



# Oregon

Kate Brown, Governor

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**DATE:** February 13, 2020

**TO:** Oregon Transportation Commission

**FROM:** Ken Shonkwiler  
Senior Region Planner

**SUBJECT:** Alternative Mobility Targets for OR 99W and OR 18 in Yamhill County

This is the staff memo and summary for alternative mobility targets for two intersections, OR 99W/Fox Farm Rd and OR 18/OR 99W/McDougall Rd, and specific highway segments along OR 99 and OR 18 through Yamhill County, and associated Findings. The subject intersections and highway segments are shown Attachment D.

### **Background:**

Yamhill County adopted an updated Transportation System Plan (TSP) November 5, 2015. ODOT Region 2 staff participated in the development of the TSP as grant manager for the ODOT-funded project and through technical assistance as a member of the project team. The project team reviewed and advised on content, assumptions, and recommendations of technical documents 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.<sup>1</sup> Public hearings on the Draft TSP before the Planning Commission and City Council led to the adoption of the 2015 Yamhill County Transportation System Plan.

OR 18 and OR 99W are among the eleven state highways within the County and are the only two classified as statewide expressways. The TSP identifies OR 99W as a primary route for commuters between Newberg and McMinnville and the Portland metropolitan and Salem areas and OR 18 as one of the main routes for recreational travel from the Portland area to the Oregon coast. A comparison of existing (year 2010) and future (year 2035) traffic operations along ODOT facilities in Yamhill County to adopted mobility targets during the 30th highest annual hour of traffic (30 HV) shows that most intersections operate well today, but traffic demand in the summer p.m. peak period at many intersections on OR 18 and OR 99W will exceed capacity by 2035 without additional improvements. Portions of both OR 18 and OR 99W also will fail to meet existing mobility targets under the 2035 Baseline “No Build” condition

The TSP assumes some priority projects on ODOT facilities are “reasonably likely” to be funded, helping the County meet the State’s mobility targets. Based on the estimated 20-year funding amount available for state highways in Yamhill County, projects reasonably likely to be funded by ODOT include multi-lane roundabouts at the intersections of OR 18/OR 154/Lafayette Highway intersection and the OR 47/OR 99W. The TSP documents that widening OR 99W to four lanes through the county would add a significant amount of capacity and would allow nearly all segments and intersections to comply with current mobility targets but is not likely to be funded. As documented under Implementation of Recommended Improvements in the TSP, the reason is two-fold: 1) widening will not be needed once the Dundee-to-Dayton phase of the Newberg-Dundee Bypass is

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<sup>1</sup> For a summary of the meetings, see the Summary of Public Involvement Activities, TSP Appendix H.

constructed and draws traffic from OR 99W and 2) the estimated cost (over \$50M) exceeds ODOT's entire funding amount for state highways in Yamhill County over the 20-year planning horizon.

There are several other locations on the state system in Yamhill County – specifically on OR 99W and OR 18 – where there are existing and/or future mobility needs, but where improvements are considered not reasonably likely to be funded by 2035. These include the intersections and segments that are the subject of the request for alternative mobility targets. The Yamhill County TSP documents the County's desire for the Oregon Transportation Commission (OTC) to adopt alternate mobility targets for these locations "in lieu of improvements," "to ensure that state mobility targets reflect the State and County's mutual expectations for highway operational performance over the planning horizon given the likely financial constraints (TSP Section 1. Executive Summary)."

ODOT requests that the OTC adopt alternative mobility targets and an associated method of calculation as the basis for defining facility performance that reflect the County's and ODOT's highway performance expectations. These expectations are based on forecasted growth associated with implementation of the County's existing adopted land use plan, regional traffic growth, and state and local transportation facility and service improvements that have been identified and are reasonably likely to be implemented during the 20-year planning horizon within identified funding constraints.

#### *Attachments*

- A. *Findings of Compliance with OAR 731-0015-0055, OAR 660-0012, and OHP Policy 1F3*
- B. *Yamhill County Transportation System Plan*  
<https://www.co.yamhill.or.us/sites/default/files/Yamhill%20Co.%20TSP%20FINAL.pdf>  
<https://www.co.yamhill.or.us/sites/default/files/Yamhill%20Co.%20TSP%20-%20APPENDIX.pdf>
- C. *Yamhill County Transportation System Plan, Volume 2, Section N, Public Involvement*  
[https://www.dropbox.com/sh/b8daiw9r329vvyvm/AACD5GGIFsBUVsChlc8mdgtUa?dl=0&preview=YamhillCo\\_TSP\\_Vol2.pdf](https://www.dropbox.com/sh/b8daiw9r329vvyvm/AACD5GGIFsBUVsChlc8mdgtUa?dl=0&preview=YamhillCo_TSP_Vol2.pdf)
- D. *Yamhill County Transportation System Plan Alternative Mobility Targets Technical Memorandum, May 2, 2019*

#### Attachment A

## Yamhill County Alternative Mobility Targets Compliance Findings



**Alternative Oregon Highway Plan Mobility Targets for OR 99W and  
OR 18 in Yamhill County: Compliance Findings**

ODOT's State Agency Coordination Agreement requires that the Oregon Transportation Commission (OTC) adopt findings of fact when making minor amendments to ODOT Modal Plans (OAR 731-015-055). Pursuant to these requirements ODOT provides the following findings to support the OTC adoption of Alternative Mobility Targets for OR 99W and OR 219 in Yamhill County as a minor amendment to the Oregon Highway Plan (OHP).

**Findings of Compliance with OAR 731-015-0055**

Coordination Procedures for Adopting Final Modal Systems Plans

(1) Except in the case of minor amendments, the Department shall involve DLCD and metropolitan planning organizations, cities, counties, state and federal agencies, special districts and other parties in the development or amendment of a modal plan. This involvement may take the form of mailings, meetings or other means that the Department determines are appropriate for the circumstances. The Department shall hold at least one public meeting on the plan prior to adoption.

*FINDING: The Department funded and participated in the development of the Yamhill County Transportation System Plan (TSP) with Yamhill County and other affected governmental jurisdictions and agencies throughout development of the plan update. DLCD was notified of proposed plan adoption, as required by OAR 660-018. The recommendation to pursue Alternative Mobility Targets was formulated as part of the TSP update process. A comprehensive public involvement program was conducted as part of the TSP process, as summarized in the TSP's Executive Summary, Section 1 (TSP is included as part of this staff report as Attachment C) and in the TSP Appendix (Appendix H: Summary of Public Involvement Activities). Public outreach included stakeholder interviews, an online survey, and two public open house meetings. The public meeting requirement is met by the numerous meetings held during the development of the TSP and by the meeting where the Alternative Mobility Targets will be presented to the OTC for adoption.*

(2) The Department shall evaluate and write draft findings of compliance with all applicable statewide goals.

*FINDING: Detailed findings addressing each of the applicable Statewide Planning Goals are set forth below.*

(3) If the draft plan identifies new facilities which would affect identifiable geographic areas, the Department shall meet with the planning

representatives of affected cities, counties, and metropolitan planning organization to identify compatibility issues and the means of resolving them. These may include:

- (a) Changing the draft facility plan to eliminate the conflicts;
- (b) Working with the local governments to amend the local comprehensive plans to eliminate the conflicts; or
- (c) Identifying the new facilities as proposals which are contingent on the resolution of the conflicts prior to the completion of the transportation planning program for the proposed new facilities.

*FINDING: New facilities are not proposed and are not the subject of this minor amendment.*

(4) The Department shall present to the Transportation Commission the draft plan, findings of compatibility for new facilities affecting identifiable geographic areas, and findings of compliance with all applicable statewide planning goals.

*FINDING: The Alternative Mobility Targets Technical Memorandum included in this staff report as part of Attachment D describes the process used to develop the Alternative OHP Mobility Targets for OR 99W and OR 18 in Yamhill County. Information demonstrating compliance with OHP Policy 1F3 and findings of compliance with Statewide Goals 1 and 12 are provided in this staff report.*

(5) The Transportation Commission, when it adopts a final modal systems plan, shall adopt findings of compatibility for new facilities affecting identifiable geographic areas and findings of compliance with all applicable statewide goals.

*FINDING: The recommended action is a minor amendment to the OHP, not a final modal systems plan, and no new facilities are proposed as a result of this action.*

(6) The Department shall provide copies of the final modal systems plan and findings to DLCD, the metropolitan planning organizations, and others who request to receive a copy.

*FINDING: ODOT will provide copies of the OTC action adopting the minor amendment and all supporting materials to DLCD, Yamhill County, the cities of Newberg, McMinnville, Dundee and Dayton, and others who request a copy.*

### **Statewide Planning Goals**

STATEWIDE PLANNING GOAL 1: To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.

*FINDING: The need for Alternative Mobility Targets was established as part of the process to develop the 2015 Yamhill County TSP. The public involvement program that was conducted as part of that process, as summarized in the TSP Executive Summary and documented in Appendix H: Summary of Public Involvement Activities, constitutes compliance with Goal 1. The Yamhill County Road Improvement Advisory Committee (YCRIAC) served as the advisory committee for the TSP update and YCRIAC members were active in the process. This standing committee's involvement was key to the planning process, as the body considers and advises the Board of County Commissioners on a variety of transportation issues, including accident rates, roadway deficiencies, and roadway conditions throughout the County.<sup>2</sup>*

STATEWIDE PLANNING GOAL 2: To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions.

*FINDING: ODOT provided direction to the County and consultant throughout the process of developing the Alternative Mobility Targets to ensure compliance with Operational Notice PB-02 and OAR 731-015-0055. This Findings document provides findings of compliance with applicable provisions of the Oregon Transportation Plan (OTP) and OHP to ensure consistency of the proposed amendment with the Department's policy framework.*

STATEWIDE PLANNING GOAL 3: To preserve and maintain agricultural lands.

STATEWIDE PLANNING GOAL 4: To conserve forest lands.

*FINDING: The TSP plans for transportation improvements in the rural portion of Yamhill County; the planning area encompasses land outside of incorporated areas and the predominant land use in the County is agriculture. TSP Section 7, Goals, Objectives, and Evaluation Criteria, includes Objective 2, "(m)inimize land use impacts," and includes the associated project evaluation criteria of minimizing impacts to EFU-zoned parcels.*

*OR 99W and OR 18 traverse areas of the County designated Exclusive Farm Use District and Agriculture/Forestry District. The adoption of OHP Alternative Mobility Targets does not include development of any land designated for farm or forest use. Implementing the requested Alternate Mobility Targets on the subject highways through Yamhill County will relieve the need for roadway widening within the planning horizon, consistent with preserving agricultural and forest resource lands in the County.*

STATEWIDE PLANNING GOAL 5: To protect natural resources and conserve scenic and historic areas and open spaces.

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<sup>2</sup> For more on the YCRIAC see <https://www.co.yamhill.or.us/content/road-improvement-advisory-committee>

*FINDING: The adoption of the Alternative Mobility Targets is consistent with protecting natural resources and conserving scenic areas in the County, as the action minimizes the need to widen roadways to accommodate existing and future needs. The County's natural resource overlay districts, including the Scenic Water Overlay District and associated requirements, will apply to TSP projects that result in road construction projects within these districts.*

STATEWIDE PLANNING GOAL 6: To maintain and improve the quality of the air, water and land resources of the state.

*FINDING: The goal's requirements do not apply to the OTC's action. The proposed action does not change any regulations related to the identified resources, nor do they impair efforts to improve the quality of these resources.*

STATEWIDE PLANNING Goal 7: To protect life and property from natural disasters and hazards.

*FINDING: The goal's requirements do not apply to the OTC's action. The proposed action does not change any regulations related to natural hazards nor does it not create development that would be subject to damage or could result in the loss of life.*

STATEWIDE PLANNING GOAL 8: To satisfy the recreational needs of the citizens of the state and visitors, and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.

*FINDING: The goal's requirements do not apply to the OTC's action. While the highways subject to the proposed Alternative Mobility Targets facilitate access to recreational areas within as well as outside of the County, the requested action does not involve siting of recreational facilities and does not directly impact any recreational facilities.*

STATEWIDE PLANNING GOAL 9: To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.

*FINDING: The highways subject to the proposed Alternative Mobility Targets facilitate access to employment areas within the County. The adoption of the proposed Alternative Mobility Targets will allow future development to occur, including planned commercial and industrial development that will contribute to the economic vitality of the County.*

STATEWIDE PLANNING Goal 10: To provide for the housing needs of citizens of the state.

*FINDING: The goal's requirements do not apply to the OTC's action. While the highways subject to the proposed Alternative Mobility Targets facilitate*

*access to residential areas in the County and within its cities, the proposed action applies only to highway corridors within the County and does not change any regulations applicable to the provision of needed housing.*

STATEWIDE PLANNING GOAL 11: To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

*FINDING: The goal addresses needed public facilities and services, including transportation. Approval of Alternative Mobility Targets will only impact transportation facilities, which are addressed under Goal 12. The findings of fact and conclusions addressing the requirements of Goal 12 demonstrate that the requested action complies with Goal 11.*

STATEWIDE PLANNING GOAL 12: To provide and encourage a safe, convenient and economic transportation system.

*FINDING: Statewide Planning Goal 12, Transportation, directs state and local jurisdictions “to provide and encourage a safe, convenient and economic transportation system.” It establishes that a transportation plan shall consider all modes of transportation, be based upon an inventory of local, regional and state transportation needs, consider the differences in social consequences that would result from utilizing differing combinations of transportation modes, avoid principal reliance upon any one mode of transportation, minimize adverse social, economic and environmental impacts and costs, conserve energy, meet the needs of the transportation disadvantaged by improving transportation services, facilitate the flow of goods and services so as to strengthen the local and regional economy, and conform with local and regional comprehensive land use plans.*

*The Yamhill County TSP was developed in compliance with Statewide Goal 12 and adopted by the Board of County Commissioners on November 5, 2015. While the TSP process and the subsequent 2019 Alternative Mobility Target Technical Memorandum provide the analysis and findings supporting the need for an alternate traffic analysis methodology and mobility targets for OR 99W and OR 18 in Yamhill County, the County does not have the authority to adopt mobility targets for state highways. With specific regard to the OTC adoption of a minor amendment to the OHP to establish Alternative Mobility Targets for OR 99W and OR 18 in Yamhill County, Goal 12 (660-0012-0020) requires standards of facility performance be established that are acceptable to the affected transportation agency. OTC adoption of the recommended Alternative Mobility Targets for OR 99W and OR 18 in Yamhill County will satisfy this requirement, consistent with the transportation system performance expectations established in the Yamhill County TSP.*

STATEWIDE PLANNING GOAL 13: To conserve energy.

*FINDING: The goal’s requirements do not apply to the OTC’s action. The proposed action does not impact energy conservation or change energy*

*consumption within Yamhill County.*

STATEWIDE PLANNING GOAL 14: To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities.

*FINDING: Goal 14 applies to urbanizing areas. The Alternative Mobility Targets apply only to highway segments that are outside of Urban Growth Boundaries of the County's cities, in unincorporated areas of the County. The requirements of the goal do not apply to the requested action.*

STATEWIDE PLANNING GOAL 15: To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

*FINDING: Willamette River Greenway requirements apply to areas within Yamhill County. Adoption of Alternative Mobility Targets for OR 99 and OR 18 will not impact the Willamette River. The adoption of the Alternative Mobility Targets is consistent with protecting the noted resources and areas in the County, as the action minimizes the need to widen roadways to accommodate existing and future needs. If Goal 15 resources are affected by future roadway improvements, they will be addressed during project development and construction.*

STATEWIDE COASTAL GOALS (GOALS 16, 17, 18, and 19)

*FINDING: These goals address estuaries, coastal shorelands, beaches and dunes, and ocean resources. These goals do not apply to the Yamhill County; there are no goal requirements applicable to the requested action.*

### **Findings of Compliance with OAR 660-0012**

*The Transportation Planning Rule (TPR), Oregon Administrative Rule 660, Division 12, defines how to implement Statewide Planning Goal 12 and outlines the necessary elements of a local Transportation System Plan (TSP). The overall purpose of the TPR is to provide and encourage a safe, convenient, and economic transportation system. The TPR directs TSPs to integrate comprehensive land use planning with transportation needs and to promote multi-modal systems that make it more convenient for people to walk, bicycle, use transit and drive less.*

*Section 660-0012-0020, Elements of Transportation System Plans, requires that each of the modal elements of a TSP be inventoried and that there is an assessment of existing and committed transportation facilities and services by function, type, capacity and condition. For state (and regional) facilities, the transportation capacity analysis must be consistent with standards of facility performance considered acceptable by the affected transportation agency.*

*FINDING: The Yamhill County TSP was prepared in accordance with the requirements of the TPR. OTC adoption of the recommended Alternative*

*Mobility Targets for OR 99W and OR 18 in Yamhill County will satisfy the requirement that the capacity analysis for the highways is consistent with facility performance standards acceptable to the state and consistent with the transportation system performance expectations established in the 2015 Yamhill County TSP.*

## **Findings of Compliance with Oregon Transportation Plan**

*The Oregon Transportation Plan (OTP) is the state's long-range multimodal transportation plan. The primary function of the plan is to establish goals, policies, strategies, and initiatives that are translated into a series of modal and topic plans. A TSP must be consistent with applicable OTP and modal and topic plan goals and policies. The most pertinent OTP goals and policies for city transportation system planning are provided below along with findings indicating how this action will comply with the identified goals and policies.*

### **POLICY 1.1 – Development of an Integrated Multimodal System**

It is the policy of the State of Oregon to plan and develop a balanced integrated transportation system with modal choices for the movement of people and goods

### **POLICY 1.2 – Equity, Efficiency and Travel Choices**

It is the policy of the State of Oregon to promote a transportation system with multiple travel choices that are easy to use, reliable, cost-effective and accessible to all potential users, including the transportation disadvantaged.

### **POLICY 2.1 Capacity and Operational Efficiency**

It is the policy of the State of Oregon to manage the transportation system to improve its capacity and operational efficiency for the long term benefit of people and goods movement.

### **POLICY 4.1 - Environmentally Responsible Transportation System**

It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources.

### **POLICY 5.1 – Safety**

It is the policy of the State of Oregon to continually improve the safety and security of all modes and transportation facilities for system users including operators, passengers, pedestrians, recipients of goods and services, and property owners.

### **POLICY 6.5 – Triage in the Event of Insufficient Revenue**

It is the policy of the State of Oregon to resolve revenue shortfalls by means that maximize public acceptance and that minimize undesirable long-term consequences to the overall transportation system in urban and rural areas.

## POLICY 7.1 – A Coordinated Transportation System

It is the policy of the State of Oregon to work collaboratively with other jurisdictions and agencies with the objective of removing barriers so the transportation system can function as one system.

## POLICY 7.3 – Public Involvement and Consultation

It is the policy of the State of Oregon to involve Oregonians to the fullest practical extent in transportation planning and implementation in order to deliver a transportation system that meets the diverse needs of the state.

## POLICY 7.4 – Environmental Justice

It is the policy of the State of Oregon to provide all Oregonians, regardless of race, culture or income, equal access to transportation decision-making so all Oregonians may fairly share in benefits and burdens and enjoy the same degree of protection from disproportionate adverse impacts.

*FINDING: The proposed OHP amendment is the result of a recognition of insufficient revenue to implement a solution that would meet current mobility targets. The amendment addresses capacity, operational efficiency, modal choice, environmental protection, and safety and was developed collaboratively by the Department and Yamhill County staff, in consultation with DLCD and Yamhill County cities, including McMinnville, Dundee, and Newberg.*

## **Findings of Compliance with Oregon Highway Plan Policy 1F**

*The OHP as the modal plan of the OTP that guides planning, operations, and financing for ODOT's Highway Division, contains policies for highway mobility targets, which are outlined in Policy 1F. Policy 1F acknowledges that there are multiple approaches to determining transportation needs necessary to maintain acceptable and reliable levels of mobility on the state highway system and it offers flexibility to consider and develop methodologies to measure mobility that are, among other things, reflective of state and local transportation and economic conditions.*

*Policy 1F identifies that acceptable modifications to OHP Mobility Targets could include changing the hour measured from the 30th highest hour, using multiple hour measures, or considering weekday or seasonal adjustments.*

*The policy establishes that the affected local jurisdiction must agree to the alternative mobility target for the state highway facility as part of a local TSP and that the plan includes findings demonstrating why the particular mobility target is necessary, including the finding that it is infeasible or impractical to meet the mobility targets in the OHP. In addition, local plans should support the establishment of an alternative mobility targets by including feasible actions for:*

- *Providing a network of local streets, collectors and arterials to relieve traffic demand on state highways and to provide convenient pedestrian and bicycle ways;*

- *Managing access and traffic operations to minimize traffic accidents, avoid traffic backups on ramps, accommodate freight vehicles and make the most efficient use of existing and planned highway capacity;*
- *Managing traffic demand and incorporating transportation system management tools and information, where feasible, to manage peak hour traffic loads on state highways;*
- *Providing and enhancing multiple modes of transportation; and*
- *Managing land use to limit vehicular demand on state highways consistent with Policy 1B (Land Use and Transportation Policy).*

*In addition, the local plan must include a financially feasible implementation program and must demonstrate that the proposed mobility target(s) are consistent with and support locally adopted land use, economic development, and multimodal transportation policy and objectives. Adopted plan policy and implementation strategies must demonstrate a strong local commitment to carry out the identified improvements and other actions.*

*FINDING: The methodology used in the development of the Yamhill County TSP is consistent with the OHP guidelines to establish alternate mobility targets. This methodology is detailed in Yamhill County Transportation System Plan Alternative Mobility Targets Technical Memorandum, included in this staff report as Attachment C. The analysis assessed existing (year 2010) and future (year 2035) traffic operations along ODOT facilities in Yamhill County, the results of which are shown in Table 2, Segment Mobility in Yamhill County, and Table 3, Intersection Mobility in Yamhill County. Alternative Mobility Target Results (v/c Ratio), of the memorandum. Portions of both OR 18 and OR 99W fail to meet existing mobility targets under the 2035 Baseline "No Build" conditions. Along OR 18, segments that fail to meet mobility targets have a maximum v/c ratio of 0.73 under 2035 baseline conditions. Along OR 99W, the segment east of Newberg has a maximum v/c ratio of 0.97 during the 2035 30 HV p.m. peak hour, while the segment between Dundee and OR 18 has a maximum v/c ratio of 1.19. With the recommended improvements from the Yamhill County TSP in place, all the intersections except OR 99W/Fox Farms Rd. will meet mobility targets.*

*Using ODOT Region 2 methodology for determining alternative mobility targets, the recommendation is to establish alternative mobility targets for the intersection of OR 99W/Fox Farm Rd and four roadway segments. Three of the roadway segments are forecasted to exceed the existing OHP Mobility Target values but operate with a v/c ratio under 1.0. The recommendation is for an OHP Mobility Target of v/c ratio of 0.75 for the OR 18 segments and v/c ratio of 0.99 for the segment of OR 99W east of Newberg.*

*The analysis finds that the segment of OR 99W between Dundee and OR 18 and the intersection of OR 99W/Fox Farm Rd are not expected to operate with a v/c ratio less than 1.0, even after assuming a peak hour factor of 1.0. Therefore, the analysis recommends using the average annual weekday p.m.*

*peak hour as the basis for defining facility performance for OR 99W between Dundee and OR 18, as well as the OR 99W/Fox Farm Rd intersection. Replacing the 30th highest annual hour of traffic analysis time period with the average annual weekday peak hour is supported by documentation that the 30th highest annual hour typically occurs during the summer months in Yamhill County, when traffic volumes increase due to an influx of visitors to Yamhill County destinations, as well as visitors traveling to and from the coast.*

*TSP Goals articulate the County's commitment to improving transportation conditions off the highway, including increasing the quality and availability of pedestrian and bicycle facilities (Goal 4) and working with transit service providers to provide transit service and amenities that encourage and increase ridership (Goal 5). The specific local actions called for in the TSP that will improve local roadways, and thus enhance their viability as alternatives to travel on the state highways for local trips, include prioritizing local improvement projects through implementation of the Road Maintenance/Reconstruction Prioritization Policy, safety ranking system, and policies for transferring road ownership to cities. Analysis of assumptions for improving pedestrian, bicycle and transit facilities are included in TSP Section 5, Future Conditions, as well as Appendix D (Future Transportation Conditions); roadway, bicycle and pedestrian priority improvements are in TSP Appendix I, Analysis of Preliminary Alternatives.*

*The TSP's transportation system improvements are in alignment with expected growth and the implementation of the County's existing adopted land use plan; the TSP demonstrates that the proposed mobility targets support locally adopted land use, economic development, and multimodal transportation policy and objectives. The TSP further documents the understanding between the County and ODOT about how transportation improvements will be funded (see TSP Section 6. Transportation Funding in the adopted TSP).*

Attachment B

## Yamhill County Transportation System Plan

Copies of the 2015 Yamhill County Transportation System Plan can be obtained by downloading the document at:

<https://www.co.yamhill.or.us/sites/default/files/Yamhill%20Co.%20TSP%20FINAL.pdf>

<https://www.co.yamhill.or.us/sites/default/files/Yamhill%20Co.%20TSP%20-%20APPENDIX.pdf>

or

<https://www.dropbox.com/sh/b8daiw9r329vwm/AACD5GGIFsBUVsChlc8mdgtUa?dl=>

Or by contacting:

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Attachment C

Yamhill County Transportation System Plan,  
Volume 2, Section N – Public Involvement

Section N – Public Involvement can be found in Volume 2 of the Yamhill County Transportation System Plan in the link below:

[https://www.dropbox.com/sh/b8daiw9r329vvvm/AACD5GGIFsBUVsChlc8mdgtUa?dl=0&preview=YamhillCo\\_TSP\\_Vol2.pdf](https://www.dropbox.com/sh/b8daiw9r329vvvm/AACD5GGIFsBUVsChlc8mdgtUa?dl=0&preview=YamhillCo_TSP_Vol2.pdf)

Or by contacting:

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Attachment D

Yamhill County Transportation System Plan Alternative  
Mobility Targets Technical Memorandum

# TECHNICAL MEMORANDUM



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**DATE:** May 02, 2019

**TO:** Ken Shonkwiler | ODOT

**FROM:** Garth Appanaitis, PE | DKS Associates  
Kevin Chewuk, PTP | DKS Associates  
Kayla Fleskes, EI | DKS Associates

**SUBJECT: Yamhill County Transportation System Plan  
Alternative Mobility Targets**

P17081-005

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It is important for a Transportation System Plan (TSP) to identify a full range of transportation system projects and services that would address the deficiencies that would exist at the end of a 20-year planning horizon if the community grows in accordance with its existing adopted land use plan and no additional improvements are made during that period of time.

However, it is also important for a TSP to realistically identify which transportation projects and services are reasonably likely to be implemented over the 20-year planning horizon, based on financial or other constraints. This exercise enables the community and, as appropriate, the state to establish realistic expectations for how that transportation system will likely operate at the end of the 20-year planning horizon.

However, because of financial and other system constraints, it is often the case that local and/or state roadways will not be improved to the extent that they will be able to meet transportation mobility targets at the end of the 20-year planning horizon if the community grows in accordance with its existing, adopted land use plan. This is particularly common in larger communities or in those with roadways that experience higher travel demands. In these cases, it is appropriate to adjust roadway performance expectations to match the performance that is forecasted to exist at the end of the 20-year planning horizon. This is accomplished through the adoption of alternative standards or mobility targets. This step allows the jurisdiction to set realistic expectations for future system performance, which will help reduce the potential for state and local investment needs by not continuing to require compliance with standards or targets that cannot likely be achieved.

In Yamhill County, the transportation system analysis has revealed that portions of OR 99W and OR 18 are not expected to be able to meet ODOT's existing adopted mobility targets at the end of the 20-year planning horizon. This memorandum documents the need for developing alternative mobility targets for OR 99W and OR 18 through Yamhill County and describes the proposed new targets. Included is a summary of the methodology and results, and the recommended alternative mobility targets for the highway.



## Background

Yamhill County is adjacent to Tillamook, Washington, Clackamas, Marion and Polk Counties. It includes the cities of Amity, Carlton Dayton, Dundee, Lafayette, McMinnville, Newberg and Sheridan, as well as the rural communities surrounding these areas. However, the study area for the TSP, shown in Figure 1, only includes the rural portion of Yamhill County outside of the Urban Growth Boundary of cities.

The existing study area roadway network comprises roughly 117 miles of state highways and 210 miles of county roadways classified as minor collector or above. There are eleven state highways within the study area, including OR 18, OR 47 and OR 99W. These highways are classified as statewide expressways, regional highways or district highways, listed in Table 1 on the following page. Many of the highways in Yamhill County provide inter-urban and inter-regional mobility and provide connections to larger urban areas and major recreation areas that are not directly served by Interstate Highways. A secondary function is to provide connections for intra-urban and intra-regional trips. The management objective is to provide safe and efficient, high-speed, continuous-flow operation.

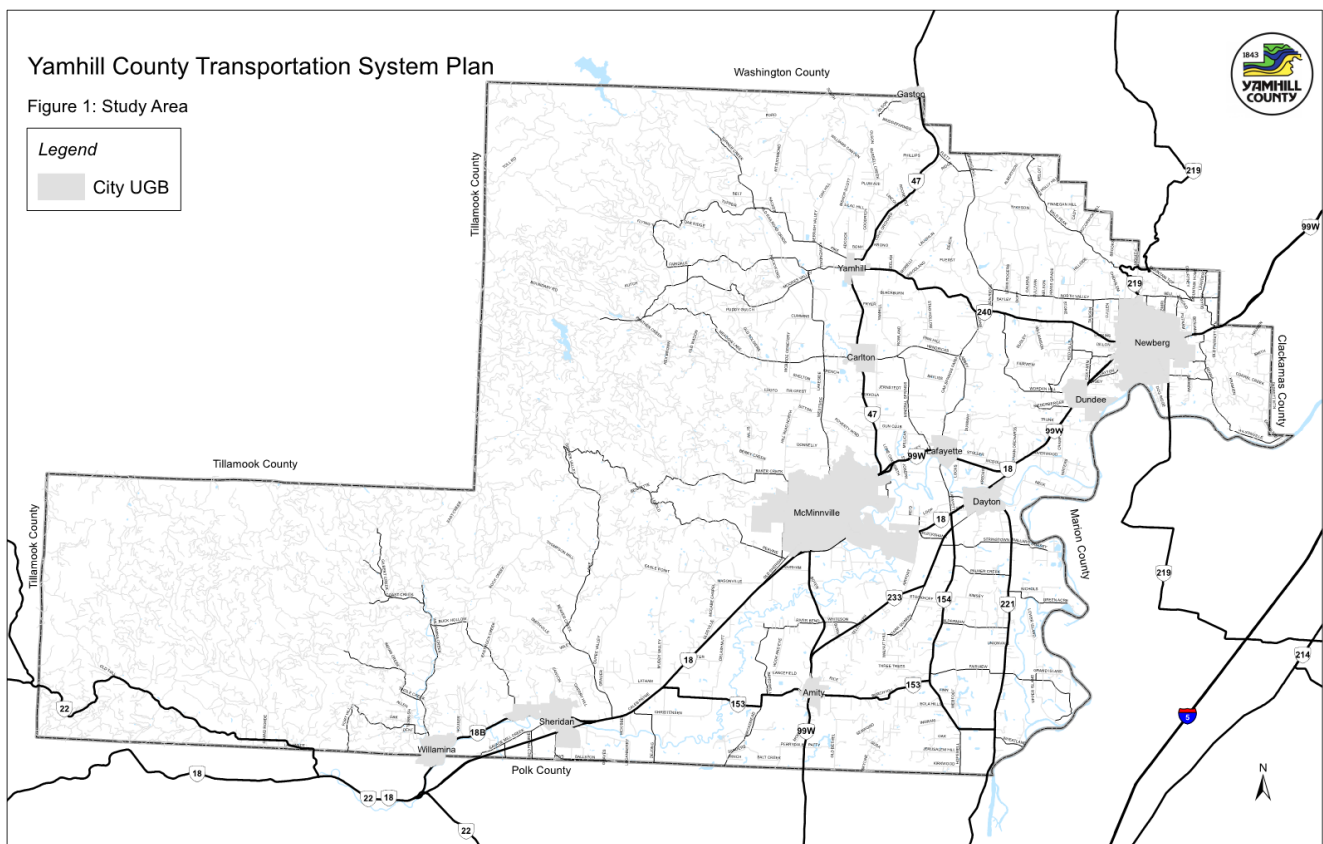


Figure 1: Yamhill County Study Area



## The Need for Alternative Mobility Targets

Prior to exploring alternatives to the current mobility targets, evaluation of the difference between the current targets and forecasted traffic operations confirmed the need for assessing the potential to mitigate conditions through other means. The findings of that evaluation are described below.

### Current Mobility Targets

All ODOT facilities within Yamhill County must comply with the volume to capacity (v/c) ratio targets in the Oregon Highway Plan (OHP). ODOT v/c ratio targets are based on highway classification, area type, and posted speeds. Table 1 lists the existing OHP Mobility Targets for Yamhill County.

ODOT standard analysis procedure also requires intersection operating conditions to be compared to existing OHP Mobility Targets during the 30<sup>th</sup> highest annual hour of traffic (30 HV). In Yamhill County, the 30<sup>th</sup> highest annual hour occurs during the summer months, when traffic volumes increase due to an influx of vacationers and visitors. During an average weekday (typically during the spring and late fall), volumes on the highways are generally five to fifteen percent lower than those during the summer.

**Table 1: State Highway Mobility Standards in Yamhill County**

| Area/Highway Category (Highway)                      | Segments/Signalized Intersections | Unsignalized Intersections |
|--|-----------------------------------|----------------------------|
| Outside Urban Growth Boundary / Rural Lands          |                                   |                            |
| Statewide Expressways<br>(OR 99W, OR 18)             | 0.70 v/c                          | 0.75 v/c                   |
| Regional<br>(OR 22, OR 47, OR 99W, OR 154)           | 0.70 v/c                          | 0.75 v/c                   |
| District<br>(OR 18B, OR 153, OR 219, OR 221, OR 240) | 0.75 v/c                          | 0.75 v/c                   |

### Existing and Future Highway Operations

A comparison of existing (year 2010) and future (year 2035) traffic operations along ODOT facilities in Yamhill County to adopted mobility targets during 30 HV traffic conditions shows that most intersections operate well today, but traffic demand in the summer p.m. peak period at many intersections will exceed capacity by 2035 without additional improvements, as shown in Table 2 and Table 3.

The Transportation System Plan (TSP) development process considered a range of improvement options for OR 99W and OR 18. This included widening the highway corridor to add capacity, making spot improvements at intersections, and improvements to maximize the efficiency of the existing roadway network. Widening OR 99W to four lanes through the county would add a significant amount of capacity and would allow nearly all



segments and intersections to comply with current mobility targets. However, the cost of such widening (in total or for any segment that currently does not have four lanes) is well beyond any reasonably likely expectation for funding during the 20-year based on current ODOT funding capabilities. In addition, the capacity improvements would not be necessary 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. Therefore, the highway-widening improvements were not recommended for implementation within the 20-year planning horizon. Without highway widening, the management approach for OR 99W is to maximize the safety and efficiency of the overall transportation system.

Portions of both OR 18 and OR 99W fail to meet existing mobility standards under the 2035 Baseline “No Build” conditions, as shown in Table 2. Along OR 18, segments that fail to meet mobility standards have a maximum v/c ratio of 0.73 under 2035 baseline conditions. Along OR 99W, the segment east of Newberg has a maximum v/c ratio of 0.97 during the 2035 30 HV p.m. peak hour, while the segment between Dundee and OR 18 has a maximum v/c ratio of 1.19. All the remaining highway segments meet current ODOT mobility standards. Given that highway widening would be required to meet existing OHP Mobility Targets, it will not be possible to meet them along OR 99W and OR 18 in Yamhill County by the end of the 20-year planning horizon.

**Table 2: Segment Mobility in Yamhill County**

| State Highway            | Existing OHP Mobility Target (v/c ratio) | Total Miles | 2010 Existing Conditions (% Deficient) | 2035 Baseline Conditions (No Build) (% Deficient) |
|--------------------------|--|-------------|--|---|
| OR 18                    | 0.70                                     | 16.2        | 0%                                     | <b>47%</b>  |
| OR 18B                   | 0.75                                     | 3.0         | 0%                                     | 0%  |
| OR 22                    | 0.70                                     | 12.9        | 0%                                     | 0%  |
| OR 47                    | 0.70                                     | 14.3        | 0%                                     | 0%  |
| OR 99W                   | 0.70                                     | 17.7        | <b>27%</b>                             | <b>27%</b>  |
| OR 153 (west of OR 154)  | 0.75                                     | 9.9         | 0%                                     | 0%  |
| OR 153 (south of OR 154) | 0.70                                     | 3.4         | 0%                                     | 0%  |
| OR 154                   | 0.70                                     | 6.3         | 0%                                     | 0%  |
| OR 219                   | 0.75                                     | 4.5         | 0%                                     | 0%  |
| OR 221 (north of OR 153) | 0.75                                     | 8.2         | 0%                                     | 0%  |
| OR 221 (south of OR 153) | 0.70                                     | 1.7         | 0%                                     | 0%  |
| OR 233                   | 0.75                                     | 8.2         | 0%                                     | 0%  |
| OR 240                   | 0.75                                     | 10.4        | 0%                                     | 0%  |

**Bold, Red and Shaded** indicates highway segment fails to meet target

Table 3 shows how ODOT intersections are expected to operate in 2035 during the summer peak. Five unsignalized intersections will not meet mobility targets under the No Build conditions, with the minor street exceeding a v/c of 1.0. However, with the recommended improvements from the Yamhill County TSP in place, all



the intersections except OR 99W/Fox Farms Rd. will meet mobility targets (no feasible mitigation was identified at OR 99W/Fox Farms Rd).

**Table 3: Intersection Mobility in Yamhill County**

| Intersection                          | Existing OHP<br>Mobility Target<br>(Major/Minor) | 2010 Existing<br>Conditions<br>(Major/Minor) | 2035 Baseline<br>Conditions<br>(No Build) | 2035 with<br>Recommended System<br>Improvements |
|---------------------------------------|--|--|---|---|
| NW Hill Rd./SW 2nd St.                | 0.75/0.75  | 0.28/0.04                                    | 0.35/0.05                                 | -   |
| NW Hill Rd./NW Baker Creek Rd.        | 0.75/0.75  | 0.26/0.11                                    | 0.31/0.13                                 | -   |
| NW Westside Rd./NW Meadow<br>Lake Rd. | 0.75/0.75  | 0.32/0.26                                    | 0.38/0.31                                 | -   |
| NE Abbey Rd./NE Hendricks Rd.         | 0.75/0.75  | 0.23/0.11                                    | 0.27/0.13                                 | -   |
| OR 240/NE Kuehne Rd.                  | 0.75/0.75  | 0.28/0.14                                    | 0.45/0.31                                 | -   |
| OR 219/NE Bell Rd.                    | 0.75/0.75  | 0.34/0.02                                    | 0.23/0.59                                 | -   |
| N. Aspen Way/NE Bell Rd.              | 0.75/0.75  | 0.05/0.02                                    | 0.06/0.02                                 | -   |
| OR 18/OR 99W/McDougall Rd.            | 0.70/0.75  | 0.66/0.47                                    | <b>0.82/&gt;1.0</b>                       | N/A <sup>1</sup>                                |
| OR 18/SE Ash Rd.                      | 0.70/0.75  | 0.00/0.31                                    | <b>0.01/&gt;1.0</b>                       | N/A <sup>2</sup>                                |
| OR 18/SE Lafayette Hwy.               | 0.70/0.70  | <b>0.43/&gt;1.0</b>                          | <b>0.54/&gt;1.0</b>                       | 0.57  |
| OR 154/OR 233                         | 0.70/0.75  | 0.21/0.14                                    | 0.35/0.21                                 | -   |
| OR 154/Stringtown Rd.                 | 0.70/0.75  | 0.14/0.25                                    | 0.21/0.30                                 | -   |
| OR 153/Hopewell Rd                    | 0.70/0.75  | 0.00/0.23                                    | 0.33/0.00                                 | -   |
| OR 154/SE Fairview Rd.                | 0.70/0.75  | 0.01/0.01                                    | 0.02/0.01                                 | -   |
| OR 240/Worden Hill Rd.                | 0.75/0.75  | 0.00/0.01                                    | 0.01/0.00                                 | -   |
| Zimri Rd./Bell Rd.                    | 0.75/0.75  | 0.05/0.08                                    | 0.06/0.10                                 | -   |
| Springbrook Rd./Bell Rd.              | 0.75/0.75  | 0.03/0.03                                    | 0.04/0.03                                 | -   |
| Parrett Mountain Rd./Schaad Rd.       | 0.75/0.75  | 0.01/0.00                                    | 0.01/0.00                                 | -   |
| Gun Club Rd./Mineral Springs Rd.      | 0.75/0.75  | 0.04/0.01                                    | 0.04/0.01                                 | -   |
| Chehalem Dr./North Valley Rd.         | 0.75/0.75  | 0.09/0.01                                    | 0.10/0.01                                 | -   |
| OR 18/OR 153                          | 0.70/0.75  | 0.37/0.04                                    | 0.58/0.26                                 | -   |
| OR 99W/OR 233                         | 0.70/0.75  | 0.28/0.25                                    | 0.38/0.54                                 | -   |
| OR 47/OR 99W                          | 0.70/0.70  | <b>0.33/0.94</b>                             | <b>0.44/&gt;1.0</b>                       | 0.69  |
| OR 154/OR 153                         | 0.70/0.70  | 0.17/0.09                                    | 0.26/0.15                                 | -   |
| OR 221/OR 153                         | 0.75/0.75  | 0.06/0.11                                    | 0.18/0.10                                 | -   |
| OR 99W/Fox Farm Rd.                   | 0.70/0.75  | <b>0.68/&gt;1.0</b>                          | <b>0.66/&gt;1.0</b>                       | N/A <sup>3</sup>                                |

**Bold, Red and Shaded** indicates intersection fails to meet target

<sup>1</sup> The TSP recommended improvement is not likely to be funded and therefore recommends an alternate mobility target at this location.

<sup>2</sup> The TSP recommended alternative is a closure/vacation of Ash Rd north and south of OR 18.

<sup>3</sup> No feasible mitigation mentioned in Yamhill County TSP



## Factors Limiting the Ability to Meet Existing Mobility Targets

Several factors combine to make compliance with the current mobility targets along OR 18 and OR 99W difficult. They include:

### ■ Competition from Multiple Users

The importance of OR 99W to statewide, regional, and local traffic creates significant demands for both short and long trips along the corridor. These competing users include:

- Motorists making local trips to homes, work, and shopping
- Motorists making regional trips between other cities within and outside of Yamhill County
- Freight traveling to and through Yamhill County (portions of OR 99W are designated as a Statewide Expressway)
- Tourists and vacationers driving towards the coast or to destinations within the county

### ■ Financial Factors

As is true for most agencies, funding for County and ODOT transportation improvements is limited. Even if all forecasted state and local transportation revenue for projects in Yamhill County over the next 20 years were spent on highway capacity improvements along OR 99W and OR 18, it would still fall short of enabling current mobility targets to be met.

### ■ Existing Development Patterns

In some areas along OR 99W and OR 18, adjacent development constrains the ability to widen the highway right-of-way. Obtaining needed right-of-way for highway widening would require acquisition and removal of such development, which would be expensive and undesirable to the community.

## Proposed Alternative Mobility Targets

The approach to developing alternative mobility targets for OR 18 and OR 99W through Yamhill County included the following:

- The replacement of the 30th highest annual hour of traffic analysis time period with the average annual weekday peak hour.
- New maximum v/c ratio thresholds that reflect ODOT and County's highway performance expectations based on the expected growth associated with implementation of the County's existing adopted land use plan, regional highway traffic growth, and state and local transportation facility and service improvements that have been identified and reasonably likely to be implemented during the 20-year planning horizon with identified funding constraints.

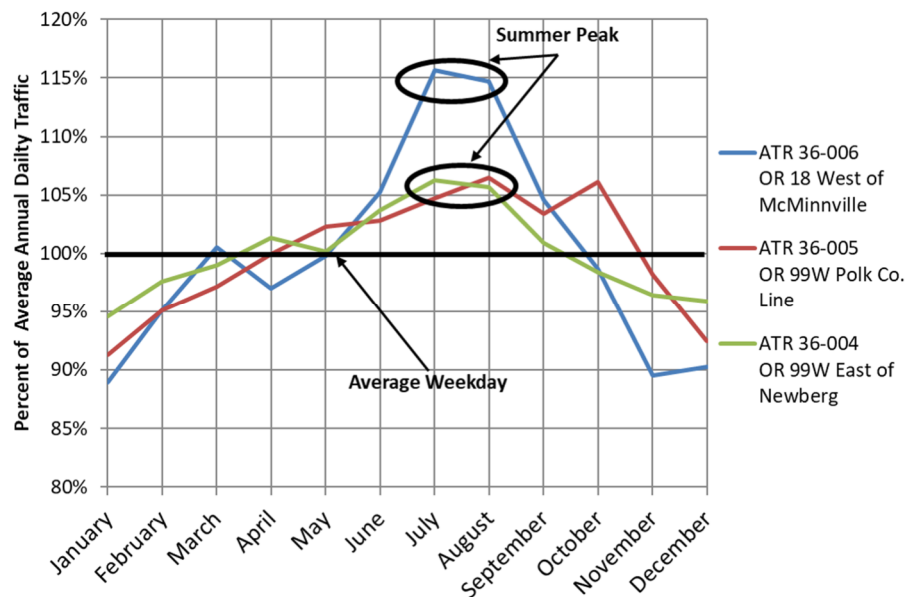
This section describes the proposed alternative mobility targets in detail, including the process used to develop them and the associated analysis methodology.



## Applying the Average Annual Weekday Peak Hour

One characteristic of the current mobility target that makes it difficult to comply with through Yamhill County is the requirement to use the 30<sup>th</sup> highest annual hour of traffic as the design period. In many larger urbanized areas, this time period is roughly equivalent to the average weekday p.m. peak hour at virtually any time during the year. However, within Yamhill County, state highways also serve significant seasonal demand from recreational trips. Therefore, the 30<sup>th</sup> highest annual hour of traffic occurs during the summer when local commuting traffic peaks coincide with recreational traffic peaks. Because it will not be possible to meet, or even stay below actual facility one-hour capacity using ODOT’s standard analysis methodology during the 30<sup>th</sup> highest hour, the approach to establish a new mobility target for OR 99W and OR 18 through Yamhill County begins with using a design period that is more representative of travel that does not take place during the peak summer season.

Figure 2 illustrates the difference in traffic volumes on OR 18 and OR 99W during an average weekday compared to the summer peak (30 HV). During an average weekday (typically during the spring and late fall), volumes are generally five to fifteen percent lower than those along the highway during the summer. In fact, for around seven months out of the year, traffic volumes are often below the annual average.



**Figure 2: Summer volumes on highways in Yamhill County are generally five to fifteen percent higher than those along the highway during an average weekday**

Since the average annual weekday p.m. peak hour is

more representative of travel on OR 18 and OR 99W through Yamhill County for the majority of any given year than the 30<sup>th</sup> highest annual hour, this time period is recommended for the analysis methodology used to develop the OR 18 and OR 99W alternative mobility targets. This would shift the corridor management emphasis away from accommodating summer recreational trips through the county and refocus it on conditions that are more representative of every day travel.

## Assigning New Maximum v/c Ratio Thresholds

As noted above, using the average annual weekday p.m. peak hour as the basis for defining facility performance instead of the 30<sup>th</sup> highest annual hour is more consistent with the conditions that exist on OR 18 and OR 99W throughout the majority of any given year. However, even with this methodology adjustment, several intersections still exceed the OHP v/c ratio values that apply to OR 18 and OR 99W.



The OHP v/c ratio thresholds for state highways in Yamhill County range from 0.70 to 0.75. Raising the v/c ratio threshold to match the forecasted roadway performance based on the implementation of the County's existing, adopted land use plan and implementation of the identified financially constrained projects along the corridor is also needed in several areas, in addition to changing the analysis time period as described above.

## Alternative Mobility Target Process

Figure 3 shows the ODOT Region 2 methodology for determining alternative mobility targets. Table 4 and Table 5 summarize the assessment of each study intersection and segment within Yamhill County using the methodology.

**Step 1:** The majority of ODOT study intersections (25 out of 26) and roadway segments (13 of 17) would be expected to meet existing OHP mobility targets during the summer of 2035, after recommended improvements described earlier. To be compliant, Yamhill County would need alternative mobility targets for the intersection of OR 99W/Fox Farm Rd and the remaining four roadway segments.

**Step 2:** The intersection of OR 99W/Fox Farm Rd. would not be expected to operate with a v/c ratio less than 1.0. Three of the four roadway segments are expected to operate with a v/c ratio less than 1.0.

**Step 3:** The intersection of OR 99W/Fox Farm Rd. would not be expected to operate with a v/c ratio less than 1.0 after assuming a peak hour factor of 1.0<sup>1</sup>. The segment of OR 99W between Dundee and OR 18 would also not be expected to operate with a v/c ratio less than 1.0 after assuming a peak hour factor of 1.0.

**Step 4:** The intersection of OR 99W/Fox Farm Rd. would be expected to operate with a v/c ratio under 1.0 during an average weekday in 2035, after assuming a peak hour factor of 1.0. The segment of OR 99W between Dundee and OR 18 would be expected to operate with a v/c ratio at 1.0 during an average weekday in 2035.

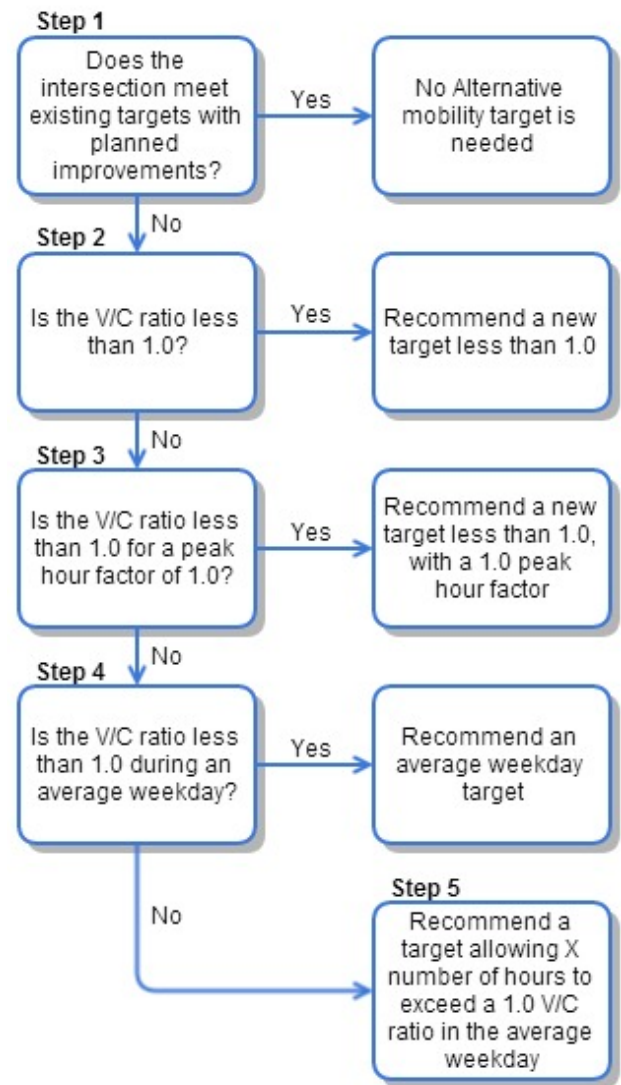


Figure 3: Alternative Mobility Target Methodology

<sup>1</sup> Peak hour factors (PHF) are used to account for the non-uniformity of traffic flow within the peak hour by converting hourly volumes to peak flow rates associated with a selected interval of time within the peak hour. The most common interval of time selected for traffic analysis is the peak 15 minutes. A PHF of 1.0 assumes uniform traffic flow within the four 15-minute periods of the peak hour.



**Table 4: Intersection Alternative Mobility Target Results (v/c Ratio)**

| Intersection                       | Existing OHP Mobility Target* | 2035 Summer (30 HV) Intersection Operations | Assuming 0.99 v/c Mobility Target | 2035 Summer (30 HV) Intersection Operations |                              | 2035 Average Weekday Intersection Operations |                               |
|------------------------------------|-------------------------------|---|-----------------------------------|---|------------------------------|--|-------------------------------|
|                                    |                               | Step 1: With Recommended Improvements       |                                   | Step 2: With Recommended Improvements       | Step 3: 1.0 Peak Hour Factor | Step 4: With Recommended Improvements        | Step 5: Total Hours v/c > 1.0 |
| NW Hill Rd./SW 2nd St.             | 0.75/0.75                     | 0.35/0.05                                   | -                                 | -   | -                            | -  | -                             |
| NW Hill Rd./NW Baker Creek Rd.     | 0.75/0.75                     | 0.31/0.13                                   | -                                 | -   | -                            | -  | -                             |
| NW Westside Rd./NW Meadow Lake Rd. | 0.75/0.75                     | 0.38/0.31                                   | -                                 | -   | -                            | -  | -                             |
| NE Abbey Rd./NE Hendricks Rd.      | 0.75/0.75                     | 0.27/0.13                                   | -                                 | -   | -                            | -  | -                             |
| OR 240/NE Kuehne Rd.               | 0.75/0.75                     | 0.45/0.31                                   | -                                 | -   | -                            | -  | -                             |
| OR 219/NE Bell Rd.                 | 0.75/0.75                     | 0.23/0.59                                   | -                                 | -   | -                            | -  | -                             |
| N. Aspen Way/NE Bell Rd.           | 0.75/0.75                     | 0.06/0.02                                   | -                                 | -   | -                            | -  | -                             |
| OR 18/OR 99W/McDougall Rd.         | 0.70/0.75                     | <b>0.82</b>                                 | 0.99                              | <b>0.82</b>                                 | -                            | -  | -                             |
| OR 18/SE Ash Rd.                   | 0.70/0.75                     | **  | -                                 | -   | -                            | -  | -                             |
| OR 18/SE Lafayette Hwy.            | 0.70/0.70                     | 0.57  | -                                 | -   | -                            | -  | -                             |
| OR 154/OR 233                      | 0.70/0.75                     | 0.35/0.21                                   | -                                 | -   | -                            | -  | -                             |
| OR 154/Stringtown Rd.              | 0.70/0.75                     | 0.21/0.30                                   | -                                 | -   | -                            | -  | -                             |
| OR 153/Hopewell Rd                 | 0.70/0.75                     | 0.33/0.00                                   | -                                 | -   | -                            | -  | -                             |
| OR 154/SE Fairview Rd.             | 0.70/0.75                     | 0.02/0.01                                   | -                                 | -   | -                            | -  | -                             |
| OR 240/Worden Hill Rd.             | 0.75/0.75                     | 0.01/0.00                                   | -                                 | -   | -                            | -  | -                             |
| Zimri Rd./Bell Rd.                 | 0.75/0.75                     | 0.06/0.10                                   | -                                 | -   | -                            | -  | -                             |
| Springbrook Rd./Bell Rd.           | 0.75/0.75                     | 0.04/0.03                                   | -                                 | -   | -                            | -  | -                             |
| Parrett Mountain Rd./Schaad Rd.    | 0.75/0.75                     | 0.01/0.00                                   | -                                 | -   | -                            | -  | -                             |
| Gun Club Rd./Mineral Springs Rd.   | 0.75/0.75                     | 0.04/0.01                                   | -                                 | -   | -                            | -  | -                             |
| Chehalem Dr./North Valley Rd.      | 0.75/0.75                     | 0.10/0.01                                   | -                                 | -   | -                            | -  | -                             |
| OR 18/OR 153                       | 0.70/0.75                     | 0.58/0.26                                   | -                                 | -   | -                            | -  | -                             |
| OR 99W/OR 233                      | 0.70/0.75                     | 0.38/0.54                                   | -                                 | -   | -                            | -  | -                             |
| OR 47/OR 99W                       | 0.70/0.70                     | 0.69  | -                                 | -   | -                            | -  | -                             |
| OR 154/OR 153                      | 0.70/0.70                     | 0.26/0.15                                   | -                                 | -   | -                            | -  | -                             |
| OR 221/OR 153                      | 0.75/0.75                     | 0.18/0.10                                   | -                                 | -   | -                            | -  | -                             |
| OR 99W/Fox Farm Rd.                | 0.70/0.75                     | <b>0.66/1.99</b>                            | 0.99                              | <b>0.66/1.99</b>                            | <b>0.64/1.44</b>             | <b>0.59/0.90</b>                             |                               |

\* Worst mainline volume-to-capacity ratio/worst side street volume-to-capacity ratio

\*\* The TSP recommended alternative is a closure/vacation of Ash Rd north and south of OR 18

**Bold, Red and Shaded** indicates intersection fails to meet target



**Table 5: Highway Segment Alternative Mobility Target Results (v/c Ratio\*)**

| Highway Segment                    | Existing OHP Mobility Target | 2035 Summer (30 HV) Intersection Operations | Assuming 0.99 v/c Mobility Target | 2035 Summer (30 HV) Intersection Operations |                              | 2035 Average Weekday Intersection Operations |                               |
|------------------------------------|------------------------------|---|-----------------------------------|---|------------------------------|--|-------------------------------|
|                                    |                              | Step 1: With Recommended Improvements       |                                   | Step 2: With Recommended Improvements       | Step 3: 1.0 Peak Hour Factor | Step 4: With Recommended Improvements        | Step 5: Total Hours v/c > 1.0 |
| OR 18                              | 0.70                         | -   | -                                 | -   | -                            | -  | -                             |
| - between Dayton and OR 154        |                              | <b>0.73</b>                                 | 0.99                              | <b>0.73</b>                                 | -                            | -  | -                             |
| - between McMinnville and OR 153   |                              | <b>0.71</b>                                 | 0.99                              | <b>0.71</b>                                 | -                            | -  | -                             |
| - Remaining OR 18 segments         |                              | <0.7  | -                                 | -   | -                            | -  | -                             |
| OR 18B                             | 0.75                         | <0.7  | -                                 | -   | -                            | -  | -                             |
| OR 22                              | 0.70                         | <0.7  | -                                 | -   | -                            | -  | -                             |
| OR 47                              | 0.70                         | <0.7  | -                                 | -   | -                            | -  | -                             |
| OR 99W                             | 0.70                         | -   | -                                 | -   | -                            | -  | -                             |
| - east of Newberg to county limits |                              | <b>0.97</b>                                 | 0.99                              | <b>0.97</b>                                 | -                            | -  | -                             |
| - between Dundee and OR 18         |                              | <b>1.19</b>                                 | 0.99                              | <b>1.19</b>                                 | <b>1.06</b>                  | <b>0.98</b>                                  | -                             |
| - remaining OR 99W segments        |                              | <0.7  | -                                 | -   | -                            | -  | -                             |
| OR 153 (west of OR 154)            | -                            | -   | -                                 | -   | -                            | -  | -                             |
| - west of OR 154                   | 0.75                         | <0.7  | -                                 | -   | -                            | -  | -                             |
| - south of OR 154                  | 0.70                         | <0.7  | -                                 | -   | -                            | -  | -                             |
| OR 154                             | 0.70                         | <0.7  | -                                 | -   | -                            | -  | -                             |
| OR 219                             | 0.75                         | <0.7  | -                                 | -   | -                            | -  | -                             |
| OR 221                             | -                            | -   | -                                 | -   | -                            | -  | -                             |
| - north of OR 153                  | 0.75                         | <0.7  | -                                 | -   | -                            | -  | -                             |
| - south of OR 153                  | 0.70                         | <0.7  | -                                 | -   | -                            | -  | -                             |
| OR 233                             | 0.75                         | <0.7  | -                                 | -   | -                            | -  | -                             |
| OR 240                             | 0.75                         | <0.7  | -                                 | -   | -                            | -  | -                             |

**Bold, Red and Shaded** indicates intersection fails to meet target

\*Maximum v/c ratio for the entire segment reported



## Recommended Alternative Mobility Targets

Figure 4 shows the recommended mobility targets in the Yamhill County study area. The two intersections forecasted to exceed existing OHP Mobility Target values in 2035 after recommended improvements are OR 99W/Fox Farm Rd. and OR 18/OR 99W/McDougall Rd. Oregon Transportation Commission (OTC) adoption of the following alternate mobility standards are recommended:

- OR 99W/Fox Farm Rd – alternative analysis methodology that assesses the average annual weekday traffic condition, with an assumed peak hour factor of 1.0, and a v/c ratio of 0.90
- OR 18/OR 99W/McDougall Rd – 30<sup>th</sup> highest hour v/c ratio of 0.85

A handful of roadway segments on OR 99W and OR 18 in Yamhill County are also expected to operate above the existing OHP Mobility Target values at the end of the 20-year planning horizon. Three of the segments are expected to operate with a v/c ratio under 1.0 in 2035. One segment requires adjusting the methodology to assess the average annual weekday traffic conditions with an assumed peak hour factor of 1.0. OTC adoption of the following alternative mobility standards are recommended:

- OR 18 between Dayton and OR 154 – 30<sup>th</sup> highest hour v/c ratio of 0.75
- OR 18 between McMinville and OR 153 – 30<sup>th</sup> highest hour v/c ratio of 0.75
- OR 99W east of Newberg – 30<sup>th</sup> highest hour v/c ratio of 0.99
- OR 99W between Dundee and OR 18 – alternative analysis methodology that assesses the average annual weekday traffic condition, with an assumed peak hour factor of 1.0, and a v/c ratio of 0.99

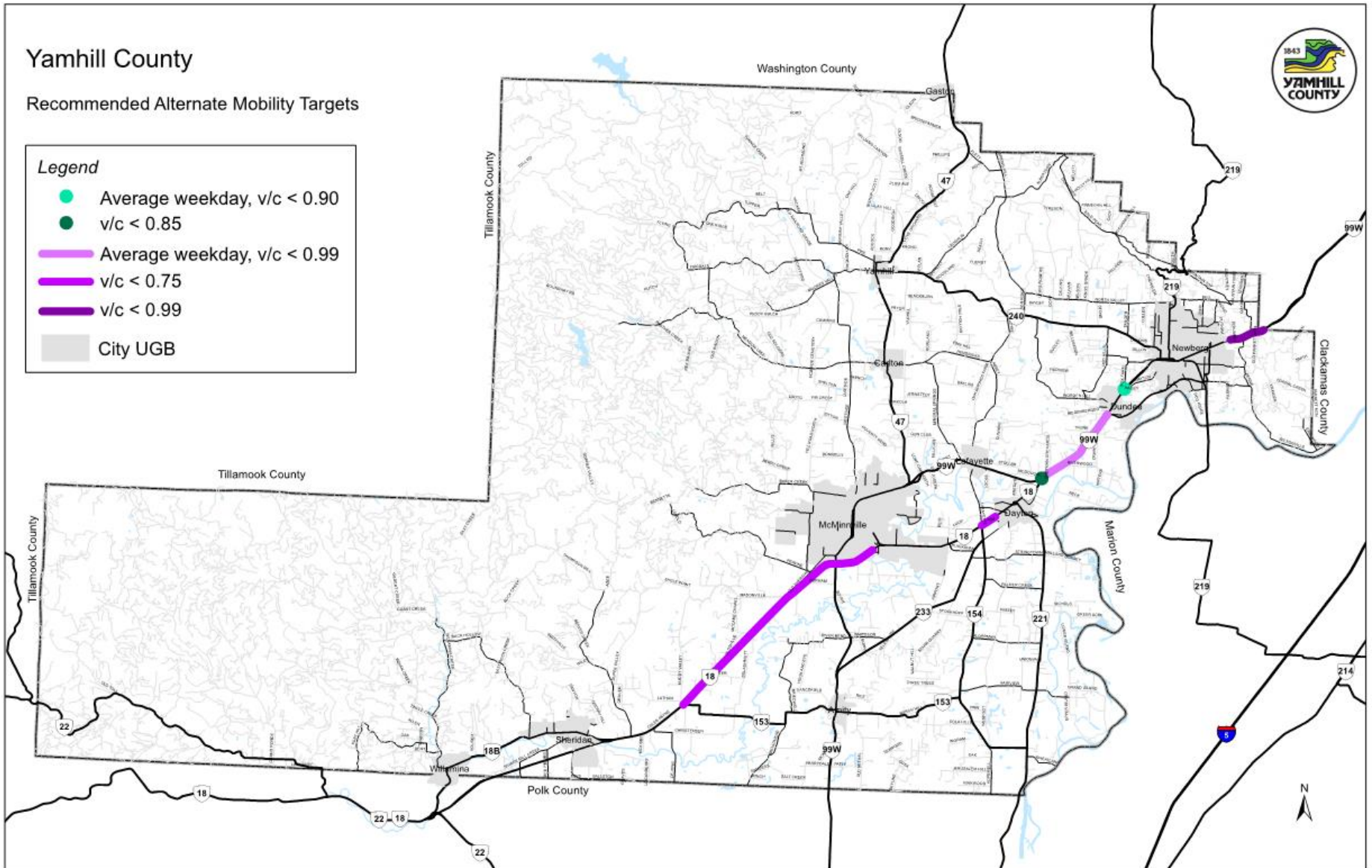
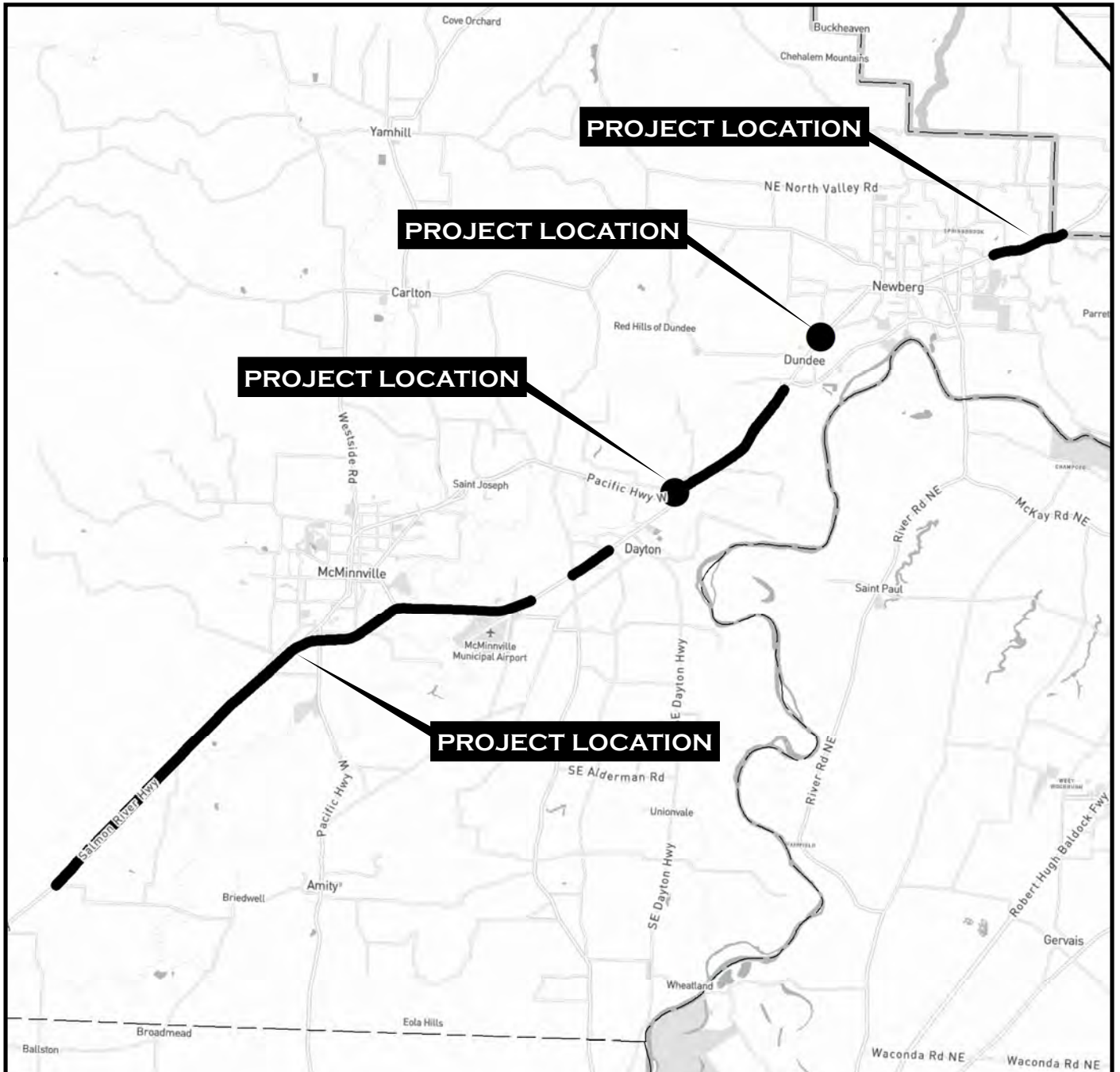


Figure 4: Yamhill County Recommended Alternate Mobility Targets

# PROJECT LOCATION

## ODOT REGION 2



**ACT:** Mid-Willamette Valley ACT

**COUNTY:** Yamhill

**CITY:** Newberg/McMinnville

### YAMHILL COUNTY ALTERNATIVE MOBILITY TARGET



#### STATE HIGHWAY CLASSIFICATION

|  |                  |
|--|------------------|
|  | INTERSTATE       |
|  | STATEWIDE        |
|  | LOCAL ROADS      |
|  | PROJECT LOCATION |

#### BOUNDARIES

|  |                     |
|--|---------------------|
|  | ODOT REGION         |
|  | COUNTY              |
|  | ACT BOUNDARY        |
|  | HYDROLOGIC FEATURES |



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**DATE:** 2/19/2020





# PROJECT VICINITY

## ODOT REGION 2







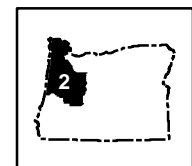
### YAMHILL COUNTY ALTERNATIVE MOBILITY TARGET

#### STATE HIGHWAY CLASSIFICATION

-  INTERSTATE
-  STATEWIDE
-  LOCAL ROADS
-  PROJECT LOCATION

#### BOUNDARIES

-  ODOT REGION
-  COUNTY
-  ACT BOUNDARY
-  HYDROLOGIC FEATURES



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