



Bend Transportation Plan 2040 Project List

PREPARED FOR: Steering Committee
PREPARED BY: TSP Project Team
DATE: June 20, 2019

2040 Project List Purpose

This memorandum presents the 2040 TSP Project as approved for evaluation by the Steering Committee on June 20, 2019.

The performance of the recommended 2040 project list will be analyzed using the Bend-Redmond Travel Demand Model. The list will then be evaluated using the Prioritization Criteria (see the June 2019 Prioritization Criteria Memorandum for more details). The outcomes of that analysis will be considered by CTAC during a workshop at CTAC 12.

Introduction

The 2040 TSP Project List is a combination of improvements identified in the four venues discussed below. All project list elements have been approved for evaluation by the Steering Committee.

1. Citywide Transportation Framework (Previously Approved by Steering Committee)

- **Baseline Projects** – includes previously identified project needs from the City's 5-year Capital Improvement Program, the Bend MPO Transportation Plan's financially-constrained project list, the Bend Urban Area 2016 Transportation System Plan amendments to support the UGB expansion,¹ and those projects identified for funding as part of the 2019 Council Goals process. The Baseline Projects are shown in Figure 1 and listed in Table 1.
- **Additional Vehicular & Multimodal Projects** – projects and programs identified by CTAC and approved by the Steering Committee within Phase 1 of this TSP update. These additional projects are shown in Figures 2 and listed in Table 2.
- **Complete Bicycle Low-Stress Network** – additional bike facilities needed to provide a comprehensive Low-Stress Network for cycling throughout the city. Specific projects to construct near-term elements of the Bicycle Low-Stress Network have been identified in "Key Route Infill Projects" described below.
- **Connected Pedestrian System** – improvements needed to (a) fill gaps in the sidewalk system and provide additional crossing opportunities along arterials and collectors, (b) implement a local sidewalk infill and crossing improvement program, and (c) improve facilities to meet current Americans with Disabilities Act (ADA) standards. Specific projects to construct near-term elements of the connected pedestrian system have been identified in "Key Route Infill Projects" described below.
- **State of Good Repair** – this is a general category of funding for capital improvements necessary to maintain the City's transportation system in a state of

¹ Bend Urban Area Transportation System Plan as updated to incorporate 2016 UGB expansion.

good repair. Many roadways in the City have deferred maintenance needs that will require significant reconstruction to remedy. This program is included in Table 2.

- **Studies & Policies** – this list includes refinement plans for further study related to an additional river crossing and improvements to the railroad crossing at Reed Market as well as programmatic elements that help achieve the TSP policies, such as implementing transportation demand management (TDM) programs for major employers and institutions, an Intelligent Transportation Systems (ITS) plan, the Downtown Parking Plan, and development of a policy to address alternative mobility standards for use in evaluating the impacts of future land use growth as well as prioritizing citywide improvements. These elements are included in Table 2 and the draft policies.
2. **Neighborhood Workshop Outcomes:** Workshop participants identified specific programs and projects of both citywide and neighborhood significance that address existing needs as shared by workshop participants. From a broader list of neighborhood ideas, CTAC recommended a set of projects for inclusion in the 2040 Project List (Included in Table 2 and noted as “CTAC Recommend Addition”).
 3. **Staff Recommendations:** City staff identified additional multimodal projects to address existing and forecast future deficiencies of the transportation system that were not previously identified. These projects are listed in Table 3 and shown in Figure 3.
 4. **Key Routes:** City staff identified key corridors that are critical to implementing the Low Stress Bicycle Network and providing infill to provide continuous walking routes across the City. City staff also identified essential projects along those routes that are needed in order to provide a usable, continuous facility. These routes and key projects were also recommended by CTAC for inclusion in the 2040 Project List. Projects are shown in Figure 4 and listed in Table 4.

Background

The 2040 Project List implements the TSP goals and performance measures approved by the Steering Committee in September 2018. This list provides the framework for a balanced transportation system that will serve Bend residents, workers, visitors, a robust economy, and a livable community during the next twenty years.

The TSP Scenario Evaluation process identified a core list of projects that achieve the findings identified below.

✓ **Addressing Key Vehicular Capacity Needs Will Improve Travel Time Reliability & Help Alleviate Congestion**

Technical work completed for the TSP to-date has clearly demonstrated the need to manage Bend’s existing and future congestion by improving connectivity (new roads), widening specific existing roadway segments, fixing intersection bottlenecks, and/or adopting policies that allow for more vehicular congestion in specific areas or corridors.

The key capacity needs were identified as those that address:

- (1) east-west capacity and connectivity through Central Bend,
- (2) north-south capacity due to the lack of a comprehensive arterial network, and
- (3) south/central US 97 corridor capacity and safety.

At prior CTAC meetings, the benefits and trade-offs of a variety of projects that address the key capacity needs were discussed. To address the first two categories of needs, the 2040 Project List includes a combination of new roads and an incremental approach to intersection improvements and roadway widening. This approach will enable the City to monitor the effectiveness of emerging technologies on managing vehicular congestion and to construct new or widen existing roadways only when they are needed. In addition to physical improvements and technological changes, the 2040 Project List includes refinement plans related to a possible new bridge over the Deschutes River, and the potential for moving the Burlington Northern Railroad switching yard outside of the City and/or constructing an overcrossing at Reed Market Road.

The operational and safety management projects needed to address the south/central US 97 corridor are being identified via the ODOT US 97 Parkway Study.

✓ **Complete Bike and Pedestrian Networks Create Connectivity and Access**

Complete bicycle and pedestrian systems in Bend will improve connectivity and access for people on foot, using mobility devices, and on bikes. Without a comprehensive and connected network, implementation of isolated projects will not result in significant gains in access to jobs for those walking, using mobility devices, or biking. Completing these networks is particularly important for connecting employment and residential areas with key transit corridors and the overall viability of transit in Bend. The 2040 Project List includes a goal of a complete bicycle “low-stress network” and a complete pedestrian system to address this need.

✓ **Transit and Demand Management Work Together**

Technical work completed for the TSP to-date has also identified that demand for motor vehicle trips, particularly during peak hours, can be mitigated by a combination of transit investments and implementing policies and programs that encourage use of other modes (e.g., parking pricing and employer commute options). Concepts such as “mobility hubs”² can provide first/last mile travel choices that connect to an improved transit system. Implementing transportation demand management in key regional centers and parking pricing in downtown would support increased transit, walking and biking in Bend, and complement the Bend Comprehensive Plan.

² A mobility hub is a physical place where different modes of travel and services converge, providing an integrated range of mobility services such as public transit, bike share, scooters, shuttles, and ride-share. This convergence of services helps to seamlessly link trips by different modes, including providing first/last mile services for regional transit connections.

Figure 1. 2040 Project List: Baseline Transportation Projects

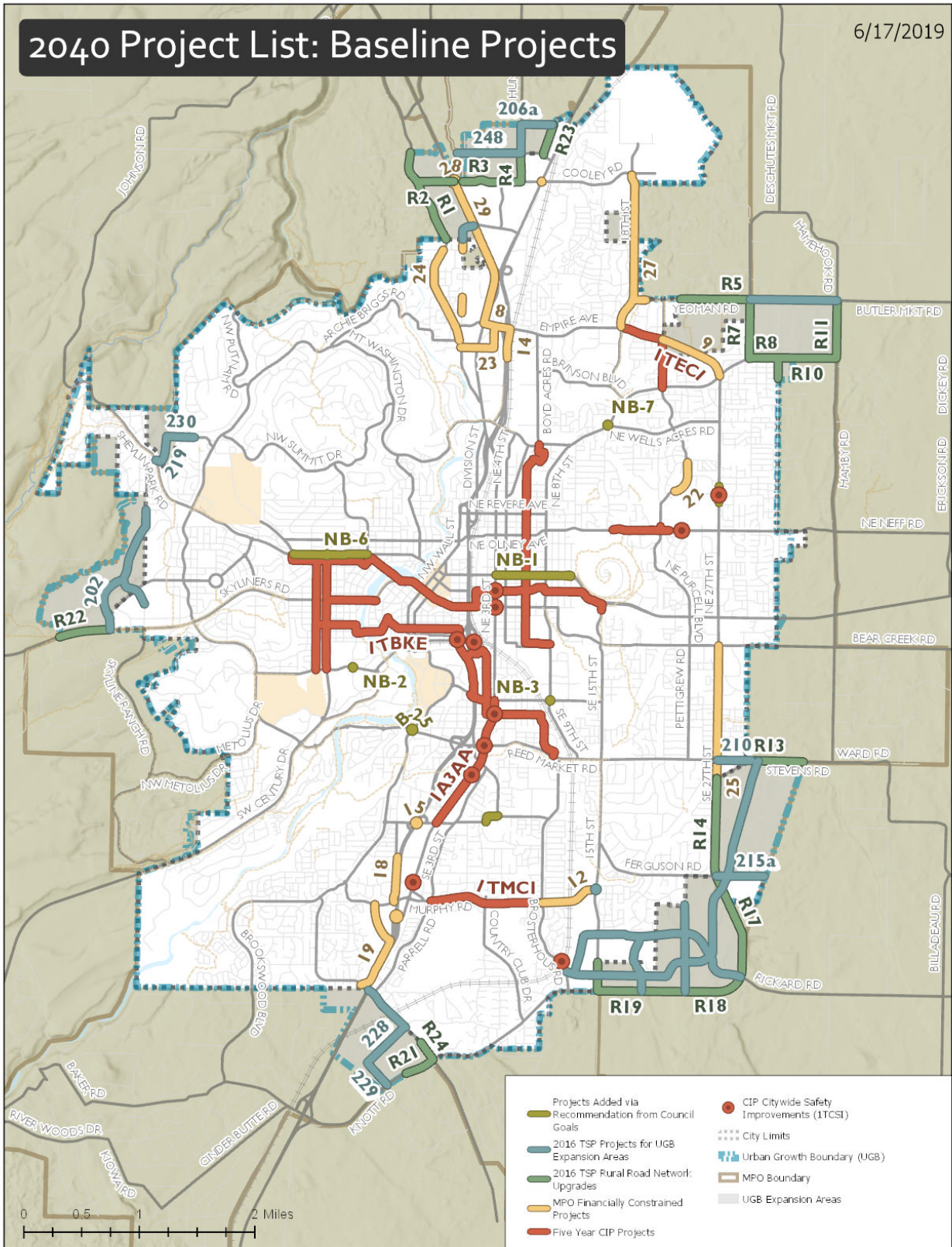


Table 1. Baseline Transportation Projects

Number	Project Name	Location	Project Description	Project Type
NB-1	Greenwood Avenue Sidewalk improvements	From 3rd Street to 12th Street	Improve existing sidewalks along Greenwood Avenue (Added via Council Goals)	Pedestrian
NB-2	Simpson Avenue / Columbia Avenue intersection safety and capacity improvements	Simpson Avenue at Columbia Avenue	Includes a roundabout (Added via Council Goals)	Roadway Safety/Capacity
NB-3	Wilson Avenue / 9th Street intersection safety and capacity improvements	Wilson Avenue at 9th Street	Includes a roundabout (Added via Council Goals)	Roadway Safety/Capacity
NB-4	27th Street / Conners Avenue intersection safety and capacity improvements	27th Street at Conners Avenue	Specific improvement to be determined to address existing and future safety and operational needs (Added via Council Goals)	Roadway Safety/Capacity
NB-5	Chase Road extension	From Brosterhous Road to terminus	Includes extending Chase Road to Brosterhous Road and intersection improvements at Brosterhous Road/Chase Road (Added via Council Goals)	Complete Street (All Modes)
NB-6	Newport Avenue corridor improvements	From College Way to NW 9th Street	Includes closing sidewalk gap on Newport Avenue and connecting Newport Avenue to 15th St neighborhood greenway. Includes additional improvements to be determined (Added via Council Goals)	Complete Street (All Modes)
NB-7	Butler Market Road / Wells Acres Road intersection safety and capacity improvements	Butler Market Road at Wells Acres Road	Includes a roundabout (Added via Council Goals)	Roadway Safety/Capacity

Number	Project Name	Location	Project Description	Project Type
B-25	Reed Market Road/Bond Street intersection capacity improvement	Reed Market Road at Bond Street	Assumes partial two-lane roundabout at Bond/Reed Market Road (Added via Council Goals)	Roadway Safety/Capacity
B-27	Reed Market Road / 3rd Street intersection safety and capacity improvements	Reed Market Road at 3rd Street	Provide dedicated left turn lanes on Reed Market at 3rd Street, possibly through widening or a lane reconfiguration (Added via Council Goals)	Roadway Safety/Capacity
8	Empire Avenue widening to five lanes	From US 20 to US 97 northbound ramp	Widen Empire to 5 lanes (near interchange) and install traffic signal at SB ramps.	Roadway Safety/Capacity
9	Empire Avenue extension	From Purcell Boulevard to 27th Street	Includes three lane extension, maintaining ROW for a five lane section, and multi-lane roundabout at Butler Market Road	Complete Street (All Modes)
10	Stevens Road realignment	Stevens Road at Reed Market Road	Includes connection to Reed Market Road and bridge to cross canal	Roadway Safety/Capacity
11	O.B. Riley Road intersection safety and capacity improvement	From Old Bend-Redmond Hwy to 3rd Street	Improvements at key intersections such as Mervin Sampels, Archie Briggs Road, Halfway Road and Glen Vista/Hardy Road	Roadway Safety/Capacity
12	Murphy Road extension	From Brosterhous Road to 15th Street	Includes a bridge to cross the railroad and a roundabout at Murphy Road/15th Street.	Complete Street (All Modes)
13	US 97 / Cooley Road area improvements	US 97 at Cooley Road	Includes interim Cooley Road improvements	Roadway Safety/Capacity
14	US 97 / Empire Avenue northbound off ramp widening	US 97 at Empire Boulevard	US 97/Empire Avenue northbound off ramp widening to two lanes	Roadway Safety/Capacity

Number	Project Name	Location	Project Description	Project Type
15	Powers Road / US 97 preliminary engineering and ROW acquisition for Interchange	Powers Road at US 97	May include interchange or overcrossing, pending outcome of the Parkway Study	Roadway Safety/Capacity
17	Yeoman Road extension	From 18th Street to western terminus	Includes two lane extension and bridge to cross canal	Complete Street (All Modes)
18	New North Frontage Road	Near Murphy Road	Improvements to be determined	Complete Street (All Modes)
19	New South Frontage Road	Near Murphy Road	Improvements to be determined	Complete Street (All Modes)
20	Britta Street extension (north section)	From Hardy Road to Robal Road	Includes two lane extension	Complete Street (All Modes)
21	Britta Street extension	From Halfway Road to Ellie Lane	Includes two lane extension	Complete Street (All Modes)
22	Purcell Boulevard extension	From Full Moon Drive to Jackson Avenue	Includes two lane extension	Complete Street (All Modes)
23	Mervin Sampels Road / Sherman Road Collector Corridor upgrade	From O.B. Riley Road to Empire Boulevard	Includes upgrade to two lane collector roadway and a traffic signal at US 20	Complete Street (All Modes)
24	O.B. Riley Road Arterial Corridor upgrade	From Hardy Road to US 20	Includes upgrade to three lane arterial with curb, sidewalk and bike lane improvements	Complete Street (All Modes)
25	27th Street Arterial Corridor upgrade	From Bear Creek Road to Ferguson Road	Includes upgrade to three lane arterial and intersection improvements at Ferguson Road	Complete Street (All Modes)
26	US 97 northbound on ramp and southbound off ramp at Murphy Road	US 97 at Murphy Road	US 97 northbound on ramp and southbound off ramp at Murphy Road	Roadway Safety/Capacity
27	18th Street Arterial Corridor upgrade	From Cooley Road to Butler Market Road	Includes upgrade to three lane arterial	Roadway Safety/Capacity
28	US 20 intersection safety and capacity improvements	From Robal Road to Old Bend-Redmond Hwy	Intersection control improvements to be determined.	Roadway Safety/Capacity

Number	Project Name	Location	Project Description	Project Type
29	US 20 southbound Roadway widening	From Cooley Road to US 97 interchange	US 20 southbound widening to two lanes	Roadway Safety/Capacity
1TMCI	Murphy Road Corridor safety and capacity improvements	Parrell Road to Brosterhous Road	Includes roundabouts at Country Club Drive and Brosterhous Road. Includes upgrade to three lane collector.	Roadway Safety/Capacity
1TECI	Empire Boulevard Corridor safety and capacity improvements	From 18th Street to Purcell Boulevard	Includes upgrade to three lane arterial	Roadway Safety/Capacity
1TBKE	Neighborhood Bicycle greenways	Throughout Central Bend	Add improvements such as signage and pavement markings to designate neighborhood greenways	Pedestrian/Bicyclist
1A3aa	South 3rd Street Pedestrian improvements	From Powers Road to Wilson Road	Improvements to be determined	Pedestrian/Bicyclist
1TNPS	Neff Road / Purcell Boulevard intersection capacity and safety improvements	Neff Road at Purcell Boulevard	Intersection control improvements to be determined, including sidewalks along the north side of Neff Road	Roadway Safety/Capacity
1TGCI	Galveston Corridor improvements	From 14th Street to Riverside Boulevard	Multi-modal transportation facility improvements to help with pedestrian, bicycle, and vehicular connectivity in Galveston Avenue corridor. City is currently completing design effort for this project.	Roadway Safety/Capacity
1T14	14th Street reconstruction	From Newport Avenue to Colorado Avenue	Includes 1T14B and 1T14R	Roadway Safety/Capacity
1TCSI	Citywide safety improvements	Throughout Bend	Includes 3rd/Hawthorne, 3rd/COID Canal, 3rd/Pinebrook, Brosterhous/Railroad bridge, and Colorado Ave/US 97 improvements	Roadway Safety/Capacity

Number	Project Name	Location	Project Description	Project Type
R1	O.B. Riley Road rural Road upgrade	From Hardy Road to Old-Bend Redmond Highway	Includes curb and sidewalk on east side, bike lanes both directions	Pedestrian/Bicyclist
R2	Cooley Road rural Road upgrade	From O.B. Riley Road to US 20	Includes curbs, sidewalks and bike lanes both directions	Pedestrian/Bicyclist
R3	Cooley Road rural Road upgrade	From US 20 to Hunnell Road	Includes curb and sidewalk on north side, bike lanes both directions, and an intersection improvement at Cooley Road/Hunnell Road	Pedestrian/Bicyclist
R4	Hunnell Road rural Road upgrade	From Cooley Road to Loco Road	Includes sidewalk on west side	Pedestrian/Bicyclist
R5	Yeoman Road rural Road upgrade	From western terminus to Deschutes Market Road	Includes curbs, sidewalks and bike lanes both directions	Pedestrian/Bicyclist
R6	Deschutes Market Road rural Road upgrade	From Yeoman Road to canal	Includes curb and sidewalk on east side, bike lanes both directions	Pedestrian/Bicyclist
R7	Deschutes Market Road rural Road upgrade	From canal to Butler Market Road	Includes curb and sidewalk on east side	Pedestrian/Bicyclist
R8	Butler Market Road rural Road upgrade	From Deschutes Market Road to Eagle Road	Includes curb and sidewalk on north side	Pedestrian/Bicyclist
R9	Butler Market Road rural Road upgrade	From Eagle Road to Clyde Lane	Includes curbs, sidewalks and bike lanes both directions	Pedestrian/Bicyclist
R10	Butler Market Road rural Road upgrade	From Clyde Lane to Hamby Road	Includes curb and sidewalk on north side, bike lanes both directions	Pedestrian/Bicyclist
R11	Butler Market Road rural Road upgrade	From Hamby Road to Hanbrook Road	Includes curbs and sidewalks on both sides	Pedestrian/Bicyclist
R12	Eagle Road rural Road upgrade	From Eagle Road to Marea Drive	Includes curb, sidewalk, and bike lane on east side	Pedestrian/Bicyclist
R13	Stevens Road rural Road upgrade	From Stevens realignment to Bend UGB boundary	Includes curbs, sidewalks and bike lanes both directions	Pedestrian/Bicyclist

Number	Project Name	Location	Project Description	Project Type
R14	SE 27th Street rural Road upgrade	From Stevens Road to Ferguson Road	Includes curb, sidewalk, and bike lane on east side	Pedestrian/Bicyclist
R15	SE 27th Street rural Road upgrade	From Ferguson Road to Diamondback Lane	Includes curb and sidewalk on east side, bike lanes both directions	Pedestrian/Bicyclist
R16	SE 27th Street rural Road upgrade	From Diamondback Lane to access road	Includes curb and sidewalk on east side	Pedestrian/Bicyclist
R17	SE 27th Street rural Road upgrade	From access road to Knott Road	Includes curbs and sidewalks on both sides	Pedestrian/Bicyclist
R18	SE 27th Street rural Road upgrade	From Knott Road to 15th Street	Includes curbs, sidewalks and bike lanes both directions	Pedestrian/Bicyclist
R19	Knott Road rural Road upgrade	From 27th Street to 15th Street	Includes curbs, sidewalks and bike lanes both directions	Pedestrian/Bicyclist
R20	15th Street rural Road upgrade	From Knott Road to access road	Includes curb and sidewalk on east side, bike lanes both directions	Pedestrian/Bicyclist
R21	Knott Road rural Road upgrade	South of China Hat Road	Includes curb and sidewalk on north side	Pedestrian/Bicyclist
R22	Skyliners Road rural Road upgrade	Within the UGB expansion area	Includes curb and sidewalk on north side	Pedestrian/Bicyclist
R23	Clausen Drive rural Road upgrade	From Loco Road to northern terminus	Includes sidewalk on west side	Pedestrian/Bicyclist
R24	China Hat Road rural Road upgrade	North of Knott Road	Includes sidewalks on both sides	Pedestrian/Bicyclist
R25	China Hat Road canal bridge widening	North of Knott Road	Widen bridge to include sidewalk on both sides	Pedestrian/Bicyclist
R26	Deschutes Market Road canal bridge widening	North of Monticello Drive	Widen bridge to include sidewalk on west sides	Pedestrian/Bicyclist
201	Skyline Ranch Road extension	West UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
202	Crossing Drive extension	West UGB expansion area	Two lane collector roadway	Complete Street (All Modes)

Number	Project Name	Location	Project Description	Project Type
204	New Road	From O.B. Riley to Robal Road	Two lane collector roadway	Complete Street (All Modes)
205	Hunnell Road extension	Triangle UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
206a	New Road	Triangle UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
207a	Yeoman Road extension	From Deschutes Market Road to Hamhook Road	Two lane collector roadway	Complete Street (All Modes)
210	New Road to Stevens	DSL UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
211	New Road	DSL UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
212	New Road	DSL UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
213	New Road	Elbow UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
214	New Road	Elbow UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
214b	New Road	Southeast Bend UGB	Two lane collector roadway	Complete Street (All Modes)
214c	New Road	Southeast Bend UGB	Two lane collector roadway	Complete Street (All Modes)
215a	New Road	DSL UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
216	New Road	Elbow UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
219	Skyline Ranch Road	Shevlin UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
224	New Road	Elbow UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
224a	New Road	Southeast Bend UGB	Two lane collector roadway	Complete Street (All Modes)

Number	Project Name	Location	Project Description	Project Type
225	New Road	Elbow UGB expansion area	Two lane collector roadway	Complete Street (All Modes)
226	New Road	Elbow UGB expansion area	Two lane collector roadway	Complete Street (All Modes)

Figure 2. 2040 Project List: Citywide Transportation Framework Projects

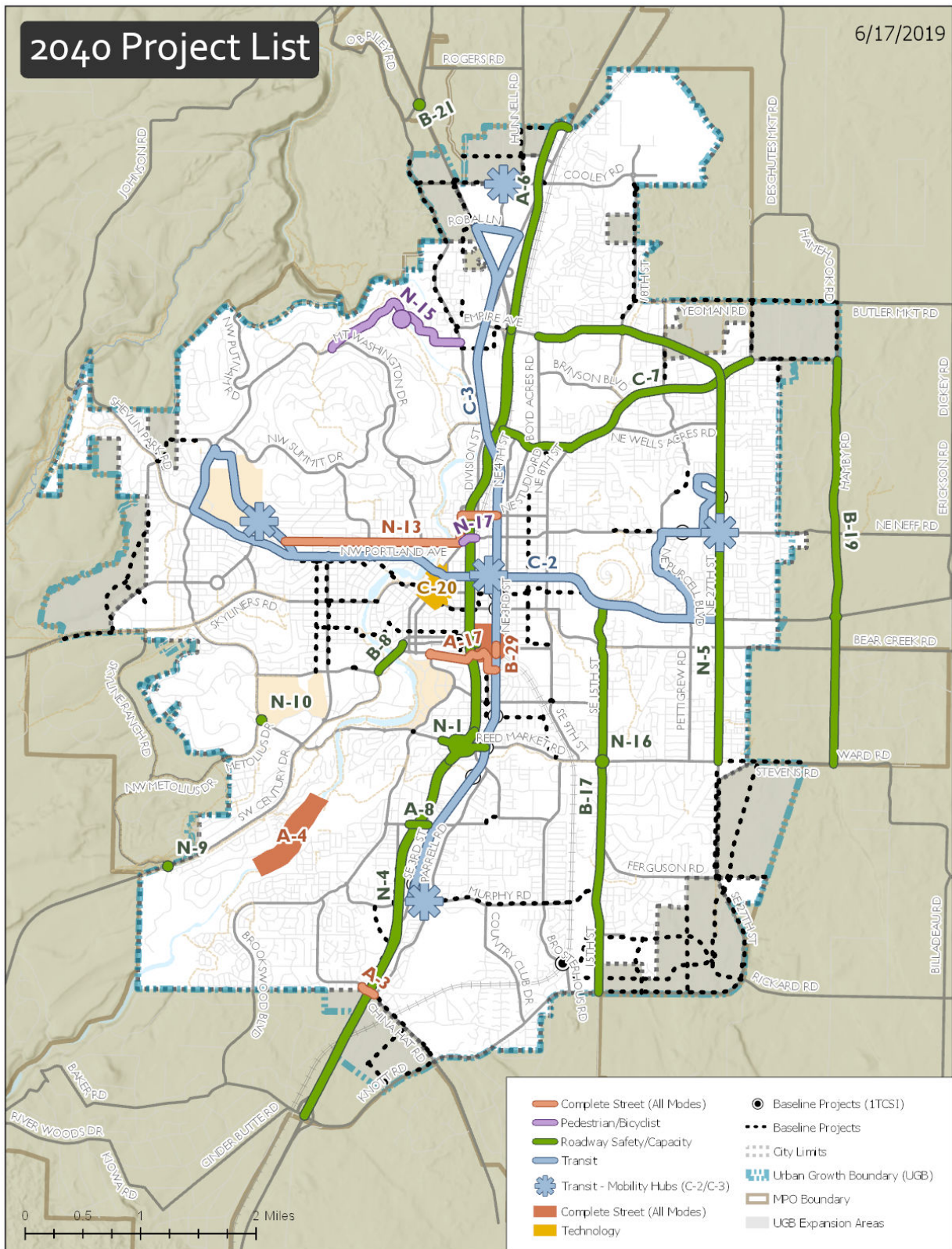


Table 2. 2040 Project List (including CTAC recommended additions)

Project Number	Project Name	Location	Project Description	Project Type
A-3	Ponderosa Street / China Hat Road overcrossing	Ponderosa Street/China Hat at US 97	Vehicle, pedestrian and bicycle access over US 97 at Ponderosa Street/China Hat Road. Includes intersection improvement at Parrell Road/China Hat Road.	Complete Street (All Modes)
A-4*	Study for southern river crossing	Between Powers Road and Murphy Road	Study to identify new river crossing location between Powers Road and Murphy Road, connecting Century Drive to US 97 or 3rd Street	Complete Street (All Modes)
A-6	US 97 North parkway extension	From Grandview Drive to Butler Market Road	Includes all improvements in the US 97 Bend North Corridor Project FEIS	Roadway Safety/Capacity
A-8	Powers Road interchange	Powers Road at US 97	Grade separated interchange or overcrossing of US 97 (pending Parkway Study)	Roadway Safety/Capacity
A-17	Aune Road extension	From Bond Street to 3rd Street	Two lane extension of Aune Road to connect 3rd Street and Bond Street. Includes intersection improvement at 3rd Street and a RAB at the intersection of Bond St and Industrial Way.	Complete Street (All Modes)
B-8	Colorado Avenue corridor capacity improvements	From Simpson Avenue to Arizona Avenue	Includes incremental approach for Colorado Avenue widening, including right-of-way acquisition and monitoring for if/when widening is appropriate. Implement alternate mobility targets and identify smaller projects to incrementally improve mobility, reliability and safety. Includes intersection capacity improvements at Colorado Avenue/Simpson Avenue roundabout and Colorado Avenue/Industrial Way. Includes complete streets upgrade.	Roadway Safety/Capacity

Project Number	Project Name	Location	Project Description	Project Type
B-17	15th Street Corridor safety and capacity improvements	From US 20 to Knott Road	Includes roundabouts at key intersections, including Wilson Avenue, Ferguson Road, and Knott Road.	Roadway Safety/Capacity
B-19	Hamby Road Corridor safety improvements	From Ward Road/Stevens Road to Hamby Road/Butler Market Road	Includes shoulder widening for safety and bicycle facilities. Includes a roundabout at US 20 and safety improvements at key intersections, including Neff Road and Butler Market Road.	Roadway Safety/Capacity
B-20	US 20 / Cook Avenue intersection safety and capacity improvements	US 20 at Cook Avenue	Includes intersection safety and capacity improvements (may include roundabout or signal).	Roadway Safety/Capacity
B-21	US 20 / Old Bend-Redmond highway intersection safety and capacity improvements	US 20 at Old-Bend Redmond Highway	Includes intersection safety and capacity improvements (may include roundabout or signal).	Roadway Safety/Capacity
B-29	3rd Street railroad undercrossing widening	From Emerson Avenue to Miller Avenue	Widen 3rd Street to 4-lanes under the railroad, including complete street design.	Complete Street (All Modes)
C-2	Newport Avenue / Greenwood Avenue corridor high-capacity transit and mobility hubs	Mt Washington Drive to 27th Street	Includes HCT transit service connecting COCC to downtown to St. Charles Area. Includes improved transit connections from neighborhoods to HCT stops. Should be implemented in connection with Project C-4.	Transit
C-3	3rd Street corridor high-capacity transit and mobility hubs	Murphy Road to near Robal Road	Includes HCT transit service connecting northern Bend (the Triangle) to southern Bend. Includes improved transit connections from neighborhoods to HCT stops. Should be implemented in connection with Project C-4.	Transit
C-7	Butler Market Road intersection safety and capacity improvements	From US 97 to 27th Street	Includes roundabouts or traffic signals at 4th Street, Brinson Boulevard, and Purcell Boulevard. Wells Acres Road roundabout as a separate baseline project.	Roadway Safety/Capacity

Project Number	Project Name	Location	Project Description	Project Type
C-9	Colorado Avenue / US 97 Northbound ramp intersection safety and capacity improvements	Colorado Avenue at US 97 Northbound ramp	Includes traffic signal or roundabout.	Roadway Safety/Capacity
C-16 (Not Mapped)	TDM Program for major employers and institutions	Throughout Bend	TDM program for major employers and institutions.	Technology
C-19 (Not Mapped)	Traffic Signal Coordination improvements along signalized corridors, including freight and transit Signal Priority	Throughout Bend	Includes US 97 (mainline and ramp terminals), 3rd Street, 27th Street, Colorado/Arizona couplet, and US 20 (3rd Street and Greenwood) corridors.	Technology
C-20	Parking pricing and management in downtown Bend	Downtown Bend	Implement the 2017 Downtown Parking Plan.	Technology
C-24*	Study of at-grade railroad crossing solutions near Reed Market Road	Near Reed Market Road and railroad crossing	Study the cost and feasibility of relocating the BNSF switchyards compared to a Reed Market Road overcrossing of the railroad.	Complete Street (All Modes)
N-1	Reed Market Road Interchange improvements	Reed Market Road at US 97	Reed Market Road interchange improvements as defined by the Parkway Study.	Roadway Safety/Capacity
N-4	US 97 operational and safety management improvements and associated City street improvements	US 97 within Bend MPO boundary	Includes potential recommended Parkway Plan projects such as RI/RO Access Modifications/Closures, Ramp Meters, Butler Market Interchange Improvements, Revere Ave Lane Re-allocation, US 97 Auxiliary Lanes, Baker/Knott Interchange ramp terminal improvements, etc.	Roadway Safety/Capacity
N-5	Empire Boulevard / 27th Street Corridor capacity improvements	From Boyd Acres Road to Reed Market Road	Includes incremental approach for Empire Boulevard/27th Street widening, including right-of-way acquisition and monitoring for if/when widening is appropriate. Implement alternate mobility targets and identify smaller projects to incrementally improve mobility, reliability and safety. Includes complete streets upgrade.	Roadway Safety/Capacity

Project Number	Project Name	Location	Project Description	Project Type
LSN (Mapped separately)	Low Stress Bicycle Network (LSN) Program	Throughout Bend	City program to implement a LSN (see LSN map and list of key LSN projects).	Pedestrian/Bicyclist
P-1 (Not Mapped)	Connected Pedestrian System Program, including Sidewalks and Enhanced Crossings on Arterial and Collector Roadways	Throughout Bend	City program to complete the arterial and collector pedestrian system (sidewalks and crossings).	Pedestrian/Bicyclist
P-2 (Not Mapped)	Local Street Sidewalk Infill, Repair, and Crossing improvement Program	Throughout Bend	City program to implement local street and sidewalk infill, repairs, and crossing improvements.	Pedestrian/Bicyclist
T-1 (Not Mapped)	Address Capital Needs backlog to maintain a state of Good Repair	Throughout Bend	City program to address capital needs backlog to maintain a state of good repair, including reconstruction of streets, signals, bridges, and other transportation infrastructure.	Program
T-2 (Not Mapped)	Neighborhood traffic calming Program	Throughout Bend	City program to manage vehicle speeds in neighborhoods through various traffic calming techniques.	Pedestrian/Bicyclist
T-3 Not Mapped)	School zone enforcement and Safe Routes to School Program	Throughout Bend	City program to improve safety near schools and in school zones. Includes enhanced speed zone enforcement and improvements for walking and biking.	Pedestrian/Bicyclist
T-4 (Not Mapped)	Street lighting Program	Throughout Bend	City program to improve street lighting, especially at crossing locations. Consider dark skies.	Pedestrian/Bicyclist
T-5 (Not Mapped)	Bicycle and Pedestrian facility maintenance Program	Throughout Bend	City program to improve snow and debris clearing along key pedestrian and bicycle facilities.	Pedestrian/Bicyclist
N-6 (Not Mapped)	Intelligent Transportation System (ITS) plan implementation	Throughout Bend	Intelligent Transportation System (ITS) projects and programs as defined by the County ITS Plan.	Technology

Project Number	Project Name	Location	Project Description	Project Type
N-7 (Not Mapped)	Transportation safety Action Plan (TSAP) implementation	Throughout Bend	Safety projects and programs as defined by the Transportation Safety Action Plan.	Complete Street (All Modes)
N-8 (Not Mapped)	Cascades East transit (CET) Plan implementation	Throughout Bend	Transit projects and programs as defined by the Cascades East Transit Plan.	Transit
N-9	Century Drive/Skyline Ranch Road roundabout CTAC Recommended Addition	Century Drive at Skyline Ranch Road	Address existing and future safety and operational needs at intersection; specific improvements to be evaluated in next phase of work.	Roadway Safety/Capacity
N-10	Mt. Washington Drive/Metolius Drive roundabout CTAC Recommended Addition	Mt. Washington Drive at Metolius Drive	Address existing and future safety and operational needs at intersection; specific improvements to be evaluated in next phase of work.	Roadway Safety/Capacity
N-13	Portland Avenue Corridor Project CTAC Recommended Addition	From College Way to NE 3rd	Multi-modal transportation facility and safety improvements to help with pedestrian, bicycle, and vehicular connectivity in the Portland Avenue corridor. Project includes improvements to the Revere Avenue Interchange area and an intersection improvement at Portland Avenue/Wall Street.	Complete Street (All Modes)
N-14 (Not Mapped)	Improve all City-owned pedestrian bridges across the Deschutes River CTAC Recommended Addition	Various	Evaluate and repair/replace bridges to accommodate pedestrian and bicycle traffic.	Pedestrian/Bicyclist
N-15	Archie Briggs Road Improvement Project CTAC Recommended Addition	Deschutes River Trail Crossing	Construct improved pedestrian crossing at the Deschutes River Trail Crossing of Archie Briggs Road. City is currently seeking funding to replace the Archie Briggs Road vehicular bridge due to maintenance issues.	Pedestrian/Bicyclist

Project Number	Project Name	Location	Project Description	Project Type
N-16	Reed Market Road/15th Street intersection safety and capacity improvements CTAC Recommended Addition	Reed Market Road at 15th Street	Includes expanding the partial multi-lane roundabout to a full multi-lane roundabout.	Roadway Safety/Capacity
N-17	Olney Protected Bicycle Lanes CTAC Recommended Addition	Parkway undercrossing	Provide protected bicycle lanes on Olney Avenue at Parkway undercrossing.	Pedestrian/Bicyclist
N-18 (Not Mapped)	Projects of Regional Significance from Subarea Planning Efforts CTAC Recommended Addition	Various	Subarea planning efforts will identify infrastructure needs to serve Opportunity and Expansion Areas, which are key development areas for the City. Projects that result should be added to the 2040 project list as necessary.	Roadway Safety/Capacity

*Indicates project for a feasibility study

Project Type: Multimodal Roadway Capacity/Safety Transit Technology Pedestrian/Bicyclist

Figure 3 Recommended Additions to 2040 Project List

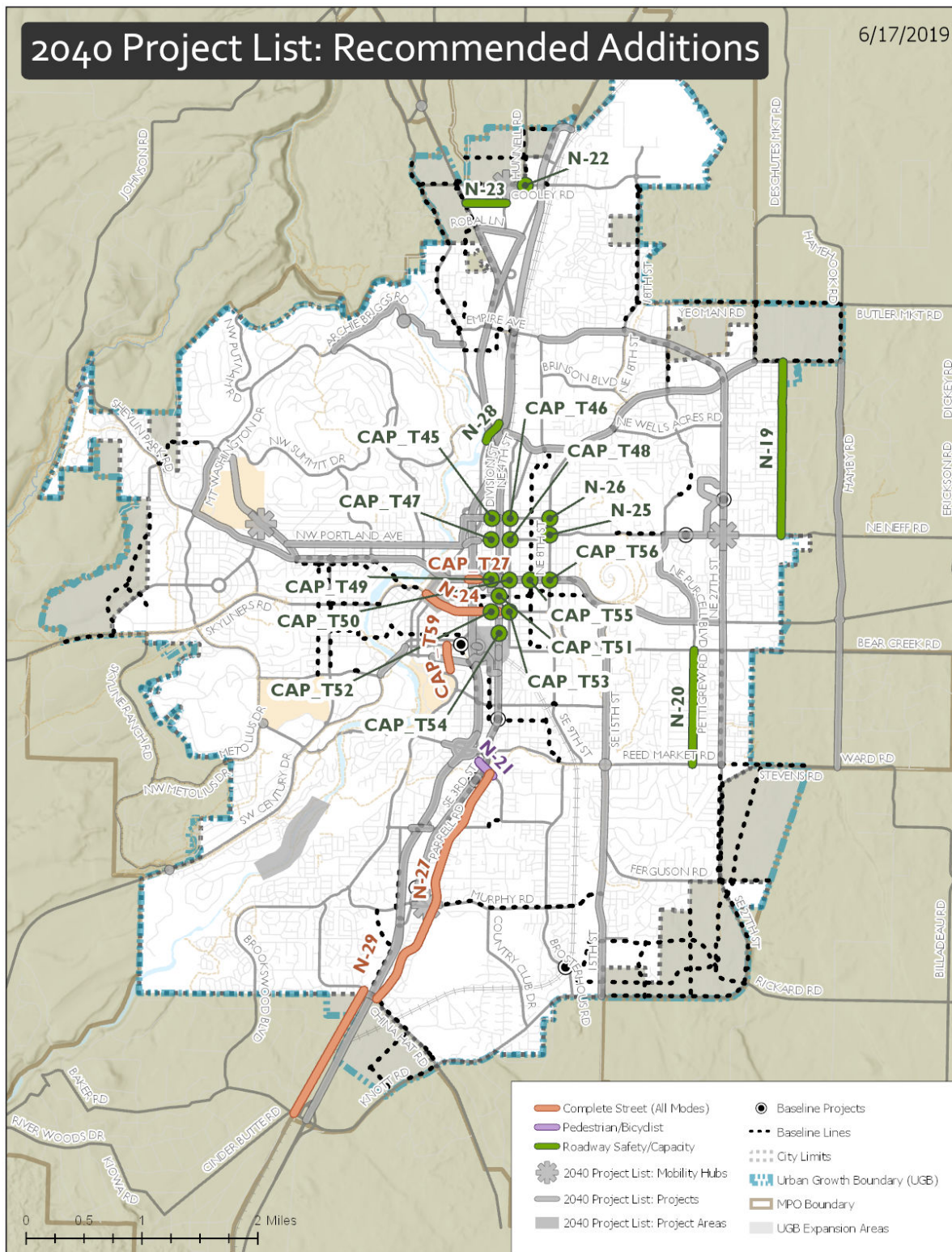


Table 3. Recommended Additions to 2040 Project List (Post CTF)

Project Number	Project Name	Location	Project Description	Project Type	Reason for Addition
N-19	Eagle Road Functional Classification Upgrade	Neff Road to Butler Market Road	Classify roadway as Minor Collector and construct complete street upgrades.	Roadway Capacity/Safety	Staff recommendation
N-20	Pettigrew Road Urban Upgrade	Reed Market Road to Bear Creek Road	Construct complete street upgrades. Includes intersection improvements at Reed Market Road and Bear Creek Road.	Roadway Capacity/Safety	Staff recommendation
N-21	3rd Street Canal Crossing	Canal crossing just south of 3rd Street/Brosterhous Road	Construct pedestrian facilities on 3rd Street across the canal bridge.	Pedestrian/Bicyclist	Staff recommendation
N-22	Cooley Road/Hunnell Road Intersection Improvement	Cooley Road/Hunnell Road	Add intersection improvement at Cooley/Hunnell to Cooley Road rural Road upgrade project (R3) already in baseline.	Roadway Capacity/Safety	Staff recommendation
N-23	Collector between Cooley Road & Robal Road	US 20 to Hunnell Road	Construct new collector between US 20 and Hunnell Road. Road would be south of Cooley road and north of Robal Road.	Roadway Capacity/Safety	Staff recommendation
N-24	Franklin Avenue Corridor Study	Downtown to 3rd Street	Conduct a corridor study to determine roadway and intersection improvement needs to serve all users.	Complete Street (All Modes)	Staff recommendation
N-25	Olney Avenue/8th Street Intersection improvement	Olney Avenue/8th Street	Improve intersection capacity.	Roadway Capacity/Safety	Staff recommendation
CAP_T46	Revere Avenue/4th Street Intersection improvement	Revere Avenue/4th Street	Improve intersection capacity.	Roadway Capacity/Safety	Core Area Project Recommendation
N-26	Revere Avenue/8th Street Intersection improvement	Revere Avenue/8th Street	Improve intersection capacity.	Roadway Capacity/Safety	Staff recommendation
CAP_T45	Revere Avenue/2 nd Street Intersection improvement	Revere Avenue/2 nd Street	Improve intersection capacity.	Roadway Capacity/Safety	Core Area Project Recommendation
CAP_T47	Onley Avenue/2nd Street Intersection improvement	Onley Avenue/2nd Street	Improve intersection capacity.	Roadway Capacity/Safety	Core Area Project Recommendation

Project Number	Project Name	Location	Project Description	Project Type	Reason for Addition
CAP_T48	Onley Avenue/4th Street Intersection improvement	Onley Avenue/4th Street	Improve intersection capacity	Roadway Capacity/Safety	Core Area Project Recommendation
CAP_T50	Greenwood/4th Street Intersection improvement	Greenwood/4th Street	Improve intersection capacity.	Roadway Capacity/Safety	Core Area Project Recommendation
CAP_T49	Greenwood/2nd Street Intersection improvement	Greenwood/2nd Street	Improve intersection capacity	Roadway Capacity/Safety	Core Area Project Recommendation
CAP_T52	Franklin Avenue/2nd Street Intersection improvement	Franklin Avenue/2nd Street	Improve intersection capacity	Roadway Capacity/Safety	Core Area Project Recommendation
CAP_T53	Franklin Avenue/4th Street Intersection improvement	Franklin Avenue/4th Street	Improve intersection capacity	Roadway Capacity/Safety	Core Area Project Recommendation
CAP_T51	Hawthorne Avenue/3rd Street Intersection improvement	Hawthorne Avenue/3rd Street	Improve intersection capacity	Roadway Capacity/Safety	Core Area Project Recommendation
CAP_T54	Clay Avenue/3rd Street Intersection improvement	Clay Avenue/3rd Street	Improve intersection capacity	Roadway Capacity/Safety	Core Area Project Recommendation
CAP_T55	Greenwood/6th Street Intersection improvement	Greenwood/6th Street	Improve intersection capacity	Roadway Capacity/Safety	Core Area Project Recommendation
CAP_T56	Greenwood/8th Street Intersection improvement	Greenwood/8th Street	Improve intersection capacity	Roadway Capacity/Safety	Core Area Project Recommendation
CAP_T27	Greenwood Undercrossing Improvements	Underpass of the Parkways	Widen undercrossing to include improved multimodal facilities	Complete Street (All Modes)	Core Area Project Recommendation
N-27	Parrell Road Urban Upgrade	China Hat Road to Brosterhous Road	Construct complete street upgrades and reconstruct roadway	Complete Street (All Modes)	Staff recommendation
N-28	Butler Market Interchange Frontage Road	US 20/Butler Market Road	Construct frontage road from US 97 southbound off-ramp to Division Street	Roadway Capacity/Safety	TSAP/Parkway Coordination
CAP_T59	Sisemore Street Extension	Arizona Avenue to Bond Street	Construct street extension	Complete Street (All Modes)	Core Area Project Recommendation

Project Number	Project Name	Location	Project Description	Project Type	Reason for Addition
N-29	US 97 Frontage Road	Ponderosa Street to Baker Road	Construct frontage road	Complete Street (All Modes)	Parkway Coordination
C-4 (Not Mapped)	Mobility Hubs	Location to-be determined	Construct or retrofit one or more micro mobility hubs that could be combined with transit centers, such as a new facility or modified Hawthorne Station, or transit service. Should be implemented in connection with Projects C-2 and C-3.	Transit	CTAC Recommendation
N-30	US 20/27 th Street Intersection Improvement	US 20/27 th Street	Improve intersection capacity	Roadway Capacity/Safety	Steering Committee Addition

Project Type: Multimodal Roadway Capacity/Safety Transit Technology Pedestrian/Bicyclist

Figure 4. Key Walking and Biking Routes

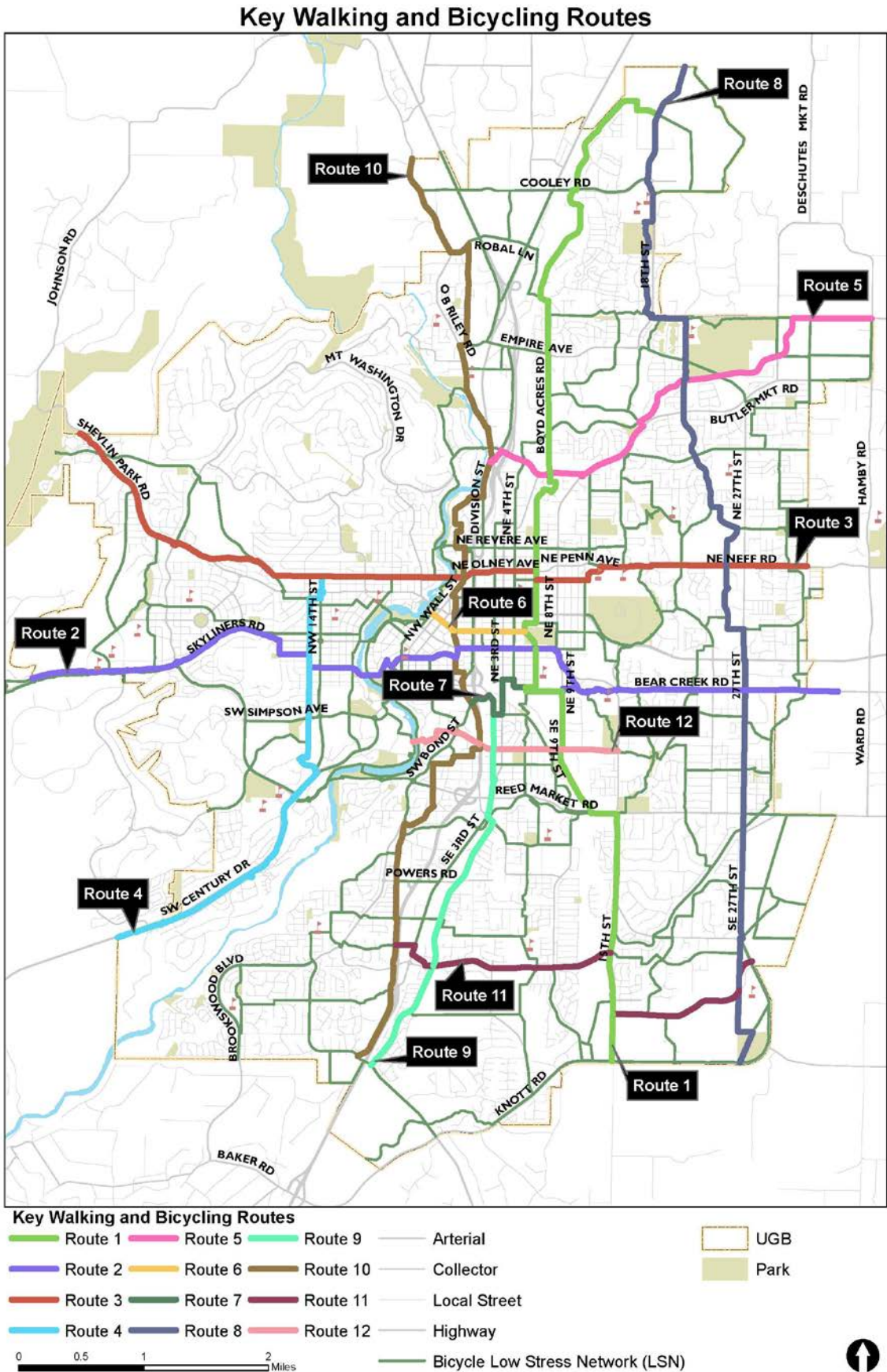


Table 4. Recommended Low-Stress Bicycle Network Projects on Key Routes

Key Routes & Projects	Project Extents	Facility Type & Description	Cost Projection
ROUTE 1: Juniper Ridge to SE Elbow: Route runs north-south through the central portion of Bend connecting SE 15th Shared Use Path, 6th St Neighborhood Greenway, Boyd Acres Rd Shared Use Path			
R1-A	SE 9th St: Wilson Ave to Reed Market Rd	Shared use path adjacent to roadway: Close sidewalk gap and create low-stress bikeway.	\$\$
R1-B	SE 9th St: Wilson Ave to Glenwood Ave	Buffered bike lane: Re-stripe roadway to include buffered bike lanes when roadway is repaved.	\$
R1-C	NE Boyd Acres Rd: Butler Market Rd to Empire Ave	Shared use path adjacent to roadway: Close sidewalk gap and create low-stress bikeway.	\$\$\$
R1-D	SE 15th Street: Reed Mkt Rd to 300' south of King Hezekiah	Shared use path adjacent to roadway: Convert an existing curb-tight sidewalk to a separated shared use path.	\$\$
ROUTE 2: NW Crossing to new Affordable Housing: Route runs east-west connecting Skyliners Rd, Franklin Ave and Bear Creek Rd			
R2-A	NW Franklin Ave: Harriman Ave to RR undercrossing	Improve transition at Hill St: Project would manage the conflict between right turns and crosswalk to sidewalk under RR. Crosswalk: Create safe crossing of Franklin at Harriman.	\$
R2-B	Franklin Ave Underpass: Hill St to 1 st St	Shared use path adjacent to roadway: Widen sidewalk paths under RR and Hwy 97 to modernize design for roadside safety.	\$\$\$\$\$
R2-C	Franklin Ave: 1 st St to 5 th St	Buffered bike lane: Re-stripe roadway to include buffered bike lane westbound; includes crosswalks at 2 nd St & 4 th St and signal timing enhancements at 3 rd St.	\$
R2-D	Bear Creek SRTS: Larkspur Trail to Coyner Trail	Trail: Close sidewalk gap and create a connection between Coyner and Larkspur Trail.	\$
R2-E	Bear Creek Rd: Cessna Ave to east UGB	Shared use path adjacent to roadway: Close sidewalk gap and create low-stress bikeway extending to 170 new affordable housing units.	\$\$\$
ROUTE 3: Shevlin Park to Big Sky Park: Route runs east-west connecting Shevlin Park			

Key Routes & Projects	Project Extents	Facility Type & Description	Cost Projection
Rd, Portland Ave, Olney Ave, and Neff Rd			
R3-A	Norton Ave: NE 6 th St to NE 12 th St	Neighborhood greenway: Create a low-stress bikeway on NE Norton Ave (SRTS ³).	\$
R3-B	Hillside Trail: Connects NE 12 th to Neff Rd	Hillside path: Close sidewalk gap and create a switchback shared use path (SRTS); includes school zone enhancements.	\$\$\$
R3-C	Neff Rd: NE 12 th to Big Sky Park	Shared use path adjacent to roadway: Close sidewalk gaps and create a low-stress bikeway.	\$\$\$
R3-D	Deschutes River Footbridge: Drake Park	Upgrade footbridge: Accessibility upgrades and widen to reduce user conflicts.	\$\$
R3-E	Olney Avenue: Wall Street to railroad	Shared use path adjacent to roadway: close sidewalk gap over railroad and remove existing barrier to east-west bicycle connectivity and create right-turn hook crash countermeasure.	\$
Route 4: West UGB to Portland Ave: Route runs north-south connecting Haul Rd Trail to 15th St Neighborhood Greenway			
SW-1	Newport Ave: NW College Way to NW 9 th St	Sidewalks: Close sidewalk gap on Newport Ave and connect Newport Ave to 15 th St neighborhood greenway	\$
R4-A	NW 15th St: Lexington Ave to Milwaukie Ave	Hillside path: Close sidewalk gap and create a hillside switchback shared use path within the 15 th St neighborhood greenway.	\$
R4-B	NW 14th St: Ogden Ave to Portland Ave	Hillside path: Close sidewalk gap and create a hillside switchback shared use path within 14 th St right-of-way to connect route to Portland Ave.	\$
Route 5: Route runs along Butler Market Rd			
R5-A	Butler Market Rd: Brinson Blvd to NE 6 th St	Shared use path adjacent to roadway: Close sidewalk gap along both sides of Butler Market Rd and create low-stress bikeway.	\$\$\$
Route 6: Hawthorne Overcrossing: Core Area connectivity			

³ STRS: Safe Routes to School

Key Routes & Projects	Project Extents	Facility Type & Description	Cost Projection
R6-A	Hawthorne Overcrossing Bridge: NE 1 st St to NE 5 th St	Grade separated overpass: Close sidewalk gap along Hawthorne and create a grade-separated footbridge over BNSF RR ⁴ and Hwy 97.	\$\$\$\$
<i>Route 7: 3rd St at RR to Connect KorPine to 3rd St</i>			
R7-A	3rd St	Crosswalk: Create a safe crossing of 3 rd St between BNSF RR and Wilson Ave using RRFB ⁵ and safety islands.	\$
R7-B	3rd St	Crosswalk: Create a safe crossing of 3 rd St between BNSF RR and Franklin Ave using RRFB and safety islands.	\$
R-7C	3rd St	3rd Street Underpass: Near Term Enhancements to sidewalk.	\$
<i>Route 8: 27th St: Route runs north-south connecting neighborhoods to services and transit</i>			
R8-A	27th St: Hwy 20 to Reed Mkt Rd	Shared use path adjacent to road: Close sidewalk gap along 27 th Street and create a low-stress bikeway.	\$\$\$
<i>Route 9: Route runs north-south parallel to 3rd Street</i>			
R9-A	Parrell Rd: Murphy Rd to Brosterhous Rd	Shared use path adjacent to road: Close sidewalk gap along Parrell Rd and create a low-stress bikeway on both sides of the street.	Costs captured in N-27
<i>Route 12: Wilson Ave: Route runs east-west connecting neighborhoods to services and transit</i>			
R12-A	Wilson Ave: 2 nd Street to SE 9 th Street	Shared use path adjacent to roadway: Close sidewalk gap along Wilson Avenue and create a low-stress bikeway.	\$\$
R12-B	Wilson Avenue: 9 th to 15 th Street	Shared use path adjacent to roadway: Create a low-stress bikeway to connect near SE neighborhoods to Old Mill and Deschutes River Trail.	\$\$

Notes:

- \$ - Less than \$500,000
- \$\$ - \$500,000 to \$1 million
- \$\$\$ - \$1 million to \$5 million
- \$\$\$\$ - \$5 million to \$10 million
- \$\$\$\$\$ - \$10 million to \$50 million

⁴ BNSF RR: Burlington Northern Santa Fe Railroad

⁵ RRFB: Rectangular Rapid Flashing Beacon