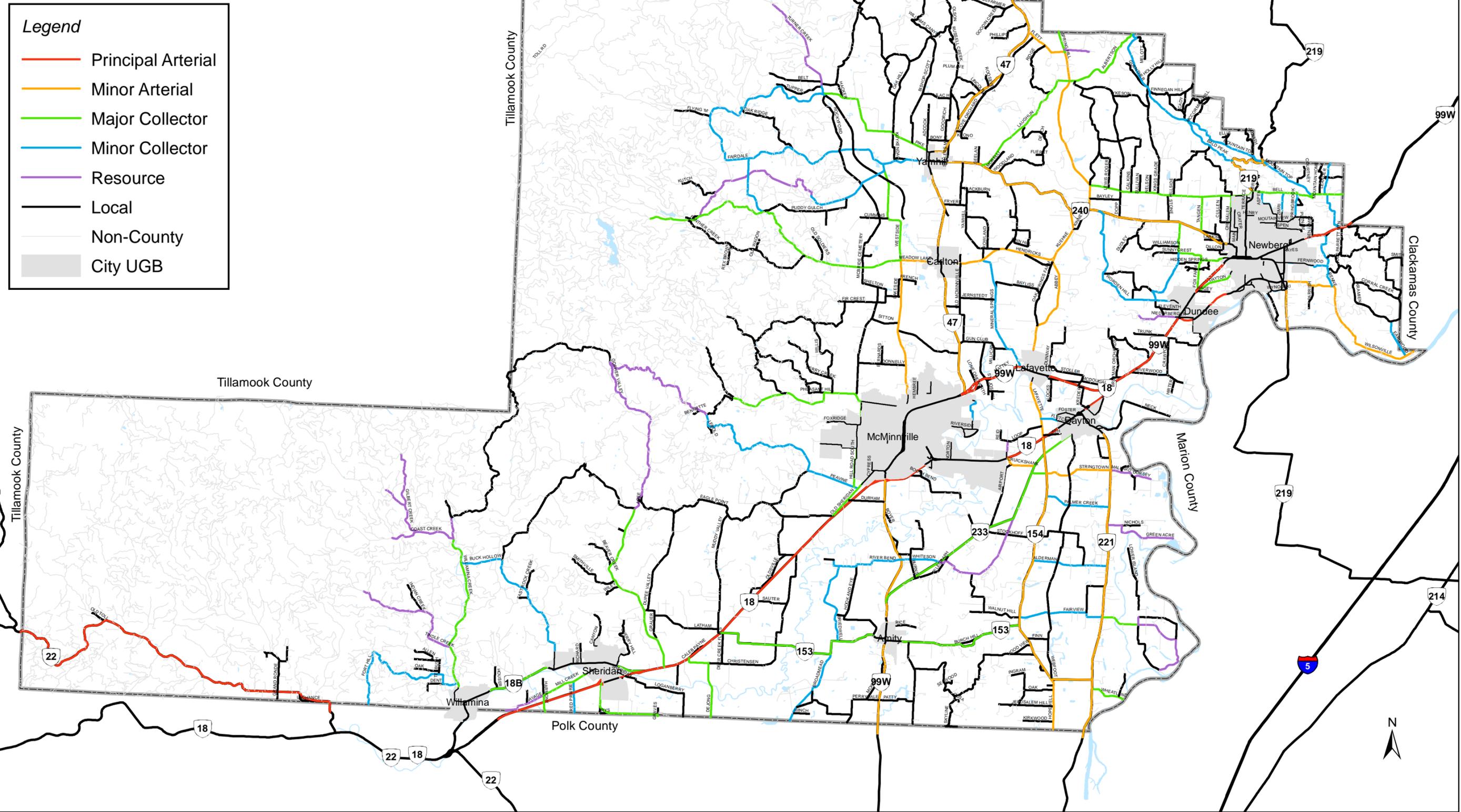
Local Roads

- Provides access to adjacent land and higher-classified roads; and
- Accommodates travel over shorter distances compared to collectors or arterials.

Figure 2 shows the Yamhill County functional classification system. Most state highways are classified as principal arterials or major arterials. There are a few county roads classified as minor arterials, primarily in the more developed northern portion of the study area (Westside Rd., Abbey Rd./Kuehne Rd., Hendricks Rd., Spring Hill Rd./Flett Rd., Wilsonville Rd., Stringtown Rd., and Hopewell Hwy.). Most of the county roads, however, are classified as collectors, resource, or local roads.

Yamhill County Transportation System Plan

Figure 2: Functional Classification System (December, 2014)



Roadway Standards

Roadway standards provide guidance for Yamhill County staff when either constructing or reconstructing county roadways.⁷ The standards that are applied depend on the functional classification of the roadway. There are two sets of standards - one for new construction and reconstruction projects (more stringent) and one for maintenance projects (less stringent). The purpose of having two sets of standards is that when a new roadway is built or an existing road is reconstructed, the desired standards should be met. The standards for improvements done as a part of maintenance projects are less stringent, however, because there may not be enough funding to meet the desired standards or there may not be adequate right-of-way to build the improvement to the higher standard.

The new construction/reconstruction standards cover a variety of roadway elements, including:

- Design average daily traffic (ADT)
- Design speed
- Maximum grade
- Sight distance
- Lane and shoulder widths⁸
- Surface and shoulder type
- Maximum superelevation rate
- Minimum curve radius
- Maximum degree of curvature
- Vertical clearance
- Minimum right-of-way width
- Cross slope

The maintenance standards include a subset of these elements, including lane and shoulder widths, surface type, total roadway width, and cross slope.

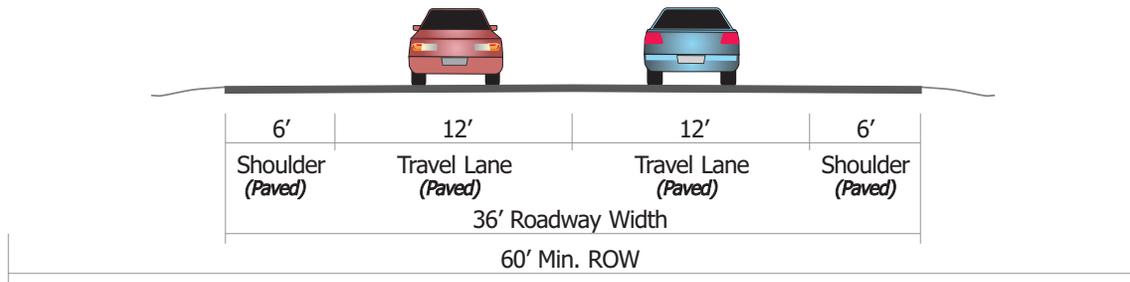
⁷ ODOT's design standards are applied for state highways.

⁸ The standards for lane width, shoulder width, and shoulder type do not apply to gravel surface types.

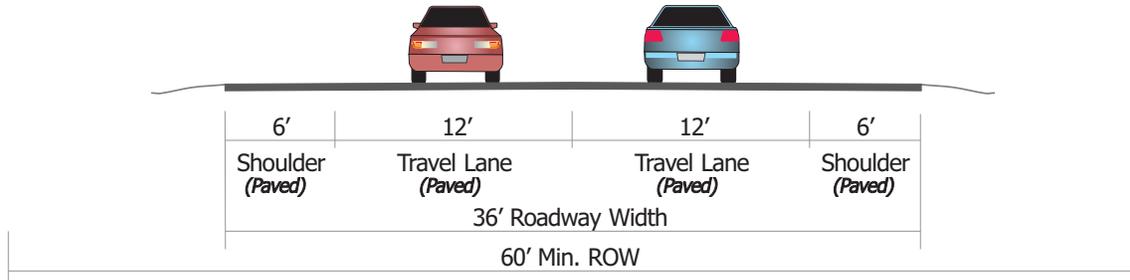
A third set of advisory standards provides guidance on private roadways. Although these roadways are not constructed or maintained by the County, the standards are intended to provide guidance to developers on the construction/improvement of safe and efficient private roads.

The County's roadway standards are presented in Appendix A. Typical cross-section drawings corresponding to the County's road standards are shown in Figure 3 and Figure 4.

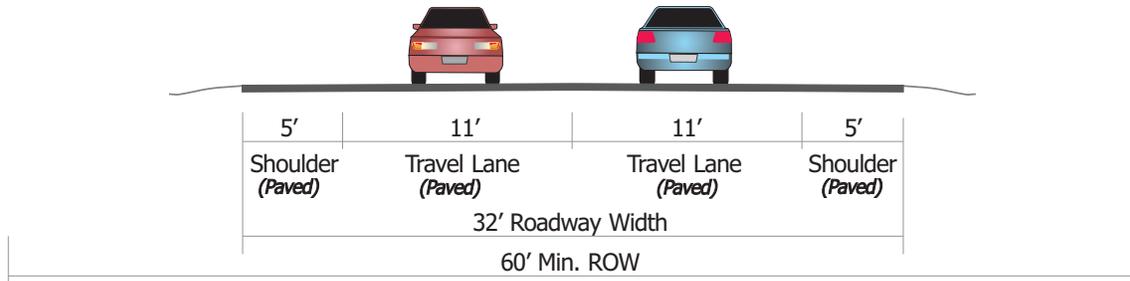
Principal Arterial/Minor Arterial



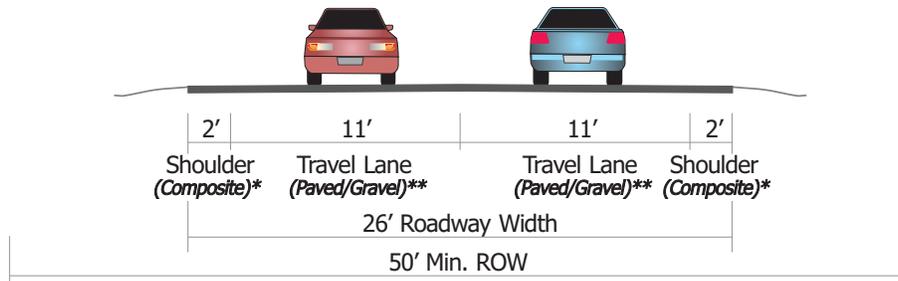
Major Collector



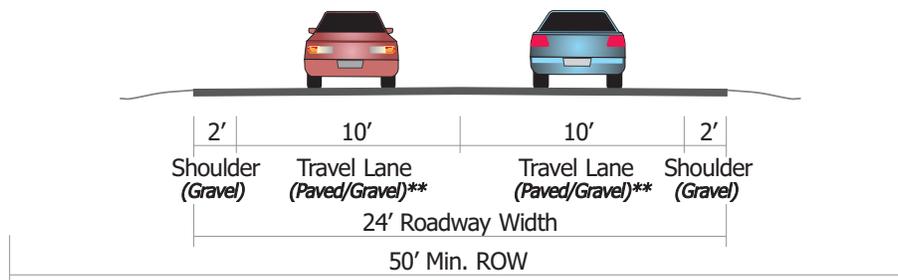
Minor Collector



Resource Road



Local Road



* Paved plus other surface type

** To be determined by County Road Engineer

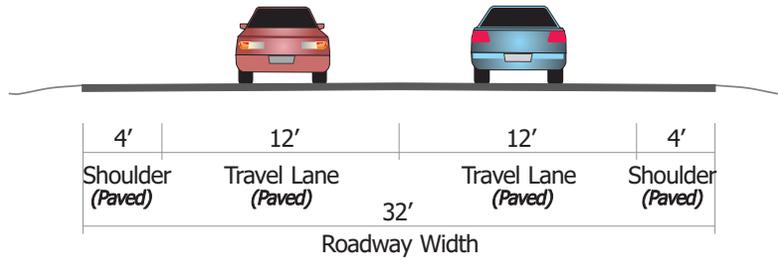
Note: See design standards for reduced shoulder/roadway width requirements in rolling hills or mountainous terrain

DKS

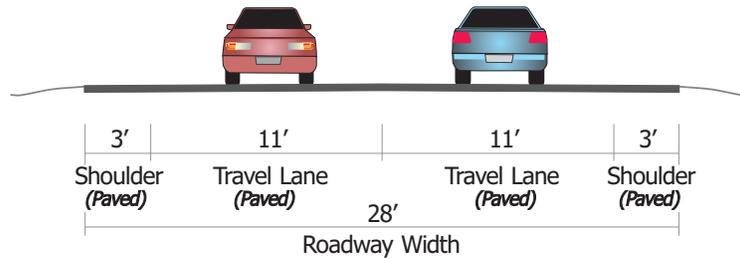
Figure 3

**Roadway Cross-Section Standards
for New Construction/
Reconstruction Projects**

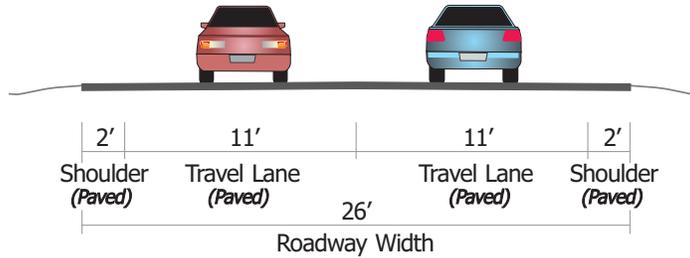
Principal Arterial



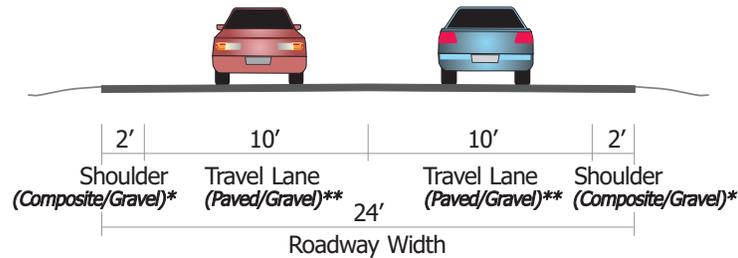
Minor Arterial



Major Collector/Minor Collector



Resource Roads/Local Roads



* Composite for resource roads (paved plus other surface type)
Gravel for local roads

** To be determined by County Road Engineer

Note: See design standards for reduced shoulder/roadway width requirements in rolling hills or mountainous terrain

DKS

Figure 4

**Roadway Cross-Section Standards
for Maintenance Projects**

Section 4. Existing Conditions

The existing roadway network has roughly 117 miles of state highways and 210 miles of county roadways classified as minor collector or above. There are 11 state highways providing connections to all of the urban areas within the County as well as the surrounding five-county area.

The county road system consists entirely of two-lane roads with no medians. Most of the county roadways classified as resource road or above are paved, while the local roads are mostly gravel. Turn lanes are provided at only a few county intersections. The basic speed rule covers most of the system, with slower speed zones in rural developed areas and for specific segments with geometric deficiencies. Currently within the rural area, there are no signalized county intersections.

The majority of state highways are two-lane facilities, with additional through lanes at some locations along OR 99W and OR 18. Turning lanes are provided at most major intersections along OR 99W and OR 18, but generally are not provided on other state highways. The basic speed rule is in effect for almost all state highways, with isolated slower speed zones in rural developed areas. There are no signalized intersections along the state highways outside of the incorporated areas within the County.

Nearly all of the bicycle facilities within the rural Yamhill County area are either shoulder bikeways and shared roadways. A shoulder bikeway is a paved shoulder that provides a suitable area for bicycling to reduce conflicts with faster moving motor vehicle traffic. On a shared roadway, bicyclists and motorists share the same travel lanes. There are only a few bike lanes in the study area, located near Newberg and McMinnville. A shared-use path differs from a shared-use roadway by being separated from motor vehicle traffic. There are no shared-use paths within the rural area.

There are no sidewalks or paths within rural Yamhill County. All of the pedestrian facilities in the County consist of shoulders, which may be used to serve pedestrians as well as bicyclists in rural areas.

The Yamhill County Transit Area (YCTA) provides the majority of the transit service within the County. This includes intra-city service within McMinnville and Newberg, inter-city link routes, Dial-a-Ride service, and Volunteer Medical Transportation.

The intra-city service includes two routes in McMinnville and two routes in Newberg, with connections to the link routes. Four link routes connect McMinnville, Newberg, and other communities to destinations outside of Yamhill County. These operate along fixed routes with fixed schedules, and serve major stops within each community. Dial-a-Ride is a curb-to-curb transportation service operating throughout Yamhill County that is available to anyone unable to access YCTA fixed routes. Volunteer Medical Transportation is a volunteer-operated van service providing Yamhill County residents access to medical appointments in the Portland area. There are no supporting transit facilities such as bus shelters, bus pull-outs, or official park-and-ride lots within the study area.

There are a number of private airports as well as two public airports in the County - the McMinnville Municipal Airport and the Sportsman Airpark in Newberg. Two freight rail lines operate within the County, the Portland & Western (PNWR) and the Hampton Railway.⁹ There are no commercial ports or waterways. Gas transmission pipelines are located between McMinnville and south of Amity and in the Newberg-Dundee area.

Existing Transportation Conditions and Needs

Existing Roadway Needs

Two approaches were used to analyze existing transportation conditions. With the first approach, transportation data such as traffic volumes and roadway characteristics were

⁹ Oregon Department of Transportation, [State of Oregon: Oregon Railroads Map](#), 2014.

collected and analyzed. The results of this analysis were compared to standards, and for locations that did not meet the standards, a potential need was identified. The second approach was to gather and assess information on existing transportation needs received from stakeholders, agency staff and the RIAC. Existing transportation conditions and needs are summarized below; additional information can be found in Appendix B.

Existing Mobility Needs

Congestion is not an issue on most state highway and county roads. There are, however, locations where congestion regularly occurs. The County and ODOT have established mobility targets that reflect the maximum levels of congestion that should occur on county roads and state highways. The only roadway segments that do not meet ODOT's targets are OR 99W between Newberg and Dundee and OR 99W between Dundee and OR 18. All county road segments currently operate well within the targets. Most of the state highway and county road intersections operate acceptably, with the exception of the OR 18/OR 154/Lafayette Hwy., OR 99W/OR 47, and OR 99W/Fox Farm Rd. intersections.

There were multiple comments from the stakeholders, agency staff and RIAC about the general need for additional capacity along the OR 99W/OR 18 corridor, the need for alternate routes to OR 99W, and the need for more routes connecting communities (see Figure C-1 and Table C-1 in Appendix C). Overall, however, aside from the OR 99W/OR 18 corridor in the Newberg-Dundee area, mobility within the County is not a significant concern.

Existing Traffic Operations Needs

Traffic operations issues were identified where left-turn lanes or right-turn lanes may be needed at unsignalized intersections. Most of the turn lane needs are on state highways and near urban areas where traffic volumes are higher.

Stakeholders, agency staff and the RIAC reported numerous roadway operational needs. Many of their comments relate to problems with turning vehicles and the lack of turn lanes at intersections, particularly along OR 18. Other problems include driver confusion at intersections due to non-standard intersection layouts, difficulty in accessing and crossing state highways from side roads, and the need for traffic signals at several intersections.

Existing Safety Needs

The safety needs analysis included the calculation of crash rates for intersections and road segments along all roads with a functional classification of minor collector or higher. ODOT's Safety Priority Index System (SPIS) locations were also included in the analysis. ODOT maintains the SPIS system to analyze and identify locations on the state highway system which have the greatest safety issues related to crash frequency and severity. Each year, a SPIS report is produced that identifies locations in the top 5% and 10% of all SPIS sites statewide.

The crash rate analysis indicated that there are multiple roadway segments with crash rates of 200% or more of the statewide average for similar facilities (see Figure 5). Most of these are on county roadways. Only one of the intersections analyzed has a higher-than-acceptable crash rate. This is at OR 18/Cruickshank Rd.

There are 13 locations within the top 10% of SPIS sites statewide. A majority of these are at intersections. OR 18 and OR 99W have the largest number of sites. There are two areas along these highways with closely-spaced SPIS sites. The first is on OR 99W to the east of Dundee and the second is on OR 18 between Ash Rd. and Lafayette Hwy.

Yamhill County Transportation System Plan

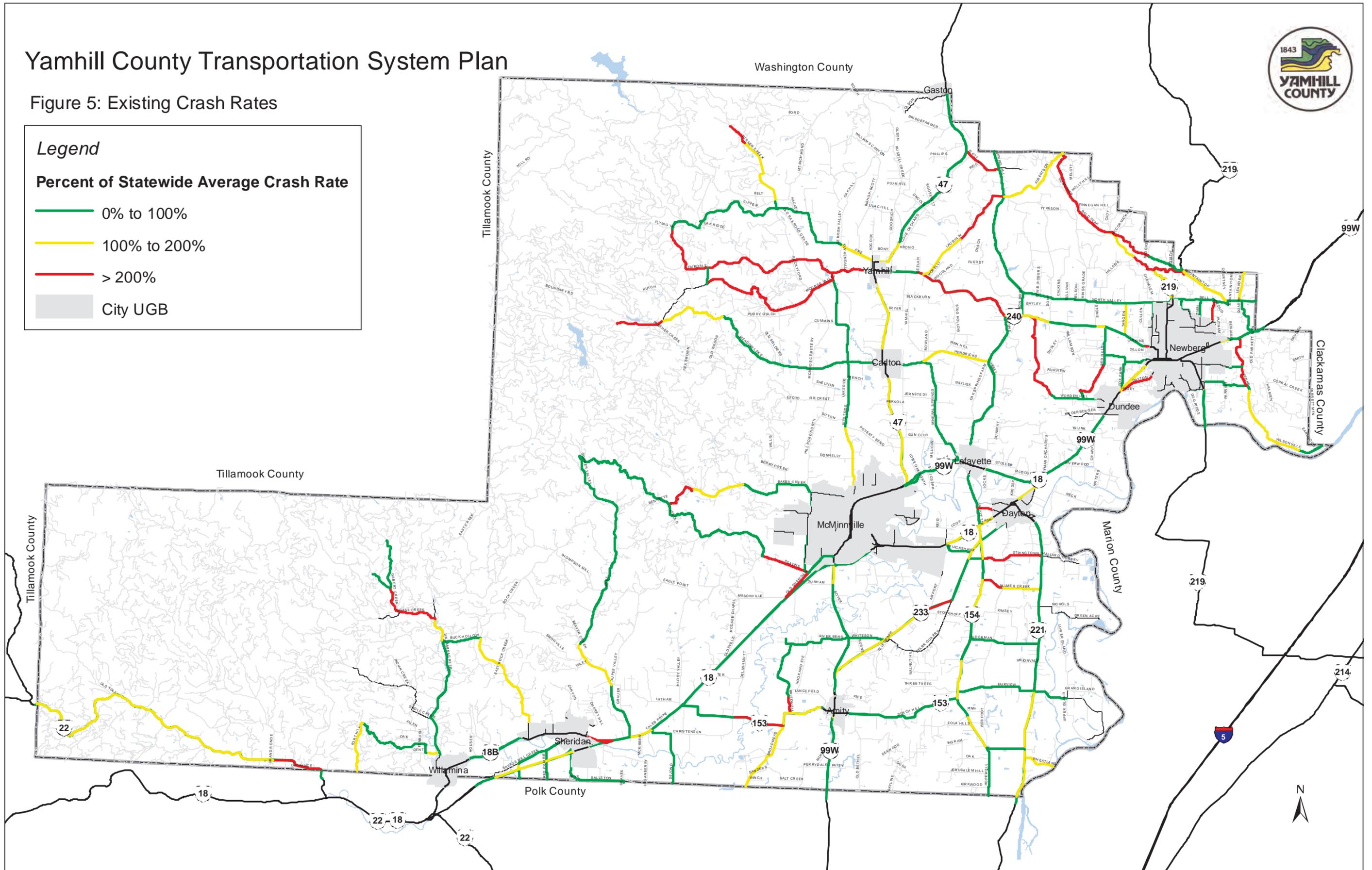
Figure 5: Existing Crash Rates



Legend

Percent of Statewide Average Crash Rate

- 0% to 100%
- 100% to 200%
- > 200%
- City UGB



Nearly all of the safety needs reported by the stakeholders, agency staff, and RIAC were at intersections of state highways and county roads. At several of these intersections, difficulty in accessing the highway because of high traffic volumes and high speeds was cited as a problem. This includes the OR 18/OR 154/Lafayette Hwy. intersection, which was the most frequently reported location. At other intersections, the confusing intersection layout and lack of driver awareness of the intersection were mentioned as possible crash causes. Segment safety needs were identified on OR 99W to the north and east of Dundee, where the highway narrows from two westbound lanes to one lane, and on OR 18 at the South Yamhill River Bridge near McMinnville, which was described as needing replacement.

Based on the crash rates, SPIS locations, and input from the RIAC, stakeholders, and county staff, seven priority safety improvement locations were identified. These are:

- Abbey Rd./Hendricks Rd. intersection
- Stringtown Rd. between OR 154 and OR 221
- Worden Hill Rd. from OR 240 to the end of pavement
- OR 99W/OR 18/McDougall Rd. intersection
- OR 18 between Ash Rd. and OR 154/Lafayette Hwy
- OR 18/Red Prairie Rd. intersection
- OR 99W/OR 47 intersection

Detailed crash analysis was performed for these locations, which served as the basis for the recommended safety improvements described in Section 10.

Existing Geometric Needs

Geometrics describe the physical features of the roadway, such as lane and shoulder widths for roadway segments and approach width, approach grade, intersection angle for intersections. Existing geometric needs were identified for roadway segments and intersections by comparing existing geometric features to roadway standards.

Roughly 70% of the county roadways classified as minor collector or above do not meet the lane width standards and about 30% do not meet the shoulder width standards. For state highways, shoulder width standards are not met along more than 50% of the total mileage within the study area. The existing lane width and shoulder width deficiencies for state highways and county roads are shown in Figure 6.

For intersections, geometric needs were analyzed for intersections where a potential problem was identified by the stakeholders, County or ODOT staff, the RIAC, or field reconnaissance. Approach width, approach grade, intersection angle, and intersection sight distance were compared to the American Association of State Highway and Transportation Officials (AASHTO) standards.¹⁰ A number of state highway and county road intersections were found to be deficient (see Appendix B).

Comments from the stakeholders, agency staff and the RIAC members regarding geometric needs were focused on inadequate shoulder widths and skewed intersections. It was reported that wider shoulders are needed on many roadways throughout the County to provide an adequate area for emergencies as well as bicycle and pedestrian use.

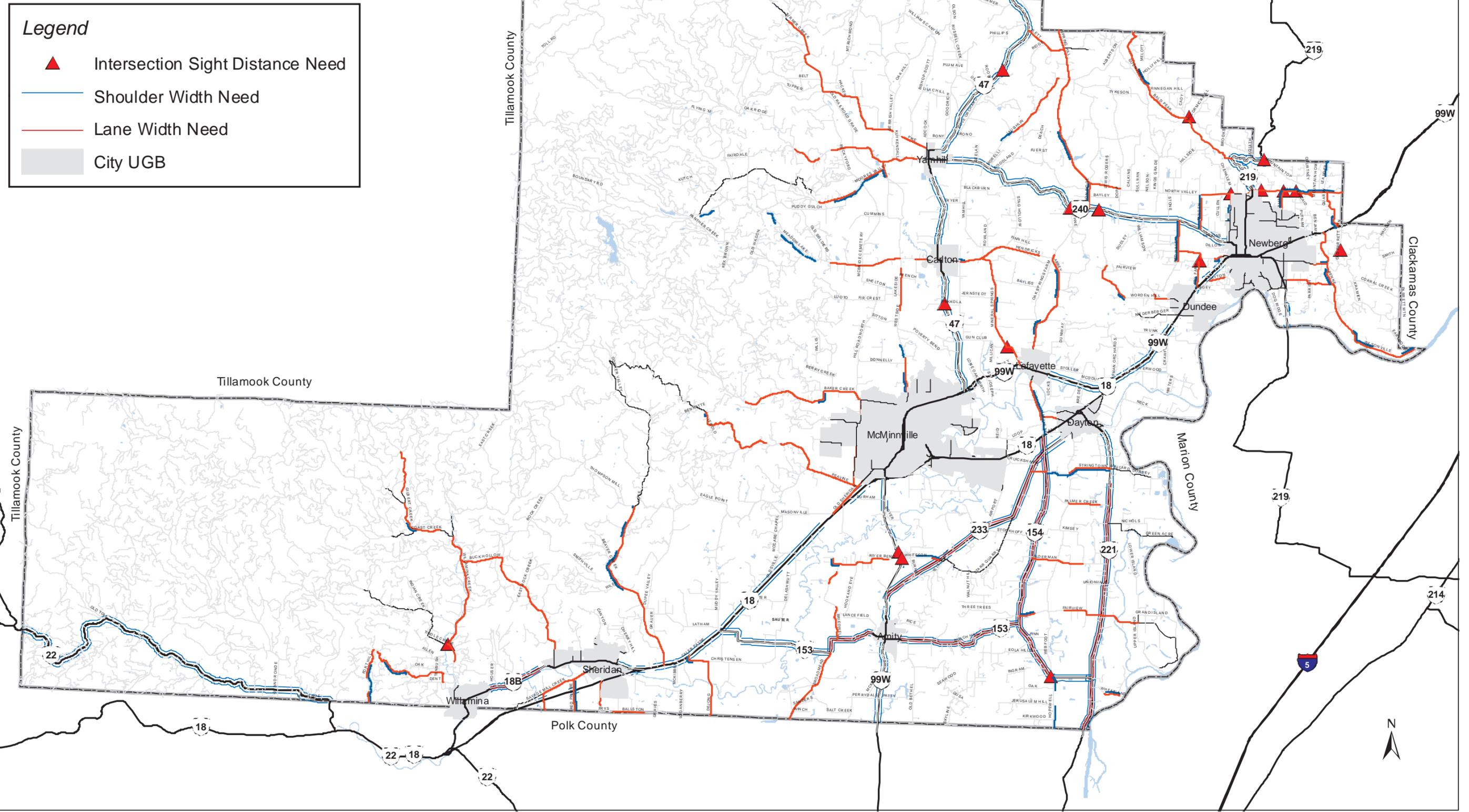
Existing Access Needs

Similar to many state highways that both serve through traffic demand and provide access to adjacent property, there are several state highways in the study area with high concentrations of access points. The problems associated with high access density are well understood, including reduced capacity, traffic operations and safety conflicts between slower-moving turning vehicles and higher-speed through-traffic, and degradation of the bicycle and pedestrian environment.

¹⁰ AASHTO, A Policy on the Geometric Design of Highways and Streets, (2004)

Yamhill County Transportation System Plan

Figure 6: Existing Lane and Shoulder Width Needs



OR 47 and OR 240, in particular, have relatively large numbers of access points. These were compared to the access spacing standards for state highways contained in the *OHP*.¹¹ It was found that the maximum number of approaches that would be allowed based on the standards is exceeded along nearly the entire length of both highways.

Existing Bridge Needs

Existing County and ODOT bridge conditions were analyzed using data from ODOT's Bridge Management System. This data includes a bridge sufficiency rating for each bridge determined based on periodic inspections performed by ODOT. The rating is a numeric value representing the capacity of a bridge to remain in service. A score of 100% would represent a completely sufficient bridge, while a score 0% would indicate a completely deficient bridge.

The Federal Highway Administration (FHWA) uses this index in evaluating the nation's bridges for funding distribution and eligibility. Bridges with a sufficiency rating of 80 or less are eligible for rehabilitation. Bridges with a rating of 50 or less are eligible for replacement.

Sixty percent of the ODOT bridges and 36% of the county bridges are eligible for either rehabilitation or replacement (sufficiency rating of less than 80). The bridges eligible for replacement (sufficiency rating of less than 50) are:

- OR 99W at North Yamhill River
- OR 22 at South Yamhill River
- Palmer Creek Rd. at Palmer Creek
- Dejong Rd. at South Yamhill River

Existing Bicycle and Pedestrian Needs

The *ODOT Bicycle and Pedestrian Guide*¹² states that shared roadways are suitable for bicycle use on low-volume rural roads and highways. On a shared roadway, bicyclists and motorists

¹¹ Oregon Department of Transportation, Oregon Highway Plan, (1999).

¹² Oregon Department of Transportation, Bicycle and Pedestrian Design Guide, (2011).

share the same travel lanes. Based on traffic volumes, shared roadways are appropriate for most county roads and some state highways within the study area. For these roadways, there are no bicycle needs.

On rural roads with high bicycle use, however, the guide states that roads should include paved shoulders where vehicle speeds and volumes are high. Further, the guide recommends that the shoulder width standards for rural highways contained in the *ODOT Highway Design Manual (HDM)*¹³ should be used in determining adequate shoulder widths for bicycle use. Similarly, the County uses their Maintenance Project shoulder width standards in determining adequate shoulder widths for bicycle use along county roadways.

Based on these guidelines, bicycle needs exist where there are higher bicycle and vehicle volumes and:

- The shoulder width standard is not met; or
- The shoulder is not paved.

The locations meeting these criteria include all or portions of:

- OR 47
- OR 99W
- OR 154/Lafayette Hwy.
- Westside Rd.
- Old Sheridan Rd.

It is unlikely that additional bike lanes are currently needed within the study area. This is because all of the locations with higher bicycle volumes are on high-speed rural roadways, where bike lanes are generally not recommended.¹⁴

¹³ Oregon Department of Transportation, [Highway Design Manual](#), 2012.

¹⁴ Oregon Department of Transportation, [Bicycle and Pedestrian Design Guide](#), 2011.

For pedestrians, shoulders are typically the most appropriate facility type in rural areas, because pedestrian volumes are too low to warrant sidewalks or paths. The *ODOT Bicycle and Pedestrian Guide*¹⁵ states that the shoulder widths recommended in the *HDM*¹⁶ are generally adequate to accommodate pedestrians. The County considers shoulders meeting their Maintenance Project shoulder width standards to be adequate for pedestrians. There were numerous comments from the stakeholders that conditions for bicycle and pedestrian travel are unsafe throughout the County, particularly in the rural areas. Figure 7 shows the existing bicycle and pedestrian needs within the study area.

Existing Corridor Health

A measure of the combined need of each roadway segment was developed by applying a Corridor Health Tool. The corridor health concept is based on the idea of measuring the “health” of each corridor segment within several different categories of performance, and then combining the measurements to obtain a picture of overall corridor health.

The Tool was applied for the same areas of need described in the previous sections. A combined health score was generated for each segment, which was used to assign a good, fair, or poor rating according to the following categories:

- Good – 75 – 100
- Fair – 50 – 74
- Poor - < 50

As shown in Figure 8, most corridor segments fall in the good or fair categories, with a handful of exceptions. The overall percentages of total state highway and county road mileage by category are shown in Table 1.

¹⁵ Ibid.

¹⁶ Ibid.

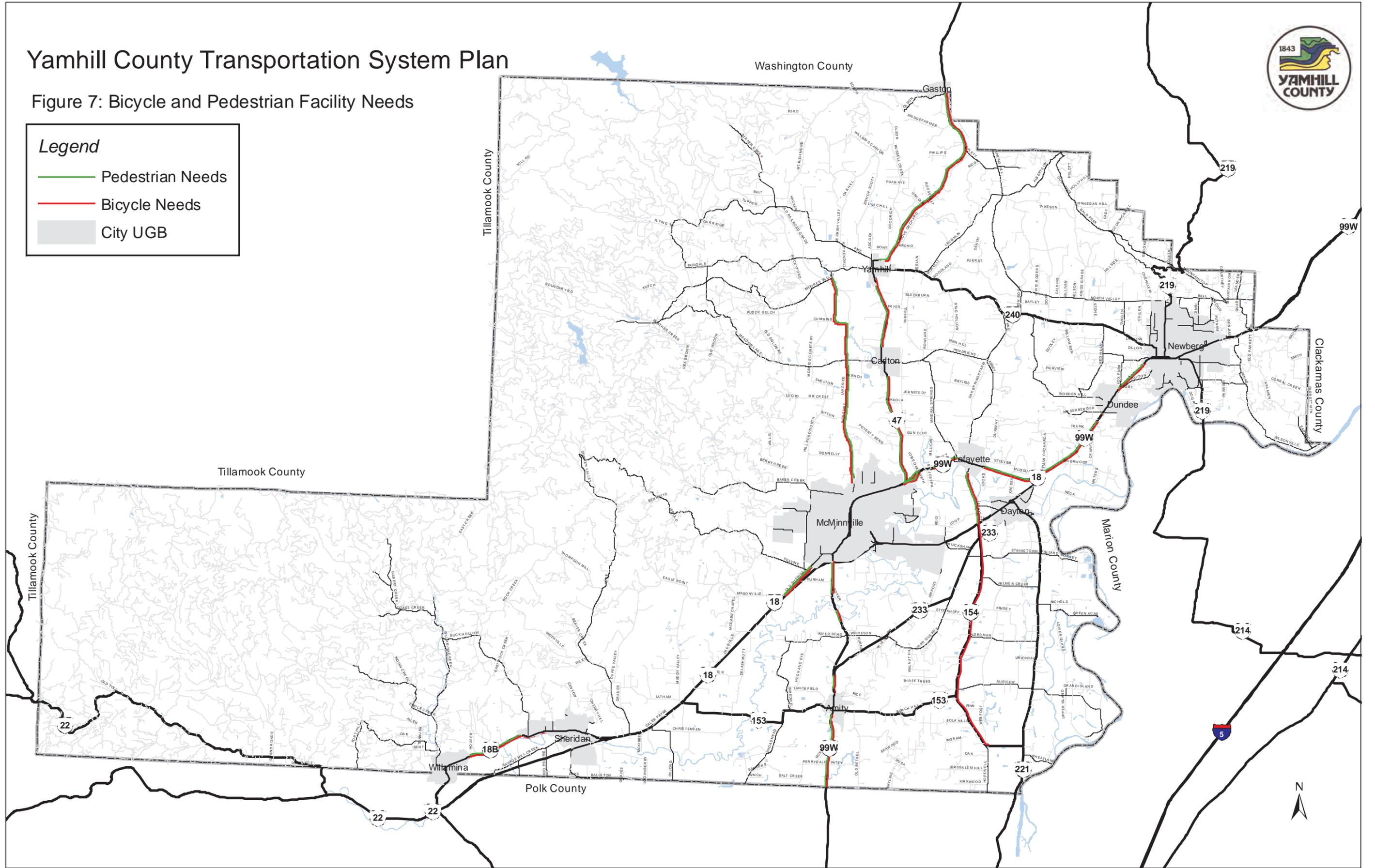
Yamhill County Transportation System Plan

Figure 7: Bicycle and Pedestrian Facility Needs



Legend

- Pedestrian Needs
- Bicycle Needs
- City UGB



Yamhill County Transportation System Plan

Figure 8: Existing Corridor Health



Legend

Overall Corridor Health

- Poor
- Fair
- Good
- City UGB

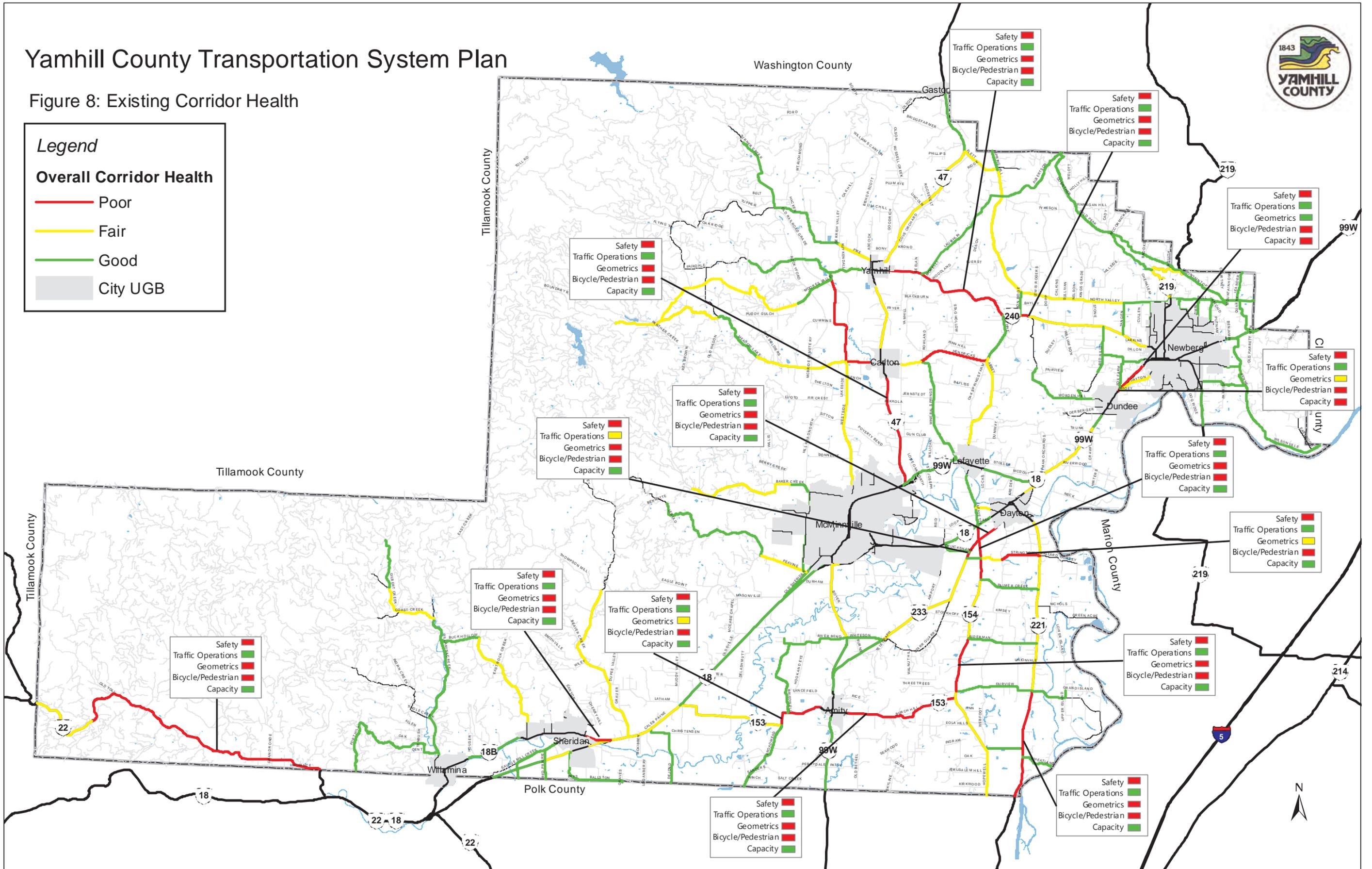


Table 1: Overall Corridor Health

Corridor Health Rating	County Roads	State Highways
Good	86%	29%
Fair	13%	40%
Poor	5%	31%

The primary need areas contributing to the poor scores are safety, geometrics, and bicycle/pedestrian facilities.

Existing Transit Needs

The *Yamhill County Coordinated Human Services Public Transportation Plan: The Next Steps*¹⁷ was prepared by the Mid-Willamette Valley Council of Governments in 2007 to identify strategies to improve transportation services for people with disabilities, seniors, and individuals with lower incomes. Some of the transit-related needs identified in the study for the rural portion of the County are:

- Lack of evening and weekend service
- Need for more bus stops
- Need for expanded service to large employers, such as the Spirit Mountain Casino and the Riverside Dr. industrial area
- Gaps in outlying areas
- Need for intercity service between Yamhill and Carlton and between Sheridan, Willamina and Grand Ronde
- Inadequate transit facilities/amenities, such as designated bus stops with signs/schedules, transit shelters, sidewalks, curb cuts, loading spaces, and ADA-compliant facilities

¹⁷ Mid-Willamette Valley Council of Governments, Coordinated Human Services Public Transportation Plan, (2007).

YCTA staff identified the following additional needs:

- Pull-outs for buses
- Improved travel time reliability on OR 99W
- More regional connections (e.g., the Oregon coast)

The only transit needs reported by the stakeholders are the lack of pull-outs for buses and the lack of designated stop areas.

Existing Air, Rail, Pipeline, and Waterway Needs

No existing needs were identified for either the McMinnville Municipal Airport or the Sportsman Airpark.

The PNWR is a short line railroad with tracks extending from Portland to Eugene through the Willamette Valley. None of the PNWR lines in Yamhill County are listed as being at risk for abandonment in the *Oregon State Rail Plan*¹⁸ for the 2013-2020 period. The Hampton Railway operates freight service in the County between Fort Hill and Willamina, where it interchanges traffic with the PNWR. The *Oregon State Rail Plan* indicates that the entire Hampton Railway is considered at-risk for abandonment, with zero percent of the line meeting the minimum standard for which larger railcars can be sustainably accommodated. The line carries little traffic, with no active customers on the line in 2013, making it a vulnerable abandonment candidate.

No existing needs were identified for waterways or pipelines.

¹⁸ Oregon Department of Transportation, *Oregon State Rail Plan*, 2014.

Section 5. **Future Conditions**

Future Transportation Conditions and Needs

Future transportation conditions in the County were analyzed for the 2035 No-Build scenario, in which no transportation improvements were assumed beyond those that are currently programmed. The 2035 forecast year is consistent with the Transportation Planning Rule requirement that a 20-year planning horizon from the time of plan adoption must be used. The 2035 time frame is also consistent with the forecast year used in the Newberg-Dundee Bypass planning. Phase 1 of the Bypass between Newberg and Dundee was assumed to be in place for the future conditions analysis.

Roadways

Future roadway needs were analyzed in the areas of mobility, traffic operations, safety, and geometrics for the same facilities included in the existing conditions analysis. The analysis was based on a set of traffic forecasts prepared as a part of the study. The forecasts are based on historical traffic growth rates and anticipated future land use and economic development. In general, future traffic volumes are expected to increase about 1.9 % annually on state highways and about 0.6 % on county roads. The highest future volumes will occur along OR 99W and OR 18. The highest growth rates are expected on OR 219 and OR 18, which are popular commute routes. County roads have significantly lower future volumes and traffic growth rates, due to the limited development opportunities within the rural portion of the County.

Future Mobility Needs

Consistent with the relatively low traffic growth for county roads, all county roadway segments will operate well within the mobility standard for the 2035 horizon year.

As for existing conditions, a majority of the state highway segments will operate within the mobility targets in the future. The segments not meeting the targets are:

- OR 99W east of Newberg
- OR 99W between Dundee and OR 18
- OR 99W between OR 47 and McMinnville
- OR 18 between Dayton and OR 154
- OR 18 between McMinnville and OR 153

The percentage of deficient miles along OR 18 increases from 0% for existing conditions to 47% for 2035, but decreases from 27% to 25% along OR 99W. The reason for the decrease along OR 99W is that the mobility target is met for the segment between Newberg and Dundee with the addition of the Phase 1 Bypass. Overall, the percentage of state highway miles not meeting current mobility targets increases from 4% to 10% by 2035. With the exception of the segment of Oregon 99W between Dundee and OR 18, the degree to which the current mobility targets are expected to be exceeded is very minor.

All county road intersections will meet the mobility targets for 2035. The only state highway intersections not meeting the targets are:

- OR 18/ OR 99W/McDougall Rd.
- OR 18/Ash Rd.
- OR 18/Lafayette Hwy.
- OR 47/OR 99W
- OR 99W/Fox Farm Rd.

Locations with future mobility needs are shown in Figure 9.

Future Traffic Operations Needs

The majority of the future turn lane needs are on state highways along OR 18, OR 153, OR 154, and OR 99W. There are only two county road intersections with future needs. These are shown in Figure 10.

Yamhill County Transportation System Plan

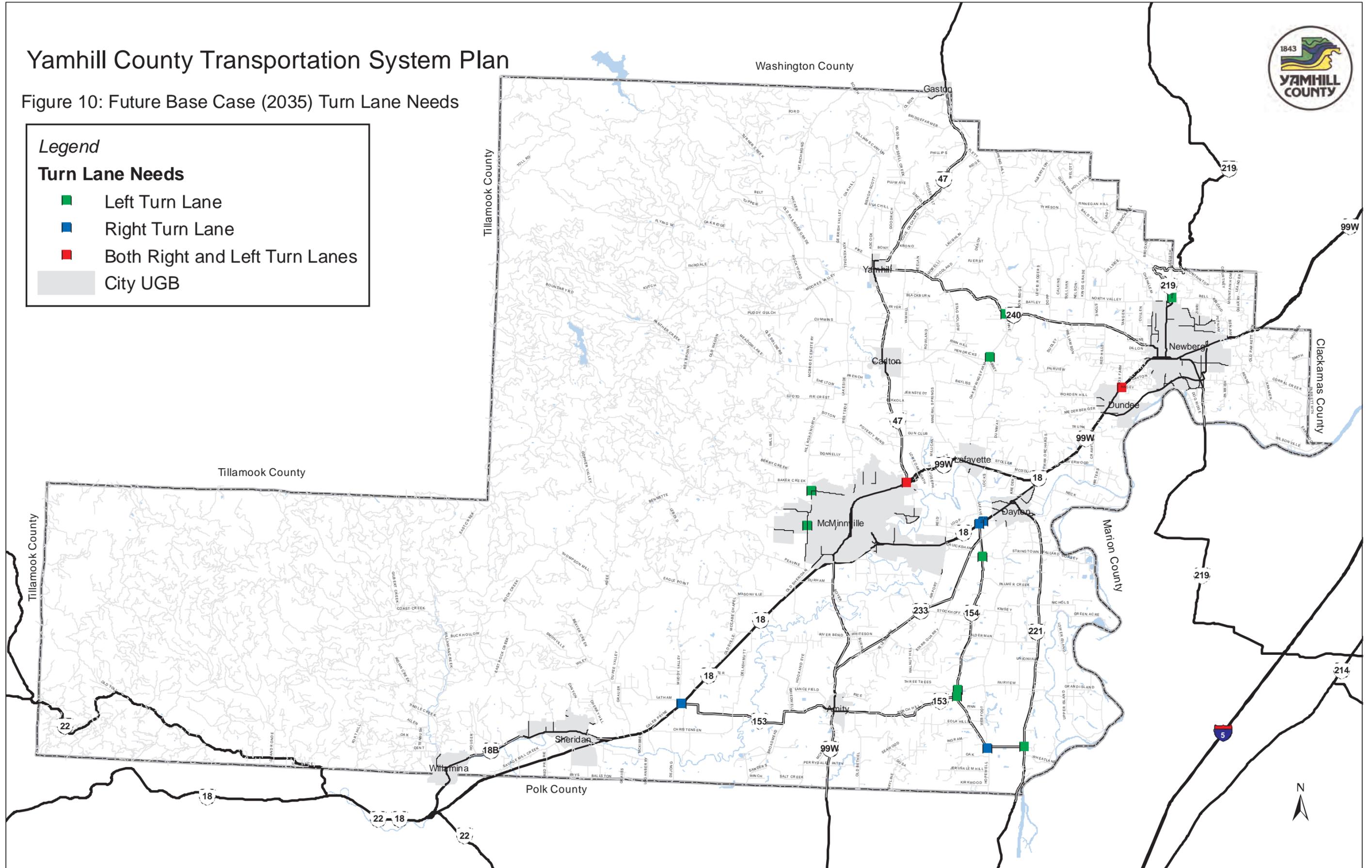
Figure 10: Future Base Case (2035) Turn Lane Needs



Legend

Turn Lane Needs

- Left Turn Lane
- Right Turn Lane
- Both Right and Left Turn Lanes
- City UGB



Future Safety Needs

Future safety conditions were estimated using the *Highway Safety Manual (HSM)*¹⁹ procedures. Within the procedures, changes in crash rates are estimated based on differences between existing and future traffic volumes. The analysis indicated no changes in the future crash rates for any of the seven roadway segments examined in the existing conditions analysis. The *HSM* procedures do not include volume-based adjustments for intersections, so future crash rates could not be estimated for intersections.

Future Geometric Needs

Future geometric needs may differ from existing needs depending on the level of future traffic volumes. Such a difference may occur where an existing geometric feature is adequate for lower volumes, but falls below the standard for higher future volumes.

Based on ODOT's standards and the future volumes, several additional lane width needs were identified along OR 153 and OR 219. There were no additional shoulder width needs for state highways.

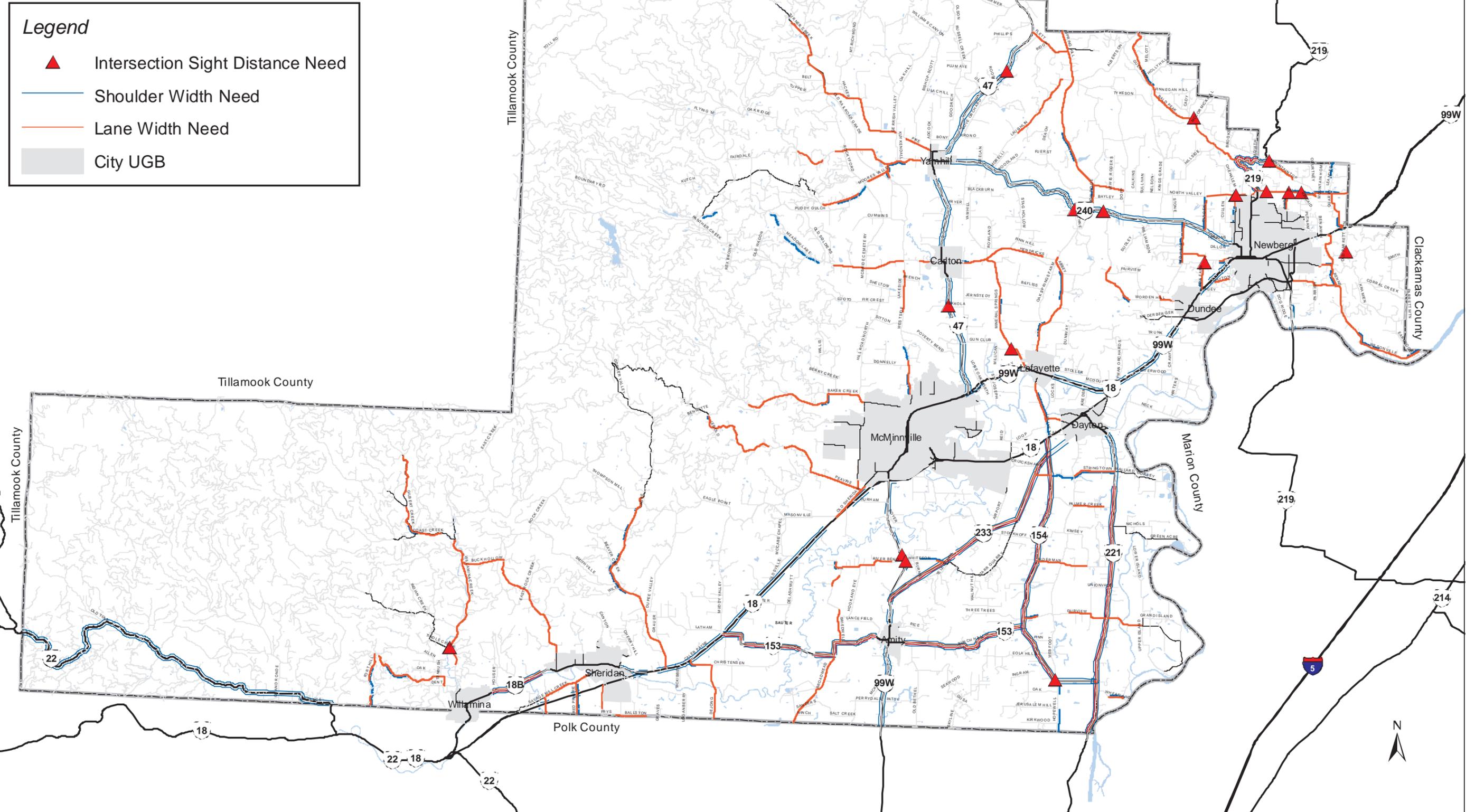
The lane width and shoulder width standards for county roads are based strictly on functional classification and do not consider traffic volume. Therefore, future lane and shoulder width needs for county roads would be the same as existing needs. Future geometric needs are summarized in Figure 11.

¹⁹ American Association of State Highway and Transportation Officials, Highway Safety Manual, 2010.

Yamhill County Transportation System Plan



Figure 11: Future Base Case (2035) Geometric Needs



Future Bicycle and Pedestrian Needs

Because traffic volumes will remain low on most county roads and most state highways, shared roadways will continue to be adequate for bicycle use along these facilities. For roadways with existing bicycle needs, the level of need will become higher as traffic volumes increase. These are:

- OR 47
- OR 99W
- OR 154/Lafayette Hwy.
- Westside Rd.
- Old Sheridan Rd.

Due to higher traffic volumes, the level of need will also be higher at those locations with pedestrian needs identified in the existing conditions analysis. These are largely the same as the locations with bicycle needs, in addition to OR 18B between Sheridan and Willamina.

Future Corridor Health

The future corridor health category would not change for any of the county road segments compared to existing conditions. Corridor health also remains the same in the future for most state highway segments. Along OR 99W, the segments between Newberg and Dundee improve from poor to fair because of the improved mobility with the construction of the Bypass. State highway segments with lower future corridor health are OR 153 from Hopewell Rd. to OR 221, OR 18 from Red Prairie Rd. to the Polk County line, and OR 219 north of North Valley Rd.

Future Transit Needs

Based on the anticipated slow rates of population and employment growth within the rural portion of the County, the type and level of future needs for YCTA transit services will likely be similar to the existing needs.

Future Air, Rail, Pipeline, and Waterway Needs

No future needs were identified for the air, pipeline, or waterway modes.

The *Oregon State Rail Plan*²⁰ identifies the potential need for a passenger rail connection between Yamhill County and the Portland metropolitan area. No additional future freight rail needs were identified.

²⁰ Oregon Department of Transportation, *Oregon State Rail Plan*, 2014.

Section 6. Transportation Funding

Funding for capital improvement projects for county and state transportation facilities is expected to be very limited over the next 20-year period. Therefore, existing and potential future funding sources were explored to determine an approximate budget for future transportation system improvements.

Future revenues from existing funding sources were estimated by examining the amount of revenues received from these sources over roughly the past 10 years. The average annual amounts over this period served as the initial estimates of future funding levels. The initial estimates were reviewed by county and ODOT staff and adjusted based on their assessment of how future funding levels may change.

Historically, the County has received nearly all of its transportation funding from the State Highway Fund. State Highway Fund revenue sources include motor vehicle fuel taxes, motor vehicle registration and title fees, driver's license fees, and the motor carrier weight-mile tax. Each county's share of the revenue is distributed based on the ratio of the number of vehicles registered in the county to the number of registered vehicles statewide. It may be spent for construction, improvement, maintenance, operation and use of public highways, roads, streets and roadside rest areas.

In the past, most of the County's State Highway Fund revenue has been spent on maintenance and operation of the road system, with the remaining amount used for capital improvement projects. County staff expects that the share of the revenue to be spent on capital improvement projects will increase in the future, to about \$300,000 per year or \$6M over the 20-year planning horizon.

ODOT's funding for capital improvements to the state highway system comes primarily from a variety of federal programs, with state matching funds. ODOT expenditures on state highway

improvements in Yamhill County have been mainly financed from the following federal programs:

- Surface Transportation Program (STP) - Projects on any Federal-Aid highway other than local or rural minor collector roads, unless they were on the Federal-Aid Highway System on January 1, 1991.
- Highway Safety Improvement Program (HSIP) - Infrastructure-related highway safety improvements to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- Advance Construction (ADVCON) - Construction of Federal-Aid projects in advance of the apportionment of authorized funds.

For planning purposes, approximately \$10-15M in state and federal funding administered by ODOT is estimated be available for capital improvements on state highways over the 20-year period.²¹

In addition to the State Highway Fund, which has been the primary source of revenue to the County in the past, other local transportation funding mechanisms were investigated as potential sources of additional revenue to the County in the future. All of these mechanisms are authorized by the Oregon Revised Statutes.

Two mechanisms that have successfully used by other Oregon counties similar to Yamhill County are property taxes and local improvement districts. Property taxes or local option ad valorem taxes for roads require voter approval and the tax levies must be shared with the cities. These taxes may be permanent or of limited duration. A local improvement district (LID) is a geographic area in which real property is taxed to defray all or part of the costs of a public

²¹ The State has not committed any future funding for projects in Yamhill County. This estimate is based on the assumption that Yamhill County will receive a reasonable share of the state/federal funding projected to be available over the 20-year planning horizon in Region 2 and based on ODOT sustaining their current revenue structure. It is used to illustrate the degree of financial constraints faced by ODOT as of the writing of this document. Actual funding through state and federal sources may be higher or lower than the range of this estimate. This estimate does not include projects that might be funded through the federal Highway Safety Improvement Program (HSIP).

improvement. Costs are apportioned according to the estimated benefit that will accrue to each property. The average revenue generated from these sources by the other Oregon counties is roughly \$800,000 per year.²²

Examples of other funding mechanisms available to the County are transportation utility fees, and franchise fees. A transportation utility fee is a recurring monthly charge that is paid by all residences and businesses within the county based on the number of trips generated. It is collected through a regular utility bill (e.g., water or sewer). There are no Oregon counties currently using utility fees, but there are a number of cities with this mechanism in place.

Franchise fees are fees charged on utilities' and telecommunications providers' operations. The assessment limits are not controlled by the state, i.e., each county establishes its own ordinances and codes. Franchise fees are currently assessed by Clackamas, Morrow, and Wallowa Counties.

Another funding source established by the County is the County Road Improvement Program (CRIP). The CRIP provides funding from private property owners for improvements to specific county roads. It is currently being modified to better fit the objectives of the program.

In addition to these local funding sources, there are several state sources available to the County other than the State Highway Fund. The Special Public Works Fund provides funds for publicly owned facilities that support economic and community development in Oregon. Low-interest loans are available from \$100,000 to \$10M. Initial loan terms are up to 25 years or the useful life of the project. This program has been utilized by several Oregon counties. Funding is provided by the Infrastructure Finance Authority, an Oregon state agency.

ODOT Pedestrian and Bicycle Program grants are awarded using a statewide competitive process. A local match is seen as a local commitment to a project and can be a consideration in project selection. Typical grants range from \$50,000 - \$500,000.

²² Estimated based on historical funding data for similar Oregon counties obtained from the Association of Oregon Counties' website.

A complete listing of the existing funding sources for county roads and state highways is provided in Appendix E, together with potential alternative revenue sources for county roads.

Section 7. Goals, Objectives, and Evaluation Criteria

A set of goals and objectives reflecting Yamhill County's values was developed to guide the preparation and implementation of the TSP. The goals describe the desired outcomes of future transportation improvements in the County. The objectives identify actions to be taken to accomplish the goals. More broadly, the goals and objectives will be used to guide the County's future transportation system management decisions.

The recommended improvements in the TSP must be consistent with the goals and objectives. To accomplish this, evaluation criteria reflecting the goals and objectives were developed for selecting the recommended improvements from a set of improvement options. The evaluation criteria are measurable factors used in determining the extent to which the improvement options would meet the goals and objectives.

Goal I: Provide for Efficient and Convenient Motor Vehicle Travel

- Objective 1: Establish mobility standards to maintain the minimum level of motor vehicle travel efficiency. State and county standards for mobility will be supported by the respective jurisdiction.
- Objective 2: Maintain mobility and traffic operations according to standards.

Evaluation Criteria:

- Reduction in congestion and delay
- Reduction in traffic conflicts
- Objective 3: Maintain the existing system of roads and bridges to a level suitable for the function of the road, allowing for smooth and comfortable travel, and reducing vehicle maintenance costs through the preservation of pavements and prevention of damage by overweight vehicles.

- Objective 3: Identify opportunities to reduce the use of state highways for local trips.
- Objective 4: Establish and maintain a functional classification system that provides a plan for system purpose and design.
- Objective 5: Limit access points on highways and arterials. Support consolidated and shared access points.

Evaluation Criteria:

- Improvement in access conditions²³

Goal 2: Provide for the Safety of All Transportation Modes

- Objective 1: Identify improvements to address high-collision locations to enhance safety for all modes.

Evaluation Criteria:

- Reduction in crash rate/severity

- Objective 2: Improve roadway geometrics.

Evaluation Criteria:

- Type/level of geometric improvement²⁴

Goal 3: Provide an Equitable, Balanced and Connected Multi-modal Transportation System

- Objective 1: Provide adequate facilities for all transportation modes.

²³ Includes the reduction in the number of access points and the improvement of access design.

²⁴ Type of improvement refers to the suitability of an improvement for addressing a specific type of need. Level of improvement represents the extent or degree of an improvement relative to the standard.

- Objective 2: Distribute the benefits and impacts of transportation decisions fairly and address the transportation needs and safety of all users, including the young, elderly, people with disabilities, and people of all races, ethnicities, and income levels.
- Objective 3: Provide connections to all modes that meet applicable County and Americans with Disabilities Act (ADA) standards.
- Objective 4: Support connectivity between the various communities in the County.

Goal 4: Increase the Quality and Availability of Pedestrian and Bicycle Facilities

- Objective 1: Improve bicycle and pedestrian facilities.

Evaluation Criterion:

- Type/level of bicycle/pedestrian facility improvement²⁵
- Objective 2: Consider bicycle/pedestrian improvements that complement the basic provision of facilities to encourage higher levels of usage (e.g., wayfinding signage).
- Objective 3: Support the development of the Yamhela’s Westsider Trail.

Goal 5: Work with Transit Service Providers to Provide Transit Service and Amenities that Encourage and Increase Ridership

- Objective 1: Identify areas that support additional transit services, and coordinate with transit providers and transit plans to improve the coverage, reliability and frequency of services.
- Objective 2: Promote transit accessibility for transportation-disadvantaged groups.
- Objective 3: Enhance intercity transit connectivity.

²⁵ Type of improvement refers to the suitability of an improvement for addressing a specific type of need. Level of improvement represents the extent or degree of an improvement relative to the standard.

- Objective 4: Implement bus stops, park-and-ride lots, and transit centers identified in the *Yamhill County Coordinated Human Services Public Transportation Plan: The Next Steps*.²⁶
- Objective 5: Identify needs for services to regional employment and activity centers.
- Objective 6: Consider transit user needs that complement the basic provision of service to encourage higher levels of usage (e.g., shelters and benches).

Goal 6: Manage the Transportation System to Support a Prosperous and Competitive Economy

- Objective 1: Enhance access to major employment and industrial locations.
- Objective 2: Enhance the efficiency, access, capacity and reliability of the freight system.

Goal 7: Provide Transportation Facilities and Services that are Fiscally Responsible and Economically Feasible

- Objective 1: Plan for an economically viable and cost-effective transportation system that makes the best use of limited transportation funds.

Evaluation Criteria:

- Minimization of construction cost
- Objective 2: Identify and develop diverse and stable funding sources to implement recommended projects in a timely fashion and ensure sustained funding for road maintenance and transportation improvement projects.
- Objective 3: Actively seek state and federal transportation funds to finance programs and improvements.

²⁶ Mid-Willamette Valley Council of Governments, Coordinated Human Services Public Transportation Plan, 2007.

- Objective 4: Maintain the existing transportation system assets to preserve their intended function and maintain their useful life.
- Objective 5: Consider costs and benefits when identifying project solutions and prioritizing public investments.
- Objective 6: Ensure transparency when determining transportation system investments.

Goal 8: Provide a Transportation System that Conserves Energy and Protects and Improves the Environment

- Objective 1: Minimize impacts to preserve the natural, scenic, and cultural resources in the County.

Evaluation Criteria:

- Minimization of impacts to environmentally sensitive areas

- Objective 2: Minimize land use impacts.

Evaluation Criteria:

- Minimization of impacts to EFU-zoned and developed parcels
- Minimization of required right-of-way

Goal 9: Coordinate with Local and State Agencies and Transportation Plans

- Objective 1: Coordinate with the Oregon Transportation Plan and associated modal plans.

Evaluation Criteria:

- Consistency with ODOT standards

- Objective 2: Coordinate with local agency transportation system plans for communities within Yamhill County.
- Objective 3: Meet the requirements of the Oregon Transportation Planning Rule.
- Objective 4: Coordinate with local agencies and entities within Yamhill County including major employers, incorporated and unincorporated communities, and other stakeholders or groups, as appropriate, on transportation issues involving these entities.
- Objective 5: Coordinate regional project development and implementation with local jurisdictions (e.g. evacuation routes, countywide transit, and jurisdictional transfer of roadways).
- Objective 6: Coordinate with cities and ODOT to review and assess potential impacts and appropriate mitigation of proposed development applications.

A further description of the development of the goals, objectives, and evaluation criteria is included in Appendix F.

Section 8. Management Systems and Tools

The County has several management systems and tools in place to support decision-making about expenditures for capital improvements and maintenance for the County's roadway system. The use of these systems and tools allows the County to examine needs on a system-wide basis and then make objective, defensible decisions about the best allocation of limited resources to address those needs. The existing systems and tools are applied for the following purposes:

- Project prioritization
- Ranking of safety problem locations
- Gravel road condition rating
- Prioritization of paving of gravel roads
- Road ownership transfer

Because the TSP should provide not only recommendations about specific future capital improvement projects, but also guidance on the on-going, day-to-day management of the transportation system, the development of management approaches in the following additional areas was investigated:

- Mitigation of traffic diversion from state highways to county roads
- Designation of scenic routes
- Designation of truck/hazardous materials routes

In addition to these approaches, the County's existing management systems and tools are documented in this section.

Mitigation of Traffic Diversion from State Highways to County Roads

There are three primary traffic diversion routes in the County that involve drivers trying to avoid congestion on OR 99W (see Figure 12). These are:

- Newberg to Lafayette, Carlton, and McMinnville via OR 240, Kuehne Rd, Hendricks Rd., and Abbey Rd.
- Newberg to Dundee via Sunnycrest Rd., Hidden Springs Rd., and Fox Farm Rd.
- Dundee to OR 99W at Fulquartz Landing Rd. via 5th St., Edwards Dr., and Fulquartz Landing Rd.

An effective way to decrease the amount of diverted traffic along these routes is to improve the OR 99W corridor. In addition to Phase I of the Bypass, there are several improvements recommended in Section 10 that would enhance traffic operations, geometrics, and safety along OR 99W. Also, if the phase of the Bypass from Dundee to OR 18 is constructed, most, if not all, of the traffic from this corridor to county roads would be eliminated.

These routes should be monitored after the opening of Phase I to determine the level of diversion. If this does not significantly decrease, the following improvement opportunities should be explored:

- Advancement of the improvements along the OR 99W corridor recommended in Section 10.
- For the first two diversion routes listed above, advancement of the improvements for these routes recommended in Section 10. Although this approach would not reduce the level of diversion, the improvements would allow the diverted traffic to be accommodated more safely.

Designation of Scenic Routes

Both objective (measurable) criteria and subjective criteria should be applied in determining suitable scenic routes. Once a potential route has been defined, County staff should work with county and state tourism organizations to refine and implement the route.

Yamhill County Transportation System Plan

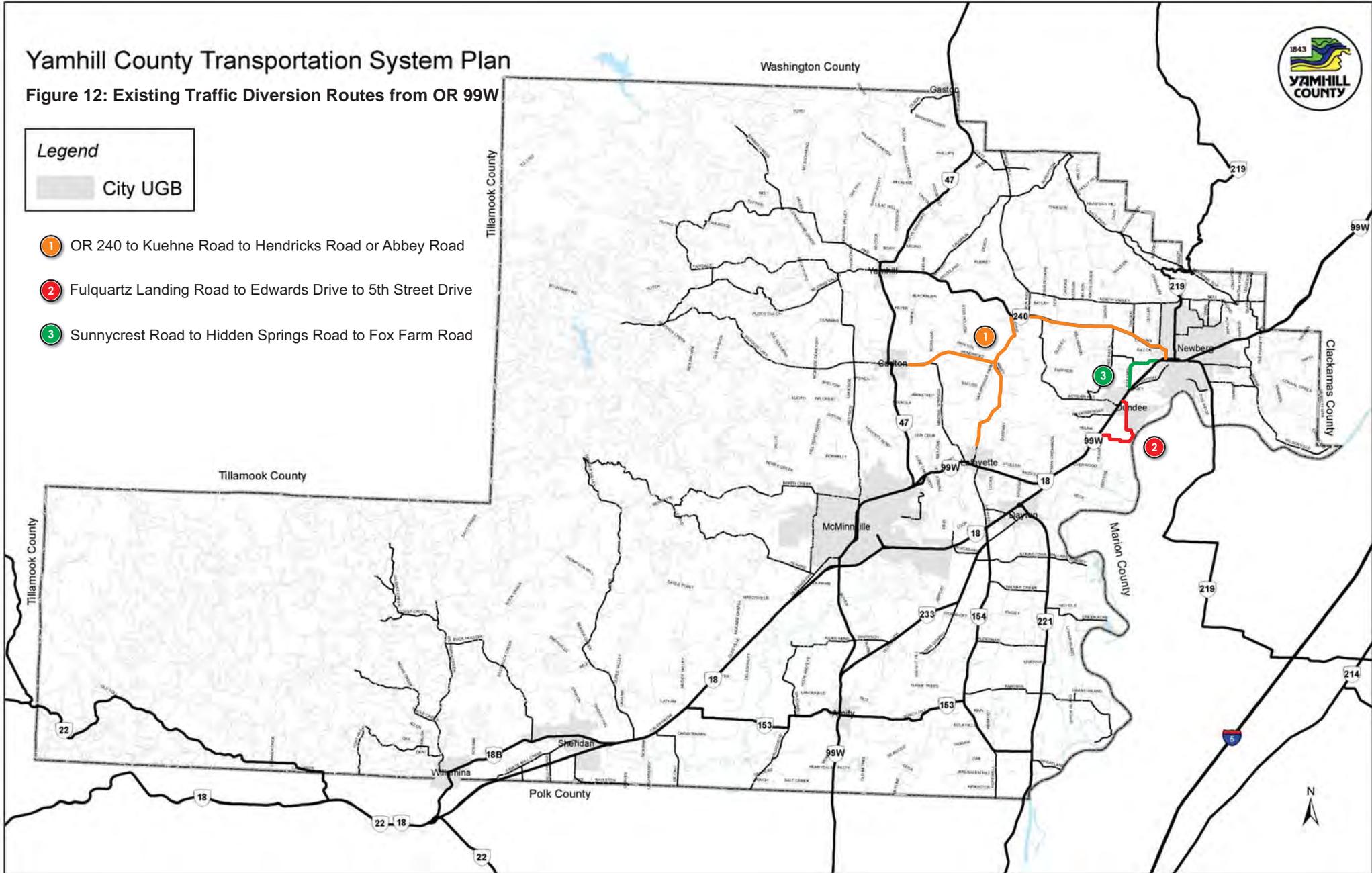
Figure 12: Existing Traffic Diversion Routes from OR 99W



Legend

 City UGB

-  OR 240 to Kuehne Road to Hendricks Road or Abbey Road
-  Fulquartz Landing Road to Edwards Drive to 5th Street Drive
-  Sunnycrest Road to Hidden Springs Road to Fox Farm Road



The objective criteria to be met are:

- Roadway is paved
- Adequate lane width or roadway width
- Crash rate less than or equal to two times the statewide average for the same facility type (minor collector and above)
- Roadway does not have a SPIS location

A second set of criteria should be subjectively applied to determine whether a roadway is suitable for sightseeing traffic, which behaves differently than typical traffic (e.g., slower moving, less likely to recognize potential safety problems). These are:

- Horizontal alignment
- Vertical alignment
- Presence of sight distance deficiencies
- Surface quality
- Access density
- Availability of turnouts
- Scenic value of surrounding terrain
- Types of vehicles on roadway (e.g., farm vehicles)
- Presence of roadway lighting

Additional subjective criteria are the level of support from local groups and municipalities and plans for the protection, enhancement, and promotion of the roadway as a scenic route.

While these criteria are primarily for county roadways, it is important to also recognize that most travelers are likely to use state highways to access the county roadways.

Once the criteria have been applied and a potential route has been identified, the County should work with county and/or state tourism organizations to determine whether to pursue

adoption of the route. If it is adopted, the County should work these organizations, as well as key local stakeholders, to develop signing/way finding and to promote the route.

Designation of Truck/Hazardous Materials Routes

Truck and freight routes can be defined as either recommended or prohibited routes. Within Yamhill County, truck/freight routes are currently defined for both state highways and county roadways.

ODOT truck/freight routes are identified in ODOT's functional classification system. In Yamhill County, the primary truck routes are on OR 99W and OR 18. Trucks are allowed on other state highways, but through truck traffic is encouraged to use these designated routes when possible. Yamhill County's recommended truck route map shows both length and weight-restricted routes. Trucks are allowed on all county roadways unless prohibited. The specific restrictions are shown in the *Yamhill County Weight Restricted Bridges and Approved Route List*.²⁷

With regard to hazardous materials routes, Federal regulations state that motor carriers "shall operate the vehicle over routes which do not go through or near heavily populated areas, places where crowds are assembled, tunnels, narrow streets, or alleys, except where there is no practicable alternative".²⁸ All commercial vehicle operators are expected to be aware of these regulations and the current state highway and county road hazardous materials restrictions within Yamhill County.

Because information on truck and hazardous routes in Yamhill County is already available and well-defined for both state highways and county roads, no additional management systems or tools are recommended.

²⁷ Yamhill County, Yamhill County Weight Restricted Bridges and Approved Route List: Attachment C36, 2008.

²⁸ 49 CFR 397.67 - Motor Carrier Responsibility for Routing, 2011.

Project Prioritization Process

The County's Road Maintenance/Reconstruction Prioritization Policy is used to identify annual road maintenance and reconstruction improvements to protect public safety and property, make effective use of available funds, and preserve the County's investment in its transportation system. It was adopted by the Yamhill County Board of Commissioners on May 14, 2008 by board order. The policy includes eight implementation strategies:

- Confine road maintenance and reconstruction to roads formally accepted as county roads.
- Prioritize road maintenance and reconstruction expenditures annually in a resolution and order adopted by the Board of Commissioners, using a road maintenance priority matrix as a guide. The matrix assigns point values to various activities and roadway classifications.
- The RIAC will recommend revisions as needed to the Yamhill County Board of Commissioners to ensure the most effective use of available funds.
- Implement a base condition concept for the maintenance of paved roads based on a set of criteria that consist of an average pavement condition index (PCI) value and a minimum percentage of road miles greater than or equal to a specific PCI value for each functional classification.
- Develop a base condition concept for gravel roads that will provide a systematic measurement and reporting of their condition (see "Gravel Road Condition Rating System" below).
- Limit expenditures for major reconstruction projects to county roads that are not identified as needing capacity improvements in the near-term.
- Finance reconstruction and minor improvement activities for local streets through localized funding mechanisms, such as the creation of service districts or local improvement districts (LIDs), established exclusively for maintenance of these roads.
- Encourage annexation to a city for local roads within urban and urban reserve areas.

Ranking of Safety Problem Locations

The County currently uses a ranking system for safety problem locations that was developed and implemented by the RIAC. The criteria considered are traffic volume, the number of reported crashes, total fatalities, total injuries, and the number of property damage only (PDO) crashes. Total fatalities and injuries are weighted more heavily than PDO crashes. Prioritization points are calculated based on these criteria. The County will continue to use this ranking system, with possible modifications over time.

Gravel Road Condition Rating System

The County currently uses an informal Gravel Road Condition Rating System. The following factors are evaluated in the field and used to calculate a gravel condition index (GCI) value:

- Crown
- Drainage - culverts and ditches
- Safety
- Width
- Vegetation – sight distance
- Rock

Roadways are determined to be in generally good, fair, or poor condition based on the GCI score. Roadways with lower GCI scores are given a higher maintenance priority. If there are near-term plans for paving a roadway, it is not given a maintenance priority.

A more detailed rating system is not anticipated due to the dynamic nature of gravel roadway conditions, which can vary along the length of the roadway and on a daily basis depending on weather conditions and other factors.

Prioritization of Paving of Gravel Roads

The County's Gravel Collector Roads Upgrade Prioritization System is used to rank collector roadways considered as potential candidates for paving. Prioritization points are calculated based on traffic volume, crashes, gravel condition, and residential density along the roadway. The paving prioritization is determined by ranking the roadways by total points.

Road Ownership Transfer

The County follows a policy established in the previous Yamhill County TSP²⁹ for the transfer of road ownership from the County to the cities. The policy encourages the expeditious transfer of jurisdiction of roadways to incorporated cities in conjunction with annexation. Developers who propose annexation and have frontage on a road that does not meet city road standards have the primary responsibility for upgrading the road to city standards. Roads must be upgraded at the time of annexation or the developer must sign with the city an agreement to upgrade the road at the time of development. The policy also requires the transfer or an agreement to transfer jurisdiction of county roadways within urban growth boundaries at the time of annexation. Although the terms of the agreement may vary from case-to-case, the County adheres to this policy and will continue to do so in the future.

A management system that the County has used in the past to identify pavement maintenance needs is the Pavement Management System (MTC – PMS). This system utilizes a Pavement Condition Index which rates the overall condition of the pavement. The PMS is not currently in use; however, the County may be purchasing an updated system in the future.

Additional information on the County's existing and recommended roadway management systems and tools is included in Appendix G.

²⁹ Yamhill County, Yamhill County Transportation System Plan, 1995.

Section 9. Public Process

Development of the TSP was a collaborative process among the County, ODOT, RIAC, key stakeholders, and the community. Throughout the study, the project team took time to understand multiple points of view, obtain fresh ideas and resource materials, and encourage participation from the public. Several methods were used to engage the community, including stakeholder interviews, an online survey, and two public open house meetings. This section summarizes the public process and the input received from the stakeholders and the community.

Compliance with Title VI Outreach Requirements

Public Involvement for the TSP is subject to the requirements and guidance found in ODOT's *Guidelines for Addressing Title VI and Environmental Justice in Transportation Planning*.³⁰ Specifically, Title VI identifies measures to reach and solicit comments from disadvantaged populations within a community. Although Yamhill County has relatively limited concentrations of minorities and low-income residents, these populations must be accommodated. Yamhill County Planning Department staff did not identify any known groups that should be specifically approached. They indicated that the groups typically expressing interest in the County's planning projects would not qualify for Title VI or Environmental Justice noticing, since these groups' issues are typically focused on environmental concerns unrelated to the disadvantaged populations identified in ODOT's guidelines.

Based on 2010 Census data, about 85% of the County's population is white and about 15% of the population is classified as Hispanic/Latino. This is a comparable percentage of white, and slightly higher percentage of Hispanic/Latino, compared to Oregon as a whole. The percentage of people of races other than white in Yamhill County is also similar to Oregon as a whole. To

³⁰ Oregon Department of Transportation, [Guidelines for Addressing Title VI and Environmental Justice in Transportation Planning](#), 2015.

help reach Hispanic/Latino populations, newspaper advertisements were printed in both English and Spanish and a Spanish interpreter was made available at the two open house meetings.

An estimated 15% of individuals in the County were below the poverty line in 2013, which is comparable to the state as a whole.

County Transportation Issues

To obtain input on key issues, meetings were held at the start of the study with the RIAC, and telephone interviews were conducted with stakeholders representing local governments, school districts, police and fire departments, and local businesses. In addition, an online survey was conducted through the County's website.

Overall, about 90% of the respondents to the online survey rated the transportation system in the County as "good" or "fair". The most common concerns among the stakeholders and survey respondents were in the following areas:

- Safety – in particular, intersections along OR 18 and OR 99W, such as OR 99W/OR 18 and OR 18/Lafayette Hwy.
- Lack of bicycle and pedestrian facilities – shoulders are too narrow or there are no shoulders for bicyclists
- Congestion and delay – need for the Newberg-Dundee Bypass and additional capacity on OR 18
- Geometrics – narrow and winding county roads and narrow shoulders or no shoulders
- Improved transit service and facilities – additional service to Portland and Salem and the lack of bus shelters and bus stop signage
- Traffic operations – lack of turn lanes on state highways, particularly OR 18, and difficulty in crossing state highways
- Roadway maintenance – need for repairs beyond spot maintenance

Summaries of the stakeholder interview and online survey results are included in Appendix I.

Open House #1

The first open house was held on August 8, 2013. The purpose of the open house was to provide the public an opportunity to review information on existing and future projected conditions in the County. Another objective was to obtain comments on key transportation issues within the County, potential solutions to address the issues, and the highest-priority locations to investigate. Comments were received from the public about several local road problem locations and potential improvements. There was also general interest in ensuring that bicycle and pedestrian improvements would be included in the TSP.

Open House #2

A second open house was held on December 11, 2014 to provide an opportunity for the public to comment on improvement options for the priority roadway and bicycle/pedestrian improvement locations shown in Figure 13.

Roadway Improvement Options

The 21 priority roadway improvement locations were determined based on the needs identified in the existing and future conditions analysis and comments received from the RIAC, stakeholders, agency staff, and public. The list below does not reflect the order of importance of these locations.

1. Kuehne Rd./Abbey Rd./Hendricks Rd. intersection
2. Stringtown Rd. between OR 221 and OR 154
3. Worden Hill Rd. from OR 240 to north of Fairview Dr.
4. OR 99W/OR 18/McDougall Rd. intersection
5. OR 18 between Ash Rd. and OR 154/Lafayette Hwy.
6. OR 18/Red Prairie Rd. intersection
7. OR 99W/OR 47 intersection
8. OR 99W – Dundee city limits to OR 18 junction
9. OR 153/Hopewell Rd./Webfoot Rd.

- 10.** OR 221/OR 153 intersection
- 11.** OR 233/Starr Quarry Rd. intersection
- 12.** Bald Peak Rd./Mountain Top Rd. intersection
- 13.** North Valley Rd./Chehalem Dr. intersection
- 14.** Bell Rd./Aspen Way intersection
- 15.** Bell Rd./Zimri Rd. intersection
- 16.** Bell Rd./Springbrook Rd. intersection
- 17.** OR 99W – Newberg city limits to Dundee city limits
- 18.** OR 233/Cruickshank Rd. intersection.
- 19.** OR 18/Gopher Valley Rd. intersection
- 20.** OR 99W/Durham Ln. intersection
- 21.** Fox Farm Rd./Hidden Springs Rd. intersection

The improvement options were developed to address the needs identified in the existing and future conditions analysis and by the RIAC, stakeholders, and public. The goals, objectives, and evaluation criteria were used as a guide in the development of the options, as well as the future funding constraints identified in the funding analysis. The focus was to identify options that would improve safety and maintain traffic operations, while minimizing cost and environmental and land use impacts. Another objective was to develop a package of improvements for each location that would address not only the primary need, but secondary needs within the vicinity.

In some cases, due to the type of need or specific characteristics of the location, only one improvement option is available. An example of this would be a location where there are conflicts between turning vehicles and through traffic. Here, the only option would be to provide a turn lane. The improvement options are briefly summarized in Table 2 below. Additional details are provided in the Improvement Options memo in Appendix H.

Table 2: Roadway Improvement Options

Location		Needs	Improvement Options
No.	Description		
1	Kuehne Rd./Abbey Rd./Hendricks Rd.	<ul style="list-style-type: none"> Improved safety Skewed intersections Lack of turn lanes 	<ol style="list-style-type: none"> 1. Realign Abbey Rd. as “T” intersection with Hendricks Rd., add turn lanes 2. Realign Hendricks Rd. as “T” intersection with Abbey Rd., add turn lanes 3. Install roundabout
2	Stringtown Rd. between OR 221 and OR 154	<ul style="list-style-type: none"> Improved safety Narrow lanes and shoulders 	<ol style="list-style-type: none"> 1. Widen lanes and shoulders, install shoulder rumble stripes, install signing and striping at curves
3	Worden Hill Rd. from OR 240 to north of Fairview Dr.	<ul style="list-style-type: none"> Improved safety on Worden Hill Rd. Poor intersection geometrics at OR 240/Worden Hill Rd. 	<ol style="list-style-type: none"> 1. Improve OR 240/Worden Hill Rd. intersection 2. Same as Option 1, plus install rumble stripes and curve signs/striping on Worden Hill Rd. 3. Same as Option 2, plus add shoulders and remove two crests on Worden Hill Rd. 4. Same as Option 3, plus realign four curves on Worden Hill Rd.
4	OR 99W/OR 18/McDougall Rd.	<ul style="list-style-type: none"> Improved safety and traffic operations Non-standard intersection layout Future mobility need 	<ol style="list-style-type: none"> 1. Install roundabout
5	OR 18 between Ash Rd. and OR 154/Lafayette Hwy.	<ul style="list-style-type: none"> Improved safety Future mobility need 	<ol style="list-style-type: none"> 1. Close Ash Rd., install roundabout at OR 18/OR 154/Lafayette Hwy. 2. Close Ash Rd., realign Lafayette Hwy. and OR 154 as offset “T” intersections with OR 18
6	OR 18/Red Prairie Rd.	<ul style="list-style-type: none"> Improved safety Difficulty in crossing OR 18 	<ol style="list-style-type: none"> 1. Install median on OR 18 to allow two-stage crossing

Location		Needs	Improvement Options
No.	Description		
7	OR 99W/OR 47	<ul style="list-style-type: none"> Improved safety Lack of turn lane Existing and future mobility needs Poor pavement condition 	<ol style="list-style-type: none"> 1. Install traffic signals on eastbound and westbound OR 99W, rehabilitate pavement 2. Merge eastbound and westbound OR 99W into single roadway and install traffic signal, add turn lane 3. Merge eastbound and westbound OR 99W into single roadway and install roundabout
8	OR 99W – Dundee City Limits to OR 18 Junction	<ul style="list-style-type: none"> Existing and future mobility needs 	<ol style="list-style-type: none"> 1. Widen OR 99W to four lanes with median between Bypass junction and OR 18
9	OR 153/Hopewell Rd./Webfoot Rd.	<ul style="list-style-type: none"> Improved safety Lack of turn lane Narrow lanes and shoulders 	<ol style="list-style-type: none"> 1. Remove vegetation near intersection, install intersection warning beacon 2. Same as Option 1, plus widen lanes and shoulders and consider turn lane
10	OR 221/OR 153	<ul style="list-style-type: none"> Improved safety Confusing intersection, sharp angles Lack of turn lane Narrow lanes 	<ol style="list-style-type: none"> 1. Remove intersection connector roads to create standard intersection, install turn lane, widen lanes
11	OR 233/Starr Quarry Rd.	<ul style="list-style-type: none"> Improved safety Narrow lanes and shoulders Confusing intersection Substandard curve on OR 223 	<ol style="list-style-type: none"> 1. Improve curve on OR 233, realign Starr Quarry Rd. as “T” intersection with OR 233, install turn lane and guide signs on OR 233, widen lanes and shoulders
12	Bald Peak Rd./Mountain Top Rd.	<ul style="list-style-type: none"> Improved safety Skewed intersection Narrow lanes and shoulders 	<ol style="list-style-type: none"> 1. Realign Ornduff Rd. and Mountain Top Rd. to form single intersection and connect with Bald Peak Rd., reduce crest on Bald Peak Rd.
13	North Valley Rd./Chehalem Dr.	<ul style="list-style-type: none"> Poor sight distance Narrow lanes Offset intersection approaches 	<ol style="list-style-type: none"> 1. Trim vegetation near intersection, remove crest on North Valley Rd. 2. Same as Option 1, plus realign south leg of Chehalem Dr.

Location		Needs	Improvement Options
No.	Description		
14	Bell Rd./Aspen Way	<ul style="list-style-type: none"> Poor sight distance Narrow lanes and shoulders 	1. Reduce crest on Bell Rd., widen lanes and shoulders
15	Bell Rd./Zimri Rd.	<ul style="list-style-type: none"> Poor sight distance Narrow lanes and shoulders 	1. Remove /relocate sight obstructions on southwest corner of intersection
16	Bell Rd./Springbrook Rd.	<ul style="list-style-type: none"> Improved safety Poor sight distance Narrow lanes and shoulders 	1. Convert intersection to three-way stop, remove vegetation near intersection, install advance intersection warning signs and intersection beacon
17	OR 99W – Newberg City Limits to Dundee City Limits	<ul style="list-style-type: none"> Improved safety Existing mobility need Narrow shoulders Merge problem in lane reduction area east of Dundee 	1. Widen shoulders, monitor merge problem
18	OR 233/Cruikshank Rd.	<ul style="list-style-type: none"> Improved safety Confusing intersection Narrow lanes and shoulders 	<ol style="list-style-type: none"> Remove connector roads at intersection and realign Cruikshank Rd. as “T” intersection with OR 233 south of existing home, consider turn lanes, widen lanes and shoulders Remove connector roads and realign Cruikshank Rd. as “T” intersection with removal of existing home, consider turn lanes, widen travel lanes and shoulders Install roundabout with removal of existing home
19	OR 18/Gopher Valley Rd.	<ul style="list-style-type: none"> Poor access conditions at driveways on OR 18 Narrow lanes and shoulders 	1. County and ODOT to work with property owners to consolidate driveways over time
20	OR 99W/Durham Ln.	<ul style="list-style-type: none"> Improved safety Narrow shoulders 	1. Install intersection beacon, remove sight distance obstructions, consider turn lanes
21	Fox Farm Rd./Hidden Springs Rd.	<ul style="list-style-type: none"> Improved safety Poor sight distance Substandard curves 	<ol style="list-style-type: none"> Create “T” intersection Realign Fox Farm Rd. to improve curves, create “T” intersection

The improvement options were screened using the evaluation criteria described in Section 7 and the findings were reviewed with the County, ODOT, and the RIAC. There was general agreement about the improvement concepts and the results of the evaluation. Minor revisions were made to the options based on County and ODOT input. The evaluation scores are shown in the summary sheets at the end of the Improvement Alternatives memo in Appendix H.

Proposed Bicycle and Pedestrian Improvements

The proposed bicycle and pedestrian improvements presented at the second open house address the locations where improvements are needed to safely accommodate higher bicycle or pedestrian volumes. The improvements generally consist of widening travel lanes and/or shoulders to provide greater separation between bicyclists/pedestrians and vehicular traffic. These improvements were proposed at the following locations (see Figure 13):

- a.** Old Sheridan Rd. between McMinnville city limits and OR 18
- b.** OR 47 between OR 99W and Washington County line
- c.** OR 18B between Sheridan and Willamina
- d.** OR 99W between Newberg and Dundee
- e.** OR 99W between Lafayette and McMinnville
- f.** Lafayette Hwy. between Lafayette and OR 18
- g.** Westside Rd. between McMinnville and Meadowlake Rd.
- h.** Westside Rd. between Meadowlake Rd. and Moore's Valley Rd.

The only exception to the lane/shoulder widening improvements is for OR 47 between OR 99W and the Washington County line. Here, the planned Yamhela's Westsider Trail was proposed, which will run parallel to OR 47, with connections via OR 47 and intersecting county roads.

Community Preferred Options

Public input was provided at the second open house on several of roadway improvement options. For Worden Hill Rd. (Location #3), both Option 3 and Option 4 were supported. Option 3 includes improvements to the OR 240/Worden Hill Rd. intersection, and on Worden Hill Rd., the installation of rumble stripes and curve signs/striping, the addition of shoulders, and the removal of two crests. Option 4 is the same as Option 3, plus the realignment of four curves on Worden Hill Rd.

One comment was received for OR 18 between Ash Rd. and Lafayette Hwy. (Location #5) supporting Option 2, which includes the closure of Ash Rd. north and south of OR 18 and the realignment of Lafayette Hwy. and OR 154 as offset “T” intersections with OR 18.

Option 2 was preferred for the OR 153/Hopewell Rd./Webfoot Rd. intersection (Location #9). This would improve sight distance by removing vegetation near the intersection, install a warning beacon at the intersection, and widen the lanes and shoulders on OR 153 and Hopewell Rd. in the vicinity of the intersection. In addition, an eastbound right-turn lane would be considered.

One comment was received in support of Option #3 at the OR 99W/OR 47 intersection (Location #7). This option would feature the merging of the eastbound and westbound OR 99W roadways into a single roadway, with the installation of a roundabout.

For the OR 233/Cruickshank Rd. intersection (Location #18), both Option 2 and Option 3 were supported. With both options, the existing home located in the center of the intersection would be removed. Option 2 would remove the connector roads at the intersection and realign Cruickshank Rd. to meet OR 233 as a “T” intersection. A northbound left-turn lane and southbound right-turn lane on OR 233 would be considered, and the lanes and shoulders on OR 233 would be widened near the intersection. Option 3 would reconstruct the intersection as a roundabout.

There was one comment in favor of Option 2 for the Fox Farm Rd./Hidden Springs Rd. intersection, which would realign Fox Farm Rd. to improve the radii on the “S” curve and realign Hidden Springs Rd. as a “T” intersection with Fox Farm Rd.

Several other comments not related to the improvement options were also received:

- Roundabouts help the flow of traffic
- Add shoulders when performing maintenance work on county roads
- Widen Lafayette Hwy. between OR 18 and OR 99W to better accommodate bicyclists
- Consider adding paved shoulders on Baker Creek Rd. for bicycle access to the county parks outside of McMinnville
- OR 99W needs shoulders between Trunk Rd. and Riverwood Rd.

Additional information on the public process can be found in in Appendix I.

Section 10. Recommended Transportation System Improvements

The improvements presented below are recommended for further investigation. Based on the public input received at the second open house, evaluation results, and input from the RIAC and county staff, these improvements best meet the goals, objectives, and needs for the County's transportation system. None of the recommended improvements involve any significant right-of-way or property impacts. They are not expected to have any disproportionately negative impacts on Title VI populations. Rather, these improvements will benefit the entire population. Complete documentation of the selection of the recommended improvements is included in Appendix J.

Roadway Projects

The recommended roadway improvements are in the form of projects, which consist of a bundle of one or more individual improvements that address both the primary and secondary needs at a location. This approach enhances the cost-effectiveness of improvement projects by increasing the total benefit and reducing the total cost, compared to separate projects for each improvement. The recommendations describe the type of improvements to be implemented, not their specific design characteristics or features. These would be determined at the time of project development.

For each project, a funding source is identified. In the past, County roadway improvements have typically been funded using revenues from the State Highway Fund that are allocated to the County or Oregon Transportation Investment Act (OTIA) funds, which are specifically used for bridge projects.³¹ Alternative funding sources not currently used by the County are also included, such as local improvement districts, transportation utility fees, franchise fees, and county road districts bonds, property taxes for roads, and ODOT Pedestrian and Bicycle

³¹ Going forward, OTIA funds will not be available.

Program grants. For planning purposes, ODOT estimates approximately \$10-15M in state and federal funding administered by ODOT is will be available for capital improvements on state highways over the 20-year period.³²

A recommended time frame is also provided for each project. The time frame estimates are primarily based on when a project will be needed to address the identified needs: short-term (2015-2020), medium-term (2020-2025), and long-term (2025-2030+). Other factors were considered in some cases, including:

- Phasing – the project can be implemented in an inexpensive, short-term phase together with a longer-term phase, which may require additional time to secure funding.
- Other recent improvements – if an improvement has recently been made at a location, the priority for another project at the same location may be lower.
- Related improvements – another improvement is scheduled which would eliminate the need for the recommended project.
- Cost – higher-cost projects will likely require more time to secure funding.

The time frame is not intended to reflect priority. The recommended county roadway projects can be considered as a pool of potential improvements that the county can select from according to future circumstances, such as the availability of funding for a specific improvement type or the ability to combine the project with another project.

The recommended roadway improvements are summarized in Table 3 and Figure 13.

³² The State has not committed any future funding for projects in Yamhill County. This estimate is based on the assumption that Yamhill County will receive a reasonable share of the state/federal funding projected to be available over the 20-year planning horizon in Region 2 and based on ODOT sustaining their current revenue structure. It is used to illustrate the degree of financial constraints faced by ODOT as of the writing of this document. Actual funding through state and federal sources may be higher or lower than the range of this estimate. This estimate does not include projects that might be funded through the federal Highway Safety Improvement Program (HSIP).

Table 3: Recommended Roadway Improvements

Location		Recommended Project	Cost	Funding Source	Time Frame
No.	Description				
1	Abbey Rd./Hendricks Rd./Kuehne Rd.	<u>Option 1:</u> <ul style="list-style-type: none"> • Realign Abbey Rd. as “T” intersection with Hendricks Rd. • Install southbound left-turn lane on Hendricks Rd. at Abbey Rd. • Install acceleration/merge lane from Abbey Rd. to Kuehne Rd. • Realign and widen travel lanes on Abbey Rd. • Realign Oak Spring Farm Rd. as “T” intersection with Abbey Rd. • Widen travel lanes and shoulders on Hendricks Rd. and Kuehne Rd 	\$625,000 + ROW cost	<ul style="list-style-type: none"> • County (State Highway Fund) • Alternate county funding sources 	Short-term
2	Stringtown Rd. - OR 221 to OR 154	<u>Option 1:</u> <ul style="list-style-type: none"> • Install signing/striping at several curves* • Widen road • Widen/improve shoulders • Install shoulder rumble stripes 	\$4.25M	<ul style="list-style-type: none"> • County (State Highway Fund) • Alternate county funding sources 	Short-term* Medium/long-term

Location		Recommended Project	Cost	Funding Source	Time Frame
No.	Description				
3	Worden Hill Rd. - OR 240 to north of Fairview Dr.	<u>Option 4:</u> <ul style="list-style-type: none"> • Realign OR 240/Worden Hill Rd. intersection to eliminate skew, widen shoulders on OR 240 near intersection • Install signing/stripping at several curves, install rumble stripes for length of roadway • Widen shoulders and remove crests at two locations • Straighten curves at several locations 	\$5.4M	<ul style="list-style-type: none"> • County (State Highway Fund) • Alternate county funding sources 	Long-term
4	OR 99W/OR 18/McDougall Rd. ³³	<u>Option 1:</u> <ul style="list-style-type: none"> • Close McDougall Rd. approach to intersection* • Install multi-lane roundabout • Widen shoulders on OR 99W and OR 18 in vicinity of intersection 	\$9.0M	ODOT	Short-term* Long-term
5	OR 18 - Ash Rd. to OR 154/Lafayette Hwy.	<u>Option 1:</u> <ul style="list-style-type: none"> • Close Ash Rd. north and south of OR 18* • Install multi-lane roundabout, widen Lafayette Hwy. and OR 154 near intersection 	\$8.0M	ODOT	Short-term* Medium/long-term

³³ This project may be pursued if the Dundee to OR 18 phase of the Bypass is not built.

Location		Recommended Project	Cost	Funding Source	Time Frame
No.	Description				
6	OR 18/Red Prairie Rd.	<u>Option 1:</u> <ul style="list-style-type: none"> Install median on OR 18 with adequate width to allow two-stage crossing movements Widen lanes and shoulders on Red Prairie Rd. in vicinity of intersection 	\$7.0M	ODOT	Medium/long-term
7	OR 99W/OR 47	<u>Option 3:</u> <ul style="list-style-type: none"> Merge eastbound and westbound roadways on OR 99W into single roadway and install multi-lane roundabout Widen shoulders on OR 47 in vicinity of intersection 	\$6.0M	ODOT	Short-term
8	OR 99W – Dundee to OR 18	<u>Option 1:</u> <ul style="list-style-type: none"> Widen and rehabilitate shoulders* Widen OR 99W to four lanes with median between Newberg-Dundee Bypass junction and OR 18 	\$40.0-50.0M	ODOT	Medium-term* Long-term ³⁴
9	OR 153/Hopewell Rd./Webfoot Rd.	<u>Option 2:</u> <ul style="list-style-type: none"> Remove vegetation, install warning beacon at intersection* Widen travel lanes and shoulders near intersection, consider adding eastbound right-turn lane on OR 153 	\$1.0M	<ul style="list-style-type: none"> ODOT County (State Highway Fund) Alternate county funding sources 	Short term* Medium/long-term

³⁴ Pending outcome of future Bypass phase.

Location		Recommended Project	Cost	Funding Source	Time Frame
No.	Description				
10	OR 221/OR 153	<u>Option 1:</u> <ul style="list-style-type: none"> • Vacate south-to-west and north-to-west connector roads to create standard intersection • Install northbound left-turn lane on OR 221 • Widen travel lanes on OR 221 in vicinity of intersection 	\$1.5M	ODOT	Short-term
11	OR 233/ Starr Quarry Rd.	<u>Option 1:</u> <ul style="list-style-type: none"> • Realign OR 233 so curve meets standard • Realign Starr Quarry Rd. as "T" intersection with OR 233 • Install southbound left-turn lane on OR 233 • Install guide signs on OR 233 • Widen travel lanes and shoulders in vicinity of intersection 	\$1.5M	<ul style="list-style-type: none"> • ODOT • County (State Highway Fund) • Alternate county funding sources 	Short-term
12	Bald Peak Rd./ Mountain Top Rd.	<u>Option 1:</u> <ul style="list-style-type: none"> • Realign Ornduff Rd. and Mountain Top Rd. to form single intersection north of Bald Peak Rd. • Connect new intersection to Bald Peak Rd. • Reduce crest on Bald Peak Rd. at intersection 	\$620,000	<ul style="list-style-type: none"> • County (State Highway Fund) • Alternate county funding sources 	Medium-term

Location		Recommended Project	Cost	Funding Source	Time Frame
No.	Description				
13	North Valley Rd./ Chehalem Dr.	<u>Option 2:</u> <ul style="list-style-type: none"> Reconstruct North Valley Rd. west of intersection to reduce crest Trim/remove vegetation Realign south leg of Chehalem Dr. to eliminate offset 	\$525,000	<ul style="list-style-type: none"> County (State Highway Fund) Alternate county funding sources City of Newberg (future development fees) 	Short-term ³⁵
14	Bell Rd./Aspen Way	<u>Option 1:</u> <ul style="list-style-type: none"> Reduce crest on Bell Rd. to west of intersection Widen travel lanes and shoulders on Bell Rd. Replace and/or install guardrail in vicinity of intersection 	\$710,000	<ul style="list-style-type: none"> County (State Highway Fund) Alternate county funding sources 	Short-term
15	Bell Rd./Zimri Rd.	<u>Option 1:</u> <ul style="list-style-type: none"> Remove/relocate sight obstructions on SW corner of intersection 	\$20,000	<ul style="list-style-type: none"> County (State Highway Fund) Alternate county funding sources 	Short-term

³⁵ Contingent on Newberg development.

Location		Recommended Project	Cost	Funding Source	Time Frame
No.	Description				
16	Bell Rd./ Springbrook Rd.	<u>Option 1:</u> <ul style="list-style-type: none"> Convert intersection to three-way stop control Remove vegetation on SE corner of intersection Relocate utility pole on north side of Bell Rd. to improve clear zone safety Install “stop ahead” advance warning signs with beacons on Bell Rd. Install warning beacon at intersection 	\$130,000	<ul style="list-style-type: none"> County (State Highway Fund) Alternate county funding sources 	Short-term
17	OR 99W – Newberg to Dundee	<u>Option 1:</u> <ul style="list-style-type: none"> Widen shoulders on OR 99W where deficient Monitor lane reduction area east of Dundee; identify appropriate improvement measures as needed 	\$3.0M	ODOT	Medium-term
18	OR 233/ Cruickshank Rd.	<u>Option 2:</u> <ul style="list-style-type: none"> Remove connector roads Realign Cruickshank Rd. as “T” intersection with OR 233, removing existing home Consider northbound left-turn lane and southbound right-turn lane on OR 233 at new intersection Widen travel lanes and shoulders on OR 233 in vicinity of intersection 	\$2.0M	ODOT	Medium-term
19	OR 18/ Gopher Valley Rd.	<u>Option 1:</u> <ul style="list-style-type: none"> County and ODOT to work with property owners to consolidate accesses over time 	N/A	ODOT	Medium/Long-term

Location		Recommended Project	Cost	Funding Source	Time Frame
No.	Description				
20	OR 99W/Durham Ln.	<u>Option 1:</u> <ul style="list-style-type: none"> • Install overhead flashing beacon at intersection • Remove/relocate sight distance obstructions on OR 99W • Relocate stop sign on Durham Ln. as close to intersection as possible • Consider northbound left-turn lane and southbound right-turn lane on OR 99W • Move existing intersection warning signs closer to intersection 	\$1.0M	ODOT	Medium-term
21	Fox Farm Rd./Hidden Springs Rd.	<u>Options 1 and 2:</u> <ul style="list-style-type: none"> • Create "T" intersection* • Realign Fox Farm Rd. to improve radii on "S" curves; realign Hidden Springs Rd. as "T" intersection at Fox Farm Rd. 	\$415,000	<ul style="list-style-type: none"> • County (State Highway Fund) • Alternate county funding sources 	Short-term* Long-term

Bicycle/Pedestrian Improvements

Nearly all of the proposed bicycle/pedestrian improvements presented at the second open house are recommended for implementation. The improvements are located throughout the County, as shown in Table 4 and Figure 13. They consist mainly of shoulder widening and/or paving to a minimum of six feet, or to the County's or ODOT's standard if it is higher. In some cases, lane widening is also recommended because having adequate lane width for vehicular traffic also improves safety for bicyclists and pedestrians.

In addition to the shoulder and lane widening improvements, the Yamhela's Westsider Trail is recommended (see Figure 13). The trail will run parallel to OR 47 from OR 99W to Gaston, linking up with the State Highway Bicycle trail to Forest Grove and to Hagg Lake. The cities of Gaston, Yamhill and Carlton are situated along the trail. Access will be available from intersecting county roads and nearby OR 47.

All of the recommended improvements are based on existing needs, so they can be implemented as soon as funding becomes available.

Transit Improvements

The recommended improvements for transit service in Yamhill County were determined based on the needs identified in the *Yamhill County Coordinated Human Services Public Transportation Plan: The Next Steps*³⁶ and by YCTA staff, stakeholders, and the public. The recommended improvements are:

- Additional service during the evenings and on weekends
- More frequent bus stops
- Expanded service to large employers (e.g. Spirit Mountain Casino and the Riverside Drive industrial area)
- Improved service to outlying areas

³⁶ Mid-Willamette Valley Council of Governments, Coordinated Human Services Public Transportation Plan, 2007.

Table 4: Recommended Bicycle and Pedestrian Improvements

Location		Recommended Improvement	Cost	Funding Source	Time Frame
A	Old Sheridan Rd. - McMinnville to OR 18	<ul style="list-style-type: none"> Widen travel lanes Widen and pave shoulders to six feet 	\$2.0M + culvert replacement	County	Short-term
B	OR 47 - OR 99W to Washington County	<ul style="list-style-type: none"> Yamhela's Westsider Trail 	N/A	County/Private	Short-term
C	OR 18B - Sheridan to Willamina	<ul style="list-style-type: none"> Widen travel lanes Widen and pave shoulders to six feet 	\$3.0M	ODOT	Medium-term
D	OR 99W - Newberg to Dundee	<ul style="list-style-type: none"> Widen and pave shoulders to six feet* 	See Location #17 in Table 3	ODOT	Medium-term or with Location #17 improvement
E	OR 99W - Lafayette to McMinnville	<ul style="list-style-type: none"> Widen and pave shoulders to six feet 	Reconstruction of two bridges**	ODOT	Medium-term
F	Lafayette Hwy. - Lafayette to OR 18	<ul style="list-style-type: none"> Widen travel lanes Widen and pave shoulders to six feet 	\$1.7M + utility pole relocation	County	Short-term

* Alternatively, the shoulders on Dayton Avenue could be widened, consistent with the Dundee TSP and Chehalem Heritage Trail Strategic Plan.

** South Yamhill River bridges only.

- New service between Yamhill and Carlton
- New service between Sheridan, Willamina and Grand Ronde (West Valley)
- Designated bus stops with signs and posted schedules
- Transit shelters for fixed routes
- Sidewalks, curb cuts, loading spaces, and crosswalks in areas adjacent to transit lines
- Improved ADA accessibility
- Pull-outs for buses
- More regional connections (e.g. to the Oregon coast)

Additional improvements may be identified in a Transit Development Plan that may be developed by the YCTA in the near future.

ODOT provides limited transit funding through the Enhance category of the Statewide Transportation Improvement Program (STIP), Special Transportation Fund (STF), and *ConnectOregon* program. The Enhance category of the STIP funds projects that expand or improve the state's multimodal transportation system. For transit, this includes capital projects only. STF funds can be used to provide transportation services to seniors and people with disabilities, including transit service. *ConnectOregon* funds investments in air, rail, marine, transit, and bicycle/pedestrian infrastructure through grants and loans.

The primary federal transit funding sources available are the Section 5310 and 5311 programs. Section 5310 funds may be used for the special needs of elderly individuals and individuals with disabilities. Section 5311 is a rural program that provides funding to the states for the purpose of supporting public transportation in rural areas.

A small amount of transit funding is also provided from the Yamhill County General Fund.

Air, Rail, Pipeline, and Waterway Improvements

There are no recommended air, pipeline, or waterway improvements.

The potential passenger rail connection between Yamhill County and the Portland metropolitan area identified in the *Oregon State Rail Plan*³⁷ was examined in the *Yamhill County Commuter Rail Study*.³⁸ The study evaluated the potential for commuter rail operation from McMinnville to Milwaukie utilizing existing freight rail lines which generally parallel OR 99W (see Figure 14). Key findings from the study include the following:

- Service would include five inbound trips in the morning peak period and five outbound trips in the evening peak based on 30-minute frequencies. Two trains in each peak would run to and from McMinnville, with the remainder operating to and from Newberg.
- Although adequate for low-speed freight service, the rail line would require considerable upgrading to accommodate commuter rail operations safely and cost-effectively.
- The estimated capital cost to place a McMinnville-to-Milwaukie commuter rail line into operation would be \$112M (1997 dollars).
- The estimated operating cost would be \$3.0M annually.
- Daily boardings for 2015 are estimated to be 1,580.
- Given the number of riders with trip destinations in the OR 217 corridor and Wilsonville, a timed connection with Tri-Met's Westside Express Service between Wilsonville and Beaverton would be important.

Development of new service will require a detailed feasibility study that examines potential ridership, technical feasibility, implementation, costs, and other factors.

³⁷ Oregon Department of Transportation, *Oregon State Rail Plan*, 2014.

³⁸ Oregon Department of Transportation, *Yamhill County Commuter Rail Study*, 1998.

Implementation of Recommended Improvements

Implementation of the recommended projects, both for county and state facilities, will be significantly constrained by the anticipated future funding amounts. For the County, this is estimated to be roughly \$300,000 per year or \$6M over the 20-year planning horizon. For ODOT, a total of \$10-15M is estimated to be available for capital transportation improvements on state highways over the 20-year period.

County Projects

County roadway projects are identified as short-term, medium-term, or long-term based, primarily, on whether the needs exist today or are expected with future with traffic growth. Some projects are classified as longer-term based on input from the County, such as locations where a project has been recently constructed (e.g., Worden Hill Rd.). No additional prioritization is recommended for the County roadway projects. Implementation of specific projects can occur as funding becomes available or other opportunities arise. An example of this is bundling a project with another capital improvement or a scheduled maintenance project. Project bundling could also be done with ODOT if there are complementary nearby projects on County and ODOT facilities.

Similarly, all of the recommended bicycle and pedestrian improvements address existing needs and therefore are considered equally important. Specific improvements can be implemented based on funding availability or as other opportunities arise.

ODOT Projects

Some of the projects on ODOT facilities are recommended as priority projects because there are mobility needs at these locations that must be addressed to meet the State's mobility targets. The following priority projects are considered "reasonably likely" by ODOT to be funded based on the estimated 20-year funding amount for state highways in unincorporated Yamhill County:

- OR 18 – Ash Rd. to OR 154/Lafayette Hwy. (Location #5) - Close Ash Rd. north and south of OR 18, install a multi-lane roundabout at the OR 18/OR 154/Lafayette Hwy. intersection,³⁹ and widen Lafayette Hwy. and OR 154 near the intersection.
- OR 47/OR 99W intersection (Location #7) – merge the eastbound and westbound roadways on OR 99W into a single roadway and install a multi-lane roundabout;⁴⁰ widen shoulders on OR 47 in the vicinity of the intersection.

In addition, there are several other state highway locations where there are existing and/or future mobility needs, but improvements are considered not reasonably likely to be funded. These are:

- OR 99W/OR 18/McDougall Rd. intersection (Location #4)
- OR 18 west of Dayton
- OR 18 west of McMinnville
- OR 99W – Dundee to OR18 (Location #8)
- OR 99W/Fox Farm Rd. intersection

At the first three locations, the mobility needs are for future conditions only and the mobility targets are only slightly exceeded. Also, at OR 99W/OR 18/McDougall Rd., the need would be eliminated if the Dundee-to-Dayton phase of the Bypass is constructed, because the Bypass is expected to draw a significant amount of traffic from OR 99W.

On OR 99W between Dundee and OR 18, four-lane widening is required to address the existing and future needs. Two factors make this improvement not reasonably likely to be funded:

- It will not be needed if the Dundee-to-Dayton phase of the Bypass is constructed, because the Bypass is expected to draw a significant amount of traffic from OR 99W.

³⁹ Further analysis of the feasibility and desirability of a multi-lane roundabout at this location will be required.

⁴⁰ Further analysis of the feasibility and desirability of a multi-lane roundabout at this location will be required.

- With an estimated cost of over \$50M, this improvement alone would well exceed ODOT's entire funding amount for state highways in Yamhill County over the 20-year planning horizon.

The shoulder widening and rehabilitation portion of this project is recommended in the medium-term, however, because this is a much lower-cost improvement that is needed whether the future phase of the Bypass is built or not.

With regard to OR 99W/Fox Farm Rd., ODOT is currently working with the City of Dundee to develop an improvement at the intersection of OR 99W/First St. in Dundee. The scope of this improvement will either include or have an effect on the intersection of OR 99W/Fox Farm Rd. At this time, there is no estimate of how this improvement will impact the operation of the OR 99W/Fox Farm Rd. intersection, but some improvement is expected, particularly in combination with the reduction in traffic expected with the opening of Phase 1 of the Bypass. The operational conditions at this intersection should continue to be monitored by ODOT, post-Phase 1, and addressed to the extent practicable from a property impact and funding standpoint, in consideration of the magnitude of any operational or safety problems that may develop by the end of the 20-year planning horizon. The potential for the Dundee-to-Dayton segment of the bypass to be constructed should also be a factor in these considerations, as its construction would include a complete reconstruction/replacement of the existing OR 99W/Fox Farm Rd. intersection.

In lieu of improvements at these locations, ODOT should request that the OTC adopt alternate mobility targets to reflect likely highway performance, given the anticipated funding constraints and the State's and County's inability to construct the improvements needed to mitigate the expected future conditions.⁴¹

⁴¹ On OR 99W between Dundee and OR 18, the alternate mobility target should be a volume/capacity (v/c) ratio of 1.00 based on average weekday P.M. peak hour traffic volumes, with no peak hour factor (PHF). At OR 99W/Fox Farm Rd., the alternate mobility target should be a v/c ratio of 0.90 based on average weekday P.M. peak hour traffic volumes, with no peak hour factor.

All of the other ODOT projects, including the bicycle/pedestrian improvements, can be treated in a similar manner to the recommended county projects, with no specific prioritization. Because none of these projects will substantially impact mobility expectations, they can be implemented as funding becomes available or other opportunities arise.