



COMMUNITY DEVELOPMENT

DESCHUTES COUNTY PLANNING COMMISSION

5:30 PM, THURSDAY, FEBRUARY 10, 2022

Barnes Sawyer Rooms - Deschutes Services Bldg - 1300 NW Wall St – Bend

(541) 388-6575 | www.deschutes.org

AGENDA

MEETING FORMAT

The Planning Commission will conduct this meeting in person, electronically, and by phone.

Members of the public may view the Planning Commission meeting in real time via the Public Meeting Portal at www.deschutes.org/meetings.

Members of the public may listen, view, and/or participate in this meeting using Zoom. Using Zoom is free of charge. To login to the electronic meeting online using your computer, copy this link:

<https://us02web.zoom.us/j/89757788228?pwd=L3c2c2hlnkxZT0g5TlhpcKE5MzA1Zz09>

Passcode: 508007

Using this option may require you to download the Zoom app to your device.

Members of the public can access the meeting via telephone, dial: 1-312-626-6799. When prompted, enter the following Webinar ID: 897 5778 8228 and Passcode: 508007. Written comments can also be provided for the public comment section to planning@deschutes.org by 5:00 p.m. on February 10. They will be entered into the record.

I. CALL TO ORDER

II. PUBLIC COMMENT

III. ACTION ITEMS

- [1.](#) Dark Skies Outdoor Lighting Panel Discussion (*Tarik Rawlings, Associate Planner*)
- [2.](#) Deschutes County Transportation System Plan 2020-2040 Update (*Peter Russell, Senior Transportation Planner*)

IV. PLANNING COMMISSION AND STAFF COMMENTS

V. ADJOURN



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COMMUNITY DEVELOPMENT

MEMORANDUM

TO: Deschutes County Planning Commission

FROM: Tarik Rawlings, Associate Planner
Will Groves, Planning Manager

DATE: February 3, 2022

SUBJECT: Deschutes County Outdoor Lighting Ordinance – Outdoor Lighting Panel

Based on previous direction from the Planning Commission, staff has assembled an Outdoor Lighting Panel consisting of eight (8) relevant panelists. The selected panelists will provide a variety of perspectives on outdoor lighting best practices, and specific feedback and recommendations related to the language and criteria contained in Deschutes County's Outdoor Lighting regulations (Deschutes County Code (DCC) Chapter 15.10, Outdoor Lighting Control¹).

I. Background

The Community Development Department's (CDD) FY 2021-2022 Work Plan considers amending DCC Chapter 15.10 to comply with new technologies and Dark Skies Best Practices.² On November 15, 2021, the Board approved the request to begin the process. On January 13, 2022, the Planning Commission gave direction on the types of panelists and perspectives desired for the Outdoor Lighting Panel. In preparation for the Planning Commission meeting and initial Outdoor Lighting Panel discussion on February 10, 2022, staff contacted several individuals and received numerous messages expressing interest in serving on the Panel.

II. Outdoor Lighting Panel

On February 10, 2022 the Planning Commission will convene an Outdoor Lighting Panel to discuss DCC Chapter 15.10 and any potential changes to the existing code. Based on direction from the Planning Commission, staff has assembled the following panelists:

1. Grant Tandy (Observatory Manager, Worthy Garden Club / NASA/JPL Solar System Ambassador)
2. Bill Kowalik (Chairperson, Oregon Chapter of International Dark-Sky Association)

¹ https://deschutescounty.municipalcodeonline.com/book?type=ordinances#name=CHAPTER_15.10_OUTDOOR_LIGHTING_CONTROL

² <https://www.deschutes.org/cd/page/work-plan-annual-report>. Page 34.

3. Ron Thorkildson (Deschutes County Property Owner and Resident)
4. Russell Robertson (Building Inspector, City of Bend)
5. Jerry Jones (Senior Director of Land Development, Pahlisch Homes)
6. Rima Givot (Science Teacher, Sisters High School / Amateur Astronomer)
7. Peter Gutowsky (Deschutes County CDD Director and Code Compliance Representative)
8. Elise Wolf (Director and Avian Rehabilitator, Native Bird Care / East Cascades Audubon Society)

III. Chapter 15.10, Outdoor Lighting Control

Deschutes County's Outdoor Lighting Ordinance, adopted in 1994³, is the focus of the Panel discussion. Utilizing the expertise and perspectives from the Panel, a primary goal of this discussion is to provide specific feedback related to the criteria and language contained in the County's existing Outdoor Lighting Control development code (DCC 15.10).

Legal Authority

In previous discussion with the Planning Commission, staff identified legal prohibitions against "retroactive ordinances", which make lawfully installed light fixtures illegal. Interestingly, the currently adopted DCC 15.10.170(A)(1)(a-b), includes such a retroactive provision:

15.10.170. Exemptions.

A. Nonconformance.

1. *All other outdoor light fixtures lawfully installed prior to and operable on the effective date of the requirements codified in this ordinance are exempt from all such requirements except those regulated in DCC 15.10.150(A), (B) and (C) or as follows:*
 - a. *All replacement of outdoor lighting fixtures, as of the date of adoption, shall be subject to the provisions of this ordinance.*
 - b. *Until a date six years after the date of adoption of this code, August 31, 2000.*

This existing code section allows a period of six (6) years for existing fixtures to comply with the County's outdoor lighting regulations, if those fixtures are not otherwise exempted under DCC 15.10.170(A).

Since the Planning Commission meeting on January 13, 2022, staff has further coordinated with County Legal Counsel on the legal interpretation, applicability, and enforceability of DCC 15.10.170(A). Legal Counsel continues to reiterate the heightened risk of applying retroactive review to existing fixtures as both a constitutional legal principle and a codified rule within state statute in ORS 92.285 and ORS 215.110(6). These statutes and underlying legal principles have been applied at the state-level in the case of *Church v. Grant County*, 37 Or LUBA 646 (2000).

Based on this legal guidance, as part of the current review of the outdoor lighting ordinance, Staff will recommend to the Planning Commission a reworking of DCC 15.10.170(A) to clarify that light fixtures

³ Ordinance 94-024. https://s3-us-west-2.amazonaws.com/municipalcodeonline.com-new/deschutescounty/ordinances/documents/1620317553_1994-34738-Ordinance%20No.%2094-024%20Recorded%209_1_1994.pdf

lawful on the date of installation will continue to be lawful under any new ordinance. Only new and replacement fixtures may be the subject of any new regulation.

IV. Next Steps

Based on the Outdoor Lighting Panel discussion, the Planning Commission may schedule a second date to convene the Panel for further input and feedback. If the Planning Commission does not find a second Panel gathering necessary, staff will engage the Commission on next steps.

ATTACHMENTS:

1. Deschutes County Outdoor Lighting Control – DCC Chapter 15.10

Chapter 15.10. OUTDOOR AND GREENHOUSE LIGHTING CONTROL

- 15.10.010. Purpose and Intent as Relates to Residential, Commercial and Public Area Lighting.**
- 15.10.020. Purpose and Intent as Relates to Street Lighting.**
- 15.10.030. Conformance With Applicable Codes.**
- 15.10.040. Approved Materials and Methods of Construction or Installation/Operation.**
- 15.10.050. Definitions.**
- 15.10.055. Definition-Outdoor and Greenhouse Light Fixtures.**
- 15.10.060. Definition-Community Development Department.**
- 15.10.065. Definition-Exempt Light Fixtures.**
- 15.10.070. Definition-Individual.**
- 15.10.075. Definition-Installed.**
- 15.10.080. Definition-Shielding.**
- 15.10.085. Definition-Fully Shielded.**
- 15.10.090. Definition-Partially Shielded.**
- 15.10.095. Definition-Directed Shielding.**
- 15.10.100. Definition-Unshielded.**
- 15.10.105. Definition-High Intensity Discharge Lamp Sources.**
- 15.10.110. Definition-Luminous Tube Lighting.**
- 15.10.115. Definition-Greenhouse**
- 15.10.120. Requirements for Installation of Outdoor Lighting.**
- 15.10.130. Submission of Plans and Evidence of Compliance With Code-Subdivision Plats.**
- 15.10.140. Shielding.**
- 15.10.150. Prohibitions.**
- 15.10.160. Externally Lighted Outdoor Advertising Signs, Billboards.**
- 15.10.170. Exemptions.**
- 15.10.180. Violations and Penalties.**
- 15.10.190. Violations Constitute Public Nuisance.**
- 15.10.200. Code Requirements Tables for Shielding.**

15.10.010. Purpose and Intent as Relates to Residential, Commercial and Public Area Lighting.

The purpose of DCC 15.10 is to affirm the right of citizens in Deschutes County, Oregon to illuminate residential, commercial and public areas with lighting fixtures appropriate to the need while utilizing such illumination in a way that preserves rural and urban vistas and is confined to the property from which it is generated.

(Ord. 94-024 §1, 1994)

15.10.020. Purpose and Intent as Relates to Street Lighting.

The purpose of DCC 15.10 is to affirm that citizens of Deschutes County, Oregon have a right to the safety of well-lighted streets and highways and that such illumination by nature cannot be confined to the property from which it is generated. Thus, certain high wattage and low wattage applications for the propose of highway safety as defined below are allowed under these provisions.

(Ord. 94-024 §1, 1994)

15.10.030. Conformance with Applicable Codes.

All outdoor electrically powered illuminating devices shall be installed in conformance with the provisions of this code, the building code, the electrical code, and the sign code of the jurisdiction. No provision of this ordinance are intended to pre-empt applicable state codes.

(Ord. 94-024 §1, 1994)

15.10.040. Approved Materials and Methods of Construction or Installation/ Operation.

The provisions of this code are not intended to prevent the use of any design, material, or method of installation or operation not specifically prescribed by this code, provided any such alternate has been approved. The building official may approve any such proposed alternate that: Provides an equivalent alternative design that does not exceed 1800 lumens nor project light off-site of the subject lot or parcel.

(Ord. 94-024 §1, 1994)

15.10.050. Definitions.

Whenever appropriate in applying the provisions of DCC 15.10, the following words and phrases are defined as set forth in DCC 15.10.055-110.

(Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

15.10.055. Definition-Outdoor and Greenhouse Light Fixtures.

"Outdoor light fixtures" means outdoor artificial illuminating devices, outdoor fixtures, lamps and other similar devices, permanently installed or portable, used for flood lighting, general illumination or advertisement. Such devices shall include, but are not limited to, search, spot, agricultural production/grow, and flood lights for:

1. Buildings and structures;
2. Recreational areas;
3. Parking lot lighting;
4. Landscape lighting;
5. Billboards and other signs (advertising or other);
6. Street lighting;
7. Product display area lighting;
8. Building overhangs and open canopies;
9. Holiday lighting;
10. Greenhouse interior lighting.

(Ord 2016-014 §1, 2016; Ord. 95-063 §1, 1995)

15.10.060. Definition-Community Development Department.

"Community Development Department" means the Community Development Department or designated representative(s) for the purposes of this ordinance.

(Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

15.10.065. Definition-Exempt Light Fixtures.

"Exempt light fixtures" means outdoor artificial illuminating devices which are exempted by DCC 15.10.170.

(Ord. 95-063 §1, 1995)

15.10.070. Definition-Individual.

"Individual" means any private individual, tenant, lessee, owner or any commercial entity including but not limited to companies, partnerships, joint ventures or corporations.

(Ord. 94-024 §1, 1994)

15.10.075. Definition-Installed.

"Installed" means initial installation of outdoor lighting fixtures following the effective date of this ordinance. Projects with approved construction plans prior to effective date of this ordinance are excluded from compliance with the ordinance in the initial installation only.

(Ord. 95-063 §1, 1995)

15.10.080. Definition-Shielding.

"Shielding" for the purpose of this ordinance is provided for a lighting fixture by design of such fixture or by an externally applied device such as a shroud or hood of metal, wood or painted glass that does not allow transmission of light.

(Ord. 94-024 §1, 1994)

15.10.085. Definition-Fully Shielded.

"Fully shielded" means outdoor light fixtures shielded or constructed so that light rays emitted by the fixture are projected below the horizontal plane.

(Ord. 95-063 §1, 1995)

15.10.090. Definition-Partially Shielded.

"Partially shielded" means shielding so that the edge of the shield is at or below the centerline of the light source or lamp so as to limit light emission above the horizontal plane to 10 percent or less.

(Ord. 94-024 §1, 1994)

15.10.095. Definition-Directed Shielding.

"Directed shielding" means shielding by design or external application that directs light downward and limits direct line-of-sight of a fixture's lamp to the property upon which the fixture is installed.

(Ord. 95-063 § 1, 1995)

15.10.100. Definition-Unshielded.

"Unshielded" means light fixtures lacking any means to restrict the emitted light to below the horizontal plane.

(Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

15.10.105. Definition-High Intensity Discharge Lamp Sources.

"High intensity discharge lamp sources" means high pressure sodium, mercury vapor, metal halide, low pressure sodium, and other similar lamps.

(Ord. 95-063 §1, 1995)

15.10.110. Definition-Luminous Tube Lighting.

"Luminous tube lighting" means gas-filled tubing which, when subjected to high voltage, becomes luminescent in a color characteristic of the particular gas used, e.g. neon, argon, etc.

(Ord. 94-024 §1, 1994)

15.10.115 Definition-Greenhouse.

"Greenhouse" means any building that is constructed of glass, plastic, or other transparent material in which plants are grown under climate controlled conditions, and includes hoop houses and other similar structures.

(Ord 2016-014 §1, 2016)

15.10.120. Requirements for Installation Of Outdoor Lighting.

Except as exempted by provisions of this ordinance, as of the date of adoption, the installation of outdoor lighting fixtures shall be subject to the provisions of this ordinance.

(Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

15.10.130. Submission of Plans and Evidence of Compliance With Code-Subdivision Plats.

All proposed subdivisions and partitions within Deschutes County that include outdoor lighting fixtures or street lighting shall be subject to the provisions of this ordinance.

(Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

15.10.140. Shielding.

All nonexempt outdoor lighting fixtures shall have shielding as required by the tables set forth in DCC 15.10.200.

(Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

15.10.150. Prohibitions.

- A. Laser Source Light. The use of laser source light or any similar high intensity light for outdoor advertising or entertainment, when projected above the horizontal is prohibited.
- B. Searchlights. The operation of searchlights for advertising purposes is prohibited between eleven o'clock P.M. and sunrise the following morning.
- C. Recreational Facilities. No outdoor recreational facility, public or private, shall be illuminated after eleven o'clock P.M. except to conclude a specific recreational or sporting event or any other similar activity conducted at or in the facility which was in progress under such illumination prior to eleven o'clock P.M., except that any outdoor recreational facility, public or private, which is illuminated with outdoor lighting fixtures conforming to this code may operate any time with such illumination.

(Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

15.10.160. Externally Lighted Outdoor Advertising Signs, Billboards.

All externally lighted advertising signs and billboards will be illuminated by one of the following manners:

- A. Top mounted fixtures in which case such fixtures will conform to the shielding requirements as set forth in DCC 15.10.140.
- B. Bottom mounted fixtures in which case such fixtures shall be shielded either by application of external device or manufactured in such a way that upward and side directed light is confined to an area within four inches of the outermost surface of the sign's top and sides. Shielding will be constructed in such a manner that no reflective surface of the lighting fixture will extend past the limit of the shielding in the vertical plane when viewed from directly above. (See typical drawings - Table 1 and Table 2 attached.)

(Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

15.10.170. Exemptions.

- A. Nonconformance.

- 1. All other outdoor light fixtures lawfully installed prior to and operable on the effective date of the requirements codified in this ordinance are exempt from all such requirements except those regulated in DCC 15.10.150(A), (B) and (C) or as follows:
 - a. All replacement of outdoor lighting fixtures, as of the date of adoption, shall be subject to the provisions of this ordinance.
 - b. Until a date six years after the date of adoption of this code, August 31, 2000.

2. Fossil Fuel Light. All outdoor light fixtures producing light directly by the combustion of natural gas or other fossil fuels are exempt from all requirement of DCC 15.10.
- B. Airport operations lighting and aircraft navigational beacons as established by the Federal Aviation Administration are permanently exempt from these provisions. All other airport outdoor lighting must conform to the intent of this ordinance.
 - C. Correctional Institutions. Exterior lighting for County correctional institutions shall be shielded high pressure sodium except at the immediate entry area, in which case other lighting may be used that conforms to the intent of this ordinance.
 - D. Lights used for holiday decorations for no more than 45 days are exempt from the requirements of this ordinance.
 - E. Carnivals and Fairs that require the use of temporary outdoor lighting fixtures are exempt except that permanent installations at dedicated sites must conform to the requirements of this ordinance.
 - F. Historical areas as designated by proper authority are exempt from the requirements of this ordinance. Use of the minimum illumination necessary to maintain public safety is encouraged.
 - G. Motion detector lights that operate automatically for periods of less than 20 minutes.
 - H. U.S. flags displayed by top mounted lighting on a 24 hours basis.
 - I. Internally lighted advertising signs.
 - J. Temporary exemptions to the provision(s) of DCC Title 15 for five days per calendar year.
 - K. Television or movie film productions are exempt except that permanent installations at dedicated sites must conform to the requirements of this ordinance.
 - L. Customary agricultural practices are exempt except that permanent installations at dedicated sites must conform to the requirements of this ordinance.
 - M. Construction necessary for an allowed use are exempt except that permanent installations at dedicated sites must conform to the requirements of this ordinance.
- (Ord. 99-022 §1, 1999; Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

15.10.180. Violations and Penalties.

For any person, firm or corporation to erect, construct, enlarge, alter, repair, move, improve or convert any lighting structure, or cause the same to be done, contrary to or in violation of any provision of this ordinance shall constitute a code violation subject to DCC 18.144.050.

(Ord. 2003-021 §33, 2003; Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

15.10.190. Violations Constitute Public Nuisance.

Any outdoor lighting fixture erected, constructed, enlarged, altered, repaired, moved, improved, or converted, contrary to the provisions of this ordinance shall constitute a code violation subject to DCC 18.144.040.

(Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

15.10.200 Code Requirement Tables for Shielding.

See attached Table 1, 2 and 3.

(Ord. 95-063 §1, 1995; Ord. 94-024 §1, 1994)

**MEMORANDUM**

DATE: February 2, 2022

TO: Planning Commission

FROM: Peter Russell, Senior Transportation Planner

RE: February 10 update on 2020-2040 Transportation System Plan (TSP)

The Road Department, with the assistance of the Community Development Department (CDD), has initiated an update of the 2010-2030 Deschutes County Transportation System Plan (TSP). The new TSP will cover the years 2020-2040. The TSP focuses on County arterials and collectors as well as bicycles, pedestrians, transit, and other modes. The draft 2020-2040 TSP will include work sessions and public hearings before the Planning Commission (PC) and the Board of County Commissioners (Board). Adoption is slated for mid- to late 2022.

I. BACKGROUND

The County selected Kittelson & Associates Inc. (KAI) as the consultant for the 2020-2040 TSP. To date, KAI and County staff from the Road Department and Planning Division have met and continue to meet with Oregon Department of Transportation (ODOT) and staff from other local jurisdictions. KAI and County staff reviewed a proposal from the County Bicycle and Pedestrian Advisory Committee (BPAC) on future road improvements and connectors. Additionally, KAI and the County held an online presentation from April 27 to May 14, 2021, including an online public meeting on May 4, to solicit public comment. The online presentation also included technical memos on plans and policy reviews, goals and objectives, and needs analysis of existing and future conditions.

The materials and future meetings can be found at the following link:
[Deschutes County TSP Update \(kaiproject.com\)](https://kaiproject.com/DeschutesCountyTSPUpdate)

II. WORK IN PROCESS

KAI has prepared a draft project list for County roads, intersections, bike/ped projects, and bridge projects. Please refer to attached February 1, 2022, memo from KAI, which includes the list of draft projects and maps of their locations. (KAI also prepared a project list for State highways based on ODOT's facility plans, which ODOT is still in the process of reviewing and providing comments.) The draft County project list was prepared with input from the Road Department. Elements that went

into developing the 2020-2040 draft project list included analysis of 2040 traffic volumes, safety data, suggestions from BPAC, bridge sufficiency ratings, public comment from an earlier open house, and projects carried over from the 2010-2030 TSP project list. The draft project list includes planning-level cost estimates for each project and suggested prioritization. In a complementary task, KAI is reviewing the County's transportation system development charge (SDC) methodology and costs. The County uses SDCs in the funding of capital improvement projects.

After receiving ODOT's comments, KAI and County staff will schedule an Open House for the public to review and comment on the draft project list. Due to the continuing pandemic, the Open House will be held online. KAI and County staff will review financial projections for the next 20 years and how that forecast relates to the draft project list. Finally, KAI and County staff will review the existing Road Moratorium, i.e., a prohibition of adding roads into the system of County-maintained roads. The Board enacted the moratorium in 2006 and updated it in 2009 in response to loss of timber revenues and changes in gas tax revenues.^{1 2}

III. INTENDED OUTCOMES FOR TONIGHT

The PC functions as the Public Advisory Committee (PAC) for the TSP update. The presentation tonight is to inform the PC about the draft project list and receive comments. The PC does not need to formally approve the project list at this time. KAI and staff will return to the PC after the online Open House and report on the public's comments.

IV. CONCLUSION

KAI or staff is prepared to answer any questions.

Attachment: KAI February 1, 2022, "Draft Alternatives Development & Analysis Memorandum"

¹ BOCC Res. 2006-049

² BOCC Res. 2009-118

DRAFT ALTERNATIVES DEVELOPMENT & ANALYSIS MEMORANDUM

Date: February 1, 2022

To: Chris Doty, Peter Russell, and Cody Smith, Deschutes County

From: Matt Kittelson, Julia Kuhn, Carrie Theus, and Daniel Bowers

Project: Deschutes County TSP Update

Subject: Alternatives Development and Analysis

This memorandum presents potential changes to the transportation system that could help address existing and future needs in Deschutes County. The needs were identified through 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 changes help to support plans that are identified 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 alternatives identified have been prioritized as high, medium and low, and cost estimates are provided for each.

The information contained in this memorandum is presented primarily in graphical and tabular form with supporting text to further clarify/supplement the information. The potential projects will be reviewed by the Deschutes County TSP Advisory Committee, Partner Agency Committee and at a Public Workshop in December to provide a preferred set of projects to incorporate into the Draft TSP Update.

The recommended multimodal transportation projects 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.

BASIS OF NEEDS ASSESSMENT

The May 2021 *Existing Conditions and Future Needs Memo* (herein referred to as the “May 2021 memo”) summarized year 2021 and projected year 2040 needs related to people driving, riding bikes, walking, taking transit and moving freight. The needs were identified through feedback from the County and partner agency staff, through a technical analyses, and from feedback received from County residents. As summarized in that memo, there are a number of changes to the transportation system that could be implemented in the next 20 years to enhance safety and mobility for all users. These potential transportation system changes formed the basis of the projects and associated costs outlined in the enclosed memo.

PROJECT COSTS

The estimated construction costs for each project 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. 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. Detailed cost estimate sheets are included in Appendix A. 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.

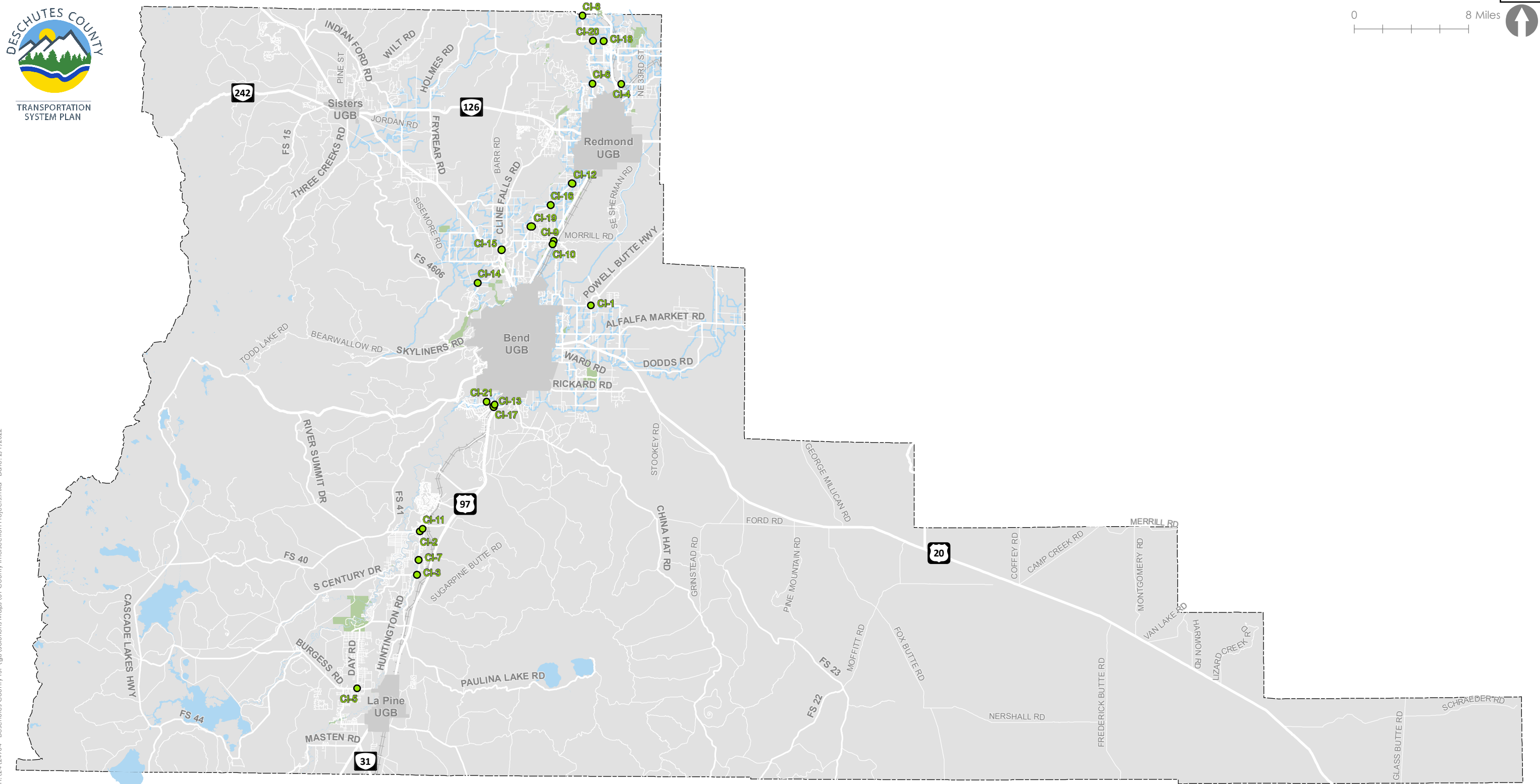
Costs for individual transit corridors are not provided. The County and Cascades East Transit (CET) will continue to collaborate on capital improvements and strategic policies that can help implement more robust transit service throughout the County.

INTERSECTION CHANGES

As discussed in the May 2021 memo, the needs assessment at intersections focused on both vehicular capacity as well as potential geometry changes identified by the Project Advisory Committee as well as projects identified through the TSAP.

Two locations were identified where vehicular capacity changes would be needed in the next twenty years, including Deschutes Market Road at Greystone Lane, and S Century Drive at Venture Lane. Given the location of these roadways in proximity to the Bend Urban Growth Boundary (UGB) and Sunriver, respectively, the County will coordinate implementation of potential changes at these locations with the City and local community.

The TSP is not inclusive of all of the intersection projects that the County will pursue over the next twenty 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 1 and in Table 1.



- COUNTY INTERSECTION
- Parks
- Water
- UGBs

Data Source: ODOT, Oregon State Parks, Deschutes County

Figure 1

County Intersection Projects
Deschutes County, Oregon

Table 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	ROUNDAABOUT	HIGH	\$2,500,000	-
CI-2	S CENTURY DR	SPRING RIVER RD	ROUNDAABOUT	HIGH	\$2,200,000	\$200,000
CI-3	HUNTINGTON RD	SOUTH CENTURY DR	ROUNDAABOUT	HIGH	\$2,000,000	-
CI-4	NE 5TH ST	ONEAL 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	S CENTURY DR	VANDERVERT RD	ROUNDAABOUT	MEDIUM	\$2,100,000	-
CI-8	NW 43RD ST	NW CHINOOK DR/ NW POVEY AVE	REALIGNMENT, LEFT TURN LANE	MEDIUM	\$700,000	-

ID	ROAD 1	ROAD 2	PROJECT DESCRIPTION	PRIORITY	COST ESTIMATE	BIKE/PED COMPONENT OF COST
CI-9	GRAYSTONE LN	PLEASANT RIDGE RD	REALIGNMENT, LEFT TURN LANE	MEDIUM	\$2,700,000	-
CI-10	DESCHUTES MARKET RD	GRAYSTONE LN	SIGNAL WITH TURN LANES	MEDIUM	\$2,300,000	-
CI-11	VENTURE LN	S CENTURY DR	ROUNDAABOUT OR REALIGNMENT	MEDIUM	\$2,100,000	-
CI-12	S CANAL BLVD	MCVEY AVE	REALIGNMENT	MEDIUM	\$400,000	-
CI-13	CINDER BUTTE RD	CHEYENNE RD	REALIGNMENT	MEDIUM	\$200,000	-
CI-14	JOHNSON RD	TYLER RD	REALIGNMENT	MEDIUM	\$600,000	-
CI-15	CLINE FALLS HWY	COOK AVE/TUMALO RD	ROUNDAABOUT OR REALIGNMENT	MEDIUM	\$1,800,000	\$200,000
CI-16	S CANAL BLVD	SW YOUNG AVE	REALIGNMENT	MEDIUM	\$300,000	-
CI-17	BAKER RD	CINDER BUTTE RD	INTERSECTION IMPROVEMENTS	MEDIUM	\$1,000,000	-

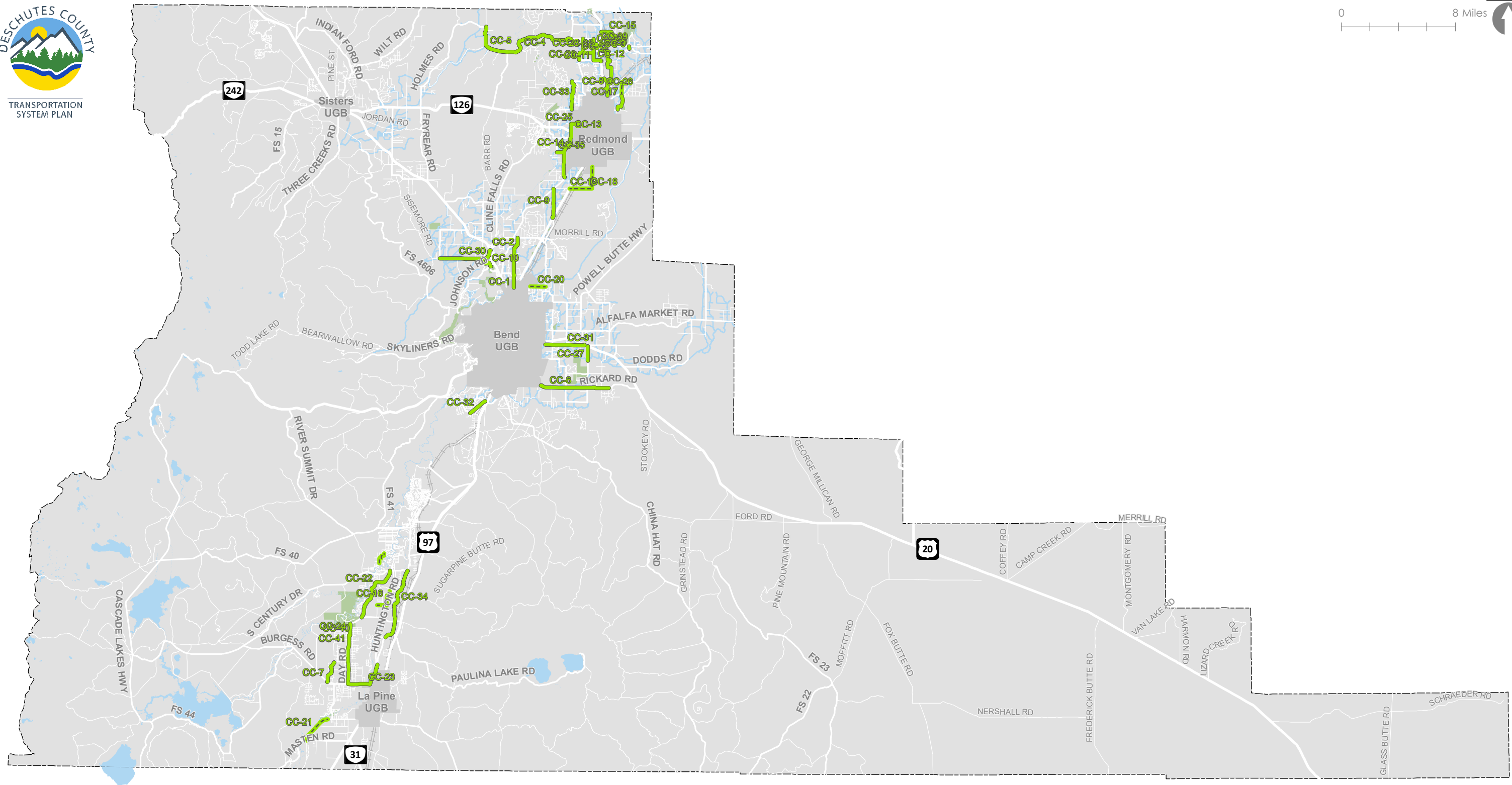
ID	ROAD 1	ROAD 2	PROJECT DESCRIPTION	PRIORITY	COST ESTIMATE	BIKE/PED COMPONENT OF COST
CI-18	NW LOWER BRIDGE WAY	NW 19TH ST	TURN LANES/REALIGNMENT	MEDIUM	\$500,000	-
CI-19	OLD BEND REDMOND HWY	SWALLEY RD/ KIOWA DR	REALIGNMENT	LOW	\$200,000	-
CI-20	NW LOWER BRIDGE WAY	NW 31ST ST	TURN LANES	LOW	\$500,000	-
CI-21	BAKER RD	BROOKSWOOD BLVD	SIGNAL/TURN LANES	LOW	\$1,400,000	\$100,000


ROADWAY CHANGES


As discussed in the May 2021 memo, 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 strength connections between areas of the County and to other areas in Central Oregon. These projects are illustrated in Figure 2 and Table 2. The projects identified in Figure 2 will be implemented over time to reflect changing needs for the various users of the transportation system and economic development opportunities.


In reviewing Figure 2, it is helpful to note that many existing roadways within the County area not built to current County standards and that not all roadways within the County will be rebuilt to match these standards over the next twenty 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 are recommended changes are shown in Figure 3 and Table 3.



 County Road Projects
  Parks

 County Road Extension Projects
 Water

 UGBs

County Roadway Projects Deschutes County, Oregon

Table 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	BUCKHORN RD	WIDEN & OVERLAY	HIGH	\$7,300,000	\$2,200,000
CC-5	NW LOWER BRIDGE WAY	BUCKHORN RD	HOLMES RD	WIDEN & OVERLAY	HIGH	\$5,100,000	\$1,500,000
CC-6	RICKARD RD	KNOTT RD/27TH ST	BOZEMAN TRAIL	WIDENING	MEDIUM	\$2,300,000	\$700,000
CC-7	SUNRISE LN	300' NORTH OF SHADY LN	BURGESS RD	COUNTY STANDARD IMPROVEMENT	MEDIUM	\$1,300,000	\$400,000
CC-8	N. CANAL BLVD	REDMOND CITY LIMITS	ONEIL HWY	WIDEN & OVERLAY	MEDIUM	\$700,000	\$200,000

ID	ROAD	BEGIN	END	PROJECT DESCRIPTION	PRIORITY	COST ESTIMATE	BIKE/PED COMPONENT OF COST
CC-9	61ST ST	S. CANAL BLVD	HWY 97	WIDEN & OVERLAY	MEDIUM	\$1,800,000	\$600,000
CC-10	TUMALO RESERVOIR RD	OB RILEY RD	COLLINS RD	WIDEN & OVERLAY	MEDIUM	\$5,300,000	\$1,600,000
CC-11	NW 19TH ST	NW LOWER BRIDGE WAY	NW ODEM AVE	COUNTY STANDARD IMPROVEMENT	MEDIUM	\$2,700,000	\$800,000
CC-12	NW ODEM AVE	NW 19TH ST	HWY 97	COUNTY STANDARD IMPROVEMENT	MEDIUM	\$1,100,000	\$300,000
CC-13	SW HELMHOLTZ WAY	OR 126	ANTLER AVE	WIDEN & OVERLAY	MEDIUM	\$900,000	\$300,000
CC-14	NE 1ST ST, NE KNICKERBOCKER AVE, AND NE 5TH ST	ONEIL HWY	SMITH ROCK WAY	WIDEN & OVERLAY	LOW	\$3,400,000	\$1,000,000
CC-15	NW EBY AVE, NE 5TH ST, NE CAYUSE AVE, AND NE 9TH ST	US 97	NE WILCOX RD	WIDEN & OVERLAY	LOW	\$1,700,000	\$500,000
CC-16	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-17	STELLAR DR, UPLAND RD, SAVAGE DR, WINCHESTER DR, BROWNING DR	STELLAR DR END OF COUNTY MAINTENANCE (@MILKY WAY)	STAGE STOP DR (@BROWNING DR/PITCH CT)	COUNTY STANDARD IMPROVEMENT	LOW	\$1,300,000	\$400,000

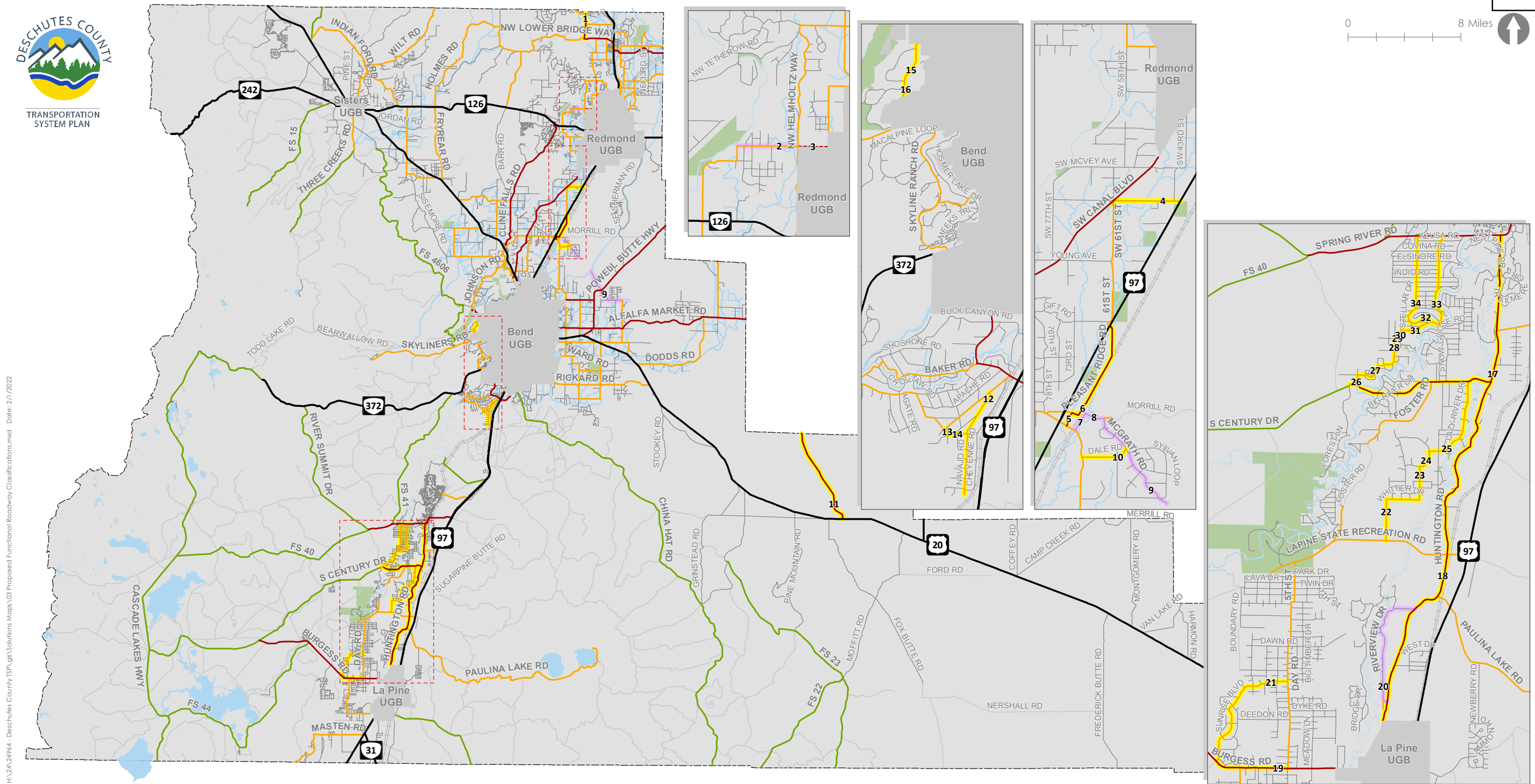
ID	ROAD	BEGIN	END	PROJECT DESCRIPTION	PRIORITY	COST ESTIMATE	BIKE/PED COMPONENT OF COST
CC-18	SW 19TH ST	END OF PAVEMENT – SW 19TH ST	BNSF RR CROSSING	ROADWAY EXTENSION	LOW	\$7,300,000	\$2,200,000
CC-19	SW 19TH ST	BNSF RR CROSSING	US 97 (@SW QUARRY AVE)	ROADWAY EXTENSION	LOW	\$1,300,000	\$400,000
CC-20	COOLEY RD	URBAN GROWTH BOUNDARY	DESCHUTES MARKET RD	ROADWAY EXTENSION	LOW	\$2,900,000	\$900,000
CC-21	6TH ST	MASTEN RD	6TH ST - END OF COUNTY MAINTENANCE	ROADWAY EXTENSION	LOW	\$3,800,000	\$1,100,000
CC-22	FOSTER RD	SOUTH CENTURY DR	LA PINE STATE REC. RD	COUNTY STANDARD IMPROVEMENT/ WIDEN & OVERLAY	LOW	\$4,100,000	\$1,200,000
CC-23	BURGESS RD	DAY RD	HUNTINGTON RD	WIDEN & OVERLAY	LOW	\$1,900,000	\$600,000
CC-24	5TH ST (LA PINE)	AMBER LN	LAPINE STATE REC. RD	WIDEN & OVERLAY	LOW	\$800,000	\$200,000
CC-25	W. ANTLER AVE	NW 35TH ST	NW HELMHOLTZ WAY	WIDEN & OVERLAY	LOW	\$400,000	\$100,000
CC-26	N. CANAL BLVD	ONEIL HWY	HIGHWAY 97	WIDEN & OVERLAY	LOW	\$1,100,000	\$300,000

ID	ROAD	BEGIN	END	PROJECT DESCRIPTION	PRIORITY	COST ESTIMATE	BIKE/PED COMPONENT OF COST
CC-27	GOSNEY RD	US 20	RICKARD RD	WIDEN & OVERLAY	LOW	\$2,800,000	\$800,000
CC-28	31ST ST	NW SEDGEWICK	NW LOWER BRIDGE WAY	WIDEN & OVERLAY	LOW	\$1,000,000	\$300,000
CC-29	NW ALMETER WAY	NORTHWEST WAY	NW SEDGEWICK AVE	WIDEN & OVERLAY	LOW	\$500,000	\$200,000
CC-30	BAILEY RD	US 20	TUMALO RESERVOIR RD	WIDEN & OVERLAY	LOW	\$1,300,000	\$400,000
CC-31	BEAR CREEK RD	CITY LIMITS	US 20	WIDEN & OVERLAY	LOW	\$3,200,000	\$1,000,000
CC-32	CINDER BUTTERD	BAKER RD	MINNETONKA LN	WIDEN & OVERLAY	LOW	\$1,300,000	\$400,000
CC-33	NW HELMHOLTZ WAY	MAPLE AVE	NW COYNER AVE	WIDEN & OVERLAY	LOW	\$2,500,000	\$700,000
CC-34	HUNTINGTON RD	SOUTH CENTURY DR	BURGESS RD	WIDEN & OVERLAY, EXCLUDING PORTION FROM RIVERVIEW DR TO RIVERVIEW DR	LOW	\$6,600,000	\$2,000,000
CC-35	SW WICKIUP AVE	SW HELMHOLTZ WAY	SW 58TH ST	WIDEN & OVERLAY	LOW	\$600,000	\$200,000

ID	ROAD	BEGIN	END	PROJECT DESCRIPTION	PRIORITY	COST ESTIMATE	BIKE/PED COMPONENT OF COST
CC-36	4TH ST (TERREBONNE)	MAJESTIC ROCK DR	F AVE	COUNTY STANDARD IMPROVEMENT	LOW	\$200,000	\$100,000
CC-37	F AVE (TERREBONNE)	4TH ST	5TH ST	COUNTY STANDARD IMPROVEMENT	LOW	\$100,000	-
CC-38	5TH ST (TERREBONNE)	F AVE	CENTRAL AVE	COUNTY STANDARD IMPROVEMENT	LOW	\$300,000	\$100,000
CC-39	H AVE (TERREBONNE)	11TH ST	12TH ST	COUNTY STANDARD IMPROVEMENT	LOW	\$200,000	\$100,000
CC-40	AMBER LN	5TH ST	DAY RD	REALIGNMENT	LOW	\$300,000	\$100,000
CC-41	DAY RD	AMBER LN	BURGESS RD	WIDEN & OVERLAY	LOW	\$3,000,000	\$900,000
CC-42	NW SEDGEWICK AVE	NW 19TH AVE	NW ALMETER WAY	WIDEN & OVERLAY	LOW	\$1,000,000	\$300,000



HA24 24764 - Deschutes County TSP gis Solutions Maps V03 Proposed Functional Roadway Classifications.mxd Date: 2/1/2022



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

Data Source: Deschutes County

Proposed Functional Roadway Classifications
Deschutes County, Oregon

Table 3. Proposed Change to Functional Classification

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 MODELS TO EXISTING STREETS"
4	SW QUARRY AVE	US 97	S CANAL BLVD	LOCAL	COLLECTOR	IMPROVE CONNECTION TO CANAL WHICH IS AN ARTERIAL ROAD THAT RUNS PARALLEL TO 97, KEY ROAD SEGMENT IN CONNECTION TO NORTH TUMALO AREA FROM US 97, 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 US 97, CONNECTION FOR US 97 ACCESS FROM TUMALO RD/DESCHUTES MARKET ROAD
6	PLEASANT RIDGE RD	GRAYSTONE LN	US 97	COLLECTOR	ARTERIAL	600' SEGMENT THAT IS KEY IN CONNECTION FOR US 97 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 ROAD IS LOCAL

ID	ROAD	BEGIN	END	FUNCTIONAL CLASSIFICATION		COMMENTS
				CURRENT	PROPOSED	
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 ROAD
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
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

ID	ROAD	BEGIN	END	FUNCTIONAL CLASSIFICATION		COMMENTS
				CURRENT	PROPOSED	
20	RIVERVIEW DR	HUNTINGTON RD	HUNTINGTON RD	COLLECTOR	LOCAL	PARALLEL TO HUNTINGTON ROAD, RURAL CONNECTIONS TO RIVER AND HOMES, CURVY ROAD
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
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

ID	ROAD	BEGIN	END	FUNCTIONAL CLASSIFICATION		COMMENTS
				CURRENT	PROPOSED	
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

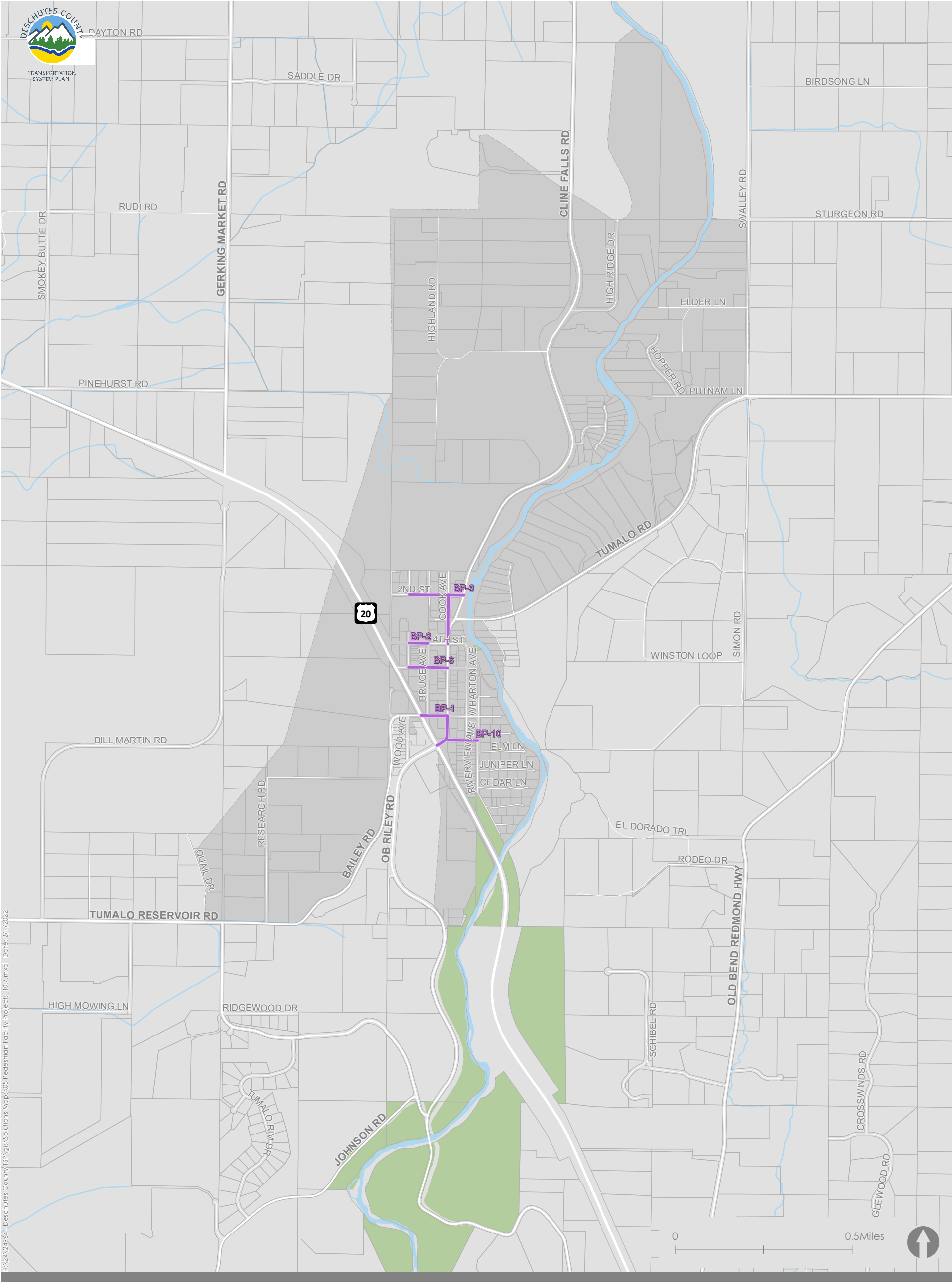
ODOT Intersections and Roadways

ODOT projects to be confirmed with the state and added to the TSP.

PEDESTRIAN FACILITIES

Figure 4 and Table 4 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.



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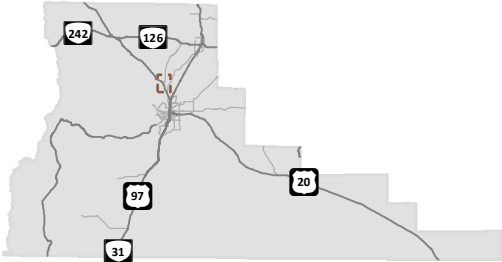


Figure 4A

**Pedestrian Facility Projects
Tumalo , Oregon**



-

Pedestrian Facility Projects Terrebonne , Oregon

Table 4. 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)	US 20	TUMALO SCHOOL	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)	US 97	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 roadway for use by people riding bikes. The County has a designated bicycle route system to help guide cyclists to the appropriate facilities. 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 this memo 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 and Table 6 identify regional bicycle connections that have been developed and prioritized with input from BPAC. Table 5 identifies routes that would connect communities and serve broad transportation functions, such as commuting, recreation, or daily services. Table 6 identifies routes that primarily provide connections to recreational opportunities.

Over time, strengthening the connections summarized in the tables will help to expand the overall bicycle infrastructure within the County. Specific routes, including roadways and specific projects needed to support or develop these routes, have not yet been identified. In addition, the funding to construct and maintain these facilities has not yet been identified. 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.

Finally, the County, by reference, will adopt the Map 11 of the Bend Parks and Recreation District's (BPRD's) Comprehensive Plan (2018)¹ 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.

¹ [BPRD-Comp-Plan-Adopted-for-web.pdf \(bendparksandrec.org\)](https://www.bendparksandrec.org/wp-content/uploads/2018/05/BPRD-Comp-Plan-Adopted-for-web.pdf)

Table 5. Bicycle Route Community Connections

COMMUNITY CONNECTION	DESCRIPTION	PRIORITY
BEND TO REDMOND	ROUTE COULD OCCUR ADJACENT TO OR WITHIN ODOT RIGHT-OF-WAY (US 97)	HIGH
BEND TO SUNRIVER	ROUTE CURRENTLY IN DESIGN AS A MULTI-USE PATH ALONG US 97. WOULD CONNECT BEND, LAVA LANDS, AND SUNRIVER.	HIGH
BEND TO SISTERS	WOULD INCLUDE BEND TO TUMALO CONNECTION, WHICH IS ALSO A PRIORITY ROUTE, AND WOULD LIKELY INCLUDE COUNTY AND ODOT FACILITIES. FUTURE COORDINATION WILL BE REQUIRED.	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 (US 97)	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
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
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 BUTTEE & PRINEVILLE	ROUTE COULD UTILIZE STATE HIGHWAYS AND/OR COUNTY ROADS. COORDINATION WITH ODOT AND CROOK COUNTY WILL BE REQUIRED.	LOW
SISTER TO BLACK BUTTE RANCH	SIGNIFICANT PRIOR PLANNING WHICH ASSUMED A MULTI-USE PATH PARALLEL US 20.	LOW
BLACK BUTTE RANCH TO CAMP SHERMAN	ROUTE WOULD REQUIRE COORDINATION WITH FOREST SERVICE	LOW

Table 6. Bicycle Route Recreation Connections

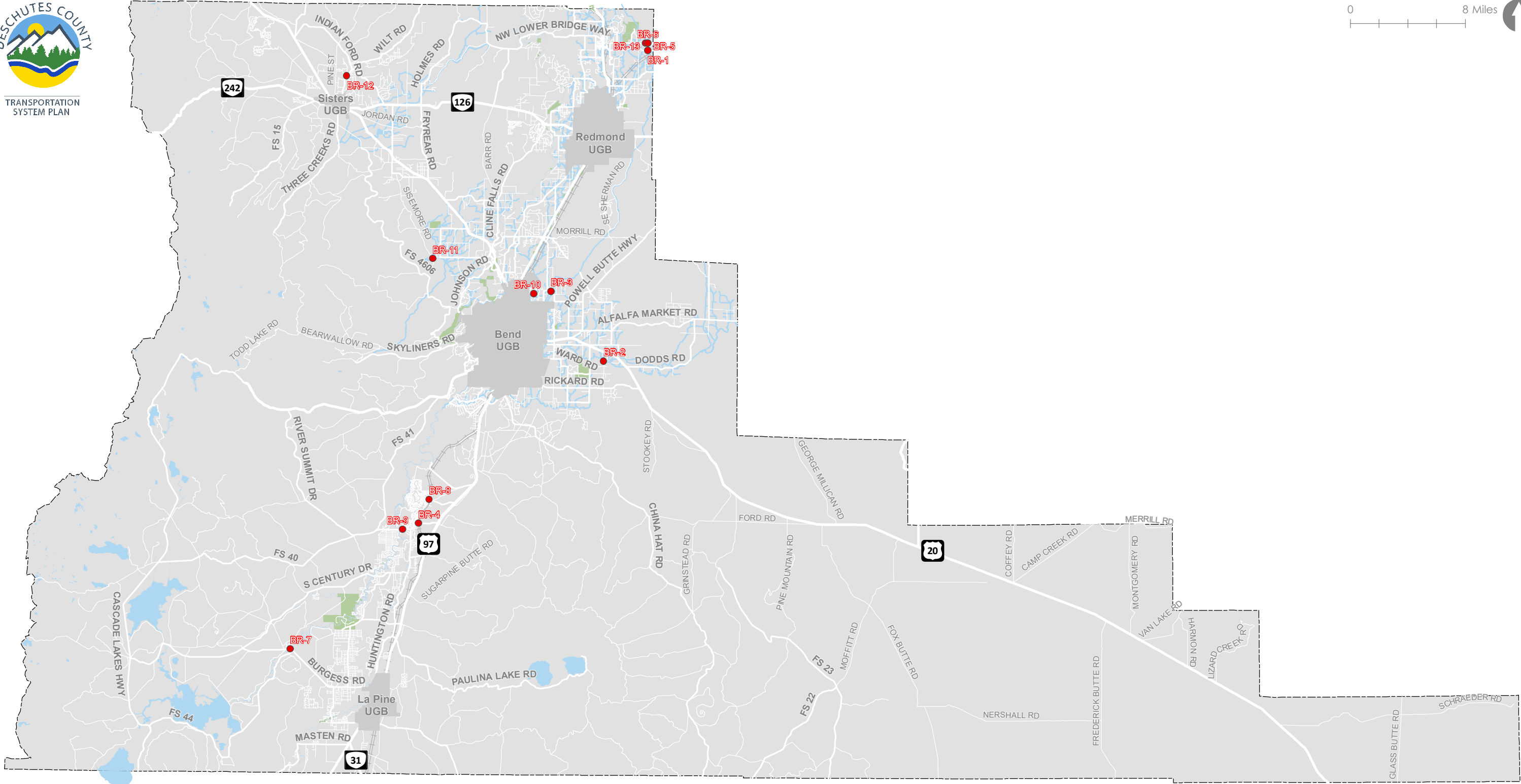
COMMUNITY CONNECTION	DESCRIPTION	PRIORITY
BEND TO CASCADES LAKES TRAILHEADS	CASCADE LAKES HIGHWAY CORRIDOR AND BICYCLE FACILITIES STUDY (2019) IDENTIFIES MANY NEEDED IMPROVEMENTS ALONG THE CORRIDOR. ROUTE WOULD PROVIDE ACCESS TO SIGNIFICANT RECREATIONAL OPPORTUNITIES. ROUTE HIGHLY UTILIZED TODAY.	HIGH
BEND TO TUMALO STATE PARK	CURRENT CONDITIONS RESTRICT THE ROUTE TO PEDESTRIAN ONLY. BPRD HAS CONDUCTED PRIOR PLANNING ON THIS ROUTE.	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 RADLANDS 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. Three bridges were noted as having rating associated with a "structurally deficient" categorization, including Sisemore Road at Couch, Gribbling Road across the Central Oregon Irrigation District canal, and Foot Bridge across the Crooked River. The County regularly reviews the structural ratings of its bridges and makes changes as funding and other opportunities arise. Projects to address these deficiencies and other county priorities are shown in Figure 5 and Table 7. These projects represent the County's current priorities but do not encapsulate all of the bridges that may be modified over time.



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- Bridge Projects
- Parks
- Water
- UGBs

Data Source: ODOT, Oregon State Parks, Deschutes County

Figure 5
Bridge Projects
Deschutes County, Oregon

Table 7. 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	GRIIBLING 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

ID	ROAD	LOCATION	DESCRIPTION	PRIORITY	COST
BR-11	SIEMORE 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

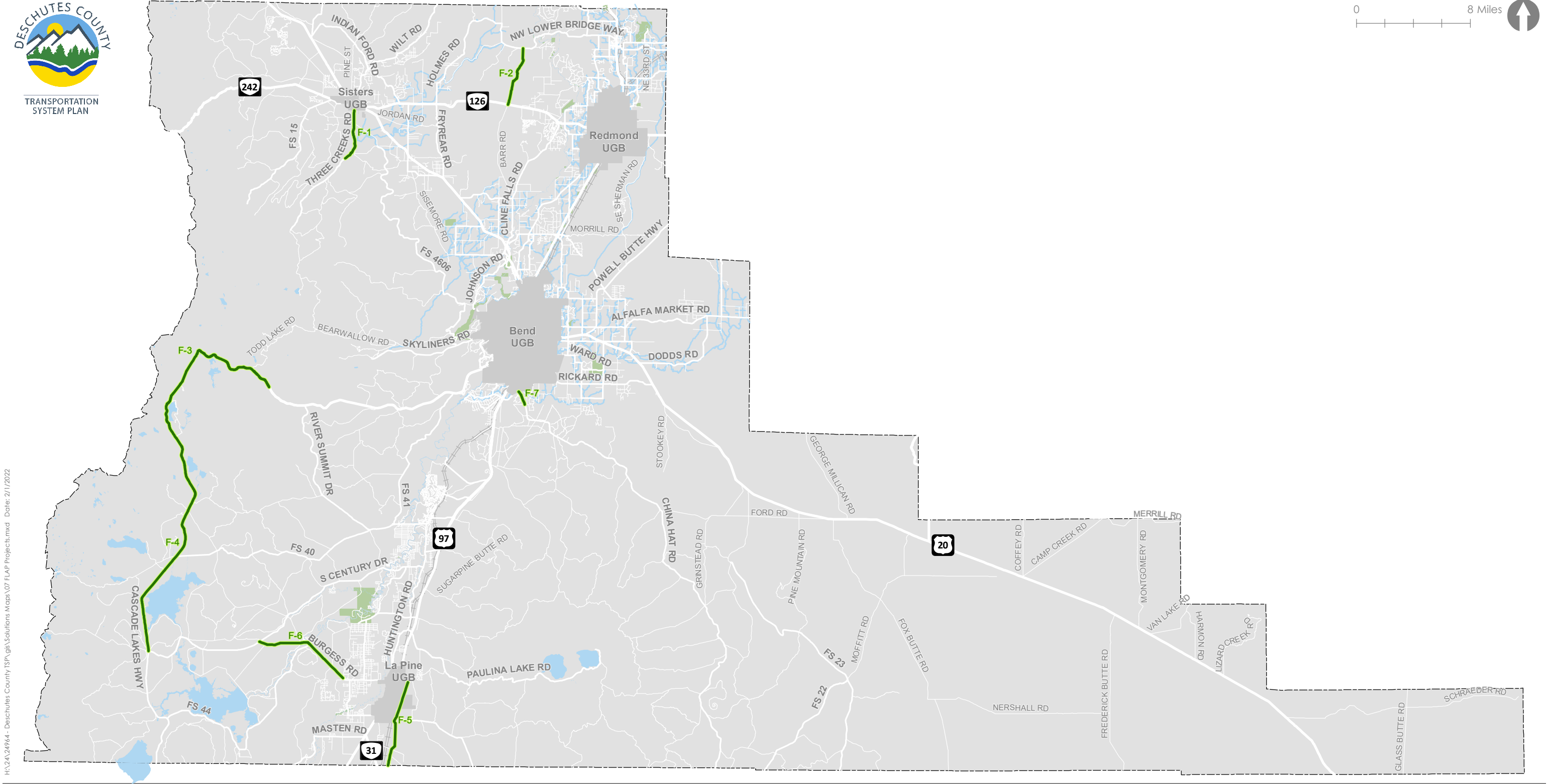
FEDERAL LANDS ACCESS PROGRAM ROADWAYS




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 6 and Table 8 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.

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-  Federal Land Access Projects
-  Parks
-  Water
-  UGBs

Data Source: ODOT, Oregon State Parks, Deschutes County

Figure 6

FLAP Projects Deschutes County, Oregon

Table 8. 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 LEFT-TURN AND RIGHT-TURN LANES AT MAJOR DESTINATIONS	MEDIUM	\$12,200,000	\$2,400,000	\$700,000
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

ID	ROAD	BEGIN	END	DESCRIPTION	PRIORITY	COST	COUNTY CONTRIBUTION	BIKE/PED COMPONENT OF COUNTY CONTRIBUTION
F-5	DARLENE WAY	ROSLAND RD	COUNTY LINE	COUNTY STANDARD IMPROVEMENT OF FULL-LENGTH DARLENE WAY; ASSUMED NO ROW ACQUISITION ON EXISTING ALIGNMENT ACROSS BLM LAND	LOW	\$6,800,000	\$1,400,000	\$400,000
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 9. Table 9 also include 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 9. TSAP Priority Locations & Status

INTERSECTION	PROJECT IDENTIFIED?	STATUS
US 20/WARD RD/HAMBY RD	ROUNDAABOUT	ODOT PROJECT PROGRAMMED FOR 2022
US 97/VANDEVERT RD	INTERSECTION IMPROVEMENT	ODOT PROJECT PROGRAMMED FOR 2021
US 20/FRYREAR RD	NONE	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	ROUNDAABOUT	ODOT PROJECT PROGRAMMED FOR 2022
US 20/O.B. RILEY RD/COOK AVE	ROUNDAABOUT	ODOT PROJECT PROGRAMMED FOR 2022
US 97/61ST ST	NONE	COUNTY TO COORDINATE WITH ODOT ON FUTURE PROJECT REFINEMENT.
US 97/11TH ST/LOWER BRIDGE WAY	PART OF US97: TERREBONNE/ LOWER BRIDGE WAY IMPROVEMENTS	ODOT PROJECT PROGRAMMED FOR 2023
61ST ST/QUARRY AVE/CANAL BLVD	NONE	COUNTY TO CONDUCT FUTURE PROJECT REFINEMENT.

INTERSECTION	PROJECT IDENTIFIED?	STATUS
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.
US 97/SMITH ROCK WAY/B AVE	PART OF US97: TERREBONNE/ LOWER BRIDGE WAY IMPROVEMENTS	ODOT PROJECT PROGRAMMED FOR 2023
DESCHUTES MARKET RD/HAMEHOOK RD	ROUNDAABOUT	COUNTY PROJECT PROGRAMED FOR 2022
US 97/BURGESS RD	TRAFFIC SIGNAL	PROJECT IDENTIFIED IN WICKIUP JUNCTION REFINEMENT PLAN. COUNTY TO COORDINATE WITH CITY OF LA PINE AND ODOOT 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.
CANAL BLVD/HELMHOLTZ WAY	NONE	COUNTY TO CONDUCT FUTURE PROJECT REFINEMENT.
DICKEY RD/NELSON RD	NONE	COUNTY TO CONDUCT FUTURE PROJECT REFINEMENT.
US 97/GALLOWAY AVE	NONE	COUNTY TO COORDINATE WITH ODOT ON FUTURE PROJECT REFINEMENT.
BUTLER MARKET RD & POWELL BUTTE HWY	ROUNDAABOUT	PROJECT IDENTIFIED IN DESCHUTES COUNTY TSP.
BUTLER MARKET RD & HAMBY	NONE	COUNTY TO CONDUCT FUTURE PROJECT REFINEMENT.
BUTLER MARKET RD & HAMEHOOK	NONE	COUNTY TO CONDUCT FUTURE PROJECT REFINEMENT.
BAKER RD & CINDER BUTTE	INTERSECTION IMPROVEMENT	PROJECT IDENTIFIED IN DESCHUTES COUNTY TSP
S CENTURY & HUNTINGTON	ROUNDAABOUT	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	NONE	COUNTY TO CONDUCT FUTURE PROJECT REFINEMENT.
LOWER BRIDGE WAY/31ST ST	NONE	COUNTY TO CONDUCT FUTURE PROJECT REFINEMENT.
LOWER BRIDGE WAY/43RD ST	NONE	COUNTY TO CONDUCT FUTURE PROJECT REFINEMENT.

NEXT STEPS

The County will be conducting an on-line Open House in early 2022 to obtain feedback on the projects listed herein as well as to identify new potential projects for consideration. The results of the upcoming public engagement will enable the County to finalize the list of projects for inclusion into the updated TSP as well as to begin to identify potential funding sources.

APPENDICES

Appendix A: Cost Estimating Details