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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 three intersections in Lane County

This is the staff memo and summary for alternative mobility targets for the following intersections. (The specific targets are described in Attachment D of this staff report.)

- OR 225 (McVay Highway) at 30th Avenue (south of Eugene)
- OR 126 (Veneta) at Territorial Highway (Formerly OR 200)

Background

Lane County adopted a new Transportation System Plan (TSP) in December 2017. The plan was prepared in accordance with the technical and public involvement requirements described in the Transportation Planning Rule (OAR 660-012) and was accepted by the Oregon Department of Land Conservation and Development (DLCD). ODOT participated in developing the plan.

The plan is fiscally constrained. It identifies projects that are reasonably likely to be funded within a 20-year planning horizon. This includes multi-modal projects (and policies) that will reduce reliance on motor vehicles.

The initial traffic operations analysis prepared for the TSP (for future conditions) indicated that, even when the priority projects and policies described in the plan are constructed and implemented, there are three intersections where it will not be feasible to meet the mobility targets prescribed in the Oregon Highway Plan (OHP). The main limitation is the availability of funding for necessary capacity improvements.

Accordingly, the TSP identifies the need to establish alternative mobility targets at these locations. The new TSP was adopted by Lane County and accepted by DLCD assuming that alternative mobility targets for the three intersections will be adopted by the OTC.

OHP Policy 1F.3 provides for the establishment of alternative targets. This action is also in keeping with ODOT's commitment to the principles of *practical design* and *least-cost planning.* Alternative mobility targets provide flexibility, for both ODOT and local governments, in situations where it is necessary to tolerate some congestion – either because of funding limitations or to avoid the impacts of a roadway expansion.

Attachments

A	*Findings of Compliance with OAR 731-0015-0055*
B	*Lane County Transportation System Plan* *https://www.dropbox.com/sh/b8daiw9r329vvvm/AACD5GGlFsBUVsChlc8mdgtUa?dl=0&preview=Lane+County+TSP_Vol1.pdf*
C	*Lane County Transportation System Plan, Volume 2, Section N, Public Involvement* *https://www.dropbox.com/sh/b8daiw9r329vvvm/AACD5GGlFsBUVsChlc8mdgtUa?dl=0&preview=Lane+County+TSP_Vol2.pdf*
D	*Technical Memorandum Lane County Transportation System Plan Alternative Mobility Targets*

Attachment A

Findings of Compliance with *OAR* 731-0015-0055

Coordination procedures for adopting final modal system plans

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 (the Department) provides the following findings to support the OTC adoption of Alternative Mobility Targets for three intersections in Lane County as minor amendments to the Oregon Highway Plan (OHP):

- OR 225 (McVay Highway) at 30th Avenue (south of Eugene)
- OR 200 (Territorial Highway) at OR 126 (Veneta)

731-015-0055

Coordination Procedures for Adopting Final Facility Plans

(1) Except in the case of minor amendments, the Department shall involve DLCD [Department of Land Conservation and Development] 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 Lane County Transportation System Plan (TSP) with Lane County, DLCD, and other affected local jurisdictions throughout development of that TSP. 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 the appendix of the TSP (Technical Memorandum 1: Public and Stakeholder Involvement Strategy) which is included as part of this staff report as Attachment C. 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 were presented to the OTC for adoption.

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

FINDING: The Department of Justice (DOJ) identified two statewide goals with which this minor amendment should comply, Goal 1 and Goal 12.

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 Lane County TSP. The comprehensive public involvement program conducted as part of that process and is documented in the appendix of the TSP (Technical Memorandum 1: Public and Stakeholder Involvement Strategy) which is included as part of this staff report as Attachment C.

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 Lane County TSP was adopted by the Lane Board of County Commissioners in September of 2017. It was developed in compliance with Statewide Goal 12, and the County findings documenting compliance are included as part of this staff report as Attachment B. With specific regard to the OTC adoption of a minor amendment to the OHP to establish Alternative Mobility Targets for the Intersections in Lane County, Goal 12 (660-0012-0020) requires standards of facility performance be established that are acceptable to the affected transportation agency.

(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: A technical memorandum which documents the need for Alternative Mobility Targets and the methodology used to determine the recommended targets is provided in this staff report as Attachment D. Findings of compliance with the Statewide Goals 1 and 12 are provided in this attachment and the Transportation System Plan is provided as Attachment B. There are no new facilities being proposed under this plan.

(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: The Department will provide copies of the OTC action adopting the minor amendment and all supporting materials DLCD, Lane County, and others who request a copy.

Attachment B

Alternative Mobility Targets for Lane County

Transportation System Plan

The Lane County Transportation System Plan can be viewed and downloaded from the Lane County website: www.lanecounty.org

1. Path to the TSP:

   > government > county departments > public works > engineering and construction services > transportation engineering services > transportation planning > transportation system plan

2. Complete link:

   www.lanecounty.org/government/county_departments/public_works/engineering_and_construction_services/transportation_engineering_services/transportation_planning

For assistance, contact:

Bill Johnston, Transportation Planner
Oregon Department of Transportation; Region 2, Area 5 (Lane County)
2080 Laura St; Springfield, OR 97477
541-747-1354 or bill.johnston@odot.state.or.us

Attachment C

Lane County Transportation System Plan,

Volume 2, Section N Public Involvement

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

https://www.dropbox.com/sh/b8daiw9r329vvvm/AACD5GGlFsBUVsChlc8mdgtUa?dl=0&preview=Lane+County+TSP_Vol2.pdf

For assistance, contact:

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Attachment D

Technical Memorandum

Lane County Transportation System Plan Alternative Mobility Targets

TECHNICAL MEMORANDUM #8

DATE: June 9, 2017

TO: Project Management Team

FROM: Scott Mansur and Jordin Ketelsen, DKS Associates

SUBJECT: **Lane County Transportation System Plan**
Alternative Mobility Target Evaluation (Task 7.7) P11086-018

An important component of a transportation plan is to realistically identify which transportation projects and services are likely to be implemented, based on financial or other constraints. This exercise enables the community and the state to establish reasonable expectations for how the transportation system will likely operate under future (2036) traffic demands.

Funding limitations and right-of-way constraints often prohibit the expansion of a roadway network to accommodate 20-year planning horizon traffic volumes while meeting existing volume-to-capacity (v/c) based mobility targets. In such cases, it is appropriate to adjust roadway performance expectations, as expressed through alternative mobility targets (AMTs), to match the performance that is actually forecasted to exist under 2036 traffic demands. The purpose of alternative mobility targets is to lower performance expectations to match realistic constrained expectations. In other words, adopting alternative standards or mobility targets is simply an exercise in adjusting roadway performance expectations to match realistic estimates of future roadway operations based on forecasted traffic volume growth and the fact that transportation infrastructure improvements are not reasonably likely.

In Lane County, the operational analysis identified three intersections which are not expected to meet ODOT's existing mobility targets under forecasted 2036 traffic volumes.[1] This memorandum documents the need for AMTs and the methodology utilized to determine the recommended AMTs at the following intersections:

- McVay Highway/30th Avenue
- Territorial Highway/OR 126
- Highway 99/Goshen Avenue intersection

[1] Technical Memorandum #7 – Future Transportation Conditions and Needs

BACKGROUND

The study intersections at McVay Highway/30th Avenue, Territorial Highway/OR 126, and Highway 99/Goshen Avenue, shown on Figure 1, are maintained by ODOT. McVay Highway/30th Avenue and Territorial Highway/OR 126 are signalized intersections while the Highway 99/Goshen Avenue intersection is currently a three legged, unsignalized intersection where the stopped controlled approach in the westbound leg.

Figure 1 - Study Intersection requiring Alternative Mobility Targets

THE NEED FOR ALTERNATIVE MOBILITY TARGETS

Prior to exploring alternatives to the current mobility targets, an evaluation of future forecasted traffic operations and practical transportation improvements confirmed the need to investigate solutions beyond capacity improvements. The findings of that evaluation are described below.

CURRENT MOBILITY TARGETS

According to the *1999 Oregon Highway Plan* (*OHP*), ODOT mobility targets are given as v/c ratios based on the highway category.[2] Table 1 on the following page shows the intersection mobility target and the intersection operations given the 2036 future 30th Highest Hour Volume (30HV) forecasts for the existing transportation system.

[2] *1999 Oregon Highway Plan*, Oregon Department of Transportation, 1999; Table 5 in Policy 1F displays the maximum allowable v/c ratios for areas outside of the Portland Metropolitan Area.

Table 1: 2035 Future 30HV Traffic Operations

Study Intersection (*Jurisdiction*)	Mobility Target	*v/c*
Signalized Intersections		
McVay Highway/30th Avenue	0.85 v/c	1.45
Territorial Highway/OR 126	0.80 v/c	0.84
Unsignalized Intersections		
Highway 99/Goshen Avenue	0.80 v/c	**1.93**

Signalized intersection:
Delay = Average Intersection Delay (sec.)
v/c = Volume-to-Capacity Ratio
LOS = Level of Service

Unsignalized intersection:
Delay = Critical Movement Approach Delay (sec)
v/c = Critical Movement Volume-to-Capacity Ratio
LOS = Major Street LOS/Minor Street LOS

Bold/Highlighted Text: Does not meet current Mobility Target

Factors Limiting the Ability to Meet Existing Mobility Targets

Several factors combine to make it challenging to comply with the current mobility targets for the study intersections in Lane County. The main limitation is the availability of funding for the necessary improvements. Table 2 identifies each of the projects identified in the Lane County TSP Update and their associated planning level cost-estimates.

Table 2: Summary of Identified TSP Projects Associated with Each Intersection

TSP Project Number	Project Name	Description	Cost-Estimate
5a	30th Avenue/McVay Highway/I-5 Interchange	Widen 30th Avenue structure over I-5 as well as McVay Highway and Franklin Boulevard ramp terminals to accommodate future multimodal users and motor vehicle capacity and improve safety for all modes.	$65 Million
71	Highway 99/Goshen Avenue Intersection	Modify to an all-way-stop controlled intersection and add a southbound left turn lane.	$500,000
144d	Territorial Highway/Highway 126W Intersection	Construct additional eastbound and westbound through lanes.	$750,000

As is true for most agencies, funding for County and ODOT transportation improvements is limited. The identified intersections are not reasonably likely to receive state or local transportation funding for projects over the next 20 years. Additionally, the improvements at the McVay Highway/30th Avenue intersection would require construction to the existing I-5 overpass, which drastically raises the cost of the improvements. Therefore, the intersections would still fall short of meeting current mobility targets.

PROPOSED ALTERNATIVE MOBILITY TARGETS

This section describes the process used to develop the AMTs and the final recommended mobility targets. Figure 2 shows the ODOT Region 2 methodology for determining appropriate alternative mobility targets.[3]

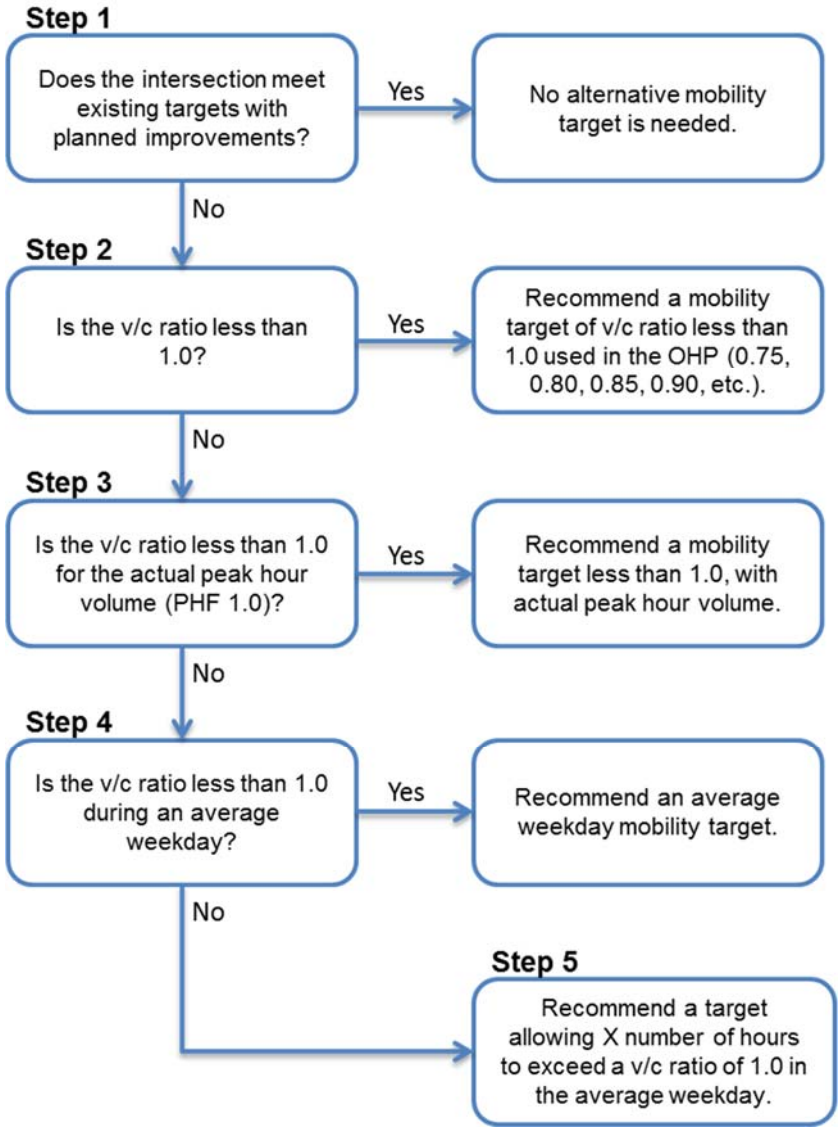

Figure 2: ODOT Region 2 Alternative Mobility Target Methodology

[3] As outlined in an ODOT Interoffice Memo dated December 30, 2009 (attached).

Step 1: The three study intersections (two of which are signalized) are expected to fail to meet the existing Oregon Highway Plan (OHP) mobility targets through the year 2036. The recommended improvements are not likely to take place before 2036 due to financial constraints. Alternative mobility targets are needed (proceed to Step 2).

Step 2: Of the three study intersections that would not meet current mobility targets in 2036, one would be expected to operate with a v/c ratio less than 1.0 (Territorial Highway/OR 126). Based on the expected v/c ratio, an AMT of 0.85 is recommended for this intersection. The remaining two intersections have a v/c greater than 1.0 (proceed to Step 3).

Step 3: When traffic demand nears or exceeds capacity, the actual traffic volume through an intersection is constrained to the available capacity and does not exhibit the same peaking characteristics of unconstrained traffic flow. In other words, when the v/c is close to 1.0, a peak hour factor (PHF) of 1.0 represents actual traffic patterns better than the measured PHF. After applying a PHF of 1.0, the intersections of McVay Highway/30th Avenue and Highway 99/Goshen Avenue still operate at a v/c greater than 1.0 (proceed to Step 4).

Step 4: Of the remaining two study intersection that would not meet current mobility targets in 2036, the average weekday traffic volumes were used to compare the 30HV to the annual average weekday traffic volumes.[4] The average weekday volume is approximately 90% of the 30HV at McVay Highway/30th Avenue and 97% of the 30HV at Highway 99/Goshen Avenue. Using the average weekday volumes, the intersections of McVay Highway/30th Avenue and Highway 99/Goshen Avenue still operate at a v/c ratio greater than 1.0 (proceed to Step 5).

Step 5: For the two remaining intersection that fail to meet mobility targets for average weekday intersection operations, the alternative mobility target is determined based on the duration of the period that the forecasted average weekday PM volumes will exceed capacity. The volumes for each intersection were determined using hourly volumes from ODOT State Highway Vehicle Classification data to determine the proportional amount of the peak hour volumes.[5] These volumes were used to determine the number of hours each intersection would have a v/c ratio greater than 1.0.

Table 3 summarizes the assessment of each study intersection using steps 1 through 5 of the methodology described above.

[4] Average weekday volumes were calculated by applying a growth rate to the existing volumes; see Technical Memorandum #7 – Future Transportation Conditions and Needs for more information.
[5] Hourly volumes were provided by the ODOT Traffic Monitoring Coordinator.

Table 3: Alternative Mobility Target Results (v/c ratio) for Recommended Improvements

Intersection	Existing OHP Mobility Target	Step 1: Compare to Existing Targets	Step 2: Compare to v/c of 0.99	Step 3: Use a PHF of 1.00	Step 4: Use Average Weekday Volumes	Step 5: Duration with v/c ratio over 1.00	Recommended Alternative Mobility Target
		2036 (30 HV) Intersection Operations			*2036 Average Weekday Intersection Operations*		
Signalized Intersection							
McVay Highway/30th Avenue	0.85 v/c	1.45	0.99	1.45	1.31	1.08	Exceeds capacity for 2 hours[1]	v/c ≥ 1.0 for no more than 2 hours
Territorial Highway/OR 126	0.80 v/c	0.84	0.99	0.84[2]	0.80	-		0.80 using PHF of 1.00[2]
Unsignalized Intersection							
Highway 99/Goshen Avenue	0.80 v/c	1.93	0.99	1.93	1.66	1.74	Exceeds capacity for 3 hours[3]	v/c ≥ 1.0 for no more than 3 hours

[1] Based on nearby traffic patterns, the volume of traffic during the third highest hour was estimated to be 91% of the peak volume, resulting in a v/c of 0.92.

[2] Existing operations are close to meeting existing OHP mobility targets; Applying a peak hour factor (PHF) of 1.0 results in a v/c ratio that meets the existing OHP mobility target of 0.80. Based on guidance from ODOT staff, the recommended AMT maintains the existing v/c ratio but adjusts the calculation methodology (as compared to simply increasing the v/c ratio).

[3] Based on nearby traffic patterns, the volume of traffic during the fourth highest hour was estimated to be 78% of the peak volume, resulting in a v/c of 0.91.

Bold/Highlighted: Indicates the intersection fails to meet mobility target.

Recommended Alternative Mobility Targets

The three identified study intersections are expected to fail to meet current ODOT mobility targets under 2036 forecasted volumes and potential funding for transportation solutions is not reasonably likely by 2036. Based on the ODOT Region 2 documented methodology for developing AMTs, the final recommended AMTs are as follows:

Table 4. Summary of Recommended AMTs

Intersection	Existing OHP Mobility Target	Recommended Alternative Mobility Target
McVay Highway/30th Avenue	0.85 for 30 HV Conditions	**v/c ≥ 1.0 for no more than 2 hour**
Territorial Highway/OR 126	0.80 for 30 HV Conditions	**0.80 using a PHF of 1.00**
Highway 99/Goshen Avenue	0.80 for 30 HV Conditions	**v/c ≥ 1.0 for no more than 3 hours**

Impacts of Alternative Mobility Targets

Choosing to implement AMTs may impact the traveling public and surrounding land uses. AMTs are the outcome of a process that determines the best possible alternative solution given all identified constraints. Therefore, alternative mobility targets are not a choice, but an adaptation to a constrained expected reality and the congestion that would occur whether or not an alternative mobility target was established.

There are several positive impacts associated with adopting AMTs. First, AMTs allow for a better balance between the transportation system, economic development, and land use. AMTs can also reduce the burden placed on development interests that are responsible for their proportional share of impacts to the surrounding transportation system. Perhaps most importantly, AMTs help set more realistic expectations for future traffic conditions and mobility objectives that are agreeable to state and local agencies.

Implementation of Alternative Mobility Targets

It is recommended the AMTs be presented to ODOT for discussion and acknowledgement that the existing mobility targets will not be met. If the methodologies and recommendations outlined in the memo are approved, ODOT should request that the Oregon Transportation Commission (OTC) adopt the alternative targets. Once adopted by the OTC, the alternative mobility targets should be referenced in the updated Lane County Transportation System Plan.

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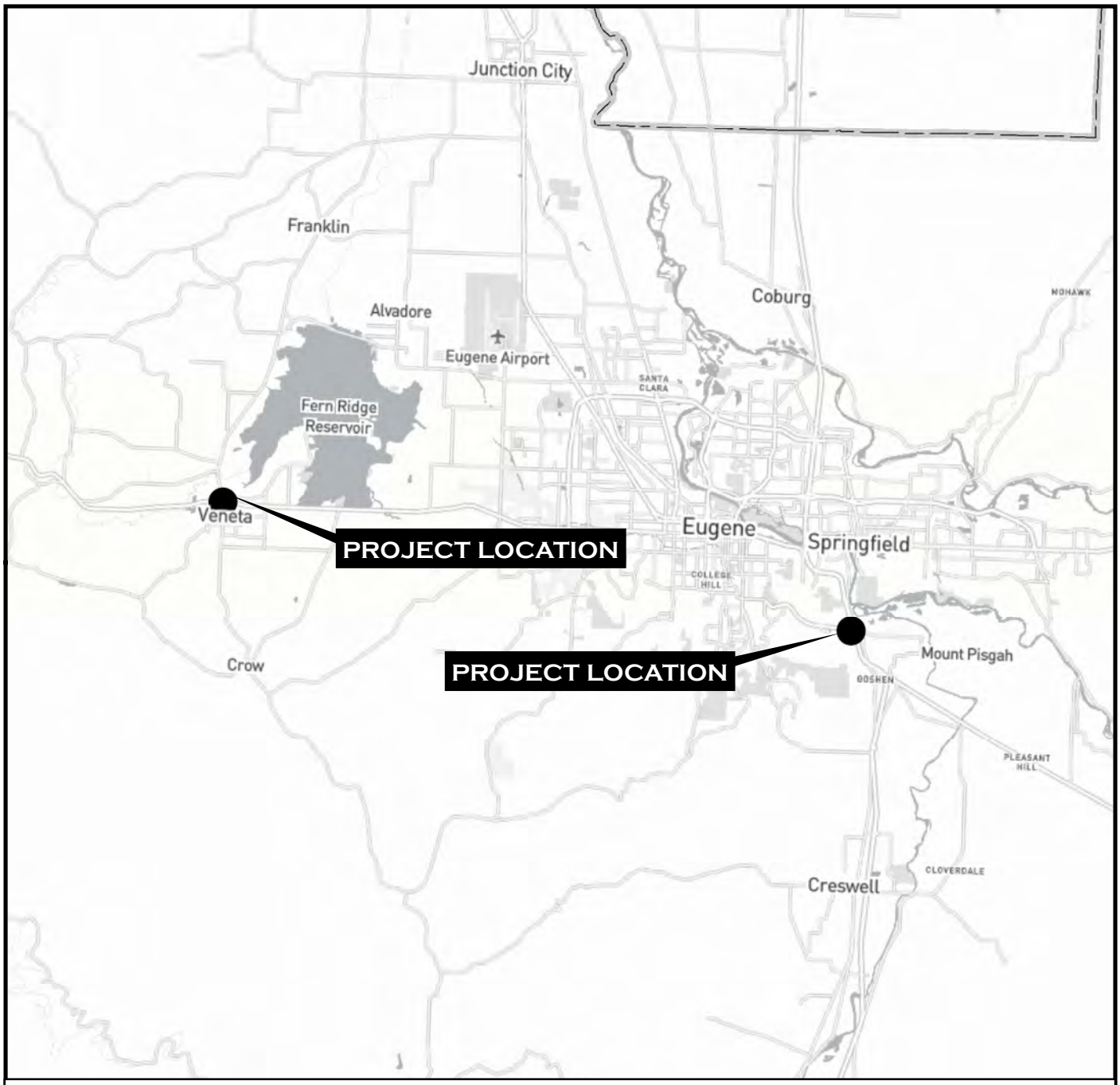
PROJECT LOCATION
ODOT REGION 2



ACT: Lane ACT ***COUNTY:*** Lane ***CITY:*** Veneta / Springfield

LANE 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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PRODUCED BY ODOT - GIS UNIT
ODOTMaps@odot.state.or.us
GIS NO. 23-52
DATE: 2/20/2020

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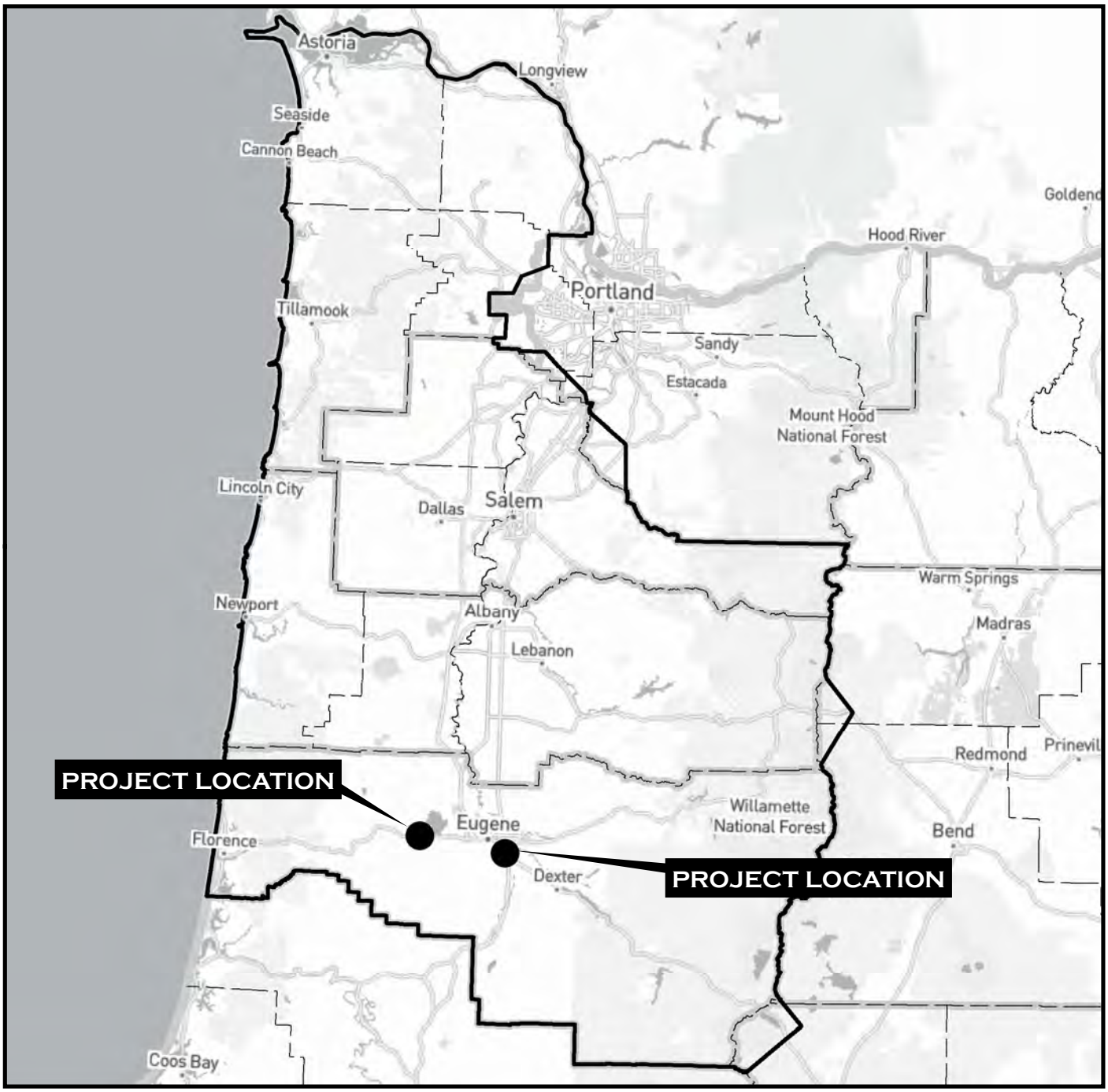
PROJECT VICINITY

ODOT REGION 2



LANE 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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Miles

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DATE: 2/20/2020

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