Oregon
Kate Brown, Governor

Delivery and Operations Division – Region 2
455 Airport Rd SE Bldg. B
Salem, OR 97301-5395
Phone: (503) 986-2600

DATE: February 13, 2020

TO: Oregon Transportation Commission

FROM: Ken Shonkwiler
Senior Region Planner

SUBJECT: Alternative Mobility Targets for US 30 in Scappoose

This is the staff memo and summary for alternative mobility targets for all intersections along US 30 through the City of Scappoose, and associated Findings. The proposed alternative mobility target is a maximum v/c of 1.0 for 4, 5, or 6 hours (see the Background Report for the specific intersection recommendations), with the method of calculation based on an average annual weekday peak hour traffic and an assumed peak hour factor of 1.0.

Background:

The City of Scappoose adopted an updated Transportation System Plan (TSP) in September 2016. 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 advised a project Community Advisory Committee (CAC) composed of local residents and business representatives. The CAC reviewed and commented on each memorandum and met with the project team at key stages during the project to consult on project issues and alternatives. The project team met with the CAC nine times and held work sessions with the Planning Commission and City Council.[1] Public hearings on the Draft TSP before the Planning Commission and City Council led to the adoption of the 2016 Scappoose Transportation System Plan.

US 30 is the major transportation route through Scappoose, running north and south, bisecting the City. The TSP documents future transportation needs, based on the City's projected population and employment growth expected through implementation of the City's existing, adopted land use plan. A comparison of existing (year 2012) and future (year 2035) traffic operations along US 30 to adopted mobility targets during summer traffic conditions (30 HV) shows that most intersections currently operate well, but traffic demand in the summer p.m. peak period at many intersections will exceed capacity by 2035.

Adding enough capacity to address the current and forecasted congestion issues in the US 30 corridor in Scappoose would require either widening US 30 to a 6/7 lane cross section of construction of a bypass around Scappoose. Both of these options would be very expensive (several hundred million to perhaps 1 billion, based on our recent experience with the Newberg/Dundee Bypass) and neither could be considered reasonably likely to be constructed during the 20-year planning horizon.

Widening the highway beyond the existing five lanes would have significant community and economic impacts considering the surrounding environment and highly constrained existing right-of-way. The railroad is directly adjacent to the highway on one side and Scappoose's downtown/commercial development directly adjacent to the other side of the highway. Therefore, the highway-widening improvements were not assumed for implementation within the 20-year planning horizon.

[1] For a summary of the meetings, see the Public Involvement Summary, TSP Volume 2, Section N.

The concept of a Scappoose bypass is even more problematic from both a cost and regulatory standpoint. Such a facility west of Scappoose would be very expensive due to steep terrain and environmental/regulatory requirements. The concept of a bypass through the area east of the built area of Scappoose is equally problematic as it lies mostly in the 100-year floodplain that is currently protected by an extensive dike system and much of that sort of facility would need to be placed on structure, assuming that it would even be possible to gain the necessary environmental and regulatory approvals.

The Scappoose TSP recommends that the Oregon Transportation Commission (OTC) adopt alternative mobility targets for the highway since several intersections along US 30 (between Havlik Drive and Scappoose-Vernonia Highway) are expected to experience congestion over multiple hours on an average weekday (up to four to six hours on weekdays) in the future. The proposed alternative mobility targets change the focus from peak traffic volumes during the typical 30th highest hour (usually in the summer months) to average weekday peak hour conditions during the rest of the year. The Scappoose TSP documents the community's recommendation to handle congestion as best as possible by managing travel demand, maximizing the efficiency of the existing transportation system, increasing walking, biking, and transit ridership, and other techniques. The Background Report in Attachment D provides additional detail about the process and analysis used to reach this recommendation.

Attachments
A. Findings of Compliance with OAR 731-0015-0055, OAR 660-0012, and OHP Policy 1F3
B. Scappoose Transportation System Plan
http://www.ci.scappoose.or.us/planning/page/scappoose-master-plans
C. Scappoose Transportation System Plan, Volume 2, Section N, Public Involvement
https://www.dropbox.com/sh/b8daiw9r329vvvm/AACD5GGlFsBUVsChlc8mdgtUa?dl=0&preview=Scappoose_TSP_Vol2.pdf
D. Technical Memorandum Scappoose Transportation System Plan Alternative Mobility Targets, Updated May 2, 2019

Attachment A

Scappoose Alternative Mobility Targets
Compliance Findings

Alternative Oregon Highway Plan Mobility Targets for US 30 in Scappoose:

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 US 30 in Scappoose 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 Scappoose Transportation System Plan (TSP) with the City of Scappoose and other affected governmental jurisdictions and agencies throughout development of that TSP. DLCD was updated during plan development and was provided the draft TSP and code amendments prior to adoption for comments, consistent with OAR 660-018. The recommended Alternative Mobility Targets were developed as part of the TSP development process. A comprehensive public involvement program was conducted as part of the TSP process and is documented in Volume 2, Section B (Memo 1: Public Involvement Plan) of the TSP. 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: Technical Memorandum Alternative Mobility Targets developed as part of the Scappoose TSP (TSP Volume 2, Section M) and included in this staff report as part of Attachment D describes the process used to develop the Alternative OHP Mobility Targets for US 30 in Scappoose. 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, the City of Scappoose, Columbia County, 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: Statewide Planning Goal 1, Citizen Involvement, establishes the requirement for state and local governments taking land use actions "to develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process." As noted in the previous finding, the recommended Alternative Mobility Targets were developed as part of the process to develop the Scappoose TSP. The public involvement program that was conducted as part of that process, as documented in the Public Involvement Summary in Volume 2, Section N, of the TSP (included as part of this staff report as Attachment B), constitutes compliance with Goal 1.

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 City 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: Goals 3 and 4 do not apply to the OTC's action. The proposed Alternative Mobility Targets do not include development of any land designated for agricultural or forest use and the subject highway segments are within the Scappoose Urban Growth Boundary.

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

FINDING: The adoption of the Alternative Mobility Targets is consistent with protecting natural resources and conserving scenic areas in the City, as the action minimizes the need to widen roadways our construct new facilities to accommodate existing and future needs. If Goal 5 resources are affected by future roadway improvements, they will be addressed during project development and construction.

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 highway subject to the proposed Alternative Mobility Targets facilitates access to recreational areas within as well as outside of the City, 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 highway subject to the proposed Alternative Mobility Targets facilitates access to employment areas within the City. The adoption of the proposed Alternative Mobility Targets will accommodate future development in accordance with their adopted comprehensive plan, including planned commercial and industrial development that will contribute to economic vitality of the City.

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 highway subject to the proposed Alternative Mobility Targets facilitates access to residential areas within Scappoose, the proposed action applies only to the highway corridor within the City 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 2016 Scappoose TSP was developed in compliance with Statewide Goal 12 and was adopted by the City Council of the City of Scappoose on September 6, 2016. It was subsequently acknowledged by DLCD. While the TSP provides the analysis and findings supporting the need for an alternate traffic analysis time period and mobility targets for all the intersections on US 30 within the City of Scappoose, the City does not have the authority to adopt mobility targets for US 30. With specific regard to the OTC

adoption of a minor amendment to the OHP to establish Alternative Mobility Targets for US 30 in Scappoose, 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 US 30 in Scappoose will satisfy this requirement, consistent with the transportation system performance expectations established in the Scappoose 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 the Scappoose Urban Growth Boundary.

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 to areas already within the Scappoose Urban Growth Boundary. The OTC's action will help facilitate future growth within the existing UGB and support efficient use of urban lands within the City.

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 do not apply to areas within the City of Scappoose.

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

FINDING: These goals address estuaries, coastal shore lands, beaches and dunes, and ocean resources. These goals do not apply to the City of Scappoose; 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 Scappoose Transportation System Plan was prepared in accordance with the requirements of the TPR. OTC adoption of the recommended Alternative Mobility Targets for US 30 in Scappoose will satisfy the requirement that the capacity analysis for the highway is consistent with facility performance standards acceptable to the state and consistent with the transportation system performance expectations established in the 2016 Scappoose 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 OHP mobility targets. The amendment addresses capacity, operational efficiency, modal choice, environmental protection, and safety and was developed collaboratively by the Department and Scappoose City staff, in consultation with DLCD, and Columbia County.

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 transportation system plan 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 Scappoose TSP is consistent with the OHP guidelines to establish Alternate Mobility Targets. This methodology is detailed in TSP Volume 2, Section M, which is included in this staff report as part of Attachment C.

The alternative mobility methodology documents that in Scappoose the 30th highest annual hour typically occurs during the summer months, when traffic volumes increase due to vacationers and visitors traveling through to and from the coast. During an average weekday, volumes are generally 15 percent lower than those along the highway during the summer. The analysis recommends using the average annual weekday p.m. peak hour as the basis for defining facility performance instead of the 30th highest annual hour. Despite this methodology adjustment, several intersections still exceed the OHP v/c ratio values that apply to US 30. In addition to changing the analysis time period, raising the v/c ratio threshold in order to match the forecasted roadway performance along the corridor is also needed in several areas. Using ODOT Region 2 methodology for determining Alternative Mobility Targets, the analysis assessed each study intersection along US 30, the results of which are provided in Attachment D, Figure 1.

The specific local actions called for in the TSP to help relieve congestion include expanding the local street system; employing Transportation System Management (TSM) strategies; enhancing transit; and filling gaps in the pedestrian and bicycle network. (See Attachment C, TSP Volume 2, Section M, Other Strategies Being Applied to Enhance Mobility*, p 6.) TSP goals and objectives, under "The Vision" section in the TSP, reinforce the City's commitment to improving transportation conditions off the highway, including enhancing the arterial and collector street system that provides additional alternatives to US 30 (Goal 2, Objective 2) and employing TSM and transportation demand management strategies (Goal 6, Objective E).*

The TSP's transportation system improvements are in alignment with expected growth and the implementation of the City's existing adopted comprehensive 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 City and ODOT about how transportation improvements will likely be funded (see The Investments *chapter in the adopted TSP).*

Attachment B

Scappoose Transportation System Plan

Copies of the 2016 Scappoose Transportation System Plan can be obtained by downloading the document at:
http://www.ci.scappoose.or.us/planning/page/scappoose-master-plans
or
https://www.dropbox.com/sh/b8daiw9r329vvvm/AACD5GGlFsBUVsChlc8mdgtUa?dl=

Or by contacting:

Ken Shonkwiler, Senior Region Planner
Oregon Department of Transportation, Northwest Area
350 West Marine Drive, Astoria, OR 97103
(503) 325-5281
Kenneth.d.Shonkwiler@odot.state.or.us

Attachment C

Scappoose Transportation System Plan, Volume 2, Section N —Public Involvement

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

https://www.dropbox.com/sh/b8daiw9r329vvvm/AACD5GGlFsBUVsChlc8mdgtUa?dl=&preview=Scappoose_TSP_Vol2.pdf

Or by contacting:
Ken Shonkwiler, Senior Region Planner
Oregon Department of Transportation, Northwest Area
350 West Marine Drive, Astoria, OR 97103
(503) 325-5281
Kenneth.d.Shonkwiler@odot.state.or.us

Attachment D

Technical Memorandum Scappoose
Transportation System Plan Alternative Mobility Targets

TECHNICAL MEMORANDUM

720 SW Washington St.
Suite 500
Portland, OR 97205
503.243.3500
www.dksassociates.com

DATE: March 31, 2016

TO: Scappoose TSP Project Management Team

FROM: Julie Sosnovske, PE
Reah Flisakowski, PE

SUBJECT: **Scappoose Transportation System Plan**
Alternative Mobility Targets P11086-012

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. As a base case, it is assumed that 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.

Because of the financial and other constraints that have been faced by state and local governments over the last 20 years and which are expected to continue into the foreseeable future, it is often the case that the local and/or state roadways will not be improved to the extent that they will be able meet local level-of-service (LOS) standards or, in the case of ODOT, roadway volume-to-capacity (v/c) ratio based mobility targets, at the end of the 20-year planning horizon if the community grows in accordance with its existing, adopted land use plan. In some cases, a community may also choose to not add capacity to major roadways due to other urban design or livability priorities. 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, as expressed through local LOS standards or state mobility targets, to match the performance that is actually forecasted to exist at the end of the 20-year planning horizon, through the adoption of alternative standards or mobility targets.

In other words, in these situations, adopting alternative standards or mobility targets is simply an exercise in adjusting roadway performance expectations to match realistic expectations for how the roadways are actually forecasted to operate, taking into account financial and other constraints and assuming implementation of the existing, adopted local land use plan. In addition to establishing realistic expectations for future system performance, this process will help reduce the potential for state and local investment needs by not continuing to require compliance with standards or targets that both parties acknowledge cannot likely be achieved, assuming that the community continues to grow in accordance with its existing, adopted land use plan.

In Scappoose, the transportation system analysis has revealed that portions of US 30 are not expected to be able to meet ODOT's existing adopted mobility targets at the end of the 20-year planning horizon, based on the transportation impact associated with the population and employment growth expected through implementation of the City's existing, adopted land use plan and the transportation system performance that would result, assuming implementation of only those projects and services that have been identified as reasonably likely to be funded during the 20-year planning horizon. This memorandum documents the need for developing alternative mobility targets for US 30 through Scappoose and describes the proposed new targets. Included is a summary of the methodology and results, and the recommended alternative mobility targets for the highway.

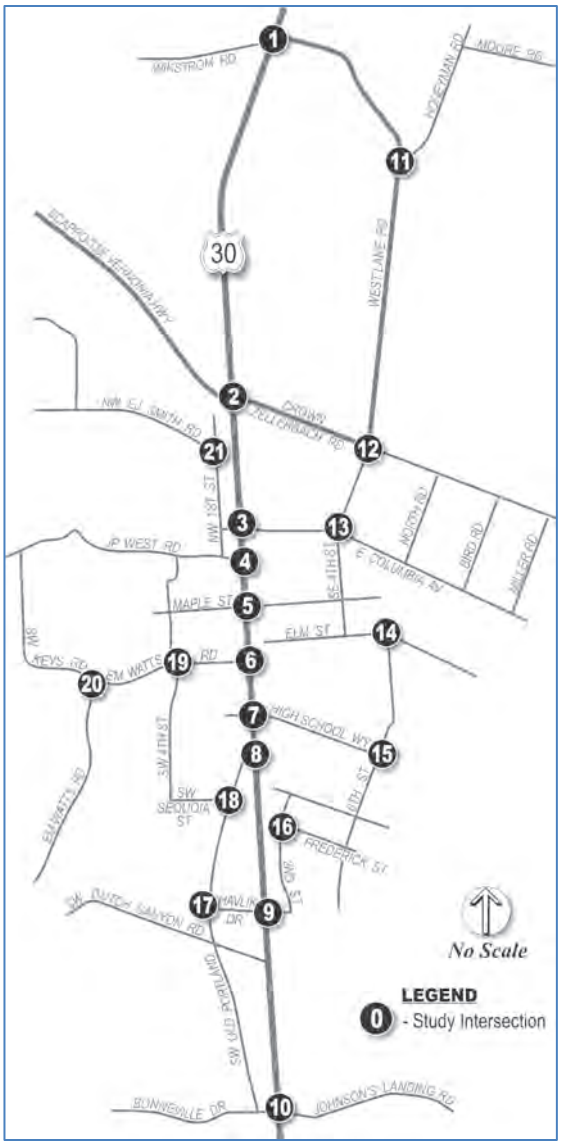


Figure 1: Scappoose TSP Study Area

Background

The segment of US 30 under consideration, shown in Figure 1, is represented by study intersections numbered 1 through 10. The segment of US 30 is bounded by the urban growth boundary (near West Lane Road/Wikstrom Roads to the north and near Bonneville Drive/Johnson Landing Road to the south). US 30 is the major transportation route through Scappoose, running north and south, bisecting the city. The Columbia River to the east, hilly topography to the west, existing development and the UGB limit continuous north to south routes parallel to US 30.

Within Scappoose, US 30 is classified as a Statewide Highway. Statewide Highways typically provide inter-urban and inter-regional mobility and provide connections to larger urban areas, ports, 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. In addition, US 30 through Scappoose is part of the National Highway System (NHS), and is a designated Freight Route and Truck Route.

The Need for Alternative Mobility Targets

Prior to exploring alternatives to the current mobility targets, evaluation of the disparity 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 intersections along US 30 in Scappoose 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 US 30.

Table 1: Mobility Targets for ODOT Intersections along US 30

Roadway (Intersection)	Speed Limit Major/Minor (mph)	OHP Mobility Standard (volume-to-capacity ratio)	
		OHP Signalized or all-way stop intersections, or free movements at unsignalized intersections	OHP Stop or yield-controlled movements at unsignalized intersections
US 30/Wikstrom Rd	55/45	0.80	0.90
US 30/Scappoose-Vernonia Highway	35/35	0.85	
US 30/East Columbia Ave	35/25	0.85	
US 30/J.P. West Rd	35/25	0.85	0.95
US 30/Maple St	35/25	0.85	
US 30/E.M. Watts Rd	35/25	0.85	
US 30/High School Wy	35/25	0.85	
US 30/Old Portland Rd (north end)	35/35	0.85	
US 30/Havlik Dr	45/25	0.80	0.95
US 30/Bonneville Dr	45/25	0.80	0.95

***v/c ratios are the maximum allowed**

Source: Oregon Highway Plan (OHP), Policy 1F, Table 6, as amended December 21, 2011Targets

All intersections along US 30 in Scappoose should 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.

ODOT standard analysis procedure also requires intersection operating conditions to be compared to existing OHP Mobility Targets during the 30th highest annual hour of traffic (30 HV). In Scappoose, the 30th highest

annual hour typically occurs during the summer months, when traffic volumes increase due to vacationers and visitors traveling through to and from the coast. During an average weekday, volumes are generally 15 percent lower than those along the highway during the summer, as described in Technical Memorandum #5.

Existing and Future Highway Operations

A comparison of existing (year 2012) and future (year 2035) traffic operations along US 30 to adopted mobility targets during summer traffic conditions (30 HV) 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. Table 2 summarizes the results of this analysis, along with existing OHP Mobility Targets. As shown, most of the intersections would fail to comply with the targets by 2035. Note that a more restrictive Highway Design Manual (HDM) mobility standard is applied to the evaluation of planned improvements or highway construction improvements on state highways.[1] If the HDM standards are not met at the time of project development, a design exception may be required.

The Transportation System Plan (TSP) development process considered a range of improvement options for US 30. This included making spot improvements at intersections, enhancing the transit system, expanding the cycling and walking networks, strategies to help manage peak travel demands, and improvements to maximize the efficiency of the existing street network. Widening the highway beyond the existing five lanes through the city would add a significant amount of capacity and would allow nearly all intersections to comply with current mobility targets. However, the impact to existing development would be significant considering the surrounding environment and constrained right-of-way (both built environment and physical constraints). Additionally, the cost of such widening is well beyond any reasonably likely expectation for funding during the 20-year based on current ODOT funding capabilities. Therefore, the highway-widening improvements were not recommended for implementation within the 20-year planning horizon.

ODOT and the City will manage US 30 with the expectation that no highway widening projects will be developed during the 20-year planning horizon. Without highway widening, the management approach for US 30 is to maximize the safety and efficiency of the overall transportation system and increase accessibility and availability of transit, walking and biking facilities, recognizing that it is not currently financially feasible or practical from either a community impact or physical constraint perspective (or both) to construct additional highway capacity on US 30 to reduce congestion.

Table 2 shows how US 30 intersections, which did not meet mobility targets for the 2035 “No Build” condition, are expected to operate in 2035 during the summer peak with the recommended improvements from the Scappoose TSP in place (Financially Constrained projects shown in Tech Memo #9). Congestion on the highway is not expected to significantly improve over the “No Build” condition, with peak hour demand exceeding capacity at all signalized and unsignalized intersections. Given that highway widening would be required to meet existing OHP Mobility Targets, it is clear that it will not be possible to meet them along US 30 in Scappoose by the end of the 20-year planning horizon.

---

[1] 2012 ODOT Highway Design Manual (HDM), Table 10-2: 20 Year Design Mobility Standards.

Table 2: Intersection Operations along US 30 within Scappoose, 30 HV Conditions (V/C Ratios)

Intersection	Existing OHP Mobility Target	2012 Existing Conditions	2035 Baseline Conditions (No Build)	2035 with Recommended System Improvements
Signalized Intersections				
US 30/Scappoose-Vernonia Highway	0.85	0.81	**>2.0**	**1.32**
US 30/East Columbia Avenue	0.85	0.83	**1.28**	**1.24**
US 30/Maple Street	0.85	**0.91**	**1.28**	**1.21**
US 30/E.M. Watts Road	0.85	**0.92**	**1.33**	**1.24**
US 30/High School Way	0.85	0.84	**1.11**	**1.05**
US 30/Havlik Drive	0.80	**0.91**	**1.48**	**1.26**
US 30/Wikstrom Road/West Lane Road	0.80			**1.13**

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

Factors Limiting the Ability to Meet Existing Mobility Targets

Several factors combine to make compliance with the current mobility targets along US 30 difficult. They include:

- **Competition from Multiple Users**
  The importance of US 30 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 through Scappoose between other cities
  - Freight traveling to and through Scappoose (US 30 is a Federal Truck Route)
  - Transit, including movement and access – most of the local transit routes are along US 30
  - Bicyclists- US 30 is a touring bike route as well as a means of transportation for locals
  - Pedestrians using the most direct route, in some places the only route, connecting their residences with community facilities, employment, and shopping

- **Financial Factors**
  As is true for most agencies, funding for City and ODOT transportation improvements is limited. Even if all forecasted state and local transportation revenue for projects in Scappoose over the next 20 years were spent on highway capacity improvements, it would still fall well short of enabling current mobility targets to be met.

- **Existing Development Patterns**
  In many areas along US 30, adjacent development constrains the ability to widen the highway right-of-way or provide parallel alternate routes. Obtaining needed right-of-way for highway widening would

require acquisition and removal of such development, which would be very expensive and undesirable to the community.

- **Environmental Factors**
  The railroad tracks immediately east of US 30, the Columbia River to the east, hilly topography and Scappoose Creek to the west and the UGB limit options to provide an effective, connected transportation system, especially along or parallel US 30, which is the primary transportation corridor through the city. These factors provide a challenging environment for transportation and make the construction or expansion of transportation facilities or the construction of parallel routes potentially cost prohibitive.

Other Strategies Being Applied to Enhance Mobility

Recognizing that mobility along US 30 will be constrained, the City's Transportation System Plan includes several actions to help relieve congestion:

- Improvements to local streets to allow the city street network to operate at a Level of Service "D" or better for signalized intersections and Level of Service "E" or better for unsignalized intersections (both with v/c ratios less than 0.90) through the year 2035. Maintaining good performance of the local streets will help to provide attractive travel alternatives to US 30 for local trips, where practical.
- Expand the city's local street network, especially in the northeast parts of the city, to improve connectivity and create alternate routes to US 30 for local trips, removing them from the highway.
- Use an array of Transportation System Management (TSM) strategies, including protective/permissive signal timing on US 30 (currently being implemented), improved connectivity of local streets, as well as access management regulations already in place.
- Work with ODOT to ensure that traffic signal timing remains up-to-date, including coordination between signals, as traffic volume conditions change over time.
- Fill facility gaps in the pedestrian and bicycle network and improve crossing opportunities along US 30, improving safety and providing access to major activity generators.

However, even with these actions in place, traffic operations along US 30 will not meet existing OHP Mobility Targets at the end of the 20-year planning horizon. The implementation of these actions, along with the OTC adoption of alternative mobility targets for US 30 into the OHP that reflect ODOT and the City's mutual, realistic highway performance expectations, constitutes ODOT's US 30 management strategy in Scappoose through the 20-year planning horizon.

Proposed Alternative Mobility Targets

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

Alternative Mobility Target Process

Figure 3 shows the ODOT Region 2 methodology for determining alternative mobility targets. Table 3 summarizes the assessment of each study intersection along US 30 using the methodology. Refer to Technical Memorandum #8 (Future Transportation Conditions) for summer and average weekday 2035 p.m. peak hour motor vehicle volumes used for this methodology.



Figure 3: Alternative Mobility Target

Step 1: None of the seven signalized study intersections along US 30 would be expected to meet existing OHP mobility targets during the summer of 2035, after recommended improvements described earlier. To be compliant, Scappoose would need alternative mobility targets for all of the seven signalized study intersections along US 30.

Step 2: Of the seven study intersections that would not meet current mobility targets during the summer of 2035, none would be expected to operate with a v/c ratio less than 1.0.

Step 3: Of the seven study intersections expected to operate with a v/c ratio over 1.0 during the summer of 2035, none would be expected to operate with v/c ratios less than 1.0 after assuming a peak hour factor of 1.0.[2]

Step 4: Of the seven study intersections expected to operate with a v/c ratio over 1.0 during the summer of 2035 after assuming a 1.0 peak hour factor, five (the signalized intersections of US 30 with Scappoose-Vernonia Highway, East Columbia Avenue, Maple Street, E.M. Watts Road and Havlik Drive) would be expected to also operate with a v/c ratio over 1.0 during an average weekday peak hour in 2035.

Step 5: "Hours of congestion" analysis was conducted, which assumes that traffic volumes that exceed capacity in the analysis hour are shifted to the "shoulder" hours, iteratively, until all traffic can be accommodated. The

[2] 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-minutes periods of the peak hour.

analysis applied to the five signalized intersections identified in Step 4, shows the intersections will exceed capacity for up to six consecutive hours during an average weekday in 2035, as follows:

- US 30/Scappoose-Vernonia Highway – 5 hours
- US 30/East Columbia Avenue – 6 hours
- US 30/Maple Street – 5 hours
- US 30/E.M. Watts Road – 4 hours
- US 30/Havlik Drive – 5 hours

Recommended Alternative Mobility Targets

Five signalized intersections are forecasted to exceed the existing OHP Mobility Target values once the analysis methodology is adjusted to assess the average annual condition, as follows:

- US 30/Scappoose-Vernonia Highway (signalized)
- US 30/East Columbia Avenue (signalized)
- US 30/Maple Street (signalized)
- US 30/E.M. Watts Road (signalized)
- US 30/Havlik Drive (signalized)

Therefore, the existing adopted OHP target values require an alternative mobility standard for those intersections. The following alternative OHP Mobility Targets are recommended for adoption by the Oregon Transportation Commission (OTC).

- US 30/Scappoose-Vernonia Highway (signalized) – v/c ratio of 1.0 - "full capacity" for 5 hours
- US 30/East Columbia Avenue (signalized) – v/c ratio of 1.0 - "full capacity" for 6 hours
- US 30/Maple Street (signalized) – v/c ratio of 1.0 - "full capacity" for 5 hours
- US 30/E.M. Watts Road (signalized) – v/c ratio of 1.0 - "full capacity" for 4 hours
- US 30/Havlik Drive (signalized) – v/c ratio of 1.0 - "full capacity" for 5 hours

OTC adoption of the alternative analysis methodology that assesses the average annual weekday traffic condition, with an assumed peak hour factor of 1.0, is also recommended for all of US 30 in Scappoose.

Table 3: 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
Signalized Intersections							
US 30/Scappoose-Vernonia Highway	0.85	**1.32**	0.99	**1.32**	**1.24**	**1.18**	5 hours
US 30/East Columbia Avenue	0.85	**1.24**	0.99	**1.24**	**1.19**	**1.17**	6 hours
US 30/Maple Street	0.85	**1.21**	0.99	**1.21**	**1.15**	**1.08**	5 hours
US 30/E.M. Watts Road	0.85	**1.24**	0.99	**1.24**	**1.18**	**1.10**	4 hours
US 30/High School Way	0.85	**1.05**	0.99	**1.05**	**1.01**	0.93	-
US 30/Havlik Drive	0.80	**1.26**	0.99	**1.26**	**1.24**	**1.11**	5 hours
US 30/Wikstrom Road/West Lane Road	0.80	**1.13**	0.99	**1.13**	**1.07**	0.94	-

* Planned Improvements include the Financially Constrained Motor Vehicle Projects included in Technical Memorandum #9.
Bold, Red and Shaded indicates intersection fails to meet target

TECHNICAL MEMORANDUM

720 SW Washington St.
Suite 500
Portland, OR 97205
503.243.3500
www.dksassociates.com

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: **Scappoose Transportation System Plan**
Alternative Mobility Targets P17081-005

In Scappoose, the transportation system plan (TSP) identifies portions of US 30 that will not meet ODOT's adopted mobility targets at the end of the 20-year planning horizon, based on the transportation impact associated with the population and employment growth expected through implementation of the City's existing, adopted land use plan and the transportation system performance that would result. The Alternative Mobility Targets Technical Memorandum (TSP Volume 2, Section M) documents the need for developing alternative mobility targets for US 30 through Scappoose and describes the proposed new targets.

TSP Alternative Mobility Analysis

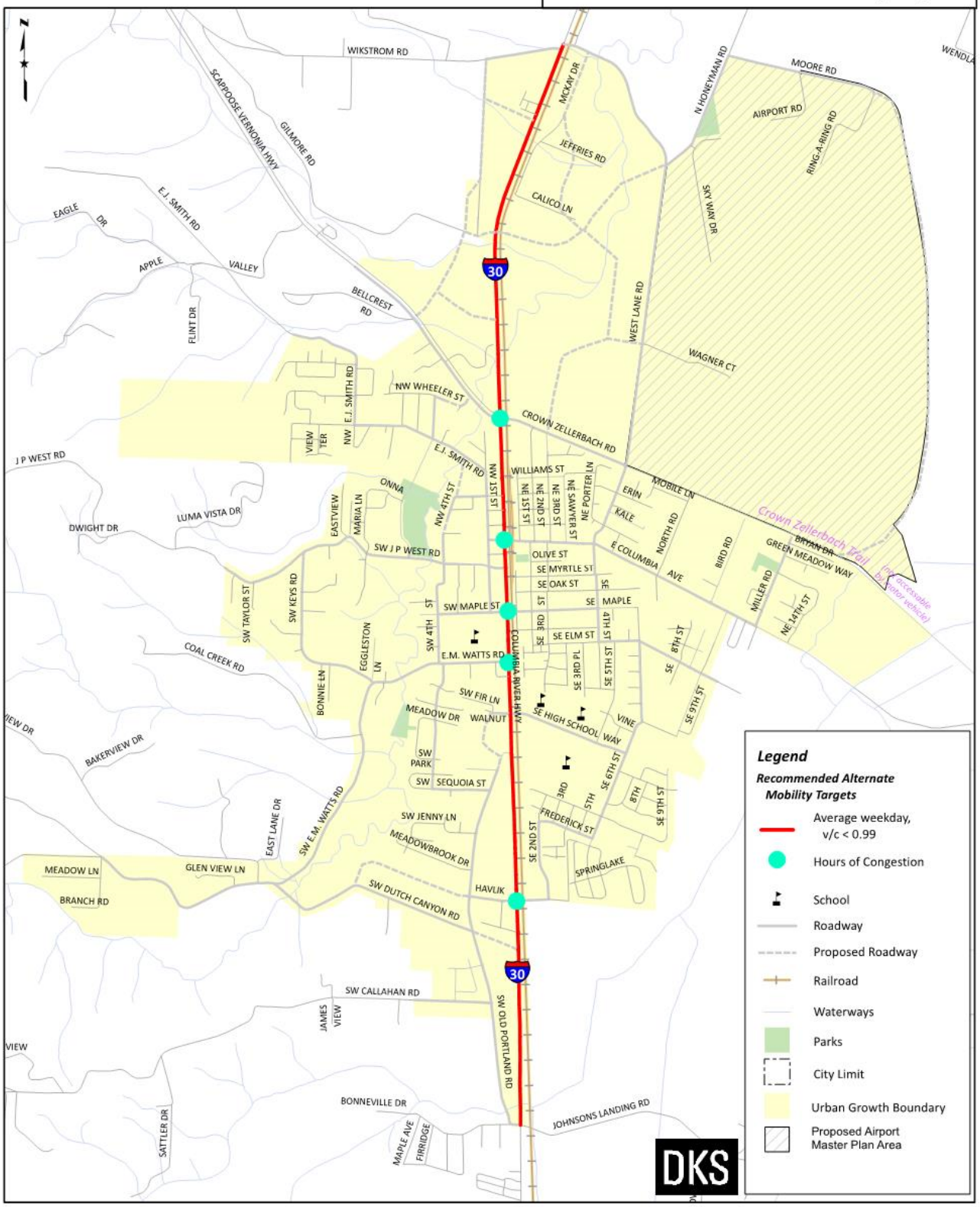
The Alternative Mobility Targets Technical Memorandum includes a summary of the methodology and results, and the recommended alternative mobility targets for US 30 through Scappoose from the analysis completed during the TSP process. The memorandum forecasts that many of the signalized study intersections along US 30 will operate at capacity for four to six hours by 2035, even after adjusting the analysis methodology to assess the average annual weekday traffic condition.

The memorandum recommends OTC adoption of the alternative analysis methodology that assesses the average annual weekday traffic condition, with an assumed peak hour factor of 1.0 for all of US 30 in Scappoose. In addition, the memorandum lists five signalized intersections (shown in Figure 1) where the recommended alterative mobility target would be to allow the intersection to function with a volume-to-capacity (v/c) ratio of 1.0 for four to six hours by 2035.

DKS

City of Scappoose

FIGURE 1
Recommended Alternate Mobility Targets



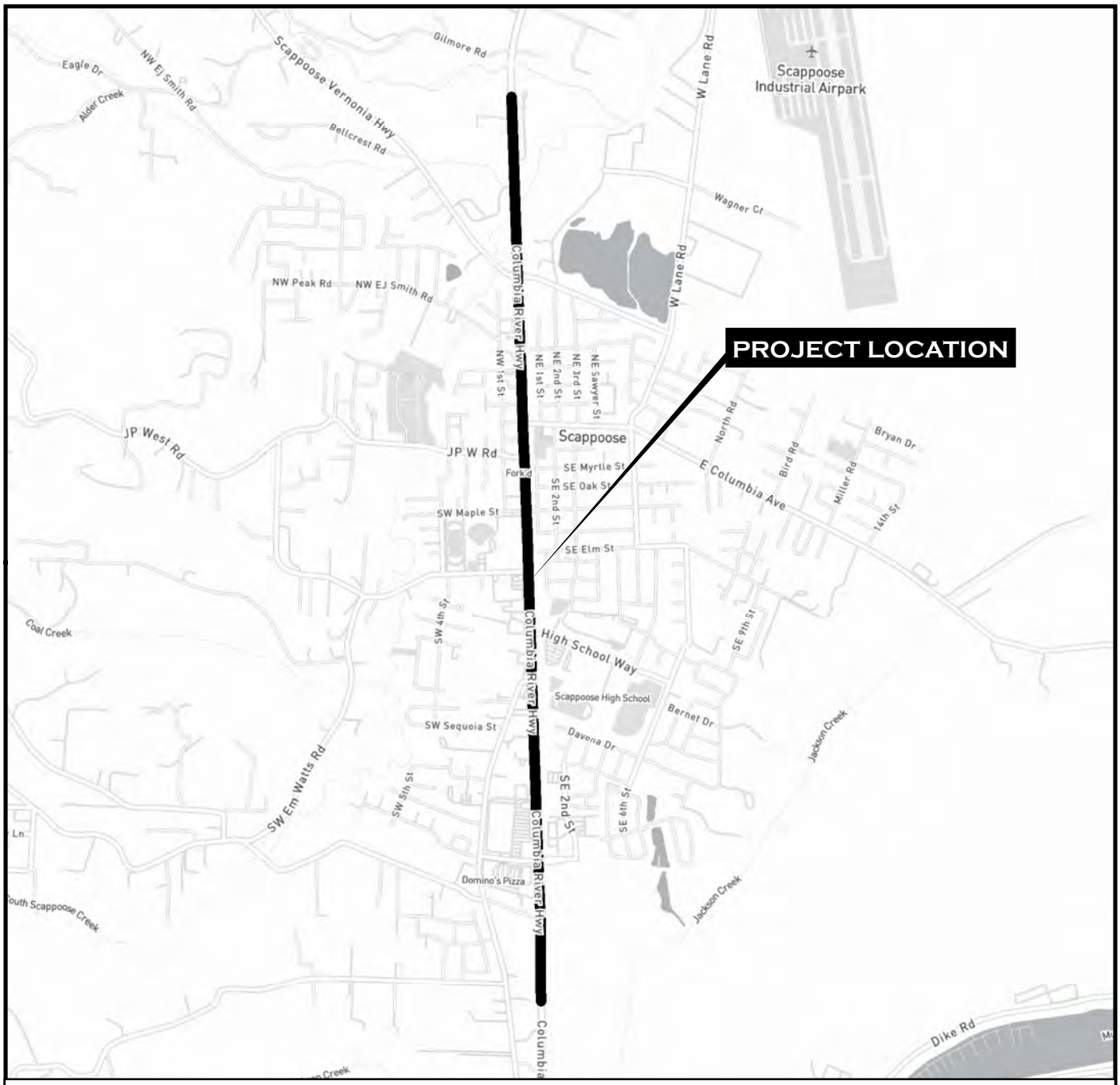
Exploration of Alternative Signal Optimization

During the TSP analysis process, the signalized intersection timings along US 30 were adjusted to account for forecasted future traffic conditions. Beyond small operational improvements associated with adjusted signal timing, there were no feasible, financially constrained projects identified in the TSP to address the congestion challenges along US 30. To assist with OTC adoption of the alternative mobility targets, additional exploration was completed to identify if operational improvements such as adjusted signal timing would lessen the forecasted congestion or reduce the hours of forecasted congestion along US 30.

No operational improvements were identified that would significantly reduce the forecasted congestion. The forecasted 2035 traffic volumes exceed capacity significantly along the corridor and even with optimized signal timing and similar operational improvements, the corridor would operate at capacity for multiple hours. There were no improvements identified that would significantly change the recommendation for OTC adoption of alternative mobility targets.

See the Scappooose TSP Volume 2, Section M for a detailed discussion of the alternative mobility target recommendations for Oregon Transportation Commission adoption.

PROJECT LOCATION
ODOT REGION 2



ACT: Northwest Oregon ACT ***COUNTY:*** Columbia ***CITY:*** Scappose

SCAPPOOSE ALTERNATIVE MOBILITY TARGET

STATE HIGHWAY CLASSIFICATION
- INTERSTATE
- STATEWIDE
- LOCAL ROADS
- PROJECT LOCATION

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

0 0.5
Miles

PRODUCED BY ODOT - GIS UNIT
ODOTMaps@odot.state.or.us

GIS NO. 23-52

DATE: 2/19/2020

\\gis_resources\giswork\GIS23_52_OTC_maps_and_graphics\OTC_MAPS\OTC_20_MAPS

"This product is for informational purposes and may not be suitable for legal, engineering, or surveying purposes. Users of this product should review and consult the primary data sources to determine the usability of the information. Conclusions drawn from this information are the responsibility of the user."

PROJECT VICINITY
ODOT REGION 2



SCAPPOOSE ALTERNATIVE MOBILITY TARGET



STATE HIGHWAY CLASSIFICATION
- INTERSTATE
- STATEWIDE
- LOCAL ROADS
- PROJECT LOCATION

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

0 40
Miles

PRODUCED BY ODOT - GIS UNIT
ODOTMaps@odot.state.or.us
GIS NO. 23-52

DATE: 2/19/2020

\\gis_resources\giswork\GIS23_52_OTC_maps_and_graphics\OTC_MAPS\OTC_20_MAPS

"This product is for informational purposes and may not be suitable for legal, engineering, or surveying purposes. Users of this product should review and consult the primary data sources to determine the usability of the information. Conclusions drawn from this information are the responsibility of the user."