



## 01 | INTRODUCTION

Deschutes County is located in the heart of Central Oregon with the Cascade Mountain Range to the west and the High Desert plateau to the east. The County covers 3,055 square miles of natural beauty, outdoor recreation, and is home to a growing economy. For the last two decades, Deschutes County has experienced rapid population growth and has become a national destination for new residents, visitors and a center for economic prosperity and progress. In the past 10 years, the population of the County has increased by more than 40 percent to more than 200,000 people today; only 33 percent of the County's residents live in the unincorporated and rural areas.

With this unprecedented growth, Deschutes County faces the challenges of maintaining, funding, and planning for a transportation system that both enhances the health and well-being of residents and supports long-term economic resilience for businesses, tourism and recreation. The County's transportation system must accommodate traffic passing through enroute to destinations elsewhere in the region, the day-to-day travel needs of its residents and those employed here in addition to the influx of visitors during the winter and summer months. The County also is home to US 97 and the Redmond Municipal Airport, which are two of the crucial components of Oregon's Resilience Plan in the event of a Cascadia Subduction Zone Event (an earthquake and/or tsunami striking the Oregon coast). With limited funding for new transportation infrastructure, as well as built and natural environmental considerations, the County must balance the need to preserve its existing transportation system with strategic changes to the system that enables these needs to be met during the next 20 years.

The County's Transportation System Plan (TSP) was last updated in 2012. This updated TSP provides a coordinated guide for changes to the County's transportation infrastructure and operations over the next 20 years. Planning for the County's future transportation reflects regional and community goals and values, supports local and regional economic development activities, and enhances the quality of life that residents and visitors enjoy and expect.

## PRIORITIZED INVESTMENTS FOR THE FUTURE

The identified list of priorities for future transportation investments reflects the County's commitment to prioritizing changes to the transportation system that reflect its focus on preserving and maintaining its existing investments. This list of capital investments identified in the TSP will be reviewed and prioritized as part of the County's regular budgeting efforts. For reference purposes, Figure 1-1 shows how the County prepares its annual prioritization and budget for maintenance, operation, and capital expenditures.

Figure 1-1: Hierarchy of Expenditures and Investment



The list of prioritized investments in the TSP is based on this hierarchy and was developed assuming:

1. Current maintenance and operational standards remain in place.
2. The County's existing Road Moratorium (Resolution 2009-118), which limits acceptance of new road miles into the County maintenance system, remains in place.
3. Existing funding levels remain in place and are occasionally adjusted legislatively to a level that will roughly match inflation.
4. No significant additional local funding mechanisms are developed or implemented.
5. State and Federal grant programs are available at approximately the same historical intervals and funding levels.

With this backdrop, the County refined the list of possible TSP projects by working with its residents, policy-makers, and partner agency staff and performing technical analyses of roadways, intersections, bike facilities, transit, walking routes, and transportation safety. Many of the identified projects help to support plans adopted by the local cities, the Oregon Department of Transportation (ODOT), other County planning efforts, the County's Transportation Safety Action Plan (TSAP) and/or local refinement and facility plans. Some of the other considerations that shaped the final list of recommended investments include:

- Balancing impacts to existing and developable parcels with County-wide and community needs;
- Minimizing impacts to Goal 5 resources (natural resources, scenic and historic areas, and open spaces);
- Supporting and enhancing key state and regional economic plans and priorities;
- Identifying key intersections that could be changed in the future to address known safety and/or anticipated capacity needs;

- Prioritizing roadway corridors where strategic investments may be needed to help support future growth and economic development in the region, enhance the safety of all users and/or strengthen connections between areas of the County and to other areas in Central Oregon;
- Providing regional bicycle connections that could serve broad transportation functions, such as commuting, recreation, or daily services;
- Modifying key bridges as funding and/or other opportunities arise;
- Leveraging opportunities for future system changes that could be provided using funds from the Federal Lands Access Program (FLAP), particularly for transportation facilities providing connections to key recreational areas and economic development priorities adjacent to/and or located within Federal lands;
- Coordinating with Cascades East Transit (CET) on projects that can help increase service to the unincorporated areas of the County as well as to the High Desert Museum and Lava Lands Visitor Center;
- Enhancing access to the Redmond Municipal Airport and Bend Municipal Airport; and,
- Leveraging funding opportunities with key partner agencies and private investments.

The list of transportation investments are organized into the following categories for implementation based on complexity, likely availability of funding, and assessment of need:

- Intersection changes;
- Roadway segments, including changes to functional classification;
- ODOT intersections and roadways;
- Pedestrian facilities;
- Bicycle facilities;
- Bridges;
- FLAP projects;
- Transit; and,
- Safety.

Table 1-1 shows the list of identified projects by category and by prioritization. In reviewing this table, it is important to note that some projects may be accelerated and others postponed due to changing conditions, funding availability, public input, or more detailed study performed during programming and budgeting processes. Further, project design details may change before construction commences as public input, available funding, and unique site conditions are taken into consideration. Projects identified herein may be funded through a variety of sources including federal, state, county or local transportation funds, system development charges (SDCs), through partnerships with private developers, or a combination of these sources. In addition, as part of TSP implementation, the County will continue to coordinate with ODOT and the local communities regarding project prioritization, funding, and construction.

Table 1-1: Total Cost of Prioritized TSP Investments

Project Category	Estimated Cost by Priority			Total Cost
	High	Medium	Low	
Intersection Changes	\$11,530,000	\$14,900,000	\$2,100,000	\$28,530,000
Roadway Changes	\$6,100,000	\$25,000,000	\$57,500,000	\$88,600,000
County Share of ODOT Intersections	\$19,100,000	\$3,000,000	\$19,000,000	\$41,100,000
Pedestrian Facilities	\$600,000	\$3,600,000	\$2,100,000	\$6,300,000
Bridges	\$5,700,000	\$2,400,000	\$7,900,000	\$16,000,000
County Share of FLAP Projects	\$600,000	\$3,700,000	\$4,500,000	\$8,800,000
Total	\$43,630,000	\$52,600,000	93,100,000	\$189,330,000

The remainder of this chapter outlines the organization of the TSP as well as a summary of public engagement activities and compliance of the TSP with some of the regulatory requirements.

## TSP ORGANIZATION

The TSP is comprised of two volumes. Volume 1 is the main document and includes the items that will be of interest to the broadest audience. Volume 2 contains the technical memoranda, data, and related transportation plans that enhance and support Volume 1.

Volume 1 includes the following:

- Chapter 1 – a brief overview of the planning context for the TSP;
- Chapter 2 – goals and policies that express the County’s long-range vision for the transportation system;
- Chapter 3 – the transportation system deficiencies and needs as well as the process to develop the TSP’s list of planned capital improvements and transportation programs;
- Chapter 4 – an overview of the recommended projects for the multimodal system (this chapter also serves as the Transportation Element of the Comprehensive Plan);
- Chapter 5 – a list of the multimodal projects and the costs estimated for their construction; and,
- Chapter 6 – a summary of transportation funding and implementation, including estimated revenue, cost of 20-year needs, and potential funding sources.

Volume 2 includes the following technical documents:

- Appendix A: Plans and Policy Review Memo;
- Appendix B: Public Involvement Plan;
- Appendix C: Methodology Memo;
- Appendix D: Transportation System Conditions, Deficiencies, and Needs Memo;
- Appendix E: Solutions Analysis Memo;
- Appendix F: Preferred Alternatives and Funding Plan Memo;
- Appendix G: Redmond Municipal Airport Master Plan; and,
- Appendix H: Tumalo Community Plan (TCP) Active Transportation Update/Sisters Country Vision Action Plan Trails Outreach Update.

While not all of Volume 2 is adopted as part of the TSP, all of the documents provide useful information regarding the basis for the decisions represented in Volume 1.

## PURPOSE

The TSP addresses transportation needs in Deschutes County except within the Urban Growth Boundaries (UGB) for Redmond, Sisters, La Pine and Bend.

The TSP goals, policies, projects, and implementation tasks are based on technical analyses and thoughtful input received from the community, Deschutes County staff, partner agency staff, and County policymakers. The TSP identifies transportation facilities and services that can support the County’s adopted Comprehensive

Plan and continued regional economic development. This TSP provides for a long-term vision to support growth in jobs and population in the County as well as improving the safety for all transportation-users over the next 20 years. The TSP serves as a resource for the County to make decisions about transportation and land use by providing:

- A blueprint for future County transportation investments that improve safety for all travelers;
- A tool for coordination with state, regional and local agencies;
- Information to ensure prudent land use and transportation choices;
- Order of magnitude cost estimates for transportation infrastructure investments needed to support system needs, and possible sources of funding for these improvements; and,
- Function, capacity and location of future roadways, sidewalks, bikeways, transit, and other transportation facilities.

The TSP satisfies the state's requirements as prescribed by Oregon Statewide Planning Goal 12: Transportation.

## GUIDING PRINCIPLES AND CONTEXT

The TSP provides a flexible, adaptable framework for making transportation decisions in an increasingly unpredictable and financially constrained future. Decisions about the County's transportation system will be guided by the goals contained in Chapter 2, but ultimately the decisions will be made within the overall context of the County's land use plans and support for local and regional economic development. These guiding plans and principles provide a foundation for the TSP's goals, policies, and potential actions.

The Oregon Revised Statutes (ORS) require that the TSP be based on the Comprehensive Plan land uses and provide for a transportation system that accommodates the expected growth in population and employment. Development of this TSP was guided by ORS 197.712 and the Department of Land Conservation and Development (DLCD) administrative rule known as the Transportation Planning Rule (TPR, OAR 660-012-0060).

Per the TPR, this TSP identifies multimodal transportation needs to serve users of all ages, abilities, and incomes. As such, solutions to address existing and future transportation needs for bicycling, walking, transit, motor vehicles, freight, and rail, and improved safety for all travelers are included. Further, one of the implementation steps of the TSP will include proposed amendments to the Deschutes County Code. As required by the TPR, this TSP was developed in coordination with local, regional and state transportation plans.

## REGIONAL COORDINATION & COMMUNITY ENGAGEMENT

The TSP reflects the County's continued commitment to coordinating transportation and land use planning within Central Oregon. This update was collaboratively developed by community members, businesses, the freight community, ODOT, Sisters, Redmond, La Pine, Bend, Terrebonne, Sunriver, Tumalo Cascades East Transit (CET), and the County's Bicycle and Pedestrian Advisory Committee (BPAC). Opportunities for engagement included:

- Project website that included all technical reports, draft goals and objectives, and links to other relevant documents;
- Project Management Team Meetings attended by County staff;
- Two Advisory Committee Meetings;
- Four Agency Partner Advisory Committee Meetings;
- Two Public Open Houses;
- Targeted outreach with community and social service organizations; and,
- Updates with the Board of County Commissioners.

Through these activities, the County provided community members with a variety of forums to identify their priorities for future transportation projects, programs, and policies.





## 02 | GOALS AND POLICIES

The TSP provides a coordinated guide for changes to the County's transportation infrastructure and operations over the next 20 years. The development of the TSP is based on the assumption that the transportation system meets daily travel needs and also contributes to the physical, social, and economic health of the County and of Central Oregon. The TSP strives to provide users with a safe and efficient transportation network. As such, planning for the County's future transportation needs must be conducted within regional and community goals and values, support local and regional economic development activities, and enhance the quality of life that residents and visitors enjoy and expect.

The TSP goals provide the County's visions for the future transportation system. The goals are aspirational in nature and may not be fully attained within the 20-year planning horizon. The policies support the goals to help the County implement the TSP projects and programs after the TSP has been adopted. The policies, organized by goals, provide high-level direction for the County's policy and decision-makers and for County staff. The policies will be implemented over the life of the TSP. The County's 2012 TSP goals and policies were used as a foundation for providing the updated TSP goals and policies outlined below.

### GOAL 1: COORDINATION AND COLLABORATION

Promote a multimodal transportation system that supports the County's Comprehensive Plan and is consistent and coordinated with the adopted plans for the State, the region, adjacent counties, and the cities and incorporated communities within the County.

#### Policies

- 1.1 Coordinate the design and operations of the County's transportation system with State, regional, and local planning rules, regulations and standards.
- 1.2 Coordinate future land use and transportation decisions with state, regional and local agencies to efficiently use public investments in the County's transportation system, for people driving, bicycling, walking, or using transit as well as the movement of freight, emergency responses, and evacuation needs.
- 1.3 Coordinate regional project development and implementation with the cities of Bend, Redmond, Sisters, and La Pine.
- 1.4 Provide notification to the affected local and state agency partners regarding land use development proposals, plan amendments and zone changes that have the potential to significantly impact non-County transportation facilities.
- 1.5 Coordinate system management and operations with ODOT on major roadways.

- 1.6 Maintain an intergovernmental agreement with each of the cities to provide specific timelines and milestones for the transfer of County roadways within the urban growth boundaries at the time of annexation, including the full width of right of way.
- 1.7 Provide regular outreach to residents and employers, schools, law enforcement and public health professionals to encourage participation with the County in identifying and solving transportation issues.
- 1.8 Coordinate with CET to implement the Transit Master Plan recommendations within the County to support people taking transit.

## GOAL 2: SAFETY

Provide a transportation system that promotes the safety of current and future travel by all users.

### Policies

- 2.1 Design and maintain County roadways consistent with their expected use, vehicular travel speeds, and traffic volumes.
- 2.2 Incorporate the Transportation Safety Action Plan (TSAP) goals and action items into County planning projects and update the TSAP at appropriate intervals.
- 2.3 Coordinate with the Sheriff's Office to discuss enforcement activity on specific facilities in the County and jointly communicate safety issues when observed and encountered.
- 2.4 Continue the partnership with the County's BPAC to promote education and outreach activities and to inform future County investment decisions in facilities for people riding bikes and walking.
- 2.5 Coordinate with the emergency service providers in the County to prioritize the maintenance and investment in key lifeline and evacuation routes.
- 2.6 Coordinate with ODOT, railroads, and local communities to prioritize safety investments at rail crossings.
- 2.7 Prioritize investments in key crossing locations for people walking and riding bikes across major County roadways and/or ODOT highways, especially at locations that serve vulnerable populations.
- 2.8 Coordinate with ODOT for planning for grade-separate wildlife crossings of State highways using relevant wildlife migration information, crash data, and best management practices.

## GOAL 3: MOBILITY AND CONNECTIVITY

Promote a multimodal transportation system that moves people and goods between rural communities and Sisters, Redmond, Bend, La Pine, and other key destinations within the County as well as to the adjacent counties, Central Oregon, and the state.

### Policies

- 3.1 Maintain the County's roadway system in a state of "good repair."
- 3.2 Invest in new roadways only when a need has been demonstrated that benefits the economic growth of the County and/or locations that address key gaps in the roadway system and there is sufficient long-term funding to operate and maintain the new roadways.
- 3.3 Monitor the safety, traffic volumes, and usage by people walking and riding bikes on County arterials and collectors to help determine when changes to specific roadways are needed and/or educational outreach to the traveling public.
- 3.4 Maintain a County-wide bicycle route map.
- 3.5 Partner with ODOT, Bend, La Pine, Redmond, Sisters, and neighboring counties to coordinate investment in transportation facilities that cross jurisdictional boundaries.
- 3.6 Pursue funding to provide secondary access roadways to isolated rural subdivisions.
- 3.7 Periodically review transportation performance standards used to review land use applications and modernization projects and revise if needed.
- 3.8 Periodically review and update the County design and construction standards related to roadways and facilities for people walking and riding bikes in unincorporated areas.
- 3.9 Periodically review policies and standards that address street connectivity, spacing, and access management.
- 3.10 Support transit service to improve mobility within the County and connectivity to transit stations in Bend, Redmond, La Pine, and other regional and state destinations.
- 3.11 Monitor the condition of County bridges on a regular basis and perform routine maintenance, repair and replacement when necessary.
- 3.12 Partner with local agencies, ODOT, and the public airports to periodically review airport master plans for Redmond, Bend, Sisters, and Sunriver to ensure they and County development code are consistent.
- 3.13 Partner with the US Forest Service and Bureau of Land Management to maintain the County's system of forest highways to continue to provide key access to recreational areas such as campsites, lakes, hiking, and biking trails in the County.

- 3.14 Coordinate with ODOT to identify County routes to be used as detours when a crash or other incident closes a State highway.
- 3.15 At a minimum, seek dedication of public rights of way for extensions of existing roads or future roads on lands not zoned Exclusive Farm Use or Forest in order to develop a rural-scale grid system.

## GOAL 4: ECONOMIC DEVELOPMENT

Plan a transportation system that supports existing industry and encourages economic development in the County.

### Policies

- 4.1 Prioritize transportation investments that support access to allowed land uses, activities, airports, and recreational areas.
- 4.2 Maintain arterials and collector roadways for the movement of people and goods to employment centers in the County.
- 4.3 Update and continue to implement the County's Transportation System Development Charge (SDC) program.
- 4.4 Incorporate facilities for people walking and riding bikes to key recreational areas as part of changes to the roadway system.
- 4.5 Support bicycle tourism by prioritizing and improving designated County bike routes.
- 4.6 Incorporate improvements to the County arterial system that support freight service and provide access to US97, US 20, and OR 126.
- 4.7 Support economic development by encouraging ODOT to prioritize modernization, preservation, and safety projects on highways designated as Freight Routes.
- 4.8 Periodically assess the probability of providing passenger rail service to and through Deschutes County.

## GOAL 5: EQUITY AND ACCESSIBILITY

Provide a multimodal transportation system that supports a safe, efficient, and low-stress environment for walkers, cyclists and transit users as well as benefits the overall health and environment within the County.

### Policies

- 5.1 Prioritize investments in the County's transportation system that support users of all abilities, ages, race/ethnicity, income levels, and those with disabilities.

- 5.2 Design all new transportation facilities consistent with the requirements of the American's with Disabilities Act (ADA).
- 5.3 Maintain a partnership with CET, the cities, ODOT, and transportation options providers to promote walking and cycling, public transportation, micro mobility options, and rideshare/carpool programs through community awareness and education.
- 5.4 Accommodate bicycle, pedestrian, and transit facilities, when prescribed by design standards and various master plan documents, when new roads are constructed and/or existing roads are reconstructed.
- 5.5 Maintain road design standards that promote pedestrian, bicycle and transit facilities to and from schools, community gathering places, grocery stores, and other services as prescribed within community plans.
- 5.6 Establish priorities for construction and maintenance of roadway shoulders or shared use pathways to provide for walking and bicycle travel.
- 5.7 Partner with ODOT, the cities, CET and other providers to secure funding for transit service to underserved areas of the County.
- 5.8 Support efforts of local agencies to develop and maintain a trail system along the Deschutes River, within Tumalo, and along major irrigation canals.
- 5.9 Support Commute Options' efforts to work with major employers, local business groups, non-profit agencies, school districts to support implementation of Transportation Demand Management (TDM) strategies that provide options employees, residents, and customers to use transit, walk, ride bikes, carpool, and telecommute.

## GOAL 6: SUSTAINABILITY AND ENVIRONMENT

Provide a transportation system that balances transportation services with the need to protect the environment.

### Policies

- 6.1 Partner with BPAC, local agencies, CET, and non-profit groups to promote the use of walking, cycling and transit as viable options, minimize energy consumption, and lessen air quality impacts.
- 6.2 Ensure changes to the County transportation system are consistent with the Transportation Planning Rule (TPR).
- 6.3 Comply with applicable state and federal noise, air, water, and land quality regulations as part of transportation investments in the County.
- 6.4 Preserve listed Goal 5 resources within the County.

- 6.5 Implement, where cost-effective, environmentally friendly materials and design approaches as part of County transportation projects (e.g., storm water retention/treatment to protect waterways, solar infrastructure, impervious surfaces, etc.).
- 6.6 Prioritize transportation investments that support system resilience to seismic events, extreme weather events, and other natural hazards.

## GOAL 7: STRATEGIC INVESTMENTS

Maintain the safety, physical integrity, and function of the County's multi-modal transportation network, consistent with Goal 6 of the OTP.

### Policies

- 7.1 Continue to pursue and implement Federal Lands Access Program (FLAP) funding to prioritize County investments to support tourism and access to key recreational areas.
- 7.2 Maintain long-term funding stability for maintenance of the transportation system.
- 7.3 Prioritize investment in the existing transportation network through maintenance and preservation activities.
- 7.4 Coordinate with ODOT and local agency partners to implement intelligent transportation solutions that increase the life of transportation facilities and/or delay the need for capacity improvements.
- 7.5 Periodically review and, if needed, make updates to the County Code requirements to ensure that future land use decisions are consistent with the planned transportation system.
- 7.6 Coordinate with ODOT in the implementation of the Statewide Transportation Improvement Program (STIP) and Statewide Transportation Improvement Funding (STIF).
- 7.7 Coordinate with and provide guidance to CET in programming public transportation funds received by the County.
- 7.8 Pursue additional funding sources to support major reconstruction or replacement of County bridges.
- 7.9 Partner with federal and state agencies to seek funding that prioritize investments that support recommendations from the Bend, Redmond, Sisters, or Sunriver airport master plans.

# CHAPTER 3: NEEDS ASSESSMENT AND EVALUATION

The TSP projects and implementation tasks were informed by technical analyses of existing transportation conditions, forecast year 2040 deficiencies, and an evaluation of possible system changes that can meet the transportation needs for all users (including the transportation disadvantaged) and address the need for movement of goods and services to support local and regional economic development priorities. The needs assessment, in combination with thoughtful input received from the community, Deschutes County staff, partner agency staff, and County policy makers, formed the list of recommended projects, the TSP goals and policies and the funding plan. This chapter summarizes the key elements of the existing and future needs analyses; further details of the needs analyses are provided in Volume 2.

## EXISTING TRANSPORTATION SYSTEM CONDITIONS

Existing transportation needs, opportunities, and constraints reflect an inventory of the County transportation system conducted in 2019 and 2020. This inventory included all major transportation-related facilities and services at that time. Key roadway features (including number and type of roadway lanes, speeds, pavement type/condition, traffic volumes and roadway classifications), traffic conditions, safety performance, bicycle and pedestrian facilities, and transit service, among other topics, were analyzed.

Key findings related to the existing County system are highlighted below.

- The areas within the County with the highest percentages of youth are primarily located in Tumalo and Terrebonne as well as adjacent to the Bend and Redmond Urban Growth Boundaries (UGBs). Connections for school students between their homes, the local community schools, and school bus stops were considered in identification of potential roadway, walking, cycling and transit projects.
- The highest percentage of elderly populations is located in the Sunriver area and adjacent to the Sisters, Redmond, and La Pine UGBs. The areas adjacent to these three UGBs are also where the highest concentration of the population with disabilities and the minority populations reside. Coordination with Cascades East Transit (CET) to serve the existing and future needs of these residents is included in the recommended implementation task list for the TSP.
- Continued coordination between the County and ODOT and the incorporated communities will help address and provide consistency of individual roadway functional classification designations.
- Roadway repairs are and will continue to be monitored and accomplished as part of the County's ongoing maintenance program.
- The County does not have any designated freight routes that provide connections to local industrial and employment lands. The TSP alternatives evaluation explored the need to designate County freight routes to serve key economic priority areas to supplement the ODOT freight system.
- No roadway capacity deficiencies were identified under existing conditions.

- The County's Transportation Safety Action Plan (TSAP) identified key locations for monitoring and potential changes to the transportation system to address documented safety deficiencies. The TSAP is incorporated by reference as part of the TSP.
- Many of the County bikeways and highways do not have paved shoulders that are at least six feet wide which is the standard for ODOT highway while the County standard for paved shoulders is 3-5'.
- The small, unincorporated communities in the County do not have dedicated bicycle facilities and several of the roadways adjacent to schools or other pedestrian trip generators (parks, trail connections, rural commercial areas, etc.) located in Terrebonne and Tumalo are missing sidewalks. Safe Routes to School funding may be an option to assist with implementation of TSP recommendations in small communities.

## BASIS OF NEED ASSESSMENT

The TSP addresses the projects, programs, and policies needed to support growth in population and jobs within the County as well as the travel associated with regional and state economic growth between now and the year 2040. The identified set of recommendations reflects County policy makers' and community members' priorities to maintain existing facilities and reduce congestion, save money, improve safety, and provide community health benefits without costly increases to automobile-oriented infrastructure. Over time, the County will periodically update the TSP to respond to changing conditions and funding opportunities.

The existing land use patterns, economic development opportunities, and population and job forecasts helped inform the analysis of year 2040 needs. This information helped identify future changes to the transportation system (and the supporting policies and programs) to address deficiencies and support economic development in a manner consistent with the County's Comprehensive Plan and Zoning Map.

### Growth in County Population

By Oregon Revised Statute 195.034, incorporated cities and counties formulate and adopt coordinated population projections. Based on the June 2022 Coordinated Population Report prepared by the Portland State University (PSU) Center for Population Research, in 2020 the total County population was 198,253 and is forecast to grow to a total population of 275,905 by the year 2040. Much of the County growth is expected to occur within the Redmond, Bend, and Sisters UGBs. Within the unincorporated/rural areas, the 2020 population was 59,471 and is anticipated to grow to approximately 64,000 people by 2040. The anticipated growth in both urban and rural population within the County helped inform the estimation of year 2040 traffic volumes using the County transportation facilities.

## Traffic Volume Development

The expected increase in traffic volumes on key roadways within the County was based on a review of past changes in traffic volumes as well as expected increases in population and area jobs. Further details on the anticipated growth in traffic volumes on roadways within the County is provided in Volume 2.

The deficiencies evaluation included a review of County arterials and collector roadways. The roadway capacity needs associated with the State facilities within the County are addressed through other planning efforts by ODOT. The County will continue to partner with ODOT to monitor and identify additional needs through future planning and evaluation efforts.

The deficiencies analysis compares the anticipated traffic volumes on the roadways to capacity levels associated with a Level-of-Service (LOS) "D" condition, which is considered by the County to reflect "acceptable" conditions. From a planning standpoint, two-lane rural roadways carrying a total daily volume of less than 24,000 vehicles per day is generally considered to operate with a LOS "D" or better.

## Baseline Roadway Analyses

The baseline (future) analysis forms the basis of the project list reflected in Chapter 5. This baseline analysis was guided by the transportation needs identified in previously adopted plans and policies for the County, ODOT, and other agency partners, the 2040 population forecasts and the County's land use map, the anticipated growth in traffic volumes, and the fact that there are no major construction projects that are funded at this time that could materially change traveler behaviors or traffic volumes on the County's roadway network in the future.

## Baseline (Year 2040) Transportation Needs

In addition to the summary of existing deficiencies identified in the previous section, the future deficiencies analysis revealed:

- Two County roadways that would exceed LOS "D" conditions, including Deschutes Market Road at Greystone Lane and S Century Drive at Venture Lane.
- Following adoption of the TSP, the County will continue to monitor the need for changes to the transportation system to address roadway and intersection safety, especially at the locations included in the TSAP.
- Although most County roadways do not have adequate width for comfortable and convenient connections for people walking and riding bicycles, providing shoulders on all County collectors and arterials in the next 20 years is not feasible due to constraints such as available right-of-way, environmental and/or property impacts and the high costs to construct. The County will continue to seek opportunities to provide shoulders, particularly in areas with significant roadway curvature, hills, bridges and other locations that could be beneficial for sharing the road among people driving, walking and riding bikes. Additionally, many County roads have low volumes of traffic, which offsets the substandard shoulders.

- Additional public transportation services are needed to provide options for people who cannot or may choose not to drive vehicles. In the future, transit service will continue to be coordinated and operated by CET. The County will continue to collaborate with CET and ODOT on the prioritization of funding and operating public transportation services within and to the County.
- The Redmond Municipal Airport Master Plan was updated in 2018 to identify needs through the year 2040. This updated Master Plan identified the provision of additional airside facilities, general aviation facilities, parking supply, passenger facilities, and non-aeronautical property development in the vicinity of the airport to support the Airport through the year 2040.
- No changes to the existing rail or pipeline facilities were identified to serve the future needs of the County.

## Evaluation Of Transportation System Alternatives to Address Identified Needs

The Advisory Committee (AC), Agency Partner Coordination Committee (APCC), Project Management Team (PMT), the Bicycle and Pedestrian Advisory Committee (BPAC) and participants at open houses and other community forums identified transportation system alternatives that had the potential to address existing and future transportation needs. Many of the potential alternatives help to support plans that have been identified by the cities and unincorporated areas within the County, ODOT, other County planning efforts, the TSAP and/or local refinement and facility plans.

The identified alternatives address all modes of travel and include programs that could reduce vehicular travel demand. Further, these potential system alternatives avoid principal reliance on any one mode of transportation and increase transportation choices for all users. The PMT developed these ideas into a potential project list that they screened considering the TSP's goals and objectives and key County priorities. The potential solutions were reviewed and refined through community members and policymakers to form the 20-year list of projects reflected in Chapter 5. Through this process, evaluation of solutions that could address the identified needs as well as serve to accomplish key County objectives were identified. Some of the considerations that shaped the final list of recommended projects include:

- Balancing impacts to existing and developable parcels with County-wide and community needs;
- Minimizing impacts to Goal 5 resources (natural resources, scenic and historic areas, and open spaces);
- Supporting and enhancing key state and regional economic plans and priorities;
- Leveraging future transportation investments to reduce access, economic, safety and health disparities within the County, particularly those areas identified as serving populations of low income, minority, youth and/or the elderly;
- Providing additional connections within Terrebonne and Tumalo for people walking;
- Identifying key intersections where the roadway geometry and/or traffic control could be changed in the future to address known safety and/or anticipated capacity needs;
- Prioritizing strategic roadway corridors where vehicular capacity and/or changes to the roadway characteristics may be needed to help support future growth and economic development in the

region, enhance the safety of all users and/or strengthen connections between areas of the County and to other areas in Central Oregon;

- Providing regional bicycle connections that could serve broad transportation functions, such as commuting, recreation, or daily services;
- Modifying key bridges as funding and/or other opportunities arise;
- Leveraging opportunities for future system changes that could be provided using funds from the Federal Lands Access Program (FLAP), particularly for transportation facilities providing connections to key recreational areas and economic development priorities adjacent to/and or located within Federal lands;
- Coordinating projects included in the CET Master Plan that can help increase service to the unincorporated areas of the County as well as to the High Desert Museum and Lava Lands Visitor Center;
- Enhancing access to the Redmond Municipal Airport and Bend Municipal Airport;
- Improving freight mobility; and,
- Leveraging funding opportunities with key partner agencies and private investments.

The resultant 20-year project list is intended to address the identified transportation needs, meet the TSP goals, and reflect the criteria included in ORS 660-012-0035. The TSP projects are categorized as high, medium, and low priorities for future inclusion into the County's Capital Improvement Program (CIP) based on the complexity, likely availability of funding, and assessment of need. The intent of identifying likely priorities allows the County with the flexibility to adapt to changing economic development and community needs over the next 20 years. The project lists and maps of the potential locations were posted to the County's website prior to adoption. Details of the recommended project lists are provided in Chapter 5.

## 04 | PROVIDING MULTIMODAL SYSTEMS

The TSP is a coordinated set of multimodal policies, programs, and projects that addresses the transportation needs within the rural and unincorporated areas of the County over the next 20 years. This chapter provides an overview of these programs and projects; the detailed project list and associated cost estimates are shown in Chapter 5.

Although driving will continue to be the primary mode of travel in the County and the preservation and improvement of the existing roadway system will remain important, the TSP projects, policies, and programs are intended to increase transportation choices, reduce reliance on the automobile by better accommodating and encouraging travel by foot and bike for short trips, improve safety for all transportation users, and provide for improved transit service. The TSP and the County's adopted land use plans and regulations are intended to make walking, cycling, and use of transit convenient.

### THE ROADWAY SYSTEM

People driving, walking, biking, and taking transit all rely on the roadway network to access destinations locally within the County as well as regionally within Central Oregon. The identified roadway solutions in the TSP address mobility, access, freight, and safety needs.

#### Functional Classification

The County's functional classification system provides a system hierarchy based on the intended function of each type of roadway (e.g., moving people across Central Oregon or providing access to local destinations). ODOT identifies the appropriate classifications for state facilities whereas the County identifies the appropriate classifications for roads under its authority. The classification levels also describe how the roadway "looks and feels" and provides recommendations for travel lane widths, roadside treatments, accommodating bicycles, and the need for sidewalk or trails adjacent to the road.

The County's functional classification is based on the following hierarchy:

- Arterials are intended to serve more regional needs and provide connections to key activity centers within the County. They are also intended to represent the key movement of goods and services throughout and to/from the County. These roadways also provide connections to the incorporated UGBs within the County.
- Collectors primarily connect the rural areas of the county with the state facilities and the County arterials. These roadways provide important connections to much of the unincorporated areas of the County.
- Forest Highways provide access to recreational areas such as campsites, lakes, hiking, and biking trails in the County. Maintenance of these facilities is provided by the County and by the Forest Service, depending on location.

- Local roads serve specific areas within the County and can be paved or unpaved.

Figure 4-1 presents the County's functional classification map.

## County Roadway Cross-Section Standards

The County's cross-section standards are used to guide the construction of new roadways and/or changes to existing roadways. These standards are updated over time to support the needs of all users as well as continued economic development opportunities. Many existing roadways within the County area are not built to the standards shown in Table 4-1. The adoption of these standards is not intended to imply that all existing roadways be rebuilt to match these standards, rather the standards will help inform identified changes to specific roadways in the future. Further, because the design of a roadway or corridor can vary based on the needs of the area, these standards provide flexibility based on adjacent land use and specific topographic considerations. The unincorporated communities of Terrebonne and Tumalo have their own standards; these are shown in Table 4-2 and Table 4-3, respectively.

The County standards do not require a sidewalk except for certain segments in Terrebonne and Tumalo; people walking or biking are assumed to use the shoulder or share the road on lower volume streets. Standards are presented within the TSP for reference only. DCC Chapter 17.48 (in particular Table A) contains the adopted County's roadway standards.

Table 4-1: Minimum Road Design Standards, Rural County (outside of La Pine, Tumalo, and Terrebonne)

Type/Class	ROW	Paved Width	Travel Lane Width	Paved Shoulder Width	Gravel Shoulder Width	Turn Lane Width	Sidewalk Required
State Hwy	80'-100'	36'-70'	12'	6'	---	14'	No
Minor Arterial	80'	28'-46'	11'	3'-5'	2'	14'	No
Collector	60'	28'-46'	11'	3'-5'	2'	14'	No
Local Road	60'	20', 24"	---	---	2'	---	No
Industrial	60'	32'	---	---	---	---	No
Private	---	20', 28'	---	---	---	---	No
Frontage Road	40'-60'	28'	---	---	---	---	No

Source: Deschutes County Code 17.48.050, Table A

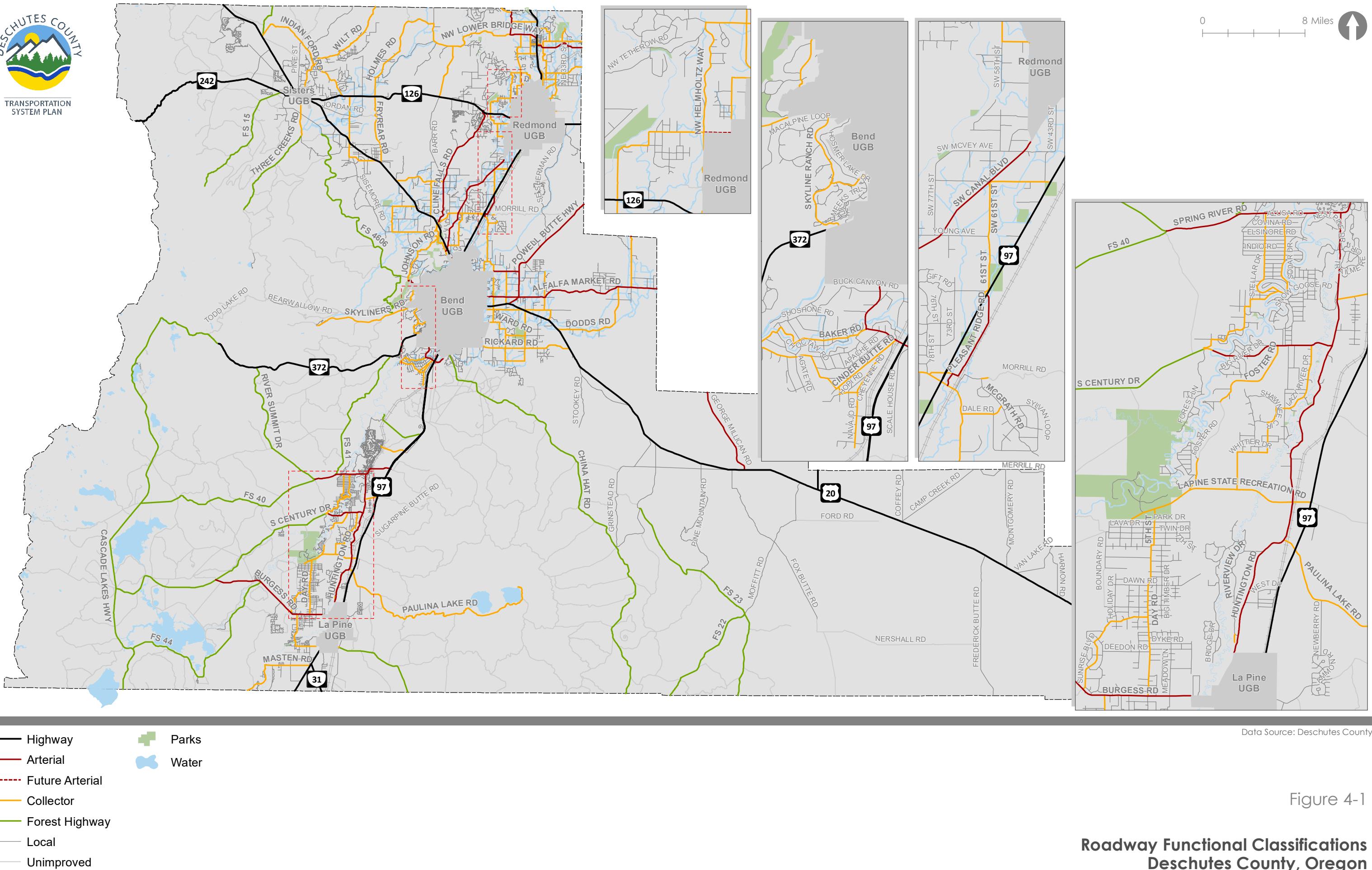


Table 4-2: Minimum Road Design Standards, Terrebonne Unincorporated Community

Type/Class	ROW	Paved	Travel Lane	Paved Shoulder	Gravel Shoulder	Turn Lane	Sidewalk
		Width	Width	Width	Width	Width	Required
US97	80'-100'	60'	12'	6'	6'	14'	No*
<b>Minor Arterial</b>							
Smith Rock Way	TeC	60'	34'	12'	5'	2'	14' Yes
	TeR	60'	34'	12'	5'	2'	14' No
Lower Bridge Way		60'	34'	12'	5'	2'	14' No
<b>Collector</b>							
Commercial	TeC	60'	24'	12'	---	2'	--- Yes
	TeR	60'	24'	12'	---	2'	--- No
Residential	TeR	60'	24'	12'	---	2'	--- No**
<b>Local</b>							
Commercial	TeC	60'	24'	12'	---	2'	--- Yes
	TeR	60'	24''	12'	---	2'	--- No
Residential	TeR	60'	20'	12'	---	2'	--- No***
<b>Other</b>							
Alley (Commercial)		20'	20'	10'	---	---	--- No
Path/Trail		15'	6'-8'	---	---	2.5****	--- ---

Source: Deschutes County Code 17.48.050, Table A

6-foot sidewalks are required on both sides of US97 between South 11<sup>th</sup> Avenue and Central Avenue with improved pedestrian crossings at B Avenue/97 and C Avenue/97

\*\* 5-foot sidewalks with drainage swales are required from West 19<sup>th</sup> to 15<sup>th</sup> Street on the south side of C Avenue

\*\*\* 5-foot curb sidewalks with drainage swales required along Terrebonne Community School frontage on B Avenue and 5<sup>th</sup> Street

\*\*\*\* If path/trail is paved

Table 4-3: Minimum Road Design Standards, Tumalo Unincorporated Community

Type/Class	ROW	Paved Width	Travel Lane Width	Paved Shoulder Width	Gravel Shoulder Width	Turn Lane Width	Sidewalk Required
US 20	80'-100'	60'	12'	4'	6'	14'	No
<b>Collector</b>							
Commercial	60'	30'	11'	4'	2'	14'	Yes
Residential	60'	36'	12'	6'	2'	14'	No
<b>Local</b>							
Commercial	60'	20'	10'	---	2'	---	No*
Residential	60'	20'	10'	---	2'	---	No
<b>Other</b>							
Alley (Commercial)	20'	20'	---	---	---	---	No
Path/Trail	15'	6' unpaved 8' paved	---	---	2.5''**	---	No

Source: Deschutes County Code 17.48.050, Table A

\*5-foot curbless sidewalks on both sides for roads designated for sidewalks in Tumalo Comprehensive Plan Map D2.

\*\* If path/trail is paved

## Federal Lands Access Program Roadways

The Federal Lands Access Program (FLAP) was established to "improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands." This program is intended to supplement State and County funds for public roads, transit, and other transportation facilities accessing federal lands with a prioritized emphasis for "high-use recreation sites and economic generators." FLAP is funded through the Federal Highway Trust Fund and its allocation is based on road mileage, bridges, land area, and number of visits to the lands.

FLAP provides funding opportunities to help the County deliver capital projects that increase access to Federal Lands. In addition, FLAP is a funding tool to help the County fund maintenance of existing roads that are designated as Forest Highways and other roads that provide similar access.

As part of TSP implementation, the County will continue to coordinate with all of the federal agencies, BPRD, CET, and ODOT on the request for future FLAP-funded projects.

## State Highway Design Standards

Any future changes to the state highways within the County will be informed by the OHP, the state's Highway Design Manual (HDM), and the Blueprint for Urban Design, which provides more flexible standards for urban areas.

## Access Management and Spacing Guidance

Providing appropriate levels of access to adjacent lands is a key part of operating and planning for a transportation system that serves the needs of all users. ODOT and the County maintain standards to help balance the needs for both "through travelers" (including freight and public transportation) as well as serving the localized needs of residents, employees, and visitors.

For state highways, access spacing guidelines are specified in the 1999 Oregon Highway Plan, Appendix C – Access Management Standards. Access to State Highways is controlled under Oregon Administrative Rule, Division 51 (OAR 734-051-4020(8)).

The adopted County access spacing standards are included in DCC Chapter 17.48.

## Movement of Freight

The movement of goods and services within the County and the overall region will continue to rely upon the state highways, especially those designated as freight routes. The TSP does not include a designated freight system of County roadways.

## Traveler Information/ITS

Intelligent Transportation System (ITS) infrastructure enhances traffic flow, maintenance activities, and safety through the application of technology. The provision of reliable ITS infrastructure to inform motorists about incidents, weather conditions, and congestion has proven to be a useful and cost-effective tool for the County to manage its roadway system.

ODOT and the County collaborated to update the Deschutes County ITS Plan in 2020. This update reflected identified needs, advanced and emerging technologies, and supports an integrated Transportation Systems Management and Operations (TSMO) strategy. The plan includes recommended TSMO strategies, a communications plan, and a deployment plan. This plan is incorporated by reference into the TSP.

## Safety

The County's 2019 Transportation Safety Action Plan (TSAP) provides specific projects, policies, and programs to address identified safety needs within the unincorporated areas of the County. The TSAP is adopted by reference into the TSP.

As part of TSP implementation, the County will continue to identify future project refinements, as needed, monitor the timing of intersection changes at these locations, and seek funding opportunities and/or the potential to combine safety-related projects with other project development within the County.

Several of the safety-based needs for the County reflect conditions best addressed through education, enforcement, or outreach programs. Others may be addressed through systemic intersection and roadway treatments at specific locations. The type of treatments that could be considered by the County are further detailed in the TSAP and include:

- Roadway Treatments to Reduce Roadway Departure Crashes – With new road construction and roadway maintenance projects, the County may consider the construction of shoulders (as required by roadway standards), centerline and shoulder rumble strips, edge-line striping, recessed or raised pavement markers, and/or curve signing upgrades.
- Roadway Treatments to Reduce Speed – With new road construction and roadway maintenance projects, the County may consider lane narrowing at targeted locations, transverse speed reduction markings, and speed feedback signs in conjunction with posted speed limit signs. At rural communities, changes in roadside elements can be used to indicate a change in context to reduce speeds. In addition, enhanced enforcement at key corridors could focus on driving at appropriate speeds.
- Safety Data Monitoring – County staff, in collaboration with ODOT, will continue to periodically analyze crash data and identify the need for engineering, enforcement and educational treatments at specific locations. Tools such as ODOT's Safety Priority Index System (SPIS) and All Roads Transportation Safety (ARTS) programs may be used to assist with prioritizing locations.
- Safe Routes to School – The County, Tumalo, and Terrebonne should seek projects that improve safety near schools and school routes, particularly for those walking and biking to school. These efforts should be coordinated with infrastructure projects such as ADA projects.
- Enhanced Intersection Signing and Striping Options – At collector and arterial intersections, the County may consider enhancements such as advanced warning signs, double advance signs, reflective striping and signage, oversized stop signs, double stop signs, stop ahead pavement markers, transverse rumble strips, and edge-line treatments to help increase visibility and awareness of an intersection. The County should prioritize the use of treatments that have documented effectiveness through the Highway Safety Manual (HSM) or documented Crash Modification Factors (CMFs).

The top sites for safety improvements in unincorporated Deschutes County are identified in the TSAP and will help inform future funding and prioritization in the County's Capital Improvement Plan (CIP).

## THE PEDESTRIAN SYSTEM

Outside of the urban areas, sidewalks are needed in portions of Tumalo and Terrebonne to provide walking facilities between the residential areas and schools and the neighborhood commercial areas. In addition, dedicated sidewalks are appropriate within one-quarter mile of transit stops. The County will work with the local communities, CET and the private sector to identify funding opportunities to add sidewalks in these areas over the next 20 years.

Additional changes not specifically identified in the TSP to the sidewalks, pathways, and pedestrian crossings treatments at key intersections may be provided in the future based on project development and design as well as funding opportunities. Where applicable, the County will require sidewalk and/or multiuse pathway construction as part of future land use actions per the DCC Chapter 17.48 requirements.

## THE BICYCLE SYSTEM

Deschutes County provides and maintains useable shoulders along roadways for use by people riding bikes though not all roadways are currently improved to include such facilities. The County has an aspirational designated bicycle route system ("County Bikeways") where useable shoulders will be provided, as practical, as part of ongoing maintenance and roadway improvements projects.

Crossing improvements for people riding bikes, though not specifically identified in the TSP, may be provided when bicycle facilities are constructed that intersect major roads. The need for and type of crossing treatments as well as other facility changes will be evaluated at the time of project development and design. The County may provide such facilities as standalone projects or in conjunction with scheduled maintenance activities. As part of TSP implementation, the County will evaluate the need to modify existing DCC Chapter 17.48 requirements related to bicycle facility requirements as part of future land use actions.

In addition, as part of implementation of the TSP, changes to the bicycle network will continue to be informed by the County's Bicycle and Pedestrian Committee (BPAC) activities. BPAC's mission is "to promote and encourage safe bicycling and walking as a significant means of transportation in Deschutes County" and focuses on both changes to the system as well as public education and awareness and a review of safety and funding needs as part of implementation of potential projects.

The County will also continue to partner with ODOT to identify priority locations along the state highways for increased shoulder widths and/or shared use paths.

The County, by reference, will adopt the Map 11 of the Bend Parks and Recreation District's (BPRD's) Comprehensive Plan (2018) identifying future trail connections to parks within the County but outside the Bend (UGB) as well as those within the Deschutes National Forest. As noted in the BPRD plan, the trails have been prioritized for implementation but the actual alignments in the map are approximate and subject to future easement/user agreements to enable trail construction, availability of funding, and securing agreements from affected property owners for trailheads and parking areas.

The Redmond Area Parks and Recreation District (RAPRD) also provides access to trails and facilities outside of the Redmond City Limits, including those in Terrebonne and Tumalo and the Borden Beck Wildlife Preserve. As part of TSP implementation, the County will coordinate with RAPRD on the need for and timing of new trails outside of the Redmond City Limits.

The La Pine Parks and Recreation District also provides facilities outside of the City Limits, such as the Leona Park and Rosland Campground. They are also planning for a working with BLM on a property transfer of 141 acres to the Park District that will house a future "South County Events Area" to include facilities for "campers, bikers, walkers, hikers, horse owners and others". The County will coordinate with Park District on the planning for this new facility as well as overall access to existing facilities outside the City Limits.

As part of TSP implementation, the County will coordinate with BPRD, RAPRD, the La Pine Parks and Recreation District, and the Sisters Park and Recreation District on the planning for and timing of new trails outside of city limits. It is important to note that not all County roadways are currently or will be designed to provide roadside parking for trailhead users within the County. The County will work with each of these parks and recreation districts to identify appropriate locations in the future to provide safe access for trail users as well as to roadway users not accessing the parks/trails.

## Other Programmatic Considerations for the Pedestrian and Bicycle System

Other policy/programmatic considerations that the County may incorporate as part of TSP implementation are dependent on funding opportunities and potential agency partnerships. These types of considerations could include:

- Monitoring System – pending availability of resources, the County could establish a data monitoring or counting program that helps to identify and prioritize locations with higher levels of walking and cycling activity. In combination with safety reviews through TSAP and other ongoing regional efforts, this data monitoring program can help the prioritization of resources in the future.
- Continued Education and Outreach – implementation activities might include topics related to providing the Sheriff's Department and other emergency services personnel with training regarding bicycle/pedestrian safety and enforcement issues; encouraging and supporting efforts by County schools or other organizations to develop and add a bicycle/pedestrian safety curriculum for students of all ages; identifying opportunities to install signage along roadways where bicycle touring or other significant bicycling activity is expected advising travelers of the "rules of the road" pertaining to motorists and non-motorized travelers, etc.
- Ongoing Maintenance Activities – further reviewing the budgets associated with maintenance activities along key cycling routes, including the periodic removal of debris including small branches and other roadside debris that could create safety hazards for a bicyclist or pedestrian.
- Additional Funding Partnerships - exploring opportunities for coordination and cooperation with state and federal agencies in examining innovative means of providing or funding pathways, trails, and equestrian facilities.

## TRANSIT SERVICES

In 2020, CET adopted its Master Plan to reflect the transit needs of the region through the year 2040. The CET Master Plan is adopted by reference into the Deschutes County TSP.

Per the adopted Master Plan, CET will continue to provide high-quality, available, and reliable transit service that fundamentally supports the environment, economic development, and equity for all travelers. Within the unincorporated and rural areas of the County, the CET Master Plan identifies the following:

- Increasing local circulation via local Dial-A-Ride and/or Community Connector vehicles;
- Providing service to Crooked River Ranch via shopper/medical shuttles;
- Potential service to Eagle Crest and/or providing a stop in Tumalo along Route 29;
- Changes to the bus stop for Deschutes River Woods (e.g., Riverwoods Country Store) or an alternative way to serve Deschutes River Woods via Route 30;
- Re-routing existing service lines to Sunriver;
- Adding service to the High Desert Museum and Lava Lands Visitor Center (potentially seasonally based); and,
- A new Route 31 and/or modification of Route 30 to connect La Pine and Sunriver.

Finally, the transit capital investments identified in the CET Plan include fleet replacement and expansion and transit stops enhancement and additions. The County and CET will continue to partner on transit projects that serve the community.

## RAIL SERVICE

Freight rail service will continue to be an important, energy efficient mode of transportation. The TSP supports the continued use of freight rail tracks and service provided in the County by the Burlington Northern Santa Fe (BNSF) Railway and Union Pacific (UP) Railroad. The TSP also supports the continued use of the City of Prineville's short line freight railway that runs from Redmond to Prineville along OR 370.

The nearest passenger rail service is and will continue to be provided in Portland and in Chemult. No passenger rail service is anticipated within the County within the next 20 years.

## PIPELINES AND WATERWAYS

Today, there is one natural gas pipeline in the County that parallels US97. The TSP recommends continued coordination with the gas pipeline operator to provide continued services within the County. No additional pipeline facilities are anticipated within the next 20 years.

There are no navigable waterways located in Deschutes County but there are several waterways and lakes that are used recreationally. As local and regional destinations, access to these bodies of water facilitate tourism, economic development, and environmental conservation efforts. Major bodies of water include

Paulina Lake, East Lake, Wickiup Reservoir, Crane Prairie Reservoir, Sparks Lake, the Crooked River, and the Deschutes River. The TSP recommends enhancements to the roadways accessing these recreational areas to improve safety for all users.

## AIR SERVICE

Within the County, the largest public use airport is the Roberts Field-Redmond Municipal Airport (RDM) located in southeast Redmond. The Bend Municipal Airport, Sunriver Airport, and Sisters Eagle Airport are also available for public use. The TSP supports the continued use of these airports for service within the County in the future.

The TSP adopts by reference the City of Redmond's Airport Master Plan (as Updated in 2018) to reflect the needs of the Redmond Municipal Airport through the year 2040. This updated Master Plan includes a prioritized list of additional airside facilities, general aviation facilities, parking supply, passenger facilities, and non-aeronautical property development in the vicinity of the airport to support the anticipated 20-year growth at the Airport. The TSP supports continued coordination with the City of Redmond and ODOT to maintain safe and efficient connections to the airport for Deschutes County residents and visitors.

## BRIDGES

The County regularly reviews the structural ratings of its bridges and addresses changes to the bridges as funding and other opportunities arise. The need for changes to existing bridge locations within the County will be addressed throughout the 20-year period of the TSP and incorporated as part of County budgeting and partner agency funding discussions, as appropriate.

## VEHICULAR PERFORMANCE STANDARDS

The County uses motor vehicle Level of Service (LOS) standards to evaluate acceptable vehicular performance on its road system. LOS standards are presented as grades A (free flow traffic conditions) to F (congested traffic conditions). ODOT uses mobility targets based on volume to capacity (V/C) ratios as defined in the OHP for planning evaluations of existing facilities and in the Highway Design Manual (HDM) for design of future facilities to evaluate acceptable vehicular performance on state facilities. As V/C ratios approach 1.0, traffic congestion increases.

In some cases, it may not be possible or desirable to meet the designated mobility target or LOS standards. In those cases, an alternative mix of strategies such as land use, transportation demand management, safety improvements or increased use of active modes may be applied.

The County roadways and intersections are subject to LOS "D" whereas ODOT highways and intersections are evaluated using the applicable mobility targets in the Oregon Highway Plan (OHP). Within the urban areas of the County, each city's standards apply to their streets and intersections.

## 05 | TRANSPORTATION INVESTMENT PRIORITIES

This Chapter presents a list of prioritized transportation investments intended to serve the County in the future. These investments were identified and prioritized based on feedback obtained from County residents, partner agency staff and by technical analyses of roadways, intersections, bike facilities, transit, walking routes, and transportation safety. Many of the identified projects help to support plans adopted by the local cities, the Oregon Department of Transportation (ODOT), other County planning efforts, the Transportation Safety Action Plan (TSAP) and/or local refinement and facility plans. For planning purposes and the County's future considerations related to the Capital Improvement Program (CIP), the prioritized investments have been categorized as high, medium or low. Each of the identified investments have associated cost estimates.

The transportation investments are organized into the following categories for implementation based on complexity, likely availability of funding, and assessment of need:

- Intersection changes;
- Roadway segments, including changes to functional classification;
- ODOT intersections and roadways;
- Pedestrian facilities;
- Bicycle facilities;
- Bridges;
- Federal Land Access Program (FLAP) roads;
- Transit; and,
- Safety.

Some projects may be accelerated and others postponed due to changing conditions, funding availability, public input, or more detailed study performed during programming and budgeting processes. Further, project design details may change before construction commences as public input, available funding, and unique site conditions are taken into consideration. Projects identified herein may be funded through a variety of sources including federal, state, county or local transportation funds, system development charges (SDCs), through partnerships with private developers, or a combination of these sources.

In addition, as part of TSP implementation, the County will continue to coordinate with ODOT and the local communities regarding project prioritization, funding and construction.

## PROJECT COSTS

The estimated construction costs are provided in the subsequent tables. These costs are order-of-magnitude (e.g., planning-level) estimates that account for right-of-way, design engineering, and construction and generally include a 30 percent contingency factor<sup>1</sup>. The costs were calculated for each project using the methodology and procedures recommended by the American Association of Cost Engineers (Class 5 estimates). All costs are rounded to the nearest \$100,000 and provided in 2021 dollars. The detailed costs include all estimation assumptions as well as any deviations related to unique topographic, right-of-way, or other constraints.

Where applicable, cost estimates include anticipated project funding that would provide bicycle or pedestrian facilities, including usable shoulder space.

Costs for individual transit corridors are not provided. The County and Cascades East Transit (CET) will continue to collaborate on capital improvements and strategic policies that can help implement more robust transit service throughout the County.

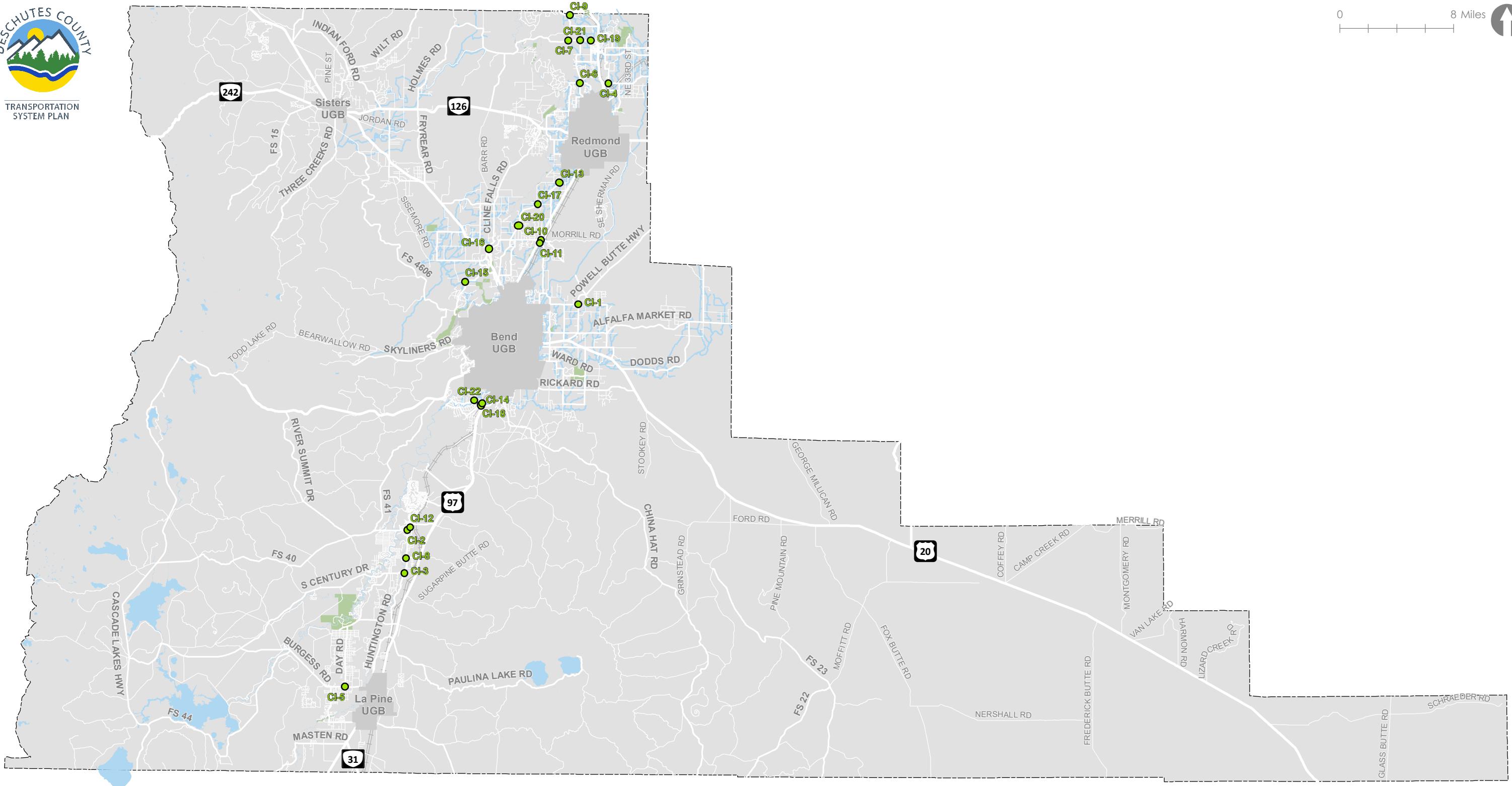
## INTERSECTION CHANGES

As discussed in Chapter 4, the needs assessment at intersections focused on both vehicular capacity as well as potential geometry changes identified by the Project Advisory Committee, public input, and those identified through the TSAP.

The TSP is not inclusive of all of the intersection projects that the County will pursue over the next 20 years. Rather, these have been identified as projects that the County can pursue to strategically improve the operational efficiency of specific intersections and important roadways. These projects can enhance system operations and can be completed as opportunities arise. In all cases, the County will review the appropriate intersection control options at the time of project development and delivery. The projects are illustrated in Figure 5-1 and in Table 5-1.

---

<sup>1</sup> Contingency factor determined based on the scope and scale of the planned project with larger projects typically utilizing a larger contingency factor.



● County Intersection Project

✚ Parks

✚ Water

✚ UGBs

Data Source: ODOT, Oregon State Parks, Deschutes County

Figure 5-1

**County Intersection Projects  
Deschutes County, Oregon**

**Table 5-1. Intersection Changes and Associated Cost Estimates**

ID	Road 1	Road 2	Project Description	Priority	Cost Estimate	Bike/Ped Component of Cost
CI-1	Powell Butte Hwy	Butler Market Rd	Roundabout	High	\$2,500,000	-
CI-2	S Century Dr	Spring River Rd	Roundabout	High	\$2,200,000	\$200,000
CI-3	Huntington Rd	South Century Dr	Roundabout	High	\$2,000,000	-
CI-4	Ne 5th St	O'Neil Hwy	Realignment	High	\$130,000	-
CI-5	Burgess Rd	Day Rd	Signal	High	\$800,000	\$100,000
CI-6	Coyner Rd	Northwest Way	Left Turn Lanes (Northwest Way Only)	High	\$400,000	-
CI-7	NW Lower Bridge Way	NW 43 <sup>rd</sup> St	Realignment/Left Turn Lane or Roundabout	High	\$3,500,000	\$200,000
CI-8	S Century Dr	Vandervert Rd	Roundabout	Medium	\$2,100,000	-

ID	Road 1	Road 2	Project Description	Priority	Cost Estimate	Bike/Ped Component of Cost
CI-9	NW 43rd St	NW Chinook Dr/ NW Povey Ave	Realignment, Left Turn Lane	Medium	\$700,000	
CI-10	Graystone Ln	Pleasant Ridge Rd	Realignment, Left Turn Lane	Medium	\$2,700,000	-
CI-11	Deschutes Market Rd	Graystone Ln	Signal With Turn Lanes	Medium	\$2,300,000	-
CI-12	Venture Ln	S Century Dr	Roundabout Or Realignment	Medium	\$2,100,000	-
CI-13	S Canal Blvd	McVey Ave	Realignment	Medium	\$400,000	-
CI-14	Cinder Butte Rd	Cheyenne Rd	Realignment	Medium	\$200,000	-
CI-15	Johnson Rd	Tyler Rd	Realignment	Medium	\$600,000	-
CI-16	Cline Falls Hwy	Cook Ave/Tumalo Rd	Roundabout Or Realignment	Medium	\$1,800,000	\$200,000
CI-17	S Canal Blvd	SW Young Ave	Realignment	Medium	\$300,000	-

ID	Road 1	Road 2	Project Description	Priority	Cost Estimate	Bike/Ped Component of Cost
CI-18	Baker Rd	Cinder Butte Rd	Intersection Improvements	Medium	\$1,200,000	-
CI-19	NW Lower Bridge Way	NW 19th St	Turn Lanes/Realignment	Medium	\$500,000	-
CI-20	Old Bend Redmond Hwy	Swalley Rd/ Kiowa Dr	Realignment	Low	\$200,000	-
CI-21	NW Lower Bridge Way	NW 31st St	Turn Lanes	Low	\$500,000	-
CI-22	Baker Rd	Brookwood Blvd	Signal/Turn Lanes	Low	\$1,400,000	\$100,000

## ROADWAY CHANGES

As discussed in Chapter 4, the needs assessment identified strategic roadway corridors where vehicular capacity and/or changes to the roadway characteristics may be needed to help support future growth and economic development in the region as well as to enhance the safety of all users. The identified projects also can help to strengthen connections between areas of the County and to other areas in Central Oregon. These projects are illustrated in Figure 5-2 and Table 5-2. The projects identified will be implemented over time to reflect changing needs for the various users of the transportation system and economic development opportunities.

In reviewing the prioritized list, it is helpful to note that many existing roadways within the County area are not built to current County standards and that not all roadways within the County will be rebuilt to match these standards over the next 20 years. It is also important to note that changes to existing roadways (beyond those identified in the TSP) may be required as part of future land use approvals consistent with the roadway functional classification requirements.

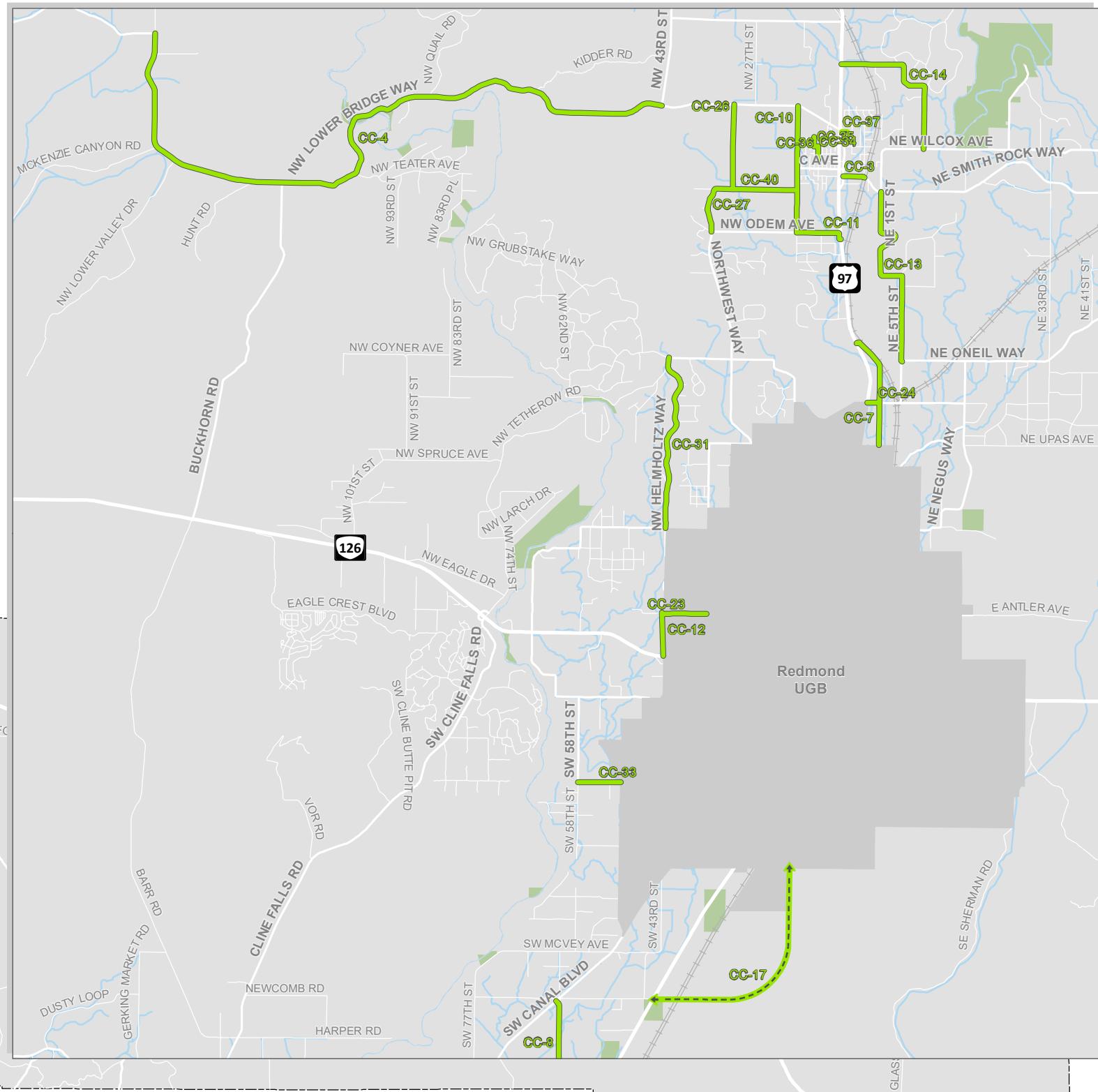
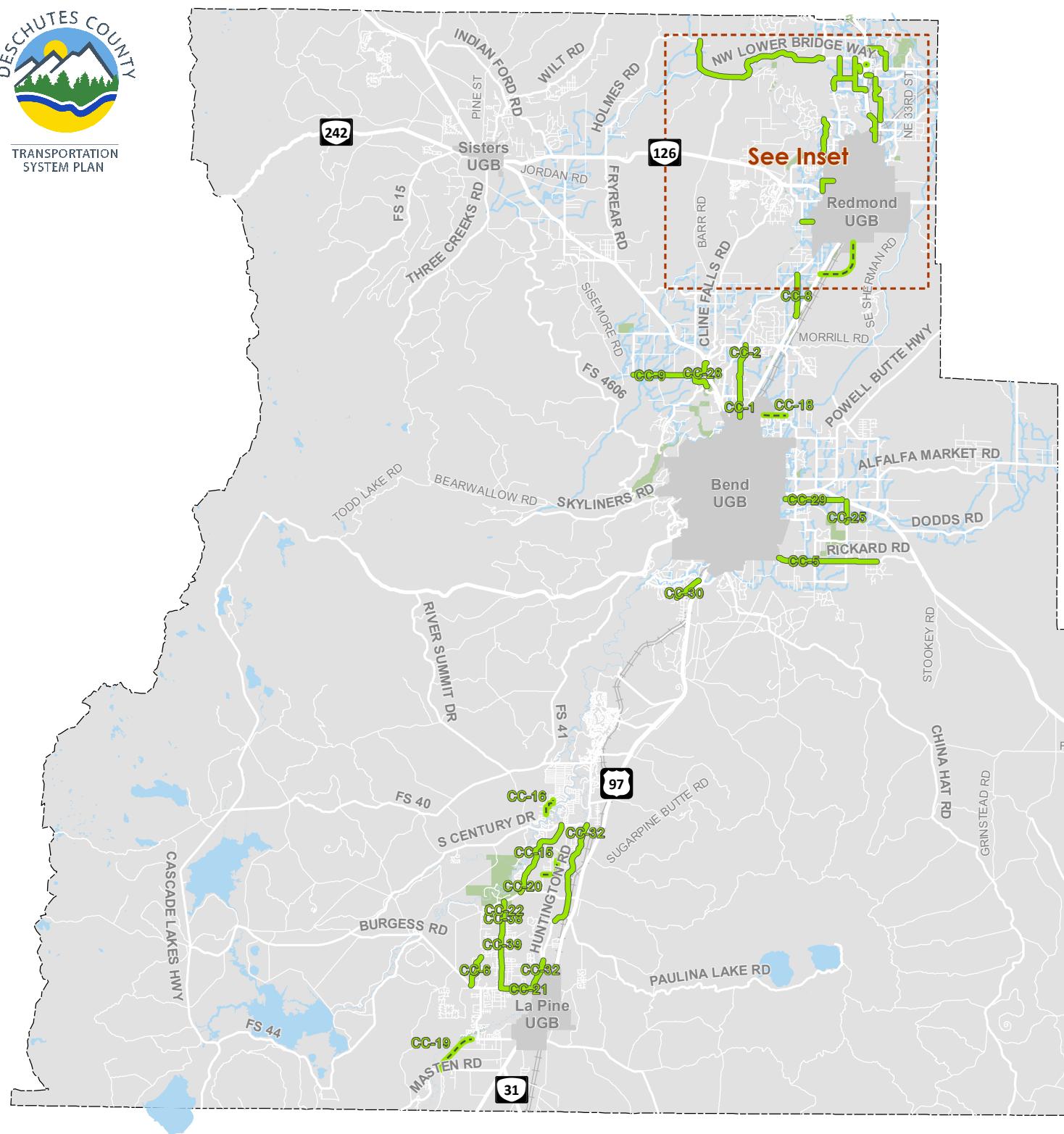
In addition to the roadway changes, the County is proposing changes to the existing functional classification system based on review by County staff, input from stakeholders, and coordination with partner agencies. These changes will occur as part of TSP implementation. These recommended changes are shown in Figure 5-3 and Table 5-3.



---

## TRANSPORTATION SYSTEM PLAN

\\kittelson.com\fs\NH\_Projects\24\24964 -Deschutes County TSP Figures\5-2 County Roadway Projects.mxd Date: 6/8/2023



## County Road Projects



### County Road Extension Projects



UGBs



Data Source: ODOT, Oregon State Parks, Deschutes County

Figure 5-2

# County Roadway Projects Deschutes County, Oregon

**Table 5-2. Roadway Changes and Associated Cost Estimates**

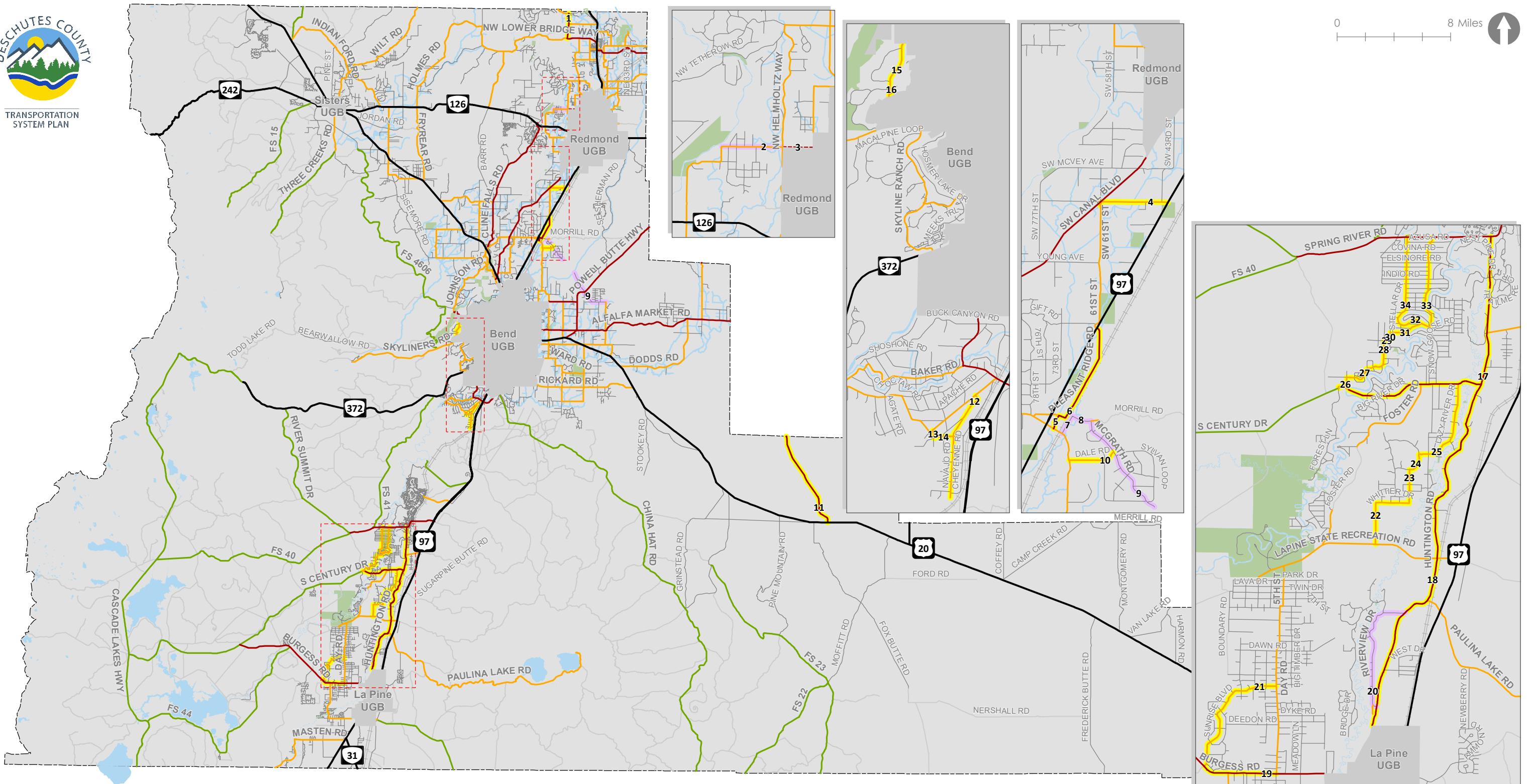
ID	Road	Begin	End	Project Description	Priority	Cost Estimate	Bike/Ped Component of Cost
CC-1	Hunnell Rd	Loco Rd	Rodgers Rd	New Road	High	\$1,600,000	\$500,000
CC-2	Hunnell Rd	Rodgers Rd	Tumalo Rd	Reconstruction/ Pave	High	\$3,900,000	\$1,200,000
CC-3	Smith Rock Way	Highway 97	Rr Xing/UGB Terrebonne	Widen & Overlay	High	\$600,000	\$200,000
CC-4	NW Lower Bridge Way	43rd St	Holmes Rd	Widen & Overlay	Medium	\$8,900,000	\$3,500,000
CC-5	Rickard Rd	Knott Rd/27th St	Bozeman Trail	Widening	Medium	\$2,300,000	\$700,000
CC-6	Sunrise Ln	300' North Of Shady Ln	Burgess Rd	County Standard Improvement	Medium	\$1,300,000	\$400,000
CC-7	N. Canal Blvd	Redmond City Limits	O'Neil Hwy	Widen & Overlay	Medium	\$700,000	\$200,000
CC-8	61st St	S. Canal Blvd	Hwy 97	Widen & Overlay	Medium	\$1,800,000	\$600,000

ID	Road	Begin	End	Project Description	Priority	Cost Estimate	Bike/Ped Component of Cost
CC-9	Tumalo Reservoir Rd	OB Riley Rd	Collins Rd	Widen & Overlay	Medium	\$5,300,000	\$1,600,000
CC-10	NW 19th St	NW Lower Bridge Way	NW Odem Ave	County Standard Improvement	Medium	\$2,700,000	\$800,000
CC-11	NW Odem Ave	NW 19th St	Hwy 97	County Standard Improvement	Medium	\$1,100,000	\$300,000
CC-12	SW Helmholtz Way	Or 126	Antler Ave	Widen & Overlay	Medium	\$900,000	\$300,000
CC-13	Ne 1st St, Ne Knickerbocker Ave, And Ne 5th St	O'Neil Hwy	Smith Rock Way	Widen & Overlay	Low	\$3,400,000	\$1,000,000
CC-14	NW Eby Ave, Ne 5th St, Ne Cayuse Ave, And Ne 9th St	US97	Ne Wilcox Rd	Widen & Overlay	Low	\$1,700,000	\$500,000
CC-15	Whittier Dr, Wolf St, And Shawnee Circle	Whittier Dr - End of County Maintenance	Lazy River Dr	County Standard Improvement	Low	\$2,600,000	\$800,000
CC-16	Stellar Dr, Upland Rd, Savage Dr,	Stellar Dr End of County	Stage Stop Dr (@Browning Dr/Pitch Ct)	County Standard Improvement	Low	\$1,300,000	\$400,000

ID	Road	Begin	End	Project Description	Priority	Cost Estimate	Bike/Ped Component of Cost
	Winchester Dr, Browning Dr	Maintenance (@Milky Way)					
CC-17	SW 19th St	End Of Pavement – SW 19th St	US97 (In the Vicinity of SW Quarry Ave)	Illustrative Roadway Extension. May require statewide planning goals exceptions prior to implementation	To be determined	\$8,600,000	\$2,600,000
CC-18	Cooley Rd	Urban Growth Boundary	Deschutes Market Rd	Roadway Extension	Low	\$2,900,000	\$900,000
CC-19	6th St	Masten Rd	6th St - End Of County Maintenance	Roadway Extension	Low	\$3,800,000	\$1,100,000
CC-20	Foster Rd	South Century Dr	La Pine State Rec. Rd	County Standard Improvement/ Widen & Overlay	Low	\$4,100,000	\$1,200,000
CC-21	Burgess Rd	Day Rd	Huntington Rd	Widen & Overlay	Low	\$1,900,000	\$600,000
CC-22	5th St (La Pine)	Amber Ln	La Pine State Rec. Rd	Widen & Overlay	Low	\$800,000	\$200,000
CC-23	W. Antler Ave	NW 35th St	NW Helmholtz Way	Widen & Overlay	Low	\$400,000	\$100,000

ID	Road	Begin	End	Project Description	Priority	Cost Estimate	Bike/Ped Component of Cost
CC-24	O'Neil Hwy	N. Canal Blvd	Highway 97	Widen & Overlay	Low	\$1,100,000	\$300,000
CC-25	Gosney Rd	US 20	Canal, 1 Mile South of Us20	Widen & Overlay	Low	\$2,800,000	\$800,000
CC-26	31st St	NW Sedgewick	NW Lower Bridge Way	Widen & Overlay	Low	\$1,000,000	\$300,000
CC-27	NW Almeter Way	Northwest Way	NW Sedgewick Ave	Widen & Overlay	Low	\$500,000	\$200,000
CC-28	Bailey Rd	US 20	Tumalo Reservoir Rd	Widen & Overlay	Low	\$1,300,000	\$400,000
CC-29	Bear Creek Rd	City Limits	US 20	Widen & Overlay	Low	\$3,200,000	\$1,000,000
CC-30	Cinder Butte Rd	Baker Rd	Minnetonka Ln	Widen & Overlay	Low	\$1,300,000	\$400,000
CC-31	NW Helmholtz Way	Maple Ave	NW Coyner Ave	Widen & Overlay	Low	\$2,500,000	\$700,000
CC-32	Huntington Rd	South Century Dr	Burgess Rd	Widen & Overlay, Excluding Portion from	Low	\$6,600,000	\$2,000,000

ID	Road	Begin	End	Project Description	Priority	Cost Estimate	Bike/Ped Component of Cost
				Riverview Dr to Riverview Dr			
CC-33	SW Wickup Ave	SW Helmholtz Way	SW 58th St	Widen & Overlay	Low	\$600,000	\$200,000
CC-34	4th St (Terrebonne)	Majestic Rock Dr	F Ave	County Standard Improvement	Low	\$200,000	\$100,000
CC-35	F Ave (Terrebonne)	4th St	5th St	County Standard Improvement	Low	\$100,000	-
CC-36	5th St (Terrebonne)	F Ave	Central Ave	County Standard Improvement	Low	\$300,000	\$100,000
CC-37	H Ave (Terrebonne)	11th St	12th St	County Standard Improvement	Low	\$200,000	\$100,000
CC-38	Amber Ln	5th St	Day Rd	Realignment	Low	\$300,000	\$100,000
CC-39	Day Rd	Amber Ln	Burgess Rd	Widen & Overlay	Low	\$3,000,000	\$900,000
CC-40	NW Sedgewick Ave	NW 19th Ave	NW Almeter Way	Widen & Overlay	Low	\$1,000,000	\$300,000



- Highway
- Arterial
- Future Arterial
- Collector
- Forest Highway
- Local
- Unimproved
- Functional Class Upgrade
- Functional Class Downgrade
- Parks
- Water

Data Source: Deschutes County

Figure 5-3  
Changes to Roadway Functional Classifications  
Deschutes County, Oregon

Table 5-3. Changes to the Functional Classification Designations

ID	Road	Begin	End	Functional Classification		Comments
				Current	Proposed	
1	43rd St	NW Lower Bridge Way	NW Chinook Ave	Collector	Arterial	One of the main roads NW of Terrebonne, main access to Crooked River Ranch, 1/2 access roads to CRR
2	NW Maple Ave	NW Helmholtz Way	NW 59th St	Arterial	Collector	Possible database error, updating to match county mapping
3	NW Maple Ave	NW 35th St	NW Helmholtz Way	Na	Arterial	Future connection; called out in the city of Redmond tsp; from tsp- "proposed 3 lane arterial to improve connectivity between and within existing neighborhoods, employment, and commercial areas, to provide connections to newly developed or developing areas, and to provide alternative travel routes for all modes to existing streets"
4	SW Quarry Ave	US97	S Canal Blvd	Local	Collector	Improve connection to canal which is an arterial road that runs parallel to US97, key road segment in connection to north Tumalo area from US97, 2 lane road with narrow gravel shoulders
5	Graystone Ln	Deschutes Market Rd	Pleasant Ridge Rd	Collector	Arterial	1275' segment that is key in the eastern parallel roads to US97,

ID	Road	Begin	End	Functional Classification		Comments
				Current	Proposed	
						Connection for US97 Access from Tumalo Rd/Deschutes market road
6	Pleasant Ridge Rd	Graystone Ln	US97	Collector	Arterial	600' segment that is key in connection for US97 Access from Tumalo Rd/Deschutes market road
7	19th St	Deschutes Market Rd	Morrill Rd	Collector	Local	1750' segment that connects to rural farmland area ne of bend, no major traffic generators
8	Morrill Rd	19th St	McGrath Rd	Collector	Local	1675' segment that connects to rural farmland and hiking area ne of bend, no major traffic generators, the rest of Morrill Rd is local
9	McGrath Rd	Morrill Rd	End	Collector	Local	Road that connects to rural farmland area ne of bend, no major traffic generators
10	Dale Rd	Deschutes Market Rd	McGrath Rd	Local	Collector	4,180' segment that connects rural land to Deschutes Market Rd
11	George Millican Rd	US 20	County Line	Local	Arterial	Possible database error, updating to match county mapping
12	Navajo Rd	Cinder Butte Rd	End	Local	Collector	Traffic from homes, driveways every 50-100', 1' paved shoulder, connects to cinder butte road which is a collector

ID	Road	Begin	End	Functional Classification		Comments
				Current	Proposed	
13	Minnetonka Ln	Cinder Butte Rd	Cherokee Dr	Local	Collector	Traffic from homes, driveways every 50-100', no paved shoulder, connects to cinder butte road which is a collector
14	Cherokee Dr	Minnetonka Ln	Navajo Rd	Local	Collector	Traffic from homes, driveways every 50-100', 1' paved shoulder, connects to Minnetonka Lane and Navajo road that are being upgraded as well
15	McClain Dr	City Limits	Sage Steppe Dr	Local	Collector	Possible database error, updating to match county mapping
16	Sage Steppe Dr	McClain Dr	City Limits	Local	Collector	1580' segment in new developed area, continues McClain drive proposed upgrade of collector
17	S Century Dr	Spring River Rd	Deschutes River Xing	Collector	Arterial	Connection to the communities of three rivers, caldera springs, and Crosswater
18	Huntington Rd	S Century Dr	City Limits	Collector	Arterial	Connection between la pine, three rivers, and sunrise; gravel shoulder and paved shoulder 0'-2'
19	Burgess Rd	Day Rd	Sunrise Blvd	Collector	Arterial	Possible database error, updating to match county mapping
20	Riverview Dr	Huntington Rd	Huntington Rd	Collector	Local	Parallel to Huntington Road, rural connections to river and homes, curvy road

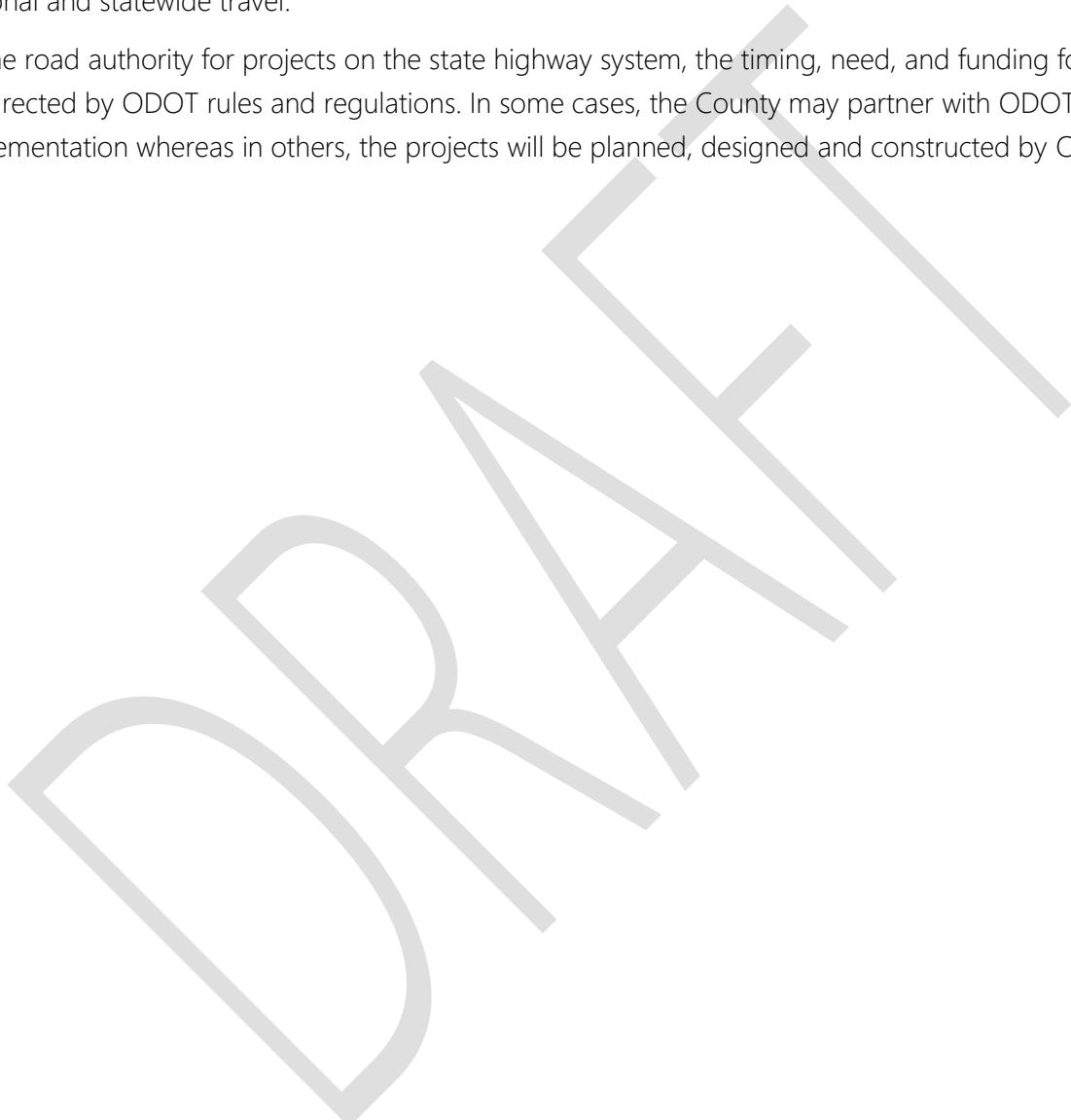
ID	Road	Begin	End	Functional Classification		Comments
				Current	Proposed	
21	Sunrise Blvd	Burgess Rd	Day Rd	Local	Collector	Connection to many homes, driveways every 50-300', gravel shoulders, paved shoulders 0-2'
22	Whittier Dr	La Pine State Rec. Rd	Wolf St	Local	Collector	Enhance connection route to la pine state park from three rivers and other communities to the north; 1/2 is a gravel road, other half is paved with no striping
23	Wolf St	Whittier Dr	Shawnee Circle	Local	Collector	Enhance connection route to la pine state park from three rivers and other communities to the north; gravel road
24	Shawnee Circle	Wolf St	Lazy River Dr	Local	Collector	Enhance connection route to la pine state park from three rivers and other communities to the north; gravel road
25	Lazy River Dr	Shawnee Circle	S Century Dr	Local	Collector	Enhance connection route to la pine state park from three rivers and other communities to the north
26	Bonanza Ln	S Century Dr	Stage Stop Dr	Local	Collector	Enhance connection route to west Three Rivers homes and big river group campground
27	Stage Stop Dr	Bonanza Ln	Browning Dr	Local	Collector	Enhance connection route to west Three Rivers homes
28	Browning Dr	Stage Stop Dr	Winchester Dr	Local	Collector	Enhance connection route to west Three Rivers homes

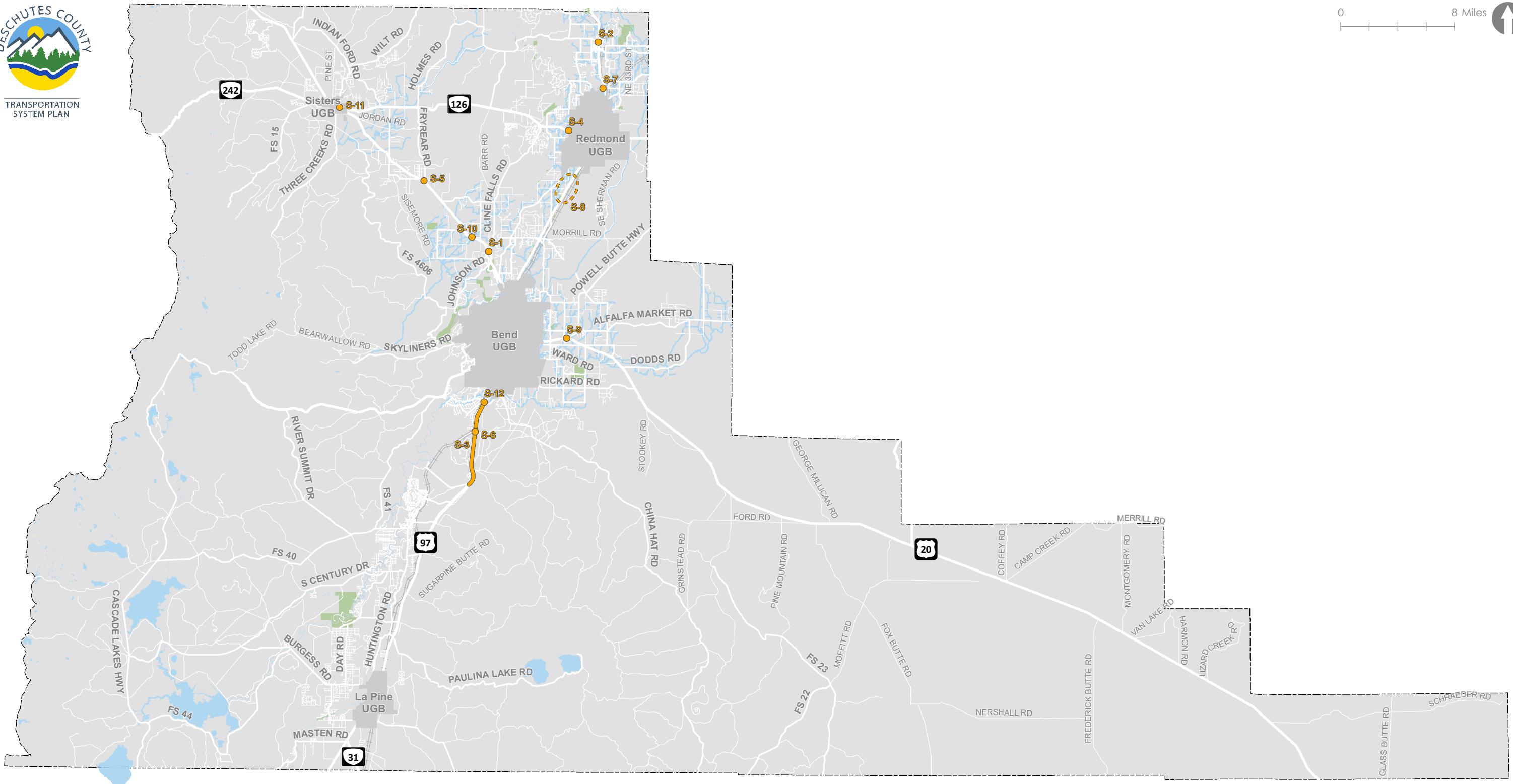
ID	Road	Begin	End	Functional Classification		Comments
				Current	Proposed	
29	Winchester Dr	Browning Dr	Savage Dr	Local	Collector	Enhance connection route to west Three Rivers homes
30	Savage Dr	Winchester Dr	Upland Rd	Local	Collector	Enhance connection route to west Three Rivers homes
31	Upland Rd	Savage Dr	Milky Way	Local	Collector	Enhance connection route to west Three Rivers homes
32	Milky Way	Stellar Dr	Solar Dr	Local	Collector	Enhance connection route to west Three Rivers homes
33	Solar Dr	Milky Way	Spring River Rd	Local	Collector	Enhance connection route to west Three Rivers homes
34	Stellar Dr	Milky Way	Spring River Rd	Local	Collector	Enhance connection route to west Three Rivers homes

## ODOT Intersections and Roadways

Future changes to ODOT intersections and roadways within the County have been identified in previously adopted and/or acknowledged transportation plans. ODOT and County staff prioritized the list of changes for inclusion in the TSP. These are shown in Figure 5-4 and Table 5-4. In addition to this list, the County will continue to partner with ODOT to monitor and identify future projects that help to address the needs of local, regional and statewide travel.

As the road authority for projects on the state highway system, the timing, need, and funding for projects will be directed by ODOT rules and regulations. In some cases, the County may partner with ODOT on implementation whereas in others, the projects will be planned, designed and constructed by ODOT.





State Highway Projects

Parks

Water

UGBs

Data Source: ODOT, Oregon State Parks, Deschutes County

Figure 5-4

State Facility Projects  
Deschutes County, Oregon

**Table 5-4. ODOT Intersections Changes and Associated Cost Estimates**

ID	Road 1	Road 2	Description	Notes	Priority	Cost	County Contribution	Bike/Ped Component of County Contribution
S-1	US 20	Cook Ave/O.B. Riley Rd	Two-Lane Roundabout	ODOT project programmed for 2023	High	\$11,000,000	\$9,100,000	\$1,800,000
S-2	US97	Lower Bridge Way	Grade Separated Interchange From US97	Interchange project identified via US97: Terrebonne/ Lower Bridge Way improvement project. ODOT project programmed for 2023.	High	\$30,200,000	\$10,000,000	\$700,000
S-3	US97	Baker Road To Lava Butte	Implementation Of Multiuse Path	ODOT project currently in design phase	High	\$3,000,000	-	-
S-4	OR 126	SW Helmholtz Way	Traffic Signal or Intersection Improvement	Coordinate with city of Redmond & ODOT on specific project. Also identified within Redmond tsp.	Medium	\$1,000,000	\$500,000	\$100,000
S-5	US 20	Fryrear Rd	Turn Lane on Highway, Realign	Intersection identified within Deschutes County TSAP	Medium	\$3,000,000	\$2,500,000	-
S-6	US97	Deschutes River Woods South Interchange Project	Interchange	This project will provide a grade separated interchange on US97 that will connect the Deschutes River Woods	Low	\$42,900,000	\$10,000,000	-

ID	Road 1	Road 2	Description	Notes	Priority	Cost	County Contribution	Bike/Ped Component of County Contribution
				subdivision (west) and the high desert museum area (east). A future refinement process (interchange area management plan, or other) will determine the connection point to the DRW. A grade separation of the BNSF RxR will also be required.				
S-7	US97	Pershall-O'Neil Hwy	Implement Components of The Interchange Area Management Plan (IAMP) Adopted for This Area.	The county will coordinate with ODOT and the city of Redmond on the appropriate county involvement to implement IAMP projects.	Low	Multiple Projects	-	-
S-8	US97	Quarry Rd	Grade Separated Interchange From US97	Illustrative Project. Timing and need to be further refined. May require statewide planning goals exceptions prior to implementation.	To be determined	\$50,000,000	\$5,000,000	-

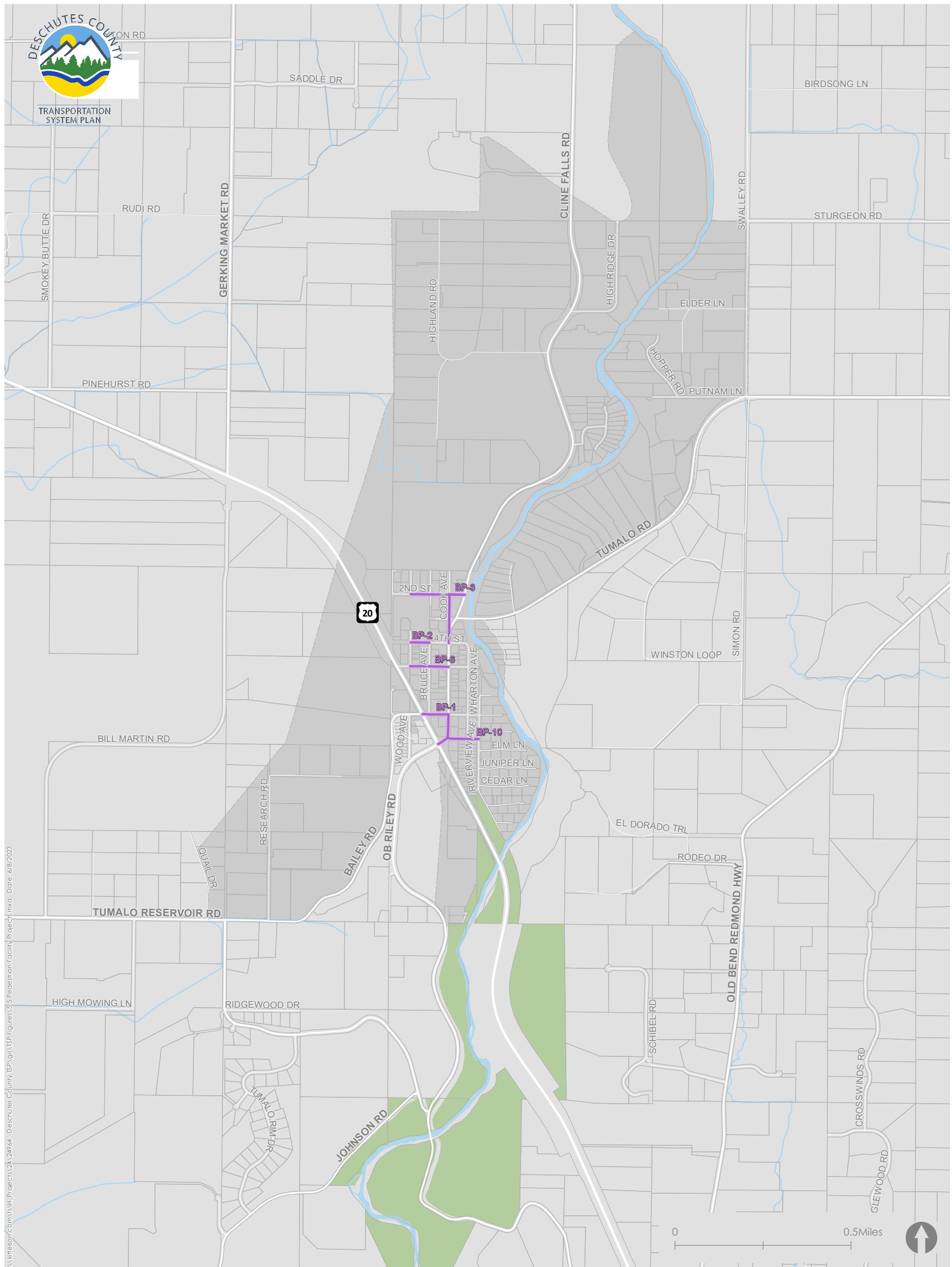
ID	Road 1	Road 2	Description	Notes	Priority	Cost	County Contribution	Bike/Ped Component of County Contribution
				Need for project likely driven by economic development within Redmond industrial lands				
S-9	US 20	Powell Butte Hwy	Roundabout	Project timing and need to be further refined.	Low	\$5,000,000	\$500,000	-
S-10	US 20	Pinehurst Rd	Turn Lane on Highway, Realign	Project timing and need to be further refined.	Low	\$3,000,000	\$2,500,000	-
S-11	US 20	Locust St	Roundabout	County contribution to ODOT/ city of Sisters project	Low	\$6,000,000	\$1,000,000	-
S-12	US97	Baker Road	Implement Components of The Interchange Area Management Plan (IAMP) For This Area.	The county will coordinate with ODOT and the city of Bend on the appropriate county involvement to implement IAMP projects.	Low	Multiple Projects	-	-

## PEDESTRIAN FACILITIES

Figure 5-5 and Table 5-5 reflect priorities for changes to the pedestrian system within Terrebonne and Tumalo. In general, the sidewalks identified in the TSP reflect providing sidewalks between the residential areas and schools as well as to provide connections to neighborhood commercial areas in the two communities.

Other changes to the pedestrian system as well as pedestrian crossing improvements may be provided in the future based on project development and design as well as funding opportunities. The County may require sidewalk construction as part of future land use actions as well, consistent with the Development Code requirements.





Data Source: Deschutes County

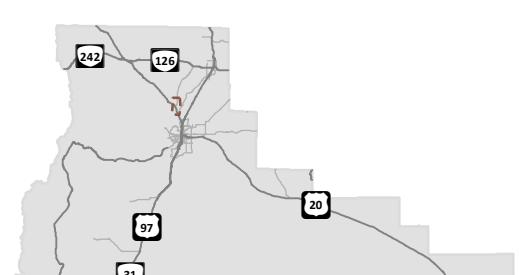
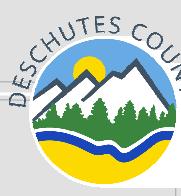


Figure 5-5A

## Pedestrian Facility Projects Tumalo, Oregon



---

## TRANSPORTATION SYSTEM PLAN

---

## Pedestrian Projects

 Parks

A blue water droplet icon.

Water

 Unincorporated Cities

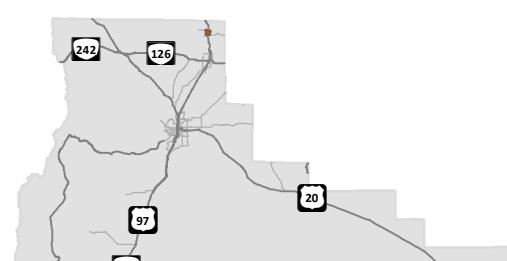


Figure 5-5B

## Pedestrian Facility Projects Terrebonne, Oregon

**Table 5-5. Pedestrian Facilities and Associated Cost Estimates**

ID	Road	Begin	End	Description	Priority	Cost
BP-1	7th St (Tumalo)	US 20	Cook Ave	5' Sidewalk On Both Sides	High	\$300,000
BP-2	4th St (Tumalo)	Wood Ave	Bruce Ave	5' Sidewalks On Both Sides	High	\$300,000
BP-3	2nd St/Cook Ave Sidewalks (SRTS-Tumalo)	Tumalo School	Cline Falls/4 <sup>th</sup> Street	5' Sidewalks In Areas Without	Medium	\$1,700,000
BP-4	5th St (Terrebonne)	B Ave	C Ave	5' Sidewalk On East Side Only	Medium	\$200,000
BP-5	B Ave (Terrebonne)	5th St	6th St	5' Sidewalk, North Side Only	Medium	\$200,000
BP-6	5th St (Tumalo)	Wood Ave	Cook Ave	5' Sidewalks On Both Sides	Medium	\$500,000
BP-7	C Ave (Terrebonne)	6th St	NW 19th St	5' Sidewalks On Both Sides	Medium	\$1,000,000
BP-8	C Ave (Terrebonne)	US97	16th St	5' Sidewalk On South Side Only	Low	\$600,000
BP-9	11th St (Terrebonne)	Central Ave	U.S. 97	5' Sidewalks On Both Sides	Low	\$1,100,000
BP-10	8th St (Tumalo)	Cook Ave	Riverview Ave	5' Sidewalks On Both Sides	Low	\$400,000

## BICYCLE FACILITIES

Deschutes County provides and maintains useable shoulders along roadways for use by people riding bikes though not all roadways are currently improved to include such facilities. The County has an aspirational bicycle route system, referred to as County Bikeways, where useable shoulders will be provided, as practical, as part of ongoing maintenance and roadway improvements projects. Facilities designated as County Bikeways are shown in Figure 5-6.

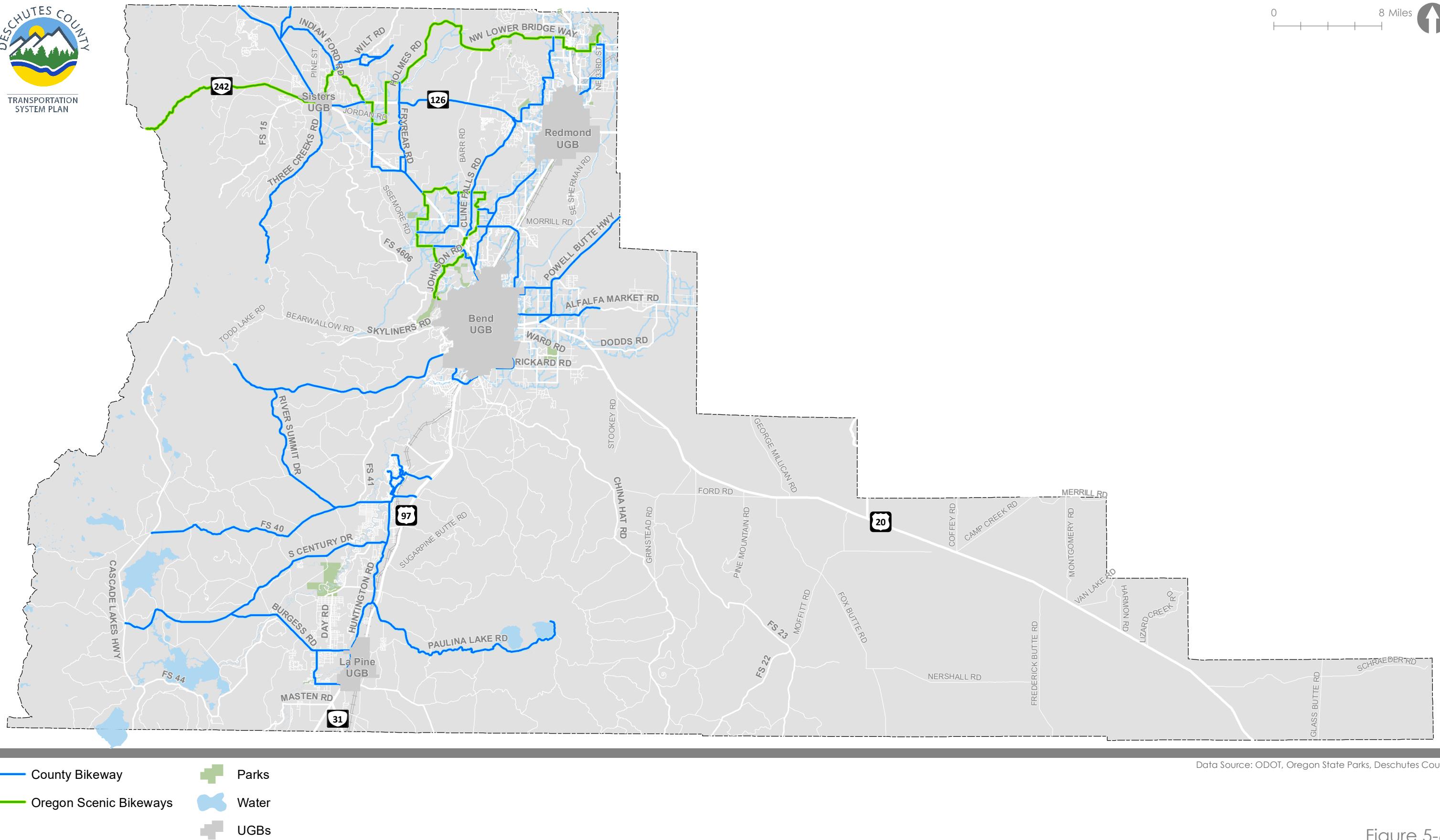
Crossing improvements, though not specifically identified in the TSP, may be provided when bicycle facilities are constructed that cross major roads. The need for and type of crossing treatments as well as other facility changes will be evaluated at the time of project development and design. The County may provide such facilities as standalone projects or in conjunction with scheduled maintenance activities. At the time the TSP was written, the County was evaluating potential changes to the Development Code requirements (as included in the County Code Title 22 requirements) related to bicycle facility requirements as part of land use actions. Future changes to Title 22 will be considered as part of TSP implementation.

In addition, as part of implementation of the TSP, changes to the bicycle network will continue to be informed as part of the County's Bicycle and Pedestrian Committee (BPAC) activities. BPAC's mission is "to promote and encourage safe bicycling and walking as a significant means of transportation in Deschutes County" and focuses on both changes to the system as well as public education and awareness and a review of safety and funding needs as part of implementation of potential projects.

As part of that coordination, Table 5-6 and Table 5-7 identify regional bicycle connections that have been developed and prioritized with input from BPAC. Table 5-6 identifies routes that would connect communities and serve broad transportation functions, such as commuting, recreation, or daily services. Table 5-7 identifies routes that primarily provide connections to recreational opportunities, which could also serve to improve transportation mode choices available to County residents and visitors.

Over time, strengthening the identified connections will help to expand the overall bicycle infrastructure within the County. Specific routes, including roadways and projects needed to support or develop these routes, have not yet been identified nor has the funding to construct and maintain these facilities. In the future, these costs may be funded by the County and/or a variety of agency partners, pending the actual alignment and project elements identified. The County will work with BPAC and agency partners, including ODOT and local jurisdictions, to advance development and implementation of preferred routes as resources allow.

\\kittelson.com\NH\_Projects\24\24964 - Deschutes County TSP\gis\TSP Figures\5-6 Bikeways.mxd Date: 6/8/2023



Data Source: ODOT, Oregon State Parks, Deschutes County

Figure 5-6  
**Bikeways**  
**Deschutes County, Oregon**

Finally, the County, by reference, will adopt the Map 11 of the Bend Parks and Recreation District's (BPRD's) Comprehensive Plan (2018) identifying future trail connections to parks within the County but outside the Bend (UGB) as well as those within the Deschutes National Forest. As noted in the BPRD plan, the trails have been prioritized for implementation but the actual alignments in the map are approximate and subject to future easement/user agreements to enable trail construction, availability of funding, and securing agreements from affected property owners for trailheads and parking areas. As part of TSP implementation, the County will coordinate with BPRD on the planning for and timing of new trails. It is important to note that not all County roadways are currently or will be designed to provide roadside parking for trailhead users. The County will work with BPRD to identify appropriate locations in the future to provide safe access for trail users as well as to roadway users not accessing the parks/trails.

**Table 5-6. Bicycle Route Community Connections**

Community Connection	Description	Priority
Bend To Redmond	Various routes possible. Preferred route alignment has not been identified.	High
Bend To Sunriver	Route currently in design as a multi-use path along US97 (project s-3). Would connect bend, lava lands, and Sunriver.	High
Bend To Sisters	Could include Bend to Tumalo and/or Bend to Tumalo state park connection, which is also a priority route, and would likely include county and ODOT facilities. Future coordination will be required.  Additional Sisters to Tumalo connection may be necessary if Bend to Sisters route does not include the Tumalo community.	High
Redmond To Sisters	Route could occur adjacent to or within ODOT right-of-way (or 126)	High
Redmond To Terrebonne	Route would likely occur adjacent to or within ODOT right-of-way (US97)	High
Redmond To Tumalo	Route may overlap with other route development, such as Bend to Sisters or possible Redmond to Sisters.	High
Sisters To Terrebonne & Smith Rock State Park	Route is currently part of a scenic bikeway. Improvements to the existing route, including improved crossings, are needed.	High
Sisters To Black Butte Ranch	Significant prior planning which assumed a multi-use path parallel to US 20.	High

Community Connection	Description	Priority
Deschutes River Woods to East Side of Bend	Route would connect area south of Bend to new development areas and recreational opportunities within or near southeast bend. Route could benefit from trail construction within future se Bend developments.	Medium
Sunriver To La Pine	ODOT is currently in the planning stages to identify preferred route location.	Medium
Bend To Prineville	Route could utilize state highways and/or county roads. Coordination with ODOT and crook county will be required.	Low
Redmond To Powell Butte & Prineville	Route could utilize state highways and/or county roads. Coordination with ODOT and crook county will be required.	Low
Black Butte Ranch to Camp Sherman	Route would require coordination with forest service	Low

**Table 5-7. Bicycle Route Recreation Connections**

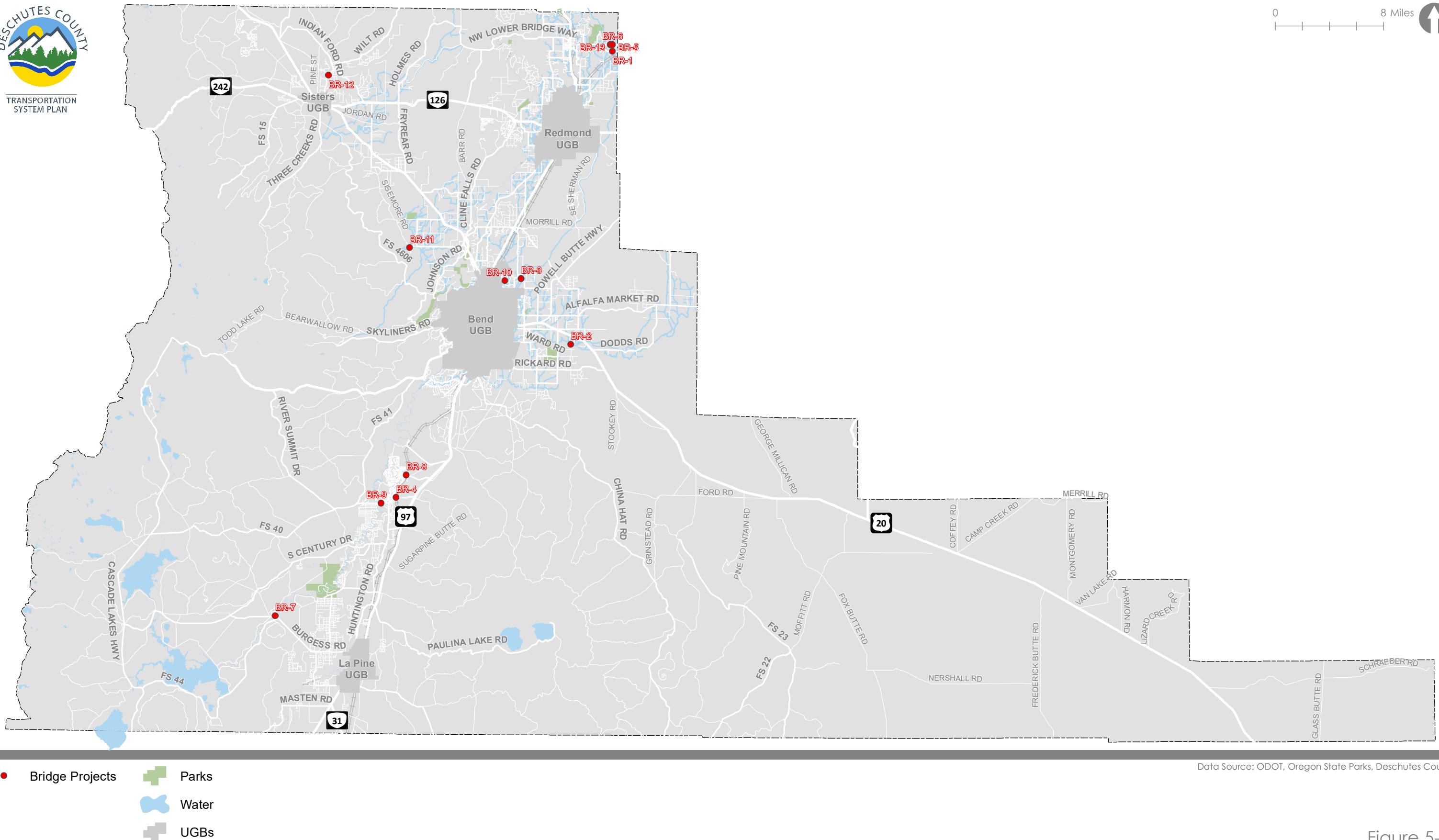
Community Connection	Description	Priority
Bend to Cascades Lakes Trailheads	Cascade Lakes Highway corridor and bicycle facilities study (2019) identifies many needed improvements along the corridor. Route would provide access to significant recreational opportunities. Route highly utilized today.	Medium
Bend to Tumalo State Park	Current conditions restrict the route to pedestrian only. BPRD has conducted prior planning on this route, including a connection to riley ranch.	Medium
Tumalo to Tumalo State Park	Route would connect Tumalo community to recreation opportunities. Could be part of Bend to Sisters and/or Tumalo connection.	Medium
La Pine to Rosland Park	Route would connect planned multi-use path within La Pine to Rosland Park to the west.	Medium
Redmond to Badlands Recreation Area	Route would connect Redmond to recreation areas east of town. Coordination with Redmond will be necessary.	Medium
Sunriver to Cascade Lakes Trail Heads	Route exists and is heavily utilized today. Improvements necessary to increase shoulder width in some areas. Possible coordination with Sunriver and ODOT.	Medium
Redmond to Recreation Areas to West	Route would connect Redmond to recreation areas, including Deschutes River, Eagle Crest, Cline Butte Recreational Area, etc.	Low
Bend to Recreation Areas to the East	Route to connect Bend with recreation areas to the east including resorts, BLM lands, biking trails, etc. Likely coordination with BPRD.	Low
Cline Butte Recreation Area to Tumalo	Route includes portion of two bridges scenic bikeway. Improvements to the existing route, including improved crossings, are needed.	Low

---

## BRIDGES

In 2020, the majority of the County's bridges were rated as being structurally sufficient. The County regularly reviews the structural ratings of its bridges and makes changes as funding and other opportunities arise. Projects to address county bridge priorities are shown in Figure 5-7 and Table 5-8. These projects represent the County's current priorities but do not encapsulate all the bridges that may be modified over time.





● Bridge Projects

● Parks

● Water

● UGBs

Data Source: ODOT, Oregon State Parks, Deschutes County

Figure 5-7

**Bridge Projects  
Deschutes County, Oregon**

**Table 5-8. Bridge Projects and Associated Cost Estimates**

ID	Road	Location	Description	Priority	Cost
BR-1	Smith Rock Way	North Unit Canal	Replacement	High	\$1,000,000
BR-2	Gribbling Rd	Central Oregon Canal	Replacement	High	\$900,000
BR-3	Hamehook Rd	-	Replacement	High	\$1,100,000
BR-4	S Century Dr	BNSF RR	Rehabilitation	High	\$2,700,000
BR-5	Wilcox Ave	-	Removal	Medium	\$200,000
BR-6	Wilcox Ave	-	Removal	Medium	\$100,000
BR-7	Burgess Rd	-	Replacement	Medium	\$2,100,000
BR-8	Cottonwood Dr	BNSF RR	Replacement	Low	\$3,800,000
BR-9	Spring River Rd	Deschutes River	Rehabilitation	Low	\$400,000
BR-10	Old Deschutes Rd	Pilot Butte Canal	Replacement	Low	\$400,000
BR-11	Sisemore Rd	-	Replacement	Low	\$600,000
BR-12	Camp Polk Rd	-	Replacement	Low	\$1,400,000
BR-13	Wilcox Ave	-	New Bridge	Low	\$1,300,000

## FEDERAL LANDS ACCESS PROGRAM ROADWAYS

The Federal Lands Access Program (FLAP) was established to “improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands.” This program is intended to provide supplemental funding to be used in combination with State and County funds for public roads, transit, and other transportation facilities. In particular, FLAP helps prioritize funding for “high-use recreation sites and economic generators.” FLAP is funded through the Federal Highway Trust Fund and its allocation is based on road mileage, bridges, land area and number of visits to the lands.

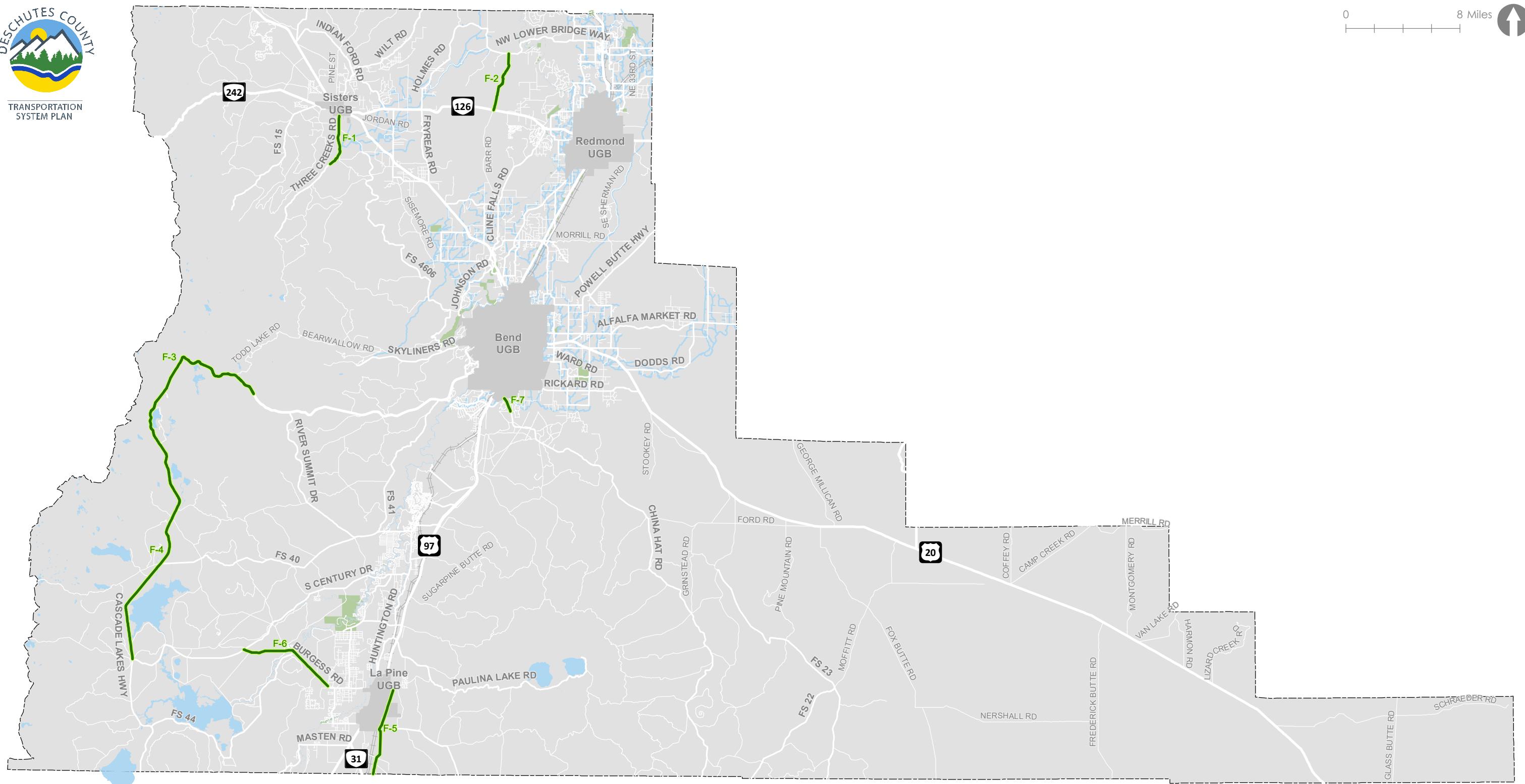
FLAP provides funding opportunities to help the County deliver capital projects to increase access to Federal Lands. In addition, FLAP is a funding tool to help the County fund maintenance of existing roads that provide access to Federal Lands, such as those designated as Forest Highways and other roads that provide similar access.

Figure 5-8 and Table 5-9 identify the County’s current priorities for future FLAP-funded projects. As part of TSP implementation, the County will continue to coordinate with all of the federal agencies, BPRD, Cascades East Transit, and ODOT on the request for future FLAP-funded projects.



# TRANSPORTATION SYSTEM PLAN

\\kittelson.com\fs\H Projects\2424964 - Deschutes County TSP\client\TSP Figures\5-8 Fl AP Projects.mxd Date: 6/8/2023



#### Federal Land Access Projects



 Water



Data Source: ODOT, Oregon State Parks, Deschutes County

Figure 5-8

FLAP Projects  
Deschutes County, Oregon

Table 5-9. FLAP Roadways and Associated Cost Estimates

Id	Road	Begin	End	Description	Priority	Cost	County Contribution	Bike/Ped Component of County Contribution
F-1	Three Creeks Rd	Sisters City Limits	Forest Service Boundary	3.7-mile-long segment scoped for widening, pavement rehabilitation, safety improvements, and removal of BR #16060	High	\$2,900,000	\$600,000	\$200,000
F-2	Buckhorn Rd	Lower Bridge Way	Highway 126	Reconstruction/ pave	Medium	\$6,500,000	\$1,300,000	\$400,000
F-3	Cascade Lakes Hwy	Milepost 21.98	Elk Lake	Widen & overlay; improve side slopes; increase horizontal sight distance; install guardrail; install centerline rumble strips, post-mounted delineators and high-type pavement markings; install shoulder rumble strips or edge line rumble strips; possible structure adjustments and culvert extensions or replacements; install	Medium	\$12,200,000	\$2,400,000	\$700,000

Id	Road	Begin	End	Description	Priority	Cost	County Contribution	Bike/Ped Component of County Contribution
				left-turn and right-turn lanes at major destinations				
F-4	Cascade Lakes Hwy	Elk Lake	S Century Dr	Widen & overlay; improve side slopes; increase horizontal sight distance; install guardrail; install centerline rumble strips, post-mounted delineators and high-type pavement markings; install shoulder rumble strips or edge line rumble strips; possible structure adjustments and culvert extensions or replacements; install left-turn and right-turn lanes at major destinations	Low	\$9,000,000	\$1,800,000	\$500,000
F-5	Darlene Way	Rosland Rd	County Line	County standard improvement of full-length Darlene Way; assumed no right-of-way acquisition on existing	Low	\$6,800,000	\$1,400,000	\$400,000

Id	Road	Begin	End	Description	Priority	Cost	County Contribution	Bike/Ped Component of County Contribution
				alignment across BLM land				
F-6	Burgess Rd	Sunrise Ct	South Century Dr	Widen & overlay	Low	\$5,300,000	\$1,100,000	\$300,000
F-7	China Hat Rd	Knott Rd	One Mile South of Knott Rd at The Deschutes National Forest Boundary	Widen & overlay	Low	\$900,000	\$200,000	\$100,000

## TRANSIT

By reference, the County will adopt the Cascade East Transit (CET) Master Plan. This Master Plan has a number of projects that can help increase service to the unincorporated areas of the County as well as to the High Desert Museum and Lava Lands Visitor Center. As part of TSP implementation, the County will continue to partner with CET to identify collaborative funding sources and future service enhancements.

## TRANSPORTATION SAFETY ACTION PLAN PROJECTS

The County's 2019 Transportation Safety Action Plan (TSAP) provides a range of projects, policies, and programs to address identified safety needs within the unincorporated areas of the County. The County will adopt the TSAP, by reference, as part of the updated TSP.

The top sites for safety improvements in unincorporated Deschutes County identified through the TSAP are shown in Table 5-10. This table also includes projects that have been identified to address these needs and relevant status. As part of TSP implementation, the County will continue to identify future project refinements, as needed, monitor the timing of intersection changes at these locations, and seek funding opportunities and/or the potential to combine safety-related projects with other project development within the County.

**Table 5-10. TSAP Priority Locations & Status**

Intersection	Project Identified?	Status
US 20/Ward Rd/Hamby Rd	Roundabout	Project Complete
US97/Vandevert Rd	Intersection Improvement	Project Complete
US 20/Fryrear Rd	Turn Lane on Highway, Realign Fryrear Road (Project SI-5)	County to Coordinate with ODOT on Future Project Refinement.
Burgess Rd/Day Rd/Pine Forest Dr	Turn-Lanes	Project Complete
Bear Creek Rd/Ward Rd	None	County to Conduct Future Project Refinement.
Alfalfa Market Rd/Dodds Rd	None	County to Conduct Future Project Refinement.
US 20/Old Bend Redmond Hwy	Roundabout	ODOT Project Programmed for 2023
US 20/O.B. Riley Rd/Cook Ave	Roundabout	ODOT Project Programmed For 2023
US97/61st St	Improved As Part of ODOT US97 Bend to Redmond Project	Project Complete

Intersection	Project Identified?	Status
US97/11th St/Lower Bridge Way	Part Of US97: Terrebonne/Lower Bridge Way Improvements	ODOT Project Programmed For 2023
61st St/Quarry Ave/Canal Blvd	Improved As Part of ODOT US97 Bend to Redmond Project	Project Complete
Northwest Way/Coyner Ave	Add Turn Lanes	Project Identified In Deschutes County Tsp.
Alfalfa Market Rd/Walker Rd	None	County To Conduct Future Project Refinement.
US97/Smith Rock Way/B Ave	Part Of US97: Terrebonne/Lower Bridge Way Improvements	ODOT Project Programmed For 2024
Deschutes Market Rd/Hamehook Rd	Roundabout	County Project Programed For 2023
US97/Burgess Rd	Traffic Signal	Project Identified in Wickiup Junction Refinement Plan. County To Coordinate with City Of La Pine and ODOT On Future Project Refinement and Implementation.
US 20/Hawks Beard (Black Butte Ranch)	None	County To Coordinate with ODOT On Future Project Refinement.
El Camino Lane/Helmholtz Way	None	County To Conduct Future Project Refinement.
S. Canal Blvd/Helmholtz Way	Add Turn Lanes	Project Complete
Dickey Rd/Nelson Rd	None	County To Conduct Future Project Refinement.
US97/Galloway Ave	None	County To Coordinate with ODOT On Future Project Refinement.
Butler Market Rd/Powell Butte Hwy	Roundabout	Programmed For 2023 Construction
Butler Market Rd/Hamby Rd	None	County To Conduct Future Project Refinement.
Butler Market Rd/Hamehook Rd	None	Intersection Now Under City of Bend Jurisdiction
Baker Rd/Cinder Butte Rd	Intersection Improvement	Project Identified in Deschutes County Tsp

Intersection	Project Identified?	Status
S Century Dr/Huntington Rd	Roundabout	Project Identified in Deschutes County Tsp
Cline Falls Rd/Coopers Hawk Dr/ Falcon Crest Dr	None	County To Conduct Future Project Refinement.
Lower Bridge Way/19th St	Turn Lanes/Realignment (Project C-18)	Project Identified in Deschutes County Tsp.
Lower Bridge Way/31st St	Turn Lanes (Project C-20)	Project Identified in Deschutes County Tsp.
Lower Bridge Way/43rd St	Included In Future Roadway Improvement Project (Project CC-4)	Project Identified in Deschutes County Tsp.



## 06 | FUNDING

Deschutes County receives transportation funding via a variety of state, federal, and local sources. Resources are initially budgeted to meet maintenance and operation standards; resources exceeding these needs are directed to the Road Department's Capital Fund to fund Capital Improvement Plan (CIP) projects.

This Chapter provides a description of funding sources and a projection of capital resources available to fund CIP projects.

### FUNDING SOURCES

#### State Highway Fund

The State Highway Fund (SHF) is managed by the State (ODOT) and contains revenue generated from taxes on motor fuels (gas and diesel), taxes on heavy trucks (including weight-mile tax and truck registrations), and driver/vehicle fees (license, title and registration).

Counties receive approximately 30% of SHF net revenue (whereas ODOT receives 50% and cities, 20%). Revenue increases to the SHF occur at irregular intervals at the discretion of the Oregon Legislature.

Within the 20-year horizon of the TSP/CIP, the State Highway Fund model will most likely transition to a user-based fee structure to replace the traditional fuel tax.

#### Federal Secure Rural Schools (SRS) and Payment in Lieu of Taxes (PILT) Program Funding

The federal Secure Rural Schools and Community Self Preservation Act (SRS) provides a federal payment to counties and school districts to offset the loss in timber revenue from federal land that is no longer received by counties due to environmental restrictions. Per federal code, a specific portion of SRS is dedicated to county road funding. In March 2023, the Deschutes County Road Agency (DCRA) was formed as an Intergovernmental Entity (per ORS 190) to receive SRS funding from the State via the federal government. Funds received by the DCRA will be internally transferred to the Road Department for expenditure.

Payment in Lieu of Taxes (PILT) is a federal payment to counties with significant federal land holdings to partially offset the loss in tax revenue. PILT funding is to be used for government purposes and its allocation occurs at the discretion of the Board of County Commissioners. Historically, the Board has provided the Road Department with a portion of PILT in recognition of the significant reduction in SRS funding (prior timber revenue) received by the Road Department.

## Federal Surface Transportation Block Grant (STBG) Funding

The Surface Transportation Block Grant program is a federal program which provides formulaic allocations to states to invest in federal-aid highways. The federal-aid system includes roads classified as collector and above, which includes county roads. A memorandum of understanding between the Oregon Department of Transportation, the League of Oregon Cities and the Association of Oregon Counties establishes a methodology for allocation of Oregon's portion of the federal funding. Historically, ODOT has operated a fund exchange program for local government in which federal funding is exchanged (90%) for state dollars to enable local governments to deliver projects outside of the federal process.

## Federal Lands Access Program (FLAP)

The Federal Lands Access Program is a federal program administered by the Federal Highway Administration for the purpose of improving transportation facilities that provide access to, are adjacent to, or are located within federal lands. Given the significant amount of federal land within Deschutes County, the Road Department has historically fared well in this competitive program for projects ranging from chip seal, bridge replacement, overlay and reconstruction efforts.

## System Development Charges (SDC)

System Development Charges are fees assessed to new development (or redevelopment) to fund capacity adding improvements necessary to accommodate new growth within the County's transportation system.

## Routine State Grant Programs

The State of Oregon, via ODOT, provides grant programs to fund various aspects of local transportation systems. Primary State programs include:

- Safe Routes to Schools
- Local Bridge Program
- All Roads Transportation Safety (ARTS)

## Federal Grant Programs

The Federal government funds various grant programs through occasional federal transportation bills, most recently the Bipartisan Infrastructure Law (BIL). Primary federal programs include:

- Safe Streets and Roads for All (SS4A);
- Highway Safety Improvement Program (HSIP);
- Rebuilding American Infrastructure Sustainably and Equitably (RAISE);
- Infrastructure for Rebuilding American (INFRA); and,
- Other programs.

## Local Funding

Due to statutory limitations and other restrictions, it is difficult for counties to generate transportation funding via local sources. Noted restrictions include:

- Prohibition in franchise fees from utility companies located in the public right-of-way; and,
- Restriction in use of general fund tax dollars for road purposes.

Notable funding sources, which require voter approval, include:

- Local Fuel Tax;
- Local Registration Fee; and,
- Sales Tax.

Deschutes County does not have a local funding source for transportation.

## FUNDING PROJECTIONS – 20 YEAR ESTIMATE

With transportation funding almost exclusively derived from state and federal funding sources, the nature of transportation funding can be very cyclical in Oregon. The legislature has approved fuel tax increases only four times since 1993. The federal fuel tax has not increased since 1993.

The current state of transportation funding in Deschutes County is stable due to the passage of a phased-in 10-cent per gallon fuel tax approved via HB 2017 in 2017. The last remaining phase of the fuel tax will occur January 1, 2024 (2-cents per gallon).

Counties in Oregon receive approximately 30% of the SHF; individual county distribution is determined based upon the proportion of registered vehicles in each county. In 2023, Deschutes County received approximately 5.5% of the portion of the SHF allocated to counties in the state.

## Prioritization of Expenditures

Based on the Road Department's hierarchy of investment, funding for capital construction is a function of the total resources available, less the annual amount required to maintain and operate the system based on existing maintenance standards and operational levels-of-service. Maintenance standards and operation levels-of-service are derived from a combination of studies (example, annual pavement maintenance and budget options report), and operational policy (example, snow and ice plan).

Figure 6-1 represents the prioritization of expenditures for maintenance, operation and capital expenditures as annually presented to the County's Budget Committee.

Figure 6-1: Hierarchy of Expenditures and Investment



## Capital Funding Estimate Assumptions

A projection of transportation funding resources available for capital investment has been prepared for the 20-year investment period of the TSP and Capital Improvement Plan based on the following assumptions:

1. Current maintenance and operational standards remain in place.
2. The County's existing Road Moratorium (Resolution 2009-118), which limits acceptance of new road miles into the County maintenance system, remains in place.
3. Existing funding levels remain in place and are occasionally adjusted legislatively to a level that will roughly match inflation.
4. No significant additional local funding mechanisms are developed or implemented.
5. State and Federal grant programs are available at approximately the same historical intervals and funding levels.

## Capital Funding Estimate

A projection of transportation system revenues and expenditures for a 20-year horizon has been prepared with consideration to the noted assumptions and prioritization (hierarchy of expenditures and investment). For comparative and project placement purposes, the estimated available Capital Improvement Project revenue has been calculated in 2023 value and estimated across the High (0 to 5 years), Medium (6 to 10 years) and Low (11-20 years) priority timeframe.

**Table 6-1: Capital Project Revenue Estimate (Present Value)**

High Priority	Medium Priority	Low Priority	Total
0 to 5 Years	6 to 10 Years	11 to 20 Years	20-year CIP Funding
\$44,000,000	\$53,000,000	\$60,200,000	\$157,200,000

The proposed Capital Improvement Program will need to account for project funding availability within the approximate amounts as noted in Table 6-1. The estimated total capital project revenue of \$157M is approximately \$32M less than the \$189M project list per Table 1-1 (Total Cost of Prioritized TSP Investments). The estimated funding gap can be addressed via additional and aggressive pursuit of state and federal grant funding opportunities for select projects throughout the 20-year horizon period.

## ROAD MORATORIUM EVALUATION

In 2006, facing an unknown future regarding transportation funding, the Board of County Commissioners passed a Road Moratorium (Resolution 2006-049) which suspended the establishment of new County roads. The resolution was modified and replaced in 2009 (via Resolution 2009-118) to allow for the addition of collector and arterial road miles to the County's system. A County road is a road that has been dedicated for public use, improved to County road standards, and accepted by the County for maintenance via Board action (ORS 368.001(1)). A road that has been dedicated for public use but has not been accepted for County maintenance is defined as a Local Access Road (per ORS 368.001(3)).

While the transportation funding environment has improved since 2006, many of the concerns which gave rise to the creation of the moratorium remain, such as:

1. High reliance on infrequent legislative adjustment to the state fuel tax, weight-mile tax, and DMV fees.
2. Funding mechanisms, such as the fuel tax, which have no inflation hedge and are therefore eroded or outpaced by inflation.
3. High reliance on fuel tax revenue which is negatively impacted by increasing fuel efficiency in vehicles, as well as an increasing number of hybrid and electric vehicles.
4. Reliance on federal programs, such as SRS and PILT, which require frequent reauthorization and are subject to reduction.
5. Legislative restrictions on the ability for counties to generate local revenue, such as a prohibition on establishment of franchise fees, and other mechanisms.

The Road Moratorium has allowed the County to invest new revenue in a Capital Improvement Plan program and has also focused long-term maintenance investment in the preservation of the County's collector and arterial road network.

## Impacts of Lifting the Road Moratorium

Upon establishment of the Road Moratorium in 2006, the County ceased to accept new road infrastructure. Prior to 2006 road miles were added to the County system via new development as well as improvement of existing road miles via the Local Improvement District (LID) process.

New development which has occurred since 2006 has been required to establish private road maintenance funding arrangements which have typically occurred via a homeowners association or other road maintenance agreements. Approximately 30 miles of new local road infrastructure have been constructed in the post-moratorium era; these road miles could be immediately eligible for County acceptance and maintenance if the Road Moratorium were to be lifted. Additionally, approximately 380 miles of Local Access Road exist in Deschutes County, of which over 120 miles exist within the 19 Special Road Districts within the County.

The Road Moratorium limited the ability to form LIDs – which are districts formed under rules within County Code and State Statute in which the County contracts for the design and improvement of County roads within the district and is reimbursed for the expense via assessments applied to properties within the district. Lifting of the Road Moratorium would allow Local Access Roads to become eligible for the LID process.

Lifting the Road Moratorium would result in increased costs associated with road maintenance for new local road miles added to the County system and the addition of staff to administer the LID program. An estimate of costs associated with the addition of new local road infrastructure has been prepared based on the following assumptions:

1. Estimated annual cost of local road maintenance (paved) and operation: \$15,000/mi/year.
2. 30 miles of local road (previously constructed to County standard, post moratorium) will be added to the system in Year 1.
3. Twenty-five percent of Local Access Road mileage will be improved via the LID process in the 20-year horizon period (approximately 5 miles added per year).
4. Administration of the LID program will require 2.0 FTE (1-engineer and 1-administrative support personnel).

**Table 6-2: Estimated Costs of Lifting the Road Moratorium (Present Value)**

Item	Year 1 Cost	Year 2-20 Cumulative Cost	Total Cost for 20-year TSP/CIP Horizon Period
Acceptance of 30 miles of improved	\$450,000	\$8,550,000	\$9,000,000
Acceptance of 5 miles per year of new local road infrastructure (starting year 3)	\$0	\$12,825,000	\$12,825,000
Personnel costs associated with administration of the LID program	\$250,000	\$4,750,000	\$5,000,000
<b>TOTAL</b>	<b>\$700,000</b>	<b>\$26,125,000</b>	<b>\$26,825,000</b>

Note: The above costs reflect 2023 dollars to assist in present value comparison with CIP projects costs and capital project revenue estimates.

Lifting the moratorium would reduce funding available for capital projects by approximately \$27,000,000 across the 20-year horizon period.

## Recommendation

Given the financial impact of lifting the Road Moratorium and concerns related to long-term transportation system funding in Oregon, it is recommended that the Road Moratorium remain in place to extend Deschutes County's ability to maintain its existing infrastructure and sustain a viable Capital Improvement Program into the future.

## LOCAL ACCESS ROAD TOOLS AND FAQS

To assist with explanation and provide information to customers seeking to improve or establish maintenance on non-county maintained Local Access Roads (LARs), the Road Department provides the following information and explanation to customers:

### How are Local Access Roads maintained?

LARs are typically maintained by adjacent property owners and road users. This usually occurs in one of three ways:

1. Informally: In which neighbors work together to hire a contractor or self-perform maintenance and "pass-the-hat" to share in the cost.
2. Formally: Through homeowners associations (HOAs) or other formal agreements to share in the cost of maintenance.
3. Special Road Districts: In which area residents vote to establish a district which levies a property tax to fund maintenance. Deschutes County has 19 Special Road Districts – which is the highest number of road districts within any county in the state.

By observation, all three methods work well in some areas and not very well in other areas depending upon a variety of factors.

### Frequently Asked Questions and Explanations:

1. I pay taxes and receive no service from Deschutes County.

Deschutes County does not utilize property tax to fund transportation maintenance improvements as that practice is restricted by State law. Regarding gas tax, the State currently charges 38-cents per gallon (and various DMV fees) to fund the transportation system. The State distributes the gas tax revenue in a 50-30-20 proportion in which the State keeps 50% to fund the state system, the counties receive 30% to fund the county systems, and cities receive 20% to fund the city systems.

When customers pay the gas tax, they don't individually fund the transportation jurisdiction in which they live, they fund the entire system of state highways, county roads and city streets. Everyone pays the same rate, whether or not they live in a city or the unincorporated areas. If you are paying a gas tax, chances are you are driving on the system that is being maintained with gas tax funds.

1. Why can't the County maintain my gravel road (LAR)?

Due to the fiscal burden that would be placed on county road departments to maintain significant mileage of sub-standard road construction, state law restricts the ability of counties to spend road funds (fuel tax and DMV fee revenue) on LARs. If we add gravel, grade, or plow one mile we would be obligated to provide that same service to all of the other LARs in the County.

2. How come the County maintains some gravel roads but not others?

The County maintains approximately 125 miles of gravel road that have been lawfully established as County roads and accepted for maintenance. Most of these miles were gravel when Deschutes County was established in 1916 and had previously been accepted for maintenance, with gravel surfacing, when Deschutes County was a part of Crook County. Current LARs have never been accepted by Deschutes County for maintenance.

3. Not everyone contributes to help maintain my Local Access Road.

This is the biggest downside of living on a LAR. Some neighbors have different opinions on levels of road maintenance and some choose not to pay for other reasons. This is where good neighborhood relations and communication pay dividends. There are many examples of where this is taking place in Deschutes County.

4. We have public traffic on our LAR that accesses public land.

Living next to public land has positive and negative impacts to quality of life. The attraction of the public to public land is one of the negative consequences. Use of public roads, like LARs, to access public land is a logical and predictable occurrence and therefore something that property owners should factor into their decision to purchase property when conducting due diligence. Similarly, road maintenance costs associated with unmaintained LARs should also factor into the decision to purchase property. Most LARs have been in existence for many decades as have the public lands they may serve.