MEMORANDUM

Technical Memorandum 1: Plans & Policy Review
Deschutes County Transportation System Plan Update

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TO	Deschutes County TSP Update Project Management Team
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I. OVERVIEW

This memorandum reviews existing plans, regulations, and policies that affect transportation planning in Deschutes County. The review explains the relationship between the documents and planning within the County, identifying key issues that will guide the Transportation System Plan (TSP) update process. This memorandum is intended to guide later decisions regarding the development and selection of preferred transportation solutions and necessary amendments to related plan documents and regulations.

Some documents included in this review establish transportation-related standards, targets, and guidelines with which the TSP update must coordinate and be consistent with; others contain transportation improvements that will need to be factored into the future demand forecasting and otherwise reflected in the updated TSP. Regional policy and regulatory requirements described in this review, such as the Deschutes County Code, may be subject to amendments in order to implement the recommendations of the updated TSP; this memorandum helps set the stage for those potential amendments.

Key findings include the following:

- Significant updates to the Oregon Bicycle and Pedestrian Plan were adopted in 2016 and the Deschutes TSP update can benefit from incorporating new state policy.
- Several regional coordination plans, focused on Deschutes County or Central Oregon, have been adopted to promote a safer and more connected system that leverages technology. Those plans include the Central Oregon Coordinated Human Services Transportation Plan (2018), Deschutes County Intelligent Transportation System Action Plan (2019), and Deschutes County Transportation Safety Action Plan (2019).

- For other local plans, to the extent that policies, standards, and recommendations therein have an impact on the transportation system, these will be considered for consistency as part of this TSP update.

The following plans were reviewed and are summarized in this memorandum.

II. STATEWIDE PLANS

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 overarching goals for the state.[1] 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 policies and strategies will guide the TSP update planning process, specifically in the areas of system management, maximizing performance of the existing transportation system using technology and creative

[1] 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.

design solutions, integrating multimodal options, 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 Oregon Department of Transportation's (ODOT's) Highway Division in planning, operations, and financing. 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 local road, bicycle, pedestrian, transit, rail, and air systems.

The following OHP 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 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, US 20, and OR 126) 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.
- **Regional highways** (OR 31) typically provide connections and links to regional centers, Statewide or Interstate highways, or economic or activity centers of regional significance. The management objective for these facilities is to provide safe and efficient, high-speed, 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.
- **District highways** (OR 370) 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, US 20, and OR 126 are designated as state freight routes.

Policy 1D: Scenic Byways

Several highways throughout the state have been designated Scenic Byways which have exceptional scenic value. To protect the scenic assets of its Scenic Byways, ODOT has developed guidelines for aesthetic and design elements within the public right-of-way that are appropriate for Scenic Byways. The Cascade Lakes National Scenic Byway, US 20 north of Sisters, OR 242 west of U.S. 20, and OR 31 south of US 97 are all designated National Scenic Byways.

Policy 1F: Highway Mobility Policy

Policy 1F sets mobility targets 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, and transportation planning projects (such as a TSP), during development review, and to demonstrate compliance with the TPR.

Significant amendments to Policy 1F were adopted at the end of 2011. These most recent 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 volume-to-capacity (v/c) ratios for evaluating mobility performance. Also, as part of these amendments 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 1 includes the mobility targets for the state facilities in the County. Pursuant to the OHP, US 97 and US 20 are classified as a Statewide Highway and a Freight Route. Highway 126 is classified as a Statewide Highway, and portions are a designated Freight Route. OR 31 has a Regional Highway designation.

Table 1: Volume to Capacity Ratio Targets Outside Metro[2]

Highway Category	Inside UGB					Outside UGB	
	STA	MPO	Non-MPO/ STA, MPH <35	Non-MPO/ STA, MPH 35-45	Non-MPO/ STA, MPH >45	Uninc. Comm.	Rural Land
Interstate Hwy	N/A	0.85	N/A	N/A	0.80	0.70	0.70
Statewide Expressway	N/A	0.85	0.85	0.80	0.80	0.70	0.70
Statewide (Non-freight Rte)	0.90	0.85	0.85	0.80	0.80	0.70	0.70
Statewide (Freight Rte)	0.95	0.90	0.90	0.85	0.80	0.75	0.70
Regional/District (Freight Rte)	0.95	0.90	0.90	0.85	0.85	0.75	0.70
Regional/District Expressway	N/A	0.90	N/A	0.85	0.85	0.75	0.70
Regional	1.0	0.95	0.90	0.85	0.85	0.75	0.70
District/Local	1.0	0.95	0.95	0.90	0.90	0.80	0.75

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 existing transportation network 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 ramp 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, Deschutes County will work with ODOT 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 operations of the state highway system. As part of this TSP update process, Deschutes County will work with ODOT and project stakeholders to

[2] Portions of US 97, US 20, and OR 126 extend into the Bend, La Pine, Redmond, and Sisters Urban Growth Boundaries.

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 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, the type of area, and posted speed limit. 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 access management rules in OAR 734, Division 51, addressed later in this report. The TSP update process will include discussion of how existing ODOT facilities in the study area compare to these standards.

Policy 4A: Efficiency of Freight Movement

This policy emphasizes the need to maintain and improve the efficiency of freight movement on the state highway system. US 97, US 20, and OR 126 are designated as state freight routes. A principal function of these routes is to accommodate safe and efficient freight movements by providing free-flow movements for through-traffic in the Interstate system and for traffic accessing existing (and future planned) industrial areas.

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 in commute highway corridors, as well as those located off the highway system to help preserve the performance and function of the state highway system. Cascades East Transit (CET) provides public transportation service in the County. Improving safety, access, and mobility for pedestrians and bicyclists to local transit service and to community destinations throughout the County is an objective of this TSP update process.

Project Relevance: The TSP planning process will be guided by policies in the OHP for any improvements, modifications, or local policies that would affect state facilities within the County. OHP policies provide guidance in developing recommended improvements that would impact accessibility, mobility, or function of each highway. The TSP is being developed in coordination with ODOT so that projects, policies, and County regulations proposed as part of the TSP will comply with or move in the direction of meeting the standards and targets established in the OHP related to safety, access, and mobility.

Oregon Freight Plan (2014)

The Oregon Freight Plan (OFP) is a modal plan of the OTP that implements the state's goals and policies related to the movement of goods and commodities. Its purpose statement identifies the intent to "improve freight connections to local, Native American, state, regional, national and global markets in order to increase trade-related jobs and income for workers and businesses." The objectives of the plan include prioritizing and facilitating investments in freight facilities (including rail, marine, air, and pipeline infrastructure) and adopting strategies to maintain and improve the freight transportation system.

The plan defines a statewide strategic freight network. US 97 and US 20 and parallel railroads are designated as a strategic corridor in the OFP.

The following policy and strategic direction provided in the OFP prioritizes preservation of strategic corridors as well as improvements to the supply chain achieved through coordination of freight and system management planning.

> *Strategy 1.2: Support freight access to the Strategic Freight System. This includes proactively protecting and preserving corridors designated as strategic.*
>
> > *Action 1.2.1. Preserve freight facilities included as part of the Strategic Freight System from changes that would significantly reduce the ability of these facilities to operate as efficient components of the freight system unless alternate facilities are identified or a safety-related need arises.*
>
> *Strategy 2.4: Coordinate freight improvements and system management plans on corridors comprising the Strategic Freight System with the intent to improve supply chain performance.*
>
> **Project Relevance:** Maintaining and enhancing efficiency of the truck and rail freight system in the study area will be an objective of the updated TSP. The County will work closely with ODOT, including ODOT freight representatives, to ensure mobility along identified freight corridors is preserved.

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.

Its goals, policies, and strategies are based on the vision that "Oregon will have a safe, efficient, and commercially viable rail system that serves its businesses, travelers and communities through private resources leveraged as needed, by strategic public investments." It establishes the following goal areas: partnership, collaboration, and communication; a connected system; system

investments and preservation; funding, finance, and investment principles; system safety; preserving and enhancing quality of life; and economic development.

The plan categorizes rail as Class I or Non-Class I and accordingly identifies needs related to rail elements including track, signals, weight, clearance, speed, and bridges and tunnels. There is a Class I rail line (BNSF Railway) that extends north-south through the County, with connections to The Dalles to the north and Klamath Falls to the south.

> **Project Relevance:** The TSP will consider the needs of the rail freight system in developing recommended policies and projects related to improving safety and mobility in the County. In addition, the agency advisory committee will include ODOT representatives who will advise on rail and freight interests.

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 established the role of walking and biking as essential modes of travel within the context of the entire transportation system and recognizes the benefit to the people and places in Oregon.

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 OBPP, 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 HDM and provides best practices and design guidelines for bicycle and pedestrian facilities.

> **Project Relevance:** The TSP update process will consider OBPP policies and strategies for their applicability to the County, including relevance to existing Deschutes County Code 17.48 which addresses bicycle and pedestrian development standards, and, where appropriate, the updated TSP will reflect the OBPP through policies and project selection. The state standards and strategies for pedestrian and bicycle improvements can serve as “best practices” and inform recommended bicycle and pedestrian improvements in the updated TSP. Within unincorporated communities, the TSP planning process will identify and address areas where enhancements are needed to improve sidewalk accessibility and connectivity. The TSP planning process will consider appropriate standards and designs where pedestrian and bicycle projects are recommended on, or parallel to, state facilities.

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 guiding vision is to create:

- A public transportation system that is an integral, interconnected component of Oregon's transportation system that makes Oregon's diverse cities, town, and communities work.
- Public transportation that is convenient, affordable, and efficient 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 is designed to respond to trends, opportunities, and challenges that exist today, while providing an adaptable foundation for the future. The policies and strategies advance public transportation as an important piece of the overall transportation system, linking people to destinations, services, opportunities, as well as to communities in neighboring states. Key initiatives of the plan include plan integration, regional and intercity service, and transit technologies.

> **Project Relevance:** In developing the transit element of the updated TSP, the planning process will coordinate with Cascades East Transit long-range and strategic planning in the TSP study area. A representative from CET will be invited to participate in the agency advisory committee to ensure coordination between the recommendations of the TSP and transit plans.

Oregon Transportation Safety Action Plan (2016)

An element of the OTP, the Oregon Transportation Safety Action Plan (TSAP) provides long-term goals, policies and strategies and near-term actions to eliminate deaths and life-changing injuries. The TSAP addresses all modes on all public roads in Oregon. Over the long term, the goals of the TSAP are:

- Infrastructure – Develop and improve infrastructure to eliminate fatalities and serious injuries for users of all modes.
- Healthy, Livable Communities – Plan, design, and implement safe systems. Support enforcement and emergency medical services to improve the safety and livability of communities, including improved health outcomes.
- Technology – Plan, prepare for, and implement technologies (existing and new) that can affect transportation safety for all users.

The Plan identifies actions that jurisdictions can take to increase transportation safety. They include adopting a Safe Communities Program and Safe Routes to School, which is a collaborative partnership with the National Highway Traffic Safety Administration and the ODOT to promote safety. The Safe Routes to School program is a local initiative supported by grant funding that targets safety improvements to encourage walking and biking to school.

In addition, the TSAP also identifies activities and roles for counties that can improve safety. They include:

- Evaluate local spot-specific systemic safety needs; develop plans and programs to address needs.
- Collaborate with the state and stakeholder partners to educate the public about transportation safety-related behavioral issues.
- Integrate safety programming, planning, and policy into local planning.

Project Relevance: The TSAP will be used as a resource while updating the TSP to develop local goals, policies, and strategies to increase safety in the County. Additionally, Deschutes County has adopted its own Transportation Safety Action Plan with local goals, policies, and strategies. The Deschutes TSAP is reviewed under the Section III of this memorandum.

Oregon Aviation Plan V6.0

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 responsibilities for the existing aviation infrastructure. The plan contains policies and recommended actions to be implemented by Oregon Department of Aviation in coordination with other state and local agencies and the Federal Aviation Administration.

The OAP categorizes airports based on functional role and service criteria. Airports in Deschutes County and their classification are summarized below.

- Category I, Commercial Service Airport (Redmond Municipal Airport – Roberts Field): These airports support some level of schedule commercial airline service in addition to supporting a full range of general aviation aircraft activities. Commercial service includes both domestic and international destinations.
- Category II, Urban General Aviation Airport (Bend Municipal Airport): These airports support all general aviation aircraft and accommodate corporate aviation activity, including piston and turbine engine aircraft, business jets, helicopters, gliders, and other general aviation activity. The most demanding user requirements are business-related. These airports service a large/multi-state geographic region or experience high levels of general aviation activity.
- Category IV, Local General Aviation Airport (Sisters Eagle Air Airport and Sunriver Airport): These airports support primarily single-engine general aviation aircraft but are capable of accommodating smaller twin-engine general aviation aircraft. These airports support local air transportation needs and special-use aviation activities.

Project Relevance: The TSP update will include address aviation as a transportation mode and will plan for how Deschutes County's residents and businesses access these facilities in developing TSP policies and projects.

ODOT Operations Program Plan (2018)

The ODOT Operations Program Plan (OPP) analyzed the problems and gaps in ODOT programming through stakeholder input. Of the gaps identified, those pertinent to the Deschutes County regional transportation system are included below.

- *Planning and Projects*: Greater benefits of proven operations activities and services – both their magnitude and extent— can be achieved if operations solutions are more consistently considered in planning efforts and project scoping.
- *Communication and Outreach*: Communication and outreach on the Operations Program will increase awareness of program activities, help to move away from reliance on champions, and ultimately achieve better consistency and coordination in program services.
- *Technology*: Staying on top of developments in rapidly advancing technology and sharing innovative operational practices would strengthen and expand the Operations Program's benefits.

The gaps identified informed the ODOT Operations Program. The program is a coordinated, multidisciplinary approach to ensure safe and efficient multimodal travel by (1) optimizing the performance of existing infrastructure, (2) mitigating the causes and impacts of congestion and delay; and (3) reducing and eliminating exposure to safety risks. The mission is further broken down into six goals listed below.

- *Integrate Operations into appropriate agency projects, policies, plans and procedures.*
- *Optimize the efficiency and safety of the existing multimodal transportation system.*
- *Be agile and innovative in identifying, adopting, and accommodating effective operations technology and strategies.*
- *Promote safe and efficient travel through communication of accurate and timely transportation system status information and collaboration with public and private partners.*
- *Utilize performance base strategies to drive operations planning and decision making.*
- *Achieve a sustainable Operations Program supported by good asset management practices.*

The program acknowledged both policy and operations strategies including active transit management, arterial operations, and more. The projects and services described in the OPP are expected to be sourced from several funding sources, including those already identified in the State Transportation Improvement Program (STIP), funding from operations programs, special programs, and maintenance.

The OPP concludes with an action plan, identifying near term action items through 2020 and long-term items through 2023. The action items pertinent to Deschutes County are included below.

- *Business Process/Planning and Programming:*
    1. *Develop a funding program to handle Operations projects that are too big for local region/district budgets but are not "big enough" to go through to STIP process.*
    2. *Create an "Operations Guide" that clearly identifies and defines the Operations Program leadership structure, decision making authority, role and responsibilities, and key processes.*

3. *Coordinate with ODOT Transportation Development Division (TDD) and planning staff leadership to develop a course of action that will raise the awareness and understanding of Operations concepts among Planning staff.*
4. *Integrate Intelligent Transportation System (ITS) plans into Regional Transportation Plan.*

- *Performance Measures*
    5. *Continue implementation of actions identified in the Operations Performance Measures Plan.*
    6. *Develop a Traffic Signal Management Plan to set clear targets for goals related to signal operations.*

Project Relevance: ODOT's role and funding impacts on the operations and programming of the Deschutes County transportation system should be acknowledged in the updated TSP. The TSP update will consult with ODOT's Operations Program for guidance on improvements that involve ITS, signal, or lighting management.

ODOT Traffic Signal Management Plan (2020)

The purpose of the Traffic Signal Management Plan (TSMP) is to provide a framework for the management of the traffic signal system by ODOT. The TSMP outlines ODOT's objectives related to the design, operation, and maintenance of traffic signals and strategies to accomplish those objectives and achieve good basic service. The Plan also establishes performance metrics to ensure objectives are being met. The TSMP is divided into several chapters that are organized around different elements of the traffic signal system, including Design, Operations, Maintenance, Management/Administration, and Interagency Coordination.

Acting as the statewide guiding document for traffic signal system management activities that support the mission and goals of ODOT, the plan provides recommendations for operating in a regional and local context. Local agencies may also use the TSMP as a guide for operating their signal systems.

The plan has five goals, with several objectives for each, classified into the following three categories - design, operations, and maintenance. The goals are: 1. optimize mobility and accessibility, 2. maximize operational efficiency, 3. provide safe right-of-way assignment for all modes at traffic signal, 4. support economic vitality, and 5. preserve traffic signal infrastructure. The Design, Operations and Maintenance chapters (Chapter 4 through 6) provide an overview of the various types of signals and intersections design and recommendations for compliance with ODOT standards. Additionally, there are individual action plans for each category – design, maintenance, and operations.

Project Relevance: The TSMP serves as the statewide guiding document for traffic signal system management activities that support the mission and goals of ODOT. Local agencies, such as Deschutes County, may also use this TSMP as a guide for operating their signal systems. In updating the TSP, Deschutes County should consider the design, operations, and maintenance strategies found in the TSMP in

meeting transportation operations needs identified through the current planning process.

Oregon Statewide Transportation Improvement Fund

The Statewide Transportation Improvement Fund (STIF) is a dedicated funding source for improving or expanding public transportation service in the state. The funding is distributed according to developed programs and policies by the Public Transportation Division with oversight from the Oregon Transportation Commission.

STIF funding is distributed through two funds: the Formula Fund Resource and the Discretionary Fund and Intercommunity Discretionary Fund. The Formula Fund distributes 90 percent of STIF funds to mass transit district, transportation districts, or counties with a mass transit or transportation district based on allocation formulas. Deschutes County is forecasted to receive over $3 million per fiscal year from FY 2020 to FY 2023.

The Discretionary Fund and Intercommunity Discretionary Fund allocate five percent and four percent of STIF funds, respectively, based on a competitive grant process. Deschutes County does not have projects awarded grant funding through this fund currently. However, Central Oregon Intergovernmental Council currently has three grants through the discretionary fund for improving transit service. They include the CET Community Connector Service, Hawthorne Station Renovation, and a planning and feasibility study from Klamath Fall to Redmond.

> **Project Relevance**: Transit service and facilities are anticipated to grow in the County due to increased funding from the Formula Fund Resource. Most STIF funds received by the County are allocated to local transit agencies, such as CET. This TSP update will factor growth in transit as part of the transit element of the plan and consider, in coordination with CET, facility improvements or policy or code amendments to accommodate and facilitate transit growth. Further, transportation improvement projects identified in the TSP update may be eligible for discretionary STIF funding in future funding cycles.

ODOT Funding Projections (2020)

This report summarizes revenue forecasts for ODOT. It is published twice a year to assist in financial planning, the formulation of transportation budgets, and to support other department decision-making activities. The report also includes information about future revenues from sources like registration fees, weight-mile and flat fees, and gas taxes.

The most recent update was released in July of 2020,[3] which updated the April 2020 forecast with actuals from March to May 2020. The recent and ongoing COVID-19 pandemic has imbued a degree

[3] Typically, the ODOT Forecast Reports are released every six months. The July 2020 forecast update was developed to check the assumptions and fully capture the impact of COIVD-19. A full report will be published in October 2020.

of uncertainty in the forecasts. Revenues are anticipated to rebound in 2021, as the expected duration of the virus impact is felt most acutely in 2020, and grow through 2025 as HB 2017 is fully implemented. Beyond 2025, revenue growth stagnates overall as economic and demographic growth slows and fuel demand declines.

In total, the state now estimates the loss in revenue due to the recession to be about $170 million over the 2019-21 biennium. As the recovery is likely to extend into the mid 2020's, the impact is expected to extend as well. However, the forecast is highly uncertain given the unknown future of the virus and its impact on Oregon communities.

The July 2020 report also included a section that documented the funding forecasts through 2025 for three new taxes adopted through House Bill 2017 – the Transit Payroll Tax, Vehicle Privilege Tax, and Bike Excise Tax. Additionally, local City and County forecast estimates were published in July 2020 and account for COVID-19 related losses in revenue. Table 2 below shows the forecasted revenues for Deschutes County from the 2020 to 2025 Fiscal Years (FY). The Base is revenue, not including HB2017 revenue, and the total is the combination of both.

Table 2. Deschutes County Forecasted Apportionment FY 2020-2025

	2020	2021	2022	2023	2024	2025
Base	$ 12,557,398	$ 12,423,689	$ 12,843,860	$ 12,723,443	$ 12,780,000	$12,784,700
HB2017	$ 3,911,686	$ 5,041,607	$5,307,508	$5,626,777	$ 5,782,801	$ 6,142,806
Total	**$ 16,469,085**	**$ 17,465,296**	**$ 18,151,368**	**$ 18,350,220**	**$ 18,562,801**	**$ 18,927,506**

Project Relevance: State funding sources for projects identified in the TSP will be impacted by available revenue. If revenue is expected to increase, new funding may be made available through the state for local projects.

Statewide Transportation Improvement Program (2021 – 2024)

The State Transportation Improvement Program (STIP) is the four-year programming and funding document for transportation projects and programs for 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 STIP identifies planned improvements for 2021 - 2024. The following projects located within Deschutes County are listed in the STIP.

- OR126: Redmond – Powell Butte – Project number: 20167. Pavement preservation, bike/pedestrian improvements, ADA upgrades, and signing to make travel more accessible for pedestrians and multi-modal travelers.

- US97: Multi-Use Trail (Baker Rd. - Lava Butte) – Project number 20714. Identify and evaluate planning corridors, design, and construction for a bicycle and pedestrian multi-use trail connecting Baker/Knott Road and the Lava Lands visitor center at Lava Butte, to create a safe path for multi modal travelers.
- US 97: Lower Bridge Way – NW 10th St (Terrebonne) – Project number: 21162. Evaluate, design, and construct safety improvements on US97 through Terrebonne; Potential measures include an interchange at US97 and Lower Bridge Way intersection, speed lowering interventions, and pedestrian safety improvements to reduce crashes and increase driver awareness.
- US97 at Wickiup Jct. (La Pine) Phase 2 – Project number: 21295. Develop a refinement plan that addresses the US97 highway corridor through the Wickiup Junction area focusing on safety for all modes of transportation, design and construct intersection safety and frontage road improvements developed from refinement plan, and perform geotechnical analysis of Wickiup Junction area to determine feasibility of a long term railroad/US97 overpass.
- US97 Road Weather Management – Project number: 21501. Installation of road and weather information system (RWIS), speed sensors, travel time readers and changeable message signs to provide ODOT's TripCheck system additional traveler information, improve maintenance resource allocation efficiency and performance measurements.
- US20: Ward / Hamby Rd. Intersection – Project number: 21667. Intersection safety improvements to reduce accidents and increase safety in the intersection reducing intersection-related high severity crashes and better operations of the system for travelling public.
- Gribbling Rd: Central Oregon Irrigation Canal bridge – Project number: 22039. Replace the existing bridge with one that meets current standards.
- OR242: McKenzie Pass Pavement Preservation – Project number: 22225. Improve conditions for drivers and cyclists by resurfacing roadway and rebuilding shoulders.

Project Relevance: The 2021-2024 STIP includes several projects in the County. The TSP analysis will take into account projects that are programmed in the STIP. An expected outcome of this planning process is proposed recommendations for a future STIP amendment to include projects from the updated TSP. The STIP projects will most likely involve improvements that are eligible for funding through a competitive application process.

ODOT Highway Design Manual (2012)

The 2012 Highway Design Manual (HDM) provides ODOT with uniform standards and processes for project development for the state's roadways. The HDM is to be used for all projects that are located on state highways. It is intended to provide guidance for the design of new construction; major reconstruction (4R); resurfacing, restoration, and rehabilitation (3R); or resurfacing (1R) projects.

National Highway System or Federal-aid projects on roadways that are under local jurisdiction will typically use AASHTO design standards (Policy on Geometric Design of Highways and Streets

manual, the "Green Book) or ODOT 3R design standards. The flexibility contained in the HDM supports the use of Practical Design concepts and Context Sensitive Design practices. The Blueprint for Urban Design (BUD), published in 2020, furthers these concepts by recognizing how transportation needs and solutions are different in urban areas. The BUD is a "bridging document" that establishes revised criteria to be used when designing urban projects on the state system. The document provides guidance for urban design on Oregon state highways until such time that all ODOT manuals related to urban areas are updated to include the revised design criteria.

Table 3 shows which design standards are applicable for certain projects based on project type, and whether the project involves a state route. State and local planners will also use the manual in determining 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. Some local agencies have adopted design standards and guidelines that may differ from the various 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 Selections Matrix, ODOT Highway Design Manual

Project Type	**Roadway Jurisdiction**				
	State Highways			Local Agency Roads	
	Interstate	Urban State Highways	Rural State Highways	Urban	Rural
Modernization/ Bridge New/Replacement	ODOT 4R/New Freeway	ODOT 4R/New Urban	ODOT 4R/New Rural	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

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, "Outside UGB"). The v/c ratios in the HDM are different than those shown in the 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	Inside UGB				Outside UGB	
	STA	MPO	Non-MPO/ STA, MPH <45	Non-MPO/ STA, MPH 45+	Uninc. Comm.	Rural Land
Interstate Hwy & Statewide (NHS) Expressways	N/A	0.75	0.70	0.65	0.60	0.60
Statewide (NHS, Freight Rte)	0.85	0.75	0.70	0.70	0.60	0.60
Statewide (NHS, Non-Freight Rte)	0.90	0.80	0.75	0.70	0.60	0.60
Regional/District Expressways	0.90	0.80	0.75	0.70	0.60	0.60
Regional Highway	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

Blueprint for Urban Design (2020)

The Blueprint for Urban Design (BUD) is a "bridging document" that establishes revised criteria to be used when designing urban projects on the state system. The document provides guidance for urban design on Oregon state highways until such time that all ODOT manuals related to urban areas are updated to include the revised design criteria. The key takeaways from the BUD are:

- Supplements and overrides existing HDM and other design manuals on any conflicting guidance,
- Describes Planning and design by urban context in addition to existing roadway classification and designation,
- Highlights flexibility in design,
- Provides a Performance based design approach,
- Focuses on the highest level of protection for vulnerable users, and
- Includes a new design documentation process.

The key guidance from each chapter of the BUD are as follows.

- *Chapter 1, Introduction and Background* provides an overview of the BUD's purpose and describes the connection to ODOT programs and current practices.
- *Chapter 2, Refining Urban Contexts and Roadway Classifications* provides new guidance to interpret existing land use areas and functional classification categories to more appropriately align with various urban contexts. The chapter describes six ODOT Urban Contexts and provides examples of each. The six urban contexts are Traditional Downtown/Central Business District, Urban Mix, Commercial Corridor, Residential Corridor, Suburban Fringe, and Rural Community. Practitioners will use Chapter 2 to identify the appropriate urban context for certain areas.
- *Chapter 3, Design Flexibility at ODOT in Urban Contexts*, provides information to help identify and evaluate trade-offs while considering the operations, safety, and design for

urban projects. It includes an overview of the various street realms for the urban contexts and their design elements. Practitioners will use the chapter to evaluate and identify the appropriate design elements based on the context described in Chapter 3.

- *Chapter 4, A Multimodal Decision-Making Framework*, describes a performance-based approach and a delivery process that supports decision-making from planning through design. Practitioners will use ODOT urban design concurrence to document design decisions through an overarching multimodal decision-making framework that embraces performance-based design as provided in Chapter 4.

The BUD provides new design principals for ODOT owned and operated facilities, however local governments that are leading their own projects make their own design decisions for local facilities. Deschutes County will coordinate with ODOT on the application of the BUD along applicable state facilities, if necessary, through the TSP update process.

ODOT Traffic Manual (2020)

The Traffic Manual provides guidance on state traffic engineering policies, establishes uniform methods and procedures, and includes information about traffic engineering and operations on state highways. The Traffic Manual complements the HDM - it does not contain roadway design policies but rather contains standards and guidelines, as well as lists needed approvals and processes.

> **Project Relevance:** The HDM and Blueprint for Urban Design (BUD) provide design standards for state roadways; the Traffic Manual governs engineering methods and procedures for highway improvements. The analysis for the TSP update and final project recommendations will need to be consistent with requirements for state facilities in Deschutes County. The HDM and BUD can be referenced for additional guidance, concepts, and strategies for design during this planning process.

Transportation Planning Rule (OAR 660-012) (2011)

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 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 -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 next section for a review of these access management rules.

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 amend a functional plan, comprehensive plan, or land use regulation without applying mobility standards (V/C, for example) if the subject area is within a designated multi-modal mixed-use area (MMA).

> **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 are meant to protect road operations and 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.

Access Management Rule (OAR 734-051) (2014)

Oregon Administrative Rule (OAR) 734-051 defines the State of Oregon'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 system. The most recent amendments presume that existing driveways with access to state highways have written permission from ODOT as required by OAR 734. The standards are based on state highway classification and differ depending on posted speed and average daily traffic volume.

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 TSP update, will coordinate with the County in planning for access management on state roadways consistent with its Access Management Rule.

> **Project Relevance:** Transportation analysis 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 County's Zoning Ordinance to ensure that it is consistent with these access management requirements as well as TSP recommendations related to access management.

III. LOCAL PLANS,DOCUMENTS, AGREEMENTS, AND POLICIES

2040 Bend Metropolitan Transportation Plan (2019)

Consistent with federal regulations (23 Code of Federal Regulations (CFR) part 450), the Bend Metropolitan Planning Organization (BMPO) is responsible for regional transportation planning within the Bend UGB and portions of unincorporated Deschutes County outside of the Bend UGB. The primary function of the BMPO is to "conduct a continuing, cooperative and comprehensive transportation planning process that will result in plans and programs that consider all transportation modes and will support metropolitan community development and social goals."[4]

The Bend Metropolitan Transportation Plan (MTP), adopted in 2019, is the regional TSP and serves as a multi-modal transportation plan designed to meet the anticipated 20-year transportation needs within the BMPO planning area boundary. The Metropolitan Transportation Improvement Program (MTIP), adopted in 2020, identifies transportation projects in the MPO that are programmed to receive funding between 2021-2024. The MTIP lists federally funded and locally funded projects anticipated by local agencies and ODOT that will occur in the BMPO planning area boundary.

> **Project Relevance:** Proposed improvements on the regional transportation system that are included in the updated County TSP will need to be amended into MTP and adopted by the Bend MPO Policy Board.

Deschutes County Comprehensive Plan (2009)

The Deschutes County Comprehensive Plan is a long-range policy guide for land use in the unincorporated areas within the County, outside of city urban growth boundaries (UGBs). The Comprehensive Plan includes background information and policies that address each of the 14 applicable Statewide Land Use Planning Goals. The County intends to update the Comprehensive Plan in 2021.

Transportation policies are included in the Deschutes County TSP, amended to the Comprehensive Plan in Appendix C. Existing policies will be refined as part of the TSP update process. A partial review of policies currently in the Deschutes County TSP is included in the *Review of 2012 Deschutes County Transportation System Plan* Memorandum.

Several policies related to transportation improvements are also found in Chapter 4 of the Comprehensive Plan, Growth Management. Chapter 4 addresses unincorporated communities and rural service centers. Only local policies for the Sunriver community include transportation-related elements; Section 4.5 describes transportation facilities in Sunriver. Most internal roads in Sunriver

[4] 2007-2030 Bend Metropolitan Transportation Plan, Chapter 1: Introduction, Page 1-1.

are private roads, open to the public, and maintained by the Sunriver Owners association. Section 4.5 also identifies future transportation needs for Sunriver. Because they were not functioning at full capacity at the time of Comprehensive Plan adoption, there are no changes recommended to the community's public roads, South Century Dr. and Cottonwood Road. The pertinent Transportation System Maintenance Policies for the Sunriver area are included below.

> *Policy 4.5.33 Privately-maintained roads within the Sunriver Urban Unincorporated Community boundary shall continue to be maintained by the Sunriver Owners Association.*
>
> *Policy 4.5.34 The bicycle/pedestrian path system in Sunriver shall continue to be maintained by the Sunriver Owners Association or as otherwise provided by a maintenance agreement.*
>
> *Policy 4.5.35 The County will encourage the future expansion of bicycle/pedestrian paths within the Sunriver Urban Unincorporated Community boundary in an effort to provide an alternative to vehicular travel.*
>
> *Policy 4.5.36 All public roads maintained by the County shall continue to be maintained by the County. Improvements to County maintained public roads shall occur as described the County Transportation System Plan.*
>
> **Project Relevance:** The updated TSP will be adopted as the transportation element of the County's Comprehensive Plan. Recommendations resulting from this planning process must either be consistent with existing policies, including those identified above, or the TSP process should result in proposed amendments to adopted policies. The County is embarking on a process to update its Comprehensive Plan, which may not be complete prior to the completion of this TSP update.

Deschutes County Code

The Deschutes County Code (DCC) regulates development within unincorporated Deschutes County and implements the long-range land use vision embodied in the Comprehensive Plan and TSP. The code contains requirements that address the relationship between land use development and transportation system development. Requirements in Title 22 Procedures Ordinance, Title 18 County Zoning, and Title 17 Subdivisions all have a bearing on how the transportation system is implemented. Titles 19 to 21 include zoning ordinances or districts related the unincorporated areas of city UGBs for Bend, Sisters, and Redmond.

The Subdivision ordinance includes design standards for transportation facilities. Minimum right-of-way and road widths are provided in Section 17.36.060; requirements for frontage roads are in Section 17.36.100. Sidewalk installation requirements for urban areas are in Section 17.36.130 and are required on both sides of the road; outside of urban areas, sidewalk requirements are found in Section 17.48.175. Also, Section 17.36.150 defines block lengths, requiring blocks are no longer than 1,200 feet. Special provisions for blocks over 800 feet are provided in Section 17.36.140. Minimum design standards for bikeways, roads, and structures are found in DCC 17.48. Road

dedication procedures and approval criteria are described in DCC 17.52. Design standards for bicycle, pedestrian, and transit requirements are found in Section 17.36.140.

Title 18, County Zoning, includes specific provisions for certain zones as well as supplementary provisions for development in unincorporated areas outside of UGBs. Section 18.116.031 has requirements for bicycle parking. Section 18.128.210 has requirements for bicycle and pedestrian infrastructure in planned developments, which include multimodal connections. Traffic Impact Studies are described in Section 18.116.310, including when a study is required and guidelines for the studies.

Chapter 19A addresses the Bend Urbanizable District (UA), which is located within the Bend UGB. The development standards for the district include this additional provision related to transportation improvements: *19A.01.040B. Frontage improvements must be built to City Standards and Specifications when required under certain City of Bend reviews.*

Redmond Urban Area Zoning Ordinance DCC 20.16 requires standards for public improvements, where public improvements are initiated by City of Redmond, must conform with Redmond public work standards and specifications. Additionally, the section establishes clear vision areas and measurement procedures.

> **Project Relevance:** County Subdivision requirements related to roadway design will need to be consistent with the updated TSP. Amendments to DCC requirements related to 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.

Central Oregon Coordinated Human Services Transportation Plan (2018)

The 2018 Central Oregon Coordinated Human Services Transportation Plan updates individual county plans, combining them into one regional plan with systemwide and individual strategies for the Confederated Tribes of Warm Springs, Deschutes, Crook, and Jefferson counties. All jurisdictions are served by the same public transit system, Cascade East Transit.

The purpose of the plan is to improve transportation services for people with disabilities, seniors, and individuals with lower incomes by identifying opportunities to coordinate existing resources and services, including general public services available in the area. The plan identifies priorities that are used to direct state and federal funds. An overview of existing transportation resources and services, a needs assessment, and prioritized coordination strategies are described in the plan.

The following highest priority Regional strategies, those that apply to the regional transportation system, are found in Section 4.a:

1. *Improve affordability of transit services to low-income individuals and veterans.* Provide subsidized fares for low income clients and veterans needing access to health and human services.
2. *Ongoing coordination*. Establish a structure for ongoing dialogue on coordination needs and opportunities among public transportation providers and the human and health services

communities. This includes a proposal to explore developing one regional STF Committee for Central Oregon with members from Crook, Deschutes, and Jefferson Counties and the Confederated Tribes of Warm Springs, and to use this group for high-level regional coordination activities.

3. *Expand public transportation services to late in the evening and on weekends*. Work with human and health services stakeholders to identify priorities for expansion of services to later in the evenings and when/where to provide weekend services.
4. *Education and Outreach*. Develop a comprehensive marketing and awareness campaign. Provide more information to riders, the public, communities, and elected officials and leaders about the benefits of public transit and existing transit services.
5. *Create a Dedicated Local Public Fund for Transit***.** Identify priority geographies/communities and develop a local public tax base to provide additional services.

The Coordination Plan provides a set of region-scale priority strategies to guide transportation investments, summarized above. However, as there are still variations in need across Central Oregon, each local area also has its own set of priorities. The Deschutes County Priority strategies are found in Section 4.b.ii of the plan. The high and medium priority strategies for Deschutes County are listed below.

The high priority strategies for Deschutes County are listed in rank order.

1. Create a dedicated funding source for public transportation.
2. Support, maintain, and strengthen the existing transportation network, including both local service and community connector shuttles – leverage local public transportation investments to secure state and federal resources (Note: participants indicated that the "strengthen" part of this strategy was largely focused on providing fixed-route service in Redmond).
3. Expand service to later in the evening and weekends.
4. Education and Outreach. Develop a comprehensive marketing and awareness campaign. Provide more information to riders, the public, communities, and elected officials and leaders about the benefits of public transit and existing transit services.

The following are all considered medium priority strategies for Deschutes County, and are weighted equally.

- Create express bus routes.
- Improve Bend Dial A Ride system (i.e. caregiver, child riding with parent).
- Improve affordability of transit services to low-income individuals and veterans (e.g. subsidized fares and veterans ride programs)
- Ongoing coordination – establish a structure for ongoing dialogue on coordination needs and opportunities among public transportation providers and the human and health services communities.
- Develop electronic fare card system.

Following are additional strategies that received votes in the Deschutes County meeting. The additional strategies are not listed in rank order.

- Make winter transportation more usable.

- Consider density and/or mixed housing stock (e.g. transit oriented development - TOD).
- Travel training – provide travel training classes to individuals who use paratransit service to convert to fixed-route service.
- Create voucher system for ride-sharing programs.

Project Relevance: Updated TSP policies should encourage ongoing coordination with Cascade East Transit, particularly regarding the Deschutes County strategies identified in the plan.

Deschutes County Intelligent Transportation System Plan (2020)

The 2020 Deschutes County Intelligent Transportation System (ITS) Plan is an update to the 2011 ITS Plan. Since 2011, ODOT has worked collaboratively with Deschutes County and the cities of Bend, Sisters, Redmond, and La Pine to implement technology solutions to improve safety and management of the regional transportation system. The update incorporates newly identified needs and operations in the County, embraces advanced technology, prepares for emerging technologies, and provides support for a more integrated, collaborative system of operations and management. This ITS plan integrates Transportation Systems Management and Operations (TSMO) strategies, as these are recognized as being crucial to effectively implementing and sustaining ITS projects.

The 2020 ITS Plan includes an overview of current and future transportation conditions in Chapter 2 and a user needs assessment in Chapter 3. Further, a communications plan is provided in Chapter 4, a Regional ITS Architecture in Chapter 5, and a Deployment Plan in Chapter 6.

The Deployment Plan includes unconstructed projects from the 2011 ITS Plan and identifies new projects based on the needs assessment in Chapter 3. Within the plan, Chapter 6 includes project maps, descriptions, and costs, with more detailed descriptions of projects and cost estimates in Appendix E. Figure 16 identifies locations and project numbers.

Deschutes County is the lead on only two projects, listed below, and listed as a supporting agency on numerous other projects in the plan.

- Project No. 124 – Deschutes County Fair Ingress/Egress. Install communications and CCTV.
- Project No. 204 – Special Event Management System (Fairgrounds, Expo Center, and Amphitheatre). Deploy: traffic signal timing plans, portable dynamic message signs, parking management, and public transportation management. Supporting agencies: ODOT, Redmond, Bend.

  Project Relevance: The TSP update will review and integrate identified ITS Plan projects, as well as identify new projects through TSMO strategies to address safety and capacity needs identified through the planning process. The TSP will include objectives related to embracing technological advances and tools and their benefits to the transportation system.

Deschutes County Transportation Safety Action Plan (2019)

The State of Oregon has developed a statewide Transportation Safety Action Plan (TSAP) and set a goal of zero fatal and incapacitating injuries on Oregon's transportation system by 2035. The Deschutes County TSAP is a specific action plan developed to help the County work towards the state's goal by identifying and addressing safety issues specific to the County. This TSAP evaluates crash trends and issues based on current data and identifies a broad range of treatments including projects, policies, and programs to address identified issues.

Chapter 2 includes historic crash summary data. Chapter 3 through 6 are focused on solutions and actions for transportation safety, including systemic solutions, a speed management toolbox, location specific applications, and non-infrastructure measures. System solutions in Chapter 3 address design elements that can be incorporated for enhanced safety on a variety of transportation systems – roadway segments, curves, and intersections. The Speed Management Toolbox in Chapter 4 recommends treatments for speed management including pavement markings, physical roadway improvements, and signage. Chapter 5, Location Specific Application, establishes the screening criteria for locations of concern and lists them in Table 5, Top Sites for Safety Improvements. There are numerous locations identified in unincorporated Deschutes County, shown in Table 4 (Table 5 of the TSAP). Where the table indicates a concept has been developed, the plan provides an overview of the concept.

Table 5. Top Sites for Safety Improvement – Unincorporated Deschutes County

Intersection Location*	Intersection Involves an ODOT Facility?	Concept Developed?	Number of Reported Crashes, 2012-2016	Annualized EPDO Score
Unincorporated County				
US20/Ward Road/Hamby Road	Yes		22	111
US97/Vandevert Road	Yes		17	56
US20/Fryrear Road	Yes	Yes	14	50
Burgess Road/Day Road/Pine Forest Drive	No		20	45
Bear Creek Road/Ward Road	No	Yes	14	41
Alfalfa Market Road/Dodds Road	No	Yes	2	40
US20/Old Bend Redmond Highway	Yes		17	38
US20/O.B. Riley Road/Cook Avenue	Yes		15	37
US97/61st Street	Yes		13	35
US97/11th Street/Lower Bridge Way	Yes		13	33
61st Street/Quarry Ave/Canal Blvd	No		17	32
Northwest Way/Coyner Ave	No	Yes	9	31
Alfalfa Market Road/Walker Road	No	Yes	7	28
US97/Smith Rock Way/B Ave	Yes		13	28
Deschutes Market Road/Hamehook Road	No	Yes	10	27
US97/Burgess Road	Yes		7	27
US20/Hawks Beard (Black Butte Ranch)	No		5	26
El Camino Lane/Helmholtz Way	No		4	26
Canal Blvd/Helmholtz Way	No		7	25
Dickey Road/Nelson Road	No	Yes	3	24
US97/Galloway Ave	Yes		3	24
Butler Market Road & Powell Butte Highway*	No	Yes	9	7
Butler Market Road & Hamby*	No	Yes	9	7
Butler Market Road & Hamehook*	No	Yes	5	6
Baker Road & Cinder Butte*	No	Yes	5	5
S Century and Huntington*	No	Yes	5	5
Cline Falls Rd/Coopers Hawk Drive/ Falcon Crest Drive*	No	Yes	2	2
Lower Bridge Way/19th*	No	Yes	1	2
Lower Bridge Way/31st*	No	Yes	3	2
Lower Bridge Way/43rd*	No	Yes	3	2

Chapter 6 addresses other non-infrastructure safety measures including policy, planning, programming, and projects and identifies a list of related action items. Table 6 in the plan addresses safety culture and educational action items for Deschutes County along with project partners, and

funding needed. The focus areas are safety culture, enforcement, pedestrian/cyclists, and impaired or distracted driving. Those relevant to updating the Deschutes County TSP include:

- A3. Create a Deschutes County Safety Communications Plan, including an education and public outreach system, that promotes a roadway safety culture.
- A6. Develop and maintain policies to support the actions identified in the TSAP and to better incorporate safety into long-range planning and the project development process.
- A12. Develop criteria for identifying and designating safety corridors within the County.
- A34. Design roadways integrating pedestrian and bicyclist safety considerations by providing appropriate pedestrian and bicyclist infrastructure.
- A35. Develop a countywide bicycle route map that identifies the preferred bicycle routes (lower volume, lower speed, and available shoulders) and provide wayfinding to direct cyclists to these routes. Illuminate pedestrian crossings near schools in the County.
- A36. Complete the sidewalk system in unincorporated communities by closing gaps in the sidewalk system and providing appropriately designed crossings where needed.
- A42. Integrate technology advancements to improve transportation safety.
- A43. Evaluate options to collect and use traffic volume, near-misses, and other data to understand where perceived safety issues may exist.
- A44. Evaluate the ability to use crowdsourcing technology to identify risks and locations for additional assessment.

The complete list is found in Table 6 of the TSAP.

Chapter 7, Plan Implementation and Evaluation addresses performance measures the County can use to evaluate the success of the plan and use it for future updates of the plan. The outcome measures are focused on fatal and sever injury crash rates on County roads.

> **Project Relevance**: The TSAP, projects, policy or programming recommendations should be reflected in the updated TSP where appropriate. Goals and policies related to transportation safety will be echoed in the objectives of the TSP update planning process and will be used to update County transportation policy.

Draft Terrebonne Refinement Plan

The Terrebonne community, located in Deschutes County, is bisected by US 97. As US 97 highway traffic volumes have significantly increased in the last 10 years, side street traffic movements and pedestrian crossings have become more difficult. The purpose of the Terrebonne Refinement Plan was to develop short-, medium-, and long-term improvements and management options on the US 97 corridor to improve safety and operations in the community.

To serve near- and long-term highway and local demand, the draft Refinement Plan recommends a grade-separated interchange at the US 97/Lower Bridge Way intersection and for US 97 to be repurposed as a couplet (two northbound lanes and two southbound lanes) that would utilize the existing 11th Street as the northbound highway alignment and the existing US 97 right-of-way as the southbound alignment. The plan also considered a

five-lane cross-section that would provide additional capacity within the existing highway right-of-way (i.e., 11th Street would not become part of the state highway system). While the Terrebonne Refinement Plan was not adopted by the Board of County Commissioners, ODOT and Deschutes County are currently discussing the configuration of improvements for the highway through Terrebonne in association with the legislatively earmarked $21M investment for US 97 in Terrebonne per HB 2017 (2017). The TSP Update will address the future of US 97 through Terrebonne via identification of configuration options or identification of a future process to identify and select an option.

In addition to highway improvements, the following are recommended local connections categorized by priority that improve circulation in Terrebonne. Each will be considered for inclusion in the Deschutes County TSP update.

High Priority

- Formalize 9th Street from E Avenue to F Avenue
- Formalize E Avenue from 7th Street to 9th Street
- A Avenue from 11th Street to COID Canal and North-South Connection over the COID Canal from A Avenue to Smith Rock Way
- Construct H Avenue from 11th Street to 13th Street (Recommended for inclusion in the initial construction phase)

Medium Priority

- Formalize F Avenue from 19th Street to US 97 Frontage Road
- 4th Street connection from Forster Drive north approximately 1,000 feet
- Formalization of F Avenue Frontage Road to Barberry Drive
- A Avenue Extension from COID Canal to future 16th Street Extension
- 16th Street Extension from C Avenue to A Avenue
- 13th Street Extension from B Avenue to E Avenue
- E Avenue Extension from 11th Street to 16th Street

Low Priority

- 5th Street Extension from B Avenue south to Odem Avenue
- 6th Street Extension from A Avenue to US 97
- 16th Street Extension from A Avenue south of Terrebonne
- G Avenue Extension from 15th Street to 16th Street
- H Avenue Extension from 15th Street to 16th Street

Project Relevance: As recommended by the Refinement Plan, the Deschutes County TSP projects list should include design and construction of the local street enhancement projects. Improvements planned for US 97 should be incorporated, as coordinated through ongoing discussions between ODOT and Deschutes County.

Wickiup Junction Refinement Plan (2020, In Progress)

The Wickiup Junction Refinement Plan is a project led by ODOT and supported by the City of La Pine, with adoption anticipated by early 2021. As the La Pine community has grown farther to the north and traffic volumes on US 97 have continued to increase, the highway has increasingly been a barrier to community cohesion. The City, Deschutes County, and the ODOT have engaged in the Wickiup Junction Refinement Plan to help identify transportation improvements, both along the highway as well as along the local street system to better serve both city residents and businesses as well as regional traffic within the community. Several roads under Deschutes County ownership are included in the study area - Burgess Road, Rosland Road, Darlene Way, 1st St/Reed Road, and several other minor roads.

One of the anticipated outcomes of the Refinement Plan are identified potential short-, mid-, and long-term projects to enhance the transportation system for motorists, cyclists, pedestrians, and freight. Some of the key aspects of the planning effort focus on highway mobility, non-vehicle travel, gateway transitions, and local circulation.

As of August 2020, the alternatives analysis had been presented and workshopped with the public. A preferred alternative is under review as of Fall 2020, with the final draft Refinement Plan to be presented at hearings before the La Pine City Council and Deschutes County Board of Commissioners in in 2021.

> **Project Relevance**: The proposed improvements for the Wickiup Junction Refinement Plan are generally within the City of La Pine and may not require incorporation into the Deschutes County TSP. The current planning process is an opportunity to for the County to continue to collaborate with the project partners - ODOT and City of La Pine - to promote an efficient, interconnected transportation system within the Wickiup Junction study area.

Bend Transportation System Plan (2020)

The Bend Transportation System Plan (TSP) provides a policy and plan framework that will continue to enable Bend to design a balanced transportation system for the near-term and the extended future. Strategies for planning and implementing a wide range of transportation components are addressed in the TSP, including automobile, public transportation, bicycle, and pedestrian travel. The TSP addresses the transportation system within the Bend UGB. The TSP includes an overview of existing conditions, goals, future conditions, and improvement projects for the transportation system, which includes public transportation, bicycle and pedestrian facilities, the street system (locations, designs, and functional classifications), and potential funding sources.

There are various expansion areas identified in the Bend Comprehensive Plan that were brought into the UGB but not yet to be annexed, known as “Expansion Areas.” Figures 3-1 and 3-2 in the TSP show the location and intensity of projected growth in the Bend area through 2040, including specific opportunity areas and expansion areas identified through the 2016 UGB update.

The following are specific goals or actions included in the Bend TSP that are relevant to Deschutes County.

Goal 6 – Have a Regional Outlook and Future Focus

- *Coordinate and partner with other public and private capital improvement projects and local/regional planning initiatives*
- *Create a system that is design to implement innovative and emerging transportation technologies*.

The Bend TSP addresses transportation in unincorporated UGB areas in Goal 3, Facilitate Housing Supply, Job Creation, and Economic Development to Meet Demand/Growth:

- *Build new roads and upgrade existing roads to serve areas targeted for growth (prioritizing opportunity and expansion areas) and job creation.*

TSP Action 57 addresses funding in urbanizing areas:

> *Funding for transportation infrastructure in expansion areas, as identified in the 2016 urban growth boundary (UGB) expansion, will be determined either before or upon (unless exempted). Funding must be established prior to, or concurrently with, annexation. Transportation and infrastructure funding agreements will be memorialized for each expansion area property or properties in a development agreement as a part of a master plan or area plan approval and/or annexation.*

There are several TSP projects identified in the urban growth boundary outside of city limits. The Bend TSP identifies these as funding requirements of the City and possible funding sources to implement. Deschutes County is not expected to contribute to implementation of these projects.

> **Project Relevance:** Many roadway, intersection, pedestrian, and bicycle projects identified near the edge of the Bend city limits and UGB will need to be coordinated with Deschutes County to ensure the City and County systems are compatible and supportive of each other, especially for the active transportation network. Since the expansion areas must be planned – through master planning or area planning prior to adoption, the County should encourage participation in those processes to ensure effective coordination of a compatible and supportive transportation system between the City and the County.

Separately, the City of Bend and Deschutes County have entered into a Joint Management Agreement (2017) to guide and inform the transition and jurisdictional transfer of county roads to the City of Bend in association with development and annexation.

Redmond Transportation System Plan (2020)

The Redmond TSP was updated and adopted at the end of 2020. The Redmond TSP provides specific information regarding transportation needs within the City's UGB to guide future transportation investment.

The Redmond TSP identifies the following goals:

1. Provide a safe and efficient transportation network to complement key economic development priority areas, the comprehensive plan, recreational needs, and adopted state, regional and local plans and policies.

2. Advance community and statewide emergency preparedness efforts through support of the Oregon Resiliency Plan.

3. Provide transportation choices and address the needs and safety of all travelers, including people of all ages, abilities, ethnicities, and incomes.

4. Provide comfortable, convenient and safe pedestrian and bicycle facilities for all users.

5. Provide reliable and convenient transit service to Redmond residents, its businesses, and its connection to surrounding cities, as well as special transit options for the City's elderly and disabled residents.

6. Ensure efficient and effective freight transportation infrastructure is developed and maintained to support local and regional economic expansion and diversification consistent with City and Regional economic plans and policies.

7. Implement the plan in a timely fashion and keep it up to date with respect to local and regional priorities.

Policies explicit to Deschutes County include Policy 4.6, which states that the City will "coordinate with Deschutes County and other agencies to provide additional trail extensions throughout the community including connections beyond the city limits." Policy 7.1 calls for the City and County and other entities as applicable to work together to coordinate the design of Redmond's transportation system.

Figure 10 shows existing and planned bicycle facilities within the City of Redmond UGB and proposes a shared-use path extending outside of the UGB along the SW/NW Helmholtz Way corridor.

The TSP identifies the US 97 South Redmond Corridor Facility Plan as a project requiring multi-agency coordination to address traffic congestion, safety, local access needs, and pedestrian and bicycle needs. While the Facility Plan's project study area extends beyond the City's UGB in the south, there are no planned transportation improvements outside of the UGB.

The TSP also identifies a long-range potential project to replace the existing at-grade SW Quarry Avenue/US 97 intersection with a new interchange and calls for the City, County, and ODOT to monitor transportation needs in that location over time. The TSP acknowledges that this improvement project would require a Goal Exception and does not anticipate it to be reasonably likely to be funded within the TSP's 20-year planning horizon.

Project Relevance: The Redmond TSP identifies transportation improvements that extend beyond the City's UGB. Improvements that extend beyond the City UGB will need to be factored into the TSP update, to the extent that these improvements

have not already been incorporated into the current Deschutes County TSP or are already constructed and have been either programmed by ODOT or the City or have a reasonable chance of being funded by 2040.

Separately, the City of Redmond and Deschutes County have entered into a Joint Management Agreement (2007) to guide and inform transportation planning efforts and annexation for area within the Redmond UGB and Urban Reserve Area.

Sisters Transportation System Plan (2010, revised 2018)

The City of Sisters most recent TSP was completed in January 2010 and revised in 2018. The City has an overall transportation goal to provide and encourage a safe, convenient, and economic, transportation system.

Transportation-related goals and policies include Goal 9, Compatibility, which calls for developing a transportation system "that is consistent with the City's Comprehensive Plan and that coordinates with County, State, and Regional Plans." Policies under Goal 9 generally call for coordination between other jurisdictions to develop projects that collectively benefit applicable agencies, to collaborate so the transportation system can function as one system, and to ensure consistency between standards.

There were no changes to functional classifications for roads that link Deschutes County and the City of Sisters in the TSP, nor were any new roadways proposed outside the Sisters UGB.

The TSP identifies shared-use paths and single-use paths to increase connectivity throughout Sisters and improve connections to the surrounding tail system. Several of the existing or anticipated trails and shared-use paths extend into the County. Figures 5-1 and 6-1 in the 2018 TSP illustrate path improvements.

> **Project Relevance:** Consistent with the Sister's coordination policies, the County's TSP update process will coordinate with the City on identified needed improvements on County roadways and highway intersections identified in the local TSP. Updates to the County TSP regarding trails may occur based on the TGM grant discussed below and the City's existing and planned connections. Currently, the County does not have a Park and Recreation District, nor does the County operate and maintain a trails system.

La Pine Transportation System Plan (2013)

The City of La Pine adopted its TSP in 2013. The Plan focuses on priority projects, policies, and programs to provide guidance for operating and improving the multimodal transportation system within the City's UGB.

Deschutes County has jurisdiction over the majority of the City's arterial and collector system. Figure 3-2 in the TSP illustrates which agencies have jurisdiction on roadways within the City. The TSP states that the City should work with the County to outline a process by which urban improvements will be made to County maintained facilities. Identified items that need further

discussion include future funding sources, regular maintenance expenses, and jurisdictional transfer of improved roadways when an acceptable funding source has been identified and is in place.

Roadways in the La Pine TSP are classified using arterial, collector, and local classifications. All of the classifications except for local streets apply to roads under the County's jurisdiction. Table 4-4 in the Plan presents street design standards for street classifications, which include bicycle lanes, sidewalks, planter strip, pavement width, and total right-of-way.

TSP Table 4-5 summarizes multimodal projects identified in the Plan that would address existing or future needs within La Pine. Many of the projects listed in Table 4-5 call for upgrading streets in conformance with street design standards identified Table 4-4. Table 4-6 summarizes intersection improvement projects. Many of the identified projects are on roads under the County's jurisdiction.

> **Project Relevance:** The La Pine TSP calls for several roadway and intersection improvements on County-maintained roadways within the City's boundaries. In addition, the La Pine planning document also calls for discussion and coordination between the City and County for future funding sources, maintenance expenses, and jurisdictional transfers. The City and County should continue to coordinate on Deschutes County funding goals within La Pine city limits and eventual jurisdictional transfer of County roads into City of La Pine's jurisdiction.

Bend Airport Master Plan (2013)

The Bend Municipal Airport lies to the east of the City of Bend on County-zoned and administered lands and employs close to 500 people.[5] The Bend Airport Master Plan was last updated in 2013. An update to the 2013 Master Plan is currently underway and in the early stages of the process, having completed draft existing conditions exercises.

The Master Plan calls for extending the runway north, extending taxiways on either side of the runway, and adding new aircraft hold areas. The runway extension would require a realignment of Powell Butte Highway and potentially a Goal 3 (Agriculture) Exception. Right-of-way acquisition would be required for the northeast section of the realigned highway in order to connect to the highway, northeast of McGrath Road.

> **Project Relevance:** Deschutes County should again remind the City of Bend that any roadway improvements in the vicinity of the airport and any future roadway or intersection modifications needed to support future growth will require the City to apply to the County for land use approval, including a Goal 3 Exception. The Deschutes County TSP should also incorporate the Bend Airport Master Plan as part of the TSP modal plans.

[5] https://www.bendoregon.gov/government/departments/economic-development/bend-municipal-airport/airport-businesses

Cascades East Transit (CET) 2040 Transit Development Plan (2020)

The purpose of the Cascades East Transit (CET) 2040 Transit Development Plan is to create an updated regional transit master plan for Central Oregon. The Plan updates the previous Central Oregon Regional Transit Master Plan (2013) and the Bend Metropolitan Planning Organization's Public Transit Plan and Transit Corridor Land Use Assessment (2013). Because CET, which is operated by the Central Oregon Intergovernmental Council (COIC), provides public transit service to Bend and the region, transit in Central Oregon will benefit from having a single up-to-date plan to help guide it though a planning horizon of 2040.

The Transit Master Plan (Chapter 8), describes the Community Connector transit network, a network of fixed routes that connects riders between Bend and Redmond and the cities of Culver, La Pine, Madras, Metolius, Prineville, Sisters, and Warm Springs. Called a commuter bus service by the Federal Transit Administration (FTA), this service is considered an intercity bus service. The Community Connector is open to the general public and operates Monday through Friday. The following modifications to existing service are proposed:

- *Redmond-Bend* - Modifications to Route 24 for service between Redmond and Bend include re-routing within Bend to provide more direct service; increasing service frequency to all day and adding an evening trip; improving connections with local service in Redmond in coordination with a potential transition to flex/fixed-route service; and adding weekend service.
- *Prineville-Redmond* - Modifications to Route 26 for service between Prineville and Redmond include re-routing to serve the Redmond Airport and COCC; interlining with Route 24 for a one seat ride to Bend; increasing peak period trip frequency and adding an evening trip; adding midday service as a shopping/medical shuttle trip; increasing local circulation in Prineville via local Dial-A-Ride and/or Community Connector vehicles; and adding weekend service.
- *Sisters-Redmond* - Modifications to Route 28 for service between Sisters and Redmond include improving local stop branding and amenities within Sisters; increasing local circulation in Sisters via the Community Connector; and determining if smaller communities along route need service (e.g. Eagle Crest).
- *Sisters-Bend* - Modifications to Route 29 for service between Sisters and Bend include improving local stop branding and amenities within Sisters; providing a stop at Tumalo and Cascade Village in Bend; re-routing within Bend, like Route 24, to provide more direct service; increasing local circulation in Sisters via the Community Connector; and adding weekend service.
- *La Pine-Bend* - Modifications to Route 30 for service between La Pine and Bend include identifying an improved/more efficient stop for Deschutes River Woods (e.g. Riverwoods Country Store) or alternative way to serve Deschutes River Woods; re-routing within Bend to provide more direct service to downtown; re-routing to serve Sunriver; increasing frequency of weekday trips; adding a flex-route in La Pine; adding midday service via a

shopping/medical shuttle trip; adding weekend service; and adding service to the High Desert Museum and Lava Lands Visitor Center (potentially seasonally based).

New transit services in Deschutes County are also proposed, they are:

- *Redmond Airport Service* - New service to the Redmond Airport includes modifying Route 26 between the Redmond Hub and a Redmond Airport mobility hub – including a stop at Redmond COCC – and supplementing Route 24 by a local route connection between the Redmond Hub and Redmond Airport, serving early morning departures and afternoon arrivals.
- *Sunriver Service* - A new Route 31 provides service between La Pine and Sunriver, connecting employees to jobs in Sunriver, with stops at the Sunriver Starbucks and La Pine Fire Station on Huntington. An alternative to this route is to modify Route 30.
- *Shopping/Medical Shuttle Service* – A new shopping/medical shuttle service blends features of demand-responsive services and the Community Connector routes and should be implemented in the following communities as a midday service on existing routes: Sisters – Bend, Prineville – Redmond, La Pine – Bend (including Sunriver). These new shopper/medical shuttles can provide service to new markets: Crooked River Ranch, Juniper Canyon, Deschutes River Woods, Warm Springs; Simnasho and other outlying communities

Section 9.2 Transit-Supportive Strategies includes recommendations for jurisdictions in the CET service area to assist in implementing the Plan. The section includes recommended policy language and development provisions to including in local plans and codes. The Plan also includes specific guidance to each of the jurisdictions within the service area in implementing policies and development requirements consistent with the region's transit objectives. Implementation recommendations are found in Local Agency Overviews and Implementation Plans, in Technical Appendix Volume 1. Recommendations specific to Deschutes County include that the County review existing, locally-adopted comprehensive plan policies to determine consistency with model transit policy language and update development requirement to include transit-supportive code language.

> **Project Relevance:** The TSP will reflect the transit service enhancements in Deschutes County, as well as be consistent with CET Master Plan policy and recommendations regarding transit planning in the region. Implementation recommendations from the Development Plan that were specific to Deschutes County will be considered as part of the implementation phase of the TSP update.

Central Oregon Rail Plan (2009)

The purpose of the Central Oregon Rail Plan planning effort was to develop a common regional strategy for Crook, Jefferson, and Deschutes counties to address various safety and congestion issues associated with roadway/railway at-grade crossings and to enhance freight mobility. The report addresses various rail-related safety, congestion, freight mobility, and economic development issues for central Oregon. The findings and recommendations are mostly focused around Deschutes County and Bend, but also include the following:

- Existing at-grade railroad crossings high priority locations for bridging existing at-grade crossings for the following locations:
    - BNSF/COPR Lines (Prineville Jct)/O'Neil Highway (Deschutes County/Redmond), ~$18M
    - BNSF Line / Airport Way (Deschutes County/Redmond), ~$14M
    - BNSF Line / Cooley Road (Deschutes County/Bend), ~$24M
    - BNSF Line / Reed Market Road (Deschutes County/Bend), ~$18M
    - BNSF Line / Baker Road (Deschutes County/Bend), ~$36M
    - BNSF Line / US 97 (Deschutes County/La Pine), ~$31M
- Freight Mobility and Rail Service implementation strategies, including:
    - Take advantage of and maximize opportunities with the area's shortline railroad, COPR, including industrial sites along the line, and freight terminal options such as at the Prineville Freight Depot and at the COPR interchange with BNSF at Prineville Junction.
    - For the Class 1 unit train operating model, ensure adequate on- and off-site support track along the BNSF mainline, and seek or create compatible (critical mass cargo) markets.
    - Seek agreement by shippers in Central Oregon to use a single designated intermodal complex.
- Discussion and recommendations for feasibility of a passenger or commuter rail in Central Oregon.

  Project Relevance: While the report is mainly focused on enhancements within the incorporated jurisdictions in Crook, Jefferson, and Deschutes Counties, the County may play a role in implementation strategies, including future multi-party agreements for future passenger and freight rail services or consolidation of at-grade rail crossings.

Cascade Lakes Highway Corridor and Bicycle Facilities Plan (2019)

Deschutes County and the Forest Service applied for Federal Lands Access Program (FLAP) funding in 2016 for a planning study. The scope of the planning project was to study the corridor and identify opportunities for safety improvements.

As described in the Plans' Problem Statement, the following problems were identified through *"*discussion with project partners, research on existing conditions, conversations with corridor users, and County information:*"*

- *Congestion, especially in the northern section of the corridor*
- *Parking on side of roadway which can cause safety issues*
- *Sight distance is compromised in some locations, due to grades, curves, and vegetation*
- *Speeding, especially in straightaways*
- *Unclear signage or lack of advanced signage*
- *Enforcement of speeding and parking violations is limited*

- *For some users, low awareness of cyclists and pedestrians*

The goals of the project were to 1) improve safety for all users of the corridor; and 2) provide a positive visitor experience. The existing conditions analysis described conditions throughout the corridor and site-specific issues, primarily related to trailheads.

The improvements recommended in the plan are shown in Figure 3 and summarized below:

- Implement the "green"-coded Very Low and Low cost improvements.
- Collect vehicle and bicycle traffic data (counts, turning movements, and speed if possible) to help determine the impacts of the Wilderness Strategy and to provide more information on the viability of the "yellow"-coded improvements. Key locations for traffic data are:
    - Study Begin (MP 21.98)
    - Todd Lake Intersection
    - Green Lakes Intersection
    - Devils Lake Intersection
    - Elk Lake Resort Intersection
    - S. Century Drive Intersection
- Collect counts during peak season, in 2019 (prior to Wilderness Strategy going into effect), 2020 (after Wilderness Strategy), then every 2 years for short term and every 5 years for long term.
- There are no preferred shoulder widths recommended because additional traffic data is needed to validate the use and need throughout the corridor. Four options with varying costs were provided in the plan.

  Project Relevance: The improvements recommended should be reevaluated and incorporated in the list of improvements in the TSP, where feasible.

Figure 1. Cascade Lakes Highway Corridor and Bicycle Facilities Plan Recommendations

Relative Cost	Timeline to Implement: Near-Term (0-5 years)	Mid-Term (5-10 years)	Long-Term (10+ years)
Very Low	NV1: Vegetation clearing (maintenance of original cleared areas); Improved/ additional guide, warning and regulatory signing; 6-inch edge line striping	MV1: Increased enforcement presence, especially during peak times	LV1: Increased enforcement presence, especially during peak times
	NV2: Increased enforcement presence, especially during peak times; educational outreach strategies	MV2: Educational outreach strategies	LV2: Educational outreach strategies
	NV3: Maintain good crash records; set simple performance goals	MV3: Maintain good crash records, monitor performance goals	LV3: Maintain good crash records, monitor performance goals
	NV4: Minor improvements at Devils Lake along CLH to limit parking.		
	NV5: Moderate improvements at Devils Lake along CLH to limit parking.		
Low	NL1: Additional clearing along curves, intersections; traditional bicycle warning signing	ML1: Collect regular traffic data at key locations	LL1: Collect regular traffic data at key locations
	NL2: Centerline rumble strips and delineators.		
	NL3: Collect regular traffic data at key locations		
	NL4: Dynamic warning signs for bicyclists.		
Medium	NM1: Transit Pilot Project	MM1: Parking lot expansion of Green Lakes and Devils Lake	
	NM2: Parking lot enhancements (revise existing layouts to be more efficient)	MM2: Additional congestion management/ITS solutions	
	NM3: Improvements at Devils Lake along CLH to limit parking, reduce speeds and improve crossing safety.		
High		MH1: Widen to 4' shoulders from begin through Elk Lake with minor areas of realignment	LH1: Widen to 4' shoulders from Elk Lake south to S. Century Dr.
		MH2: Widen to 5' shoulders from begin through Elk Lake with minor areas of realignment	LH2: Widen to 5' shoulders from Elk Lake south to S. Century Dr.
		MH3: Widen to 6' shoulders from begin through Elk Lake with minor areas of realignment	LH3: Widen to 6' shoulders from Elk Lake south to S. Century Dr.
		MH4: Bypass of existing Devils Lake alignment.	

Deschutes County Transportation SDC Ordinance and Methodology (2013)

System Development Charges (SDCs) are one-time fees imposed on new development, at the time of development, to recover a fair share of existing and planned facilities that provide capacity to serve growth. Consistent with state statutes, SDCs are the sum of two components:

- A reimbursement fee, design to recover costs associated with capital improvements already constructed or under construction, and
- An improvement fee designed to recover costs for future construction projects.

In 2013, Deschutes County revised its SDC methodology and rates. The rate was revised to $3,758 per peak-hour trip, and is inclusive a reimbursement fee and administrative recovery charge. The rate increases annually pursuant to an annual percentage increase or decrease in the construction cost index.

The SDC ordinance establishes a Transportation SDC Fund for gathering fees and distributing funds for capital improvements that provide for the increased capacity necessitated by new development. The SDC ordinance also establishes provisions for providing SDC credits and a review and appeals process.

The methodology calculates an improvement fee based on the number of PM peak hour trips added to the transportation system as a result of new development or redevelopment. The methodology does not include a separate reimbursement fee. The methodology includes updates to the Capital Improvement Project list, Deschutes County Transportation SDC Rate Sheet, and other policy considerations. The SDC rates are based on land uses found in the ITE and are slightly different than those found in the 2008 methodology.

> **Project Relevance**: Transportation SDCs contribute funds to transportation infrastructure in the County, including capital improvement program (CIP) projects. The SDC rates are determined in reference to the TSP, which identifies transportation needs. This TSP update process will reevaluate SDC costs and capacity estimates.

Deschutes County Road Moratorium (Resolution 2009-118)

Since 2006, Deschutes County has been operating under a road moratorium in which the County has suspended the acceptance of new County Roads (local road classification only) for maintenance until such time that road funding is deemed adequate to accept additional roads for maintenance. The resolution suspends the establishment of Local Improvement Districts unless contained within a Special Road District (District) or incorporated homeowners association (HOA) and maintenance responsibility is assured by the District or HOA.

With the moratorium in place, new development, through platting or other dedication instrument, creates Local Access Roads which are dedicated to the public, but not accepted for maintenance by Deschutes County. County code at 17.16.105 requires a maintenance agreement or covenant to be in place for new roads platted through the subdivision process.

> **Project Relevance**: The TSP will evaluate Resolution 2009-118 and provide guidance to the County Board of Commissioners related to the relevance of the resolution in the future.

Transportation Growth Management Grant to Update the Tumalo Community Plan and Implement the Rural Trails Portion of the Sisters Country Vision Implementation Plan (ongoing)

The County received a $75,000 grant from the ODOT/DLCD TGM program to update the 2012 Tumalo Community Plan and amend the County TSP map to incorporate various proposed trails and connectors identified in the Sisters Country Vision Implementation Plan (2019). The Tumalo Update will emphasize gaps in the bicycle and sidewalk system in Tumalo as well crossing US 20. The update will also look at potential transit stops in Tumalo. The rural trails portion will concentrate on potential bicycle, pedestrian and equestrian trails and connections between Sisters and Bend, Redmond, and Tumalo. With the cooperation of the USFS, several of these may be identified as future routes on the Deschutes National Forest.

> **Project Relevance**: The TGM grant may result in amendments to the Bike/Ped Goals and Policies section of the TSP. The TSP update should monitor the TGM grant analysis and incorporate relevant outcomes.