

BENTON COUNTY

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# Transportation System Plan

EFFECTIVE MARCH 21, 2019

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*The contents of this document do not necessarily reflect views or policies of the State of Oregon.*

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*The Benton County TSP Background Documents are provided in a separate document and includes all background memoranda, meeting summaries, and technical data that were the basis for the TSP development. The contents of the Benton County TSP Background Documents represent an iterative process in the development of the TSP. Refinements to various plan elements occurred throughout the process as new information was obtained. In all cases, the contents of this document supersede those in the Benton County TSP Background Documents.*

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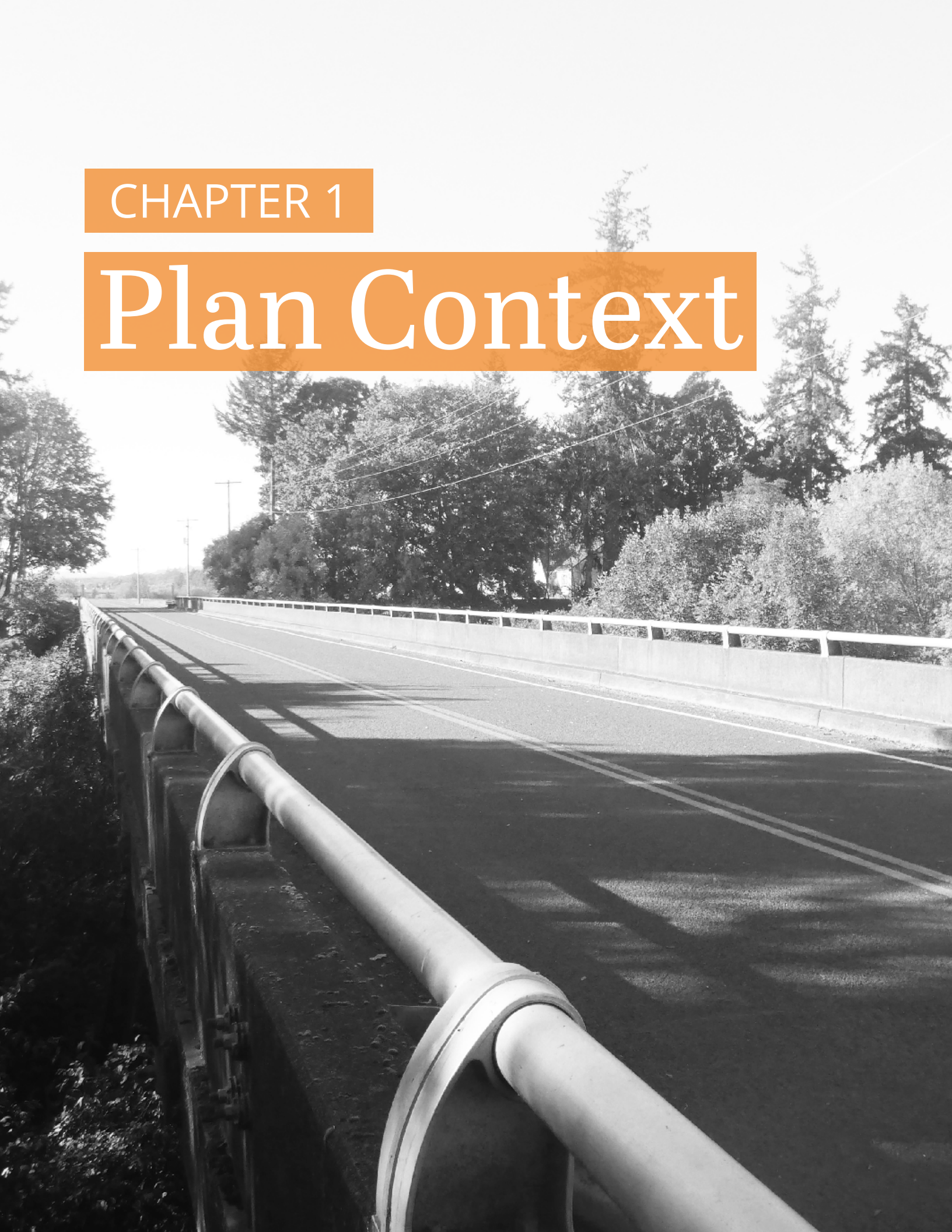
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CHAPTER 1

# Plan Context



## Why Create a Transportation System Plan?

A Transportation System Plan (TSP) is a long-range plan that sets the vision for the County's transportation system for the next 20 years and beyond. This Plan was developed through community and stakeholder input and is based on the system's needs, opportunities, and anticipated funding.

### IMPORTANCE OF A TRANSPORTATION SYSTEM PLAN

The TSP strives to align future transportation investments to support and advance the Benton County goals and values articulated during the plan update process. The TSP is the County's primary tool for implementing transportation investments that address existing County needs and lays out the improvements required to reasonably serve expected local and regional growth.

A TSP is required by the State of Oregon. This TSP update will replace the County's previous plan which was adopted in 2001 and amended most recently in 2006. It establishes a new 2017 baseline condition and identifies transportation strategies and improvements that will be necessary to address existing system deficiencies and accommodate growth through 2040.

The core of the TSP process is to imagine a transportation system that can serve local travel needs in a way that is consistent with the County's policies and values. The primary work products are updated multimodal project lists and design standards that inform the priority and type of improvements that the County desires. There are two basic types of roadway improvements: upgrades to existing facilities and new facilities on vacant or undeveloped land. This TSP also includes strategies outside of capital improvement projects to reduce single-occupancy vehicle trips and reduce vehicle emissions. The Public Works Department will use this information to periodically update the County's pursuit of state and federal grant funding and to prioritize the capital improvement list for County facilities. The projects included in this TSP are meant to provide a comprehensive list of needs but can be prioritized, funded, and completed in any order as deemed appropriate by the County.

## HOW THE TSP WILL BE USED?

The Benton County TSP is the guiding document for identifying the type, location, and priority of transportation investments. The focus of the TSP is the County's transportation system that includes streets, shared-use paths and transit services. The plan also identifies possible needs and suggested solutions on ODOT transportation facilities that serve the county.

The TSP will be used in a variety of ways, including the following examples.

- Identify priority for transportation investments.
- Provide background information to assist in pursuing grant applications to supplement County funds.
- Establish standards for application during the review of proposed land development applications.
- Serve as the basis for the facility standards applied for new or upgraded system improvements.
- Demonstrate that the County understands the resources required to provide a transportation system that is capable of supporting the growth that it expects.

Implementation of this TSP will involve on-going reevaluation of local priorities. This process will consider the goals, objectives, and evaluation criteria established in this plan, but can also incorporate changes in direction provided by the Board of Commissioners and new policies adopted in the future. Furthermore, as each project is funded, it will undergo a rigorous scoping process involving preliminary engineering design, alternatives evaluation, and public outreach. This process will transform the general project descriptions from this TSP into detailed plans that allow potential issues to be appropriately addressed so the best solutions can be implemented based on current and complete information. Additionally, as in 2017 when the County adopted a resolution committing to address climate change due to the serious global, national, and local threat to human health, ecology, and the economy, the implementation of this TSP will consider the role that transportation projects play in greenhouse gas emissions.



## Regulatory Framework

### REQUIREMENTS OF A TSP

The Benton County TSP must be consistent with transportation elements of the Corvallis Area Metropolitan Planning Organization (CAMPO) and Albany Area Metropolitan Planning Organization (AAMPO) Regional Transportation Plans, local city Transportation System Plans in Philomath, Albany, Corvallis, the Benton County Coordinated Human Services – Public Transportation Plan, and relevant ODOT plans and policies including the Oregon Transportation Plan and its modal and topic plans. As part of the TSP update process, separate TSP elements were developed for the cities of Adair Village and Monroe. Other unincorporated areas, like Bellfountain and Blodgett do not have TSPs, and rely on the County's TSP for guidance on the regional system. TSPs are required by the State's Transportation Planning Rule (TPR) documented in the Oregon Administrative Rule 660-012-0015, which explains the primary elements of the TSP. The TPR expects that a county TSP will include the following components:

- A comprehensive understanding of the existing multimodal transportation system that serves the rural and urban areas of the county and how well that system performs its expected function today.
- A reasonable basis for estimating how the urban areas and the surrounding region might grow in its population and employment over the next 20 or more years.

- An evaluation of how the expected growth could change system performance.
- A set of goals, policies, and transportation system improvements that address travel needs.
- An understanding of the on-going funding required to build and maintain the transportation system as cities grow.





## HOW THE TSP FITS WITH LOCAL PLANS

The Benton County TSP is the primary long-range planning document for the County's transportation investments. It provides direction based on a reasonable development scenario from the land use assumptions in the local Comprehensive Plans. However, the TSP is a transportation document. While many factors influence and impact this system, the purpose of the TSP is to evaluate the most significant impacts of the expected land use changes on that system, which are developed outside of the TSP. The growth forecasts made for the 2040 plan horizon year are based on the regional projections and the local cities' adopted Comprehensive Plans, which define the extent and type of growth that could be permitted during that planning period. The pace of local growth typically varies year to year, and if the overall population and employment growth falls below the 2040 forecast then the associated improvement needs may be deferred.

Future changes to land use assumptions may also change the need for some projects. Detailed project development should occur before any of the projects in the TSP are constructed. Future planning efforts may provide a more detailed look at particular areas in the County and may be used to inform amendments to this TSP.

Any recommended changes from past practices in the transportation design standards will require coordination and updates, as appropriate, to the County's Development Code to ensure future improvements are consistent with the updated TSP. This could include street cross-section dimensions and the required street right-of-way, provisions for pedestrians, bicycles, transit vehicles and motor vehicles, as well as spacing standards for driveways and cross-streets onto County facilities.

## HOW THE TSP FITS WITHIN THE REGION AND STATE

It is important that the County's plan recognize regional routes and the role they play in serving the community. The Benton County TSP transportation system designations and policies must be consistent with regional and State planning documents for this area. The State highways and regional routes are typically owned by either ODOT or the County. State facilities are not subject to the design standards or policies of the County. Project recommendations from this TSP provide the basis for ODOT improvements within the County. ODOT will consider recommended projects on State highways within Benton County when updating the State Transportation Improvement Program. However, ODOT is not committed to constructing any project recommendations in this TSP.

During the update to the Benton County TSP, several other agencies in this region also updated their transportation plans, which provided the opportunity for active coordination between the planning efforts. Transportation plan updates were initiated in Philomath, Corvallis, the Corvallis Area Metropolitan Planning Organization (CAMPO), and the Albany Area Metropolitan Planning Organization (AAMPO).

## How Was the Plan Prepared?

The Transportation System Plan update was developed through a process that involved robust public engagement, structured review of technical analysis, and a formal decision-making structure.

### PROJECT ROLES & DECISION-MAKING

The decision-making structure for the TSP update was developed to establish broad-based support for the project, as illustrated in the following figure. This approach ensured an open, inclusive process that is viewed as credible by stakeholders.

Figure 1. Benton County TSP Decision Making Structure



### ROLE OF THE COUNTY BOARD OF COMMISSIONERS AND PLANNING COMMISSION

The Benton County Board of Commissioners (BOC) was the project’s final decision maker. They are elected to represent the interests of the citizens of Benton County. The Planning Commission provides review of all planning matters and recommended to the BOC that this plan be adopted. The Project Management Team (PMT) made recommendations to the Commissioners based on technical analysis and stakeholder input.

### ROLE OF THE PROJECT TEAM

The PMT was comprised of staff from Benton County, ODOT, and the consultant project team. Benton County staff provided project oversight to ensure that the TSP update meets the requirements and objectives of affected community members and organizations within the project area. ODOT staff ensured that the update was developed effectively and consistent with statewide plans, policies, and objectives. The project consultant team led the TSP strategy and development, including the public involvement program outreach and communications. Project team members are listed in the acknowledgements section.

### ROLE OF THE TECHNICAL ADVISORY COMMITTEE

The Technical Advisory Committee (TAC) was formed to provide guidance and review of the analysis and findings of the project team. TAC members generally consisted of affected agency representatives and are listed in the acknowledgements section.

**ROLE OF THE STAKEHOLDER ADVISORY COMMITTEE**

The purpose of the Stakeholder Advisory Committee (SAC) was to convene representatives of groups that may review policy issues and project lists, as well as provide guidance to the project through a stakeholder lens. All SAC meetings were open to the public and included a public comment period. Committee members are listed in the acknowledgements section.

**PUBLIC OUTREACH PURPOSE & STRATEGY**

Public outreach was performed through a public involvement program developed by the TSP project team. The public involvement program was designed to share information and gather input on the needs and issues of the stakeholders in Benton County. The full public outreach report can be found in the Benton County TSP Background Documents.

The strategy for public involvement was designed to:

- Actively seek public input throughout the project and engage a broad and diverse audience through targeted outreach to all segments of the community, including underrepresented communities.
- Provide meaningful public involvement opportunities through the project website, including online surveys; interactive and visually-informative community events; targeted outreach to interest groups, advisory bodies, and other governments; and open public meetings.

- Seek participation of potentially affected and/or interested individuals, neighborhoods, businesses, and organizations.
- Communicate complete, accurate, understandable, and timely information.
- Document how input has been considered in the development and prioritization of proposed improvements.
- Comply with Civil Rights Act of 1964 Title VI requirements. Title VI and its implementing regulations provide that no person shall be subjected to discrimination on the basis of race, color or national origin under any program or activity that receives federal financial assistance.
- Ensure that the public involvement process is consistent with applicable state and federal laws and requirements, and is sensitive to local policies, goals, and objectives.

## NOTIFICATION & OUTREACH TOOLS

A wide range of outreach tools was used to publicize the project and encourage public participation.

- The project website included announcements, news entries, a calendar of meetings and events, a comment form, informational posters from community workshops, and a document library. <https://www.co.benton.or.us/tsp>
- Two series of three community workshops were held at major project milestones. Meeting locations included Philomath, Corvallis, North Albany, Monroe, and Adair Village.
- Following community workshops, online surveys were provided to engage individuals that were not able to attend the in-person meetings.
- In addition, tabling at community events (i.e., Open Streets Corvallis 2018) was used to disseminate project information and solicit public input, along with project team presentations to organizations and interest groups.
- Each Stakeholder Advisory Committee meeting was open to the public with time reserved to provide for public comment. In addition, public comment was solicited at the Planning Commission and BOCC adoption hearings.

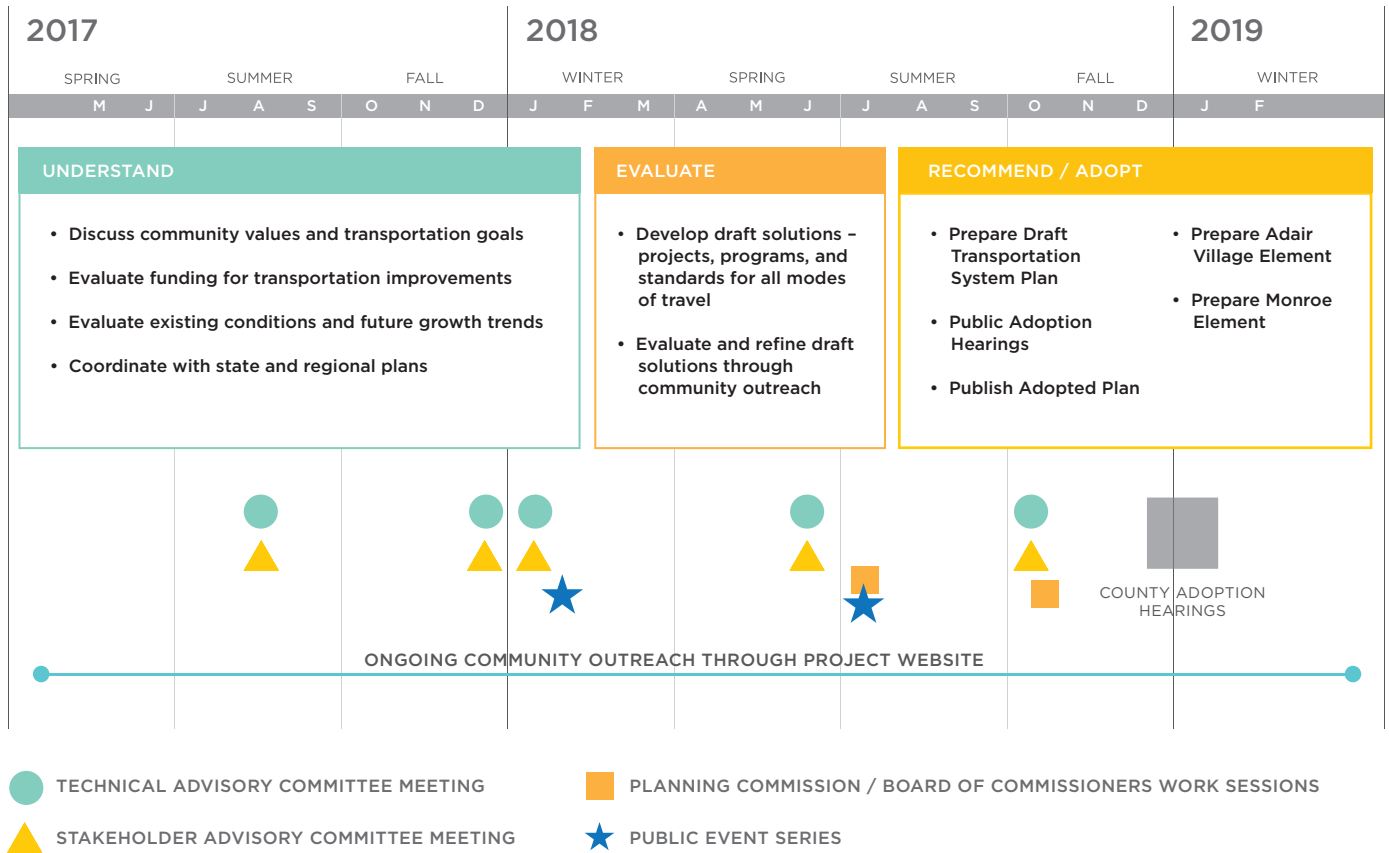
One goal of the public involvement program was to reach underrepresented community members. These efforts included the following outreach:

- **Engaging Low-Income and Non-English Speaking Communities:** The project team collaborated with the County's public health department to offer materials to reach typically underserved populations, such as low-income and Spanish-speaking community members. Spanish language translation was provided during both rounds of community workshops, with a Spanish language-only workshop held in Monroe during the second round.
- **Accessible locations:** All SAC meetings and open houses were ADA-accessible, with additional accommodations for persons with disabilities available upon request. All project information was also available in alternative formats upon request. Meetings were held in transit-accessible locations where feasible.
- **Older Adults:** The County posted project advertisements in locations where seniors would be likely to see them. Such locations included drugstores, grocery stores, and retirement and assisted living communities

## TECHNICAL DEVELOPMENT

Technical analysis for the TSP Update was performed by the project team. The analysis followed a process as illustrated in Figure 2.

Figure 2. Technical TSP Development Process



The TSP update process was documented through a series of memoranda. These project documents were reviewed by the TAC, SAC, and other project stakeholders. They were also available for public review and comment.

The project documents reflect the development of the technical elements of the TSP and provide additional details and analysis not included in the core elements documented in this document (the final TSP Report). The documents are included for reference, along with meeting summaries reflecting the public input received, in the Benton County TSP Background Documents. The memoranda developed to support the TSP update process are listed here:

- *Memorandum #1: Public Involvement Strategy*
- *Memorandum #2: Plan Assessment, Goals, and Objectives*
- *Memorandum #3: Funding for Transportation System Improvements*
- *Memorandum #4: Existing Transportation System Conditions and Deficiencies*
- *Memorandum #5: Future Transportation Operation Conditions*
- *Memorandum #6: Proposed Transportation Standards*
- *Memorandum #7: Proposed Transportation System Improvements (Project list)*
- *Memorandum #8: County Comprehensive Plan and Development Code Amendments*





CHAPTER 2

# Benton County Today & Tomorrow

This chapter describes the transportation system within Benton County, Oregon, and evaluates how well it works today and how that may change in the future. This performance review focuses on all County arterial and collector roadways and also looks at ODOT highways. The transportation conditions within the municipalities of Benton County can be found in each city's Transportation System Plans.

Travel demands are influenced by where land use development occurs and the proximity and quality of roadway systems that serve them. During this TSP update, the performance of the transportation system was reviewed for current conditions (as of 2017) and then re-evaluated based on how that might change with growth (2040). The Benton County Comprehensive Plan designates where land development is allowed throughout the County, outside of designated urban areas. Figure 3 shows the County's land use designations and the adjoining regional transportation systems that serve Benton County.

## BENTON COUNTY FACTS

**POPULATION** 92,287 (2017)

**LAND AREA** 676 square miles

**COUNTY SEAT** Corvallis

### INCORPORATED CITIES:

*Adair Village, Albany (north), Corvallis, Monroe, Philomath*

### CENSUS-DESIGNATED PLACES:

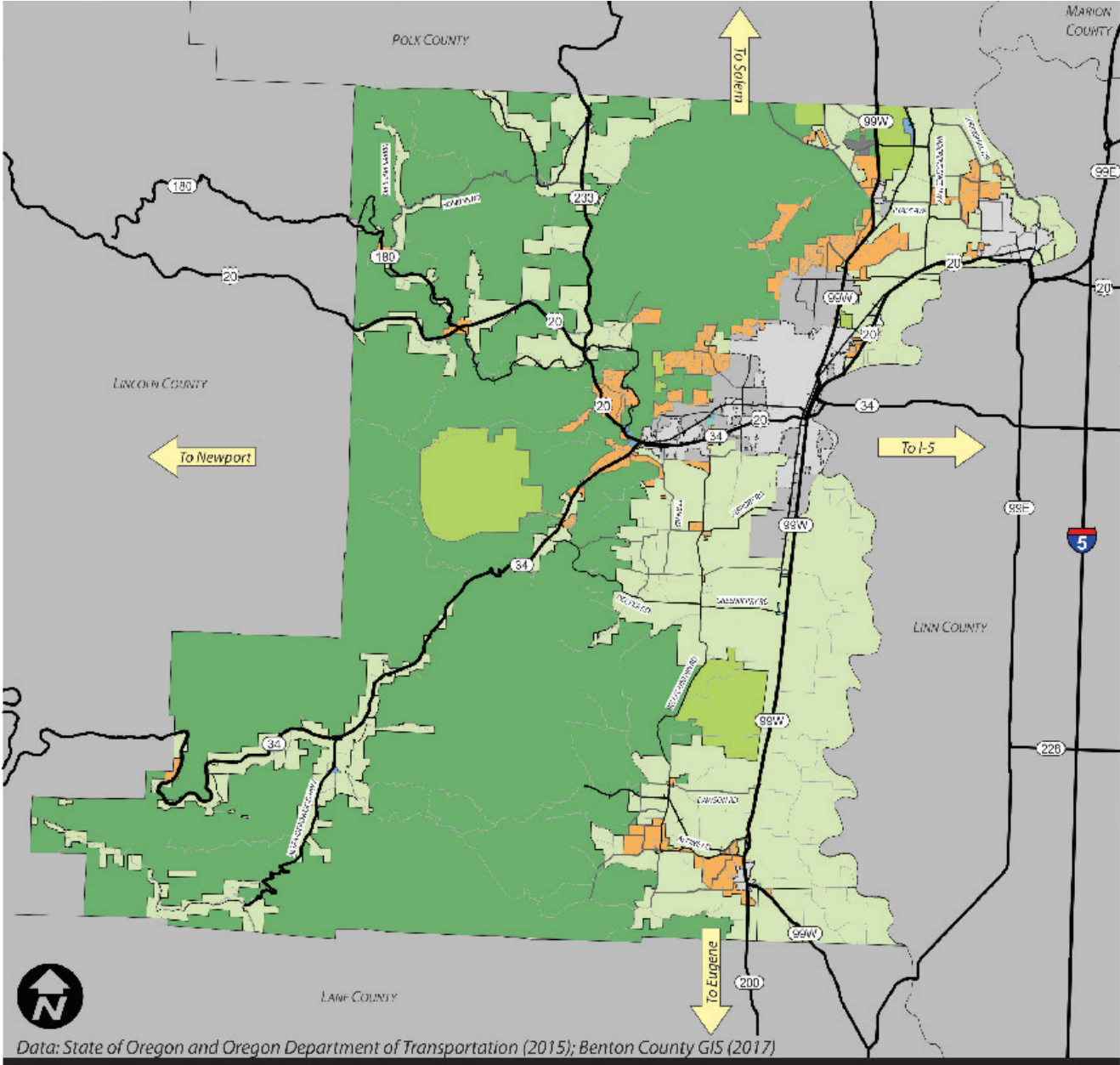
*Alpine, Alsea, Bellfountain, Blodgett, Kings Valley, Summit*

### COUNTY MAINTAINED ROADWAY

*MILES: Over 275 paved and 170 gravel centerline miles*



Figure 3. Comprehensive Plan Designations



Legend

- Significant Public Lands
- Special Use
- Landfill Site
- Commercial
- Industrial
- Rural Residential
- Agriculture/MPA
- Agriculture Industrial
- Forestry
- Principal Arterial
- Collector
- Local Roadway
- Railroad
- River
- Park
- Airport
- Urban Growth Boundary
- City Limits

**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN

## Existing Land Use and Travel Patterns

One important early step in planning for an effective transportation system is gaining an understanding of the key destinations that people currently travel to throughout the county. These destination points are referred to as trip generators. Benton County is home to Oregon State University (OSU), a major location for national research in forestry, agriculture, engineering, and the sciences. OSU anchors an extensive economic network of agriculture, lumber, and wood product manufacturing companies throughout Benton County. Recreational and cultural destinations are also a popular draw for visitors.

Benton County is the location of over 31,000 jobs, mostly concentrated in Corvallis, Philomath, and North Albany. The largest employers are Oregon State University, Good Samaritan Regional Medical Center, Hewlett Packard, Corvallis Clinic, and local and regional governments and school districts. Lower density clusters of employment are scattered throughout the county, including Adair Village, Alsea, and Monroe. Employment locations of people who both live and work in Benton County are not concentrated in downtown Corvallis, with similar

levels of employment density throughout outer Corvallis, Philomath, and North Albany. The most common cities for Benton County residents to commute to are Corvallis (41%), Albany (11%), Salem (5%), and Eugene (4%). The most common cities for Benton County workers to commute from are Corvallis (34%), Albany (13%), Philomath (4%), and Lebanon (2%). Worker flow is generally balanced between those who commute in, commute out, and stay in Benton County. 65% of workers commute by driving alone, which is approximately 6% lower than the statewide average. This lower reliance on single-occupant vehicles is mainly due to higher than average percentages of commuters that walk or bike to work. Travelers passing through or with destinations within Benton County come from Lincoln County and the Oregon Coast via US 20, Polk and Lane Counties via OR 99W, and Linn County via OR 34 and US 20. Additional discussion of trip purposes for commuters into and out of Benton County can be found in the Benton County TSP Background Documents, Memorandum #4.

## Expected Growth to 2040

Benton County population has grown by 18% since the year 2000, which is an annual growth rate of 1.06%. This growth trend is expected to continue, with a forecast of over 110,000 total residents by 2040, as shown in Table 1. Population growth has been in the urbanized areas, with Corvallis

seeing the highest total population increases and Adair Village, North Albany, and Philomath seeing the highest growth rates. Refer to Memorandum #5 in the Benton County TSP Background Documents for a complete description of expected growth.

**Table 1. Benton County Population Growth History and Forecast**

Year	2000	2010	2017	2020	2030	2040
Benton County Total	78,153	85,579	92,287	95,818	106,498	113,169
Adair Village	536	840	928	1,127	1,934	2,075
North Albany	5,104	6,463	7,586	8,088	9,615	10,850
Corvallis	49,322	54,462	61,449	63,857	70,572	75,227
Monroe	607	617	637	643	660	675
Philomath	3,838	4,584	5,169	5,388	6,848	7,493
Unincorporated	18,746	18,613	16,517	16,715	16,868	16,849

*Data from PSU Population Research Center. 2000-2010 Census Counts (incorporated areas) and population forecasts (Urban Growth Boundaries). This data may not completely reflect planned residential development in Adair Village or Monroe.*





## Transportation System Evaluation

The following transportation systems were evaluated to assess travel conditions. The assessment was made for existing travel conditions (2017). These findings were compared to expected performance levels, and cases where conditions fell below targets were identified as system needs. The assessment was made again for future conditions (2040), as appropriate, to identify any additional needs to serve growth. The performance categories that were used in this assessment were as follows:

- **Safety** – The reported crashes on the County and State roadway facilities were evaluated to determine if the rate and severity of crashes was higher than is expected for a given type of roadway or intersection. Cases that were significantly greater than the norm were flagged.
- **Mobility** – Intersection operations at key intersections selected by the Project Management Team were evaluated to determine how well they serve vehicles during the peak travel hours. Cases with excessively high travel delays were noted.

- **Active Transportation** – Biking and pedestrian facilities were evaluated to determine the quality and connectedness of travel routes.
- **Resiliency** – Bridge projects that address weight restrictions and better serve emergency response and recovery activities were included.
- **Transit** – Transit system service and improvements were evaluated through the County's 2018 Coordinated Human Services – Public Transportation Plan.

The results of these system assessments were used to identify facility deficiencies for the Existing (2017) and Future (2040) conditions. These analytical findings were supplemented with input from County staff and the general public to form a complete list of system needs for Benton County. Recommendations regarding improvements to address these deficiencies are presented in Chapter 5: Improvements.

## COMMITTED INFRASTRUCTURE IMPROVEMENTS EXPECTED BY 2040

Some of the County and State routes already have committed funding for improvements that were identified in previous plans and studies. For the purposes of this assessment, these improvements were assumed to be built by 2040, since the funding is programmed in the next five years. These committed projects include:

### SAFETY

- **Region 2 (Central) Local Road Roadway Departure [along Springhill Drive]:** Improvements to reduce roadway departure crashes along Springhill Drive from Albany City Limits to Independence Highway.
- **City of Corvallis Signal Enhancements:** Safety improvement at OR 99W & Circle Boulevard.
- **US 20: Children’s Farm Home to Merloy Avenue:** A two-way left turn lane to improve accessibility and safety along US 20.
- **South Fork Road Comprehensive Corridor Plan:** A federal proposal to address critical safety deficiencies on South Fork Road.
- **53rd Street & Country Club Intersection:** Includes analysis and potential construction of a roundabout as an intersection improvement.
- **US 20 Safety Upgrades from Albany to Corvallis:** House Bill 2017 recently dedicated \$20 million in funding for safety improvements in this corridor.

## ACTIVE TRANSPORTATION

- **Corvallis to Albany Trail:** Scenic Drive – Springhill Drive: This path will provide an off-street option for active transportation users in North Albany and recreational or commuting cyclists who use US 20.
- **Chapel Drive Bikeway Improvement:** This project will add 6-foot bike lanes on either side of the road, a raised tabletop intersection at 19th Street & Chapel Drive, and a designated pedestrian and school crossing.
- **Independence Highway Widening:** This project widens travel lanes and adds paved shoulder bikeways between Metge Avenue and Ryals Avenue. This project will tie into potential widening projects on Metge Avenue and Ryals Avenue.
- **Ryals Avenue:** This project would widen travel lanes and adds paved shoulders to Ryals Avenue from Arnold Avenue to Independence Highway.
- **Oak Grove Drive:** This project would add bike lanes to Oak Grove Drive from the existing bike lanes to Metge Avenue.
- **Crocker Lane Urbanization:** This project adds pedestrian and bicyclist amenities and urbanizes the northern part of Crocker Lane from Meadow Wood Drive to Valley View Drive.

**RESILIENCE**

- **Hubbard Road:** Long Tom River Bridge: The existing bridge, and Hubbard Road, is closed along this route. This project will replace the structure with a pre-stressed concrete girder bridge along the same alignment.
- **US 20: Willamette River (Ellsworth Street) Bridge:** This project will increase the truss span vertical clearance over the Willamette River.
- **NW Crescent Valley Drive Bridge:** Bridge rehabilitation project that includes strengthening and widening to accommodate pedestrians/cyclists.
- **OSU Campus Way Covered Bridge:** Preservation project that includes re-roofing, re-painting, and installation of a fire suppression system.
- **Alpine Road Bridge:** Timber bridge replaced with pre-stressed concrete slab bridge.
- **Marys River Road Bridge:** Timber bridge strengthening project to allow for continued access to timber resource land by logging equipment.
- **Starr Creek Road Extension:** This project connects Starr Creek Road to Hells Canyon Road with a proposed gated emergency access road to provide for two-way traffic in the case of emergency. This connects two roadway systems that currently have only one access/egress point with an emergency secondary access.
- **OR 34: Van Buren Bridge:** This project replaces the eastbound span of the OR 34 Willamette river crossing.

**OTHER PROJECTS<sup>1</sup>**

- OR 99W: Monmouth – NE Elliot Circle Road Resurfacing
- Fern Road: Chapel Drive to Grange Hall Road Resurfacing
- Crescent Valley Drive Highland/Jackson Overlay
- 13th Street Grind & Overlay
- 53rd Street: Reservoir Road – Harrison Boulevard Resurfacing
- Springhill Drive Overlay: US 20 to Albany city limits

<sup>1</sup> These projects do not directly improve the active transportation system, but improvements to pavement condition will improve the experience of any cyclists and pedestrians that use these facilities.

## Transportation System Needs

The system needs for Existing and Future conditions were evaluated and reported in Memoranda #4 and #5. Please refer to the Benton County TSP Background Documents for complete details. The following sections provide an overview of the system needs within Benton County.

### SAFETY

Safety is one of the most important considerations when assessing transportation system performance. The safety of Benton County roadways was evaluated by reviewing crash data and identifying patterns of motor vehicle, pedestrian, and bicyclist crashes. A few key safety statistics for Benton County include:

- Reported crashes averaged 863 events each year between 2011 and 2015 – the most recent years available .
- 92% of these crashes involved property damage only.
- 27 crashes had one or more fatalities.
- Most fatalities (22) and injury crashes occurred on rural facilities outside of the Urban Growth Boundary.
- Most crashes on rural roads involved speeding and/or roadway departure.
- Most crashes inside urban area involved intersections.
- Biking and pedestrian crashes were predominantly inside the urban area (87%).

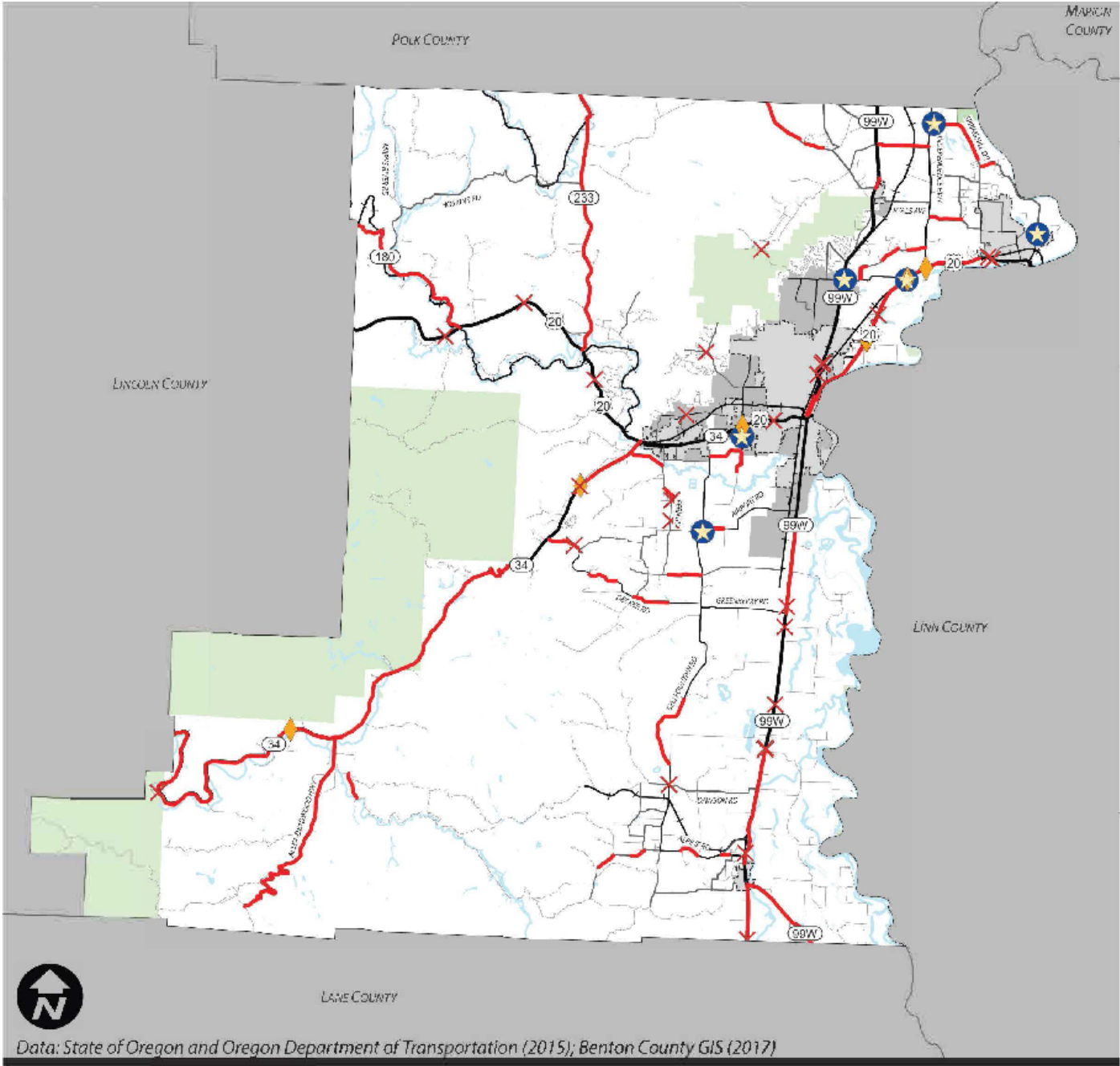
High critical crash rates were identified at the following six study intersections:

- #5: OR 99W/NW Lewisburg Avenue./NE Granger Avenue
- #18: US 20/NE Granger Avenue
- #30: SW Country Club Drive/SW 53rd Street
- #35: NW Springhill Drive/NW Independence Highway
- #39: SW Airport Avenue/Bellfountain Road
- #48: NW Quarry Road/NE South Nebergall Loop/ NW Springhill Drive

The safety review revealed segments on 13 County roadways that had high crash rates and were candidates for safety improvements. These streets include Airport Avenue, Alpine Road, Alpine Cutoff, Camp Adair Road, Decker Road, Fern Road, Grange Hall Road, Llewellyn Road, Metge Avenue, Springhill Road, Pettibone Drive, Bellfountain Road, and Plymouth Drive.

In addition, several segments of State highways US 20 and OR 34 were flagged due to high crash rates. Key intersections and roadway segments that were flagged during the safety review are shown on Figure 4 on the following page.

Figure 4. Crash Summary for Study Roads



**Legend**

- X - Fatal Collision
- ◆ - Top 5% or 10% SPIS (2015) Location
- ★ - High Crash Rate Study Intersection
- - High Crash Rate Segment
- - Principal Arterial
- - Collector
- - Local Roadway
- - Railroad
- - River
- - Park
- - Airport
- - Urban Growth Boundary
- City Limits

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## MOBILITY

Intersection conditions were evaluated at 48 selected study locations during the peak hour of operation and then compared to the mobility target for each facility type. Figure 5 illustrates the results for the Existing (2017) assessment. Locations that are marked with gold dots currently fail to meet the mobility targets. Figure 5 also illustrates the annual average daily traffic volumes on high class roadways and highways.

Moving ahead to 2040, the comparative results for these congested intersections are summarized in Table 2 below. In 8 of 10 cases, the poorly performing intersections are on State facilities. All of the County road intersections outside of the UGB were found to operate within expected levels of delay today and in 2040. Note that 5 of the 10 locations that fall below mobility targets in 2040 also do so in 2017. Those locations are already very congested and will become even more so without system improvements.

**Table 2. Congested Intersections in 2017 and 2040 (Weekday P.M. Peak Hours)**

Intersection	Control Type	Mobility Target (v/c)	2017 Existing Year v/c	2040 Future Year v/c
OR 99W & Lewisburg Ave/Granger Ave <sup>1</sup>	Signal	0.90	<b>0.93</b>	<b>1.16</b>
US 20 & Springhill Dr	Signal	0.95	0.85	<b>1.21</b>
US 20/OR 34 & 53rd St	Signal	0.85	<b>0.86</b>	<b>1.02</b>
53rd St & Reservoir Ave	Signal	NA	0.79	<b>1.00</b>
OR 99W & Arnold Ave	STOP on side street	0.70	0.43	<b>1.03</b>
OR 99W & Ryals Ave	STOP on side street	0.70	0.31	<b>&gt;2.0</b>
US 20 & Scenic Dr	STOP on side street	0.95	<b>0.99</b>	<b>&gt;2.0</b>
US 20 & Independence Hwy	STOP on side street	0.70	<b>0.97</b>	<b>&gt;2.0</b>
US 20 & Granger Ave	STOP on side street	0.75	<b>1.94</b>	<b>&gt;2.0</b>
Scenic Dr & Oak Grove Dr	STOP on side street	NA	0.25	<b>1.00</b>

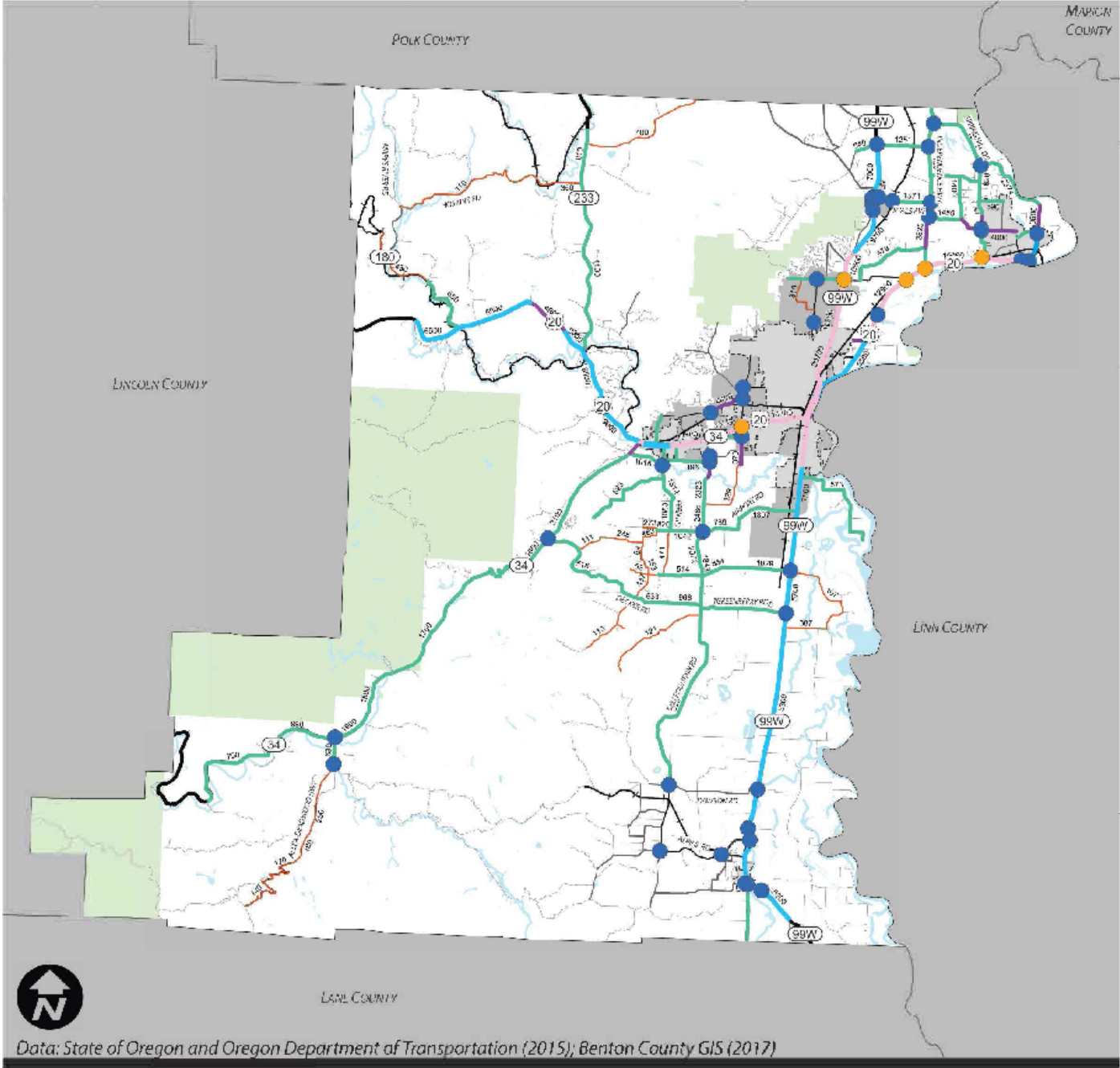
*BOLD text indicates mobility target is not met (Benton County does not currently have adopted mobility standards. Information for County facilities at locations where significant congestion occurs is shown for informational purposes only).*

*Mobility Targets pertain to the intersection for signalized control and also for Major [Minor] street approaches for two-way stop control.*

*v/c is shown at the intersection level for signalized control and the worst movement for two-way stop control. v/c is a performance measure. It compares the movement volume (v) with its capacity (c). The ratio shows the degree of congestion.*

<sup>1</sup> Intersection fails in base and future year analysis.

Figure 5. Traffic Volumes and Intersection Operations



Data: State of Oregon and Oregon Department of Transportation (2015); Benton County GIS (2017)

**Legend**

- - Meets Target
- - Fails to Meet Target
- - Principal Arterial
- - Collector
- - Local Roadway
- + - Railroad
- - River
- - Park
- - Airport
- - Urban Growth Boundary
- - City Limits
- - Average Annual Daily Traffic
- - < 500 vpd
- - 500 - 2,500 vpd
- - 2,500 to 5,000 vpd
- - 5,000 to 10,000 vpd
- - > 10,000 vpd

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## ACTIVE TRANSPORTATION

Within the rural areas of Benton County, facilities for people walking and bicycling are generally roadway shoulders or off-highway shared-use paths. The adequacy of shoulders for multimodal use was evaluated compared to minimum targets (4 feet wide) and ODOT recommended facilities. Overall, about 12% of the County roadways met the minimum and 8% met the recommended widths. ODOT highways fared better with 58% meeting the minimum and 24% meeting the recommended widths.

The bicycle system provides a non-motorized travel option for trips that are longer than a comfortable walking distance. A well-developed bicycle system promotes a healthy and active lifestyle for residents and visitors. Benton County’s bicycling network consists of bike lanes, shared-use paths, roadway shoulders, and shared roadways. Major designated routes should optimally provide wayfinding signage for bicyclists.

Rural areas typically have few dedicated multimodal facilities and traffic speeds are generally high. Viability of the walking and bicycling network in these areas is largely evaluated based on shoulder presence, type, and width.

Table 3 summarizes the results of the shoulder evaluation, which are shown in Figures 6 and 7. Overall, a limited amount of the County system meets minimum or recommended shoulder targets. Many of the County roadways that do not meet minimum shoulder targets currently have low vehicle volumes. Although much of the core ODOT system meets minimum targets, with high vehicle volumes and speeds the minimum is not enough for a well-connected network.

**Table 3. Quantity of County Shoulder Bicycle and Pedestrian Facilities**

Shoulder	County		ODOT	
	Miles	Percent	Miles	Percent
<b>Meets Minimum Shoulder Targets</b>	29.3	12%	140.1	58%
<b>Meets Recommended Shoulder Targets</b>	18.5	8%	57.0	24%

*The above table shows total shoulder miles, evaluating either side of the road separately*

Identified deficiencies in the Active Transportation system include:

- **Rural Connectivity:** The City of Monroe is within 5 miles of the unincorporated communities of Alpine and Bellfountain, but there are no adequate facilities for active transportation users in that area. The communities of Wren, Greenberry, and Alsea also lack adequate and safe shoulder facilities to access destinations by walking or biking. The lack of facilities creates limited to no safe routes to school for the children in these communities.
- **Alternative Routes:** The primary north-south corridors in southeastern Benton County are Bellfountain Road and OR 99W. OR 99W provides wider shoulders than Bellfountain Road but also carries more vehicles. Both roads have speeds over 45 miles per hour and carry freight traffic. This results in unattractive conditions for people desiring to walk or bike. Other areas of Benton County, such as Adair Village, Wren-Blodgett-Summit, Kings Valley, and Alsea, also have limited choices for active transportation corridors. Preferred routes should be identified and improvements focused on those corridors.
- **Major Highway Corridors:** The major highway corridors of US 20, OR 99W and OR 34 should be considered for active transportation improvements. US 20 connects the core cities of the metropolitan areas, Corvallis, and Albany. Segments of US 20 do not meet recommended minimum shoulder width for cyclists. The planned shared-use path from Scenic Drive to Springhill Drive in North Albany begins to fix the gap between these cities, but further improvements to reach Corvallis will be needed. OR 99W connects Adair Village with Corvallis but does not meet minimum shoulder criteria along its length.
- **Maintenance of Existing and Future Facilities:** Paramount to a successful active transportation project is planning for its continued maintenance. Many of Benton County's shared-use paths are falling apart due to the lack of a funding source/maintenance plan.

Active transportation improvement projects, such as shared-use paths adjacent to US 20 and OR 99W, would provide high-quality connectivity for cyclists and pedestrians. Rural areas of the county remain reliant on shoulders for active transportation facilities.

Figure 6. Pedestrian Facilities

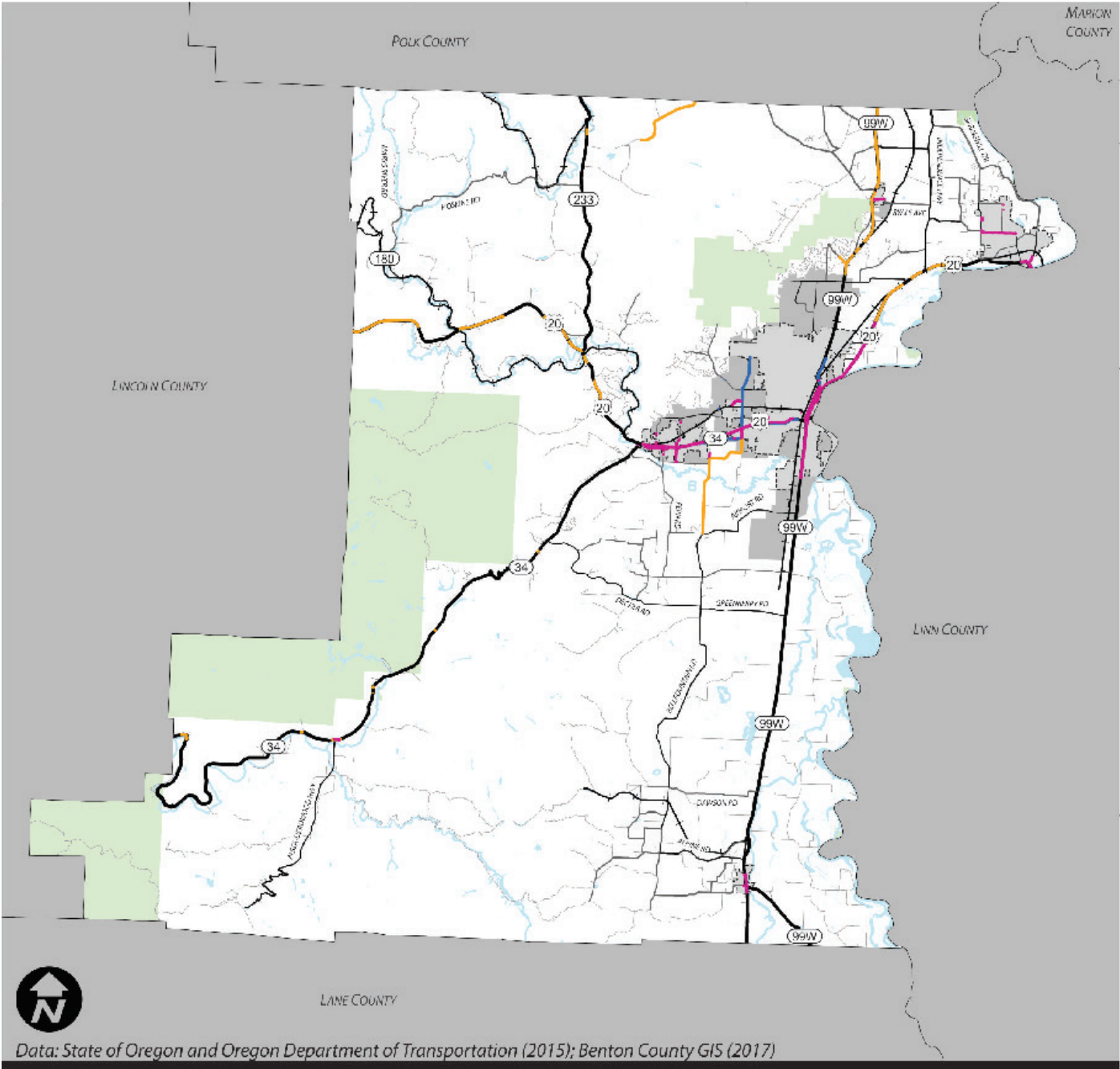
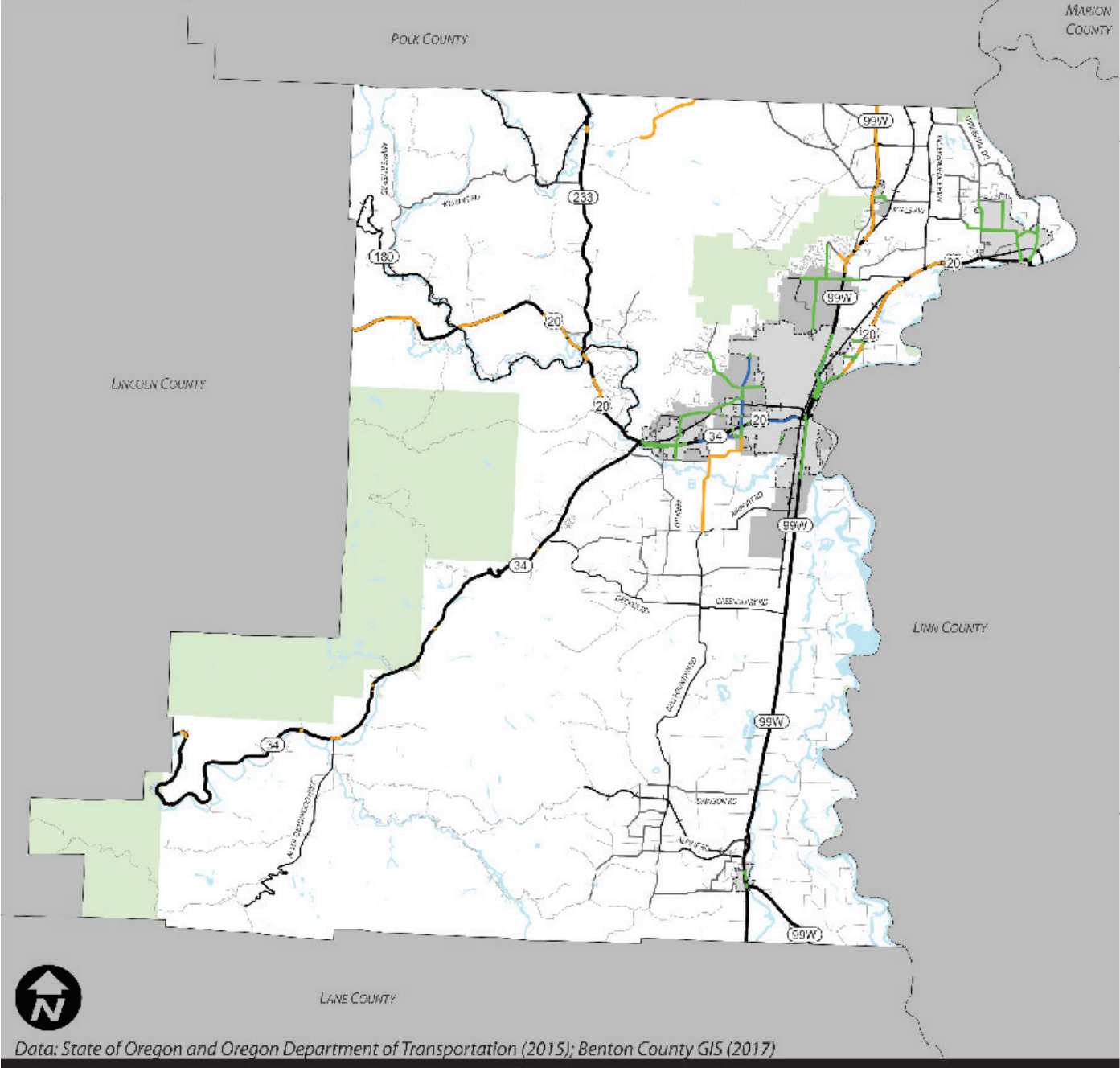




Figure 7. Bicycle Facilities



Data: State of Oregon and Oregon Department of Transportation (2015); Benton County GIS (2017)

Legend

- - Shared-Use Path
- - Wide Shoulder
- - Bike Lanes
- - Principal Arterial
- - Collector
- - Local Roadway
- + - Railroad
- █ - River
- █ - Park
- █ - Airport
- █ - Urban Growth Boundary
- City Limits

**BENTON COUNTY**  
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## RESILIENCY

Funded bridge improvements like those on Hubbard Road and US 20 will improve resilience, but aging infrastructure throughout the county means that more bridges will have weight restrictions in future years. Preserving dedicated funding for bridge maintenance will be important to maintain reliable connectivity in Benton County.

Emergency response preparation will assist Benton County's recovery efforts in the event of a natural disaster. In the case of an emergency, transportation will be in high demand, particularly for older adults and persons with disabilities. The County's Emergency Services Division plans and directs emergency procedures, including emergency response training and exercises and maintaining an Emergency Communications Center where response agencies coordinate actions and allocate resources in an emergency. Under the Emergency Operations plan, Benton County Public Works is the lead agency responsible for transportation. Support agencies include transportation providers within the region, such as Corvallis Transit System, Benton County Dial-A-Bus, and Albany Transit (Call-A-Ride, Linn-Benton Loop).<sup>1</sup>

The County has collaborated with Linn County in establishing and staffing a Vulnerable Populations Emergency Planning Work Group to plan for and coordinate services to those vulnerable populations least able to respond to emergencies without assistance. The group completed an emergency response plan in 2012 and is currently providing training and emergency preparedness planning to emergency service providers, transportation providers, community shelters, City and County personnel, and other agencies.

## FREIGHT MOBILITY

Efficient truck movement plays a vital role in the economical transport of raw materials and finished products. The designation of through truck routes provides for this efficient movement while maintaining neighborhood livability and public safety, and minimizing maintenance costs of the roadway system (due to their heavy loads freight vehicles cause more wear on the road structure). Conflicts between freight traffic and other modes can cause mobility issues and increased freight volume will create additional areas where this conflict occurs.

Highways designated as freight/truck routes by ODOT and the federal government include US 20, OR 99W, and the US 20/OR 34 corridor from Linn County through Philomath, as discussed in Memorandum #4, found in the Benton County TSP Background Documents. Since most of the congestion forecast to occur in Benton County is on these corridors, projects targeted at improving the efficiency of travel on freight/truck routes may be a priority.

Other areas that are not identified as freight routes but also experience high truck volumes include Bellfountain Road, Decker Road, Llewellyn Road, Springhill Drive, Independence Highway, Dawson Road, Airport Avenue, and Kings Valley Highway. Where these roads pass through rural communities, the high volume of truck traffic can impact the quality of life. Such impacts will be considered when developing solutions on these corridors.

Millersburg, just north of Albany in Linn County, is being considered as a location for a transshipment facility. This facility would provide for more efficient

<sup>1</sup> Benton County Emergency Operations Plan, June 2012.

movement of freight into the Portland Metro area and the Port of Portland by bypassing road congestion and shipping freight via rail. The impact, and final location, of this facility is unknown but could change the demand for freight traffic via truck and rail through and out of Benton County.

## AIRPORTS

Corvallis Municipal Airport is the only public-use air facility in Benton County. The airport is located south of Corvallis near the intersection of OR 99W and SW Airport Avenue. The Corvallis Municipal Airport Master Plan was completed in 2013. Further discussion of the improvements recommended in that plan can be found in Chapter 5. The Albany Municipal Airport and the Lebanon State Airport are in nearby Linn County. However, these three airports do not currently provide any public commercial service. To access passenger air travel, Benton County residents typically travel to Portland, Eugene, or Salem.

In 2017, the County's Special and Rural Transportation Program received funding for a 15- to 18-month pilot program to provide service from five pick-up locations in Corvallis to the Amtrak Station in Albany. One of the project's goals is to provide an alternative connection to air service at PDX. A variety of shuttle services also connect to PDX. Caravan Shuttle operates between the central Oregon coast and the Portland Airport, Portland Amtrak, and OHSU/VA Hospital. City2City Shuttle provides shuttle service to and from locations along the I-5 Corridor and Portland Airport. Hut Airport Shuttle operates to and from Corvallis, Albany, Eugene, OSU, Salem, and Woodburn to Portland Airport. OmniShuttle is a shared door-to-door service serving the Eugene-Springfield

area, and also provides service to Corvallis, Albany, Roseburg, and Oregon Coast destinations. This shuttle provides a connection from the Corvallis area to the Eugene Airport.

## TRANSIT

Transit provides mobility to Benton County residents without access to a car or who do not drive. For other residents, transit provides an option to avoid some of nuisances of driving such as congestion and parking. It can play a role in reducing the volume of traffic on the road and improving environmental quality. Fixed-route transit service is provided to residents of Adair Village, Corvallis, Philomath, and North Albany. The rural communities of Wren and Alpine are somewhat connected via the Coast to Valley Express route but this service is not priced for daily commuting from those communities and is of limited frequency (4 trips daily in each direction). Residents of the City of Monroe and the unincorporated communities of Bellfountain, Greenberry, Kings Valley, Hoskins, and Alsea have no fixed-route transit options or demand responsive options that are open to all demographic groups.

Existing transit services provide mobility and economic opportunity for some of the County's most vulnerable residents but they do not provide a comprehensive and open network for all residents or visitors. To improve mobility for all, transit in Benton County needs to expand service to accommodate the county's growth. The Benton County Coordinated Human Services – Public Transportation Plan describes strategies for efficiently prioritizing resources and identifies unmet needs and service gaps. Other transit plans, such as

the Corvallis Transit System Transit Development Plan and the Albany Area MPO/City of Albany Transit Development Plan, guide the improvement of transit service in the urbanized areas of Benton County.

Other specific transit needs to be addressed include:

- **Service along OR 99W south and north of Corvallis:** The area of southeast Benton County surrounding the City of Monroe does not have any fixed-route transit available since a pilot program of a southern 99 Express connecting Monroe with Corvallis was discontinued due to lack of demand. A new route extending to Lane County with stops in Junction City and Eugene may result in increased demand for riders from the metropolitan areas interested in the through trip. Coordination with Lane County Transit would be required to develop this route. Additionally, there is also no service along OR 99W north of Adair Village to Monmouth and other communities in Polk County. Further study is needed for this potential route.
- **Expansion of Regional Linn-Benton Loop Service:** The Linn-Benton Loop is the existing regional transit system, connecting the two regional colleges (OSU and LBCC) and the two inter-connected metropolitan areas of Corvallis and Albany. The existing Loop route and schedule have remained unchanged for the past two decades, even while significant growth has changed the face of both counties. Planning for potential expansion of the Loop network with future transit funding under HB 2017 includes studying the routes and schedules, to better serve commuters as well as the evolving needs of the two colleges.
- **Demand-responsive transit capacity improvements:** Benton County Dial-a-Bus service is operating at capacity while the population continues to age and the participation percentage of eligible users is small. There is significant potential for increased demand for this service in the future. Investments to expand the capacity on the Dial-a-Bus system will be considered. Demand-responsive service can also be considered as an alternative to fixed route service in rural areas where demand is often low in under-served areas of the County including Wren, Kings Valley, the Alsea River Valley corridor, and South Benton County.
- **Increased frequency of service and expanded evening/weekend service:** There is currently no Sunday fixed-route service on the Corvallis Transit System and limited demand response services on weekends. Requests for expanded weekend services are common themes from surveys and outreach events. Convenient access to public transportation for those commuting outside normal working hours, especially for service sector employees, is limited and more frequent off-peak service will be considered.
- **Expanded service to the North Albany area:** While this portion of Benton County is experiencing significant growth, current service is limited. Improved commuter service at peak hours and improved route and schedule timing coordinated to employment locations is needed for this corridor.

- **Improved coordination with health and human service providers:** Coordination of medical and human services transportation is an on-going challenge that requires substantial and continued partnership efforts. One of the priorities is the need for all partners, particularly state agencies, to better understand and to acknowledge the important role that transportation plays in accessing medical and human services.
- **Expanded efforts to inform the public of available services:** Despite the best of efforts, lack of awareness about available public transportation services has been identified as the single greatest impediment to its use. There is an ongoing need to communicate broadly about available services and to conduct outreach to those populations without convenient access to public transportation, that are hesitant to use public transportation, or that are unaware of available services. Rider training and continuing distribution of information about available services are needed to increase ridership, especially among seniors and low-income persons.

## FUNDING CONSTRAINTS

The average annual revenue and expenditures for the Public Works Road Fund is summarized in Table 4. Most of the revenue for the Fund currently comes from the State Highway Trust Fund. Anticipated revenue from House Bill 2017 is not shown in Table 4 as it is not yet known how much of this revenue would be dedicated to system maintenance versus the construction of new projects.

The other significant revenue source is grants. These grants come from various sources, such as CAMPO, and are project-specific.

The County's current operating budget does not cover its expenses resulting in an annual deficit of \$137,900. This deficit is balanced by a \$375,000 annual transfer from the County's General Fund. However, this transfer is not guaranteed, and the surplus generated from these funds is not included in future budget projections.

Assuming the County will continue to balance the budget of the Public Works department and maintain the current level of investment in the transportation system, Benton County is projected to have approximately \$23.4 million to spend on TSP projects through 2040 (Capital Outlay). Capital Outlay defines spending on projects, such as the ones in this TSP. Any future HB 2017 funds made available for transportation system improvements (non-maintenance) will significantly increase the number of TSP projects that can be funded.

General revenue available through HB 2017 is estimated at \$1,800,000 annually (\$39,600,000 by 2040) with an additional \$2,400,000 (\$52,800,000 by 2040) annually allocated to transit.

Due to limited funding continued evaluation of investment priorities is important.

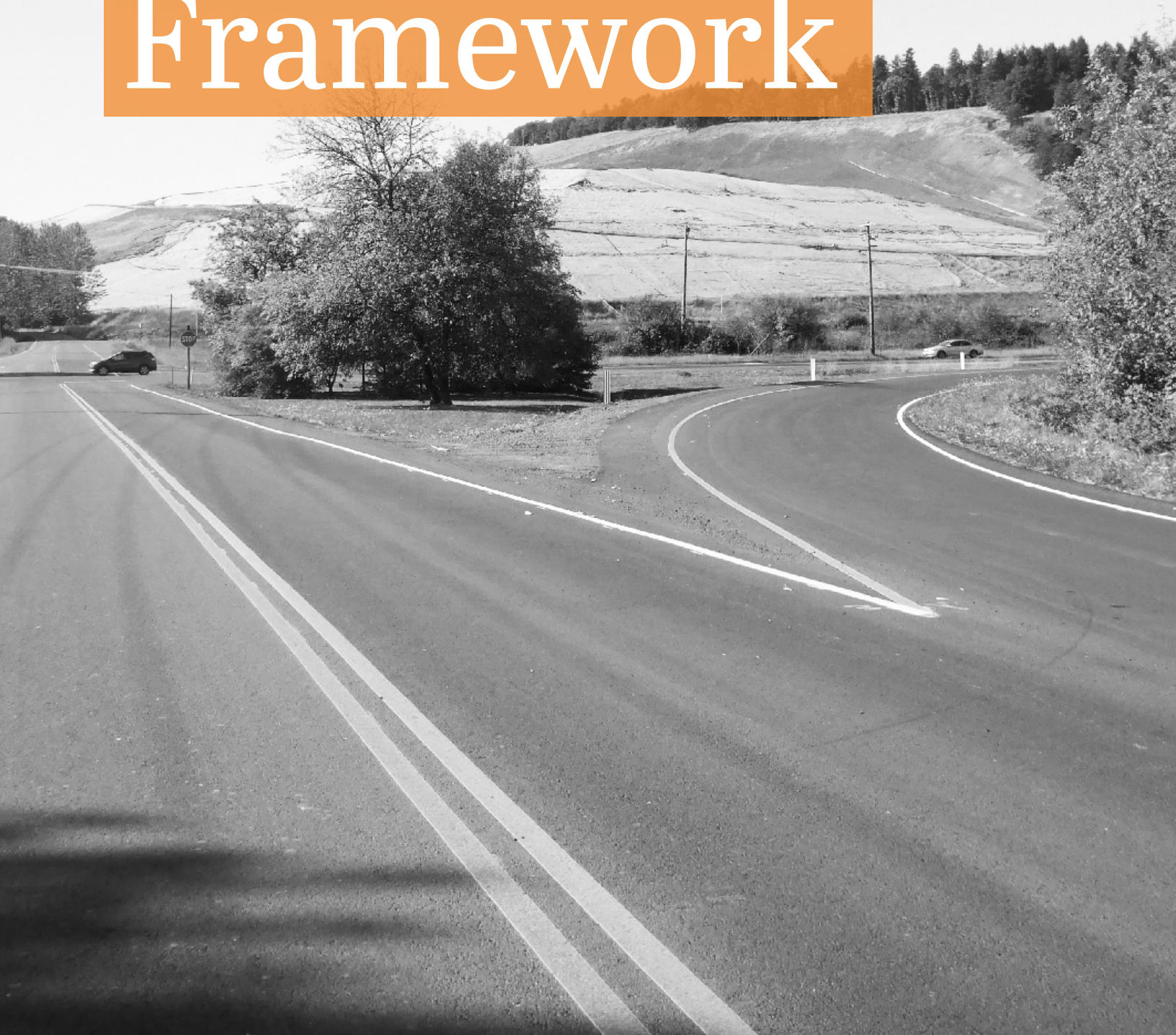
Table 4. Benton County Transportation Revenues and Expenses with 2040 Projections

Revenue	Annual Average	Projected Total (2017 to 2040)
General Revenues	\$13,700	\$315,100
Charges for Services	\$1,053,600	\$24,232,800
Operating Grants/Contributions	\$4,065,500	\$93,506,500
Capital Grants/Contributions	\$798,100	\$18,356,300
<b>Total Revenue</b>	<b>\$5,930,900</b>	<b>\$136,410,700</b>
Expenditures	Annual Average	Projected Total (2017 to 2040)
Personnel Services	\$2,791,800	\$64,211,400
Materials and Services	\$2,259,200	\$51,961,600
Capital Outlay	\$1,017,800	\$23,409,400
<b>Total Expenditures</b>	<b>\$6,068,800</b>	<b>\$139,582,400</b>
<b>Available Transportation Revenue (Revenues – Expenditures)</b>	<b>-\$137,900</b>	<b>-\$3,171,700</b>
<b>Additional Operating Revenue Needed</b>	<b>\$137,900</b>	<b>\$3,171,700</b>
Available Funding	Annual Average	Projected Total (2017 to 2040)
<b>Capital Outlay</b>	<b>\$1,017,800</b>	<b>\$23,409,400</b>



## CHAPTER 3

# TSP Framework



The Mobility and Transportation section of the 2040 Thriving Communities Initiative states:

*Benton County will ensure people are efficiently connected to the places they work, play, shop, learn, enjoy, and receive services through transportation options that promote activity, reduce congestion, and build community.*

As shown in the list below, many goals identified in the TSP are similar if not identical to those in the 2040 Thriving Communities Initiative. The transportation system in this TSP strives to be equitable, safe, environmentally conscious, and economically competitive by protecting the health, mobility, and financial investment of Benton County residents. The objectives developed for each goal are specifically related to the transportation system; however, the goals fit within the framework of the 2040 Thriving Communities Initiative.

The transportation system envisioned by Benton County balances the needs of the urban and rural populations. In rural areas of Benton County, travel to work, recreation or entertainment opportunities often necessitates a long-distance trip. With low population densities, limited transit access, and poor bicycle facilities, rural residents are often constrained to automotive travel. In urban areas of Benton County or areas in the urban fringe there are additional opportunities to travel by walking, bicycling or transit. Pursuant to State policy (Statewide Planning Goals; Transportation Planning

Rule), opportunities and strategies for alternative transportation within urban growth boundaries are identified in the respective city TSPs. The following goals reflect a balance of those two populations in addition to the wider goals of Economic Development (Goal 5), Financial Stewardship (Goal 6), and Environment (Goal 7).

The goals and objectives provided a framework for the types of projects that were included in the TSP (Chapter 5). All projects meet at least one, although often many, of the goals and objectives defined below. Chapter 6 (Strategies) includes further discussion of how this TSP has implemented these goals and objectives and includes a discussion of other techniques to create the system that is desired by the community.

The TSP supports and advances the core values of Benton County's 2040 Thriving Communities Initiative. The Thriving Communities Initiative guides the development of the future social, cultural, and environmental space of Benton County. The plan identifies six core values with Equity and Health at the center. These six values are:

- Vibrant and Livable Communities
- Community Resilience
- Diverse Economy that Fits
- Supportive People & Resources
- High Quality Environment & Access
- Equity & Health



The TSP identifies goals and objectives to guide development of the transportation system to reflect Benton County's vision and values. Goals and objectives create stepping-stones by which the community vision can be achieved. Goals are brief clear statements of the outcomes to be achieved to realize the vision. Each goal is supported by objectives, which outline the specific actions to be taken to achieve the outcomes described by the goals.

The TSP goals and objectives were developed with guidance from the Stakeholder Advisory Committee, Technical Advisory Committee, and the general public. The goals and objectives were used to guide the development and evaluation of TSP projects and strategies; they will also be used, together with an additional climate-related objective added by the Board of Commissioners, as the basis for new policies to be subsequently adopted.



## Goals and Objectives

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### **Goal 1 - Safety:** A safe transportation system minimizes risks and conflict.

**OBJECTIVE 1:** Provide safe facilities for all modes.

**OBJECTIVE 2:** Reduce the frequency of crashes and strive to eliminate crashes resulting in serious injuries or fatalities.

**OBJECTIVE 3:** Proactively improve areas where crash risk factors are present.

**OBJECTIVE 4:** Provide both primary and secondary access for emergency services.

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### **Goal 2 - Equity:** Transportation investments should serve everyone in the community and recognize disparities in people's access to transportation modes.

**OBJECTIVE 1:** Ensure mobility to the transportation disadvantaged.

**OBJECTIVE 2:** Consider the needs of the population that are unable to afford housing in close proximity to employment and daily needs in the project selection process.

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### **Goal 3 - Health:** The transportation system should encourage healthy lifestyles.

**OBJECTIVE 1:** Support access to public spaces and encourage active transportation and social interaction.

**OBJECTIVE 2:** Provide healthy transportation options for students traveling to school.

**OBJECTIVE 3:** Consider the impact of particulate emissions in transportation projects.

**OBJECTIVE 4:** Work with neighboring jurisdictions to identify and promote opportunities to commute to and around Benton County by means other than single occupant vehicles.

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### **Goal 4 - Mobility and Circulation:** The transportation system should efficiently connect people with where they want to go.

**OBJECTIVE 1:** Develop a transportation system to facilitate appropriate travel modes.

**OBJECTIVE 2:** Ensure sufficient capacity is provided concurrent with future travel demand to, within, and through Benton County.

**OBJECTIVE 3:** Coordinate with local agencies and providers to expand transit services countywide.

**OBJECTIVE 4:** Ensure an adequate truck route network to reduce commercial/ neighborhood conflicts.

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**Goal 5 - Economic Development:** Transportation should support a thriving economy.

**OBJECTIVE 1:** Preserve and protect transportation corridors essential to the economic vitality of the County.

**OBJECTIVE 2:** Promote the use of freight rail and air service to reduce trucking activity on County roads.

**OBJECTIVE 3:** Promote efficient and affordable ground transportation to existing regional airports (Portland, Eugene, and Salem) and the Albany Amtrak Station.

---

**Goal 6 - Financial Stewardship:** Investments in transportation should manage assets efficiently and responsibly.

**OBJECTIVE 1:** Maximize the useful life of existing facilities.

**OBJECTIVE 2:** Maximize the cost effectiveness of transportation improvements.

**OBJECTIVE 3:** Ensure adequate and equitable long-term funding mechanisms.

---

**Goal 7 - Environment:** The transportation system should allow a community to live harmoniously with the environment.

**OBJECTIVE 1:** Provide transportation services that preserve and protect the scenic and natural resources and rural character of Benton County.

**OBJECTIVE 2:** Provide a transportation system that allows a community to absorb the impact of and quickly recover from natural disasters.

**OBJECTIVE 3:** Minimize conflicting uses on the transportation system that degrade neighborhoods and rural communities.

**OBJECTIVE 4:** Consider the impact of transportation projects on greenhouse gas emissions, and utilize best practices and latest technologies to meet the County's climate action goals.



## Project Prioritization and Evaluation

A performance-based planning approach was used to develop the Benton County TSP to guide how the community selects investments that most effectively and efficiently achieve desired outcomes. The decisions are guided by data and analysis describing transportation system performance relative to a select group of measures that track progress toward key goals. Benefits to using a performance-based planning approach include:

- Improved investment decision-making.
- Improved return on investments and resource allocation.
- Improved system performance.
- Increased accountability and transparency.
- Demonstrated link between funding and performance.

The transportation goals and objectives were reviewed to determine which of them were good candidates for measuring evaluation criteria. They were used for preliminary selection and prioritization of investments and strategies (for County and non-County facilities) by quantifying how likely the solutions are to support the goal areas and achieve the stated objectives. These scores provided an initial high priority project list that was modified throughout the planning process based on discussions with the TAC and SAC and community input. These criteria provide a high-level analysis of how a project matches qualitative County goals but should not be mistaken for a detailed cost-benefit analysis of measurable quantitative targets. Benton County staff can use selected evaluation criteria to periodically monitor plan outcomes over time. This can help inform decisions about how to apply limited funding resources to the extensive needs identified in Chapter 2.

## Evaluation Criteria

Understanding how recommended transportation improvements align with the TSP goals and objectives facilitates the process of selecting and prioritizing projects. To this end, evaluation criteria were developed by the project team that reflect the goals and objectives approved by the Stakeholder Advisory Committee. Further discussion of the evaluation criteria can be found in Memorandum #5 in the Benton County TSP Background Documents.

Table 5 lists the evaluation criteria, the corresponding scoring methodology, and weights that were applied to the criteria. Each criterion is associated with one or multiple of the County's proposed goals and includes a question that can be answered:

- "Strongly Agree" (score of +2),
- "Somewhat Agree" (score of +1),
- "No Change" (score of 0),
- "Somewhat Disagree" (score of -1) or a
- "Strongly Disagree" (score of -2).

By summing ratings (and applying weighting if desired), projects were compared to help determine priorities.

Implementation of this TSP will involve on-going reevaluation of local priorities. The County will consider these evaluation criteria when making future investment decisions, but maintains the ability to adjust criteria weighting or incorporate changes in direction provided by the Board of Commissioners and new policies adopted in the future.

**Table 5. Evaluation Criteria Scoring**

Criteria Goal(s)	Strongly Agree	Somewhat Agree	No Change	Somewhat Disagree	Strongly Disagree	Weight
<b>Goal 1: Safety –</b> A safe transportation system minimizes risks and conflict.	Does the project improve safety at a location that has experienced a high rate of crashes or improve areas where geometry presents a high risk of crashes?					
	+2	+1	0	-1	-2	0.33
	Does the project improve areas where serious injuries or fatalities occurred in the past five years of available data?					
	+2	+1	0	-1	-2	0.33
	Does the project improve access for emergency services along Benton County Lifelines?					
	+2	+1	0	-1	-2	0.33
<b>Goal 2: Equity –</b> Transportation investments should serve everyone in the community and recognize disparities in people's access to transportation modes.	Does the project support services to meet the needs of households that do not own a vehicle?					
	+2	+1	0	-1	-2	0.5
	Does the project improve accessibility to jobs from areas with higher proportions of low-income residents?					
	+2	+1	0	-1	-2	0.5

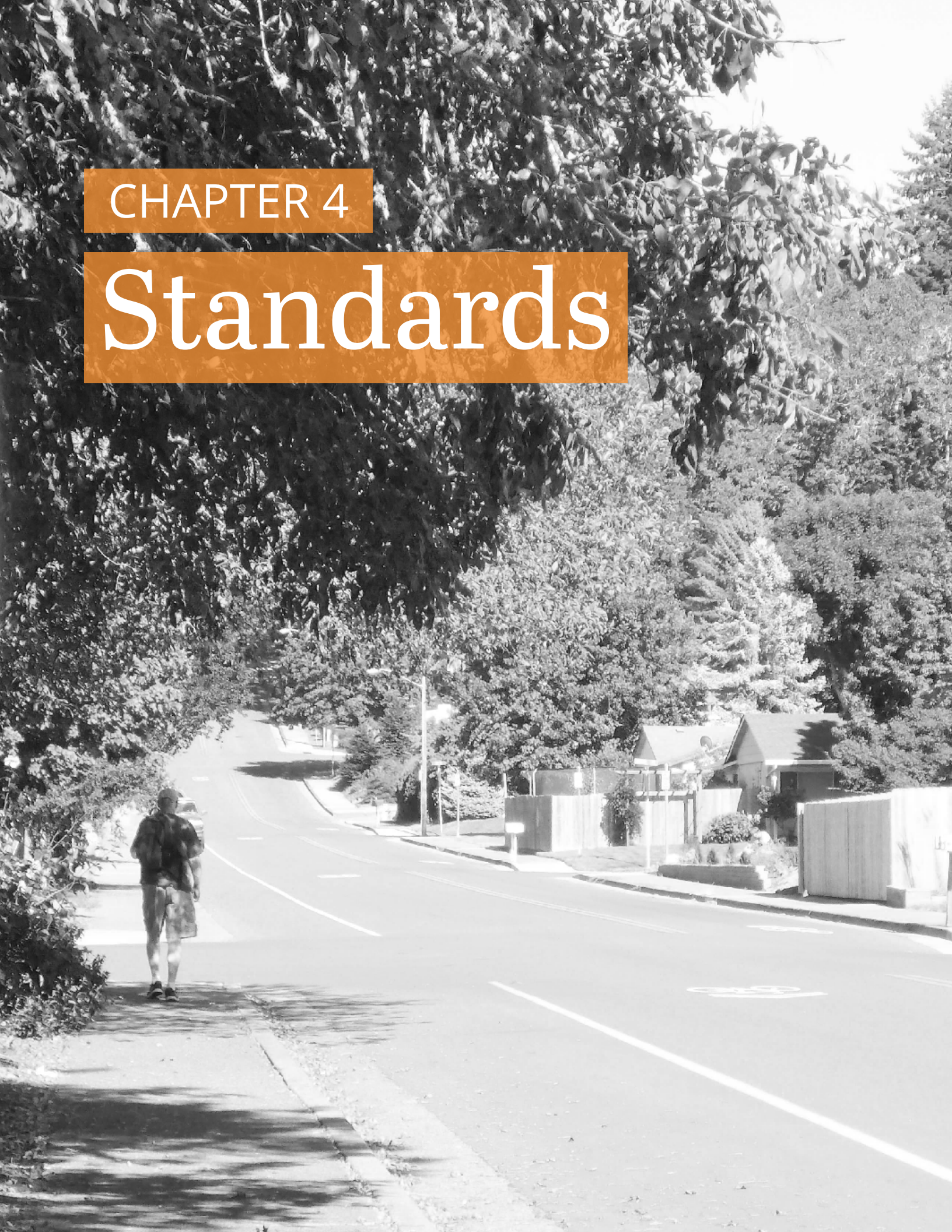
Table 5. Evaluation Criteria Scoring, *Continued*

Criteria Goal(s)	Strongly Agree	Somewhat Agree	No Change	Somewhat Disagree	Strongly Disagree	Weight
<b>Goal 3: Health –</b> The transportation system should encourage healthy lifestyles.	Does the project improve access to public spaces and encourage active transportation?					
	+2	+1	0	-1	-2	0.33
	Does the project provide healthy transportation options for students traveling to school?					
	+2	+1	0	-1	-2	0.33
	Does the project support a reduction in single occupancy vehicle use or vehicle emissions?					
	+2	+1	0	-1	-2	0.33
<b>Goal 4: Mobility and Circulation –</b> The transportation system should efficiently connect people with where they want to go.	Does the project reduce congestion in the motor vehicle network?					
	+2	+1	0	-1	-2	0.33
	Does the project enhance freight mobility?					
	+2	+1	0	-1	-2	0.33
	Does the project support the expansion of countywide transit service?					
	+2	+1	0	-1	-2	0.33
<b>Goal 5: Economic Development –</b> Transportation should support a thriving economy.	Does the project help enhance freight routes and resource collectors?					
	+2	+1	0	-1	-2	0.33
	Does the project promote the use of freight rail and air service to reduce trucking activity on County roads?					
	+2	+1	0	-1	-2	0.33
	Does the project promote efficient and affordable ground transportation to existing regional airports and the Albany Amtrak Station?					
	+2	+1	0	-1	-2	0.33
<b>Goal 6: Financial Stewardship –</b> Investments in transportation should manage assets efficiently and responsibly.	Does the project complete existing facilities and bring them up to standard?					
	+2	+1	0	-1	-2	0.5
	Does the project enhance the efficiency and safety of existing infrastructure?					
	+2	+1	0	-1	-2	0.5
<b>Goal 7: Environment –</b> The transportation system should allow a community to live harmoniously with the environment.	Does the project minimize impacts to the scenic and natural resources and rural character of Benton County?					
	+2	+1	0	-1	-2	0.33
	Does the project support the ability to absorb the impact of and quickly recover from natural disasters?					
	+2	+1	0	-1	-2	0.33
	Does the project minimize conflicting uses on the transportation system that degrade neighborhoods and rural communities?					
	+2	+1	0	-1	-2	0.33



CHAPTER 4

# Standards





Benton County applies transportation standards and regulations to the construction of new transportation facilities and to the operation of all facilities to ensure the system functions as intended and investments are used efficiently. These standards enable consistent future actions that reflect the goals of the County for a safe and efficient transportation system.

## Street Functional Classification

Traditionally, roadways are classified based on the type of vehicular travel they are intended to serve. In Benton County, the functional classification provides an organizational mechanism for developing roadway design standards, establishing traffic speeds, controlling access, designing intersections, and allocating funds for maintenance and improvements.

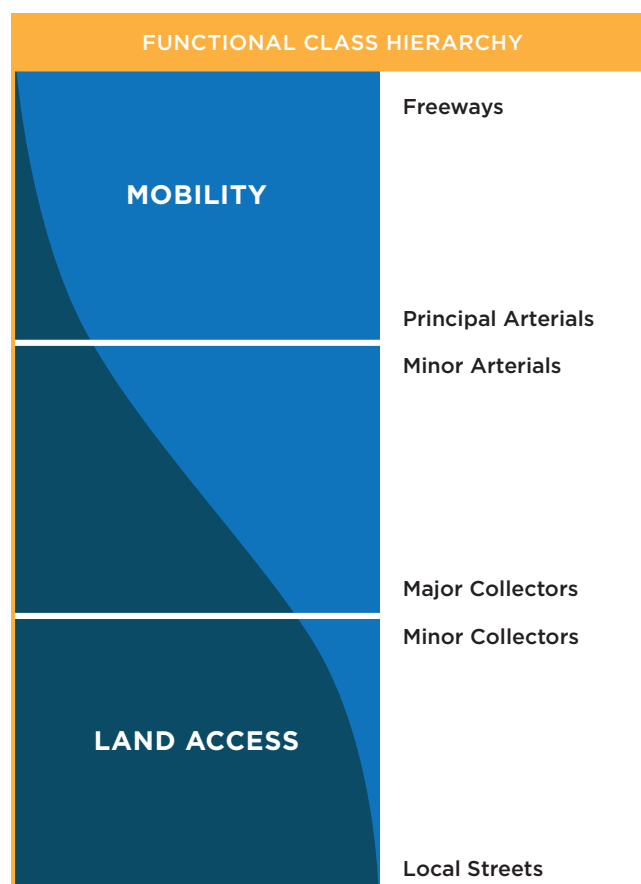
Roadways with higher intended usage generally limit access to adjacent property in favor of more efficient motor vehicle traffic movement (i.e., mobility). Local roadways with lower intended usage have more driveway access and intersections, and generally accommodate shorter trips to nearby destinations.

Benton County's functional classification system categorizes all public roadways to provide for a context-sensitive network that balances local access and regional connectivity, while recognizing the unique needs of timber and agricultural areas. Higher classified roadways prioritize safe and efficient through movement, while lower classified roads are designed to provide access to the adjacent land uses. The TSP applies the following functional classification system:

- **Principal Arterials** connect communities, provide through movement, and are State highways. Access is limited and controlled, and parking is generally prohibited. Higher auto traffic volumes and speeds make principal

and minor arterials uncomfortable for people walking and biking. There is a greater need to separate people walking and biking from auto traffic on arterials compared to other functional classifications. Within Benton County, all State highways are principal arterials.

- **Minor Arterials** connect areas of principal traffic generation to principal arterials, provide through movement, and distribute traffic to collector and local roadways. Access and parking are controlled.



- **Major Collectors** carry local traffic between neighborhoods, or between neighborhoods and arterials, and provide access to minor collectors and community services. Access and parking are controlled. There is still a need to separate people walking and biking from auto traffic on major and minor collectors, but the degree of separation required to create a comfortable environment is often smaller compared to arterials.
- **Minor Collectors** serve internal traffic within areas having a single land use pattern, and serve minor traffic generators such as schools or neighborhood shopping or community centers. They should form a continuous network in urban areas. Access and parking are allowed.

With this TSP update, Resource Collectors have been removed from the County's functional classification system. All former Resource Collectors are now Minor Collectors.

- **Local Roads** may provide on-street parking and direct access to abutting property. Their design discourages through traffic. Dead-end street lengths are minimized. People biking can share the road with auto traffic, but separation from traffic is still needed for pedestrians.

The changes to the functional classification of County roads are shown in Table 6 and are consistent with modifications in the updates to the Corvallis TSP and Philomath TSP as well as the existing Albany TSP. For additional details, please refer to Memorandum #6 in the Benton County TSP Background Documents. Figure 8 and the following sub-area figures shows the resulting functional classifications of all County roads and State highways.

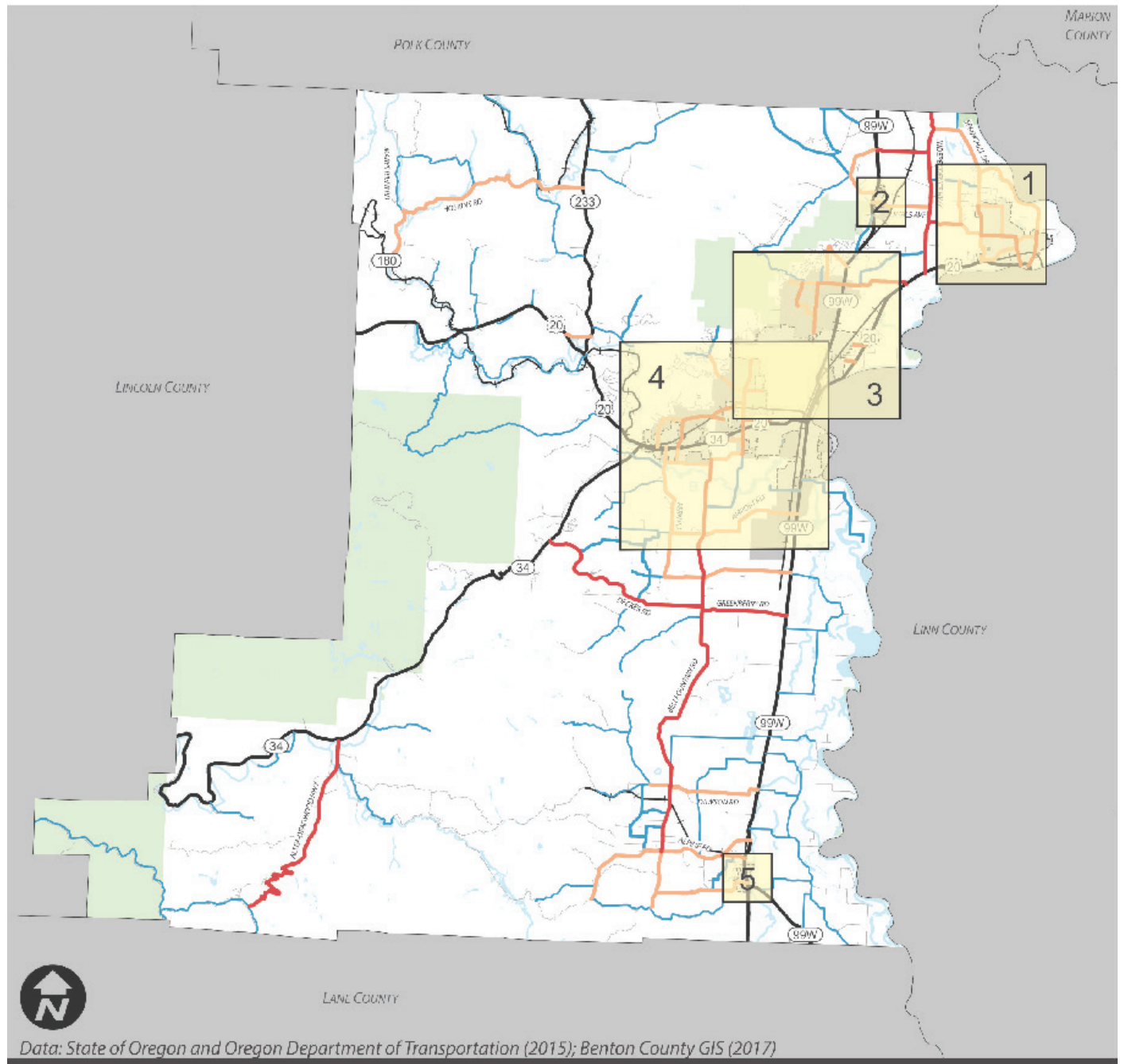
Table 6. Functional Classification Changes

Roadway	From	To	Functional Classification	
			Existing	Updated
19th Street	US 20/OR 34	West Hills Road	Major Collector	Minor Arterial
53rd Street	US 20/OR 34	Plymouth Drive	Major Collector	Minor Arterial
9th Street	US 20/OR 34	West Hills Road	Minor Collector	Major Collector
Airport Road	OR 99W	Bellfountain Road	Minor Arterial	Major Collector
Airport Road	Fern Road	End	Minor Arterial	Minor Collector
Alpine Road	Bellfountain Road	Alpine Cut-off	Minor Arterial	Major Collector
Blakesley Creek Road	Cardwell Hill Drive	End	None <sup>1</sup>	Minor Collector
Brooklane Drive	Chinitimini Avenue	Hawkeye Avenue	None <sup>1</sup>	Minor Collector
Circle Boulevard	Corvallis City Limits	US 20	None <sup>1</sup>	Minor Arterial
Conifer Boulevard	Corvallis City Limits	US 20	None <sup>1</sup>	Minor Arterial
County Club Drive	US 20/Highway 34	53rd Street	Minor Collector	Major Collector
Crescent Valley Drive	Lewisburg Avenue	Jackson Creek Drive	Major Collector	Minor Arterial
Crescent Valley Drive	South of Raider Way	Highland Drive	Minor Collector	Major Collector
Elliott Circle	Granger Avenue	End	None <sup>1</sup>	Minor Collector
Gibson Hill Road	Scenic Drive	North Albany Road	Major Collector	Minor Arterial
Harrison Boulevard	53rd/Walnut Boulevard	Corvallis City Limits	None <sup>1</sup>	Minor Arterial
Herbert Avenue	OR 99W	End	None <sup>1</sup>	Minor Collector
Lewisburg Avenue	Huntington Drive	Crescent Valley Drive	Minor Arterial	Major Collector
Orchard Street	Coon Road	OR 99W	Minor Collector	Major Collector
Ryals Avenue	OR 99W	Arnold Avenue	Local	Major Collector
Vineyard Drive	Lewisburg Avenue	End	Local	Minor Collector
West Hills Road	9th Street	19th Street	Minor Arterial	Major Collector
West Hills Road <sup>2</sup>	Reservoir Avenue	Western Boulevard	Major Collector	Minor Arterial

<sup>1</sup> Roadways were not previously listed in the 2001 TSP.

<sup>2</sup> Excluding the portion of West Hills Road that is within City Limits.

Figure 8. Street Functional Classification, County-wide



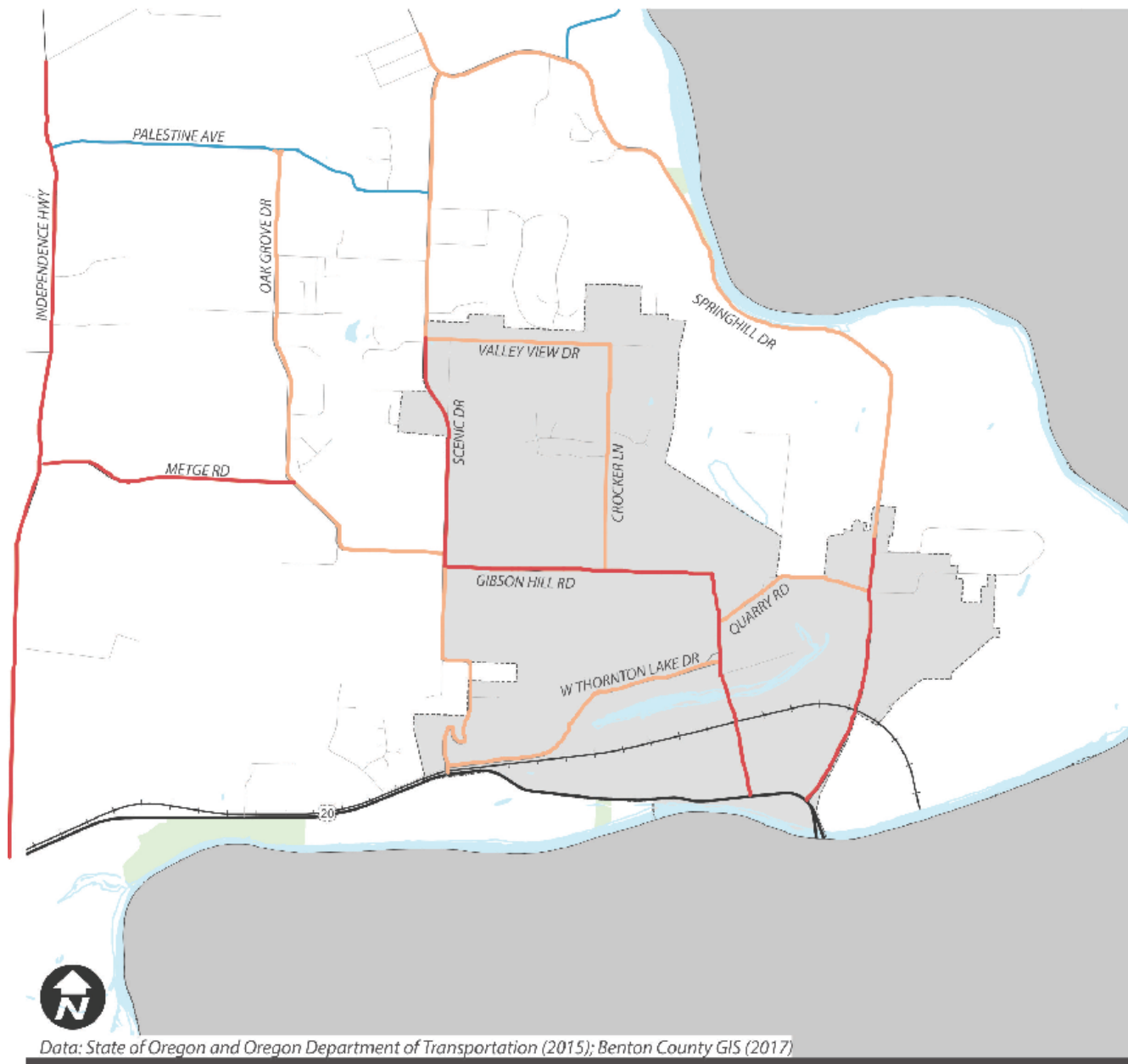
Data: State of Oregon and Oregon Department of Transportation (2015); Benton County GIS (2017)

**Legend**

- - Principal Arterial
- - Minor Arterial
- - Major Collector
- - Minor Collector
- - Local Roadway
- ++ - Railroad
- - River
- - Park
- - Airport
- - Urban Growth Boundary
- - City Limits

**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN

Figure 9. Street Functional Classification, North Albany Sub-Area



Legend

- - Principal Arterial
- - Minor Arterial
- - Major Collector
- - Minor Collector
- - Local Roadway
- + + - Railroad
- - River
- - Park
- - Airport
- - Urban Growth Boundary
- City Limits

**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN

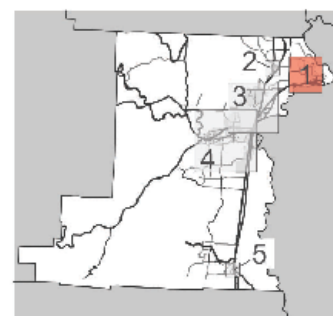
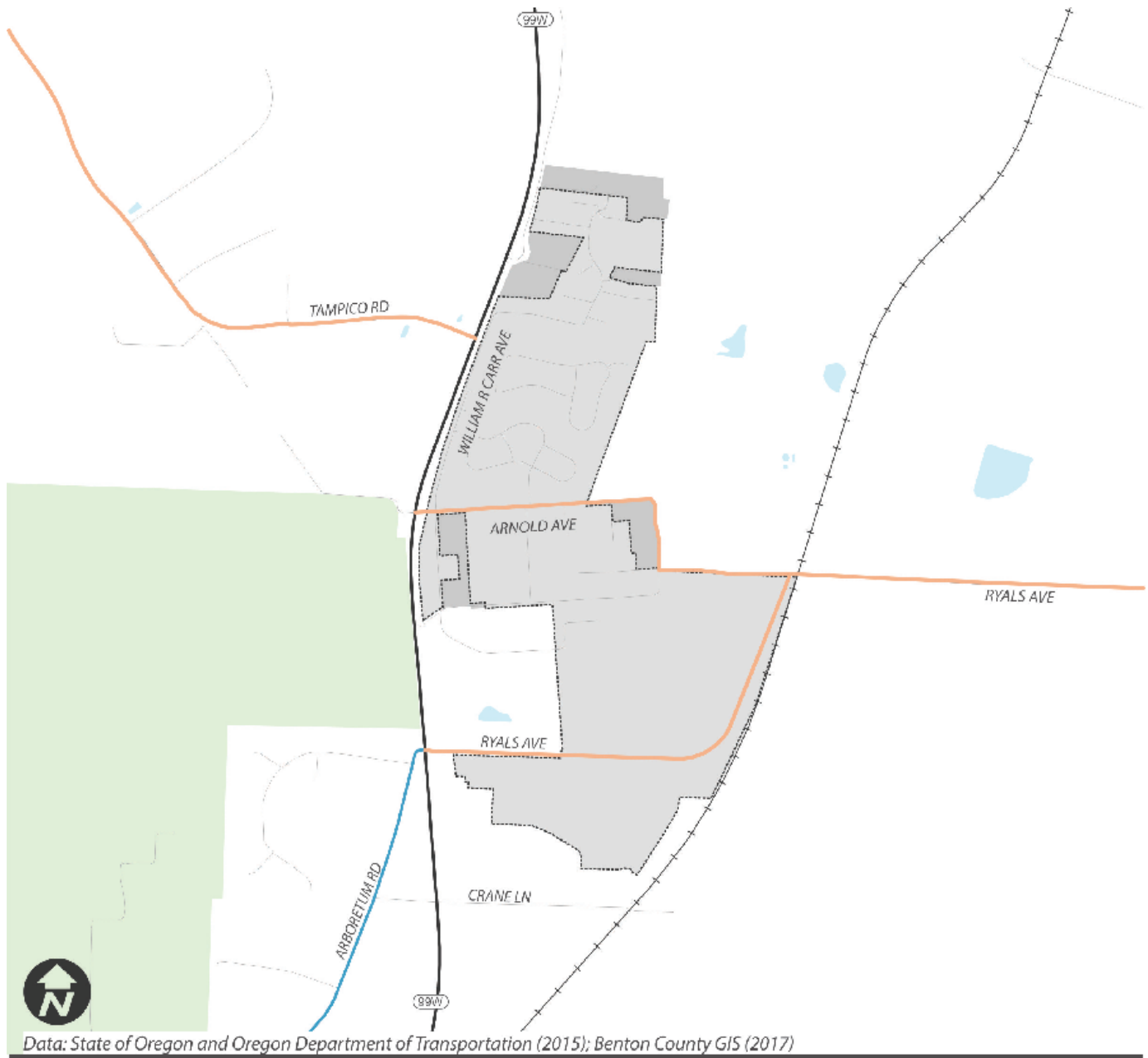




Figure 10. Street Functional Classification, Adair Village Sub-Area



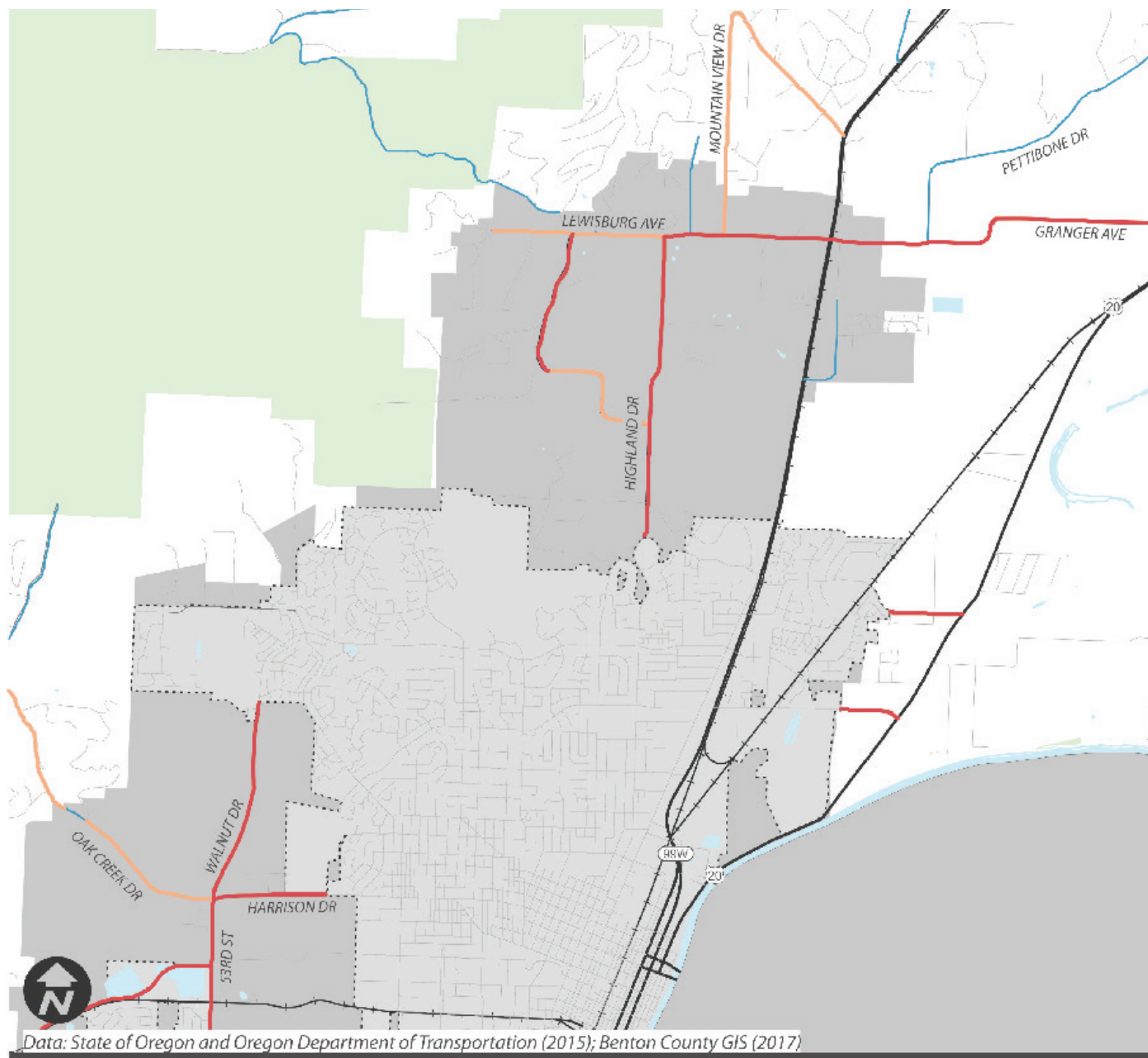
**Legend**

- - Principal Arterial
- - Minor Arterial
- - Major Collector
- - Minor Collector
- - Local Roadway
- ++ - Railroad
- - River
- - Park
- - Airport
- - Urban Growth Boundary
- - City Limits

**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN



Figure 11. Street Functional Classification, Corvallis-Lewisburg Sub-Area



**Legend**

- - Principal Arterial
- - Minor Arterial
- - Major Collector
- - Minor Collector
- - Local Roadway
- ++ - Railroad
- - River
- - Park
- - Airport
- - Urban Growth Boundary
- - City Limits

**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN

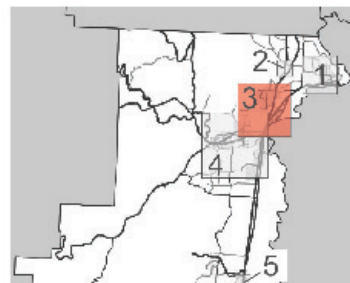
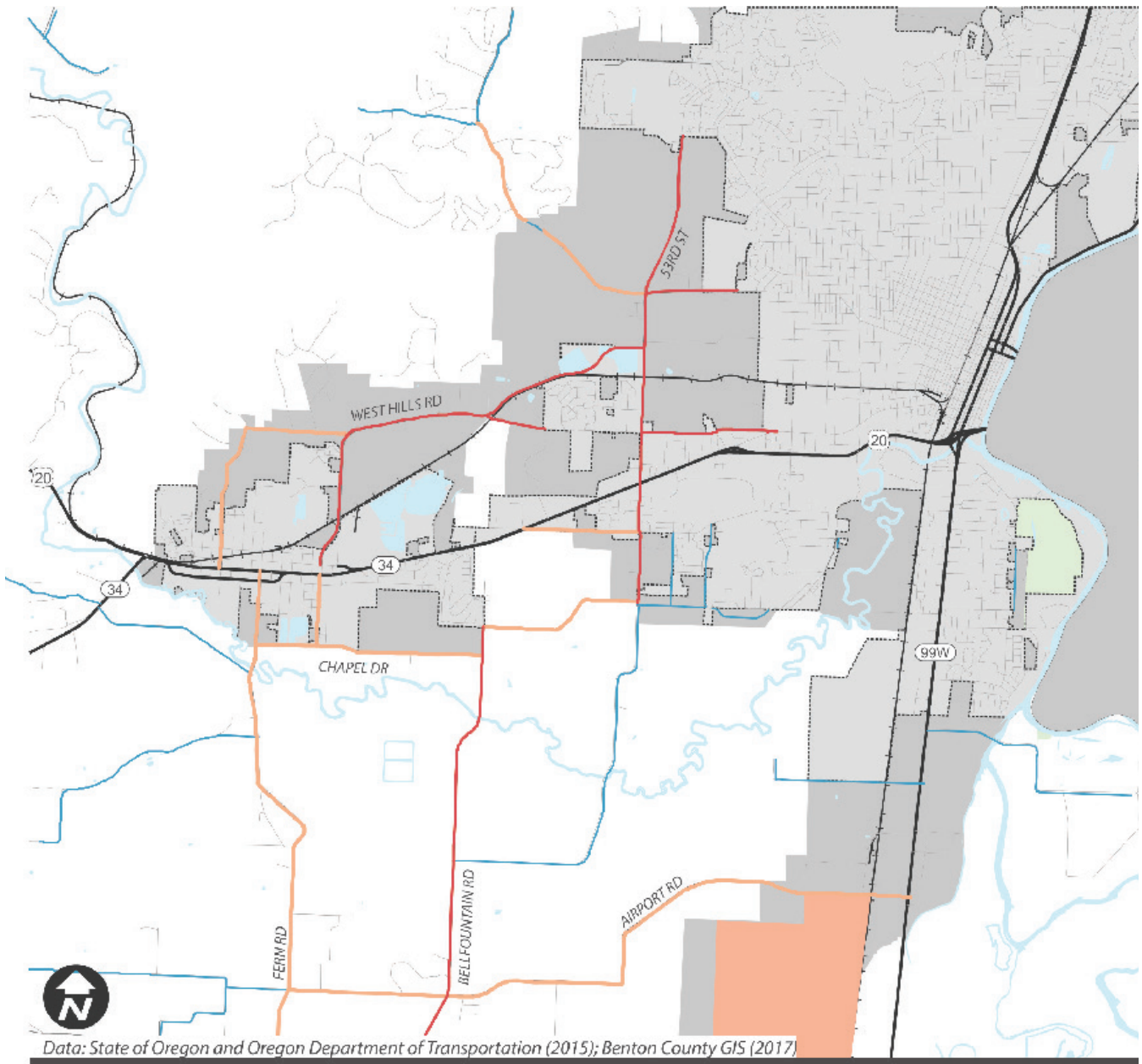


Figure 12. Street Functional Classification, South Corvallis-Philomath Sub-Area



**Legend**

- - Principal Arterial
- - Minor Arterial
- - Major Collector
- - Minor Collector
- - Local Roadway
- ++ - Railroad
- - River
- - Park
- - Airport
- - Urban Growth Boundary
- - City Limits

**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN

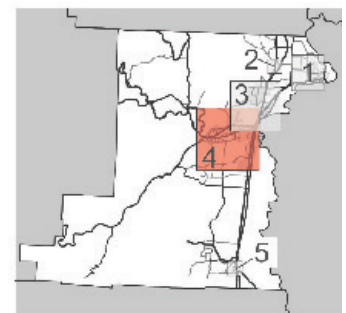
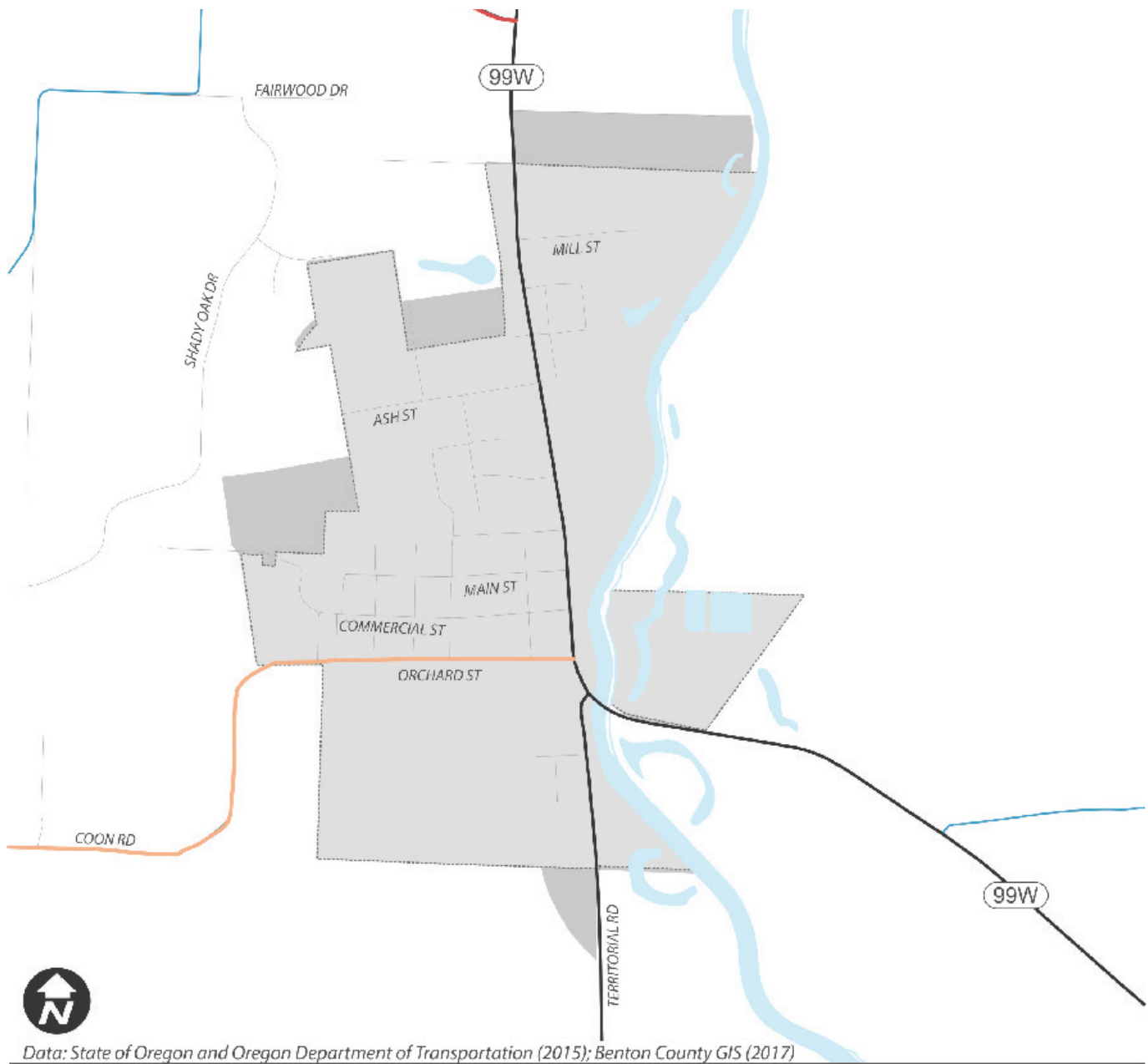


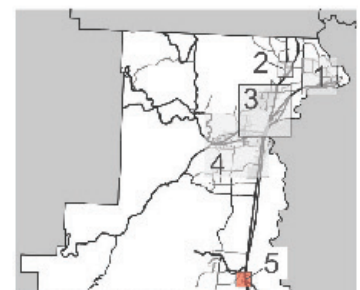
Figure 13. Street Functional Classification, Monroe Sub-Area



**Legend**

- - Principal Arterial
- - Minor Arterial
- - Major Collector
- - Minor Collector
- - Local Roadway
- ++ - Railroad
- - River
- - Park
- - Airport
- - Urban Growth Boundary
- - City Limits

**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN





## Freight Routes

Roadways that are designated as freight routes are recognized as being appropriate and commonly traveled corridors for freight vehicles. Freight routes are often used to facilitate access to industrial areas or divert heavy vehicles around an urban center. Decisions affecting maintenance, operation, or construction on a designated freight route must address potential impacts on the safe and efficient movement of truck traffic. However, the intent is not to compromise the safety of other street users to accommodate truck traffic, especially in areas where many conflicts may be present. In such areas, the operational objectives of the street should prioritize safe travel for vulnerable users (e.g., people walking and biking) while continuing to accommodate passage by truck traffic.

Freight traffic coming from Benton County includes timber and agricultural uses. Studies that evaluate freight within Benton County should further investigate the origins and destinations of freight traffic. These studies will include strategies to mitigate the potential impacts while also providing an economically competitive transportation network. Such projects include: CC-158, which is meant to study the routing of freight through North Albany specifically along Springhill Drive and Independence Highway, and CC-155, which is meant to study the routing of freight south of Philomath and Corvallis along Fern Road and Bellfountain Road.

On roads where freight routes are designated the County will evaluate existing and parallel active transportation infrastructure to preserve or create adequate separation between freight vehicles and people walking and biking.

The City of Philomath has designated West Hills Road (Reservoir Avenue to 19th Street), 19th Street (West Hills Road to Main Street), Industrial Way (including the proposed extension), 13th Street, Chapel Drive, and Bellfountain Road (in City limits) as truck routes as part of the 2018 Philomath TSP update.<sup>1</sup>

The County has designated an Over Dimension Vehicle Route over Decker Road. However, at the time of this TSP update, there were no designated freight routes on County facilities. As part of this TSP update, the following corridors will be designated as County freight routes once improvements have been made to support freight traffic:

- Coffin Butte Road (Soap Creek Road to OR 99W)
- Camp Adair Road
- Independence Highway (County border to US 20)
- Decker Road
- Greenberry Road
- Llewellyn Road (Bellfountain Road to OR 99W)

ODOT has classified Corvallis-Newport Highway (US 20/OR 34), Pacific Highway West (OR 99W), and Corvallis-Lebanon Highway (OR 34) as freight routes and reduction review routes.<sup>2</sup> US 20 between Corvallis and Albany has also been designated as a reduction review route. Federal freight routes generally require 12-foot travel lanes. Reduction review routes are highways that require review of any proposed changes to determine if there will be a reduction of vehicle-carrying capacity.

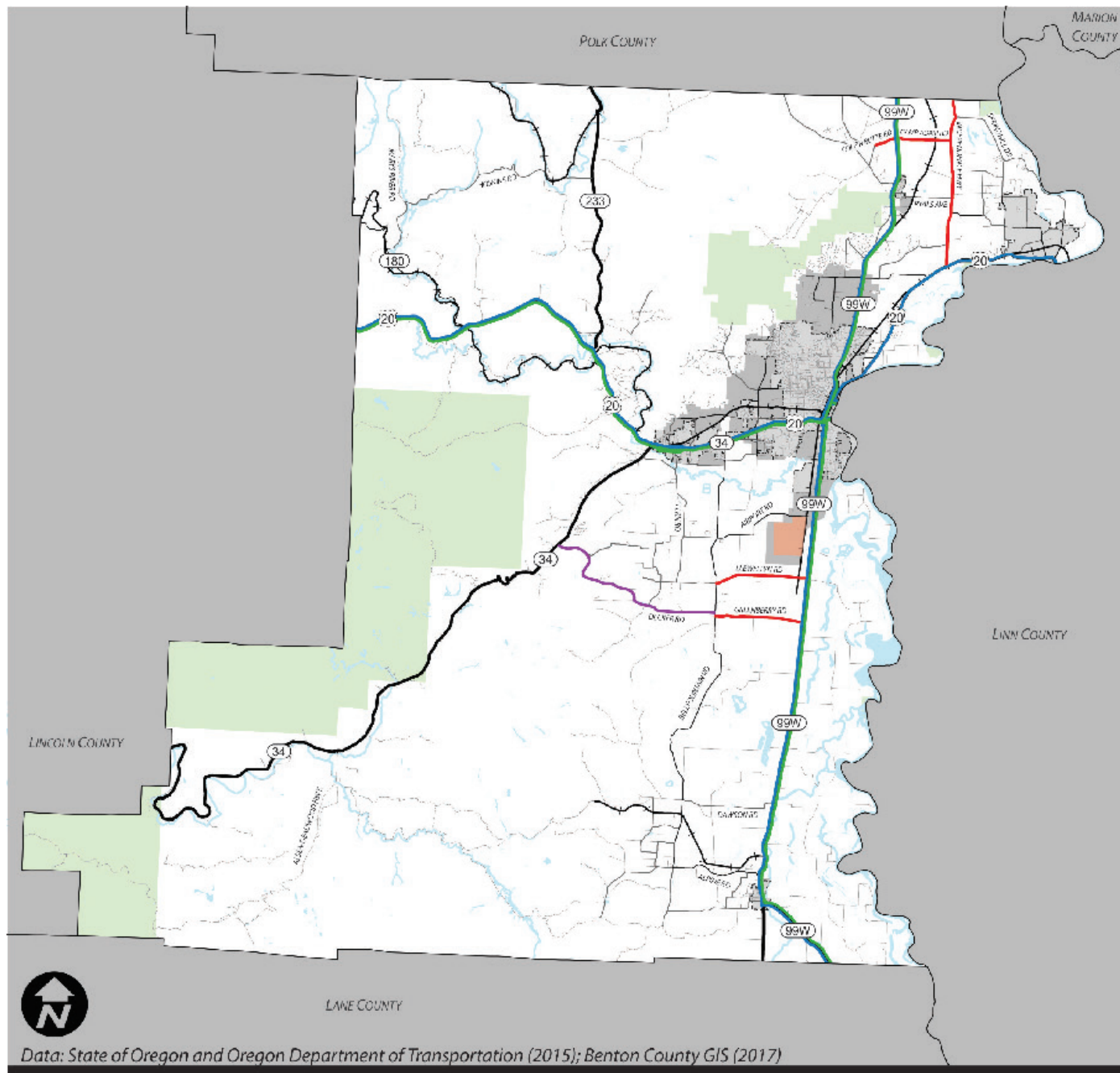
A map of the proposed County freight routes and existing State/Federal freight routes and reduction review routes is provided in Figure 14.

<sup>1</sup> Philomath Transportation System Plan, July 2018.

<sup>2</sup> Memorandum #4: Benton County Transportation Plan Update Task 2.2 Existing Transportation System Conditions and Deficiencies, November 6, 2017.



Figure 14. Proposed County Freight Routes



Data: State of Oregon and Oregon Department of Transportation (2015); Benton County GIS (2017)

**Legend**

- - Proposed County Freight Route
- - County Overwidth Vehicle Route
- - ODOT Reduction Review Route
- - ODOT Freight Route
- - Principal Arterial
- - Collector
- - Local Roadway
- ++ - Railroad
- - River
- - Park
- - Airport
- - Urban Growth Boundary
- City Limits

## Typical Roadway Cross-Section Standards

On each roadway cross-section, there are facilities that accommodate vehicles, bicycles, and pedestrians. The following sections detail elements that are a part of each roadway cross-section. County roadways within an UGB will include facilities consistent with the roadway design standards from the respective City's TSP.

### ROADWAY BICYCLE AND PEDESTRIAN FACILITIES

The basic design treatments used to accommodate bicycle travel include shared roadways, shoulder bikeways, bike lane, and pedestrian facilities. The previous TSP referenced a previous version of the Oregon Bicycle and Pedestrian Plan, Section II.1 as the standard to follow for bicycle and pedestrian facilities, except where the Benton County Development Code calls for a higher standard. The Oregon Bicycle and Pedestrian Plan has been recently updated.

The TSP update recommends using the following types of shared-use facilities for the appropriate situation. These facilities are based on the most recent definitions and from the Oregon Bicycle and Pedestrian Design Guide.<sup>1</sup>

- **Shared Roadway:** On a shared roadway, bicyclists and motorists share the same travel lane. A motorist will usually have to cross over into the adjacent travel lane to pass a bicyclist. Shared roadways are common on neighborhood streets and on rural roads and highways; however, shared roadways on highways are not desired. The treatments that enhance shared roadways for

bicyclists include a wide outside lane and bicycle boulevards. These facilities are most appropriate on roads with low speeds (up to 20 mph).

- **Shoulder Bikeway:** Paved roadway shoulders on rural roadways provide an area for bicycling, with few conflicts with faster moving motor vehicle traffic. Most rural bicycle travel is accommodated on shoulder bikeways. These facilities are most appropriate on roads with speeds of 40 mph or lower when average daily volumes exceed 8,000 vehicles. There is an inverse relationship between volume and speed – as speed increases, the appropriate volume of traffic decreases. While these facilities provide an opportunity for people to ride their bikes, community members expressed a desire to provide bicycle facilities separated from the roadway when feasible.
- **Bike Lane:** A portion of the roadway designated for use by bicyclists. Bike lanes are appropriate on urban arterials and major collectors. They may be appropriate in rural areas where bicycle travel and demand is substantial. Bike lanes must always be well marked to call attention to their use by bicyclists. Types of bike lanes include protected and buffered bike lanes. Bike lanes provide a similar degree of separation to a Shoulder Bikeway and are appropriate with similar speed and volume ranges.
- **Pedestrian Facilities:** Sidewalks, shared-use paths, and shoulder bikeways where no sidewalks exist all serve as pedestrian facilities. Generally, wide shoulders serve as pedestrian facilities in rural areas. The Oregon Bicycle and Pedestrian Design Guide provides a range of

<sup>1</sup> Oregon Bicycle and Pedestrian Design Guide, ODOT, 2011.

widths (2'-8') that are appropriate based on average daily traffic volume. This TSP follows those recommendations except that a minimum width of 4' should be used regardless of traffic volume. In unincorporated rural communities, where sidewalk would not normally be included in roadway cross-sections, sidewalk will be considered if desired by the local community.

Table 7 presents the typical cross-section standards for County roadways outside of UGBs. Within UGBs, County roads are subject to the respective City's roadway design standards. The new cross-section standards are generally consistent with the past roadway design standards, with the exception that

they are defined based on functional classification instead of average daily traffic (ADT).

The TSP update does not modify the design standards for State highways, which represent all principal arterials within the county. These roadways are subject to the design criteria in the State's Highway Design Manual.<sup>2</sup>

Typical cross-section standards for Benton County are illustrated in Figures 15 through 19 for County roadways outside of UGBs. The application of these standards is up to the judgment of the County Engineer.

**Table 7. Typical Roadway Cross-Section Standards**

	Residential Local	Primary Local	Minor Collector Standard	Major Collector Standard	Arterial Standard
<b>Functional Classification</b>	Local	Local	Minor Collector	Major Collector	Minor Arterial
<b>Projected ADT</b>	< 200	< 700	< 1000	< 2000	> 1000
<b>Projected DHV</b>	<30/Hour	<100/Hour	<100/Hour	<300/Hour	>300/Hour
<b>Min ROW</b>	50'	50'	60'	60'	80'
<b>Surface Width</b>	24'	20'	28'	32'	36'-72'
<b>Lane Widths</b>	10'	10'	10'	11'	12'
<b>Surface Material</b>	Gravel	Asphalt, Concrete, Oil Mat	Asphalt, Concrete	Asphalt, Concrete	Asphalt, Concrete
<b>Example Structure</b>	10" CAB	3" AC, 12" Aggregate	4" AC over 10" CAB	4" AC over 12" CAB	6" AC over 15" CAB
<b>Crushed Base Equivalent</b>	10"	18"	18"	20"	27"
<b>Shoulder</b>	2' Gravel	2' Gravel	4' Paved + 2' Gravel	5' paved + 2' gravel	6' paved + 2' gravel
<b>Max Grade</b>	15% Paved	15%	12%	10%	8%
<b>Min Curve Radius</b>	200'	250'	500'	760'	800'
<b>Design Speed</b>	20 mph	30mph	45 mph	45 mph	50 mph

<sup>1</sup> HSO = Hard Surface Option

<sup>2</sup> Highway Design Manual, ODOT, 2012. [https://www.oregon.gov/ODOT/HWY/ENGSERVICES/Pages/hwy\\_manuals.aspx](https://www.oregon.gov/ODOT/HWY/ENGSERVICES/Pages/hwy_manuals.aspx).

Figure 15. Minor Arterial Standard Cross-Section

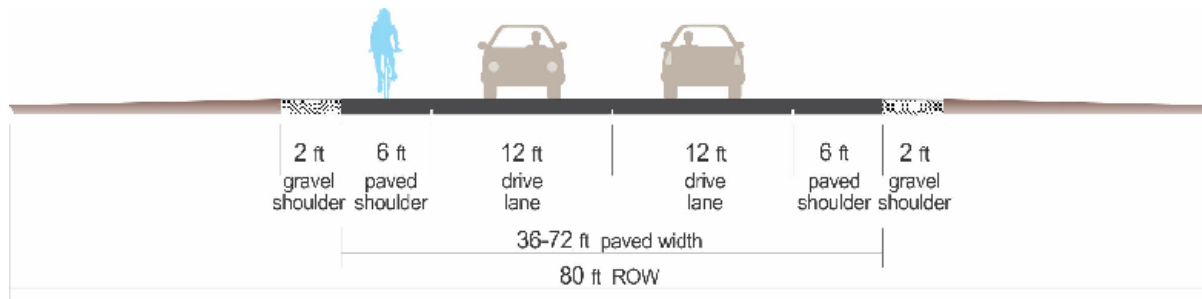


Figure 16. Major Collector Standard Cross-Section

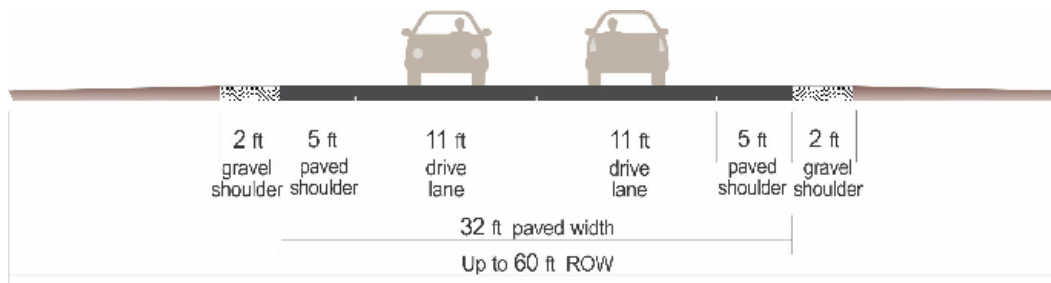


Figure 17. Minor Collector Standard Cross-Section

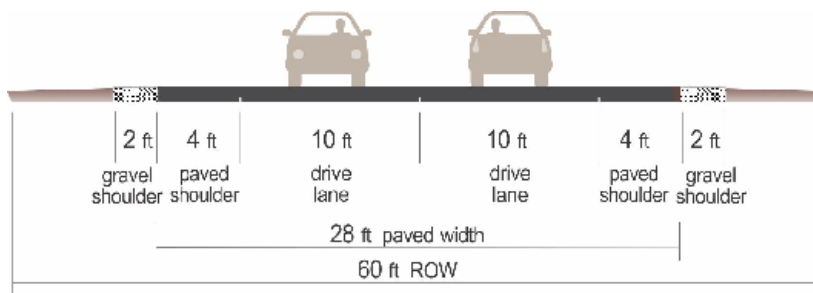




Figure 18. Primary Local Cross-Section

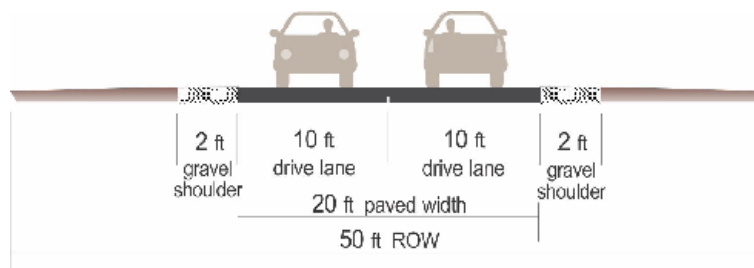
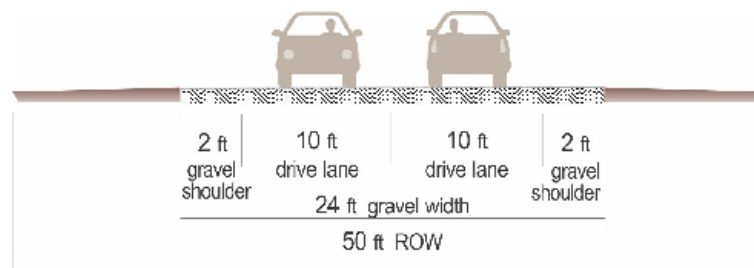


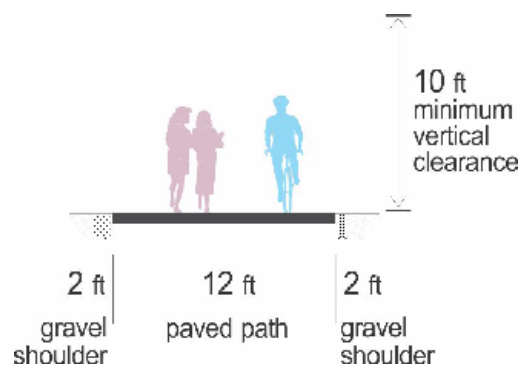
Figure 19. Residential Local Road Cross-Section



## SHARED-USE PATH

A shared-use facility is separated from motor vehicle traffic by an open space or barrier, either within the road right-of-way or within an easement. These are typically used by pedestrians, joggers, skaters, and bicyclists as two-way facilities. Shared-use paths are appropriate in corridors not well served by the street system (if there are few intersecting roadways) to create short cuts that link destination and origin points, and as elements of a community trail plan. Shared-use facilities may sometimes be the preferred option over shoulder bikeways.

Figure 20. Paved Shared-Use Path



Shared-use paths provide off-roadway facilities for walking and biking travel. Depending on their location, they can serve both recreational and transportation needs. Shared-use path designs vary in surface types and widths. Hard surfaces are generally better for bicycle travel. However, the use of concrete to provide a hard surface should be avoided. Concrete is expensive and cyclists do not prefer it. Widths need to provide ample space for both walking and biking and should be able to accommodate maintenance vehicles.

A paved shared-use path should be 12 feet wide (see Figure 20). The County Engineer may reduce the width of the typical paved shared-use path to a minimum of

eight feet at their judgement especially in constrained areas (e.g., steep, environmentally sensitive, historic, or previously developed areas).

## ENHANCED PEDESTRIAN CROSSING TREATMENT GUIDELINES

Enhanced pedestrian crossing treatments are intended to make it easier and safer for non-motorized travelers to cross roads, especially those where high traffic volumes and speeds create a barrier-effect. Treatment alternatives vary depending on the context of the crossing location and include median refuge islands, curb extensions, improved street lighting, and several types of signalized enhancements. These treatments may be used in combination. For example, the median refuge island and street lighting could be stand-alone improvements or combined with a pedestrian traffic signal enhancement.

Roadways with high traffic volumes and/or speeds in areas with nearby transit stops, residential uses, schools, parks, shopping and employment destinations often require enhanced street crossings. The County may consider adding enhanced pedestrian crossing treatments to increase protection where warranted by the combination of pedestrian demand volumes and cross traffic speeds and volumes. The National Cooperative Highway Research Program (NCHRP) Report 562, *Improving Pedestrian Safety at Unsignalized Crossings*, provides technical procedures for making this assessment.

Enhanced pedestrian crossings on State highways are required to be reviewed and approved by ODOT.

## Access Spacing Standards

Access management is a broad set of techniques that balance the need to provide for efficient, safe, and timely travel with the ability to allow access to individual destinations. Appropriate access management standards and techniques can reduce congestion and crash rates, and may lessen the need for construction of additional roadway capacity. The spacing of street and driveway and intersections on a roadway is a key element of access management.

The access standards in the 2001 Benton County TSP are replaced with the following that specifically address County facilities. Access spacing standards for State highways are determined by ODOT and are defined in the Oregon Highway Plan, OAR 734-051, and ODOT's Highway Design Manual.

Minimum public roadway intersection and private access spacing standards for County-owned roadways outside of an UGB are identified in Table 8 below. New roadways or redeveloping properties must comply with these standards to the extent practical, as determined by County staff.

As the opportunity arises through redevelopment, roadways not complying with these standards could improve with strategies such as shared access points, access restrictions (median or channelization islands), or closure of unnecessary access points, as feasible.

Where ADT's are less than 400, the road is classified as low volume road and circular driveways may be allowed. To the maximum extent practicable, the approaches shall meet minimum access spacing requirements. Any deviation from access spacing requirements shall be reviewed and acted upon by the County Engineer.

The access spacing and roadway standards of the respective City will be applied to County roadways within an UGB.

**Table 8. Minimum Roadway and Access Spacing Standards**

Posted Speed or Travel Speed*	Minor Arterial	Major Collector	Minor Collector	Resource Collector	Local Roadway
> 50 mph	475 feet	475 feet	325 feet	100 feet	100 feet
40 & 45 mph	400 feet	400 feet	325 feet	100 feet	100 feet
30 & 35 mph	275 feet	275 feet	220 feet	100 feet	100 feet
< 25 mph	200 feet	200 feet	150 feet	100 feet	100 feet

*\*County staff shall determine the travel speed for roadways without a posted speed. An applicant for access may submit a speed study completed by an Oregon certified engineer or other professional with appropriate expertise, to be considered and approved by the County, if there is disagreement with the County speed determination.*

## Mobility Standards

Prior to this TSP update, Benton County had no mobility standards for County facilities. These tools provide a metric for assessing the impacts of new development on the existing transportation system and for identifying where capacity improvements may be needed to sustain the transportation system as growth and development occur.

Two methods to gauge intersection operations include volume-to-capacity (v/c) ratios and level of service (LOS). Benton County Comprehensive plan policy and ODOT use the first method. County engineering practice has used the second method.

- **Volume-to-capacity (v/c) ratio:** A v/c ratio is a decimal representation (between 0.00 and 1.00) of the proportion of capacity that is being used at a turn movement, approach leg, or intersection. The ratio is the peak hour traffic volume divided by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. A ratio approaching 1.00 indicates increased congestion and reduced performance.
- **Level of service (LOS):** LOS is a “report card” rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay is excessive and demand exceeds capacity, typically resulting in long queues and delays.

All roadways and intersections owned by Benton County must operate at or below the following mobility targets. Henceforth Benton County traffic capacity analysis will be changed from level of service (LOS) to volume/capacity (v/c) ratio.<sup>1</sup> A local agency may choose to apply their adopted mobility targets to County-owned roadways in an UGB, given that they do not allow for a lesser degree of mobility.

The new Benton County mobility targets are presented below for each type of intersection control that may apply.

- **Signalized, All-way Stop, or Roundabout Controlled Intersections:** The intersection must operate with a volume to capacity (v/c) ratio not higher than 0.85 during the highest one-hour period on an average weekday (typically, but not always the evening peak period between 4 p.m. and 6 p.m. during the spring or fall).
- **Two-way Stop and Yield Controlled Intersections:** All intersection approaches serving more than 20 vehicles during the highest one-hour period on an average weekday (typically, but not always the evening peak period between 4 p.m. and 6 p.m. during the spring or fall) shall operate with a v/c ratio not higher than 0.90. Mobility targets do not apply to approaches at intersections serving 20 vehicles or fewer during the peak hour.

All roadways and intersections under the jurisdiction of ODOT must operate at the required mobility targets presented in the 1999 Oregon Highway Plan.<sup>2</sup> If alternate mobility targets have been approved, they supercede the targets in the

<sup>1</sup> Benton County Comprehensive Plan, 12.1.17, Benton County, 2007.

<sup>2</sup> Oregon Highway Plan, ODOT, 1999, Last amended March 2018.



## CHAPTER 5

# Projects



## Planned Transportation System

Tables 9 through 17 and Figures 21 through 26 describe the solutions for Benton County's transportation system through the year 2040. Solutions are presented by geographic sub-areas of the county and for countywide projects. The project categories include the following types (order does not imply priority):

- **Connectivity and Congestion (CC):** Projects to improve connectivity and mobility throughout the county. There are 107 projects to improve driving conditions that would cost an estimated \$947 million to complete.
- **Safety (S):** Projects that primarily improve safety throughout the county. There are 41 identified safety projects that would cost an estimated \$136 million to complete.
- **Active Transportation (AT):** Projects to provide seamless connections throughout the county for non-motorized travel. There are 30 walking and biking projects that would cost an estimated \$60 million to complete. A number of projects benefit both walking and biking modes, particularly shoulder widening or shared-use path projects.
- **Transit (T):** Projects to enhance the quality and convenience for passengers. A total of 27 transit projects was identified that would have an annual operating cost of approximately \$3 million.

Each solution is assigned a primary funding source and responsible lead agency for planning purposes; however, these designations do not create any obligation for funding. A few important comments about each funding source:

- **City projects** – Local cities of Adair Village and Monroe have no discretionary fund to advance project design and construction. These cities could consider and implement transportation SDC fee programs to provide funding for projects that expand the system to serve growth, or, potentially, new development could contribute to these facility improvements as a condition of approval based on their local development code requirements.
- **County projects** – The County has limited discretionary funding available to advance project design and construction. The County could use the project information to apply for grants or other funding mechanisms to fund these projects.
- **State projects** – The State uses local TSPs to identify project needs. The County could also use the project information to apply for grants or other funding mechanisms to potentially advance funding for these projects. The State has made no commitment to date; however, they could opt to allocate discretionary funds in the future.

The County can, however, choose to use its funds to help support City or State projects thus expediting the timeline on those projects the County would like prioritized.



Multimodal solutions were identified to address the existing and future transportation needs reported in Chapter 2. Initial candidate projects were reviewed and refined by County staff and community members through the public process to produce a master list of improvements for Benton County. In general, the projects are organized by travel mode; some address multiple modes.

The potential solutions were evaluated to assess how well they satisfied the community transportation goals and objectives. For more information about the evaluation process, refer to Chapter 3, TSP Framework. The resulting solutions were prioritized into three groups – High, Medium and Low priority based on their evaluation scores.

The remainder of this chapter presents the transportation plan solutions in tabular and map formats. Each project includes a description, the likely funding source, a preliminary cost estimate, and the project priority. This is a master list of all projects regardless of cost, priority or the likelihood of being constructed within the planning horizon.

The project priorities identified reflect those established at the time this TSP was updated. Implementation of the TSP will involve on-going reevaluation of local priorities. This process will consider the goals, objectives, and evaluation criteria established in this plan, but can also incorporate changes in direction provided by the Board of Commissioners and new policies adopted in the future.

The project descriptions in this TSP are general in nature, identifying project type, general location, and intended function. As each project is funded, it will undergo a rigorous scoping process involving preliminary engineering design, alternatives evaluation, and public outreach. This process will transform the general project descriptions into detailed plans that allow potential issues to be appropriately addressed so the best solutions can be implemented based on current and complete information. Any proposed projects effecting State highways are subject to ODOT approval.

During the process of developing projects, there was a recognized need to improve connectivity between the OR 99W corridor and southwest Corvallis. Past solutions considered included improving existing County roads or extending Kiger Island Drive from OR 99W to 53rd Street. While no clear solution was identified for this TSP update, Benton County and the City of Corvallis have expressed an interest in continuing to explore feasible alternatives.



Table 9. Project Index

Figure	Table	Project ID	Description
25	14	AT-04	19th Street Shared-use Path
25	14	AT-05	Chapel Drive Shared-use Path
25	14	AT-06	Bellfountain Road Shared-use Path
25	14	AT-13	N 9th Street Hill Improvements
22	11	AT-27	Corvallis to Albany Shared-Use Path (North Albany)
22	11	AT-33	US 20 Bike lanes (North Albany)
22	11	AT-45	Albany to Corvallis Shared-use Path River Crossing
25	14	AT-48	Philomath Boulevard (US 20/OR 34)
25	14	AT-61	Bald Hill Farm Trail
24	13	AT-108	OR 99W Circle to Elks shared-Use Path
21	10	AT-119	OR 99W Alpine Road to Alpine Cut-Off Shared-Use Path
26	15	AT-120	OR 99W Alpine Cut-off to Kelly Street Shared-Use Path
26	15	AT-122	Monroe Cross Country Shared-Use Path
26	15	AT-125	Orchard Street/6th Street Intersection Improvements
25	14	AT-149	Country Club Drive Biking Improvements
21	10	AT-152	OR 34 Shared-use path
21	10	AT-154	Kings Valley Highway Mobility Improvements Study
24	13	AT-162	Corvallis to Albany Shared-Use Path
23	12	AT-168	Vandenberg Avenue/OR 99W Enhanced Roadway Crossing
26	15	AT-177	Orchard Street Modernization
21	10	AT-178	Blodgett Road Safe Routes to School Shared-use Path
21	10	AT-200	Airport Rd to Alpine Rd Shared-use Path
22	11	AT-209	Metge Avenue Active Transportation Improvements
22	11	AT-220	Oak Grove Drive Bike Lanes
25	14	AT-232	Oak Creek Drive Signing Improvements
21	10	AT-233	Bellfountain Rd Shared-use Path
25	14	AT-234	South Corvallis Shared-use Path
24	13	AT-235	Corvallis-Lewisburg Shared-use Path
21	10	AT-236	Lewisburg-Adair Village Shared-use Path
-	10	AT-256	Bicycle Route Identification, Wayfinding, and Mapping
25	14	CC-03	Airport Avenue Modernization
25	14	CC-07	13th Street Modernization
25	14	CC-08	Extend Clemens Mill to West Hills

Table 9. Project Index, *Continued*

Figure	Table	Project ID	Description
25	14	CC-09	US20/OR34 Freight Traffic Intersection Improvement
25	14	CC-11	US 20/OR 34 Widening
25	14	CC-12	US 20 / OR 34 & 19th St Intersection Improvement
25	14	CC-14	N 9th Street Modernization
25	14	CC-15	West Hills Road Modernization
25	14	CC-16	N 19th Street Modernization
22	11	CC-29	US 20/Scenic Drive Intersection Improvement
22	11	CC-31	Gibson Hill Road Modernization
22	11	CC-34	Springhill Drive Widening
22	11	CC-35	Springhill Drive Modernization
22	11	CC-36	US 20 Widening (North Albany)
22	11	CC-37	Scenic Drive Modernization
22	11	CC-38	Crocker Lane Modernization
22	11	CC-39	Valley View Drive Modernization
22	11	CC-40	West Thornton Lake Drive Modernization
22	11	CC-41	Quarry Road Modernization
22	11	CC-42	US 20 Super-elevation and Widening Correction
22	11	CC-44	US 20/North Albany Rd Intersection Improvement
25	14	CC-46	US 20/OR 34 Corridor Optimization
24	13	CC-47	Van Buren Bridge (New Construction)
25	14	CC-49	OR 99W/US 20/OR 34 Ramps
25	14	CC-50	US 20/OR 34 Capacity Enhancements
24	13	CC-51	North Corvallis Bypass
25	14	CC-52	53rd Street/US 20/OR 34
24	13	CC-53	OR 99W/Lester Ave Extension Signal
25	14	CC-54	OR 99W/Airport Ave Traffic Control
25	14	CC-57	OR 34/Bypass Interchange
25	14	CC-58	OR 34 Overpass (OR 99W) Clearance
24	13	CC-59	OR 99W/Lewisburg Intersection Improvement
25	14	CC-60	West Hills Road Modernization
25	14	CC-62	Herbert Ave Extension
24	13	CC-63	New N-S 6 Neighborhood Collector between Lester Ave and Crescent Valley Drive
24	13	CC-64	New N-S 5 Neighborhood Collector between Lewisburg Drive and Spring Meadow Drive Extension
24	13	CC-65	Spring Meadow Drive Extension



Table 9. Project Index, *Continued*

Figure	Table	Project ID	Description
24	13	CC-66	New N-S 4 Neighborhood Collector between Crescent Valley Drive and Spring Meadow Drive
24	13	CC-67	New N-S 3 Neighborhood Collector between Lewisburg Ave and Frazier Creek Drive Extension
24	13	CC-68	West Elliot Circle Construction
25	14	CC-69	Harrison Boulevard Modernization
24	13	CC-70	New N-S 2 Collector parallel to, and east of, Highland Drive
24	13	CC-71	Frazier Creek Drive Extension
24	13	CC-72	Lester Ave Extension
24	13	CC-73	New E-W 1 Collector from Highland Drive to Lester Ave Extension
25	14	CC-74	53rd Street Railroad Crossing
25	14	CC-75	Crystal Lake Drive Extension
24	13	CC-76	Lewisburg Ave Modernization
24	13	CC-77	Highland Drive Modernization
25	14	CC-78	53rd Street (south) Modernization
24	13	CC-79	Raider Way Extension
24	13	CC-80	Shasta Drive Extension
24	13	CC-81	New N-S 9 Collector north of Lester Ave Extension
25	14	CC-82	Airport Ave Extension
25	14	CC-83	New Roadway Kiger Island from OR 99W to West Corvallis UGB
24	13	CC-84	Crescent Valley Drive Modernization
24	13	CC-85	Lester Ave Modernization
25	14	CC-86	53rd Street (north) Modernization
24	13	CC-87	Crescent Valley Drive/Highland Drive Intersection Improvement
24	13	CC-88	Satinwood Street Ext./Lester Ave Ext. Intersection Improvement
24	13	CC-89	Frazier Creek Drive/Crescent Valley Drive Intersection Improvement
25	14	CC-90	Reservoir Ave/53rd Street Intersection Improvement
24	13	CC-91	Highland Drive/Lester Ave Intersection Improvement
24	13	CC-92	Highland Drive/Frazier Creek Intersection Improvement
24	13	CC-93	Lewisburg/West Elliot Circle Intersection Improvement
25	14	CC-94	53rd Street/Country Club Intersection Improvement
24	13	CC-95	Elliot Circle/Frazier Creek Intersection Improvement
25	14	CC-109	US20/OR34-Alesea Highway Intersection Improvement
25	14	CC-112	Chapel Dr Modernization
25	14	CC-113	Crystal Lake Drive Modernization
25	14	CC-114	OR 99W/Kiger Island Drive Intersection Improvement

Table 9. Project Index, *Continued*

Figure	Table	Project ID	Description
23	12	CC-116	OR 99W/Arnold Avenue Intersection Improvement
23	12	CC-117	OR 99W/Ryals Avenue Intersection Improvement
21	10	CC-128	US 20/Granger Road Intersection Improvements
21	10	CC-129	US 20/Independence Highway Intersection Improvement
22	11	CC-130	Gibson Hill Road/Scenic Drive/Oak Grove Drive Intersection Improvement
24	13	CC-131	US 20 Corridor (Corvallis to Albany) Improvement Study
22	11	CC-133	Crocker Lane/Gibson Hill Road Intersection Improvement
24	13	CC-135	OR 99W Widening (North Corvallis)
25	14	CC-136	OR 99W Widening (South Corvallis)
25	14	CC-137	West Hills Road/Reservoir Road Intersection Improvements
26	15	CC-138	OR 99W/Orchard Street Intersection Improvements
25	14	CC-142	Airport Avenue Widening
21	10	CC-155	Bellfountain/Fern Freight Route Study
22	11	CC-158	Springhill Drive/Independence Highway Freight Study
21	10	CC-167	Greenberry Road Widening
23	12	CC-179	OR 99W Streetscape Study
21	10	CC-213	Hubbard Road Bridge
22	11	CC-214	US 20 Ellsworth St Bridge
25	14	CC-216	Campus Way Covered Bridge
21	10	CC-219	Starr Creek Rd Extension
21	10	CC-221	Independence Highway Widening
21	10	CC-222	Camp Adair Road Widening
21	10	CC-223	Coffin Butte Road Widening
21	10	CC-225	Decker Rd Widening
21	10	CC-226	Llewellyn Road Widening
23	12	CC-227	Ryals Ave Modernization
22	11	CC-228	Ryals Ave/Independence Hwy Intersection Improvement
21	10	CC-229	OR 99W/Llewellyn Rd Intersection Improvements
-	10	CC-231	OR 99W Passing Lane Study
21	10	CC-241	Territorial Hwy Widening
26	15	CC-243	Riverside District Master Plan
25	14	CC-244	OR 99W South Corvallis Refinement Study
24	13	CC-252	New E-W 5 Neighborhood Collector between Elliot Circle and East Corvallis UGB
24	13	CC-253	King Boulevard Extension

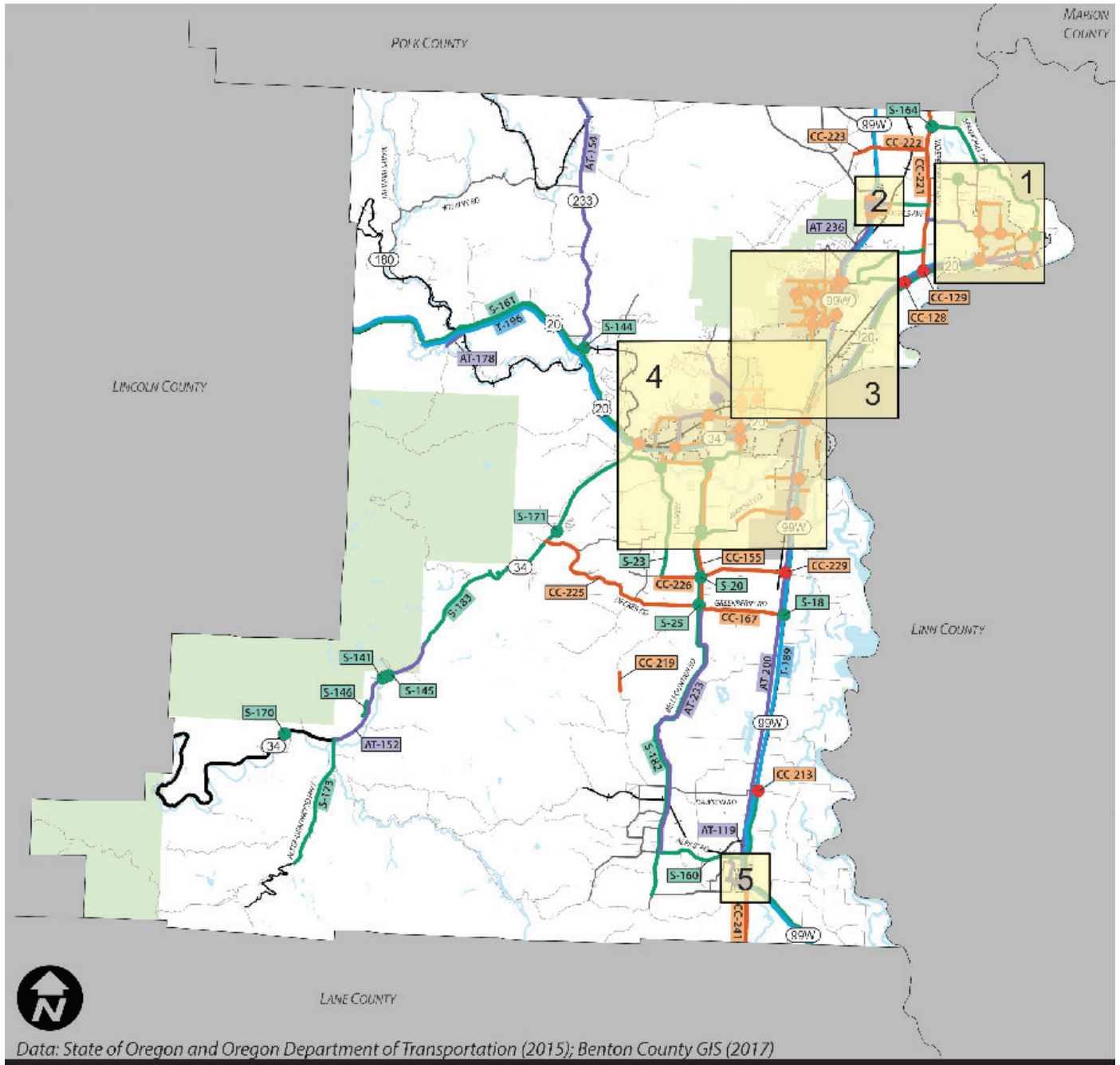
Table 9. Project Index, *Continued*

Figure	Table	Project ID	Description
24	13	CC-254	Satinwood Street Extension
-	10	CC-257	Electric Vehicle Charging Station Plan
25	14	S-17	S 19th Street Safety Improvements
21	10	S-18	Greenberry/OR 99W Intersection Improvements
21	10	S-20	Bellfountain Road/Llewellyn Road Intersection Improvements
25	14	S-21	Chapel Drive/Bellfountain Road Intersection Improvements
21	10	S-23	Improve "S" Curve alignment on Bellfountain Road
25	14	S-24	Bellfountain Road/Airport Avenue Intersection Improvements
21	10	S-25	Bellfountain Road near Muddy Creek School Safety Improvements
22	11	S-28	Palestine Ave/Oak Grove Drive Intersection Improvement
22	11	S-30	US 20/Springhill Dr Intersection Capacity Upgrade
25	14	S-56	Country Club Drive/69th Street/US 20/OR 34
25	14	S-134	US 20 Continuous Left Turn Lane
21	10	S-141	North Fork Alsea Road Bridge Replacement
25	14	S-143	Grange Hall Road/Fern Road Intersection Improvements
21	10	S-144	Wren Road/Highway 223 Intersection Improvement
21	10	S-145	Highway 34/Fish Hatchery Road Turn Lanes
21	10	S-146	Highway 34 Curve Safety Improvements
24	13	S-147	Granger Avenue Widening
26	15	S-150	OR 99W Widening (Dawson to Monroe Cemetary Rd)
21	10	S-160	Alpine Rd Widening
21	10	S-161	US 20 Widening (West)
24	13	S-163	OR 99W Widening (North)
21	10	S-164	Independence Highway/Springhill Drive Intersection Improvements
22	11	S-165	Quarry Road & Nebergall Loop/Springhill Drive Intersection Improvements
24	13	S-166	Granger Ave Safety Improvements
25	14	S-169	Fern Road Widening
21	10	S-170	OR 34/ Hayden Rd Intersection Improvements
21	10	S-171	OR 34 Roadway Departure Counter Measures
21	10	S-173	Alsea-Deadwood Highway Widening
21	10	S-182	Bellfountain Rd Widening (Coon to Greenberry)
21	10	S-183	OR 34 Widening
23	12	S-185	Ryals Ave Widening
22	11	S-210	Springhill Drive Roadway Departure Countermeasures

Table 9. Project Index, *Continued*

Figure	Table	Project ID	Description
24	13	S-211	US 20 Childrens Farm Home Two Way Left Turn Lane
22	11	S-212	US 20 Safety Upgrades
-	10	S-230	OR 99W Systemic Intersection Improvements
24	13	S-237	Pettibone Dr Safety Improvements
25	14	S-238	Grange Hall Rd Widening
25	14	S-239	Airport Ave Safety Improvements
25	14	S-240	Plymouth Dr Safety Improvements
26	15	S-242	OR 99W Widening (Territorial Hwy to Lane Co)
-	10	S-255	Safety Education and Outreach
21	10	T-189	OR 99W South - Phase 1
24	13	T-190	Corvallis Albany Special Transportation Fund Service
24	13	T-191	OR 99W North - Phase 1
24	13	T-192	99 Express Expansion
21	10	T-196	Coast to Valley Expansion

Figure 21. Benton County Transportation Projects, Countywide



Data: State of Oregon and Oregon Department of Transportation (2015); Benton County GIS (2017)

**Legend**

- S-00 - Safety Project
- AT-00 - Active Transportation Project
- CC-00 - Connectivity/Congestion Project
- T-00 - Transit Project
- - Principal Arterial
- - Collector
- - Local Roadway
- ++ - Railroad
- - River
- - Park
- - Airport
- - Urban Growth Boundary
- - City Limits

**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN



Table 10. Benton County Transportation Projects, Countywide

Project ID	Project Name	Cost	From	To	Agency	Priority
AT-119	OR 99W Alpine Road to Alpine Cut-Off Shared-Use Path	\$300,000	Alpine Road	Alpine Cut-off Road	ODOT	Medium
	Shared-use path upgrade; improve path surface to accommodate various users and improve drainage; add bollards, where feasible, project is subject to ODOT approval					
AT-152	OR 34 Shared-use path	\$15,500,000	Yewwood Lane	Alsea-Deadwood Highway	ODOT	High
	Shared-use path; project may construct shared-use path connecting Alsea and Lobster Valley with the central and northern parts of the county, project is subject to ODOT approval					
AT-154	Kings Valley Highway Mobility Improvements Study	\$200,000	US 20	North County line	ODOT	Medium
	Study; further study of the Kings Valley Highway is proposed to better understand the safety concerns and needs of all travel modes particularly freight and cyclists, project is subject to ODOT approval					
AT-178	Blodgett Road Safe Routes to School Shared-use Path	\$1,300,000	OR 180	Tum Tum Rd	ODOT	Medium
	Shared-use Path; project may provide shared-use path between the Blodgett Country Store and Blodgett Elementary School parallel to US 20, project is subject to ODOT approval					
AT-200	Airport Rd to Alpine Rd Shared-use Path	\$6,950,000	Alpine Rd	Airport Avenue	County	High
	Construct shared-use path between Airport Rd and Alpine Rd, the alignment of this route is to be determined but should connect with the proposed South Corvallis Shared-use Path					
AT-233	Bellfountain Rd Shared-use Path	16,650,000	Alpine Rd	Chapel Rd	County	High
	Shared-use path; new shared use path providing an active transportation corridor along Bellfountain Rd					
AT-236	Lewisburg-Adair Village Shared-use Path	\$3,450,000	Lewisburg Rd	Arnold Ave	ODOT	High
	Shared-use path; project may construct shared-use path within the OR 99W corridor and may use parallel facilities, project should connect with Corvallis-Lewisburg shared-use path, project is subject to ODOT approval					
AT-256*	Bicycle Route Identification, Wayfinding, and Mapping	\$200,000	-	-	County	Medium
	Coordinate with Bicycle Advisory Committee to identify County bicycle routes and provide wayfinding, mapping, and outreach					
CC-128	US 20/Granger Road Intersection Improvements	Funded	-	-	ODOT	High
	Intersection Improvement; project may install ITS Intersection Warning System and Left-turn acceleration lane, project is subject to ODOT approval					
CC-129	US 20/Independence Highway Intersection Improvement	Funded	-	-	ODOT	High
	Intersection improvement; project may install ITS Intersection Warning System and Left-turn acceleration lane, project is subject to ODOT approval					
CC-155	Bellfountain/Fern Freight Route Study	\$250,000	-	-	County	Medium
	Study; An identified freight route is needed south of Philomath, this study should investigate the impacts on automotive and freight traffic as well as cyclists and pedestrians of signing a freight route on one of these parallel roads					
CC-167	Greenberry Road Widening	\$6,100,000	Bellfountain Rd	OR 99W	County	High
	Project may improve Greenberry Rd to cross section standards, this improvement needs to occur before Greenberry Rd is designated as a County Freight Route					
CC-213	Hubbard Road Bridge	Funded	-	-	County/STIP	High
	Project may replace existing Hubbard Rd bridge with a pre-stressed concrete girder bridge					
CC-219	Sarr Creek Rd Extension	Funded	Hells Canyon Rd	Sarr Creek Rd	County/STIP	Medium
	Project may connect Sarr Creek Rd to Hells Canyon Rd to provide an emergency access route					
CC-221	Independence Highway Widening	\$11,400,000	US 20	Camp Adair Road	County	Medium
	Project may widen Independence Highway to cross-section standard before designation as a freight route					

\*The exact location of this improvement is not defined and is not shown on the map.

Table 10. Benton County Transportation Projects, Countywide, *Continued*

Project ID	Project Name	Cost	From	To	Agency	Priority
CC-222	Camp Adair Road Widening	\$2,300,000	OR 99W	Independence Hwy	County	High
	Project may widen Camp Adair Road to standard before designation as a freight route					
CC-223	Coffin Butte Road Widening	\$1,500,000	Soap Creek Rd	OR 99W	County	Medium
	Project may widen Coffin Butte Road to standard before designation as a freight route					
CC-225	Decker Rd Widening	\$9,900,000	OR 34	Bellfountain	County	Medium
	Project may widen Decker Road to standard before designation as a freight route					
CC-226	Llewellyn Road Widening	\$8,350,000	Fern	Bellfountain	County	High
	Project may widen to cross-section standards before designation as a freight route					
CC-229	OR 99W/Llewellyn Rd Intersection Improvements	\$95,000	-	-	ODOT	Medium
	Intersection Improvement, evaluate impact of identifying Llewellyn Rd as a County Freight Route, project may include a flashing amber beacon and or a northbound left turn lane, project is subject to ODOT approval					
CC-231*	OR 99W Passing Lane Study	\$250,000	-	-	ODOT	High
	Study, evaluate the benefit of passing lanes on selected segments of OR 99W south of Corvallis, project is subject to ODOT approval					
CC-241	Territorial Hwy Widening	\$5,250,000	Lane Co Line	OR 99W	County/ ODOT	Medium
	Widening Improvements; project may including widening to standard cross-section, project likely contingent on jurisdictional transfer to the County, project is subject to ODOT approval					
CC-257*	Electric Vehicle Charging Station Plan	\$150,000	-	-	County	Low
	Coordinate with regional partners to develop an electric vehicle charging station plan					
S-18	Greenberry/OR 99W Intersection Improvements	\$45,000	-	-	ODOT	Medium
	Intersection improvement; project may include flashing amber beacon, project is subject to ODOT approval					
S-20	Bellfountain Road/Llewellyn Road Intersection Improvements	\$5,000	-	-	County	Medium
	Intersection improvement; project may include rumble strips and paint stripes on pavement					
S-23	Improve "S" Curve alignment on Bellfountain Road	\$1,200,000	-	-	County	Medium
	Safety improvement; project may include widening Bellfountain Rd to cross-section standard near Llewellyn to improve safety and visibility					
S-25	Bellfountain Road near Muddy Creek School Safety Improvements	\$350,000	-	-	County	Medium
	Safety improvement; project may include widening to cross-section standard with rumble strips					
S-141	North Fork Alsea Road Bridge Replacement	\$350,000	-	-	ODOT	High
	Bridge replacement to address the identified issues of weight restrictions, poor condition, and structural inadequacies; project may include bridge replacement, project is subject to ODOT approval					
S-144	Wren Road/Highway 223 Intersection Improvement	\$1,200,000	-	-	ODOT	Medium
	Intersection improvement; project may include realignment to form a conventional "T" intersection, project is subject to ODOT approval					
S-145	Highway 34/Fish Hatchery Road Turn Lanes	\$5,000	-	-	ODOT	Medium
	Safety improvement; project may construct turn lanes to allow vehicles to slow and/or stop out of the through travel lane, project is subject to ODOT approval					

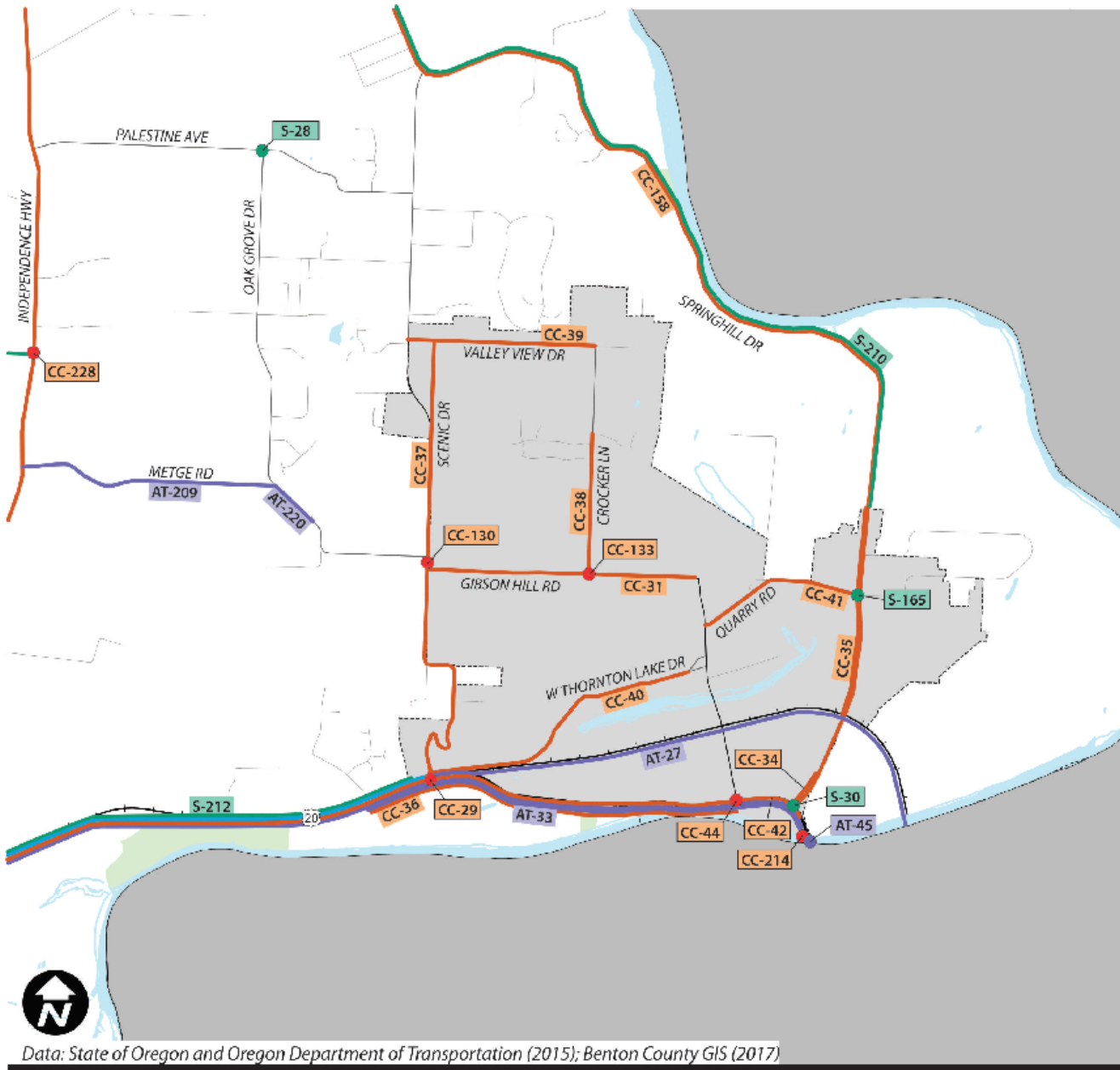
\*The exact location of this improvement is not defined and is not shown on the map.

Table 10. Benton County Transportation Projects, Countywide, *Continued*

Project ID	Project Name	Cost	From	To	Agency	Priority
S-146	Highway 34 Curve Safety Improvements	\$1,950,000	-	-	ODOT	Medium
	Safety improvement; project may realign curve because of history of crashes, project is subject to ODOT approval					
S-160	Alpine Rd/Alpine Cut-off Rd Widening	\$4,400,000	Bellfountain Rd	OR 99W	County	Medium
	Widening; project may improve to cross-section standard					
S-161	US 20 Widening (West)	\$30,100,000	OR 34	OR 180 Summit Hwy	ODOT	High
	Widening; project may widen shoulders to cross-section standard 8', this project improves safety for drivers and active transportation users, project is subject to ODOT approval					
S-164	Independence Highway/Springhill Drive Intersection Improvements	\$25,000	-	-	County	Medium
	Intersection Improvement; address fixed-object crash safety issues, project may include roadway departure improvements such as additional signs at intersection and rumble strips					
S-170	OR 34/ Hayden Rd Intersection Improvements	\$60,000	-	-	ODOT	Medium
	Intersection improvement; mitigate crash issues that are primarily fixed object crashes into ditches or animals, project may install roadway departure countermeasures such as rumble strips or bollards, project is subject to ODOT approval					
S-171	OR 34 Roadway Departure Counter Measures	\$95,000	-	-	ODOT	Medium
	Corridor safety improvement; mitigate crash issues that are primarily fixed object crashes into ditches or animals, project may install roadway departure countermeasures such as rumble strips or bollards, project is subject to ODOT approval					
S-173	Alea-Deadwood Highway Widening	\$6,550,000	OR 34	Prarie Mountain Rd	ODOT	Medium
	Widening; project may widen shoulders to cross-section standard 5' and may include jurisdictional transfer to the County, project is subject to ODOT approval					
S-182	Bellfountain Rd Widening (Coon to Greenberry)	\$22,300,000	Coon Rd	Greenberry	County	Medium
	Widening; project may widen to cross-section standard, this provides safety upgrades for drivers and active transportation users					
S-183	OR 34 Widening		Yewood Lane	US 20	ODOT	High
	Widening; project may widen shoulders to cross-section standard 6', this provides safety upgrades for drivers and active transportation users, shoulder width is based on ODOT rural highway classification, project is subject to ODOT approval					
S-230*	OR 99W Systemic Intersection Improvements	\$300,000	-	-	ODOT	High
	Intersection Improvements, systemic intersection improvements along OR99W south of Corvallis to improve safety and visibility, project may include flashing amber beacons and/or traffic diverters, project is subject to ODOT approval					
S-255*	Safety Education and Outreach	\$100,000	-	-	County	Low
	Provide safety education for Benton County residents, potential topics may include seat belt awareness, dangers of impaired driving, road hazards, and outreach to vulnerable users					
T-189	OR 99W South - Phase 1	\$100,000	Corvallis	Eugene	County/LTD	Medium
	In conjunction with ODOT public Transit and LTD, conduct a corridor evaluation and service development plan for regional public transit bus service on OR 99W between Corvallis and Eugene, with stops in Monroe; Junction City; and Eugene Airport					
T-196	Coast to Valley Expansion	\$70,000	Newport	Albany	County/ Lincoln County	Medium
	Review existing Coast to Valley Express schedule for potential of adjusting times to better match connections to HUT and Oregon Express shuttles; Amtrak; and Bolt Bus, possibly add bus and additional runs per day					

\*The exact location of this improvement is not defined and is not shown on the map.

Figure 22. Benton County Transportation Projects, North Albany, Sub-Area 1



**Legend**

- S-00 - Safety Project
- AT-00 - Active Transportation Project
- CC-00 - Connectivity/Congestion Project
- T-00 - Transit Project
- - Principal Arterial
- - Collector
- - Local Roadway
- ⊕ - Railroad
- - River
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- - Urban Growth Boundary
- ⊕ - City Limits

**BENTON COUNTY  
TRANSPORTATION SYSTEM PLAN**

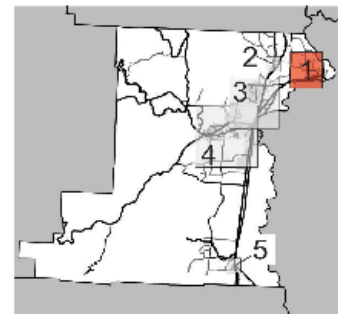


Table 11. Benton County Transportation Projects, North Albany, Sub-Area 1

Project ID	Project Name	Cost	From	To	Agency	Priority
AT-27	Corvallis to Albany Shared-Use Path (North Albany)	\$2,480,000	Scenic Drive	Springhill Road	ODOT	Medium
	Shared-use path; project may construct off highway shared-use path off of US 20 within the City of Albany limits, project is subject to ODOT approval					
AT-33	US 20 Bike lanes (North Albany)	\$30,000	Albany UGB	Willamette River west	ODOT	High
	Project may convert shoulders to bike lanes on US 20 in North Albany from Willamette River (including the Lyon Street bridge which has an existing shoulder) to Albany UGB, project is subject to ODOT approval					
AT-45	Albany to Corvallis Shared-use Path River Crossing	\$775,000	Springhill Drive	across the Lyon St Bridge	ODOT	Medium
	Project may construct bike/pedestrian bridge over the Willamette River and extending to Springhill Drive using the existing US 20 (Lyon Street) bridge, project is subject to ODOT approval					
AT-209	Metge Avenue Active Transportation Improvements	\$2,700,000	Independence Hwy	Oak Grove Dr	County/STIP	High
	Widening; project may upgrade to cross-section standards to add paved shoulders					
AT-220	Oak Grove Drive Bike Lanes	Funded	Terminus of existing lanes	Metge Ave	County/STIP	High
	Provides active transportation connectivity between Adair Village and North Albany					
CC-29	US 20/Scenic Drive Intersection Improvement	\$1,120,000	-	-	ODOT	Medium
	Intersection improvement; project may include adding turn lanes, project is subject to ODOT approval					
CC-31	Gibson Hill Road Modernization	\$5,445,000	North Albany Road	Scenic Drive	County	Medium
	Project may upgrade to cross-section standard with bike lanes and additional sidewalk on the north side per Albany Development Code					
CC-34	Springhill Drive Widening	\$3,470,000	Railroad crossing	US 20	County	Medium
	Roadway widening; project may widens Springhill Drive to four lanes from US 20 to north of Hickory Road then transition to three lanes across the rail crossing, project related to AT-35					
CC-35	Springhill Drive Modernization	\$4,235,000	north to Albany UGB	Railroad crossing	County	High
CC-36	US 20 Widening (North Albany)	\$8,500,000	west to Albany UGB	North Albany Road	ODOT	Medium
	Project may include widening US 20 to four lanes and adding sidewalk, curb, and gutter from North Albany Road west to the Albany UGB, project is subject to ODOT approval					
CC-37	Scenic Drive Modernization	\$6,965,000	north to Albany UGB	US 20	County	Medium
	Project may upgrade to cross-section standards with standard sidewalk and bike lanes per Albany Development Code; project cost assumes ROW will be dedicated					
CC-38	Crocker Lane Modernization	\$2,860,000	Gibson Hill Rd	Meadowwood	County	High
	Project may upgrade to cross-section standard with standard side sidewalk and bike lanes per Albany Development Code					
CC-39	Valley View Drive Modernization	\$3,760,000	Scenic Drive	Crocker Rd	County	Medium
	Project may upgrade to cross-section standard with standard side sidewalk and bike lanes per Albany Development Code					
CC-40	West Thornton Lake Drive Modernization	\$6,205,000	Scenic Drive	600' West of North Albany Road	County	High
	Project may upgrade to cross-section standard with standard side sidewalk and bike lanes per Albany Development Code					



Table 11. Benton County Transportation Projects, North Albany, Sub-Area 1, *Continued*

Project ID	Project Name	Cost	From	To	Agency	Priority
CC-41	Quarry Road Modernization	\$3,555,000	Springhill Drive	North Albany Road	County	Medium
	Project may upgrade to cross-section standard with standard side sidewalk and bike lanes per Albany Development Code					
CC-42	US 20 Super-elevation and Widening Correction	\$3,180,000	US 20 bridge-head	North Albany Road	ODOT	Medium
	Project may correct shared-use path superelevation issues at intersection along US 20, also widening of US 20 for a third westbound through lane between the north US 20 bridge-head and North Albany Road, project is subject to ODOT approval					
	US 20/North Albany Rd Intersection Improvement	\$40,000	US 20/North Albany Road	-	ODOT	Medium
CC-44	Intersection Improvement; project may eliminate split-phasing, convert southbound right to shared through-right lane & convert southbound through-left to left-only lane, creating dual southbound left-turns, also install westbound right-turn overlap phasing, implement actuated-coordinated signal control, and develop signal coordination between Springhill Road and North Albany Road for better traffic progression along US 20 during peak periods, project is subject to ODOT approval					
CC-130	Gibson Hill Road/Scenic Drive/Oak Grove Drive Intersection Improvement	\$950,000	-	-	County	Medium
	Intersection improvement; project may realign offset intersection geometry to standard four leg design					
CC-133	Crocker Lane/Gibson Hill Road Intersection Improvement	Funded	-	-	County	Low
	Intersection Improvement, project may add traffic signal control, if warranted					
CC-158	Springhill Drive/Independence Highway Freight Study	\$1,500,000	US 20	Independence Hwy	County	Medium
	Study, Freight traffic frequently uses Springhill Dr to avoid Independence Highway, this study may examine the causes for this diversion in more detail and explore solutions to keep freight traffic off of Springhill Dr					
CC-214	US 20 Ellsworth St Bridge	Funded	-	-	County/STIP	Medium
	Increases span vertical clearance over the Willamette River					
CC-228	Ryals Ave/Independence Hwy Intersection Improvement	\$50,000	-	-	County	Medium
	Intersection Improvement, evaluate potential safety sight distance issues, projects may include re-grading the intersection approach and/or improved intersection warning signs					
S-28	Palestine Ave/Oak Grove Drive Intersection Improvement	\$405,000	-	-	County	Medium
	Intersection improvement; project may include realigning intersection to remove offset					
S-30	US 20/Springhill Dr Intersection Capacity Upgrade	\$15,000	-	-	ODOT	Medium
	Intersection Improvement; project may include converting southbound right-turn to a shared left-right lane, creating dual-southbound lefts on Springhill Road, relocating westbound stop bar on inside lane of US 20 10-20 feet east of current location, lengthen cycle length to 120 seconds and develop coordination between North Albany Road and Springhill Road along US 20, geometric design of the intersection should allow space for right-turns on red for southbound vehicles if feasible, project is subject to ODOT approval					
S-165	Quarry Road & Nebergall Loop/Springhill Drive Intersection Improvements	\$25,000	-	-	County	Medium
	Intersection improvement; project may install intersection warning devices to improve safety and reduce rate of rear end collisions					
S-210	Springhill Drive Roadway Departure Countermeasures	\$320,000	-	-	County/STIP	Medium
	Safety improvements to reduce roadway departure crashes; project may include rumble strips and/or bollards					
S-212	US 20 Safety Upgrades	Funded	City of Corvallis	City of Albany	County/STIP	High
	Funding provided through HB 2017 to address safety concerns along US 20					

Figure 23. Benton County Transportation Projects, Adair Village, Sub-Area 2



Data: State of Oregon and Oregon Department of Transportation (2015); Benton County GIS (2017)

Legend

- S-00 - Safety Project
- AT-00 - Active Transportation Project
- CC-00 - Connectivity/Congestion Project
- T-00 - Transit Project
- - Principal Arterial
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- - Urban Growth Boundary
- - City Limits

**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN

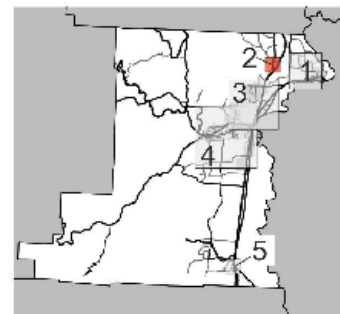
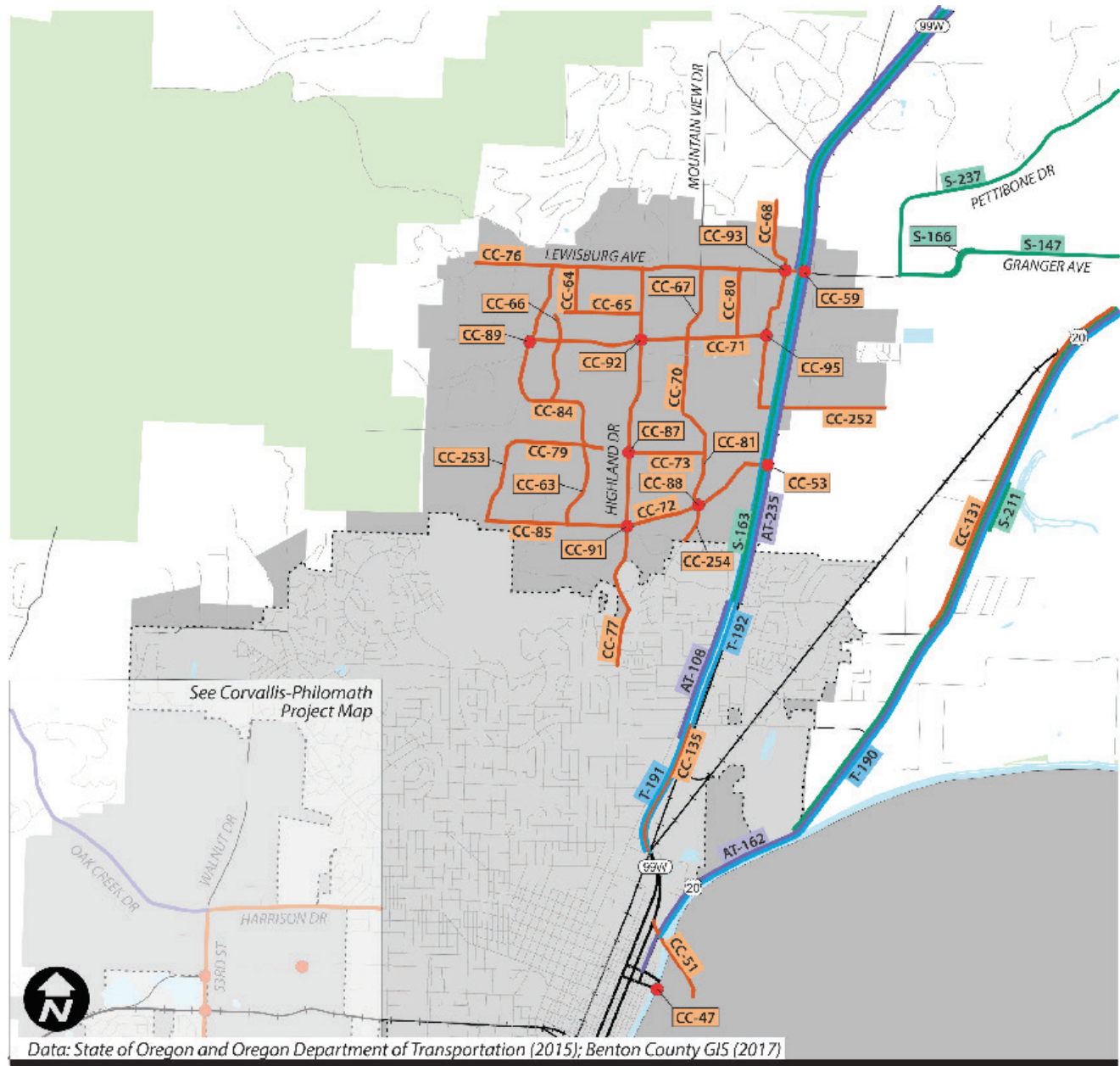


Table 12. Benton County Transportation Projects, Adair Village, Sub-Area 2

Project ID	Project Name	Cost	From	To	Agency	Priority
AT-168	Vandenberg Avenue/OR 99W Enhanced Roadway Crossing	\$250,000	-	-	ODOT	Medium
	Enhanced crossing; project provides an opportunity for an enhanced roadway crossing to serve Adair Village, this project should be coordinated with the OR 99W Streetscape Study, CC-179, project is subject to ODOT approval					
CC-116	OR 99W/Arnold Avenue Intersection Improvement	\$670,000	-	-	ODOT	Medium
	Intersection improvement; project may install traffic signal or roundabout, if feasible, when warranted, this project should be coordinated with the OR 99W Streetscape Study, CC-179, project is subject to ODOT approval					
CC-117	OR 99W/Ryals Avenue Intersection Improvement	\$670,000	-	-	ODOT	Medium
	Intersection improvement; project may install traffic signal or roundabout, if feasible, when warranted, this project should be coordinated with the OR 99W Streetscape Study, CC-179, project is subject to ODOT approval					
CC-179	OR 99W Streetscape Study	\$250,000	Ryals	Tampico	ODOT	Medium
	Streetscape Study; study to investigate potential to reduce traffic speeds and improve the environment for residents and businesses along the OR 99W corridor, project is subject to ODOT approval					
CC-227	Ryals Ave Urban Upgrade	\$1,800,000	OR 99W	Arnold Ave	County	Medium
	Project may improve Ryals Ave to cross section standards, coordinate with planned development					
S-185	Ryals Ave Modernization	\$2,700,000	Arnold Ave	Independence Hwy	County	Medium
	Widening; project may widen to cross-section standard, this project provides East-West connectivity between Adair Village and North Albany and improves safety for drivers and active transportation users					

Figure 24. Benton County Transportation Projects, Corvallis-Lewisburg, Sub-Area 3



**Legend**

- S-00 - Safety Project
- AT-00 - Active Transportation Project
- CC-00 - Connectivity/Congestion Project
- T-00 - Transit Project
- - Principal Arterial
- - Collector
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**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN

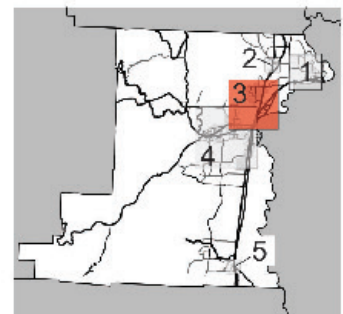


Table 13. Benton County Transportation Projects, Corvallis-Lewisburg, Sub-Area 3

Project ID	Project Name	Cost	From	To	Agency	Priority
AT-108	OR 99W Circle to Elks Shared-Use Path	\$1,020,000	Elks Drive	Circle Boulevard	ODOT	High
	Project may extend the shared-use path from Circle Boulevard to Elks Drive, project should connect with the Corvallis-Lewisburg shared-use path, project is subject to ODOT approval					
AT-162	Corvallis to Albany Shared-Use Path	\$7,050,000	Corvallis	Albany	County	High
	Shared-use path off of US 20 between the City of Corvallis and the City of Albany					
AT-235	Corvallis-Lewisburg Shared-use Path	\$1,535,000	Elks Dr	Lewisburg Rd	ODOT	High
	Shared-use path; project may construct shared-use path along OR 99W, project should connect with the Lewisburg-Adair Village shared-use path, project is subject to ODOT approval					
CC-47	Van Buren Bridge (New Construction)	Funded	-	-	ODOT	Medium
	Reconstruct a new two-lane bridge across the Willamette River adjacent to and north of the Van Buren Ave Bridge address weight restriction and vertical clearance on Van Buren Bridge to avoid out-of-direction travel for trucks project is subject to ODOT approval project has potential impacts to or may be constrained by environmental resources					
CC-51	North Corvallis Bypass	\$145,790,000	US 20/OR 99W	OR 34	ODOT	Medium
	New roadway extension; construct the 2-lane northern leg of the OR 34 bypass from the existing OR 34/OR 34 Bypass intersection across the Willamette River connecting to US 20 and OR 99W north of Polk Ave, coordinate with Project M8 (Corvallis TSP ID), note: Some Right-of-Way acquisition is needed west of the Willamette River, project is subject to ODOT approval, project has potential impacts to or may be constrained by environmental resources					
CC-53	OR 99W/Lester Ave Extension Signal	\$840,000	-	-	ODOT	Medium
	Intersection improvements (capacity); options may include constructing roundabout or traffic signal, when warranted before a signal can be installed, an engineering investigation must be conducted or reviewed by the Region Traffic Engineer who will forward intersection traffic control recommendations to ODOT headquarters traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a State highway, project is subject to ODOT approval					
CC-59	OR 99W/Lewisburg Intersection Improvement	\$2,205,000	-	-	ODOT	Medium
	Intersection improvements (capacity); construct capacity improvements at the intersection, options may include constructing an eastbound right turn lane, eastbound left turn lane, westbound right turn lane, westbound left turn lane, eastbound right turn lane, traffic signal modifications and rail crossing enhancements, project is subject to ODOT approval					
CC-63	New N-S 6 Neighborhood Collector between Lester Ave and Crescent Valley Drive	\$9,570,000	Crescent Valley Drive	Lester Ave	Developer	Low
	New roadway extension; construct new neighborhood collector between Lester Ave and Crescent Valley Drive, project has potential impacts to or may be constrained by environmental resources					
CC-64	New N-S 5 Neighborhood Collector between Lewisburg Drive and Spring Meadow Drive Extension	\$4,950,000	Lewisburg Road	Spring Meadow Drive Extension	Developer	Low
	New roadway extension; construct new neighborhood collector between Lewisburg Drive and Spring Meadow Drive Extension, project has potential impacts to or may be constrained by environmental resources					
CC-65	Spring Meadow Drive Extension	\$7,920,000	Highland Drive	Spring Meadow Drive	Developer	Low
	New roadway extension; construct Spring Meadow Drive Extension to neighborhood collector standard between Highland Drive and exiting stub, project has potential impacts to or may be constrained by environmental resources					
CC-66	New N-S 4 Neighborhood Collector between Crescent Valley Drive and Spring Meadow Drive	\$9,405,000	Spring Meadow Drive	Crescent Valley Drive	Developer	Low
	New roadway extension; construct new neighborhood collector between Crescent Valley Drive and Spring Meadow Drive, project has potential impacts to or may be constrained by environmental resources					
CC-67	New N-S 3 Neighborhood Collector between Lewisburg Ave and Frazier Creek Drive Extension	\$8,910,000	Lewisburg Road	Frazier Creek Drive Ext.	Developer	Low
	New roadway extension; construct new neighborhood collector between Lewisburg Ave and Frazier Creek Drive Extension, project has potential impacts to or may be constrained by environmental resources					



Table 13. Benton County Transportation Projects, Corvallis-Lewisburg, Sub-Area 3, *Continued*

Project ID	Project Name	Cost	From	To	Agency	Priority
CC-68	West Elliot Circle Construction	\$22,965,000	North Corvallis UGB	OR 99W	Developer	Low
	New roadway extension; construct West Elliot Circle Extension, west of OR 99W, to collector standard between OR 99W and the north Corvallis UGB, project has potential impacts to or may be constrained by environmental resources					
CC-70	New N-S 2 Collector parallel to, and east of, Highland Drive	\$16,620,000	New E-W Collector (M58 Corvallis ID)	Frazier Creek Drive Ext.	Developer	Low
	New roadway extension; construct a new N-S roadway parallel to, and east of, Highland Drive to collector standard between Frazier Creek Extension and new E-W Collector from Highland Drive to Lester Ave Extension (M58 in Corvallis TSP), project has potential impacts to or may be constrained by environmental resources					
CC-71	Frazier Creek Drive Extension	\$26,025,000	West Elliot Circle Extension	Crescent Valley Drive	Developer	Low
	New roadway extension; construct Frazier Creek Drive Extension to collector standards between Crescent Valley Drive and West Elliot Circle Extension, project has potential impacts to or may be constrained by environmental resources					
CC-72	Lester Ave Extension	\$15,650,000	OR 99W	Highland Drive	Developer	Low
	New roadway extension; construct Lester Ave Extension to collector standard between Highland Drive and OR 99W, project has potential impacts to or may be constrained by environmental resources					
CC-73	New E-W 1 Collector from Highland Drive to Lester Ave Extension	\$7,145,000	Lester Ave Ext.	Highland Drive	Developer	Low
	New roadway extension; construct new collector between Highland Drive and Lester Ave Extension, project has potential impacts to or may be constrained by environmental resources					
CC-76	Lewisburg Ave Modernization	\$15,390,000	West UGB	OR 99W	County	High
	Upgrade to cross-section standard along Lewisburg Ave between OR 99W and west UGB, project has potential impacts to or may be constrained by environmental resources					
CC-77	Highland Drive Modernization	\$16,950,000	Lewisburg Road	Angelica Drive	County	High
	Upgrade to cross-section standard between Angelica Drive and Lewisburg Road, project has potential impacts to or may be constrained by environmental resources					
CC-79	Raider Way Extension	\$8,690,000	Crescent Valley Drive	Kings Boulevard Ext.	Developer	Low
	New roadway extension; construct Raider Way Extension to collector standard between Crescent Valley Drive and Kings Boulevard Extension and construct frontage improvements on the existing portion of Raider Way, project has potential impacts to or may be constrained by environmental resources					
CC-80	Shasta Drive Extension	\$4,020,000	Shasta Drive	Frazier Creek Drive Ext.	Developer	Low
	New roadway extension; construct Shasta Drive Extension to neighborhood collector standard between Frazier Creek Drive Extension to existing stub and construct frontage improvements on the existing portion of Shasta Drive					
CC-81	New N-S 9 Collector north of Lester Ave Extension	\$5,785,000	New N-S Collector (M58 Corvallis ID)	Lester Ave	Developer	Low
	New roadway extension; construct new collector between Lester Ave Extension and New E-W Collector from Highland Drive to Lester Ave Extension (M58, Corvallis ID), project has potential impacts to or may be constrained by environmental resources					
CC-84	Crescent Valley Drive Modernization	\$17,820,000	Highland Drive	Lewisburg Road	County	Medium
	Upgrade to cross-section standard along Crescent Valley Drive between Lewisburg Drive and Highland Drive, project has potential impacts to or may be constrained by environmental resources					
CC-85	Lester Ave Modernization	\$5,850,000	Highland Drive	Kings Boulevard Ext.	County	Medium
	Upgrade to cross-section standard along Lester Ave between Kings Boulevard Extension and Highland Drive, project has potential impacts to or may be constrained by environmental resources					

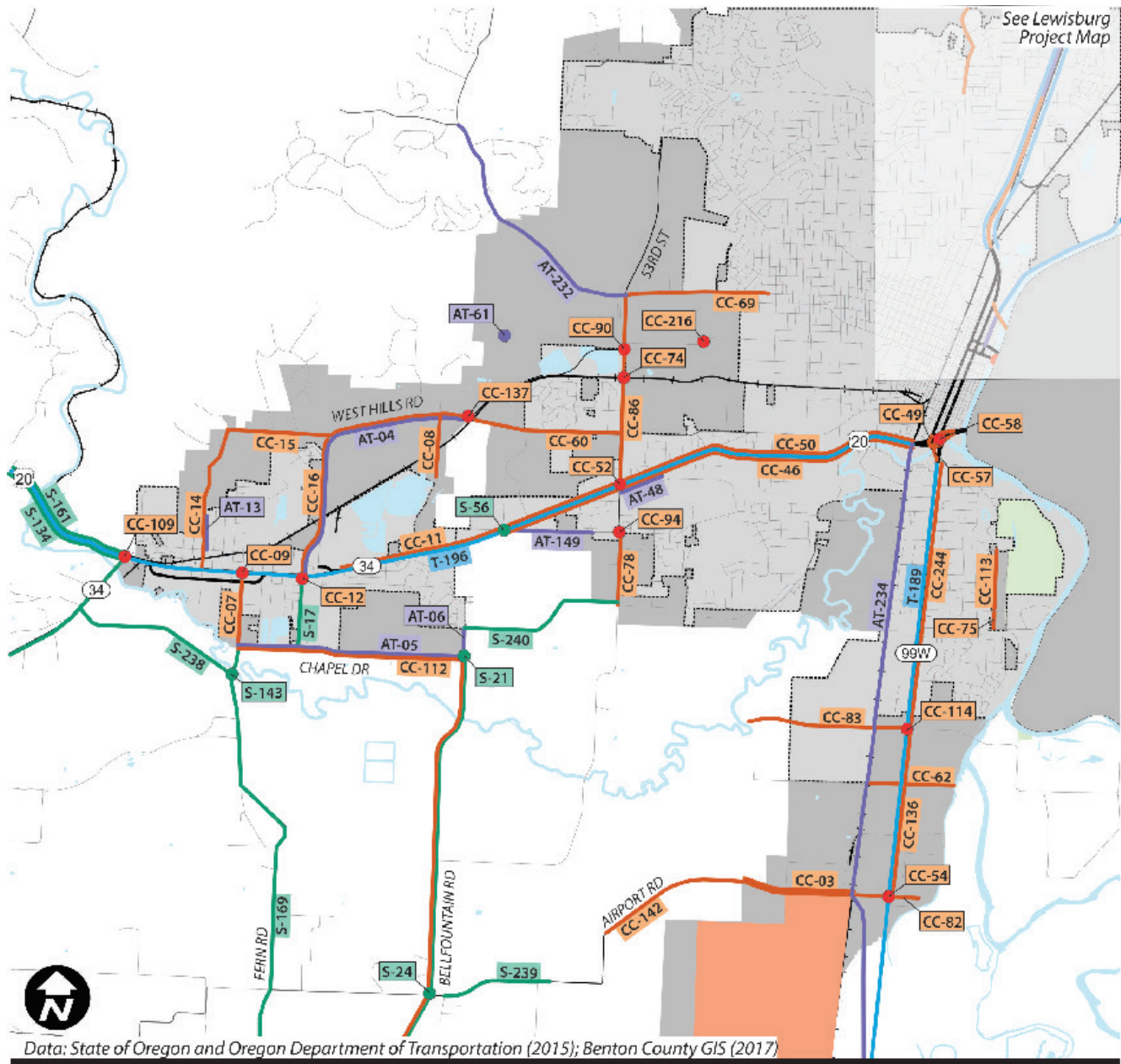
Table 13. Benton County Transportation Projects, Corvallis-Lewisburg, Sub-Area 3, *Continued*

Project ID	Project Name	Cost	From	To	Agency	Priority
CC-87	Crescent Valley Drive/Highland Drive Intersection Improvement	\$2,395,000	-	-	Developer	Low
	Intersection improvements (capacity); options may include installing a roundabout or traffic signal, when warranted, project has potential impacts to or may be constrained by environmental resources					
CC-88	Satinwood Street Ext./Lester Ave Ext. Intersection Improvement	\$2,395,000	-	-	Developer	Low
	Intersection improvements (capacity); options may include constructing a roundabout or traffic signal, when needed, project has potential impacts to or may be constrained by environmental resources					
CC-89	Frazier Creek Drive/Crescent Valley Drive Intersection Improvement	\$2,395,000	-	-	Developer	Low
	Intersection improvements (capacity); options may include constructing a roundabout or traffic signal, when needed, project has potential impacts to or may be constrained by environmental resources					
CC-91	Highland Drive/Lester Ave Intersection Improvement	\$5,325,000	-	-	Developer	Low
	Intersection improvements (capacity); options may include constructing a roundabout or traffic signal, when needed, project has potential impacts to or may be constrained by environmental resources					
CC-92	Highland Drive/Frazier Creek Intersection Improvement	\$5,325,000	-	-	Developer	Low
	Intersection improvements (capacity); options may include constructing a roundabout or traffic signal, when needed, project has potential impacts to or may be constrained by environmental resources					
CC-93	Lewisburg/West Elliot Circle Intersection Improvement	\$360,000	-	-	Developer	Low
	Intersection improvements (capacity); options may include installing traffic signal or roundabout, when warranted, project has potential impacts to or may be constrained by environmental resources					
CC-95	Elliot Circle/Frazier Creek Intersection Improvement	\$2,395,000	-	-	Developer	Low
	Intersection improvements (capacity); options may include constructing a roundabout or traffic signal, when needed, if feasible					
CC-131	US 20 Corridor (Corvallis to Albany) Improvement Study	\$250,000	-	-	ODOT	High
	Study; US 20 has known safety, access, and congestion issues, the purpose of this study is to evaluate alternatives to mitigate those issues, including alternative crossings, or upgrades to the existing crossings, of the Willamette River, after the funded safety improvements are in place, project is subject to ODOT approval					
CC-135	OR 99W Widening (North Corvallis)	\$5,250,000	Circle Boulevard	Willamette and Pacific Railroad Crossing	ODOT	Medium
	Widening; project may widen OR 99W from Willamette and Pacific Railroad Crossing through Circle Boulevard from 2 to 4 lanes, project is subject to ODOT approval					
CC-252	New E-W 5 Neighborhood Collector between Elliot Circle and East Corvallis UGB	\$8,827,000	Elliot Circle	East Corvallis UGB	City of Corvallis/ Developer/ County	Medium
	New roadway extension; construct new neighborhood collector between Elliot Circle and east Corvallis UGB (south of Pinot Gris Drive)					
CC-253	Kings Boulevard Extension	\$39,938,000	Terminus	Crescent Valley Drive	City of Corvallis/ Developer/ County	Medium
	New roadway extension; extend Kings Boulevard from current stub north to Crescent Valley Drive and construct to arterial standard. Project has potential impacts to or may be constrained by environmental resources.					

Table 13. Benton County Transportation Projects, Corvallis-Lewisburg, Sub-Area 3, *Continued*

Project ID	Project Name	Cost	From	To	Agency	Priority
CC-254	Satinwood Street Extension	\$6,294,000	Terminus	Lester Avenue Extension	City of Corvallis/ Developer/ County	Medium
	New roadway extension; construct Satinwood Street Extension to collector standard between existing stub and Lester Avenue Extension. Project has potential impacts to or may be constrained by environmental resources.					
S-147	Granger Avenue Widening	\$3,600,000	US 20	Pettibone Road	County	Medium
	Widening; project may include shoulder widening provide bicycle access between routes serving the Lewisburg/Crescent Valley area with bike lanes on US 20 to North Albany and Albany, these improvements should serve local pedestrian access as well as bicyclists					
S-163	OR 99W Widening (North)	\$16,950,000	NW Elks Dr	Arnold Ave	ODOT	High
	Project may including widening shoulders to cross-section standard 8', portions of this segment meet the 8' standard, project is subject to ODOT approval					
S-166	Granger Ave Safety Improvements	\$30,000	-	-	County	Medium
	Safety improvement; project mitigates high rate of crashes and may install curve warning signs such as chevrons					
S-211	US 20 Childrens Farm Home Two Way Left Turn Lane	\$850,000	-	-	County/STIP	High
	Safety improvement; project may construct a two way left turn lane to improve safety and accessibility					
S-237	Pettibone Dr Safety Improvements	\$320,000	Granger Ave	Independence Hwy	County	Medium
	Safety Improvements; project may include treatments for roadway departure related crashes such as improved signing, delineator posts and/or rumble strips					
T-190	Corvallis Albany Special Transportation Fund Service	\$55,000	Corvallis	Albany	Corvallis/ Albany Transit	Medium
	Expand present Corvallis-Albany demand response service from three days per week to five days per week service, for improved access to services for the senior and disabled population of this area					
T-191	OR 99W North - Phase 1	\$100,000	Corvallis	Monmouth	County/ SAMTD	Medium
	In conjunction with ODOT public Transit and LTD, conduct a corridor evaluation and service development plan for regional public transit bus service on OR 99W between Corvallis and Monmouth, in part to serve students at Western Oregon and Oregon State University					
T-192	99 Express Expansion	\$85,000	Corvallis	Adair Village	County	Medium
	Expanded evening and weekend 99 Express service to Adair Village to supplement service to a growing community					

Figure 25. Benton County Transportation Projects, South Corvallis-Philomath, Sub-Area 4



**Legend**

- S-00 - Safety Project
- AT-00 - Active Transportation Project
- CC-00 - Connectivity/Congestion Project
- T-00 - Transit Project
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**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN

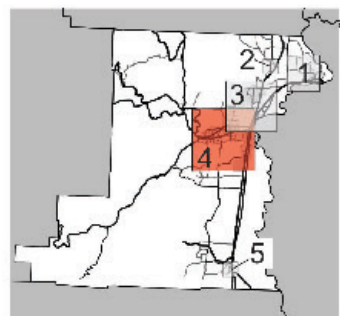


Table 14. Benton County Transportation Projects, South Corvallis-Philomath, Sub-Area 4

Project ID	Project Name	Cost	From	To	Agency	Priority
AT-04	19th Street Shared-use Path	\$5,090,000	US20/OR34	Reservoir Ave	County	Medium
	Project may construct new shared-use path along east side of N 19th and West Hills Rd to the intersection with Reservoir					
AT-05	Chapel Drive Shared-use Path	\$5,025,000	13th	Bellfountain	County	Medium
	Project may construct new shared-use Path between 13th and Bellfountain Rd					
AT-06	Bellfountain Road Shared-use Path	\$575,000	Chapel Drive	Plymouth	County	Medium
	New shared-use Path between Chapel Drive and Plymouth Dr					
AT-13	N 9th Street Hill Improvements	\$75,000	Main St	West Hills	County	Medium
	Safety improvement; project may include safety devices to warn motorists of bicyclists and pedestrians in the roadway					
AT-48	Philomath Boulevard (US 20/OR 34)	\$135,000	Technology Loop	53rd Street	ODOT	High
	Add sidewalk on Philomath Boulevard (US 20/OR 34) between 53rd Street and Technology Loop on north side to provide access to transit stops, project is subject to ODOT approval					
AT-61	Bald Hill Farm Trail	\$30,000	-	-	County	Low
	Build 1/2-mile section of trail on Bald Hill Farm to replace an existing public trail that resides on a private road on the farm					
AT-149	Country Club Drive Biking Improvements	\$1,300,000	Barley Hill Drive	US 20	County	Medium
	Bike Lanes; project may complete bike lanes on the west end of Country Club Drive, a parallel shared-use path exists and will continue to provide for the needs of walkers, it is anticipated that this link will be completed in conjunction with development after this area is annexed into Corvallis					
AT-232	Oak Creek Drive Signing Improvements	#50,000	53rd ST	Cardwell Hill Rd	County	Medium
	Safety improvement; project may add additional warning signs to improve safety for active transportation users					
AT-234	South Corvallis Shared-use Path	\$2,614,000	Marys River	Airport Ave	ODOT	High
	Shared-use path; project may constuct shared-use path between Marys River and Airport Avenue parallel to the railroad line in southeast Corvallis, the preferred alignment should be on top of the planned sewer line easement that's being acquired east of the track with development, coordinate with project PB25 and PB26 (Corvallis ID), to connect to the Corvallis-Philomath shared-use path, extend the path east along the south side of Marys River to the existing pedestrian and bicycle crossing at the SE 3rd Street bridge, project is subject to ODOT approval					
CC-03	Airport Avenue Modernization	\$2,150,000	West Corvallis UGB	OR 99W	County	Medium
	Project may upgrade road to cross-section standard per Corvallis TSP					
CC-07	13th Street Modernization	\$4,200,000	Chapel Drive	Main Street	County	High
	Project may upgrade road to cross-section standard per Philomath TSP					
CC-08	Extend Clemens Mill to West Hills	\$20,265,000	Terminus	West Hills	Developer/ County	Low
	New road; should be implemented in conjunction with future development					
CC-09	US20/OR34 Freight Traffic Intersection Improvement	\$205,000	-	-	ODOT	Medium
	Intersection Improvement; project may include freight traffic signal priority US 20/OR 34 & 19th St and US 20/OR 34 & 13th St, project is subject to ODOT approval					
CC-11	US 20/OR 34 Widening	\$43,980,000	Green St	69th	ODOT	Medium
	Widening; project may widen to 4 lanes, project is subject to ODOT approval					
CC-12	US 20 / OR 34 & 19th St Intersection Improvement	\$695,000	-	-	ODOT	Medium
	Intersection improvement; project may include re-grading to remove vertical crest issue, project is subject to ODOT approval					
CC-14	N 9th Street Modernization	\$8,655,000	US20/OR34	West Hills Rd	Developer/ County	High
	Project may upgrade to cross-section standard per Philomath TSP					
CC-15	West Hills Road Modernization	\$6,005,000	N 9th St	Reservoir Ave	County	High
	Project may upgrade to cross-section standard per Philomath TSP					



Table 14. Benton County Transportation Projects, South Corvallis-Philomath, Sub-Area 4, *Continued*

Project ID	Project Name	Cost	From	To	Agency	Priority
CC-16	N 19th Street Modernization	\$20,260,000	US20/OR34	West Hills Rd	Developer	High
	Project may upgrade to cross-section standard with sidewalk on west side and bike lanes to both sides per Philomath TSP					
CC-46	US 20/OR 34 Corridor Optimization	\$910,000	69th Street	OR 34/OR 99W Interchange	ODOT	Medium
	Implement strategies identified in the US 20/OR 34 Optimization Study (2015); options may include 1) Adaptive Signal Timing, 2) Freight Signal Priority, and/or 3) Arterial Performance Measurement and Real-Time Equipment Monitoring - at 5 signalized intersections and 1 mid-block locations to collect arterial performance measures, including traffic volumes, travel speeds, travel times, vehicle classifications, vehicle occupancy, pedestrian and bicycle volumes, and delay for vehicles, pedestrians and bicyclists, coordinate with Project A25 (Corvallis TSP ID), project is subject to ODOT approval, project has potential impacts to or may be constrained by environmental resources					
CC-49	OR 99W/US 20/OR 34 Ramps	\$24,220,000	-	-	ODOT	Medium
	New off-ramp; options may include providing an eastbound off ramp between eastbound US 20/OR 34 to eastbound OR 99W and a eastbound off ramp between eastbound OR 99W to eastbound US 20/OR 34 project is subject to ODOT approval, project has potential impacts to or may be constrained by environmental resources					
CC-50	US 20/OR 34 Capacity Enhancements	\$37,955,000	OR 34/OR 99W Interchange	West Corvallis UGB	ODOT	Medium
	Capacity enhancements for the US 20/OR 34 corridor from OR 99W to the western Corvallis UGB options may include; 1) Widening US 20/OR 34 to 4-5 lanes, 2) add turn lanes and traffic signal modifications at the intersections, 3) consolidate and realign the US 20/OR 34/Western Boulevard intersections to form a single T-intersection including an eastbound left turn lane and may include constructing a traffic signal or roundabout with bypass lanes, and 4) access management improvements coordinate with Project A3 (Corvallis TSP ID), project is subject to ODOT approval, project has potential impacts to or may be constrained by environmental resources					
CC-52	53rd Street/US 20/OR 34	\$3,160,000	-	-	ODOT	Medium
	Intersection improvements (capacity and safety); options may include constructing a eastbound right turn lane, extending the westbound right turn lane, constructing a second westbound through lane, and constructing a second eastbound through lane, this project should be coordinated with the 53rd Street and US 20/OR 34 corridor widening projects (M10 and A25 in Corvallis TSP), project is subject to ODOT approval, project has potential impacts to or may be constrained by environmental resources					
CC-54	OR 99W/Airport Ave Traffic Control	\$5,325,000	-	-	ODOT	Medium
	Intersection improvements (capacity); options may include constructing a roundabout or traffic signal, when warranted, before a signal can be installed, an engineering investigation must be conducted or reviewed by the Region Traffic Engineer who will forward intersection traffic control recommendations to ODOT headquarters traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a State highway, project is subject to ODOT approval					
CC-57	OR 34/Bypass Interchange	\$76,630,000	-	-	ODOT	Medium
	Intersection improvement (capacity); OR 34/Bypass Interchange Improvements may include constructing a westbound left-turn flyover ramp, project is subject to ODOT approval					
CC-58	OR 34 Overpass (OR 99W) Clearance	\$63,055,000	-	-	ODOT	Medium
	Corridor (capacity); improve to meet vertical clearance requirements, the vertical clearance for northbound and eastbound OR 99W at the OR 34 overpass is one to two feet below the design standard, project is subject to ODOT approval, project has potential impacts to or may be constrained by environmental resources					
CC-60	West Hills Road Modernization	\$20,705,000	Reservoir Road	Western Boulevard	County	High
	Upgrade to cross-section standards along West Hills Road between Western Boulevard and Reservoir Ave, improvements may also include supplemental safety improvements to address potential sight distance limitations related to horizontal and vertical alignment (west of Grand Oaks), project has potential impacts to or may be constrained by environmental resources					
CC-62	Herbert Ave Extension	\$7,145,000	East Corvallis UGB	OR 99W	Developer	Low
	New roadway extension; construct Herbert Ave Extension to collector standard between OR 99W and East UGB, project has potential impacts to or may be constrained by environmental resources					

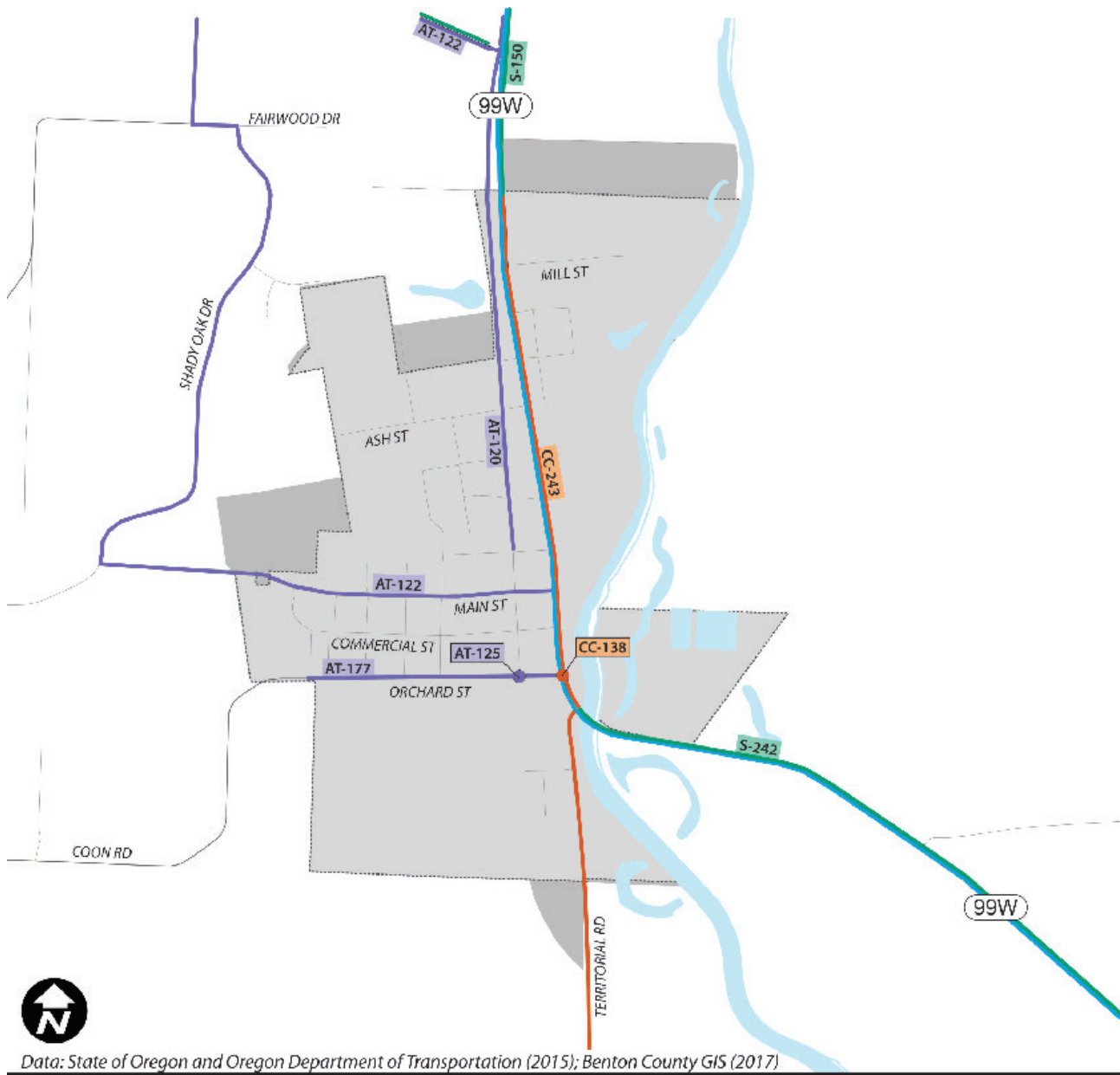
Table 14. Benton County Transportation Projects, South Corvallis-Philomath, Sub-Area 4, *Continued*

Project ID	Project Name	Cost	From	To	Agency	Priority
CC-69	Harrison Boulevard Modernization	\$10,330,000	36th Street	53rd Street	Developer	Medium
	Upgrade to cross-section standard between 36th Street and 53rd Street including bike lanes, coordinate with Project P27 (Corvallis TSP ID), project has potential impacts to or may be constrained by environmental resources, the City of Corvallis Parks Master Plan includes a shared-use path on the north side of this segment					
CC-74	53rd Street Railroad Crossing	\$7,000,000	-	-	County	Medium
	Capacity and safety improvements, options include reconstructing the crossing and roadway realignment, project has potential impacts to or may be constrained by environmental resources					
CC-75	Crystal Lake Drive Extension	\$3,005,000	Goodnight Ave	Park Ave	Developer	Low
	New roadway extension; extend Crystal Lake from Park Ave to Goodnight Ave and construct to neighborhood collector standard					
CC-78	53rd Street (south) Modernization	\$6,580,000	Nash Ave	Country Club Drive	County	High
	Upgrade to cross-section standard along 53rd Street between Country Club Drive and Nash Ave					
CC-82	Airport Ave Extension	\$3,230,000	New N-S Collector (M98 Corvallis ID)	OR 99W	Developer	Low
	New roadway extension; construct Airport Ave Extension to collector standard between OR 99W and New N-S Collector between Rivergreen Ave and Airport Ave Extension (M98 Corvallis ID), coordinate with Project A13 (Corvallis ID)					
CC-83	New Roadway Kiger Island from OR 99W to West Corvallis UGB	\$15,820,000	West Corvallis UGB	OR 99W	Developer	Low
	New roadway extension; construct Kiger Island Extension to collector standard between OR 99W and west Corvallis UGB					
CC-86	53rd Street (north) Modernization	\$27,350,000	Harrison Boulevard	US 20-OR 34	County	Medium
	Upgrade to cross-section standard along 53rd Street between Harrison Boulevard and US 20-OR 34, consistent with the 5-lane cross-section identified in the West Corvallis - North Philomath Plan, project has potential impacts to or may be constrained by environmental resources					
CC-90	Reservoir Ave/53rd Street Intersection Improvement	\$5,655,000	-	-	Developer	Medium
	Intersections improvements (capacity and safety); options may include constructing a roundabout or traffic signal, project has potential impacts to or may be constrained by environmental resources					
CC-94	53rd Street/Country Club Intersection Improvement	\$2,745,000	-	-	County	Medium
	Intersection improvement (capacity); options may include constructing a roundabout or traffic signal in conjunction with development					
CC-109	US20/OR34-Alesea Highway Intersection Improvement	\$475,000	-	-	ODOT	Medium
	Intersection improvement, project may include traffic signal or roundabout, if feasible, when warranted, project is subject to ODOT approval					
CC-112	Chapel Dr Modernization	\$2,140,000	13th St	19th Street	County	Medium
	Urban upgrade; project may include upgrade to cross-section standards					
CC-113	Crystal Lake Drive Modernization	\$6,055,000	Park Ave	Alexander Ave	County	Medium
	Urban upgrade; project may include upgrade to cross-section standards along Crystal Lake Drive between Alexander Ave and Park Ave					
CC-114	OR 99W/Kiger Island Drive Intersection Improvement	\$5,325,000	-	-	ODOT	Low
	Intersection improvements (capacity); options may include constructing roundabout or traffic signal, when warranted, before a signal can be installed, an engineering investigation must be conducted or reviewed by the Region Traffic Engineer who will forward intersection traffic control recommendations to ODOT headquarters, traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a State highway, project is subject to ODOT approval					

Table 14. Benton County Transportation Projects, South Corvallis-Philomath, Sub-Area 4, *Continued*

Project ID	Project Name	Cost	From	To	Agency	Priority
CC-136	OR 99W Widening (South Corvallis)	\$12,050,000	Rivergreen Avenue	Airport Avenue	ODOT	Medium
	Widening; project may widen OR 99W between Rivergreen Avenue and Airport Avenue from 2 to 4 lanes, project is subject to ODOT approval					
CC-137	West Hills Road/Reservoir Road Intersection Improvements	\$850,000	-	-	County	Medium
	Intersection improvement; project may construct a traffic signal or roundabout, if feasible, when warranted					
CC-142	Airport Avenue Widening	\$2,150,000	West Corvallis UGB	Start of southbound segment	County	Medium
	Widening; project may improve to cross-section standard					
CC-216	Campus Way Covered Bridge	Funded	-	-	County/STIP	Medium
	Preservation that includes re-roofing, re-painting and installation of a fire suppression system					
CC-244	OR 99W South Corvallis Refinement Study	\$500,000	Kiger Island Drive	Marys River	ODOT	Medium
	Study; Study may evaluate safety improvements to the OR 99W corridor that would improve the safety and comfort of cyclists and pedestrians, project is subject to ODOT approval					
S-17	S 19th Street Safety Improvements	\$10,000	-	-	County	Medium
	Safety improvements for pedestrians (especially children), project may include raised crosswalks at Applegate and the crossing near Clemens School					
S-21	Chapel Drive/Bellfountain Road Intersection Improvements	\$5,000	-	-	County	Medium
	Intersection improvement; project may include rumble strips on Chapel Dr					
S-24	Bellfountain Road/Airport Avenue Intersection Improvements	\$5,400,000	Chapel	Greenberry	County	Medium
	Intersection improvement; project may include roundabout or signal, if warranted					
S-56	Country Club Drive/69th Street/US 20/OR 34	\$5,680,000	-	-	ODOT	Medium
	Intersection Improvements (safety); improvements needed to mitigate complex intersection and poor street alignments, improvements may include realignments of Country Club Drive and 69th Street and constructing a roundabout, project is subject to ODOT approval					
S-134	US 20 Continuous Left Turn Lane	\$7,900,000	Highway 34	Woods Creek Road	ODOT	Medium
	Access improvement; project may construct continuous left turn lane on US 20 from Highway 34 to Woods Creek Road (Lincoln County Line) to improve safety and access, project is subject to ODOT approval					
S-143	Grange Hall Road/Fern Road Intersection Improvements	\$200,000	-	-	County	Medium
	Intersection improvement; project may include advance beacons, signing, and striping					
S-169	Fern Road Widening	\$8,500,000	Llewellyn Road	Chapel	County	High
	Widening; project may widen shoulder to cross-section standard, this project improves safety for drivers and active transportation users					
S-238	Grange Hall Rd Widening	\$1,750,000	OR 34	Fern Rd	County	Medium
	Widening; project may widen shoulders to cross-sections standard, this project improves safety for drivers and active transportation users					
S-239	Airport Ave Safety Improvements	\$320,000	MP 3.07	MP 3.76	County	Medium
	Safety Improvements; project may include treatments for roadway departure related crashes such as improved signing, delineator posts and/or rumble strips					
S-240	Plymouth Dr Safety Improvements	\$320,000	Bellfountain Rd	53rd Street	County	Medium
	Safety Improvements; project may include treatments for roadway departure related crashes such as improved signing, delineator posts and/or rumble strips					

Figure 26. Benton County Transportation Projects, Monroe, Sub-Area 5



Data: State of Oregon and Oregon Department of Transportation (2015); Benton County GIS (2017)

Legend

- S-00 - Safety Project
- AT-00 - Active Transportation Project
- CC-00 - Connectivity/Congestion Project
- T-00 - Transit Project
- - Principal Arterial
- - Collector
- - Local Roadway
- ++ - Railroad
- - River
- - Park
- - Airport
- - Urban Growth Boundary
- - City Limits

**BENTON COUNTY**  
TRANSPORTATION SYSTEM PLAN

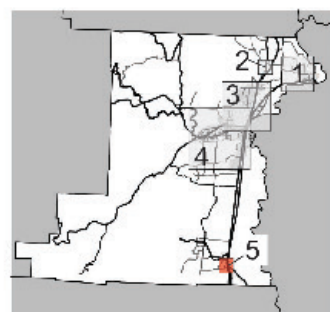


Table 15. Benton County Transportation Projects, Monroe, Sub-Area 5

Project ID	Project Name	Cost	From	To	Agency	Priority
AT-120	OR 99W Alpine Cut-off to Kelly Street Shared-Use Path	\$450,000	Alpine Cut-off	Kelly Street	ODOT	Medium
	Shared-use path upgrade; add improved path surface and drainage; add bollards, where feasible, marked crosswalks recommended at major cross street intersections, project is subject to ODOT approval					
AT-122	Monroe Cross Country Shared-Use Path	\$1,250,000	Monroe Library	Alpine Cut-off Road	Monroe/County	Medium
	Shared-use path; project may begin at Monroe Library and follow the Airport to Alpine Shared-use path pathway south to Main Street (or Commercial Street), turning west up through the Reservoir Heights Park to Shady Oak Drive/Orchard Street to the Alpine Cutoff Road/Bailey Branch access point, An alternative route could connect Shady Oak/Fairwood Drive with the Cemetery Road and the Airport to Alpine Shared-use Path, Way finding signage is also recommended					
AT-125	Orchard Street/6th Street Intersection Improvements	\$50,000	-	-	County	Medium
	Intersection improvement; project may include new striping, pedestrian and bicycle yield signage, and Rectangular Rapid Flashing Beacons (RRFBs)					
AT-177	Orchard Street Modernization	\$650,000	S 11th St	OR 99W	County	Medium
	Urban Upgrade; project may upgrade to cross-section standards including sidewalk on north and south side and bike lanes					
CC-138	OR 99W/Orchard Street Intersection Improvements	\$850,000	-	-	ODOT	Medium
	Intersection improvement; project may construct a traffic signal or roundabout, if feasible, when warranted, project is subject to ODOT approval					
CC-243	Riverside District Master Plan	\$140,000	Monroe Cemetery Rd	Territorial Hwy	ODOT	Medium
	Study; the plan will integrate land uses (commercial, industrial, public, parks, residential), transition the areas connectivity towards human-scale transportation options, enhance and protect riparian and aquatic ecosystems, and develop place-making strategies, project is subject to ODOT approval					
S-150	OR 99W Widening (Dawson to Monroe Cemetery Rd)	\$3,000,000	Dawson Road	Monroe Cemetery Rd	ODOT	High
	Widening; project may widen shoulders to provide safety for drivers and active transportation users, project is subject to ODOT approval					
S-242	OR 99W Widening (Territorial Hwy to Lane Co)	\$10,100,000	Territorial Hwy	Lane County Line	ODOT	High
	Widening; project may widen shoulders to provide safety for drivers and active transportation users, this project may include widening the bridge over the Long Tom River, project is subject to ODOT approval					



Table 16. Benton County Transportation Projects, Transit Projects

Project ID	Project Name	Annual Cost	Priority
T-188	Transit Marketing	\$30,000	High
	Market public transportation services to improve access for all riders.		
T-189	99W South - Phase I	\$100,000	Medium
	In conjunction with ODOT public Transit and LTD, conduct a corridor evaluation and service development plan for regional public transit bus service on OR 99W between Corvallis and Eugene, with stops in Monroe; Junction City; and Eugene Airport.		
T-190	Corvallis-Albany STF Service	\$137,500	High
	Expand present Corvallis-Albany demand response service from three days per week to either five or up to seven days per week service, for improved access to services for the senior and disabled population of this area.		
T-191	99W North - Phase I	\$100,000	Medium
	In conjunction with ODOT public Transit and LTD, conduct a corridor evaluation and service development plan for regional public transit bus service on OR 99W between Corvallis and Monmouth, in part to serve students at Western Oregon and Oregon State University		
T-192	99 Express Expansion	\$85,000	Medium
	Expanded evening and weekend 99 Express service to Adair Village to supplement service to a growing community.		
T-193	Demand Response Phase I	\$130,000	High
	Expand demand response senior and disabled services to include additional AM, early evening, and expanded Sunday service, for a growing older adult population in the greater Corvallis area and to address current capacity needs.		
T-194	Demand Response Phase III	\$105,000	Medium
	Expand demand response transit services to Wren, Blodgett, Burnt Woods, and the Kings Valley communities, for improved access to services for the senior and disabled population of these communities.		
T-195	Linn-Benton Loop Phase I	\$300,000	High
	Reassess LB Loop service needs, routes & schedule & implement improved general public corridor transit service between North Albany and Corvallis, for traffic congestion relief, safety, and economic development.		
T-196	Coast to Valley Expansion	\$70,000	Medium
	Review existing Coast to Valley Express schedule for potential of adjusting times to better match connections to HUT and Oregon Express shuttles; Amtrak; and Bolt Bus. Possibly add bus and additional runs per day.		
T-197	Reduced Fare Program	\$47,000	High
	Encourage discounted fares and other strategies to address the cost of transit for low income individuals.		
T-198	Corvallis-Amtrak Connector	\$140,000	High
	Establish permanent funding for the Connector pilot. Expand to seven days per week; conduct public outreach & service needs assessment; potentially add second bus and driver & modify route to better serve North and South Corvallis.		
T-199	Vehicle Asset Management	\$240,000	High
	Replace current aged cutaway fleet vehicles. Maintain existing vehicles in a state of good repair through maintenance and scheduled regular replacements.		
T-201	Bus Stop Projects	\$125,000	High
	Complete planned bus stop projects as developed in the ODOT-led NW Connector Transit Access Bus Stops & Amenities project report.		
T-202	99W South - Phase II	\$200,000	Medium
	Based on results of the corridor evaluation and service development plan, implement regional public transit bus service on OR 99W between Corvallis and Eugene, with stops in Monroe; Junction City; and Eugene Airport. This may be a contracted service with LTD.		
T-203	99W North - Phase II	\$175,000	Medium
	Based on results of the corridor evaluation and service development plan, implement regional public transit bus service on OR 99W between Corvallis and Monmouth. This may be a contracted service with Salem-Keizer Transit District.		
T-204	Demand Response Phase IV	\$105,000	Medium
	Expand demand response transit services to the Alsea River Valley corridor, Bellfountain, and the South Benton County communities, for improved access to services for the senior and disabled population of these communities.		

Table 16. Benton County Transportation Projects, Transit Projects, *Continued*

Project ID	Project Name	Annual Cost	Priority
T-205	Linn-Benton Loop Phase II	\$150,000	Medium
	Support service improvements and expansions for the Linn-Benton Loop service along the Highway 34 Corridor and other routes as identified in the Service Development Plan.		
T-206	Public Transit Partnerships	\$80,000	Medium
	Explore opportunities to partner with regional parks and open space to utilize public transportation for enhanced access to public resources for low income and minority residents.		
T-207	Plan Monitoring	\$5,000	Medium
	Establish mechanisms for routine monitoring of Plan implementation and for coordination with other land use and transportation planning occurring in the County and region.		
T-208	Demand Response Phase II	\$100,000	Medium
	Conduct an assessment of demand response service needs in under-served rural areas of Benton County, including the Alsea Valley corridor, South Benton County areas, Kings Valley, and the eastern County communities. Determine specific service needs (i.e. shooper shuttle, medical rides, etc.) and optimal days/hours of operation.		
T-245	South County Shopper Shuttle	\$90,000	High
	Establish a 2-3 Day-per-Week shopper shuttle service for seniors and individuals with disabilities, serving the communities of Monroe, Alpine, and potentially Harrisburg, with alternating shopping service to Junction City and to Corvallis and/or Albany. Coordinate with Linn County as feasible.		
T-246	After-School Programming Transportation Program	\$40,000	High
	In conjunction with Corvallis Boys and Girls Club, develop a transportation program to service students grades 9-12 with transportation for a supplemental sports and arts curriculum provided through the BGC working with the County School Districts. This will meet compliance with HB 2017 requirements for minimum 1% of STIF funds to provide student transit service.		
T-247	Expansion of County Transit Operations Facility	\$65,000	High
	The existing office/dispatch/driver training space of approx.1,200sf at the BC Sunset Building is completely inadequate for a base of operations for expansion of County transit services, as is the present transit vehicle & bus parking at the same facility, which is shared with County vehicle, employee vehicle, and public parking for five other agencies. This project would relocate transit operations to a remodeled, low-cost leased facility in the South Corvallis area located on OR 99W, with secured fenced vehicle parking and about 2,400sf of office, dispatch, and driver training/ready room space. This expansion is necessary if the County is to realistically engage in any of these expanded service projects.		
T-248	Upgraded Vehicle Dispatch and Driver Information System	\$137,200	High
	This project would convert our current legacy dispatching and scheduling software to the latest internet cloud-based technology, which would provide features not currently available for dispatchers, drivers, and our customers, such as real-time vehicle GPS locator for quick re-assignment; real-time updating of driver's rider manifests; and "where's my bus?" smart-phone capability for riders.		
T-249	Linn-Benton Loop Vehicle Contribution	\$150,000	Medium
	Assist as required with purchase of addition vehicle for the expansion of the Linn-Benton Loop, per Service Development Plan		
T-250	Benton County Transit Development Plan (TDP)	\$170,000	High
	Development of a formal and comprehensive Transit Development Plan for guidance of Benton County's future transit policy development, project planning and goals, and system growth objectives. Recommended by ODOT in STIF guidance for securing future STIF funding.		
T-251	Park and Ride Commuter Lot / Transit Study	\$75,000	Medium
	In conjunction with OCWCOG, examine current and future proposed or potential park and ride lots in Benton County in conjunction with the feasibility to provide weekday commuter transit service to/from these lots to key employer sites		

## Other Modes

### AIR SYSTEM IMPROVEMENTS

The 2013 Corvallis Airport Master Plan refines the aviation element of the Transportation Plan. The plan covers existing conditions, future forecast, and an alternatives analysis to develop recommendations for the future growth and development of the airport. The Corvallis Municipal Airport is publicly owned, and is classified as an Urban General Aviation Airport in Oregon. The airport has two runways and is adjacent to the Airport Industrial Park.

The Master Plan included the following general recommendations for the Corvallis Municipal Airport:

- Airport runway extension and strength improvement (pavement overlay) – when justified by frequent activity.
- Property acquisition for runway protection zones and obstacle free zones.
- Upgrade instruments for approaches to runway and visual navigation aids.

- Taxiway edge lighting and airfield signage.
- Perimeter security fence.
- Additional hangar space and associated taxi lanes.
- Change hangar access and separate vehicles from aircraft operational areas.
- Consider the addition of a terminal building with services, such as flight planning, pilot lounge, restrooms and showers, administrative offices, and restaurants.
- Apron area for air cargo transfer.

Recommended County projects to improve accessibility to the Corvallis Municipal Airport include upgrades to Airport Avenue (CC-03 and CC-142), Bellfountain Road (CC-155) and OR 99W (CC-54 and CC-136). The improved freight mobility that accompanies these upgrades will encourage economic growth and increased commercial traffic at the airport.

## Financially Constrained Transportation System

The Oregon Transportation Planning Rule (TPR) (OAR 660-012) requires that local agencies identify a Financially Constrained list of projects within their TSP document. Aside from complying with this regulation, this project list and expected funding value provides a basis of comparison for subsequent proposed amendments to the TSP. For example, if a major land use amendment is proposed that would significantly intensify travel activity beyond what is identified in the TSP, the County would need to demonstrate that the transportation system could still adequately serve the increased needs in the 2040 horizon year. In answering that question, the Financially Constrained system improvements would be assumed to be in place since it is reasonably likely, based on historical trends, that enough funding would be available to construct them.

As noted in Chapter 2, Benton County is expected to have roughly \$23 million available for transportation system improvements through the planning horizon. Most of that funding comes from federal and State discretionary programs.<sup>1</sup> The projections over the planning horizon of current County funding levels compared to estimated expenditures indicates there will not be any available discretionary money to allocate to moving projects identified in the TSP forward. As a result, there are very few County-led solution projects on the Financially Constrained list, as shown in Table 17.

**Table 17. Financially Constrained Projects**

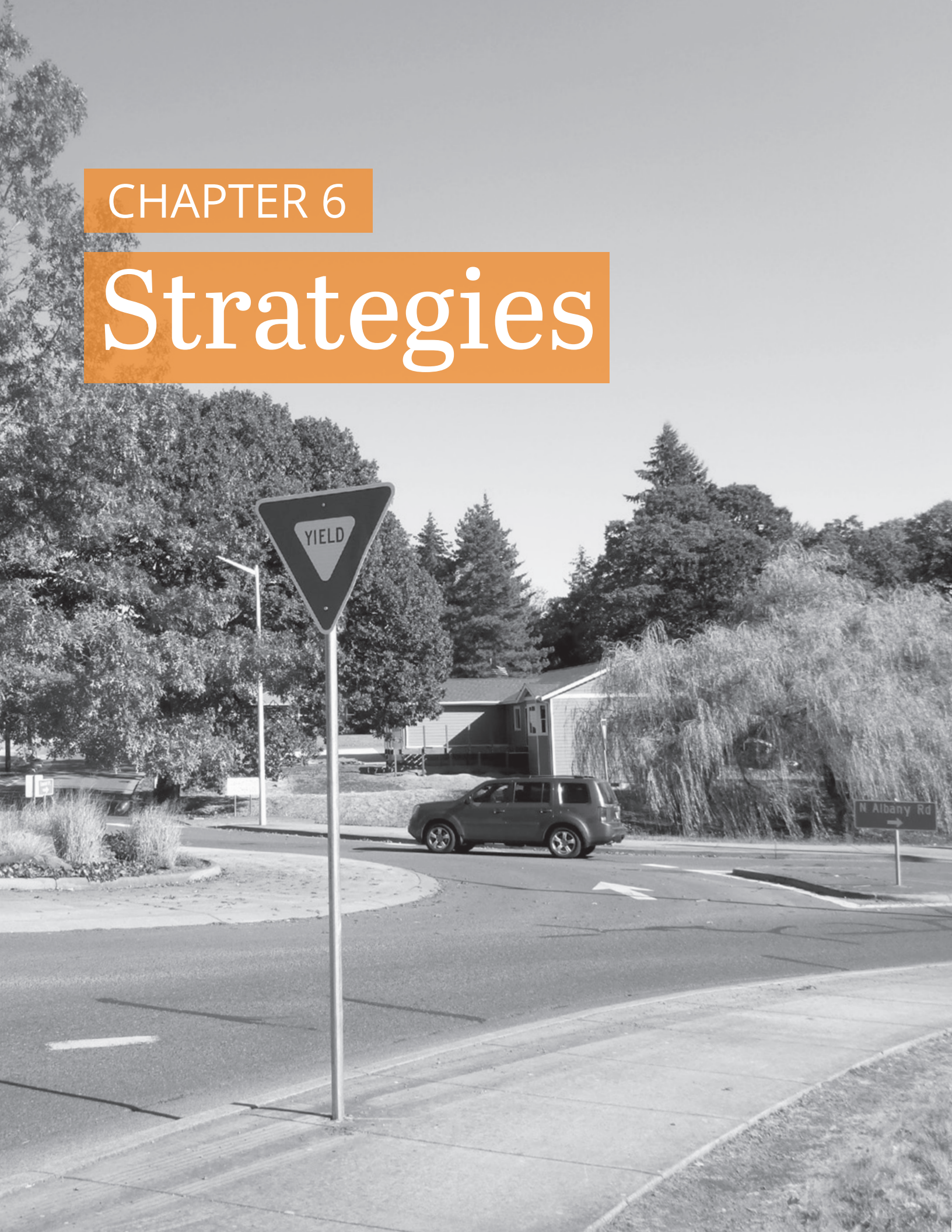
Table	Figure	Project ID	Name	Cost
14	25	CC-07	13th Street Modernization	\$4,200,000
14	25	CC-14	N 9th Street Modernization	\$8,655,000
14	25	CC-15	West Hills Road Modernization	\$6,005,000
23	10	CC-35	Springhill Drive Modernization	\$4,235,000
<b>Total</b>				<b>\$23,095,000</b>

<sup>1</sup> Funding available does not include new revenues provided by House Bill 2017.



## CHAPTER 6

# Strategies





Finding solutions to identified needs requires additional strategic approaches to supplement the investments in infrastructure. This chapter presents the strategies around safety education, travel demand management, and preparing for how innovations in technology will change transportation. Chapters 4 and 5 provide the transportation standards and list of projects that will be implemented along with the strategies and actions described in this section. In general, strategies discouraging people to travel by single-occupant vehicle are targeted and more effective in urban areas with higher density development and more variety of travel options. While most of these strategies will be led by the cities and Metropolitan Planning Organizations, Benton County will partner with these agencies to implement them. Many of the strategies below can also provide a benefit to the rural areas and will be developed when appropriate.

## Safety Education

Apart from improvements to the physical roadway network, such as shoulder widening or roadway departure improvements, safety education outreach also plays a role in improving the safety of roadway users. 80% of fatal crashes between 2011-2015 in Benton County occurred outside of UGBs; mitigation of the behavioral influences that may play a role in these crashes should not be overlooked.

### **ACTION:**

- Explore opportunities to partner with ODOT, other regional transportation agencies and public safety officials to sponsor courses that educate residents about the best practices to be safe while using regional roads (see Project S-255). Topics could include:
  - Seat belt awareness.
  - Dangers of impaired driving.
  - Hazards encountered on the road, such as weather conditions and night driving.
  - Outreach to vulnerable users, like cyclists and pedestrians.

## Transportation Demand Management (TDM)

Transportation Demand Management (TDM) or “transportation options” are terms for strategies that support transportation system efficiency by encouraging a shift from drive-alone trips to other means of travel such as carpooling, transit, bicycling, walking, and ridesharing. Examples include Rideshare, OCWCOG’s Transportation Options program, which helps public and private employers implement commuter benefit programs by facilitating shared riders for commuters. The program provides carpool and vanpool matching services for commuters living or working in Benton, Lincoln, and Linn Counties, with connections to Corvallis, Albany, Eugene, Salem, and Portland. Valley VanPool, a partnership of Cascades West, Cherriots (Salem Kaiser Transit), and Point2Point Solutions (Lane Transit District) helps match and organize commuter vanpools throughout the Central Valley and on the Coast. Rideshare is the regional network administrator of the statewide rideshare tool, Drive Less Connect. Oregon State University also has a Transportation Options program that links OSU students to transit services in the region.

TDM strategies are an important component of Benton County’s approach to reducing greenhouse gas emissions. Strategies may aim to reduce drive-alone trips overall or focus on peak-hour commuting times to reduce roadway congestion.

### TRANSIT INVESTMENT

As noted in Chapter 2 and Chapter 3 longer distance rural trips in Benton County are typically made by car. Individual travel mode decisions can only be influenced if viable alternatives are available.

The typical commute distance and low population densities make active transportation modes an unlikely choice for most rural residents but transit may provide an attractive alternative. Proposed transit connections (Table 16) south to Eugene and north to Independence along with improved connections to Albany provide an opportunity for residents to travel without using a car. They also provide improved connections to regional centers and access to wider travel options, such as airports in Eugene and Portland via the Amtrak station in Albany. The County’s 2017 Coordinated Public Transportation-Human Services Plan (Coordinated Plan) details strategies and actions to sustain and, where feasible, improve transit service countywide and is incorporated by reference.

Access to transit can be challenging in rural areas and improving access is always beneficial to the urban areas. The Oregon Cascades West Council of Governments is currently developing a Regional Park-and-Ride Plan. This TSP will incorporate the recommendations of that plan and in doing so improve transit access for residents of the county. By providing these recommendations the TSP is meeting the Goals of Equity (Goal 2), Mobility (Goal 4), Economic Development (Goal 5), and Environment (Goal 7).

#### **ACTION:**

- Implement the 2017 Coordinated Public Transportation-Human Services Plan.
- Participate in the implementation of the Oregon Cascades West Council of Governments Regional Park-and-Ride Plan when it is completed.

## ACTIVE TRANSPORTATION INVESTMENT

Active Transportation investments meet the goals of Safety (Goal 1), Equity (Goal 2), Health (Goal 3), and Environment (Goal 7) by improving fitness, reducing vehicle emissions and providing a lower cost transportation option. The projects that follow are only an example of the importance of active transportation in connecting the communities in Benton County. Separated shared-use path projects are identified from the City of Monroe to the City of Adair Village along OR 99W (e.g. AT-200), the City of Corvallis to the City of Albany along US 20 (AT-162), and along OR 34 (AT-152). Also, this TSP recognizes the impact of freight traffic on cyclist comfort (Chapter 4). Future studies shall recognize that relationship and provide for adequate facilities in the event of conflict between the modes. Furthermore, many “Modernization” projects within the urban growth boundaries primarily provide improvements to the active transportation modes. Within UGBs, Benton County applies the urban roadway standards of the City. This means that a project that improves a road to cross-section standards will most likely be adding sidewalk and bike lanes within the UGB. These types of investments provide an option for residents who can currently only travel via car in the existing transportation system.

Once viable County bike facilities exist, outreach and marketing of that system will be the next priority. Providing additional information, such as maps, about the origins and destinations of

existing and future project connections will provide more opportunity for travelers to make non-automotive trip choices. Related to this outreach effort will be the development of signed County Bike Routes and wayfinding improvements.

### ACTION:

- Designate County Bike Routes and support with wayfinding, signing, mapping, and outreach (See Project AT-256).

## COORDINATION WITH REGIONAL PARTNERS

Implementation of TDM strategies will require coordination with outside, regional agencies. With approximately 20% of workers commuting into Benton County from Albany, Salem, and Eugene (see Chapter 2) the traffic patterns in Benton County are impacted by decisions made outside of the county boundary. Transit projects T-188 and T-207 provide some funding for transit marketing and plan monitoring. As these, and other, projects are funded and evolve consideration of regional travel and coordination with outside agencies will be a central part of the project development process.

### ACTION:

- Implement Project T-188: Transit Marketing.
- Implement Project T-207: Plan Monitoring.

## Preparing for the Future and Smarter Mobility

Emerging transportation technologies will shape our roads, communities, and daily lives for generations. Vehicles are becoming more connected, automated, shared, and electric. This future is highly uncertain, but it may have significant impacts for how Benton County plans, designs, builds, and uses the transportation system. Below are some important definitions that provide the basis for the impacts, policies and action items discussed in the following sections.

**Connected vehicles (CVs)** will enable communications between vehicles, infrastructure, and other road users, see Figure 27. This means that our vehicles will be able to assist human drivers and prevent crashes while making our system operate more smoothly.

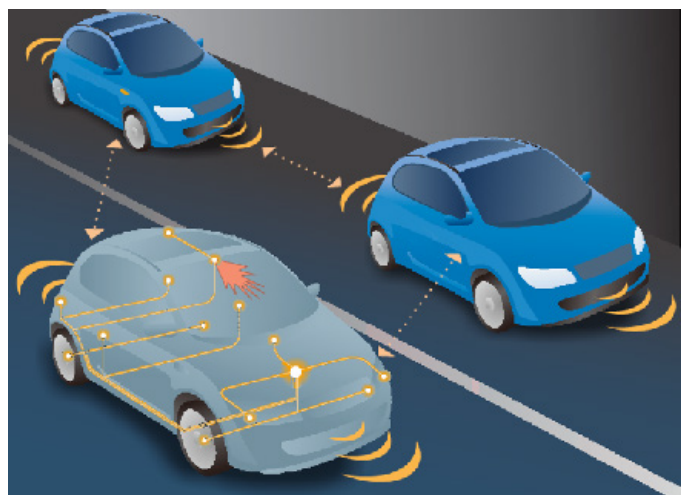
**Automated vehicles (AVs)** will, to varying degrees, take over driving functions and allow travelers to focus their attention on other matters. Already today we have vehicles with combined automated functions like lane keeping and adaptive cruise control. However, these still require constant driver oversight. In the future, more sophisticated sensing and programming technology will allow vehicles to operate with little to no operator oversight.

**Shared vehicles (SVs)** are already on the road today in Benton County that allow ride-hailing companies to offer customers access to vehicles through cell phone applications. Ride-hailing applications allow for on-demand transportation with comparable convenience to car ownership without the hassle of maintenance and parking. Ride-hailing applications can enable customers to choose whether share a trip with another person along their route or travel alone.

**Electric Vehicles (EVs)** have been on the road for decades and are becoming more economically feasible as the production costs of batteries decline.

Many of these vehicles will not be exclusive of the others and it is important to think of the host of implications that arise from the combination of these technologies. When discussing these vehicles, they can be referred to as connected, automated, shared, and electric (CASE) vehicles.

Figure 27. Vehicle to Vehicle Communication



## IMPACTS OF CASE VEHICLES

### CONGESTION AND ROAD CAPACITY

There are several competing forces that will unfold as connected, automated, and shared vehicles are deployed. It is difficult to predict how these vehicles will influence congestion and road capacity. The following factors will transform how people use County roadways:

- AVs will provide a more relaxing or productive ride experience and people will have less resistance to longer commutes.
- Shared AVs will likely cost significantly less on a per mile basis which will increase demand for travel.
- CV technology will allow vehicles to operate safely with closer following distance, less unnecessary braking, and better coordinated traffic control. This will increase road capacity in the long run as CVs and AVs comprise increasing portions of the public and private fleet of vehicles.
- In the near term, as AVs still make up a fraction of the fleet of vehicles, road capacity could decrease as AVs will operate more slowly and cautiously than regular vehicles.
- A new class of traffic – zero-occupant vehicles – will increase traffic congestion.
- Roadways may need to be redesigned or better maintained to accommodate the needs of automated driving systems. For instance, striping may need to be wider and more consistently maintained.

The following questions remain open and should be followed closely to understand the degree to which CASE vehicles will impact road capacity and congestion:

- How much will AVs cost for people to own them personally?
- How much will AVs cost if they are used as a shared fleet?
- How does cost and the improved ride experience of AVs influence travel behavior?
- How much more efficiently will AVs operate compared to regular human driven vehicles once they dominate the vehicle fleet?
- How will AVs impact road capacity in the near term as they are deployed in mixed traffic with human driven vehicles?
- What portion of traffic will be zero-occupant vehicles and what areas will likely generate the highest portion of zero-occupant vehicles looking for parking or waiting for their next passenger?

### TRANSIT

Transit is expected to remain the most efficient way to move high volumes of people through constricted urban environments. AVs will not eliminate congestion and as discussed above, could exacerbate it – especially in the early phases of AV adoption. In addition, shared AVs may not serve all areas of a community and underserved communities still require access to transit to meet their daily needs.



## PARKING

Because AVs will be able to park themselves, travelers will elect to get dropped off at their destination while their vehicle goes to find parking or their next passenger. Shared AVs will have an even greater impact on parking because parking next to your destination will no longer be a priority for the traveling public. This means that parking may be over-supplied in many areas and new opportunities to reconfigure land use will emerge. Outstanding questions related to parking that should be closely followed include:

- How does vehicle ownership impact parking behavior?
- What portion of the AV fleet will be shared?

## PACKAGE DELIVERY

AVs will also be used to deliver packages, food, and expand services. This may mean that delivery vehicles will need to be accommodated in new portions of the right of way. Package delivery by aerial drone could introduce new sets of challenges for Benton County.

## ELECTRIC VEHICLE CHARGING

To accommodate a future where electric vehicles will come to dominate the vehicle fleet, new charging capacity will be needed. In addition to charging stations, municipalities, electric utilities, regions, and states will need to work together to create enough electricity to supply the significant increase in demand.

## POLICIES AND ACTION ITEMS

### MOBILITY HUBS

A mobility hub is a central location that serves as a multimodal connection point for transit, car share, bike share, and ride share stations, see Figure 28. This system can serve as a tool to encourage travelers to take seamless multimodal trips that are well timed and convenient. Mobility hubs can be integrated into transit centers, park-and-ride lots and other areas needing or with access to multimodal supportive infrastructure (e.g., protected bike lanes) to maximize connectivity for first- and last-mile solutions.

It is likely that cities within Benton County will take the lead in siting and developing future mobility hubs. Benton County will coordinate with such efforts to provide access to County-provided transit services and information as feasible.

### ACTION:

- Coordinate with regional efforts to site mobility hubs by providing access to County-provided transit services and information as feasible.

Figure 28. Mobility Hub



## ROAD PLANNING AND CAPACITY

It is difficult to plan for the impacts of CASE vehicles on road capacity at this point in their development. Because there is a high potential that ultimately road capacity will increase after CASE vehicles are widely adopted along with a corresponding increase in traffic demand, we can expect that congestion will continue to persist.

However, CASE vehicles provide a much greater opportunity for effective transportation demand management solutions because the expected congestion can be used to encourage use of transit, shared vehicles, and bike share. These modes could all be encouraged through pricing mechanisms that are vastly less expensive to implement than building more road capacity. A variety of pricing mechanisms and alternatives to the State gasoline tax are enabled with CASE technology because these vehicles will be tracked geographically, and by time of day. With time/location data, transportation system operators will be able to develop pricing mechanisms that reduce congestion at a lower cost than other roadway improvements.<sup>1</sup> As opportunities arise, Benton County will coordinate with partnering local and regional agencies to explore options for implementation of such region-wide travel demand management strategies.

Some new vehicles, such as electric bikes and particularly electric scooters, do not always fit well within the existing public transportation infrastructure. The topical issues of what facilities these scooters should use, sidewalks or bike lanes,

the class of roads they are allowed on and whether they should be permitted at all are all currently being discussed by transportation and elected officials throughout the country. Accommodating these modes will require flexible and innovative solutions that will need to be modified as the environment changes.

## TRANSIT

To avoid potential equity and congestion issues, transit agencies need to work together to integrate the use of automated vehicles and transit. Transit needs to adapt to new competition in the transportation marketplace as well as consider adopting CASE technologies to support transit operations.

## ACTION:

- Consider adopting CASE technologies, such as:
  - Partnering with ride-hailing companies to provide first- and last-mile solutions.
  - Working with ride-hailing companies and bike share to integrate payment platforms and enable one button purchase of a suite of transportation options for multimodal trips.
  - Creating fixed route autonomous shuttles to provide first- and last-mile solutions.
  - Creating on-demand autonomous shuttles to provide first- and last-mile solutions.

<sup>1</sup> Fishman, E, 2016 Road Use Pricing: Driverless cars, congestion and policy responses.

### INTELLIGENT TRANSPORTATION SYSTEMS

The Central Willamette Valley Intelligent Transportation System (ITS) Plan defines advanced technologies that support regional transportation initiatives such as promoting travel options, optimizing transportation system performance, and reducing the frequency and effects of incidents. The plan was developed collaboratively with a steering committee of stakeholders from across the region. The ITS Action Plan includes advanced technologies and management strategies to improve the safety and efficiency of the transportation system and improve the traveler experience for all modes in the Central Willamette Valley. The ITS Action Plan includes specific ITS projects and deployment priorities.

#### **ACTION:**

- Pursue opportunities to work with regional partners on larger scale ITS efforts that would benefit residents. Such cooperation could include sharing information and data and allowing use of County right-of-way for regional ITS infrastructure.

### ELECTRIC VEHICLE CHARGING

As electric vehicles, including new modes such as electric bicycles and scooters, become more common, facilities for charging these vehicles in the public space should be considered. Information about existing electric vehicle charging stations can be found in the Benton County TSP Background Documents, Memorandum #4.

#### **ACTION:**

- Develop, in coordination with partner agencies, a regional electric vehicle charging station plan (See Project CC-257).

### ELECTRIC SCOOTERS & ELECTRIC BICYCLES

Fleets of dockless electric scooters have arrived in many cities across the nation. Electric bikes are also appearing as a subscription-based service like bike-sharing (in addition to privately owned electric bikes that have been around for several years). The scooters are activated with a smartphone app and have little to no parking restrictions at the destination of the trip. Their convenience and low cost (also true for e-bikes) make them an attractive option for many making shorter trips, potentially reducing the number of short trips made by motor vehicles. Innovative modes of transportation, like scooters, can quickly change demands on the transportation system.

#### **ACTION:**

- Monitor new technologies so that the system can adapt to future travel options.



CHAPTER 7

# Improved Transportation System



As Benton County implements the TSP projects, residents will enjoy a safer, more balanced multimodal transportation network. This chapter describes outcomes that could be achieved by 2040.

## Intersection Operations

Projects to improve congestion at study intersections were identified. With the improvements in place, all but six studied intersections (all on State highways) would meet mobility targets in 2040. However, the level of congestion experienced at these six intersections would be significantly improved. At these locations, Benton County will work with ODOT to explore the possibility of adopting alternative mobility targets that set more realistic expectations for what can be

achieved with anticipated resources. Table 18 lists the intersections anticipated to fail to meet mobility targets by 2040 and the projects from this plan to help mitigate congestion. Project descriptions in this TSP are often general in nature to provide flexibility for project design teams. For the purpose of this evaluation, assumptions were made about what future improvements might include. Therefore, the descriptions below may not match those in the previous project tables.

**Table 18. Congested Intersections in 2040 with Planned Improvements**

Intersection ID	Intersection Name	Mobility Target <sup>1</sup> (v/c)	Description of Improvements		
			2040 No Build v/c	2040 Build v/c	Analysis Description
4	OR 99W & Ryals Ave	0.70	>2.0	0.80	(CC-117) Signalize intersection. This intersection fails ODOT mobility targets with future growth in the City of Adair Village.
14	US 20 & Springhill Dr	0.95	1.21	1.00	(S-30) Coordinate with signal at North Albany Road, convert existing southbound right turn lane to shared right/left. The eastbound volume at this intersection exceeds capacity. Additional lanes on US 20 are needed.
16	US 20 & Scenic Dr	0.95	>2.0	>2.0	(CC-29) Widen US 20 from 2 to 4 lanes and add southbound left turn lane. Southbound left turning drivers have less delays but v/c ratios still exceed mobility targets. The volume using this movement low and an alternate route is available.
17	US 20 & Independence Hwy	0.70 [0.75]	0.20 [>2.0]	0.20 [0.91]	(CC-129) Add southbound left acceleration lane. High east/west through volumes create significant delays for turning movements.
18	US 20 & Granger Ave/ Autumn Seed Drwy	0.70 [0.75]	0.03 [>2.0]	6.04 [1.04]	(CC-128) Add southbound left acceleration lane. High east/west through volumes create significant delays for turning movements.
20	US 20-OR 34 & 53rd St	0.85	1.02	0.89	(CC-52) Add southbound right turn lane, lengthen the westbound right turn lane and additional east and westbound through lanes.

1 Mobility Targets pertain to the intersection for signalized control and to Major [Minor] street approaches for two-way stop control. v/c is shown at the intersection level for signalized control and the worst movement for two-way stop control.



## Safety

Between 2011 and 2015 there was an average of 175 crashes per year in Benton County. Most of these crashes occurred on 29 intersections and roadway segments identified in the existing conditions safety analysis (see Benton County Today & Tomorrow in this document and Memorandum #4 in the Benton County TSP Background Documents).



This TSP includes 32 projects targeted at mitigating identified safety issues. These include several projects to widen roadway shoulders and install warning devices to reduce roadway departure crashes. Other projects improve the safety of intersections through warning signing and upgrading traffic control (i.e., installation of roundabouts or traffic signals). While not described as “safety” projects, active transportation projects that create walking and biking facilities separated from the roadway (i.e., shared-use paths) will improve safety by eliminating many direct conflicts between motor vehicles and vulnerable users. Altogether, these projects contribute to a safer future for people walking, biking, and driving in Benton County.

## Active Transportation

With the TSP active transportation improvement projects in place, the safety of walking and biking along major travel corridors in the county will be significantly improved and connections will be established between rural communities and the urban centers. As a result, more inviting recreational opportunities will be provided, access to existing and future transit services will be enhanced, and non-motorized travel options for trips to work, schools, and daily activities will be better supported. Key connections include:

- Adair Village to North Albany: Connection through Ryals Avenue widening (S-185), funded bike lane project on Metge Avenue (AT-209), Independence Highway widening (CC-221), Gibson Hill Road urbanization (CC-31) and the Corvallis-Albany shared-use path (AT-162).
- Adair Village to Corvallis: Connection along OR 99W shared-use path (AT-108, AT-235, AT-236) and OR 99W shoulder widening (S-163).
- Alsea to Philomath: Connection through OR 34 shared-use path (AT-152) and OR 34 widening (S-183).
- Alpine to Monroe: Connection through Alpine Road shoulder widening (S-160) and Airport to Alpine Shared-use Path (AT-200).
- Alpine to Bellfountain: Connection through Bellfountain Road shared-use path (AT-233).
- Corvallis to Albany: Connection through the Corvallis-Albany shared-use path (AT-162).
- Monroe to Corvallis: Connection through Airport to Alpine Shared-use Path (AT-200).
- Blodgett to Philomath: Connection through US 20 shoulder widening (S-161).

## Public Transportation

Public Transportation in Benton County will help create a safe, equitable, and efficient component of the transportation system that supports healthy lifestyles, environmental health, and economic development by connecting people with where they want to go.

The public transportation projects address the needs for improved connections with rural areas; expanded demand response service; transit service on OR 99W between Eugene and Monmouth; and expanded service between Corvallis and Albany. Specific strategies are summarized below.

### IMPROVED CONNECTIONS TO RURAL COMMUNITIES

- Conduct a needs assessment for Rural communities like Wren, Alsea, Bellfountain, and Kings Valley that have limited or no public transportation options.

A needs assessment for these corridors will help determine what level of fixed rural or demand response transit service will be most effective. For example, a rural shopper shuttle could provide one to two days of transit service weekly, up to three times per day, and connect people in rural communities to Corvallis and Philomath. The service design can include a consolidated stop in each community, or pick up and drop off riders close to the destinations, based on the time available and local needs.

- Consider adding daily runs for the Coast to Valley Express which connects Newport and rural communities on US 20 with Corvallis and Albany.

This will support long-distance connections between Lincoln and Benton Counties. Acquisition of a bicycle trailer to accommodate larger groups of biking travelers to the coast is one possible option to expand market access.

### IMPROVED ON-DEMAND TRANSIT SERVICES

Benton County's demand response transit system supports a wide range of travel needs for some of the County's most transportation-disadvantaged residents. The ADA-accessible vehicles are aging out and need replacement. The system will need continuous improvements and capacity expansion as the older adult population continues to grow and demand for transportation increases. Maintaining capacity for regional demand response transit is a top priority for Benton County.

## SERVICE ON HIGHWAY OR 99W

- Benton County will explore organizational partnerships to serve the OR 99W corridor.

Comments from residents, employees and visitors to Benton County have identified transportation needs in communities along the OR 99W corridor, from Eugene to Monmouth. Key destinations in addition to these communities would include Junction City, Monroe (which has no transit service today), Corvallis, and Adair Village. Given that areas north and south of Benton County are served by large public transit districts (Lane Transit District and Salem-Keizer Mass Transit District), Benton County will explore organizational partnerships to serve the OR 99W corridor.

- Consider supplemental services for connections to Eugene.

The Eugene Connector is envisioned as a deviated fixed route bus offering four round trips per day or a bus every two hours between the Corvallis and Eugene Downtown Transit Centers. Benton County may consider three or four days per week service, and/or operating only to Junction City where riders can connect to an LTD route. The service is expected to appeal to people seeking medical services, shopping, and visits to family and friends. Work commutes, which require 10- to 12-hour service hours, will be considered in later phases. The communities of Monroe, Halsey, and Junction City share a transportation nexus, with convenience shopping in Junction City provided for the other two communities; an exploration of the needs of these three communities should be undertaken if a Connector service is developed.

- The OR 99W North service is envisioned as a deviated fixed route bus offering four round trips daily between Corvallis and Monmouth, with a stop in Adair Village.

The key markets are residents, students, and visitors traveling between Corvallis and Monmouth. This would provide connections between Oregon State University and Western Oregon University. This route would replace and expand the 99 Express service between Corvallis and Adair Village, offering four round trips daily, Monday through Friday. The service could be aligned with service to/from Eugene, as operationally possible, but will likely require an additional vehicle and operator to provide additional service.

Alternatively, Benton County may increase service to Adair Village through the **99 Express** independently from the service to Monmouth. Near-term demand in Adair Village is not expected to warrant an additional route today, but maintaining the separate service allows for more local stops without slowing the regional route.

## EXPANDED SERVICE BETWEEN CORVALLIS AND ALBANY

- Increase service on the Amtrak Connector and improve service for the Linn Benton Loop.

The Benton County **Amtrak Connector** currently links Corvallis to the Albany Amtrak station. The first year of the service met expectations and the County and partners plan to continue the route. Adding three trips per off-peak days (Tuesday and Wednesday in 2018) and expanding the pick-up locations to north and south Corvallis sites will help round out the service for 7-day per week availability. Geographic expansion opportunities exist within Corvallis and other communities in the county.

The **Linn Benton Loop** serves a route between Linn Benton Community College and Oregon State University, and is one of the busiest regional transit routes. Benton County is a supporter of this regional transit service, and is committed to supporting the service as it grows to keep pace with population and student enrollment growth. A short-range plan that was ongoing during the development of this TSP will provide further guidance on service improvements. This TSP adopts the priorities and recommendations described in the Linn Benton Loop Service Enhancement Plan.

## TRAVEL TRAINING, MARKETING AND COORDINATION

- Improve travel education and outreach and marketing activities to ensure riders and organizations are aware of the services offered.

While operations and vehicle maintenance are the main activities for the public transportation

services, many activities support high quality service delivery.

**Travel training** includes a variety of activities to help people learn how to ride the bus, and get comfortable using it. Travel training is implemented by staff typically in a shared facility, with minimal materials or equipment. Travel training is a key way to protect capacity on the demand-response service for those who need it most, by moving passengers capable of using fixed-route systems to those services.

**Marketing** and communication is a key component to service delivery, to ensure riders and potential riders have access to service details, changes, and disruptions. Marketing and communication activities include but may not be limited to radio, television, print and internet advertising; social media campaigns; newsletters, websites, online trip planners, and maintaining stop and vehicle location data. Local partners such as Good Samaritan Hospital, HP, schools, local cities, Oregon State University, and major employers are important information-sharing venues. Information about programs like the “emergency ride home” can encourage many people to consider alternative transportation. Costs can include staff (marketing coordinator) time, advertising rates, and design.

**Coordination** helps partner organizations to operate seamless services across and between regions. This can include, but is not limited to, transit providers, counties, cities, human service organizations, non-profit organizations, state agencies, and federal agencies. The 2017 Benton County Public Transit – Human Services Coordinated Plan is an excellent planning framework for coordination.