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MEMORANDUM

## Technical Memorandum #1: Plans and Policy Framework Klamath County Transportation System Plan Update

DATE April 16, 2020 (Revised May 18, 2020)  
TO Project Management Team  
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### OVERVIEW

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This memorandum presents a review of existing plans, regulations, and policies that affect transportation planning in Klamath County.

The review explains the relationship between the documents and the Transportation System Plan (TSP) update process, identifying key issues that have a bearing on the process with a focus on plans and policies that have been adopted or updated since adoption of the current TSP.

This memorandum is intended to guide decisions regarding selection of preferred transportation solutions and identifies potential amendments to related plan documents and regulations, steps that will occur later in the TSP update process.

Some documents included in this review establish transportation-related standards, targets, and guidelines with which the TSP update must be coordinated and consistent with; others contain transportation improvements that will need to be factored into the future demand modeling and otherwise reflected in the draft TSP.

Local policy and regulatory requirements described in this review – such as the Klamath County Land Development Code – may be subject to recommended amendments in order to implement the recommendations of the updated TSP. This memorandum helps set the stage for those potential amendments, which will be prepared as part of project implementation (Task 6).

The following documents were reviewed.

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## STATE PLANS

### Statewide Planning Goals

The foundation of Oregon’s statewide land use planning program is a set of 19 Statewide Planning Goals. The goals express the state’s policies on land use and related topics, such as citizen involvement, housing, and natural resources. Oregon’s statewide goals are achieved through local comprehensive planning, including the development and implementation of TSPs.

All of Oregon’s Statewide Goals have an influence on transportation planning, either directly or indirectly. However only certain Goals directly apply to transportation planning at a local level; the Goals listed in Table 1 are most relevant to Klamath County’s TSP update.

Table 1: Statewide Planning Goals

Statewide Planning Goal	Relevancy to the Klamath County TSP Update
Goal 1: Citizen Involvement	Establishes citizen involvement as the primary goal of the land use planning process in Oregon. The Klamath County TSP Update process is guided by a robust public involvement plan that includes public involvement goals, identified affected and interested stakeholder and target audiences, and critical factors that will gage success. In addition, this project will be guided by project advisory committees that will inform the TSP update throughout the course of the project.
Goal 2: Land Use Planning	Establishes a process and policy framework for all decisions and actions related to uses of land; ensures that such decisions and actions are premised on an adequate factual base. Existing and future transportation needs will be based on inventories of existing conditions in Tech Memo #3, including existing and planned land uses, as well as improving efficient multi-modal connections to housing, public services, employment areas, and recreational opportunities.
Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces	Existing natural resources and environmental features influence the siting, construction, and cost of transportation improvements. Tech Memo #3 will provide inventories of these resources and describe areas within Klamath County that may pose barriers to providing transportation access or improvements.
Goal 7: Natural Hazards	The risk of natural hazards affects site selection and alignment decisions and design standards. Transportation improvement projects in Klamath County should avoid natural hazard areas, such as floodplains, to the extent feasible.
Goal 9: Economic Development	Addresses the need for a variety of economic opportunities in support of the health, welfare, and prosperity of Oregon’s citizens. The TSP Update process should be coordinated with current and planned economic development activities.

<b>Statewide Planning Goal</b>	<b>Relevancy to the Klamath County TSP Update</b>
Goal 10: Housing	Cities are required to anticipate ongoing needs for housing, and to provide adequate infrastructure to serve residential uses. Transportation facilities and project prioritization will be based, in part, on the demands generated by current and projected housing needs.
Goal 11: Public Facilities and Services	Local governments are required to provide adequate public facilities, including transportation facilities, in a timely and efficient manner. The TSP Update will coordinate with or consider the provision of other public facilities consistent with adopted plans.
Goal 12: Transportation	<p>Requires multi-modal transportation plans for transportation service providers that need to:</p> <ul style="list-style-type: none"> <li>• Be based upon factual inventories,</li> <li>• Minimize adverse social, environmental, economic, and energy impacts,</li> <li>• Meet the needs of the transportation disadvantaged,</li> <li>• Facilitate the flow of goods and services, and</li> <li>• Be consistent with related local and regional plans.</li> </ul> <p>As described in more detail elsewhere in this memo, Goal 12 is implemented through the Transportation Planning Rule (OAR 660, Division 12).</p>
Goal 13: Energy Conservation	Land uses must be managed and controlled to maximize the conservation of all forms of energy based upon sound economic principles. In transportation planning, this includes consideration of travel distances (e.g., looking at ways to reduce vehicle miles traveled) and mode share (e.g., modes that can help reduce greenhouse gas emissions).
Goal 14: Urbanization	Requires land within the Urban Growth Boundary to “provide an orderly and efficient transition from rural to urban land use.” Findings regarding the feasibility of providing adequate transportation and other public facilities is required for expansion of UGB’s.

**Project Relevance:** The TSP Update will be consistent with the Statewide Planning Goals.

### **Oregon Transportation Plan (2006)**

The Oregon Transportation Plan (OTP) is the state’s long-range multi-modal transportation plan that addresses the future transportation needs of the State of Oregon through the year 2030. The primary function of the OTP is to establish goals, policies, strategies, and initiatives that are translated into a series of modal plans, such as the Oregon Highway Plan and Oregon Bike and

Pedestrian Plan. The OTP considers all modes of Oregon’s transportation system, including Oregon’s airports, bicycle and pedestrian facilities, highways and roadways, pipelines, ports and waterway facilities, public transportation, and railroads. It assesses state, regional, and local public and private transportation facilities. In addition, the OTP provides the framework for prioritizing transportation improvements based on varied future revenue conditions, but it does not identify specific projects for development.

The OTP provides broad policy guidance and sets seven (7) overarching goals for the state.<sup>1</sup> Through these goals and associated policies and strategies, the OTP emphasizes:

- Maintaining and maximizing the assets in place.
- Optimizing the performance of the existing system through technology.
- Integrating transportation, land use, economic development, and the environment.
- Integrating the transportation system across jurisdictions, ownerships, and modes.
- Creating sustainable funding.
- Investing in strategic capacity enhancements.

The Implementation Framework section of the OTP describes the implementation process and how state multimodal, modal/topic plans, regional and local TSPs and master plans will further refine the OTP’s broad policies and investment levels. Local TSPs can further OTP implementation by defining standards, instituting performance measures, and requiring that operational strategies be developed.

The last chapter of the OTP provides implementation and investment frameworks and key initiatives to be consulted in developing TSP projects and implementation measures.

**Project Relevance:** The OTP’s key initiatives will guide the TSP update, specifically in the areas of system management, maximizing performance of the existing transportation system using technology and creative design solutions, pursuing sustainable funding sources, and investing strategically in capacity projects. Consistent with a central OTP policy, the TSP update will seek to maximize the performance of the existing local transportation system using technology and system management before considering larger and costlier additions to the system.

### **Oregon Highway Plan (1999, last amended 2018)**

The Oregon Highway Plan (OHP) is a modal plan of the OTP that guides planning, operations, and financing for ODOT’s Highway Division. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and

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<sup>1</sup> The seven goals are Goal 1 – Mobility and Accessibility; Goal 2 – Management of the System; Goal 3 – Economic Vitality; Goal 4 – Sustainability; Goal 5 – Safety and Security; Goal 6 – Funding the Transportation System; and Goal 7 – Coordination, Communication, and Cooperation.

local road, bicycle, pedestrian, transit, rail, and air systems. The following policies are relevant to the TSP update process.

*Policy 1A: State Highway Classification System*

The OHP classifies the state highway system into four levels of importance: Interstate, Statewide, Regional, and District. ODOT uses this classification system to guide management and investment decisions regarding state highway facilities. The system guides the development of the facility plans, as well as ODOT's review of local plan and zoning amendments, highway project selection, design and development, and facility management decisions including road approach permits.

- **Statewide Highways** (US-97, OR-39, & OR-140) 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 constrained and urban areas, interruptions to flow should be minimal. Inside Special Transportation Areas (STAs), local access may also be a priority.
- **Regional Highways** (OR-31, OR-39, & OR-138) typically provide connections and links to regional centers, Statewide or interstate Highways, or economic or activity centers of regional significance. The management objective is to provide safe and efficient, highspeed, continuous-flow operation in rural areas and moderate to high-speed operations in urban and urbanizing areas. A secondary function is to serve land uses in the vicinity of these highways. Inside STAs, local access is also a priority. Inside Urban Business Areas, mobility is balanced with local access.
- **District Highways** (OR-62, OR-66, OR-70, OR-422, & OR-429) are facilities of county-wide significance and function largely as county and city arterials or collectors. They provide connections and links between small urbanized areas, rural centers, and urban hubs, and serve local access and traffic. The management objective is to provide for safe and efficient, moderate to high-speed continuous-flow operation in rural areas reflecting the surrounding environment and moderate to low-speed operation in urban and urbanizing areas for traffic flow and for pedestrian and bicycle movements.

*Policy 1C: State Highway Freight System*

The primary purpose of the State Highway Freight System is to facilitate efficient and reliable interstate, intrastate, and regional truck movement through a designated freight system. This freight system, made up of the Interstate Highways and select Statewide, Regional, and District Highways, includes routes that carry significant tonnage of freight by truck and serve as the primary interstate and intrastate highway freight connection to ports, intermodal terminals, and urban areas. Highways included in this designation have higher highway mobility standards than other statewide highways. US-97, OR-39, and OR-140 are designated as freight routes.

*Policy 1D: Scenic Byways*

The primary purpose of Scenic Byways is to preserve and enhance the highway by considering aesthetic and design elements along with safety and performance considerations. Aesthetic and design elements are applied within the public right-of-way through developed guidelines. Plans and projects on highways with this designation should consider impacts to the scenic qualities of the roadway. OR-31 and the Cascade Lakes Highway are designated as National Scenic Routes.

*Policy 1F: Highway Mobility Standards Access Management Policy*

Policy 1F sets mobility standards for ensuring a reliable and acceptable level of mobility on the state highway system. The standards are used to assess system needs as part of long-range, comprehensive planning for transportation projects, during development review, and to demonstrate compliance with the TPR.

Significant amendments to Policy 1F were adopted at the end of 2011. The 2011 revisions were made to address concerns that state transportation policy and requirements have led to unintended consequences and inhibited economic development. Policy 1F now provides a clearer policy framework for considering measures other than v/c ratios for evaluating mobility performance. Also, v/c ratios established in Policy 1F were changed from being standards to “targets.” These targets are to be used to determine significant effect pursuant to TPR Section - 0060.

Table 2 presents mobility targets for the state facilities in the TSP study area.

Table 2: V/C Ratio Targets Outside the Portland Metropolitan Region

VOLUME TO CAPACITY RATIO TARGETS OUTSIDE METRO <sup>17A, B, C, D</sup>							
Highway Category	Inside Urban Growth Boundary					Outside Urban Growth Boundary	
	STA <sup>E</sup>	MPO	Non-MPO Outside of STAs where non-freeway posted speed <= 35 mph, or a Designated UBA	Non-MPO outside of STAs where non-freeway speed > 35 mph but < 45 mph	Non-MPO where non-freeway speed limit >= 45 mph	Unincorporated Communities <sup>F</sup>	Rural Lands
Interstate Highways	N/A	0.85	N/A	N/A	0.80	0.70	0.70
Statewide Expressways	N/A	0.85	0.85	0.80	0.80	0.70	0.70
Freight Route on a Statewide Highway	0.90	0.85	0.85	0.80	0.80	0.70	0.70
Statewide (not a Freight Route)	0.95	0.90	0.90	0.85	0.80	0.75	0.70
Freight Route on a regional or District Highway	0.95	0.90	0.90	0.85	0.85	0.75	0.70
Expressway on a Regional or District Highway	N/A	0.90	N/A	0.85	0.85	0.75	0.70
Regional Highways	1.0	0.95	0.90	0.85	0.85	0.75	0.70
District/Local Interest Roads	1.0	0.95	0.95	0.90	0.90	0.80	0.75

<sup>A</sup> Unless the Oregon Transportation Commission has adopted an alternative mobility target for the impacted facility, the mobility targets in Tables 6 are considered standards for purposes of determining compliance with OAR 660-012, the Transportation Planning Rule.

<sup>B</sup> For the purposes of this policy, the peak hour shall be the 30th highest annual hour. This approximates weekday peak hour traffic in larger urban areas. Alternatives to the 30th highest annual hour may be considered and established through alternative mobility target processes.

<sup>C</sup> Highway design requirements are addressed in the Highway Design Manual (HDM).

<sup>D</sup> See Action 1F.1 for additional technical details.

<sup>E</sup> Interstates and Expressways shall not be identified as Special Transportation Areas.

<sup>F</sup> For unincorporated communities inside MPO boundaries, MPO mobility targets shall apply.

**Policy 1G: Major Improvements**

This policy requires maintaining performance and improving safety on the highway system by improving efficiency and management on the existing roadway network before adding capacity. The state’s highest priority is to preserve the functionality of the existing highway system. Tools that could be employed to improve the function of the state facility include access management, transportation demand management, traffic operations modifications, and changes to local land use designations or development regulations.



After existing system preservation, the second priority is to make minor improvements to existing highway facilities, such as adding traffic signals, or making improvements to the local street network to minimize local trips on the state facility.

The third priority is to make major roadway improvements such as adding lanes to increase capacity on existing roadways. As part of this TSP process, ODOT will work with the County and other stakeholders to determine appropriate strategies and tools that can be implemented at the local level that are consistent with this policy.

#### *Policy 2B: Off-System Improvements*

This policy recognizes that the state may provide financial assistance to local jurisdictions to make improvements to local transportation systems if the improvements would provide a cost-effective means of improving the operations of the state highway system. As part of this TSP update process, ODOT will work with the County and project stakeholders to identify improvements to the local road system that support the planned land use designations in the study area and that will help preserve capacity and ensure the long-term efficient and effective operation of high functional class facilities.

#### *Policy 2F: Traffic Safety*

This policy emphasizes the state's efforts to improve safety of all users of the highway system. Action 2F.4 addresses the development and implementation of the Safety Management System to target resources to sites with the most significant safety issues. The TSP update process will include a county-wide crash analysis to identify sites with a history of fatal and serious injury crashes and identify potential countermeasures to reduce crashes.

#### *Policy 2G: Rail and Highway Compatibility*

This policy recognizes the need to increase safety and transportation efficiency through the reduction and prevention of conflicts between railroads and highway users. Union Pacific (UP), Burlington Northern Santa Fe (BNSF), and Klamath Northern provides rail service through Klamath County.

#### *Policy 3A: Classification and Spacing Standards*

State policy seeks to manage the location, spacing, and type of road intersections on state highways in a manner that ensures the safe and efficient operation of state highways consistent with their highway classification.

Action 3A.2 calls for spacing standards to be established for state highways based on highway classification, type of area, and posted speed. Tables in OHP Appendix C present access spacing standards which consider urban and rural highway classification, traffic volumes, speed, safety, and operational needs. The access management spacing standards established in the OHP are implemented by OAR 734, Division 51, addressed later in this report. The TSP update process will include an analysis of how existing spacing on ODOT facilities compares to these standards.

#### *Policy 4B: Alternative Passenger Modes*

Policy 4B encourages the development of alternative passenger services and systems as part of broader corridor strategies. The policy promotes the development of alternative passenger transportation services located off the highway system to help preserve the performance and

function of the state highway system. Basin Transit Service and the Klamath Tribes (Quail Trail) provide public transportation services in the County. Improving safety, access, and mobility for pedestrians and bicyclists and enhanced connections to transit are objectives of this update process.

#### *Policy 4D: Transportation Demand Management*

This policy supports the efficient use of the state transportation system through investment in transportation demand management (TDM) strategies. Action 4D.1 calls for reducing peak period single-occupancy vehicle travel and to move traffic demand out of the peak period to improve the flow of traffic on state highways. The TSP update process will explore TDM strategies that may be appropriate for Klamath County, including requirements for new development and incentives for employers that can reduce vehicle trips.

**Project Relevance:** OHP policies provide guidance related to the accessibility, mobility, and function of state highways. The TSP planning process will consider policies in the OHP to guide proposed improvements, modifications, or policies that could affect any of the state facilities in the County. The TSP is being developed in coordination with ODOT so that projects, policies, and regulations proposed as part of the TSP will be consistent with the standards and targets established in the OHP related to safety, access, and mobility.

### **Oregon Bicycle and Pedestrian Plan (2016)**

The intent of the Oregon Bicycle and Pedestrian Plan (OBPP) is to create a policy foundation that supports decision-making for walking and biking investments, strategies, and programs that help to develop an interconnected, robust, efficient, and safe transportation system. The OBPP establishes the role of walking and biking as essential modes of travel within the context of the entire transportation system and recognizes the benefit of these modes to the people and places in Oregon.

The OBPP provides direction for what needs to be achieved, including 20 policies and associated strategies designed to help develop, sustain, and improve walking and biking networks. It identifies nine goals based upon the broader goals of the OTP that reflect statewide values and desired accomplishments relating to walking and biking:

- Goal 1: Safety
- Goal 2: Accessibility and Connectivity
- Goal 3: Mobility and Efficiency
- Goal 4: Community and Economic Vitality
- Goal 5: Equity
- Goal 6: Health
- Goal 7: Sustainability
- Goal 8: Strategic Investment
- Goal 9: Coordination, Cooperation, and Collaboration

The OBPP also provides background information related to state and federal law, funding opportunities, and implementation strategies proposed by ODOT to improve bicycle and pedestrian

transportation. It outlines the role that local jurisdictions play in the implementation of the Plan, including the development of local pedestrian and bicycle plans as stand-alone documents within TSPs.

The Oregon Bicycle and Pedestrian Design Guide is the technical element of the Plan that guides the design and management of bicycle and pedestrian facilities on state-owned facilities. It is an appendix to the Highway Design Manual and provides best practices and design guidelines for bicycle and pedestrian facilities.

**Project Relevance:** The policies and design guidance in the OBPP apply to state highway facilities in Klamath County. State policy and design guidance will be considered in evaluating and planning for the TSP's street standards and bicycle and pedestrian system elements. Through this TSP update, the County will work with regional and state agencies to help identify gaps in the regional walking and biking network and prioritize projects accordingly.

## Oregon Public Transportation Plan (2018)

The Oregon Public Transportation Plan (OPTP) is the modal plan of the OTP that provides guidance for ODOT and public transportation agencies regarding the development of public transportation systems. The OPTP is intended to establish common understandings for local, regional, and state agencies by addressing the following:

- Vision and goals for public transportation
- Policy and strategy framework to inform decision making
- Possible priorities under different levels of funding for public transportation
- Opportunities and challenges in investment and implementation
- Positioning public transportation as a key part of Oregon's transportation system

The vision stated in the OPTP is:

*In 2045, public transportation is an integral, interconnected component of Oregon's transportation system that makes Oregon's diverse cities, towns, and communities work. Because public transportation is convenient, affordable, and efficient, it helps further the state's quality of life and economic vitality and contributes to the health and safety of all residents, while reducing greenhouse gas emissions.*

The OPTP establishes and is organized into the following 10 goal areas:

1. Mobility – Public Transportation User Experience
2. Accessibility and Connectivity – Getting from Here to There
3. Community Livability and Economic Vitality
4. Equity
5. Health
6. Safety and Security
7. Environmental Sustainability
8. Land Use
9. Strategic Investment
10. Communications, Collaboration and Coordination

While the OPTP does not recommend exact projects or investments, new efforts and recommended initiatives in planning for transit came with the passage of HB 2017 (Keep Oregon Moving Act) and the establishment of a new dedicated source of funding for expanding public transportation service in Oregon.<sup>2</sup> The Statewide Transportation Improvement Fund, or STIF, provides the impetus for coordinating the prioritization of needed infrastructure. STIF funds are continuously appropriated to finance investments and improvements in public transportation services and may be used for public transportation purposes that support the effective planning, deployment, operation, and administration STIF-funded public transportation programs. STIF funds may be also used as the local match for state and federal funds that also provide public transportation service.<sup>3</sup>

Three key initiatives inform the STIF discretionary funding program:

1. **Public Transportation Plan Integration.** This key initiative promotes an effective, efficient, and seamless public transportation system, building on the need to plan together. The focus of this key initiative is for ODOT to help agencies further integrate their planning activities. Potential activities can include promoting more inclusive planning activities, and maximizing coordination and collaboration between provides, the state, tribes, and local agencies.
2. **Regional and Intercity Service.** This initiative focuses on providing public transit between cities and regions. Examples of activities under this initiative include, research and identify best practices, lesson learns, case studies, and supporting pilot programs.
3. **Public Transportation Technology.** This key initiative focuses on efforts to better understand and effectively use technology to help Oregonians meet routine needs via public transportation and promote a seamless and easy to use system.

The plan suggested local providers and local governments should take the lead on these efforts with potential support from the state. Potential activities include opportunities to evaluate, acquire develop, and share technologies to further research and potentially incorporate into transportation procedures. The OPTP includes the following performance measures to analyze statewide progress and outcomes:

- Statewide public transportation ridership per capita.
- Public transportation revenue hours per capita.
- Cost per boarding for fixed route service (adjusted for inflation)
- Percent of public transportation vehicle fleet that is low-or-zero emission.
- Transit vehicle conditions: percent of public transit buses exceeding useful life.

More information on each performance measure is found on page 95 of the OPTP.

**Project Relevance:** The TSP will consider the needs of the transit system in Klamath County while developing recommended policies and projects related to improving transit service. In addition, representatives of Basin Transit Service will be asked to review the transit related elements of the TSP and advise on transit needs and improvements.

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<sup>2</sup> <https://www.oregon.gov/ODOT/Pages/HB2017.aspx>

<sup>3</sup> <https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=245662>

## Oregon State Rail Plan (2014)

The Oregon State Rail Plan is a state modal plan under the OTP that addresses long-term freight and passenger rail planning in Oregon. The plan provides a comprehensive assessment of the state's rail planning, freight rail, and passenger rail systems. It identifies specific policies concerning rail in the state, establishes a system of integration between freight and passenger elements into the land use and transportation planning process, and calls for cooperation between state, regional, and local jurisdictions in planning for rail.

Union Pacific (UP) and Burlington Northern Santa Fe (BNSF) provides rail service through Klamath County. These are Oregon's only Class I railways, handling most freight traffic, including virtually all interstate shipments and all Amtrak passenger service. Klamath Falls is a stop on one of Amtrak's three routes through Oregon – the Coast Starlight, which stops in Klamath Falls, Chemult, Eugene, Salem, and Portland. In addition, Klamath Northern (KNOR) operates within the County and is the largest non-Class 1 railroad in the County. Non-Class I railroads provide important collector/distributor services for the larger railroads and local rail services for shippers.

**Project Relevance:** The TSP will consider the needs of the freight rail system within the County while developing recommended policies and projects.

## Oregon Aviation Plan V6.0 (2019)

The Oregon Aviation Plan (OAP) is a modal plan of the OTP that defines policies and investment strategies for Oregon's public use aviation system for the next 20 years. The plan addresses the existing conditions, economic benefits, and jurisdictional responsibility for the existing aviation infrastructure. The plan contains policies and recommended actions to be implemented with other state and local agencies and the Federal Aviation Administration.

The OAP categorizes airports based on functional role and service criteria. The study area has one airport: the Crater Lake-Klamath Regional Airport. The airport is classified as a Category I facility (Commercial Service Airport). According to the OAP, commercial service airports typically service a larger geographic area when compared to general aviation airports because people are willing to travel greater distances to access the national air transportation system. Service areas for these facilities were set at a 120-minute drive time.

**Project Relevance:** The TSP update will consider access to the Crater Lake-Klamath Regional Airport in developing its policies and projects.

## Access Management Rule (OAR 734-051) (2014)<sup>4</sup>

Oregon Administrative Rule (OAR) 734-051 defines the State's role in managing access to highway facilities to maintain functional use and safety and to preserve public investment. OHP Policy 3A and OAR 734-051 set access spacing standards for driveways and approaches to the state highway

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<sup>4</sup> Amendments to OAR 734-051 were adopted in early 2014 based on passage of Senate Bill 1024 (2010, Senate Bill 264 (2011, and Senate Bill 408 (2014). The amendments were intended to allow more consideration for economic development when developing and implementing access management rules and involved changes to how ODOT deals with approach road spacing, highway improvement requirements with development, and traffic impact analyses requirements for approach road permits.

system.<sup>5</sup> The most recent amendments presume that existing driveways with access to state highways have written permission from ODOT as required by ORS 734. The standards are based on state highway classification and differ depending on posted speed and average daily traffic volume.

**Project Relevance:** Analysis for the TSP update and final project recommendations will need to reflect state requirements for state facilities; the updated TSP will comply or move in the direction of meeting access management standards for state facilities. Implementation measures that will be developed for the TSP update may entail amendments to the development code to ensure its requirements are consistent with these access management requirements as well as the draft TSP recommendations related to access management.

### Transportation Planning Rule (OAR 660-012) (Last Updated 2012)

The Transportation Planning Rule (TPR), OAR 660-012, implements Goal 12 (Transportation) of the Statewide Planning Goals. The TPR contains numerous requirements governing transportation planning and project development, including the required elements of a TSP. In addition to plan development, the TPR requires each local government to amend its land use regulations (e.g., development code) to implement its TSP (OAR 660-012-0045). It also requires local government to adopt land use or subdivision ordinance regulations consistent with applicable federal and state requirements “to protect transportation facilities, corridors and sites for their identified functions.”

Local compliance with TPR Section -0045 provisions is achieved through a variety of measures, including access control requirements, standards to protect future operations of roads, and notice and coordinated review procedures for land use applications. Local development codes should also include a process to apply conditions of approval to development proposals, and regulations ensuring that amendments to land use designations, densities, and design standards are consistent with the functions, capacities, and performance standards of facilities identified in the TSP.

The TPR does not regulate access management. ODOT adopted OAR 734-051 to address access management and it is expected that ODOT, as part of this project, will coordinate with the County in planning for access management on state roadways consistent with its Access Management Rule. See the review of OAR 734-051 in the previous section.

Amendments to the TPR adopted in 2012 include new language in Section -0060 that allows a local government to exempt a zone change from the “significant effect” determination if the proposed zoning is consistent with the comprehensive plan map designation and the TSP. The amendments also allow a local government to accept partial mitigation for proposed amendments that create the type of desirable jobs that meet the definition in the TPR, where it can be shown that the economic benefits outweigh the negative effects on the impacted transportation facilities. Where a proposed amendment significantly affects a state transportation facility, the local jurisdiction must obtain “concurrence” from ODOT that the economic benefits of the proposal outweigh the negative impacts to the state transportation system.

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<sup>5</sup> ODOT Access Management Standards – OHP Appendix C Revisions to Address Senate Bill 264 (2011): [http://www.oregon.gov/ODOT/TD/TP/docs/ohp\\_am/apdxc.pdf](http://www.oregon.gov/ODOT/TD/TP/docs/ohp_am/apdxc.pdf)

**Project Relevance:** The TPR directs local TSP development and requires specific transportation elements be implemented in the local development ordinance. Local requirements such as access management, coordinated land use review procedures, and transportation facility standards and requirements – consistent with TPR Sections -0045 and -0060 – are meant to protect road operations, enhance safety, and provide for multi-modal access and mobility. They will be reviewed and amendments to them will be updated, as needed, to ensure consistency with the TPR.

## Statewide Transportation Improvement Program

The Statewide Transportation Improvement Program (STIP) is the four-year programming and funding document for transportation projects and programs on state and regional transportation systems, including federal land and Indian reservation road systems, interstate, state, and regional highways, bridges, and public transit. It includes state- and federally funded system improvements that have approved funding and are expected to be undertaken during the upcoming four-year period. The projects and programs undergo a selection process managed by ODOT Regions or ODOT central offices, a process that is held every two years to update the STIP.

The current 2018-2021 STIP includes the following preservation projects in Klamath County:

- All Roads Transportation Safety (Klamath County) - Project number: 20353
- Campus Drive Roundabout (Klamath Falls) - Project number: 22092
- Chiloquin Ridge Area Heavy Trail Restoration - Project number: 22090
- FFO - OR140: Green Springs Intch-K Falls/Malin Hwy - Project number: 18677
- FFO - US97: Passing Lanes - Project number: 19784
- FFO-US97: Sunriver Interchange - OR31 - Project number: 18679
- Klamath Falls safety improvements - Project number: 21317
- Lake Ewauna Trail: Klamath Ave-Spring St - Project number: 18129
- OC&E State Trail - Project number: 20265
- OC&E Woods Line St Trl: crossing safety - Project number: 18331
- OR140 Lake of the Woods - Project number: 20025
- OR140 at OR66 Intersection Improvements - Project number: 20256
- OR140: Brett Way extension (K Falls) - Project number: 18731
- OR140: Brown Creek (Beatty) - Project number: 19678
- OR140: Buck Creek Bridge replacement - Project number: 19208
- OR140: Klamath County Boat Marina - Lakeshore Dr - Project number: 19788
- OR39 @ Esplanade (Klamath Falls) - Project number: 20103
- OR39 at Washburn Way - Project number: 20029
- OR39: Crest Street - Madison Street - Project number: 19261
- OR39: Klamath Falls/Lakeview Jct - Matney Rd - Project number: 18683
- OR58: fix-it corridor culverts - Project number: 20102
- Three Trails Phase 4 - Project number: 21198
- U.S. 97: Corridor Freight Plan - Project number: US97Freigh
- US97 @ OR140 IAMP - Project number: 20171
- US97 Road Weather Management - Project number: 21501

- US97: Algoma Road - Miller Island Road - Project number: 19625
- US97: Link River Bridge NB connection - Project number: 19658
- US97: Midland Hwy - California state line - Project number: 20023
- US97: OR58 - California border - Project number: 20535
- US97: SCL Crescent - Willamette Hwy junction - Project number: 21165
- US97: Spring Creek Hill - Modoc Point - Project number: 20022
- Williamson River Road chip seal - Project number: 20727

**Project Relevance:** The TSP update analysis will take into account projects that are programmed in the STIP. An expected outcome of this planning process is proposed recommendations to amend the STIP to include projects from the updated TSP. Projects recommended in the updated TSP may be eligible for funding through the ODOT Enhance program, which awards funding through a competitive application process.

### ODOT Highway Design Manual (2012)

The 2012 Highway Design Manual (HDM) provides ODOT with uniform standards and procedures for planning studies and project development for the state's roadways. It is intended to provide guidance for the design of new construction; major reconstruction (4R); resurfacing, restoration, and rehabilitation (3R); or resurfacing (1R) projects. It has not been updated since the release of AASHTO's current Policy on Geometric Design of Highways and Streets (2018). Therefore, sound engineering judgment will continue to be a vital part in the process of applying the design criteria to individual projects. The flexibility contained in the 2012 HDM supports the use of Practical Design concepts and Context Sensitive Design practices.

The HDM is used for all projects that are located on state highways. National Highway System or Federal-aid projects on roadways that are under local jurisdiction will typically use the 2018 AASHTO design standards or ODOT 3R design standards. Table 3 shows which design standards are applicable for certain projects based on project type, and if the project involves a state route. State and local planners also use the manual to determine design requirements as they relate to the state highways in TSPs, Corridor Plans, and Refinement Plans. Some projects under ODOT roadway jurisdiction traverse across local agency boundaries; for such facilities, local agencies may have adopted design standards and guidelines that differ from ODOT design standards. Although the appropriate ODOT design standards are to be applied on ODOT roadway jurisdiction facilities, local agency publications and design practices can also provide additional guidance, concepts, and strategies related to roadway design.



Table 3: Design Standards Selection Matrix, ODOT HDM

Project Type	Roadway Jurisdiction, Classification and Standards				
	State Highways			Local Agency Roads	
	Interstate	Urban State Highway	Rural State Highways	Urban	Rural
Modernization/ Bridge New/Replacement	ODOT 4R/New Freeway	ODOT 4R/New Urban	ODOT 4R/New Rural	AASHTO	AASHTO
Preservation/ Bridge Rehabilitation	ODOT 3R Freeway	ODOT 3R Urban	ODOT 3R Rural	AASHTO	ODOT 3R Rural
Preventive Maintenance	1R	1R	1R	NA	NA
Safety- Operations- Miscellaneous/ Special Programs	ODOT Freeway	ODOT Urban	ODOT Rural	AASHTO	ODOT 3R Rural

Source: 2012 ODOT Highway Design Manual, Table 1-1: Design Standards Selection Matrix

The HDM includes mobility standards related to project development and design that are applicable to all modernization projects, except for development review projects (see Table 4). The v/c ratios in the HDM are different than those shown in the Oregon Highway Plan (OHP). The v/c ratio values in the OHP are used to assist in the planning phase to identify future system deficiencies; the HDM v/c ratio values provide a mobility solution that corrects those previously identified deficiencies and provides the best investment for the State over a 20-year design life.

Table 4: 20-Year Design Mobility Standards (Volume/Capacity [V/C]) Ratio

Highway Category	Land Use Type/Speed Limits					
	Inside Urban Growth Boundary				Outside Urban Growth Boundary	
	STAs	MPO	Non-MPO outside of STAs where non-freeway speed limit <45 mph	Non-MPO where non-freeway speed limit >= 45 mph	Unincorporated Communities	Rural Lands
Interstate Highways and Statewide (NHS) Expressways	N/A	0.75	0.70	0.65	0.60	0.60
Statewide (NHS) Freight Routes	0.85	0.75	0.70	0.70	0.60	0.60
Statewide (NHS) Non-Freight Routes and Regional or District Expressways	0.90	0.80	0.75	0.70	0.60	0.60
Regional Highways	0.95	0.85	0.75	0.75	0.70	0.65
District/Local Interest Roads	0.95	0.85	0.80	0.75	0.75	0.70

Notes:

- Interstates and Expressways shall not be identified as Special Transportation Areas (STAs).
- The peak hour is the 30th highest annual hour. This approximates weekday peak hour traffic in larger urban areas.
- MPO category includes areas within the planning boundaries of the Bend, Corvallis, Eugene/Springfield, Medford, Portland (METRO) and Salem/Keizer Metropolitan Planning Organizations, and any other MPO areas that are designated after the completion of this manual.

Source: 2012 ODOT Highway Design Manual, table 10-2: 20 Year Design-Mobility Standards (Volume/Capacity) Ratio

**Project Relevance:** The ODOT HDM provides design standards on state roadways; Statewide and MPO standards are not directly relevant to the Klamath County area although can be considered for additional guidance, concepts, and strategies for future design of roadways there.

## US 97 Freight Plan (2018)

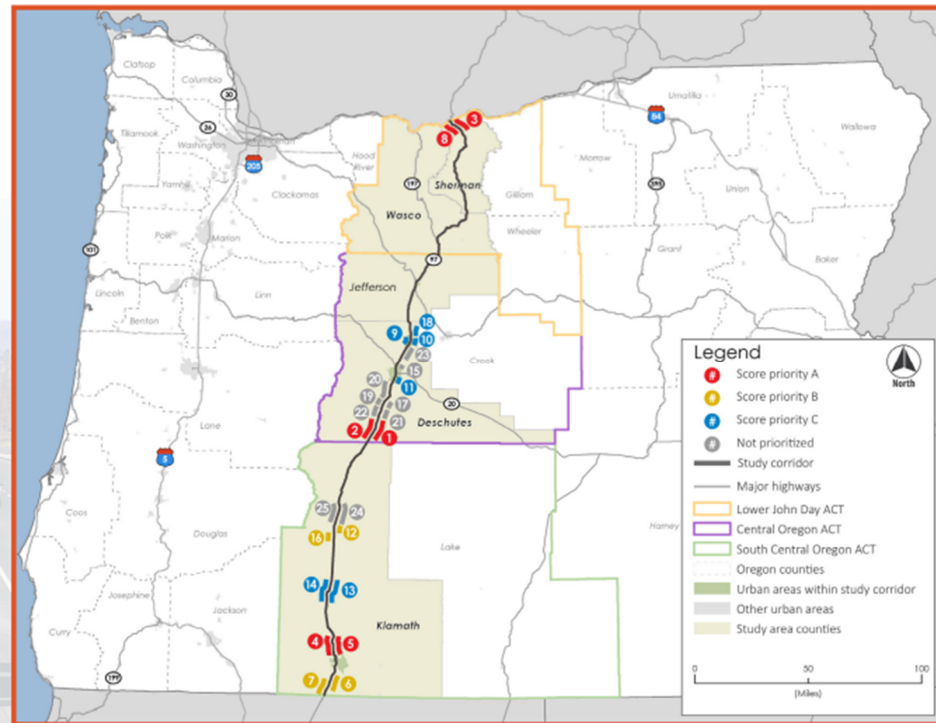
The US 97 Freight Plan was developed over two phases. The first phase was completed in 2017 and resulted in key findings around the design, performance, and amenities in the corridor.

Phase 2 completed a series of surveys, current and forecasted needs evaluation, and project prioritization to develop solutions for the corridor. The solutions primarily addressed safety and mobility improvements, including:

- Widening of paved shoulders
- Turn lane and other intersection improvements
- Dynamic speed feedback signs
- Lighting (intersection and segment)
- Flashing beacons
- Climbing or passing lane extensions

A summary of the projects and prioritization is displayed in Figure 1 below.

Figure 1: US 97 Freight Study Solutions



The projects identified in the Freight Plan that are located in Klamath County are summarized below. Additional project details such as cost summaries and prioritization can be found in Technical Memorandum #3: Investment Strategy.

*Solution 4 & 5: Install Dynamic Feedback Sign for Curves. Install Widened Paved Shoulders by 3 ft.*

*Solution 6 & 7: Increase Pavement Friction by Installing High Friction Surface Treatment. Install Dynamic Feedback Sign. Install Widen Paved Shoulder by 3 ft. Along north segment,*

*consider treatments that would warn drivers of conflicts at unsignalized intersections. Provide Actuated Flashing Beacons Triggered by Approaching Vehicles at Unsignalized Intersections.*

*Solutions 12 & 16: Treatments to address travel speed approaching intersections and intersection improvements near Chiloquin Camp Road and Volcanic Scenic Byway*

*Solutions 13 & 14: Treatments near MP 244 to alert drivers of intersection conflicts.*

*Solutions 24 & 25: US 97 Passing Lanes*

**Project Relevance:** The TSP update process will review recommended projects from the US 97 Freight Plan to determine what needs to be incorporated into the updated TSP. Projects identified in the plan will need to be factored into the TSP update as potential projects or modeled into future demand analysis.

## LOCAL PLANS

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### **Klamath County Comprehensive Plan (Adopted 1984, Revised 2003)<sup>6</sup>**

The Klamath County Comprehensive Plan is a long-range planning guide for unincorporated County areas. Its goals, policies, and implementation provide direction on transportation system and land use decision-making in the County, consistent with Statewide Planning Goals.

The transportation policies in the adopted Comprehensive Plan are established under Goal 12: Transportation and are included below. Note, Policy 7 was modified as part of the 2010 Klamath County Transportation System Plan adoption ordinances but are not shown in the Comprehensive Plan.

- 1. POLICY: A transportation facilities plan and an official map for highways, arterials, and collectors shall be prepared that are consistent with the Klamath Falls Urban Growth Boundary.*
- 2. POLICY: New, self-contained neighborhood commercial centers shall be encouraged. Such centers should be scaled to the immediate needs of surrounding development and shall be designed to serve the needs of the development so as not to undercut the regional function of existing commercial districts, if applicable.*
- 3. POLICY: Patterns of development that generate significant traffic across grade-level railroad crossing shall be avoided whenever possible.*

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<sup>6</sup> Note, the Comprehensive Plan document was last revised in 2003, however, the Klamath County 2010-2030 Transportation System Plan that was adopted in 2010 includes ordinance language that modifies elements of the Comprehensive Plan.

4. *POLICY: The County shall encourage the extension of rail lines to serve major industrial developments, provided that such rail lines do not disrupt auto traffic or transport hazardous cargoes through residential areas.*

5. *POLICY: The width and spacing of driveways along arterials shall be restricted. Where necessary, turning lanes cut out of abutting property or the construction of parallel frontage roads shall be required, if adequately proven to be necessary by the governing body or agency.*

6. *POLICY: Higher density residential development should when feasible, be located within walking distance (1,000 feet to one quarter mile) of major arterials.*

7. *POLICY: The County shall encourage local governments to improve the convenience and safety of pedestrian and bicycle transportation.<sup>7</sup>*

8. *POLICY: The Country shall encourage existing airports to be maintained and improved, and encourage the development of additional airports as needed.*

9. *POLICY: The County shall avoid new road alignments, whenever reasonably feasible, that divide farm lands into uneconomic farm units.*

10. *POLICY: Height and use of structures within the approach and departure zones designated for the Klamath Falls Municipal Airport in the 1976 Airport Master Plan shall be limited (Arnold Thompson Associates, Inc., Master Plan, Klamath Falls Municipal Airport, April, 1976); specifically:*

11. *POLICY: A safe, convenient and economic transportation system, adequate to serve anticipated growth, shall be developed that will minimize adverse social, economic and environmental impacts and costs of the transportation systems.*

12. *POLICY: The County shall establish protection zones (clear zones) for all State-owned airports.*

**Project Relevance:** The TSP update process will evaluate existing transportation goals and policies as to whether they are still applicable and reflect community needs. In addition to updated goals and policies, implementation of the TSP may prompt other policy-level changes in areas related to transportation, including economic development and land use.

## **Klamath County 2010-2030 Transportation System Plan (2010)**

The Klamath County 2010-2030 Transportation System Plan (TSP) establishes the County's goals and objectives for developing and improving the transportation system through the year 2030. It includes transportation-related issues for unincorporated areas within the County as well as the

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<sup>7</sup> The Klamath County 2010-2030 Transportation System Plan includes ordinance language that replaces Goal 12 – Policy 7 with the following language: *In coordination with private developers, local governments and the Oregon Department of Transportation (ODOT), shall encourage appropriate improvements to improve the convenience and safety of pedestrian and bicycle transportation throughout the County.*

incorporated cities of Chiloquin, Bonanza, Merrill, and Malin. The TSP is an adopted element of the Comprehensive Plan and is designed to meet federal and state requirements for system planning.

The TSP includes rural roadway standards, access management guidelines, transportation system management measures, modal plans, a finance plan, and an implementation plan. The modal plans address improvements to meet the needs of all transportation modes appropriate to Klamath County and include:

- Road Improvement Alternatives
- Freight Improvement Alternatives
- Bicycle/Pedestrian Network Improvements
- Public Transportation Alternatives
- Future County Projects

Improvement alternatives are primarily intended to improve safety and mobility for the County's primary roadways. Road improvement projects are organized by roadway facility. Figure 7-3 illustrates and lists road improvement and freight-related improvement projects. Figure 7-4 illustrates and lists bicycle and pedestrian improvement projects. Table 8-4 lists the road, freight, and bicycle/pedestrian projects along with their associated project costs.

The Public Transportation Alternatives modal plan provides general recommendations for orienting future transit service. They include:

- Klamath Tribes in Chiloquin
- Parks and athletic fields, and senior housing facilities
- OR 140 as Ridge Water and other development occur
- Park-and-Ride lots

The TSP also identified County projects that are more conceptual in nature and considered beyond the 20-year planning horizon of the TSP. The TSP recommends the projects be carried forward for future consideration as updated to County plans occur. The future County projects are not illustrated in figures or table. The TSP provides individual project descriptions.

The TSP establishes a set of standards for the design and management of County roads, primarily based on functional classification designations; typical street design standards are provided in Table 7-1.<sup>8</sup> Access management standards are established along all state highways according to highway classifications and provided in Tables 7-2 through 7-4. County road access management standards are established in Table 7-5.

**Project Relevance:** The TSP update process will review the goals, objectives, standards, and recommended projects from the County's existing TSP to determine what needs to be retained or changed in the updated TSP. This planning process will update recommended transportation improvement projects for all modes, based on existing and projected needs. It will also be coordinated with, and reflect the outcomes of, the ongoing Transportation Safety Action Plan (TSAP) work. Updated

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<sup>8</sup> Street design standards have been implemented in the County's Land Development Code.

data, stakeholder and community involvement, and evaluation criteria (see Technical Memorandum #2) will be used in making these recommendations.

## **Klamath Falls Urban Area Transportation System Plan Update (2012)**

The Klamath Falls Urban Area Transportation System Plan was developed jointly by the city of Klamath Falls and Klamath County. The plan is intended to guide the management and implementation of transportation facilities, policies, and programs within the Klamath Falls urban growth boundary (UGB). It addresses unincorporated County areas within the UGB.

The plan includes modal plans for Roadway (Section 4), Pedestrian Facilities (Section 5), Bicycle Facilities (Section 6), Transit System (Section 7), and Rail, Air, Pipeline and Surface Water Plans (Section 8).

All the modal plans document projects to address known and forecasted deficiencies. Projects are organized by mode and do not distinguish between jurisdictional authority. Table 4-1 identifies planned roadway improvements. Table 5-1 identifies planned pedestrian projects. Table 6-1 identifies planned bicycle and multi-use pathway projects. Table 7-1 identifies transit projects. In addition, Section 9 identifies “Vision Projects” that have an identified need but were not identified as a need within the TSP planning horizon. Detailed project descriptions and complete cost estimates are provided in Appendix 1D and 1E respectively.

In addition, the Roadway Facility Plan identifies policies and strategies to manage the transportation system. It establishes a “level of service” (LOS) standard of “E” for unsignalized intersections and LOS standard of “D” for signalized intersections. The Roadway Facility Plan does not establish a uniform set of street section standards between the city and the County. Tables 4-2 and 4-3 identify access spacing standards that apply to both city and County roadways.

Section 10 provides an analysis and summary of funding sources to finance the identified transportation system improvements.

Section 11 includes implementation ordinances, including specific changes to local zoning policies.

**Project Relevance:** Projects and policies identified in the Klamath Falls Urban Area TSP that are under Klamath County’s jurisdiction will need to be factored into the TSP update as potential transportation projects or modeled into future demand analysis. After the conclusion of the County’s planning process, and to the extent necessary, it is expected that projects in the Urban Area TSP will be modified to be current and consistent with the updated Klamath County TSP.

## **Green Springs Oregon 66 Interchange Area Management Plan**

The Green Springs OR 66 Interchange Area Management Plan (IAMP) identifies the location and design of future interchange modifications to improve the operation of US 97, OR 66, and OR 140 at the southwest edge of Klamath Falls. The plan includes the following:

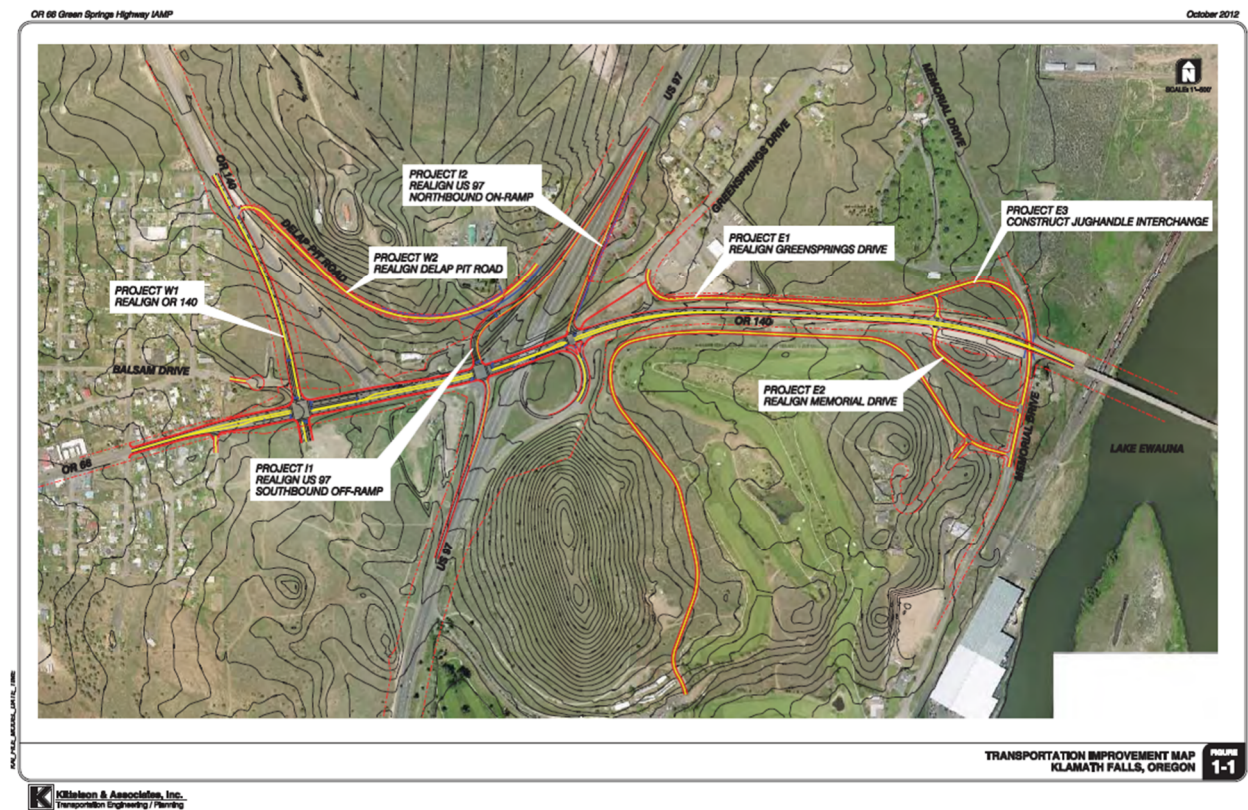
- Realigns roads, lists projects, and outlines phases for future interchange modifications and associated streets and intersections to allow efficient local street connectivity;



- Identifies current accesses to the highways that will need to be relocated, consolidated or closed;
- Links land uses in the surrounding area to the capacity of the improved transportation system;
- Describes coordination efforts between ODOT, local agencies, and affected stakeholders;
- Amends the local comprehensive plans and transportation plans by reference to realign roads in the IAMP study area; and,
- Identifies IAMP review issues and coordination between ODOT and local agencies.

Figure 2 illustrates the preferred alternative.

Figure 2: Green Springs IAMP Transportation Improvement Map



(Source Figure 1-1, OR 66 Green Springs Highway IAMP)

**Project Relevance:** Recommended IAMP projects and access management measures will be considered during the future conditions and project alternatives evaluation tasks of the TSP. Where appropriate, they will be incorporated into the TSP’s recommended policy amendments and project list to support the preferred transportation system.



## Airport Master Plans

### Klamath Falls Airport Master Plan (2004)

The purpose of the Klamath Falls Airport Master Plan is to identify necessary airport improvements to serve current and projected aviation demand over a 20-year planning horizon. The plan identifies a series of facility requirements to provide for improved safety, efficient operations, and enhanced services. The plan identifies a Capital Improvement Plan for the airport, along with potential funding resources. The Capital Improvement Plan is organized with near-term improvements (2005-2009) and long-term improvements (through the planning horizon).

- Construct Realigned Terminal Access Road— Project involves the construction of a realigned access roadway to avoid railroad crossings at Washburn Way and Joe Wright Road. The realigned road will also support National Guard vehicular traffic entering the base at the proposed main gate/base entrance area.
- Terminal Loop Road and Parking Improvements— Project includes the demolition of the existing airport maintenance building, realignment of the terminal loop road to expand the parking area, cul-de-sac construction, and landscaping. At the conclusion of the project, traffic flow will be improved for each primary group using the roads: airline passengers, National Guard personnel/visitors, general aviation, and non-aviation/corporate employees.
- East Access Roadway Connection(s)— As presently envisioned, the project would connect the airport's east side to a future road network associated with a revised Homedale/Southside Bypass Interchange. Roadway improvements in the vicinity would likely stimulate aviation and non-aviation development both on and off airport. If necessary, an east-side roadway connection to Homedale Road can be completed without the construction of the proposed interchange between Homedale Road and the Southside Bypass.

### Crater Lake Klamath Regional Airport Master Plan (in progress)

The Crater Lake Klamath Regional Airport Master Plan is currently in development and will replace the 2004 Klamath Falls Master Plan once adopted. The following draft chapters of the Master Plan are available:

- Chapter 1: Airport Inventory
- Chapter 2: Aviation Forecast
- Chapter 3: Airport Facility Requirements

The Master Plan will include additional information that address airport improvement alternatives, airport capital improvements and the preferred airport layout drawings. The updated Master Plan is scheduled to be complete in July 2020.

**Project Relevance:** The TSP update planning process will be coordinated with the planning currently underway on the Crater Lake-Klamath Regional Airport masterplan. Needed improvements to the County roadway system that support airport operations will be identified as part of the TSP update.

## **Klamath County Land Development Code**

The Klamath County Land Development Code (Code) regulates development within unincorporated Klamath County and implement the Klamath County Comprehensive Plan. The Code contains several sets of requirements that address the relationship between land use development and transportation system development. Most of the transportation-related provisions are provided in Chapter 70 – Public Works Department Development Standards. Those requirements are discussed below and address access and connectivity, design standards, traffic impact analysis, and parking.

### **Street Access and Connectivity**

Standards for street access and connectivity are provided in Article 71 (Vehicular Access and Circulation) of the Code. Section 71.020 provides access spacing standards for County roads based on street functional classification. It also provides reference to ODOT access spacing standards for access to state highways and city of Klamath Falls spacing standards for access in the city's UGB.

In addition, access management standards are also provided in Article 59.9 (OR 66 Green Springs Hwy IAMP). The standards apply additional approval criteria for granting access permits.

### **Pedestrian and Bicycle Access and Connectivity**

Standards for non-vehicular and connectivity are provided in Article 71 (Vehicular Access and Circulation). Section 71.190 provides non-vehicular access and circulation standards for new commercial, light industrial, and multi-family residential development. It prescribes walkway connection and design standards.

### **Street Design Standards**

Standards for street designs are provided in Sections 71.030 (General Roadway Design Standards), 71.040 (Minimum Right-of-Way Widths), 71.050 (Improvements in the Klamath Falls Urban Area), and 71.060 (Improvements Outside the Klamath Falls Urban Area). The standards define minimum rights-of-way and dimensional requirements for street design elements that are applicable to land partitions, subdivisions, and other affected development. The provisions also apply additional standards that are applicable to street improvements based on whether its inside or outside the Klamath Falls Urban Area.

### **Parking**

Off-street parking standards are provided in Article 68 (Off-street Parking and Loading). The article establishes the minimum number of off-street parking spaces required for all buildings, structures, developments, and land uses. The article also establishes other use and design standards for parking, such as lighting and dimensions. The Code does not establish a maximum number of parking spaces.

### **Performance Standards and Traffic Impact Studies**

Traffic Impact Study provisions are established in Section 71.200 (Traffic Impact Study) of the Code. The provisions include applicability standards, submittal requirements, review criteria, and approval conditions.

## Coordinated Application Review

Section 22.020 (Rules of Procedure) allows for a consolidated review procedure whereby an applicant may apply one time for all permits or zone changes needed for a development project.

## TPR Compliance

Section 20.040 (Conditions of Approval) provides any review body the authorization to impose conditions of approval as necessary to assure compliance with the Transportation Planning Rule (TPR). In addition, Section 47.030 (Change of Zone Designation), 48.030 (Change of Comprehensive Plan Designation), and 49.030 (Klamath County Comprehensive Plan, Land Development Code, or Zoning Map Amendments) establishes review criteria that require compliance with the TPR.

## Airport Overlay

The Code includes three Articles addressing airport overlays in the County. Articles 58 and 58.2 include the Airport Safety Overlay and Airport Noise Overlay, respectively, that apply to Klamath Falls Airport.<sup>9</sup> Article 58.4 addresses the airport safety overlay zone for other airstrips within the County.

The overlay zones are intended to preserve and reduce conflict between the airport and surrounding uses. The Articles restrict the types and intensity of uses to those that are compatible with the airport.

**Project Relevance:** Amendments to code provisions related to pedestrian and bicycle access and connectivity, transit access, traffic impact analyses, and parking standards may be recommended as part of this planning process to implement the updated TSP, ensure consistency between the code and TSP, and strengthen compliance with the TPR.

## Klamath County Department of Public Works Standards Drawings (2009)

The Klamath County Public Works Department's street construction drawings are provided in Appendix A of the Land Development Code. The drawings illustrate the minimum specifications allowable for roads constructed in the County's jurisdiction. The appendix includes street cross-section standard drawings for Collector, Local, Residential, Gravel, and Graded roads. The appendix does not include cross-section standard drawings for Arterial roads.

**Project Relevance:** Amendments to Public Works Standards Drawings may be recommended as part of this planning process to implement the updated TSP, ensure consistency between the code and TSP, and strengthen compliance with the TPR.

## Transportation Budget

The County's Public Works Department is responsible for the operation and maintenance and repair of the County's network of public roadways. Between 2008 to 2018, the Public Works Department's

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<sup>9</sup> Note, the Code refers to the Klamath Falls Airport as Kingsley Field.

yearly expenditures have averaged between \$10 and \$11 million. Most of the department's expenditures go towards repair and maintenance, with the largest single expenditure category being chip seal repairs. Capital road project expenditures have historically averaged between \$0.8 and \$0.9 million per year.

### **2019-2020 Adopted Budget**

The Klamath County Adopted Budget for fiscal years 2019-2020 provides the financial plan for the County over the next year. The Adopted Budget includes major programs, departments/funds, and in limited cases, subprograms.

The major programs are grouped into eight categories and include General Government, Agricultural Services, Community and Economic Development, Community Services, Human Services, Internal Support, Public Safety, and Public Works. The Public Works program provides the community with maintenance and construction of roads within the County. It also includes maintenance and construction of bicycle trails.

The Public Works department budget also includes a capital outlay for items or projects. The relevant capital outlay projects for the TSP include bridge construction for two projects: Joe Wright Road, W Langell Valley Road and the Matney and Gift bridges; and the Ivory Pine Design and Campbell Bridge repair and design. The capital outlay also includes more general items such as rights-of-way and railroad crossing or traffic signals.

**Project Relevance:** The TSP update will estimate the total costs of identified needed improvements and assess funding needed to implement the improvements. The TSP will identify projects that are reasonably likely to be funded within the time horizon of the plan; projects for which funding is not anticipated are identified as "vision" projects. The updated TSP will consider the department's current revenue levels, non-capital expenditures, anticipated short-term capital projects, and potential future revenue sources in developing the funding plan. It will also explore potential revenue sources that the County may wish to pursue in the future.

## **Klamath County Transit Plans**

### **Basin Transit Service Transit Development Plan (2013)**

Basin Transit Service (BTS) provides fixed-route and on-demand transit service within the Klamath Fall urban area. The Transit Development Plan (TDP) guides transit planning through a variety of possible future scenarios. The TDP identifies several transit alternatives; detailed descriptions are provided in Section 5 of the TDP. Table 5-4 summarizes transit alternatives for existing routes based on potential events. Table 5-5 summarizes scenarios for expansion of transit service within the existing area based on the potential development of vacant land. The also TDP identifies potential areas where BTS can expand existing transit service and provide new service. They include Keno, Shield Crest, and Running Y.

## **Basin Transit Service and Klamath Tribes Coordinated Human Services Public Transportation Plan (2016)**

The Coordinated Human Services Public Transportation Plan documents existing transit service within Klamath County and identifies opportunities to address unmet needs and improve service efficiency. Transit agencies are required to have a coordinated planning process to be eligible recipients of the Federal Transit Administration’s Section 5310 program and the State’s Special Transportation Fund (STF).

Multiple existing public transportation services are provided in the County. The three providers that receive STF include:

- Basin Transit Service (BTS). Provides service throughout Klamath Falls urban area.
- The Klamath Tribes (Quail Trail Public Transit). Provides regular service trips between Chiloquin and Klamath Falls.
- Klamath Basin Senior Center (Senior Center). Provides on-call transit within the greater Klamath Falls area.

The recommended improvements included in the plan are intended to enhance existing service and provide streamlined operations. The recommendations do not identify specific changes to route services or locations. Among its list of recommendations are to improve access to medical services and to coordinate with transit providers in Deschutes County to expand service in Deschutes County areas.

**Project Relevance:** The updated public transportation element of the TSP will be consistent with the Transit Development Plan and Coordinated Human Services Public Transportation Plan. Generally, the TSP will recommend projects and policies that are supportive of the vision, goals, and implementation measures for enhancing the regional transit system. Transit service is limited in many parts of the region currently, however demographic changes and population growth will drive greater demand in the future. Projects and policies in the Klamath County TSP should be integrated with the transit plans to maximize opportunities for increasing transit ridership and transportation options, in accordance with statewide transportation planning policies.

## **Klamath County Intelligent Transportation System Plan (2016)**

The Klamath County Intelligent Transportation System (ITS) Plan reviews strategies to improve the safety, operation, and efficiency of the roadway network through system management and operation techniques. ITS strategies focus on improving the operations of existing infrastructure, which is typically a lower cost solution than simply building additional capacity.

The key goals of the ITS Plan are to “improve the safety and efficiency of the transportation system, improve multi-modal traveler information, and to improve partnerships between agencies that operate the transportation network.” The ITS Plan focuses on improving the operations and safety of the County roadway network. It includes a Deployment Plan and a Communication Plan to guide implementation. The Deployment Plan includes a prioritized list of 43 ITS strategies, organized into six categories. The categories are below, with the highest priority strategies listed under each.

- **Traffic Operations and Management**
  - Connect all of the traffic signals in Klamath County to the ODOT central signal system
  - Connect existing cameras to the ODOT TripCheck system and install additional cameras
  - Install variable message signs at key locations, mostly along US 97
  - Install enhanced pedestrian crossings
  - Install bicycle and pedestrian detection and counters at select locations
- **Weather Event Management**
  - Install additional road weather information systems (RWIS) and ice detection systems
  - Install automated changeable snow zone signs
- **Maintenance and Construction Management**
  - Improve telematics technology on fleet vehicles
- **Emergency and Incident Management**
  - Connect the 9-1-1 Dispatch Center direction with ODOT and OSP
  - Develop traffic incident management (TIM) team
  - Improve interoperable communication procedures
  - Implement situational software
- **Public Transportation Management**
  - Improve real-time transit information
  - Automate transit vehicle on-board data tracking and logging
- **Freight Management**
  - Provide truck signal dilemma zone protection at key signalized intersections
  - Automate freight restriction notifications to drivers
  - Provide real-time truck parking availability information for truck parking facilities

The Communications Plan is a framework for determining how best to connect the ITS devices to the transportation network.

**Project Relevance:** The updated County TSP should be consistent with or, where necessary, update the ITS Plan's goals, objectives, and high priority ITS strategies. To the extent that projects have not been implemented, the TSP update process will review the deployment strategy, location, type, benefit, and cost to determine which projects continue to meet updated TSP objectives.

### **Klamath Falls Urban Trail Master Plan (2016)**

The Klamath Falls Urban Trail Master Plan was developed collaboratively between the City of Klamath Falls and Klamath County. It provides investment guidance for the urban trail system and connections to nearby facilities and activity centers. It addresses unincorporated County areas within the UGB.

The Master Plan includes the following elements:

- Projects

- Policies
- Programs
- Future Studies

Figure 3-3 and Table 3-2 provide the location and list of prioritized projects, policies, and programs that are intended to improve the existing trail system and how the bicycle/pedestrian system connects to it. Individual project prospectus sheets are provided following Table 3-2 and include project details, including jurisdictional responsibility.

**Project Relevance:** To the extent that projects and policies apply to unincorporated County The TSP update will consider how the findings and recommendations of the plan influence County pedestrian and bicycle policies, the identification and prioritization of trail projects, and the pedestrian and bicycle modal plans.

### Safe Routes to School Master Plan (2018)

The Klamath Falls Safe Routes to School (SRTS) Master Plan identifies improvement projects and programs to promote safe walking and bicycling conditions to elementary and junior high/middle schools within Klamath Fall's UGB, including unincorporated County areas. It prioritizes walking and biking routes within a one-mile radius of the schools for the Klamath Falls city School District and Klamath County School District that are within the UGB. Figures 8 through 12 illustrate the prioritized sidewalk and crossing improvements for individual schools within the Klamath County School District. Tables 13 through 22 provide prioritized project summaries and costs for individual schools respectively. Table 23 provides an overall improvement cost summary for all schools.

**Project Relevance:** Projects identified in the Safe Routes to School Master Plan that involve transportation facilities under Klamath County's jurisdiction will need to be factored into the TSP update as potential transportation projects or modeled into future demand analysis.