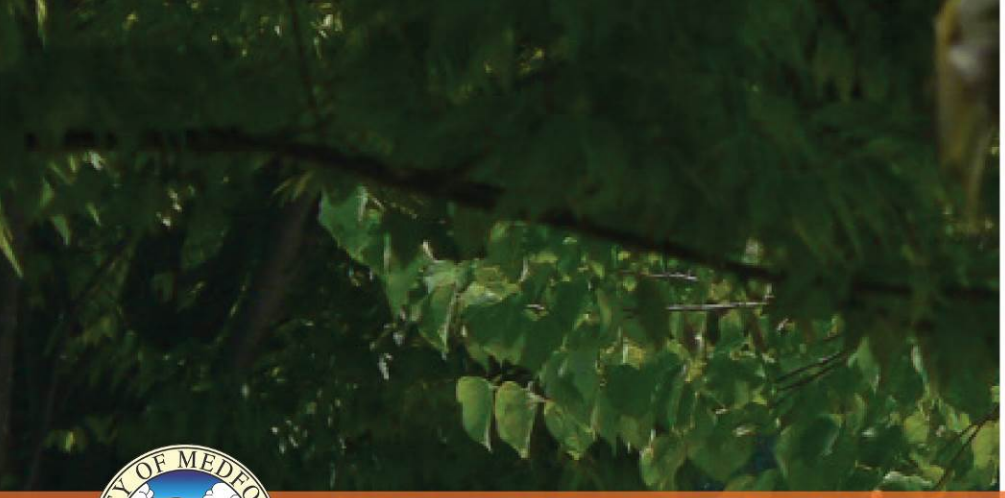

CITY OF MEDFORD

TRANSPORTATION SYSTEM PLAN

2018-2038

Adopted by Medford City Council December 6, 2018
By Ordinance NO. 2018-126

2/5/2019: Scrivener's error corrected on page 78 – Project 481 changed "two lanes" to "one lane" in the description

Acknowledgements

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SECTION 1 /// INTRODUCTION

- Regulatory Context
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Introduction

OVERVIEW

The City of Medford Transportation System Plan (TSP) provides a long-range vision for the transportation system in Medford and outlines a process for how it can be achieved with prioritized Plan elements. The Plan was developed through extensive coordination between local and state agencies and the involvement of local stakeholders, and summarizes the City's priorities to meet existing and future transportation needs. It includes prioritized projects and costs, summarizes current funding, and provides recommendations for future potential funding sources. The TSP is intended to be flexible, allowing the City to modify Plan elements and priorities according to changing community needs and revenue sources over the next 20 years.

With a need to be flexible over the next 20 years it is also important to update and improve upon the 2003 TSP. Some notable changes from 2003 to 2018 include:

- New Level-of-Service Standards
- New Roadway Cross-Sections
- New Goals, Objectives, and Action Items
- Updated Functional Classification Map
- Updated Bicycle and Pedestrian Plans
- A new Bicycle and Pedestrian Tool-Kit
- New Level of Traffic Stress Analysis

REGULATORY CONTEXT

On May 18, 2018 the City of Medford's Urban Growth Boundary (UGB) Expansion was recognized by the State of Oregon. The last UGB being amended in 1990. In order for lands within the UGB to be annexed and developed they must also be incorporated in to an adopted Transportation System Plan. The 2018-2038 TSP analyzes and plans for both lands currently in the Medford city limits and proposed UGB expansion areas for future development.

The Oregon Revised Statutes require that the TSP be based on current Comprehensive Plan land uses and that it provide for a transportation system that accommodates the expected growth in population and employment that will result from implementation of these planned land uses.

Development of this TSP was guided by Oregon Revised Statute (ORS) 197.712 and the Department of Land Conservation and Development (DLCD) administrative rule known as the Transportation Planning Rule (TPR, Oregon Administrative Rule 660-012).

The TPR requires that active travel modes be given consideration along with the automobile, and that reasonable effort be applied to the development and enhancement of alternative modes as part of the future transportation system. In addition, the TPR requires that local jurisdictions adopt land use and subdivision ordinance amendments to protect transportation facilities and to provide active transportation facilities between residential, commercial, and employment/institutional areas. It further requires that local communities coordinate their respective plans with the applicable County, regional, and State transportation plans.

This TSP update maintains consistency between the City's TSP and county, state and federal transportation policies and standards. To ensure this consistency, literature reviews of existing plans, policies, standards and laws that are relevant to the TSP update were conducted in

2011, 2013, and 2017. Detailed information from these reviews, including a complete list of the documents reviewed, is included in TSP Volume II.

URBAN GROWTH BOUNDARY EXPANSION AREAS AND THE REGIONAL PLAN

With over 4,000 acres of land being brought into the Medford UGB it is necessary to plan for how these lands will be accessed through driving, walking, biking or the use of transit. Figure 1 on page 4 shows the various expansion areas as well as the urban reserves. Whereas the expansion areas are projected to provide the City with a 20 year supply of land, the urban reserves are anticipated to provide a 50 year supply of land. As such, the TSP has planned for roadways, intersections, shared use paths, and bike and pedestrian facilities in the UGB expansion areas, but not within the urban reserve areas.

Much like the TSP plans for transportation infrastructure, the *Greater Bear Creek Valley Regional Plan* plans for urban land growth. Adopted into the Medford Comprehensive Plan on August 16, 2012 as the Regional Plan element, this plan is multi-jurisdictional planning effort that established coordinated urban reserve plan areas for the cities of Ashland, Central Point, Eagle Point, Medford, Phoenix, Talent and Jackson County. This plan is as much of a driving force behind the 2018-2038 TSP update as it was a large influence to the UGB expansion.

In building on the efforts of the Regional Plan, the City of Medford has incorporated several of the urban reserve areas into the Urban Growth Boundary. These are labeled on Figure 1; the expansion areas include:

- MD-2
- MD-3 (portions of)
- MD-4 (portions of)
- MD-5 (portions of)
- MD-6 (portions of)
- MD-7
- MD-8
- MD-9
- MD-P Prescott Park
- MD-P Chrissy Park

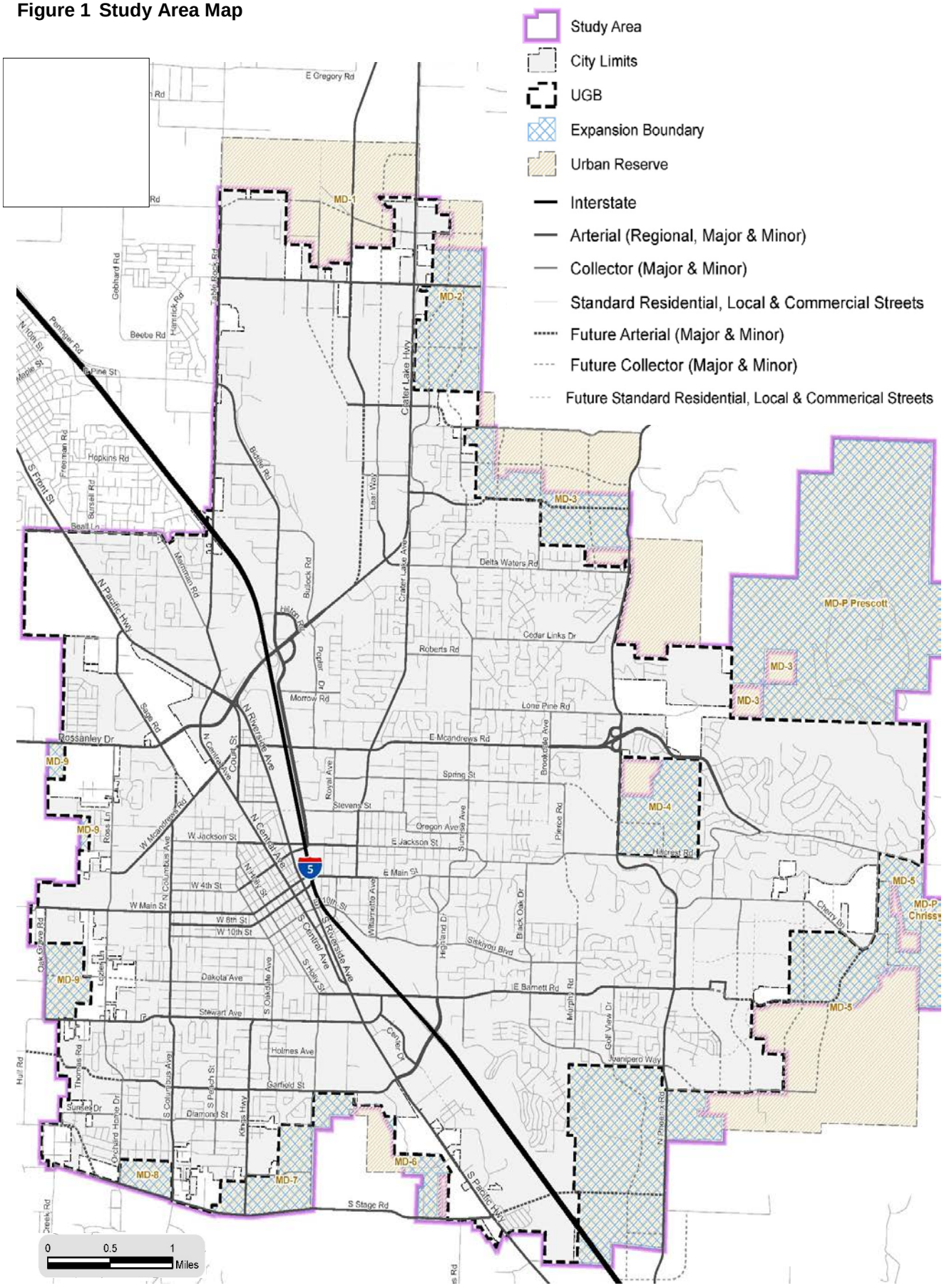
URBANIZATION PLANS

Planning for these areas doesn't stop with the TSP or the *Regional Plan*. Prior to annexation, lands within the new urban growth lands will need to adopt an urbanization plan. An urbanization plan is a conceptual land use plan that will demonstrate how the MD areas will comply with the Regional Plan by demonstrating how the lands will meet:

- target densities
- future land use needs
- transportation infrastructure needs
- locations of mixed use/pedestrian friendly areas

The 2018-2038 TSP has established preliminary, locations for roadways, shared use paths, and bicycle and pedestrian facilities in these MD areas and examples of this can be found throughout the document. Coordination between the property owners, the City, Jackson County and the surrounding jurisdictions will be key to successful urbanization of these MD plan areas.

Figure 1 Study Area Map



TSP UPDATE PROCESS

The update process for the Medford TSP started in 2010 and was completed in 2018. Much of the update process was driven by the expansion of the Medford UGB, in conjunction with adoption of the Regional Plan. The initial focus of the TSP update involved documenting the existing transportation system while identifying gaps and deficiencies in the system based on current and future forecasted transportation system performance.

After the initial analysis of the Medford transportation system was performed, the process shifted to identifying projects, goals, objectives, action items and programs to address the gaps and deficiencies identified. To fund the identified projects future revenues were projected, which enabled the creation of a finically constrained project and program list through the year 2038. Through this process there was extensive outreach and regional coordination conducted to ensure a cohesive and transparent process in updating the TSP.

Regional Coordination

Medford's transportation system has large implications that extend past the City's boundaries. Regional coordination has been a key component of the 2038 TSP with participation from Jackson County, Central Point, Phoenix, Oregon Department of Transportation, and Oregon Department of Land Conservation and Development on the Technical Advisory Committee and Citizen Advisory Committee. Additionally, the Medford TSP will influence the local projects included in the Regional Transportation Plan, maintained by the Rogue Valley Metropolitan Planning Organization.

Committees

The 2038 Medford TSP was created in close coordination with City Council, city staff, community representatives, and various professionals. Two formal committees participated in the development of the TSP and they included the:

- **Technical Advisory Committee (TAC) –** Comprised of agency staff from the Oregon Department of Transportation (ODOT), Rogue Valley Metropolitan Planning Organization (RVMPO), Rogue Valley Transit District (RVTD), neighboring cities, and Jackson County. The TAC focused on consistency with related plans, decisions regarding surrounding jurisdictions, and provided recommendations for policy and plan development.
- **Citizens Advisory Committee (CAC)/ Joint Transportation Sub-Committee (JTS) –** Comprised of Medford citizens with varying professional and personal backgrounds. The CAC focused on reviewing draft documents, providing comments and recommendations on proposed text, and gave input on plan development.

Public Involvement

Public involvement for the 2038 TSP consisted of a multi-faceted approach using open houses, public events, online engagement tools, surveys, and regularly scheduled CAC meetings. To publicize the efforts and opportunities for public input staff utilized social media, email networks, flyers, utility bill mailings, and radio, newspaper, and television outlets for advertisement of the TSP. In total, over a thousand community members from Medford, and surrounding jurisdictions, provided feedback in one form or

another. The feedback provided has influenced the visions, goals, objectives, and action items of the TSP as well as project selection. Each method of outreach is briefly summarized below.

- **TSP Open Houses**: City staff hosted six open houses related to the 2038 TSP. The first open house held on August 29, 2017 was to gain public comment on the TSP vision, goals and objectives. The next four open houses were held through January of 2018 to solicit public comments on the proposed projects. Lastly, the sixth open house, held in the fall of 2018, provided an opportunity for comment on the entire draft TSP document.

- **Public Events**: To advertise different aspects of the TSP, the City's outreach efforts, and gain community input City staff attended several city sponsored events in 2017 including Rec Fest (May 7), Movies in the Park (August 12), Concerts in the Park (August 24), and the Greater Medford Multicultural Fair (September 30). Opportunity for input was provided at each event as well as information about the progress of the 2038 TSP.

- **Online Engagement Tools**: In order to reach a broader audience the City hosted two online forums to obtain outreach. The first was the TSP Online Workshop (June 22 – July 31, 2017) and the second was the City of Medford Transportation Survey (August 1 – September 13, 2017). Both engagement tools and their outcomes are incorporated in the 2038 TSP and are available at the Medford Planning Department.

- **City of Medford Transportation Survey**: Using a more traditional form of outreach, the City hosted a survey in which participants were asked 19 questions about their transportation preferences. This form of public involvement alone produced 1,042 survey responses, the results of which have been incorporated in the 2038 TSP and are available at the Medford Planning Department.

- Regularly scheduled CAC Meetings: On the fourth Wednesday of every month, the City held the Citizen Advisory Committee meetings to provide regular updates on the progress of the TSP. Minutes of these meetings are available to the public and maintained by the City.

PRIORITIZATION OF PLAN ELEMENTS

Plan elements presented in the TSP were prioritized using evaluation criteria selected by the City Council, as well as input from staff, the Planning Commission, advisory committee members, and the public. The projects are prioritized based on financial constraints and management, maintaining the Level-of-Service mobility standards, and funding key projects that will make an impact into the future as the community grows.

The resulting prioritized projects are grouped into two general categories: Tier 1 and Tier 2. Tier 1 projects are those identified as having City wide significance, help implement the goals and objectives of the plan, and are anticipated to be feasible over the next 20 years based on the current transportation funding forecast. Tier 2 projects are those that are needed to support the transportation system in the future but are not considered part of the financially constrained plan

based on existing transportation funding resources.

It is recognized that the City's priorities may change over time and modifications may be necessary. The projects will be reviewed and evaluated periodically over the life of the plan in order to re-assess the transportation needs of the community.

TSP ORGANIZATION AND METHODOLOGY

The Medford TSP is composed of a main document (Volume I) and a volume of supporting technical appendices (Volume II).

Volume I, the Transportation System Plan, is organized into the following sections.

- Section 1 – Introduction (current section)
- Section 2 – Goals and Objectives
- Section 3 – Existing Conditions and Future Needs Assessment
- Section 4 –Transportation Funding and Implementation
- Section 5 – Transportation System Plan
- Section 6 – Key Code and Policy Amendments
- Attachment A – Bicycle and Pedestrian Toolkit

Volume II (under separate cover) contains the technical memoranda and information prepared during the development of the Transportation System Plan, including the detailed data and analysis that informed the final Plan. Those items are as follows:

Appendix A	Plans and Policies Review
Appendix B	Safety Technical Memorandum
Appendix C	Base Year Volumes
Appendix D	Base Year Conditions Figures and Synchro Outputs
Appendix E	2038 RVMPO Travel Demand Model Outputs
Appendix F	Future Volume Post-Processing Worksheet
Appendix G	2038 Future Baseline Conditions Figures and Synchro Outputs
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Appendix I	Transportation Planning Rule (TPR) Checklist
Appendix J	Functional Classification Memorandum
Appendix K	Operations Analysis

SECTION 2 /// GOALS & OBJECTIVES

Describes the city's Vision for transportation and the Goals, Objectives and Action Items to help the City achieve this vision.

- Vision
- Goals
- Objectives
- Action Items

Goals and Objectives

The following provides the City's vision for transportation and the identified goals, objectives, and action items that will help the City achieve this vision.

VISION

In 2038, the City of Medford will continue to be the regional and economic center of the Rogue Valley and will be served by a transportation system that is safe, efficient, and pleasant to use. The City's many different neighborhoods, districts, and destinations will be well connected. The City of Medford's transportation system will also be well connected to the regional and state system. People will be able to drive, walk, bike, or use public transportation to reach stores, restaurants, parks, schools, work and other common destinations. Gateways and activity centers will have attractive streetscapes that are inviting.

In application of the goals and objectives of the TSP, it is recognized this is a fiscally constrained document and the majority of the city is already constructed, which makes universal application impractical. Some parts of the community are highly convenient offering a variety of modes, including walking, bicycling, and transit. Other areas will be more auto-centric and include more modest measures to accommodate access and circulation by different modes. Recognizing this fact will lead to better decision making on utilizing the City's resources while still providing a safe, convenient, and economical transportation system that serves everyone.

The *TSP* is a policy element within the *Comprehensive Plan* that provides the City with a coordinated guide for changes to its transportation infrastructure and operations over a 20 year period of time. A basic assumption in the development of this policy element is that transportation systems do more than meet travel demand; they have a significant effect on the physical, social, and economic characteristics of the areas they serve. Transportation planning must be viewed in terms of regional and community goals and values such as protection of the environment, impact on the regional economy, and maintaining the quality of life that area residents enjoy and expect.

In order for the outcomes of this document to be periodically assessed, the Planning and Public Works Departments will provide the Planning Commission and City Council a report that provides a thorough assessment of TSP implementation progress a minimum of every two years.

A major component of this policy document is the goals, policies, and a list of possible action items. These terms are defined below.

- **Goals** are broad statements of philosophy that describe the hopes of the people of the community for the future of the community. A goal is aspirational and may not be fully attained within the 20-year planning horizon of this plan.
- **Objectives** are more detailed than goals and explain how goals will be accomplished. Objectives detail the activities that must be completed to achieve the goal. Objectives in the 2038 TSP guide the work of the City Manager and staff in formulating proposed changes to the City Code and other regulatory documents, to guide other work programs and long range planning projects, and preparation of the budget and capital improvement program. Each objective may be followed by action items that could be employed to help achieve one or more of the objectives within the set.
- **Action Items** offer direction to the City about steps that should be taken to achieve the objectives. Not all objectives include action items and not all potential actions are listed. Rather, the identified action items outline specific projects, standards, or courses of action that the City or its partner agencies could take to implement the 2038 TSP. These actions can provide guidance for decision-makers and will be updated over time.

GOAL 1 – SAFETY AND PUBLIC HEALTH

The transportation system will improve safety for users of all modes of transportation and be a public resource that supports public health in the community.

***Objective 1**:* Transportation improvement projects and transportation management decisions shall be evaluated to reduce risk to the travelling public, and improvement projects and management decisions shall strive to enhance safety for the travelling public.

Action Items:

1-a: Look for opportunities to improve the system to reduce traffic fatalities and serious injuries.

1-b: Identify and install physical measures and improvements needed to eliminate safety hazards along high-crash corridors and at high-crash intersections, including a focus on improvements to protect more vulnerable users, such as children and those with disabilities.

1-c: Identify high-traffic bicycle routes for more frequent street sweeping to remove debris that puts bicyclists at risk of crashes.

1-d: Design bike facilities that preferably separate bicycle traffic from vehicular traffic on Major Arterials by providing separate bike path systems such as off road shared-use paths or by diverting bicycle traffic onto parallel roads with adequate on road facilities when feasible.

1-e: Develop traffic-calming design standards and an implementation program for reconstruction projects within existing residential neighborhoods and new roads within proposed residential neighborhoods that accommodate safe freight movements within neighborhood and community commercial locations.

1-f: Collect and maintain safety data to identify risks, as well as, to guide policy and evidence-based decision making. Data shall be used to make policy choices and to direct resources to enhance safety opportunities that will be the most beneficial.

1-g: Assess and identify deficient rail crossings for vehicles, pedestrians, and bicycles.

***Objective 2**: Continue to remove impediments to mobility for vulnerable citizens such as those with disabilities, children, and older adults.*

Action Items:

2-a: Continue to ensure all new transportation facilities, and improvements comply with the Americans with Disabilities Act (ADA) of 1990, and implement necessary policies and procedures from the ADA project action plan.

2-b: Coordinate with local hospitals, schools, social service providers and similar organizations to identify the transportation needs of the groups they serve and identify opportunities to improve mobility for the providers' constituents.

2-c: Take regular action to ensure the safety of heavily used pedestrian crossings.

2-d: Identify key locations that represent opportunities for low-stress routes for bicycle travel throughout the City.

Objective 3: Promote active transportation as a means of improving public health.

Action Items:

3-a : Participate in, collaborate with, and promote active transportation programs and outreach like RVTD's Go by Bike Week, the Drive Less Challenge, Safe Routes to Schools Program(s), Rogue Valley Bike Share, or similar programs .

3-b: Coordinate and implement a bicycle diversion program. (Such programs allow a person issued a bicycle citation to attend a bicycle safety class instead of appearing in court or paying a fine).

3-c: Develop an action plan for development and implementation of the Citywide Path and Trail Network outlined in the City's Leisure Services Plan.

GOAL 2 – ECONOMIC DEVELOPMENT

The transportation system shall enhance economic development and vitality within the City and throughout the Region.

***Objective 4**: Provide transportation facilities that support existing and planned land uses, consistent with the City's Comprehensive Plan.*

Action Items:

4-a:. Balance transportation facility capacity with planned land uses by amending the City's concurrency and transportation facility adequacy requirements by adopting local procedures that apply the Oregon Transportation Planning Rule as the determinant of facility adequacy.

4-b: Ensure development throughout the City and within the Urban Growth Boundary expansion areas are consistent with the Functional Classification plan and other planned transportation improvements.

4-c: Implement adopted neighborhood plans including the Bear Creek Master Plan.

***Objective 5:** Maintain and improve the efficiency of the movement of freight and goods by ground, rail, air, pipeline, and transmission infrastructure.*

Action Items:

5-a: Assess land use conflicts affecting freight service providers and develop best practices that prioritize safe, efficient, and reliable freight connections while reducing neighborhood impacts.

5-b: Review and consider revisions to the existing truck route designations within the City of Medford and implement street design standards that meet the weight and dimensional needs of trucks for streets that serve industrial and commercial areas and those designated as "truck routes."

5-c: Strive to balance the needs of moving freight with community livability.

5-d: Advocate for and support designation of State and Federal priority freight routes within the City of Medford.

***Objective 6**: Increase resilience of the local freight and logistics network to natural disaster.*

Action Items:

6-a: Using the City's Natural Hazards Mitigation Plan and other resources, assess the local freight routes for vulnerabilities to natural disaster, in particular a Cascadia Event, and develop and implement a mitigation strategy by 2022. Example locations include but are not limited to Foothill Road, North Phoenix, and South Stage Road.

***Objective 7**: Identify and improve transportation facilities that support the Region's tourism industry*

Action Items:

7-a: Support the efforts of the Rogue Valley International-Medford Airport and the airport's associated master plan.

7-b: Strategically implement the Citywide Path and Trail Network found in the Leisure Services Plan to support recreational tourism in the City and region.

***Objective 8**: Support initiatives to redevelop Downtown, Liberty Park, and other existing neighborhoods through transportation infrastructure investments.*

Action Items:

8-a: Evaluate the feasibility of expanding the Downtown Parking District.

8-b: Implement transportation infrastructure improvement projects recommended by the Downtown, Liberty Park, and other neighborhood plans including the Bear Creek Master Plan. Coordinate the TSP with neighborhood planning efforts to ensure consistency between neighborhood plans and the TSP.

GOAL 3 – LIVABILITY

Design and construct transportation facilities to enhance the livability of the City's neighborhoods and business centers.

***Objective 9**: The City will balance transportation system objectives to improve mobility against objectives to avoid disruption of existing neighborhoods and nonresidential districts, and minimize impacts to individual properties.*

Action Items:

9-a: Limit Major Arterial streets to a total cross-section width of no more than five travel lanes, except at intersections. Accommodate travel demand that would otherwise require a width of more than five lanes through increased system connectivity, transit service, use of transportation demand management (TDM) strategies, and other alternative modes of transportation.

9-b: Prior to upgrading a street classification in residential and mixed-use areas to a higher order classification, the City will consider the impacts to neighborhood livability. Alternatives that allow existing neighborhoods to remain intact will be considered. If reclassification is necessary, mitigation measures and/or street-design alternatives will be considered.

9-c: Incorporate context-sensitive street and streetscape design techniques in order to balance the needed street function for all users and modes with the needs of the surrounding built environment. The selected design solution should take into consideration whether the street is new or an existing "legacy" street.

9-d: Implement transportation demand management strategies, when appropriate, to mitigate congestion prior to roadway expansion.

Objective 10: Increase the number of walkable, bikeable, mixed-use, transit oriented and transit supportive neighborhoods while promoting connectivity to existing neighborhoods.

Action Items:

10-a: Re-assess and consider the implementation of the West Main Transit Oriented District (TOD) plan as a neighborhood plan or corridor plan and consider developing other such plans for downtown and other neighborhoods.

10-b: Re-evaluate the maximum and minimum block length perimeter standards to ensure direct street routes and connectivity and reduce travel distances to all users.

10-c: Research and consider options for development standards and incentives to promote mixed-use and transit oriented development/districts.

10-d: Consider designating Medford's multimodal mixed-use areas (MMAs) and prioritize pedestrian, bicycle, and transit investments within targeted employment and residential areas that foster mixed-use development. Consider adopting incentives to increase the number of dwelling units within a quarter-mile of transit routes.

10-e: Ensure implementation of the Southeast Medford Area Plan with regard to greenways, land use, paths, trails, roadways, and other transportation related facilities.

GOAL 4 – CONNECTIVITY

Achieve connectivity appropriate for planned land uses in the area for all modes which is well connected to the regional system.

Objective 11: The City of Medford will strive to develop and maintain a well-connected transportation system for all modes and users.

Action Items:

11-a: Work with private and public sector partners including but not limited to the Metropolitan Planning Organization (MPO), Rogue Valley Area Commission on Transportation (RVACT), and Jackson County to complete the major street network as shown on the Functional Classification Map, prioritizing completion of the City's "Arterial Ring", major arterials, and regionally significant transportation projects like the South Stage Overcrossing/Extension.

11-b: Implement street design standards for all new development that provide facilities for all modes of transportation, including walking and bicycling, and that promote safe driving.

11-c: Implement street design standards for existing facilities that allow for flexibility and application of alternative street designs where construction of facilities to the City's adopted design standard for new development would not be economically or physically feasible due to existing neighborhood and development constraints.

11-d: Create an intersection control evaluation process and criteria that includes a preliminary determination for the use of a roundabout and includes a detailed evaluation where a roundabout is a potentially appropriate solution. Traffic control changes at intersections, such as installation of traffic signals or modern roundabouts, should at a minimum include safety, life-cycle costs and minimization of total delay as criteria when alternatives are considered.

11-e: Identify future opportunities to increase the number of direct north-south connections east of I-5 in order to reduce congestion along parallel routes and at intersections.

11-f: Implement wayfinding programs (through Transportation Options Planning) using conventional signage and emerging technologies to assist travelers in efficiently reaching destinations including downtown, historic districts, retail and dining destinations, shared-use paths and other recreational destinations; and ensure consistent signage with other City efforts.

11-g: Implement roadway designs on existing and new higher order streets that encourage reasonably direct and safe bicycle and pedestrian travel. In regard to the installation of bicycle infrastructure, the City should identify lower order street network connections first, off road/separated shared-use path locations second, and the typical cross section last when planning the bicycle network.

11-h: Establish a policy that ensures intervening streets not yet built between existing and new development are constructed and compensated with the adjacent development or prioritized and built by the City.

11-i: Consider code standards that allow the construction of off street improvements (such as urban trails, greenways, etc.) or consideration of a fee in-lieu as a condition of approval for land use actions in areas where these facilities are planned to serve as a transportation connection.

Objective 12: Improve access (on or off roadway) for people to walk and bike to public places especially schools, parks, employment centers, commercial areas, and other public facilities.

Action Items:

12-a: Coordinate with local and regional partners to develop trails, shared-use paths and other active transportation facilities that better connect the City's neighborhoods, schools, parks, and various activity centers.

12-b: Improve pedestrian and bicycle connectivity to current and proposed major shared-use paths, such as the Bear Creek Greenway; this may include land acquisition and dedication from private and public land owners to implement trail connections where needed.

12-c: Identify gaps such as missing bike facilities and sidewalks and systematically upgrade the network to correct deficiencies. Sidewalk infill should be the highest priority for non-auto related project funding, with a minimum of a 2:1 ratio of pedestrian to bicycle facility expenditures.

12-d: Review the National Association of City Transportation Officials Designing for All Ages and Abilities Bicycle Facilities guidelines (December 2017) when considering the installation of bicycle facilities.

12-e: Develop and adopt a separate bicycle and pedestrian plan for the City that focuses on these facilities as an adjunct to the Transportation System Plan.

Objective 13: Improve vehicle, pedestrian, and bicycle network connections with current and planned public transportation routes and improve public transportation service.

Action Items:

13-a: Identify and prioritize sidewalk infill projects within a quarter-mile radius of current and planned transit routes and/or stops.

13-b: On arterials and collectors, coordinate public transportation facility design and development with RVTD that considers the design of stop locations and facilities, transit pull-outs and other similar features.

13-c: Work with RVTD to provide locations for transfer centers outside of downtown Medford consistent with RVTD's long range plan.

13-d: When applicable, work with RVTD to assess the feasibility of developing park-and-ride facilities in strategic locations around the City.

13-e: Work with RVTD to improve public transportation connections between the airport and population centers, such as downtown and neighborhoods.

13-f: Participate in RVTD system planning efforts and amend the TSP as necessary in order to recognize the most current RVTD master plan.

GOAL 5 – FINANCING

Optimize funding resources so that transportation investments are fiscally sound and economically sustainable.

Objective 14: Systematically and regularly plan and predict the need for the acquisition of needed public right-of-way in order to implement the adopted Functional Classification Map.

Action Items:

14-a: Ensure future development includes building and extending local streets to enhance street connectivity within neighborhoods and to the higher order street network.

***Objective 15**: When opportunities arise, the City will deploy new technologies that safely increase the efficiency of existing street facilities to reduce the need for roadway expansion.*

Action Items:

15-a: Continue to implement Intelligent Transportation Systems (ITS) to maximize capacity in key corridors.

15-b: Coordinate with RVTD to identify potential Transit Signal Priority corridors and implement Transit Signal Priority corridors when appropriate.

15-c: Develop policies as new forms of transportation demand are emerging that anticipate the impact of changing demands. Examples of such areas of policy development are autonomous vehicles, Transportation Network Companies, and other similar emerging technologies on the transportation system.

15-d: Improve sampling and analysis methods to estimate trips made by walking, biking, and driving. Investigate and apply emerging technologies that enable accurate, cost-effective assessment of various types of transportation activity and phenomena including traffic congestion, infrastructure conditions, etc.

***Objective 16:** Amendments to the land development code and municipal code to implement the TSP shall be targeted for completion within 24 months of TSP acknowledgement.*

Action Items:

16-a: Modify land use review procedures to allow street cross-section standards to be applied in a flexible manner based on identified criteria or standards. Examples of flexibility may include: adopting multiple street cross-section alternatives for a single functional classification; establishing ranges of improvement widths for specific elements; allowing the elimination or reduction of aesthetic elements where constraints make it appropriate.

16-b: Review landscape requirements within the Land Development Code to allow flexibility with the amount and type of landscaping and ground cover installed while still ensuring beautification and storm water benefits along the roadways.

16-c: Incorporate the legacy street standards into the Land Development Code in order to address future development requirements along these roadways and outline who has the authority to approve deviations.

16-d: The first priority for code amendments for the TSP implementation are the amendments to implement Action Item 4-a.

***Objective 17**: Partner with local jurisdictions, state and federal agencies, and private sector partners to maximize the City's return on transportation investments whenever possible.*

Action Items:

17-a: Continue to work with ODOT, Jackson County, RVTD, and neighboring cities to fund roads, pedestrian, and bicycle facility improvements along State and regional highways/roadways and major transit routes.

17-b: Partner with schools to identify impediments to walking to school and implement Safe Routes to School solutions.

17-c: Continue active membership in the Rogue Valley Metropolitan Planning Organization (RVMPO) and associated planning efforts, and routinely participate in updating the MPO Transportation Improvement Program (TIP) to ensure that the City transportation projects are leveraged with the region's discretionary and special funding opportunities.

17-d: Collaborate with private developers through public-private-partnerships to fund public transportation infrastructure that supports proposed development.

17-e: Recognize the importance of shifting project priorities to capture transportation funding opportunities such as Statewide Transportation Improvement Program (STIP) funding and other such sources.

***Objective 18**: Support the development of stable and flexible transportation financing that provides adequate funding sources for Medford's transportation system while supporting the TSP's economic development goal.*

Action Items:

18-a: Collect transportation system development charges (SDC's), as defined by Oregon Revised Statutes and local ordinances, to mitigate impacts of new development on Medford's Transportation System.

18-b: Assess the effectiveness of current funding sources and identify new funding sources during preparation of biennial budgets including the use of tax increment financing and interjurisdictional agreements. Update policies and regulations to accommodate changes as needed.

GOAL 6 – ENVIRONMENT

Reduce environmental impacts from transportation

***Objective 19:** Reduce environmental impacts of the transportation infrastructure.*

Action Items:

19-a: Consider alternative transportation facility design standards that reduce impervious surfaces and favor management of storm water runoff using Low Impact Development (LID) techniques.

19-b: Determine the feasibility of incorporating renewable energy technologies into publicly owned transportation facilities to offset cost and impacts.

19-c: Incorporate riparian and stream restoration into shared-use path and trail development projects as opportunities present themselves.

***Objective 20:** Adopt policies designed to reduce per capita Vehicle Miles Traveled (VMT), reliance on Single-Occupant Vehicle (SOV) trips, and roadway congestion.*

Action Items:

20-a: Develop parking strategies that encourage non-auto travel to mixed-use neighborhoods, downtown and other major travel destinations.

20-b: Assess off-street parking standards to reduce minimum off-street parking requirements within Activity Centers (as identified in Chapter 5.5 of the Regional Transportation Plan) and other multimodal mixed-use areas.

20-c: Partner with employers and others to implement travel demand management strategies that encourage modes of travelling to work other than SOV trips, including carpooling; employer-supported public transportation passes; incentives for bicycle and pedestrian commuting; telecommuting and other alternatives.

20-d: Identify, in conjunction with RVTD, areas where transit route expansion could be added to alleviate congestion, SOV, and VMT.

20-e: Modify develop standards to incentivize large employment and residential developments to implement alternative transportation programs that reduce SOV trips (examples may include free or subsidized transit passes for employees or alternative work schedules).

***Objective 21:** Reduce emissions of atmospheric pollutants including greenhouse gas emissions and particulate matter.*

Action Items:

21-a: Analyze the feasibility of converting or replacing publicly owned vehicles (at time of scheduled fleet vehicle replacement) to those using renewable, low emitting, and/or non-emitting technologies (such as electric plug in hybrid, Compressed Natural Gas (CNG), or Renewable Natural Gas (RNG) fuels).

21-b: Evaluate incentives for developer-provided neighborhood Electric Vehicle charging stations.

21-c: Continue to develop tree canopy along higher-order streets.

21-d: Promote active transportation through development of new pedestrian and bicycle facilities and participation in associated education/incentive campaigns and programs.

SECTION 3 /// EXISTING CONDITIONS & FUTURE NEEDS ASSESSMENT

- Existing inventory for all modes of transportation
- Future operations and needs

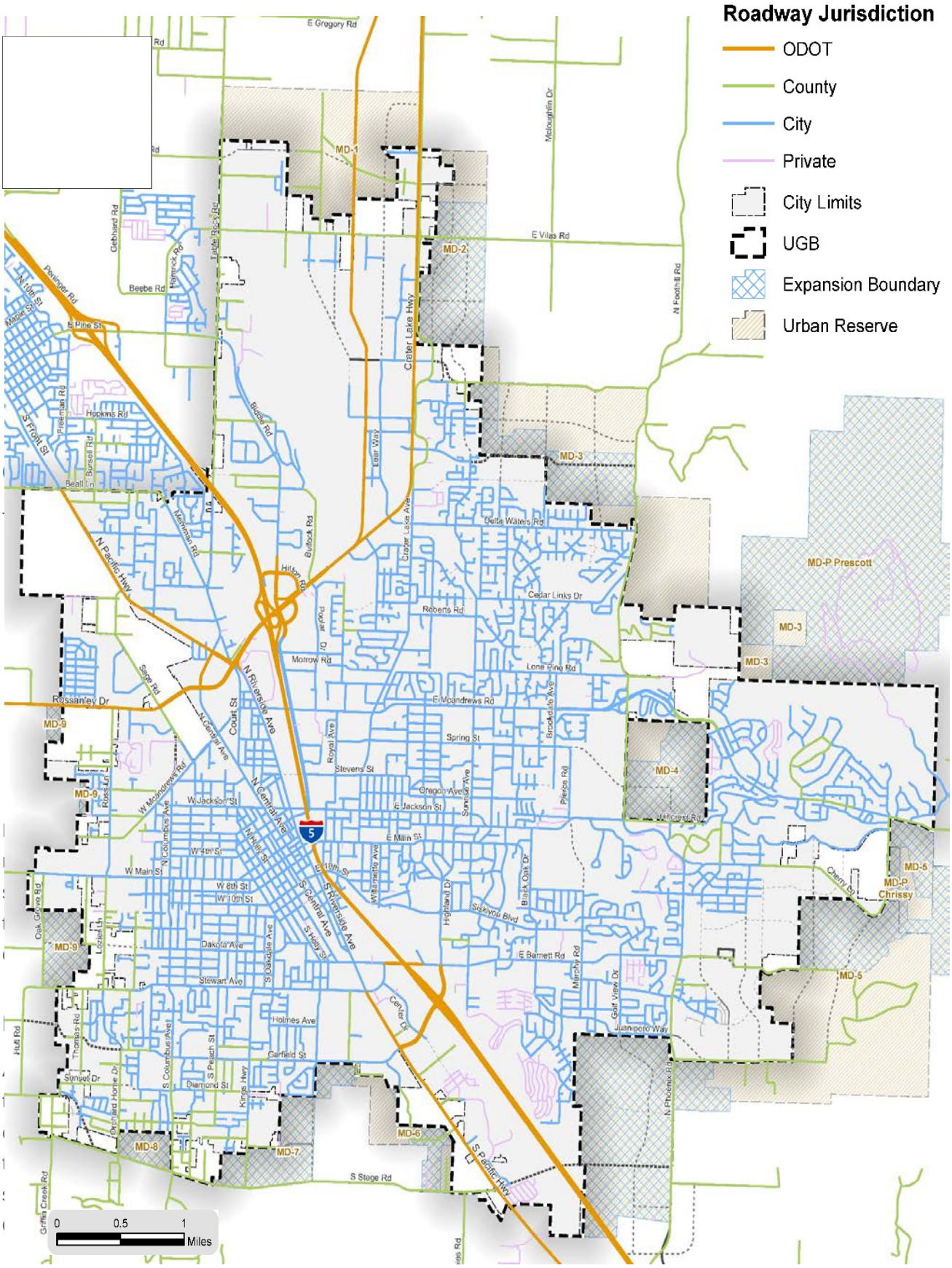
Existing Conditions and Future Needs Assessment

Development of the Medford TSP began with an assessment of existing and future transportation system conditions and needs. Current facilities for all transportation modes were inventoried and analyzed to identify any existing system deficiencies. A future conditions analysis was conducted to approximate the conditions in the year 2038, based on future land use and population estimates for the area. Relevant transportation and land use projects were incorporated into the analysis to estimate future conditions, identify future transportation issues, and evaluate potential mitigations. Details of the technical analysis are provided in *Volume II* of the TSP. The key findings are summarized below for each transportation mode.

ROADWAY

The roadway system is the backbone of the transportation system in Medford. Motor vehicle, bicycle, pedestrian, transit, and freight transportation all rely on the roadway system to some degree. The roadway system also provides motor vehicle, bicycle, pedestrian, and transit access to air and rail facilities. Roads within Medford are owned and maintained by several jurisdictions including ODOT, Jackson County, and the City of Medford. Each jurisdiction is responsible for determining the road's functional classifications, defining its major design and multimodal features, and approving construction and access permits. Coordination is required among the jurisdictions to ensure that the roads are planned, operated, maintained, and improved to safely meet public needs. Figure 2 illustrates the jurisdiction of the roads within the City of Medford.

Figure 2 Roadway Jurisdiction Map



Freight Routes

I-5 and parallel railroads are designated as strategic corridors in the *Oregon Freight Plan (OFP).* The OFP implements the state's goals and policies related to the movement of goods and commodities. Within the city of Medford, the *Oregon Highway Plan (OPH)* identifies designated National Highway System (NHS) Freight Routes and Intermodal Connectors. Intermodal Connectors are short lengths of roads that connect intermodal facilities to the state highway system. Within the City of Medford, Biddle Road is a designated Intermodal Connector from OR 62 north to Table Rock Road providing connectivity between I-5 and the Rogue Valley International Airport. ODOT and Jackson County also designate freight routes that are critical to the movement of goods and commodities throughout the state and county. These are shown in Figure 3.

Connectivity

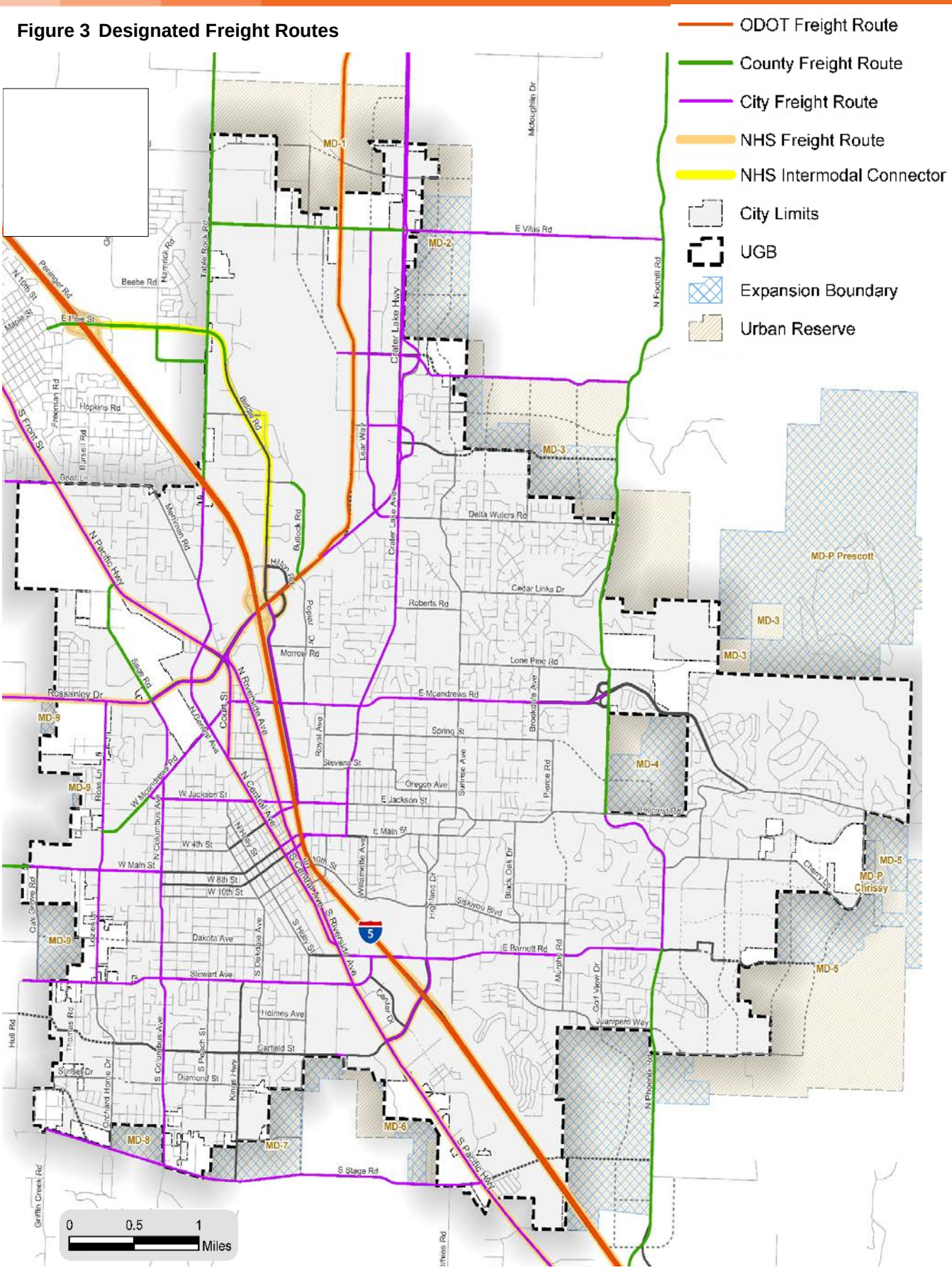
The need for future roadway connections to serve vehicles, bicyclists, and pedestrians has been expressed by many previous planning documents, including *the Regional Transportation Plan*, *Jackson County Transportation System Plan*, the existing Medford TSP and expansion area planning, and more.

Many of the City's higher-order facilities (typically the arterial and collector network) are serving both local and regional traffic due to the lack of an integrated local roadway network. To implement the regional system, the City needs additional local and collector roadway extensions and connections that will allow the higher-order facilities to provide their intended function. These are included in the Functional Classification Map as future roadways and as projects in Section 5. In addition, there is also the need for additional connectivity of higher-order facilities as described below.

South Stage Road Extension

The South Medford Interchange is one of the most congested areas of the City. Medford anticipates growth in both southwest and southeast Medford. Providing an east-west connection between these two areas will help reduce congestion at the South Medford Interchange, provide access to Major Arterials including North Phoenix Road, Riverside Avenue, and Columbus Avenue, allowing for travel around Medford without reliance on I-5 and the South Medford Interchange. This connection would also remove circuitous trips between areas of Medford and Phoenix. This new connection over I-5 is assumed in the transportation analysis of the 2038 forecast conditions.

Figure 3 Designated Freight Routes



Street and Intersection Capacity Needs

Intersection traffic operations were evaluated under existing and year 2038 baseline traffic conditions to identify potential existing or future capacity deficiencies.

Existing Traffic Conditions

The existing traffic conditions analysis identifies how the study area's transportation system operates today. This analysis includes an evaluation of traffic operations at key intersections in the city during the weekday evening peak period. Figure 4 illustrates the location of the study intersections and their existing Level-of-Service. The City of Medford's standard has been for intersections to operate with a Level-of-Service "D" or better. The City of Medford is changing the mobility standard to Level-of-Service "E" at two intersections; Stewart Ave & S Pacific Highway and Barnett Rd & Highland Dr. As shown in Figure 4, there are several intersections that do not currently meet the City's Level-of-Service standard. They are primarily located at the South Medford Interchange, along OR 62 and OR 99 (Pacific Highway). Traffic counts, diagrams showing lane configurations, turning movements, and operations, and analysis outputs are provided in the *Volume II* of the TSP.

Year 2038 Baseline Traffic Operations

The year 2038 projected traffic conditions analysis identifies how the study area's transportation system will operate in the TSP horizon year 2038. This analysis assumes regional growth consistent with the current Rogue Valley Metropolitan Planning Organization (RVMPO) Regional Transportation Plan (RTP), including build-out of the City's expansion areas. The analysis accounts for construction of several significant roadway network changes including the OR 62 Bypass up to OR 62 south of White City near Corey Road (without an interchange at Vilas Road), the North Foothill Road Extension to OR 140, and the South Stage Road Extension over I-5. The Foothill Road Extension is outside of the City of Medford but impacts travel patterns within the City of Medford. Each of these connections will change existing travel patterns and better serve the multimodal needs of existing and future City residents.

Forecast traffic volumes were developed for the study intersections based on existing traffic counts and information provided in ODOT's travel demand model for the RVMPO area (version 4.2, scenario C). Raw data from the travel demand model (not post-processed) including 2038 one-way weekday PM hour link volumes and demand-to-capacity ratios are included in *Volume II* of the TSP.

Figure 5 illustrates the study intersections forecast year 2038 Level-of-Service. As shown in Figure 5, in addition to those highlighted in the existing conditions analysis, several additional intersections are projected to exceed the Level-of-Service standard including intersections along Crater Lake Avenue, East Main Street, Jackson Street, and Foothill Road. Forecast traffic volumes, diagrams showing lane configurations, turning movements, and operations, and, analysis outputs for the 2038 Baseline Conditions are provided in the *Volume II* of the TSP.

Figure 4 Existing Intersection Level-of-Service

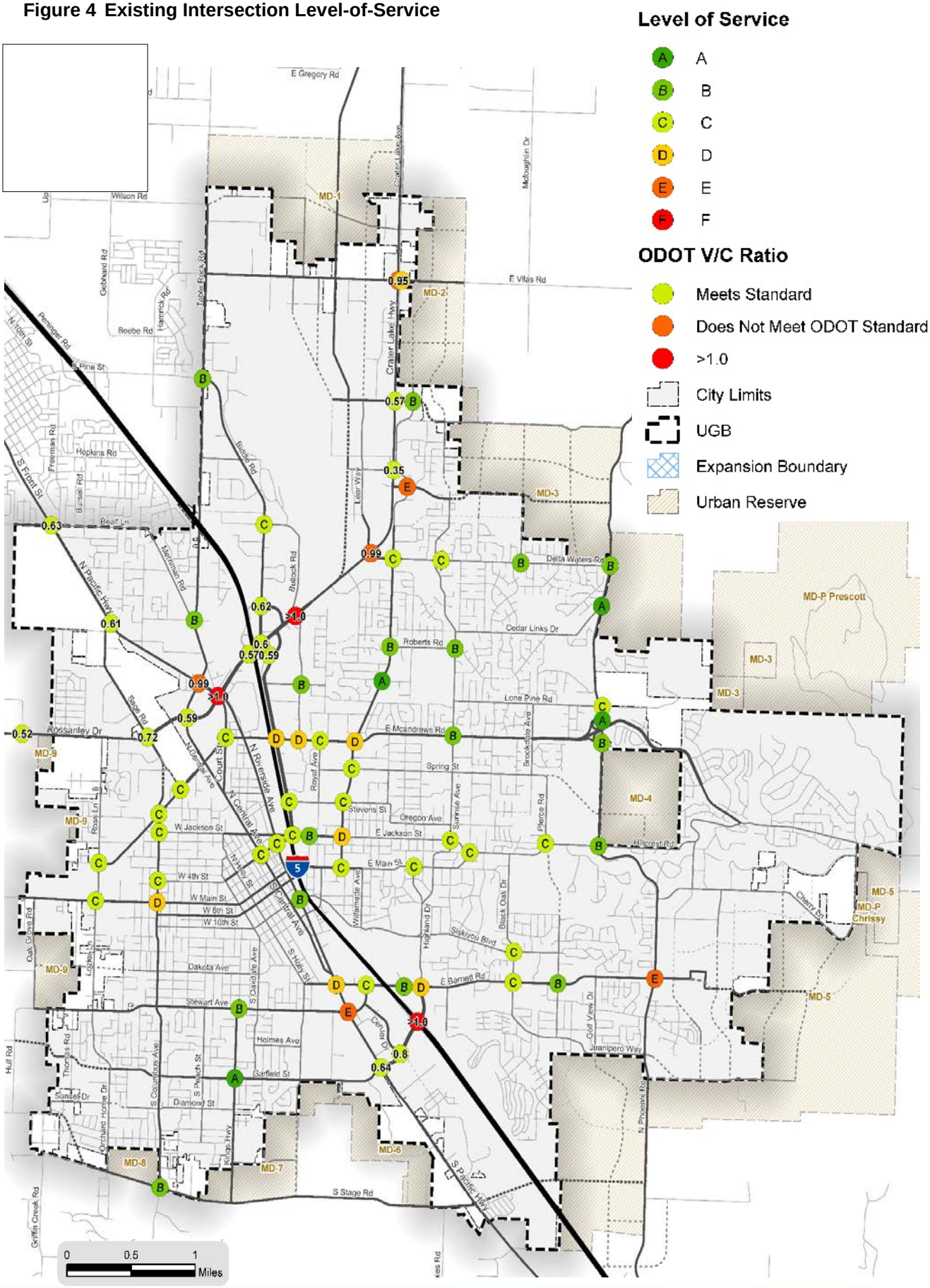
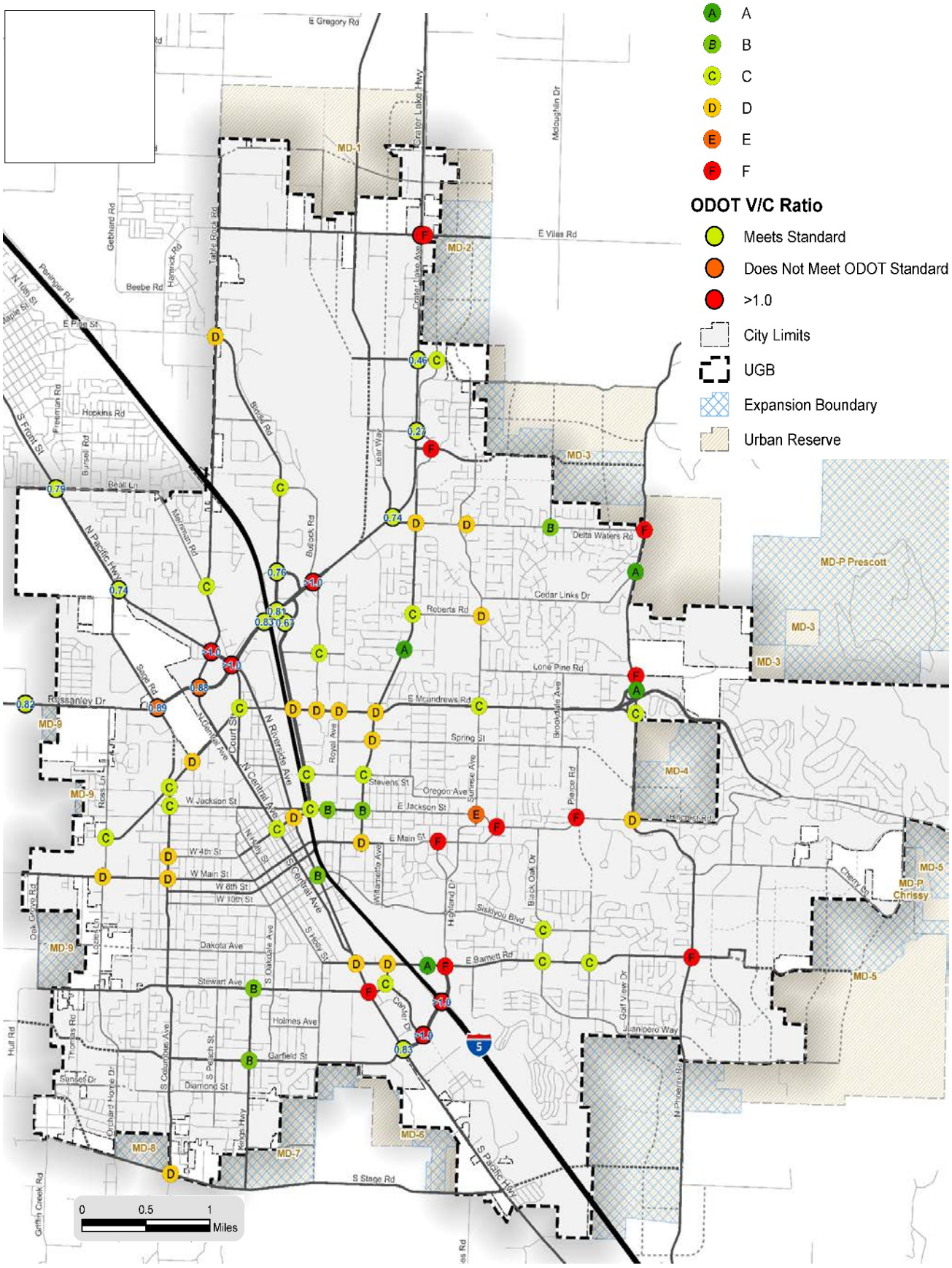


Figure 5 **2038 Future Baseline Intersection Level-of-Service**



Year 2038 Mitigated Traffic Operations

Study intersections not projected to meet the City's Level-of-Service (LOS) standard or ODOT's mobility target for ODOT facilities under 2038 forecast conditions were evaluated to identify potential improvements. Potential solutions include updating signal timing or modifying signal phasing at existing signals, adding turn lanes or through lanes to an intersection, installing a signal or roundabout at unsignalized intersections, or other potential solutions. Solutions that were identified and the resulting 2038 mitigated traffic operations are provided in *Volume II* of the TSP. The solutions are included in the intersection project list in Section 5. Other types of solutions to reduce single-occupancy vehicle trips and maximize the efficiency of the system are also included in the TSP and described in the Transportation System Management and Operations (TSMO) Plan.

Figure 6 illustrates the study intersections mitigated forecast year 2038 LOS. As shown in Figure 6, most study intersections are projected to operate acceptably with the improvements identified in Section 5 with the exception of eight locations described below. One location shown to operate at a LOS "E" but not described below is the intersection of Jackson Street and Sunrise Avenue. This location will operate better than projected based on rerouting that will occur with the planned traffic signal at Valley View Drive and Hillcrest Road (Project I75). Diagrams showing lane configurations, turning movements, and operations, and, analysis outputs for the 2038 Mitigated Conditions are provided in the *Volume II* of the TSP.

Intersections Requiring Further Study or Alternative Standards

The following describes the intersections that are projected to fail the City or ODOT's mobility standards and do not have an identified mitigation in the TSP. These locations require additional analysis as part of an Interchange Area Management Plan (IAMP) and/or will require an alternative standard to the City's existing LOS "D" standard or to ODOT's volume-to-capacity based mobility target.

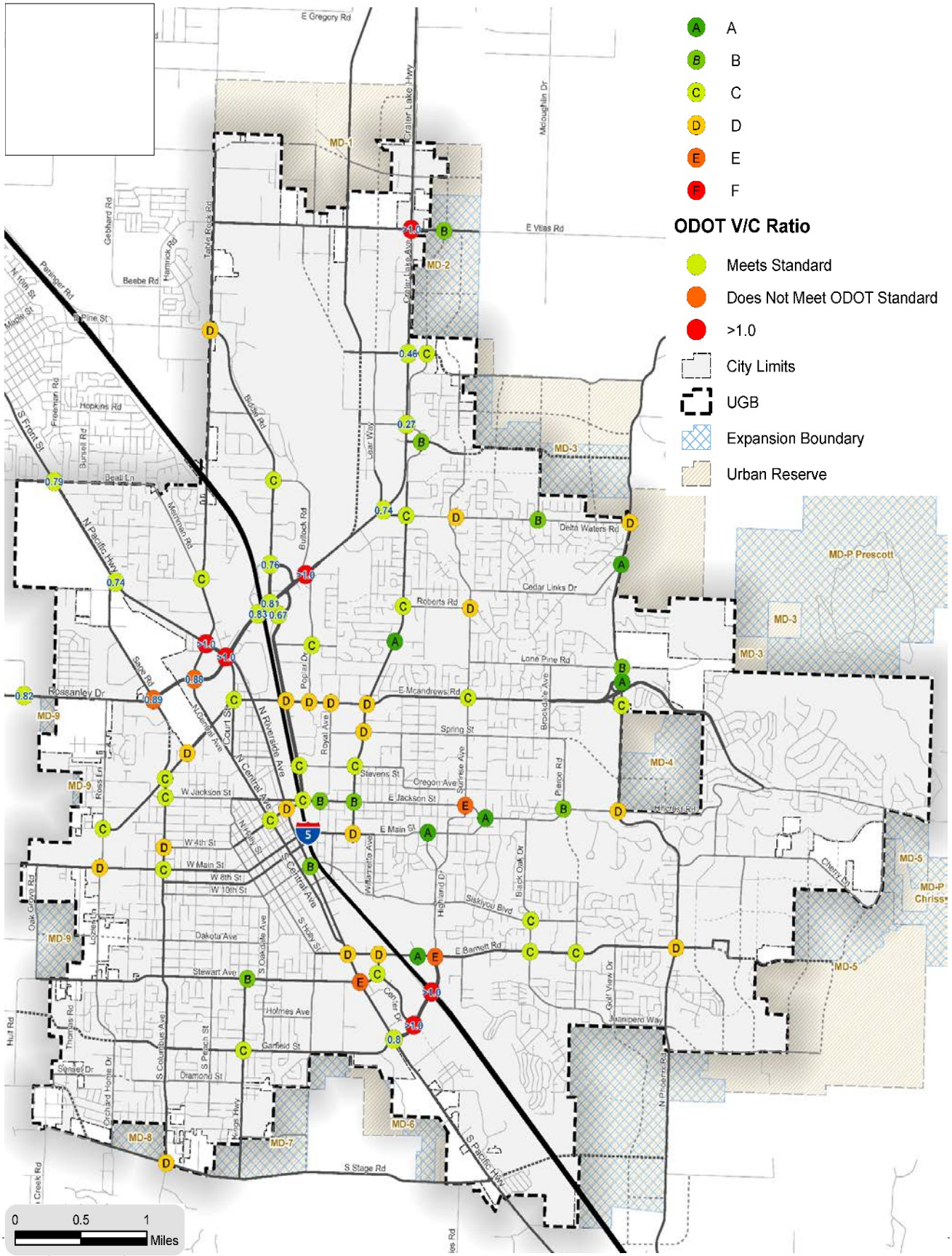
<u>City Intersections</u>

- **Highland Drive/Barnett Road** - This intersection operates at an LOS "E" with a second northbound right-turn lane added (Project I-78). The city is adopting LOS "E" as the mobility standard for this intersection.
- **Riverside Avenue/Pacific Highway/Stewart Avenue** – This intersection operates at an LOS "E" with a second eastbound left and second southbound left added (Project I-17). The city is adopting LOS "E" as the mobility standard for this intersection.
- **Crater Lake Highway/Vilas Road** – This intersection is projected to operate at a Level-of-Service "F" and over capacity. This intersection will be monitored after the opening of the OR62 Bypass to verify how travel patterns change and affect the operations of the system (Project I-40). This intersection will also be evaluated as part of a future Interchange Area Management Plan (IAMP) conducted by ODOT at the OR62 Bypass/Vilas Road interchange.

ODOT Intersections

- **South Medford Interchange (I-5/Garfield Street)** and **Garfield Street/Center Drive** – These intersections are not projected to meet ODOT's mobility standards even with the South Stage Road Extension. These intersections need alternative mobility targets (Project I-83 and I-84) or to be evaluated further as part of an update to the Exit 27 IAMP. This future IAMP should also incorporate analysis of affected the City intersections including Highland Drive/Barnett Road and Riverside Avenue/Pacific Highway/Stewart Avenue.
- **OR62 (Crater Lake Highway)/Bullock Road/Poplar Drive** - This intersection is not projected to meet ODOT's mobility standards with Phase 1 of the OR62 Bypass. ODOT has a split diamond interchange planned for the I-5/OR62/OR62 Bypass interchange as part of a future phase of the OR62 Bypass. This will significantly reduce the traffic volumes at this location and it is not included in the modeling for the TSP. ODOT will be conducting an IAMP at this location (Exit 30). This intersection may need an alternative mobility target unless a split diamond interchange is adopted within the financially constrained Regional Transportation Plan (Project I-81).
- **OR 99 (Pacific Highway)/Table Rock Road** – This intersection is not projected to meet ODOT's mobility standards. It would be improved but still not meet ODOT's mobility targets by converting the second southbound left-turn lane to a shared through-left with split phasing. This intersection needs to be studied as part of the Exit 30 IAMP and may need an alternative mobility target (Project I-79).
- **OR99/OR62/OR238** - This intersection is projected to operate at a Level-of-Service "E" but not meet ODOT's mobility standards. This intersection needs to be studied as part of the Exit 30 IAMP and may need an alternative mobility target (Project I-80).

Figure 6 Future Year 2038 Mitigated Intersection Level-of-Service



ACTIVITY CENTERS

Throughout the 2038 TSP in the goals, objectives, and action items, figures, and written text is reference to activity centers. These areas represent opportunity areas for focused investments for transportation facilities, commercial and residential development, and other community needs. Activity centers represent areas in and around residential neighborhoods that draw people for shopping, employment, education, and recreation. As defined in the Land Development Code, neighborhood activity centers are defined as:

> "A use or combination of uses which is a common destination or focal point for community activities, including primary and secondary schools, neighborhood parks and playgrounds and shopping centers." (Medford Land Development Code, Section 10.012)

In order to better facilitate targeted transportation investments and to provide consistency with the RTP Alternative Measures inclusion of activity centers within the 2038 was considered crucial. Figure 7 illustrates the various activity centers in the City of Medford. Activity centers may be used for future policy and code language adoption regarding auto, bicycle, pedestrian, and transit planning.

Activity Centers and the RTP Alternative Measures

As a participating member of the Rogue Valley Metropolitan Planning Organization (RVMPO) and through the adoption of the Regional Transportation Plan (RTP), the City of Medford has committed to participate in achieving the various Alternative Measures (AM) outlined within the RTP. The need for the Alternative Measures came out of the RTPs modeling in 2002 showing the region's inability to meet the 5% reduction in Vehicle Miles Traveled (VMT) per capita required by the State for local jurisdictions in Metropolitan Planning Organization areas with a population size of less than 1 million. The model at the time projected a 2.5% reduction in VMT per capita. The Transportation Planning Rule (TPR) provides an alternate path in place of the VMT reduction requirement by allowing local governments to propose "alternative measures" instead. In order to comply with the Transportation Planning Rule, the Land Conservation and Development Commission (LCDC) approved the RVMPO's proposed Alternative Measures. The seven measures serve as benchmarks to gauge how well the region is doing with accomplishing the goal in the TPR to reduce reliance on the automobile. To date, the Alternative Measures are calculated and maintained by the RVMPO, but changes in state law may shift the reporting requirements to the local jurisdictions. Medford recognizes its responsibility to continue to comply with these measures as part of the adoption of the TSP or until other requirements are adopted.

The seven RVMPO Alternative Measures are identified below:

1. Measure 1 – Transit and Bike/Pedestrian Mode Share
2. Measure 2 - % Dwelling Units (DUs) within ¼ mile Walk to 30-minute Transit Service
3. Measure 3 - % Collectors/Arterials with Bike Facilities
4. Measure 4 - % Collectors/Arterials in Activity Centers with Sidewalks
5. Measure 5 - % Mixed-Use Dwelling Units (DUs) in Activity Centers
6. Measure 6 - % Mixed-Use Employment in Activity Centers
7. Measure 7 – Alternative Transportation Funding

Currently, the benchmarks are assessed on a regional level with targets for the year 2020 set at the following numbers:

Table 1 RVMPO Alternative Measures 2020 Benchmarks

2020 Alternative Measure Targets						
Measure 1	Measure 2	Measure 3	Measure 4	Measure 5	Measure 6	Measure 7
% daily trips Transit: 3.0% Bike/Ped 11%	50%	60%	75%	49%	44%	$6.4 million

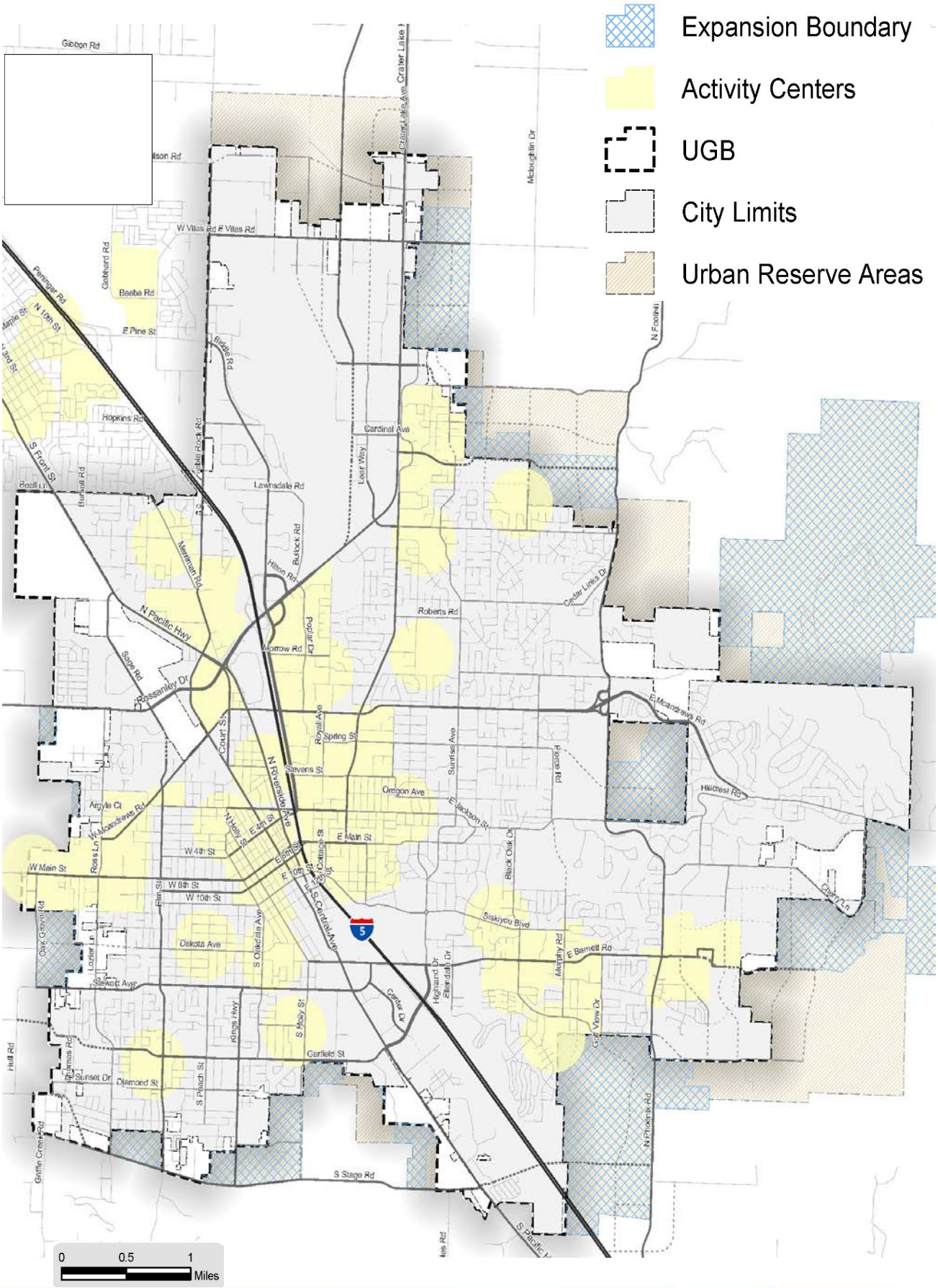
The RVMPO has reported on the region's progress with prior benchmarks most recently in 2007 and 2014 and a draft report published in 2017. The analysis reports are available at the RVMPO. Moving forward, the City will need to work with the State and the RVMPO to identify the appropriate target numbers in each category for Medford.

The City continues to work towards meeting these targets in a variety of ways. With the adoption of the Urban Growth Boundary expansion areas, the City will review and approve Urbanization Plans for these new lands. These concept plans must meet minimum density requirements, provide street networks that accommodate all modes of travel, and ensure developments are mixed use and pedestrian friendly. Other goals to increase housing and economic development within the City's downtown and surrounding established neighborhoods will further increase opportunities for transit use, walking, and biking to nearby destinations.

The TSP recognizes an inherent challenge with retrofitting the built street environment but proposes to address existing deficiencies through the new legacy street provisions, development of new trail networks and connections, and prioritizing sidewalk infill near schools and activity centers. All of these provisions help the City move closer to achieving its transportation goals and State requirements under the TPR.

The proposed Tier 1 projects support Medford and the region in striving to achieve these targets by increasing the linear miles of new sidewalks and bicycle facilities built in locations near activity centers. The activity centers identified in Figure 7 cover roughly 4,137 acres of land. The Tier 1 projects that bisect these activity centers will install roughly 3 miles of new bicycle and sidewalk facilities along these roadways. The plan also includes an annual allocation of funding for sidewalk infill ($250,000) and the installation of bicycle facilities ($100,000) to increase the City's percentages. Other opportunities to increase sidewalk and bicycle facilities can be achieved through neighborhood or corridor plans along higher order streets such as West Eighth Street, Riverside Avenue, or Central Avenue, all which intersect activity centers. The action items in the goals and objectives support the City's efforts in helping the region meet these targets, specifically items 1-a, 1-b, 1-d, 9-a, 11-a, 11-b, 11-g, 12-a, 12-c, 12-e, 13-a, 17-a, and 17-b.

Figure 7 Activity Centers



TRANSIT ORIENTED DEVELOPMENT

The nexus between land use planning and transportation planning is one that has become increasingly important in the growth and development of cities in Oregon and across the country. There are many ways to achieve an optimal pattern of development; one increasingly popular method is through the use and application of transit oriented development design principles. A transit oriented development is a comprehensive development that mixes residential, retail and office land uses with a supporting network of roads, bicycle and pedestrian ways focused on a major transit stop designed to support a high level of transit use. Typically there is a designated district, or a transit oriented district (TOD) that limits the principles of transit oriented development to a specific geographic area. The key features of transit oriented development typically include

- A mixed-use center at the transit stop, oriented principally to transit riders and pedestrian and bicycle travel from the surrounding area;
- High density of residential development proximate to the transit stop sufficient to support transit operation and neighborhood commercial uses within the TOD;
- A network of roads, and bicycle and pedestrian paths to support high levels of pedestrian access within the TOD and high levels of transit use.

Development of TODs requires coordination between both public and private parties and may come out of established planning processes and through the direct private investment in commercial and residential projects.

Transit oriented districts within the City of Medford can be seen by referencing Figure 8. Some of the City's TODs have specific comprehensive plan requirements and others have additional municipal code requirements outlined in Chapter 10. Transit oriented districts are required to follow the City's block length standards as outlined in the Medford Land Development Code, except for the SE Medford TOD. The TODs include the following:

- SE Medford TOD
- Downtown TOD
- West Medford TOD
- North Medford TOD

Established Transit Oriented Districts (Figure 8)

SE Medford TOD

Within the City's Comprehensive Plan Neighborhood Element in the *Southeast Plan* (Ordinance 2013-041) is an example of policy framework intended to create a TOD. The SE Medford TOD has specific design standards, circulation patterns and other municipal code requirements intended to promote a multi-modal, transit oriented development pattern. Through adoption of the *Commercial Center Core Area Master Plan* (ordinance 2014-160) and associated land use policies the SE TOD is to provide a mix of residential, commercial, and office uses all connected with pedestrian, bicycle and auto connections with a planned transit hub to serve the TOD and East Medford where transit is currently minimally provided.

Downtown TOD

A well-established TOD is the Downtown TOD bound by Jackson St., Central Ave., 4th Street, Oakdale Ave., 10th St. and Riverside Ave. As Medford's historic city center the Downtown TOD presents many opportunities for multi-modal travel with a well-connected pedestrian system, the Rogue Valley Transit District transfer station (Front Street Station), low stress bicycle transportation options as well as a high concentration of residential, retail and office uses. The *City Center 2050 Plan* (noted in Resolution 2002-184) establishes a policy framework to be incorporated into the City's comprehensive plan and influenced the adoption of the City's Central Business (C-B) Overlay Zone. The C-B Overlay zone has specific design and land use allowances to promote appropriate design and residential densities to support a vibrant TOD. Additional work will need to be completed and adopted in order to formally recognize the *City Center 2050 Plan* into the comprehensive plan.

West Medford and North Medford TOD

Examples of TODs still in their beginnings include the North and West Medford TODs. Although work has been done to analyze the potential for a TOD in these areas there is no recognized or adopted policy like the previous two. Specifically with the West Medford TOD a draft comprehensive plan element was prepared and considered by the Planning Commission but was never adopted by the City Council; little land use planning has been considered for the North Medford TOD. Much of this previous land use planning should be preserved in moving forward with the planning processes for the West Main TOD and all TODs generally.

TODs and Activity Centers

The most recent iteration of the Regional Transportation Plan has transitioned to using activity centers to more broadly represent areas with opportunity for a concentration in land uses and multimodal transportation. Many of the TODs in Figure 8 contain activity centers (Figure 7) and therefore present many of the same opportunities that an activity center does. The difference between the two is that a TOD is a distinct boundary containing residential, office and retail uses where an activity center is a commercial area near or around a residential district that pulls people a common destination. In order to distinguish TODs better from activity centers policies and actions should be taken to encourage residential development within TODs.

A Transit Oriented Development in 2038

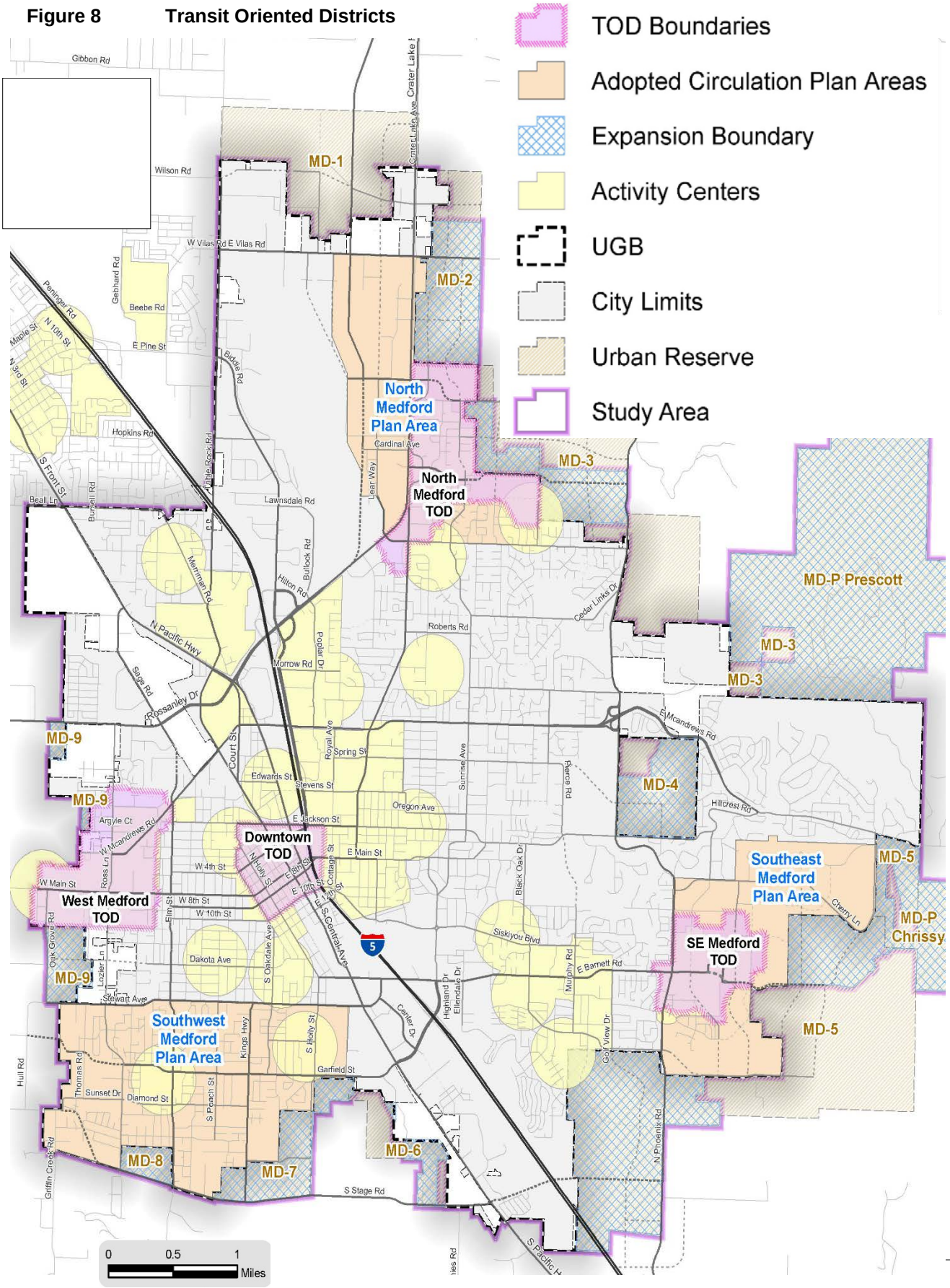
In order to achieve many of the goals of the TSP and to address portions of the Transportation Planning Rule significant action should be taken towards implementing land use policies that encourage TODs. In particular Objectives 10, 12 and 20 all support the creation and implementation of land use policies increasing "…the number of walkable, bikeable, mixed-use, transit oriented and transit supportive neighborhoods…" (Objective 10). The specific action items include:

- **10-a:** Re-assess and consider the implementation of the West Main Transit Oriented Development (TOD) plan as a neighborhood plan or corridor plan and consider developing other such plans for downtown and other neighborhoods.
- **10-c:** Research and consider options for development standards and incentives to promote mixed-use and transit oriented development.

- **12-a:** Coordinate with local and regional partners to develop trails, shared-use paths and other active transportation facilities that better connect the City's neighborhoods, schools, parks, and various activity centers.
- **20-b:** Assess off-street parking standards to reduce minimum off-street parking requirements within Activity Centers (as identified in Chapter 5.5 of the Regional Transportation Plan) and other multimodal mixed-use areas.

In evaluating the support of the goals, objectives and action items for TODs it should be noted that all the TODs, except for the SE Medford TOD, in Figure 8 contain activity centers. When creating additional transit oriented districts preference should be given to areas that contain a concentration of commercial and residential uses, specifically areas recognized as existing activity centers (Old East Medford, Rogue Valley Mall/Northgate, South Gateway/Stewart Meadows, Medford Center/Providence Medical Center and Rogue Valley Medical Center/Barnett Rd.).

Figure 8 **Transit Oriented Districts**



NEIGHBORHOOD CIRCULATION PLANS

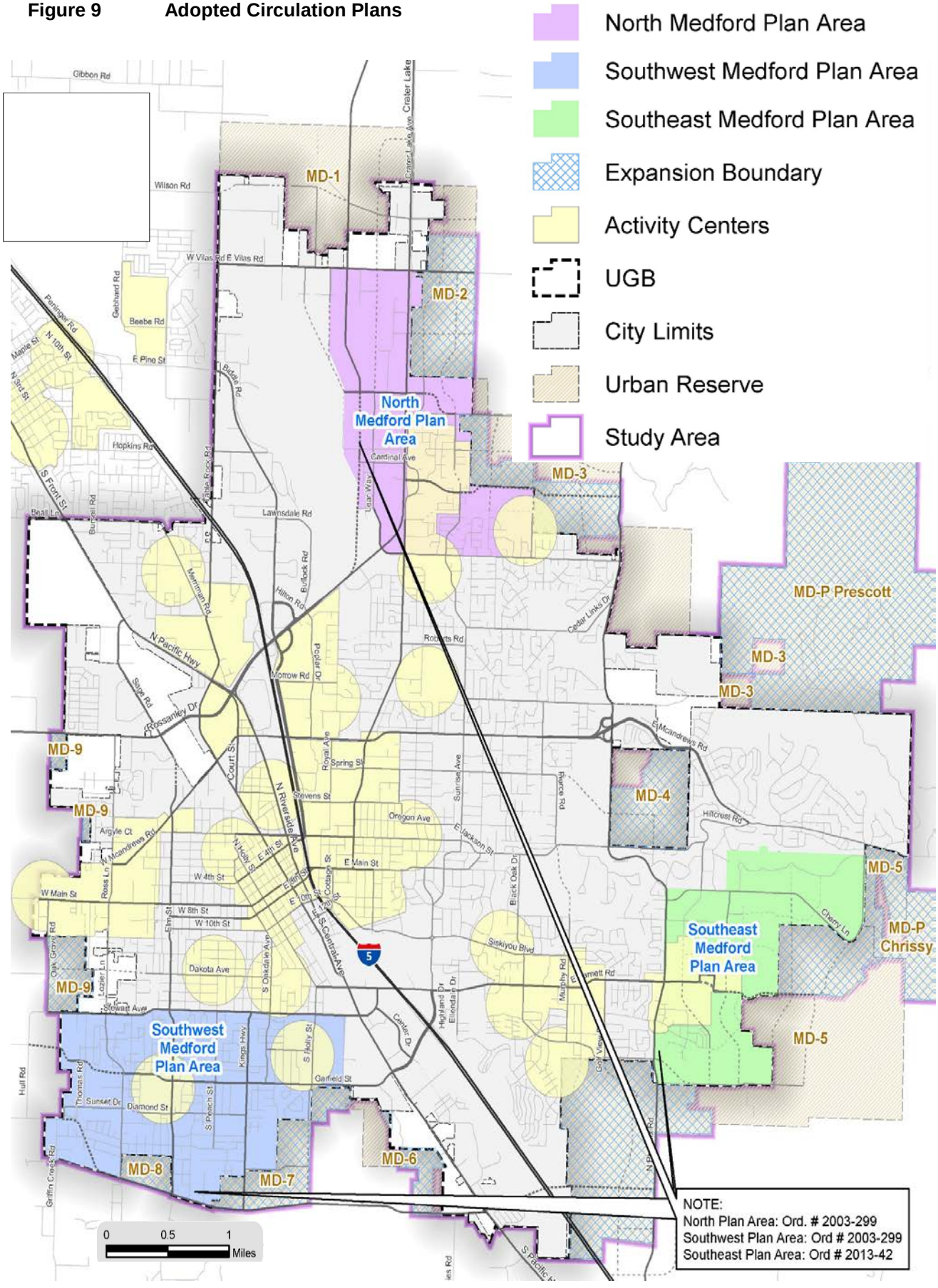
Neighborhood circulation plans are prepared by the City to address the unique issues, concerns and visions of individual neighborhoods within the City at a greater level of detail than is possible in a citywide TSP. In addition to the higher order streets adopted on the functional classification map (Figure 9), these neighborhood circulation plans show the conceptual locations of future lower orders streets to aid in assuring proper connectivity. When adopted, the requirements of a neighborhood circulation plan will supersede any conflicting requirements of the TSP.

Figure __ shows the adopted circulation plans, referenced as “Plan Areas” and has the associated ordinance number referencing the adoption date. Future circulation plans will need to be incorporated into the TSP to reference the specific roadway connections not addressed in the functional classification map.

Adopted neighborhood circulation plans include:

- North Plan Area – Ordinance #2003-299 (Attachment B)
- Southwest Plan Area – Ordinance #2003-299 (Attachment C)
- Southeast Plan Area – Ordinance #2013-42 (Attachment D)

Figure 9 Adopted Circulation Plans



Safety

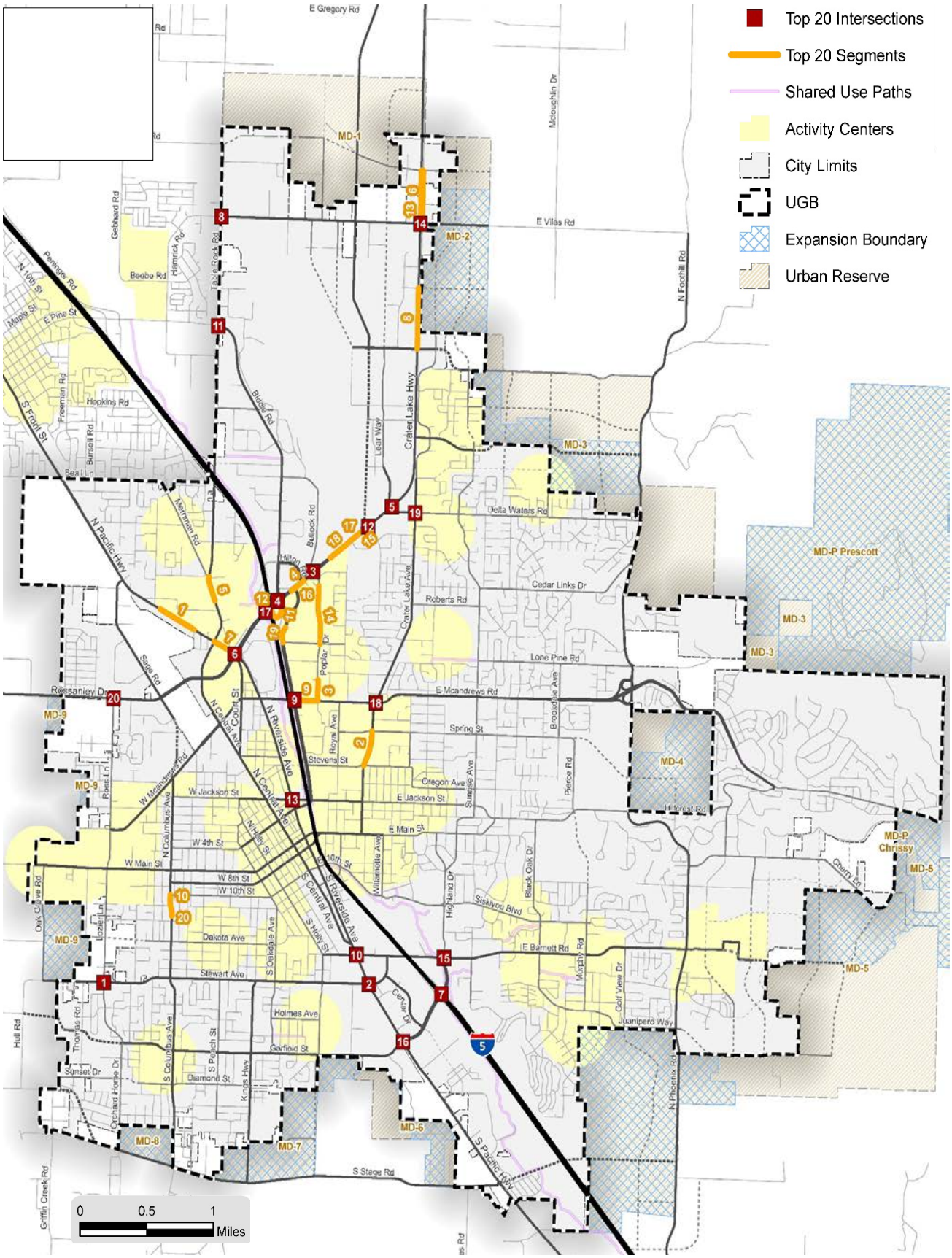
ODOT provided recorded historical crash data for the years 2011 to 2015 to identify locations throughout the City where safety-focused treatments and projects may be needed. The safety analysis identified trends and critical locations for further evaluation through two approaches: crash trends overview and network screening. The crash trends overview provides the general trends seen throughout the City and at TSP specific study intersections, and highlights intersections and roadway segments identified through ODOT's Statewide Priority Index System (SPIS) and All Roads Traffic Safety (ARTS) programs. The network screening applies a process from the American Association of State Highway and Transportation Officials (AASHTO)'s ***Highway Safety Manual*** to systematically evaluate all roads and intersections within the City of Medford.

The crash trends overview indicates that an overall increase in collisions occurred in the City of Medford between 2011 and 2015. As shown in the *Safety Analysis Memo*, 31 TSP study intersections exceed ODOT 90th percentile crash rates and should be further analyzed[1]. There are also several roadway corridors and intersections that were identified through ODOT's SPIS and ARTS programs. Charts, maps and tables showing crash trends, 90th percentile crash rates, and SPIS and ARTS roadway corridors and intersections are provided in the *Safety Analysis Memo in the TSP Volume II*.

The network screening process highlights the top intersections and non-interstate roadway segments that may have a greater potential for crash reduction than other sites in Medford. Figure 10 shows the final top twenty locations by reference population (intersections and non-interstate roadways). Table 13 list the top twenty safety locations (intersections and non-interstate roadways) and the overlapping TSP projects, if proposed. They are primarily located along Crater Lake Highway and in the vicinity of the South Medford Interchange. The detailed network screening analysis process and results are provided in the *Safety Analysis Memo in the TSP Volume II*.

[1] The 90th percentile crash rates are included in the ODOT Analysis Procedures Manual (APM).

Figure 10 Top 20 Safety Locations – Intersections and Segments*



*(See Table 13, Top Twenty Safety Locations, Overlapping Indicators and Projects, for project list)

BICYCLE

The City of Medford's existing bicycle facilities primarily include on-street bicycle lanes, multi-use paths, and neighborhood streets that are low-volume and low-speed and suitable as a "shared roadway" for vehicles and bicycles. The most notable multi-use trail in Medford is the Bear Creek Greenway (BCGW), a 20-mile multi-use path connecting Ashland, Talent, Phoenix, Medford, and Central Point. The BCGW is used for recreation and commuting and runs through numerous parks that have restrooms, drinking water, and picnic areas. The BCGW connects Ashland and Central Point; however, there is a need to improve connectivity to the trail within each city as well as provide low-stress routes to the trail.

The City's existing bicycle facilities are shown in Figure 11. As shown in Figure 11, many arterials and collectors lack bicycle facilities needed for "complete streets". These arterial and collector streets are not suitable to act as shared roadways.

Bicycle Collisions

On average, 32 collisions per year involving cyclists occurred between 2011 and 2015. Cyclist collisions resulting in injury make up 97% of all cycling crashes in the City. One cyclist crash in 2013 resulted in a fatality. The *Safety Analysis Memo in the TSP Volume II* includes maps and tables of the bicycle crash locations and trends. Cyclist crashes in Medford are not centrally located and have very few location clusters.

Bicycle Level of Traffic Stress

To help prioritize the bicycle system needs, the City's bicycle network (including future roadways assumed to be built to City standards) was evaluated using the Bicycle Level of Traffic Stress (LTS) methodology[2]. This methodology classifies four levels of traffic stress that a cyclist can experience on the roadway, ranging from LTS 1 (little traffic stress) to LTS 4 (high traffic stress). A road segment with a LTS 1 generally has low traffic speeds and low volumes and is suitable for all cyclists, including children. A road segment with a LTS 4 generally has high speeds, high volumes, and is perceived as unsafe by most adults. LTS 2 is considered appealing to a majority of the bike-riding population and is therefore the desired target on most roadways.

Figure 12 illustrates the results of the LTS analysis for the City of Medford. As shown, only multi-use paths and low order streets currently provide low stress (LTS 1 or 2) connections for bicyclists. Also worth noting is that many streets, with bicycle lanes, still result in LTS 3 or 4 connections due to the speed of adjacent traffic. Figure 13 identifies the type of improvement necessary to improve the roadway network to provide low-stress connections for bicyclists. These will be considered when improving or retrofitting roadways.

[2] LTS analysis procedures are included in the ODOT Analysis Procedures Manual (APM).

Figure 11 Existing Bicycle Facilities

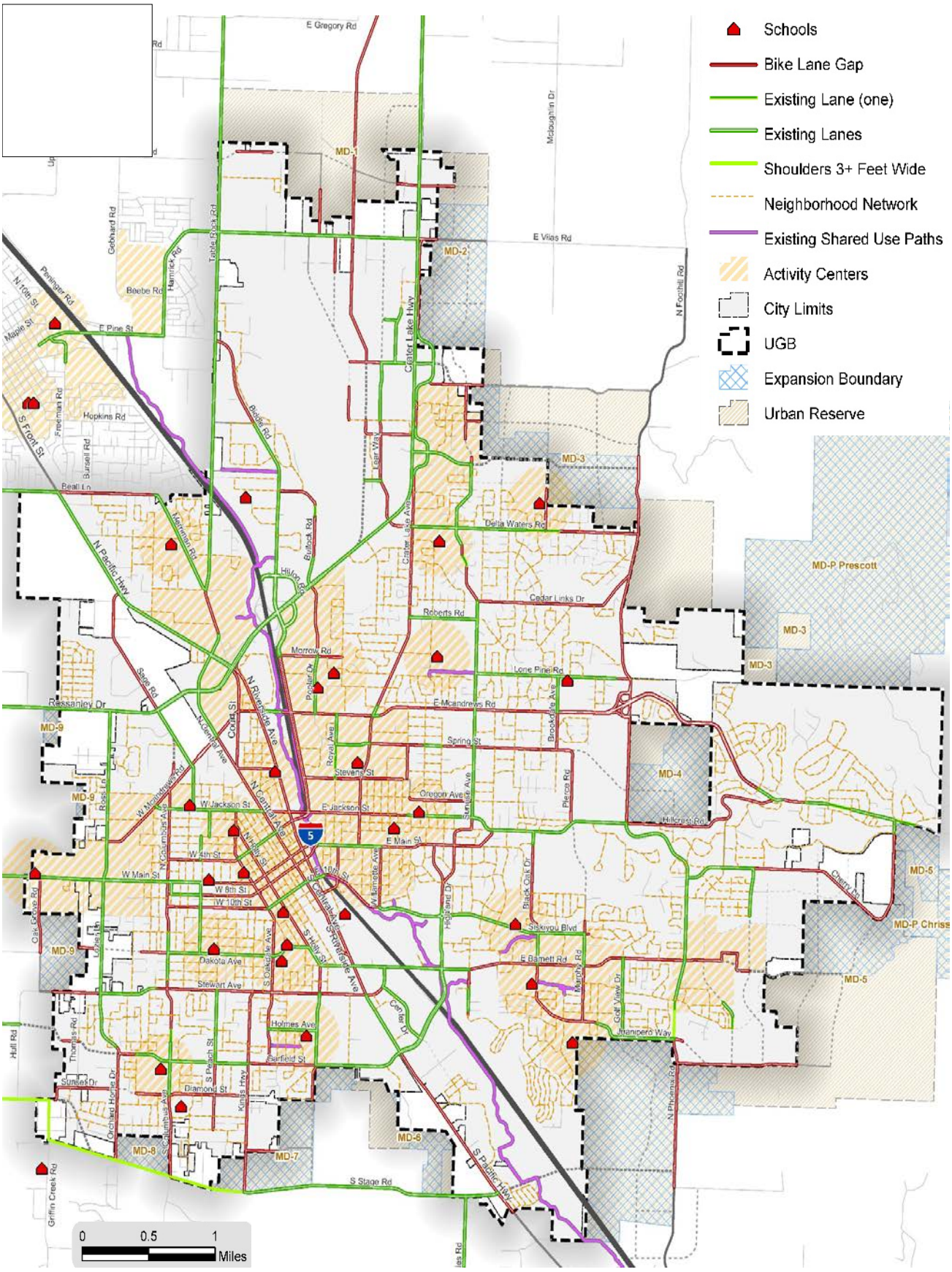


Figure 12 Existing Bicycle Level of Traffic Stress (LTS)

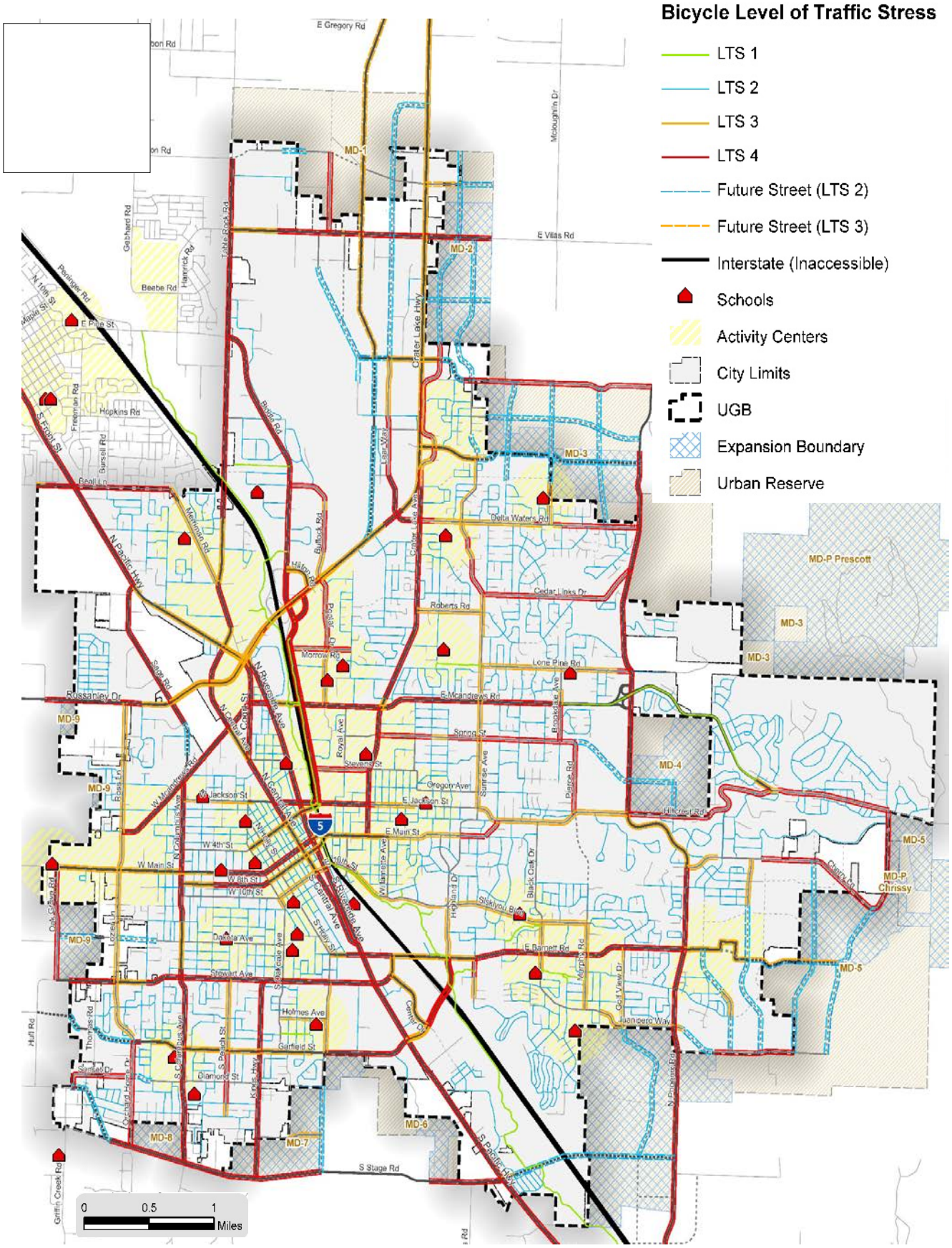
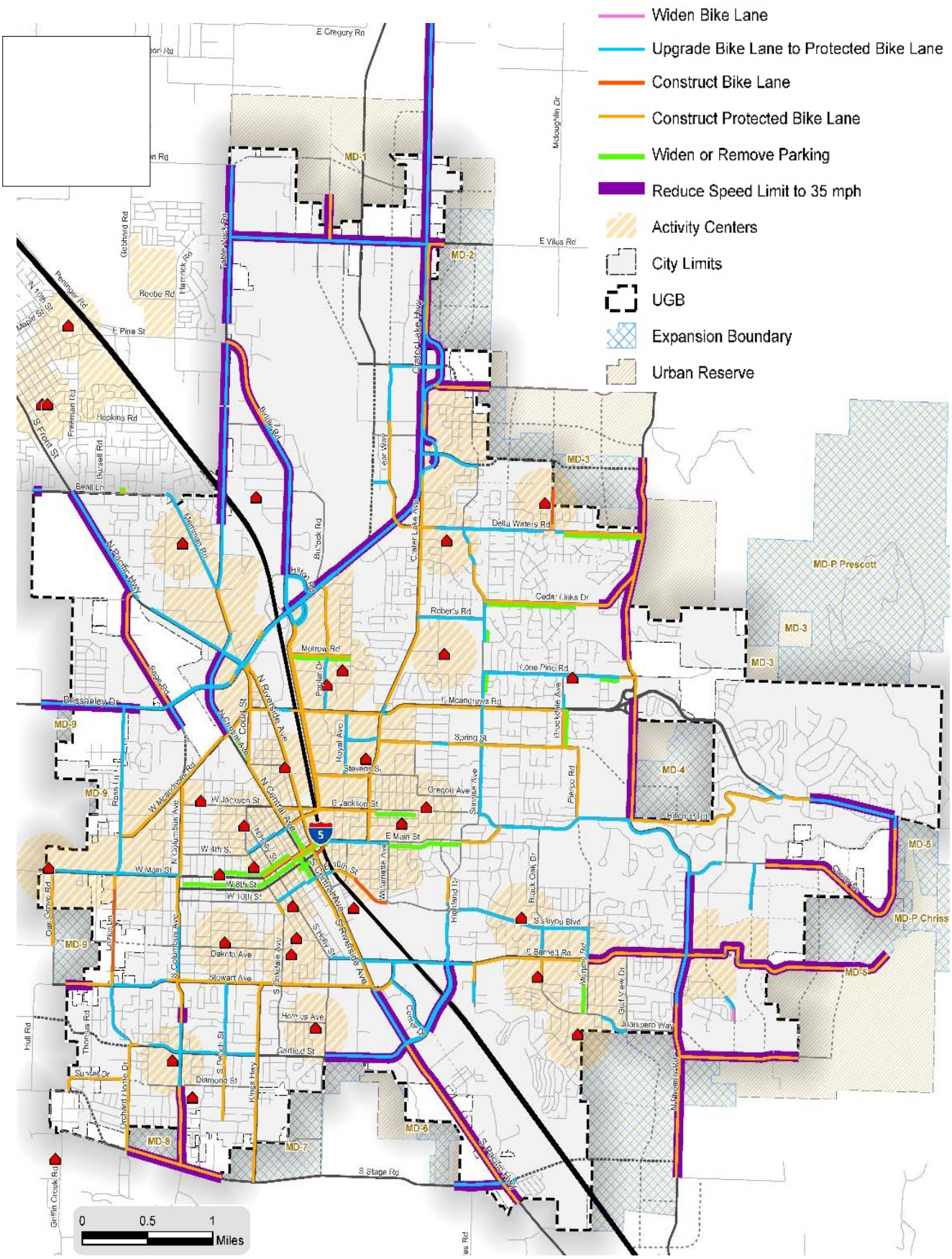


Figure 13 Bicycle Facility Improvement Needs for Low-Stress Connection



PEDESTRIAN

The City of Medford's existing pedestrian system primarily includes sidewalks and multi-use paths. Sidewalks are required on all streets within the city except I-5 and the Highway 62 bypass. Figure 14 illustrates the location and type of pedestrian facilities throughout the City. All facilities without sidewalks, except I-5 and the Highway 62 bypass, represent a gap in the existing pedestrian network. The most critical gaps are those that provide connections to schools, transit stops, and other essential destinations.

Pedestrian Collisions

Crash data from 2011 to 2015 indicates that pedestrian crashes in Medford have been increasing. They make up a low percentage of total crashes but a disproportionately high percentage of injuries and fatalities. Between 2011 and 2015, four pedestrian crashes resulted in fatalities, making up 36% of all fatal crashes that occurred in Medford over the five year study period. The *Safety Analysis Memo* in the *TSP Volume II* includes maps and tables of the pedestrian crash locations and trends.

While many pedestrian crashes occurred in downtown Medford, these crashes tend to result in low or moderately severe injuries. Pedestrian crashes resulting in a severe injury or death tended to occur outside of downtown Medford. The pedestrian fatalities that occurred in Medford between 2011 and 2015 were on North Pacific Highway (OR 99), South Pacific Highway (OR 99), Crater Lake Highway (OR 62) and Crater Lake Avenue.

Pedestrian Level of Traffic Stress

To help prioritize the pedestrian system needs, the City's pedestrian network (including future roadways assumed to be built to City standards) was evaluated using the Pedestrian Level of Traffic Stress (PLTS) methodology[3]. This methodology classifies four levels of traffic stress that a pedestrian can experience on the sidewalk and other pedestrian facilities, ranging from LTS 1 (little traffic stress) to LTS 4 (high traffic stress). The PLTS analysis also considers motorized power chairs, scooters, and other wheeled mobility devices and how one would interact with sidewalks using these modes of transportation. A sidewalk with a LTS 1 is generally adjacent to low traffic speeds and volumes, provided a wide buffer, and is suitable for all users, including children. A sidewalk with a LTS 4 generally is adjacent to high speeds and volumes, is narrow or in disrepair, and is perceived as unsafe by most adults. LTS 2 is considered appealing to a majority of the population and is therefore the desired target on most roadways.

Figure 14 illustrates the results of the LTS analysis for the City of Medford. As shown, only multi-use paths and low order streets currently provide low stress (LTS 1 or 2) connections for pedestrians.

[3] PLTS analysis procedures are included in the ODOT Analysis Procedures Manual (APM).

Figure 14 Pedestrian Facilities

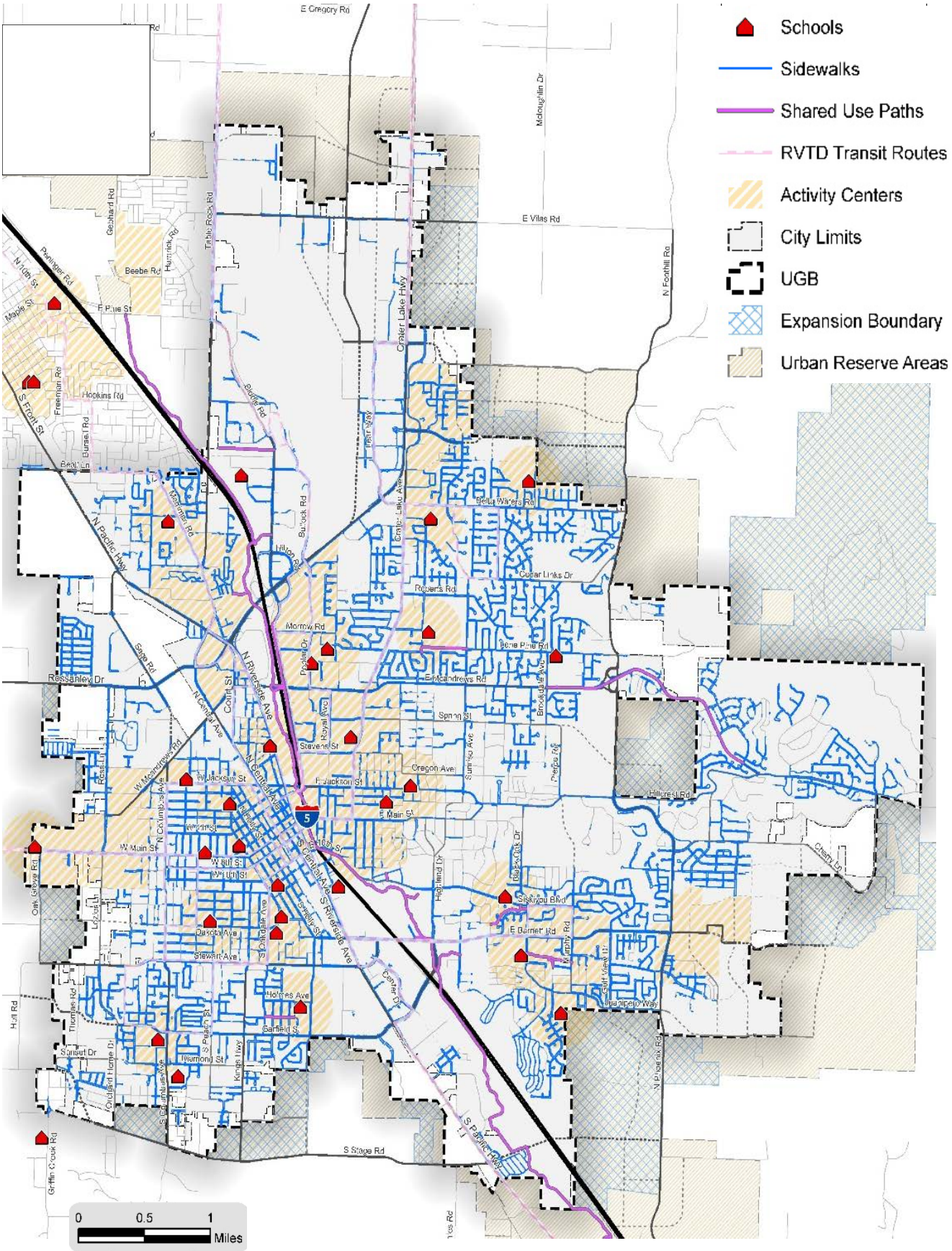
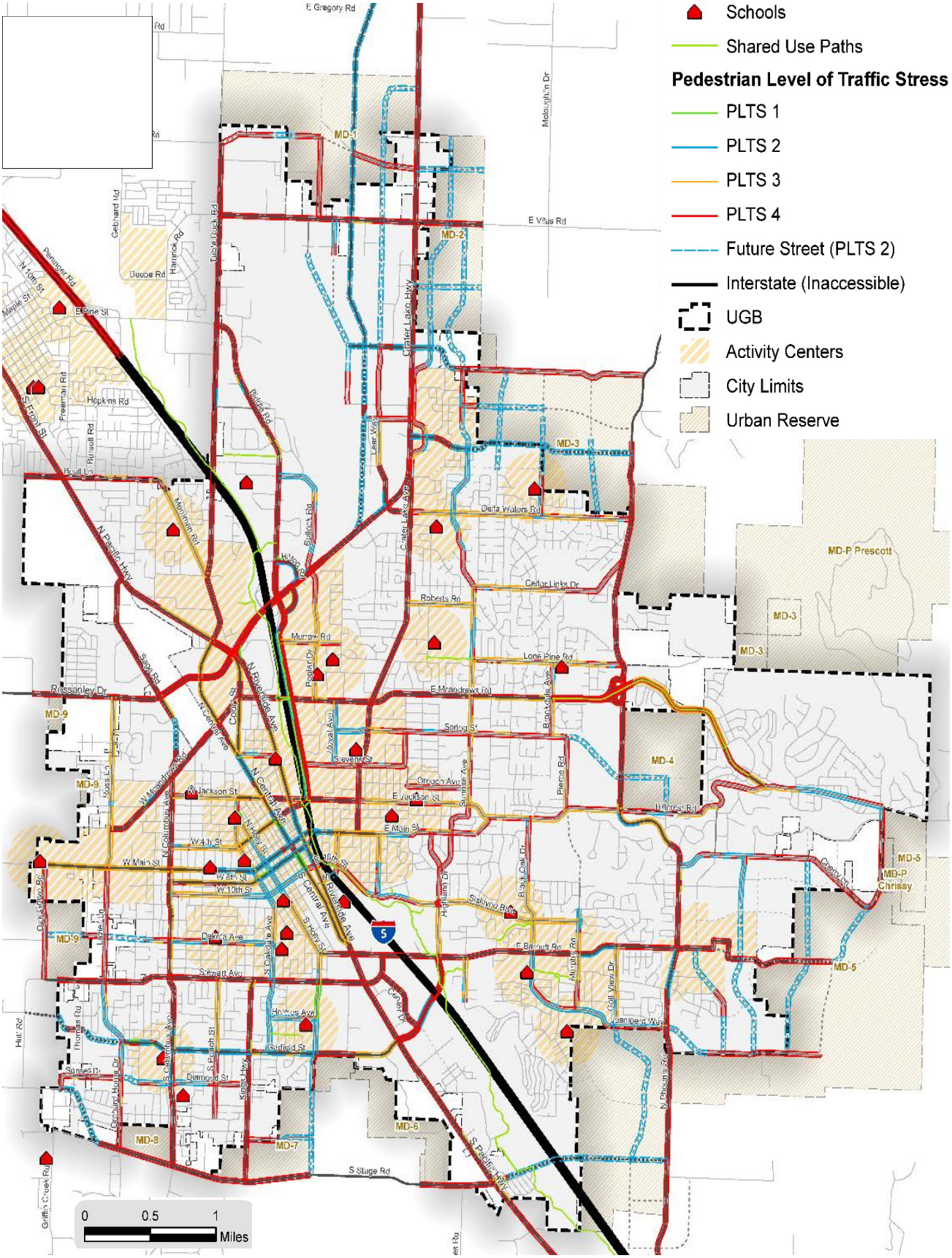


Figure 15 Existing Pedestrian Level of Traffic Stress (PLTS)



PUBLIC TRANSPORTATION

Public transportation service within Medford includes fixed-route service provided by Rogue Valley TransitDistrict (RVTD) and Josephine Community Transit (JCT) and specialized transportation services for senior citizens and persons with disabilities provided by others. Intercity transit service is provided by Greyhound and SouthWest POINT. Figure 16 illustrates the RVTD fixed-route transit routes within the City of Medford.

Fixed-Route Transit Service

RVTD Routes

RVTD is the primary provider of public transportation service in Jackson County. RVTD operates eight fixed routes, all of which connect at the Front Street Transfer Station in downtown Medford. Fixed-route service provides connections throughout Medford as well as from Medford to White City, Central Point, Jacksonville, Phoenix, Talent, and Ashland. Complementary demand-responsive service[4], required by the American with Disabilities Act (ADA), is provided within ¾ mile of fixed-route service. RVTD service is provided on weekdays excluding national holidays. No service is provided on Sundays. The fixed-route bus lines and stop locations are shown in Figure 16 and include:

- Route 2, *West Medford;*
- Route 10, *Ashland;*
- Route 21, *Poplar Square;*
- Route 24, *Rogue Valley Medical Center;*
- Route 25, Southwest Medford
- Route 30, *Jacksonville;*
- Route 40, *Central Point;* and
- Route 60, *White City.*
- Route 61, *RCC Table Rock Road*

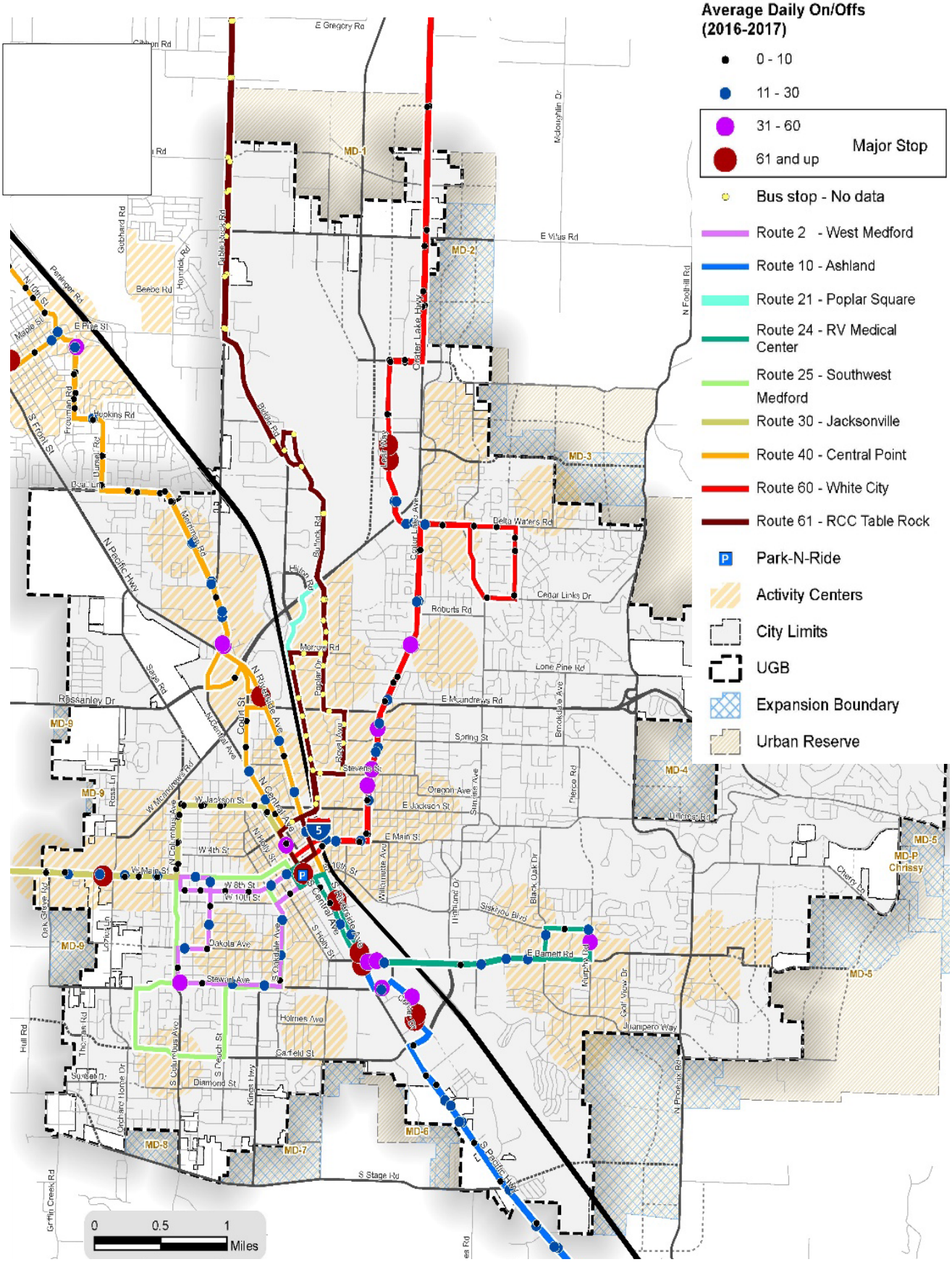
Figure 16 also shows the stop locations and their relative average daily activity (average number of boardings and alightings (e.g. ons and offs).

Rogue Valley Commuter Line

Josephine Community Transit operates the Rogue Valley Commuter Line which offers service between Grants Pass and Medford with stops in Rogue River and Gold Hill. The route runs five times a day Monday through Friday. Fares are $2 each way and are cash only. Josephine County Transit 20-ride punch Card, full fare and reduced fare commuter passes are accepted. Children six years old and younger ride for free.

[4] *Complementary demand-response service* is the legal term used to describe demand-responsive ADA service that supplements (complements) the fixed-route service. The term does not indicate that the service is free.

Figure 16 RVTD Fixed Routes and Stop Ridership



Specialized Transit Service

Medford has several providers of transportation services for specific populations. Typically, these services are limited to medical transportation for individuals with specific transportation challenges, such as the elderly or persons with disabilities. The service providers include:

- TransLink;
- Valley Lift;
- Rogue Valley Connector;
- N.E.E. Car, Inc.;
- Other TransLink contractors;
- Upper Rogue Community Center RSVP Call-a-Ride & TransMed;
- Private and charter services;

Intercity Transit Service

Greyhound

Greyhound provides service along the I-5 corridor with five stops daily in Medford at the Greyhound station which is adjacent to the RVTD Front Street Transfer Station.

SouthWest Point

SouthWest Point provides daily intercity bus service between Klamath Falls, Medford, Crescent City, and Brookings. There is one trip per day in each direction with a layover at the Medford Greyhound Station. It also stops at the Medford - Rogue Valley International Airport.

Park & Ride Lots

Park & ride lots are transit system components that provide patrons with a connection point to transit service. Patrons drive private automobiles (or ride bicycles) to a transit station, transit stop, or car/vanpool waiting area and park the vehicle in the area provided for that purpose. There is one park & ride lot in Medford located at the RVTD Front Street Transfer Station. A permit is required.

Transportation Options

RVTD houses the Transportation Options program for southwest Oregon. The program promotes alternatives to driving alone through:

- Education: programs in local schools include "Gus Rides the Bus" Interactive Bus program, bicycle safety education classes, Safe Routes to School program coordination, and Walk and Bike to School Day.
- Public Outreach: RVTD hosts a booth at local events throughout the year to provide information on transportation options.
- Employer Outreach: programs include an employee bus pass program, tax credit assistance, carpool matching, park & ride lots, and our other services to employers.

- Government Outreach: the Transportation Options program works with local government to promote policies and infrastructure that reduce reliance on automobile transportation.

In addition to the Transportation Options program, RVTD buses are equipped with bike racks for up to three bikes and, where possible, RVTD installs bike parking at shelter stops.

AIR, WATER, RAIL, AND PIPELINE SYSTEM

Air

The Rogue Valley International-Medford Airport, located to the east of I-5 and near the northern city limits, serves the Medford metropolitan area, Jackson County, and the regions of southern Oregon and northern California. The airport is publicly owned and operated by Jackson County and provides passenger, mail, and freight transportation. The airport is served by four major airlines, including Alaska Airlines, Delta Airlines, United Airlines, and Allegiant Air. These airlines provide direct flights to seven major cities, including Seattle, Portland, San Francisco, Los Angeles, Las Vegas, Salt Lake City, and Denver. The airport's master plan identifies 31 projects in its short, intermediate, and long-term capital improvement program for 2001-2020, with a total cost of $121.9 million. Public airport issues relevant to the City of Medford's TSP primarily relate to access to the airport for passengers and freight. The RTP identifies expanded service to the Rogue Valley International-Medford Airport as a Tier 1 (i.e., part of the financially constrained plan) transit improvement project.

The Rogue Valley International-Medford Airport Master Plan Update, Final Report, February 2013, is adopted by reference (Ordinance No. 2016-20).

Water

Medford does not have water based transportation systems or facilities. The Bear Creek and its tributaries run through Medford to the Rogue River. These are used for recreational purposes only.

Rail

The City of Medford's freight rail facilities are discussed below. The closest passenger rail stations are in Eugene and Klamath Falls, Oregon, and Dunsmuir, California.

Lines and Operators

The Central Oregon & Pacific Railroad (CORP) provides freight service along the I-5 corridor, connecting with the Union Pacific Railroad in Black Butte, California and Eugene, Oregon. Connections are also made with Rogue Valley Terminal Railroad Corporation (RVT) in Oregon and with Yreka Western in California. The RVT (previously named White City Terminal Railroad) operates a 14-mile railroad that connects the Medford Industrial Park in White City to a junction with the CORP north of Medford. The RVT route is not located within the City of Medford.

There are two yard-engines in Medford, which are used on demand. Most of the traffic originating in Medford heads south to California. The portion of the line south from Ashland to Black Butte has no weight restrictions. However, tunnels both north and south of the Rogue Valley cannot accommodate large containers due to steep grades, low height tunnels, and tight turns. As a result, dimensional restrictions are in place.

There are two grade-separated crossings (Highway 238 and McAndrews Road) and 17 at-grade crossings of the Central Oregon and Pacific Railroad's (CORP) mainline and three spur line crossings. Figure 17 maps the CORP route and the locations of at-grade crossings on major roads. At-grade crossings create important safety concerns, as they are the locations where interactions with other transportation system users occur. All crossings of the CORP mainline have active control gates with the exception of Clark Street which is a very low volume street.

Passenger Rail

The closest passenger rail stations are in Eugene and Klamath Falls, Oregon, and Dunsmuir, California, all of which serve Amtrak's Coast Starlight route. This route provides once-a-day service north to Portland and Seattle and south to Sacramento, the Bay Area, and Los Angeles. Amtrak offers Amtrak Thruway bus service from Medford to the rail station in Klamath Falls.

Pipeline

The City of Medford pipeline system primarily serves local utilities which include pipeline transport of water and sanitary sewer, natural gas distribution, and transmission lines for electricity, cable television, and telephone services.

Water Transmission

The Medford Water Commission (MWC) operates and maintains the water system that delivers drinking water to over 131,000 Rogue Valley residents. Approximately 60% of these residents are located in the City of Medford. The Commission's wholesale customers include the cities of Central Point, Jacksonville, Phoenix, Talent, and Eagle Point.

The Medford Water Commission's principal source of water is Big Butte Springs, located about thirty miles northeast of Medford, Oregon and five miles east of the town of Butte Falls. The Rogue River is used as a supplemental source during the summer months of May through September.

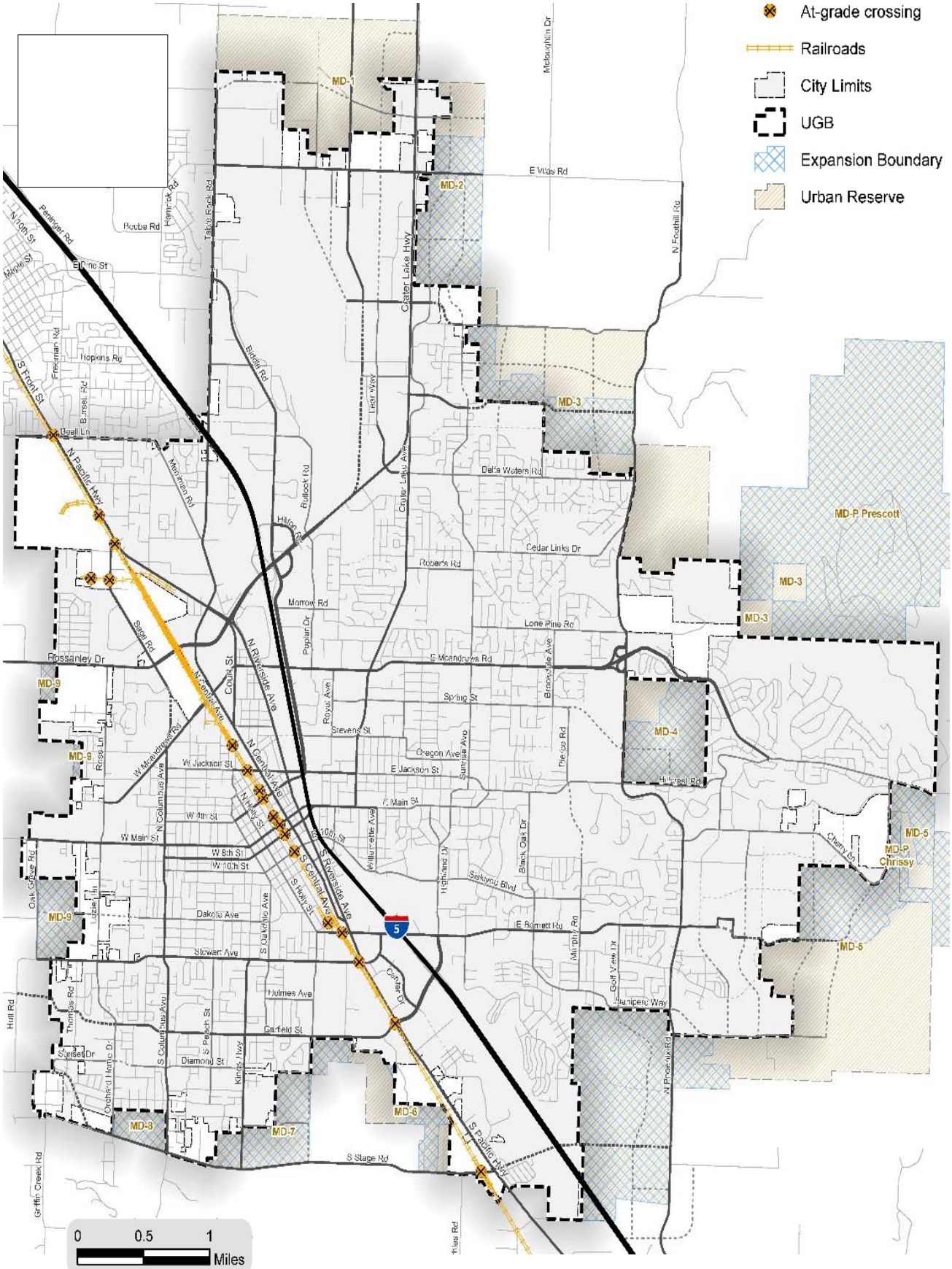
Natural Gas

The City of Medford's natural gas provider is Avista Utilities. Natural gas is transmitted from the north via the Williams Pipeline, which runs generally along the I-5 corridor. The PG&E Northwest Pipeline runs across Eastern Oregon, connecting Klamath Falls with Medford. For security reasons, Avista limits public dissemination of detailed information regarding the natural gas distribution system.

Power

Pacific Power is the provider of electric power in Medford.

Figure 17 Rail Facilities



SECTION 4 /// TRANSPORTATION FUNDING & IMPLEMENTATION

Projected transportation revenues and funding for 20-year financially-constrained plan.

- Projected Funding for Capital Improvements
- Unfunded Need

Transportation Funding and Implementation

The following provides a summary of projected funding for transportation, funds assumed to be available for capital projects over the next 20 years, estimated costs of the unmet needs, and potential funding sources the City could pursue.

PROJECTED 20-YEAR TRANSPORTATION REVENUES

Based on data provided by the City's Public Works and Finance Departments, total revenue expected to be received from transportation sources is projected to be approximately $344 million over the next 20 years:

- 2018-2022 (short-term): $83,234,160
- 2023-2027 (mid-term): $86,637,520
- 2028-2038 (long-term): $173,709,600

In general, eligible expenditures for these revenues (e.g., operations, maintenance and/or capital improvements) are fixed by revenue type. For example, fees collected for system maintenance cannot be used for capital expenditures without modifying the fee's enabling legislation. State gas tax revenues are able to be used for capital improvements, operations and maintenance, and bond payments. System Development Charges (SDC) must be used for capacity expansion, and street utility fees must be used for maintenance and operations.

Fees assessed to fund existing operations and maintenance costs can be enacted, increased and decreased by the City Council without a public vote, provided statutory requirements are met for public comment. If statutory requirements are met for public comment and public hearing, City Council can also increase or decrease fees collected for capital expenditures, such as System Development Charges, without voter approval. However, these decisions have potential political and economic consequences. For example, an increase in System Development Charges could drive new development to nearby communities that have lower fees. Medford's code already accounts for inflation with annual increases of SDCs by the Engineering News Record Construction Cost Index (ENR-CCI) each year.

The Oregon Legislature recently passed House Bill (HB) 2017, which increases state transportation funding significantly over the next 10 years. The final fiscal year in the projections currently available is 2026. The revenue estimate assumes funding remains at the fiscal year 2026 level for the remainder of the TSP forecast period. The revenue estimate does not show any increases in SDC or Street Utility fees, even though some increases are expected over the next 20 years, because SDC fees are anticipated to increase based on the ENR-CCI and, therefore, any increases are expected to be offset by inflation. While not entirely eliminating the anticipated gap between identified transportation needs and available financial resources, the revenue increases anticipated from HB2017 will provide significant funding to implement a wide variety of multimodal improvement projects. Typical projects included in the TSP multimodal action plan (Section 5) include 2 remaining projects from a previously passed bond measure (the 17-project list); safety projects that address high crash locations; projects that address congestion problem locations; projects to encourage the use of alternative travel modes such as walking, bicycling and transit; and projects that make more efficient use of the existing transportation system.

Revenue estimates based on existing funding sources and Medford's estimated share of recently

passed legislation to increase state transportation revenues are summarized in Table 2 for three time periods. These time periods include:

- First five years of the TSP (fiscal year 2018 through 2022)
- Second five years of the TSP (fiscal year 2023 through 2027)
- Last ten years of the TSP (fiscal year 2028 through 2038)

Table 2 City of Medford 20-Year Transportation Revenue Estimates

Budget Item	2018-2022	2023-2027	2028-2038
Revenue Estimates			
Existing Revenue Sources:			
State Gas Tax	$ 23,500,000	$ 23,500,000	$ 47,000,000
Street System Development Charges (SDC)	$ 8,750,000	$ 8,750,000	$ 17,500,000
Street Utility Fees	$ 37,000,000	$ 37,000,000	$ 74,000,000
Miscellaneous (CBDG, grants, MURA, etc.)	$ 3,500,000	$ 3,500,000	$ 7,000,000
Total Estimated Revenue from Existing Sources	*$ 76,750,000*	*$ 76,750,000*	*$ 153,500,000*
Anticipated Revenue Sources:			
State Transportation Revenue Increase from HB 2017	$ 6,484,160	$ 9,887,520	$ 20,209,600
Total Estimated Revenues	**$ 83,234,160**	**$ 86,637,520**	**$ 173,709,600**
Fixed Expenditures			
Operating Expenses (staff, indirect, non-road capital)	$ 49,000,000	$ 49,000,000	$ 98,000,000
Maintenance (includes 3% annual increase)	$ 13,272,840	$ 15,386,859	$ 38,516,238
Loan Repayment (Foothill)	$ 5,000,000	$ 5,000,000	
SDC Credits	$ 2,250,000	$ 2,250,000	$ 4,500,000
Contingency	$ 2,965,000		
Total Fixed Expenditures	**$ 72,487,840**	**$ 71,636,859**	**$ 141,016,238**
Balance Available for Capital Street Projects	$ 10,746,320	$ 15,000,661	$ 32,693,362
Fund Balance Carried Forward	$ 30,000,000		
Total Revenue Available for Capital Projects	***$ 40,746,320***	***$ 15,000,661***	***$ 32,693,362***
20-year Total Revenue Available for Capital Projects	**$ 88,440,343**		

UNMET NEED

The total needs for capital projects described in Section 5 are estimated to cost approximately $721 million. Table 3 shows that there is a difference between projected revenues available for capital projects and the total need resulting in an unfunded need of approximately $649 million.

Table 3 City of Medford 20-Year Revenue for Capital Projects vs. Need

20-Year Capital Funding vs. Need				
	2018-2022 (Short-term)	2023-2027 (Mid-Term)	2028-2038 (Long-Term)	Total
20-Year Revenue for Capital Projects	$40,746,320	$15,000,661	$32,693,362	$88,440,343
Total Need				$638,212,000
Unfunded Need				$549,771,657

POTENTIAL FUNDING SOURCES

The City has historically revised System Development Charges (SDCs) to fund projects required in the Transportation System Plan (TSP) after the TSP is adopted.

The City has also raised additional funds in the past by adding a surcharge to either SDCs or the street utility fee, typically for substantial project expenses not included in the TSP. Surcharges are added to SDC when the projects are adding capacity for new development. Surcharges have been added to utility fees when they serve developed areas.

Other funding options to consider are Local Improvement Districts (LIDs), a local gas tax, or use of other Funds such as the General Fund. According to the Oregon Department of Transportation, nine (9) other Oregon cities have local gas taxes, ranging from $0.01/gallon to $0.03/gallon. Twenty-three (23) Oregon cities have local gas tax on diesel fuel. Two (2) Oregon counties have gas taxes.

Considering the regional benefit of the Foothill / N Phoenix Corridor and the South Stage Overcrossing, the City of Medford is anticipating that regional partners will contribute to both projects. Regional partners are anticipated to contribute approximately $10M to $15M toward these projects.

SECTION 5 /// TRANSPORTATION SYSTEM PLAN

Future plans for all modes of transportation in Medford

- Future Networks
- Standards
- Projects

Transportation System Plan

The Transportation System Plan includes the following elements:

- Street Plan
- Pedestrian Plan
- Bicycle Plan
- Transit Plan
- Freight/Rail/Intermodal Plan
- Parking Plan
- Travel Demand Management and Transportation System Management Plans
- Modal Goals and Standards
- Water/Air/Pipeline Plans

STREET PLAN

The street element of the TSP includes the roadway functional classifications, typical cross-sections, and the prioritized roadway project list including intersection projects.

Functional Classification

Functional classification of a roadway characterizes the intended purpose, amount, and type of vehicular traffic a roadway is expected to carry, provisions for non-auto travel, and the roadway's design standards. The classification considers access to adjacent land uses and transportation modes to be accommodated.

The functional classification system in Medford, shown in Figure 18, includes: regional arterials, major arterials, minor arterials, major collectors, minor collectors, commercial streets, standard residential and local streets (which includes minor residential streets and residential lanes). Not all future commercial, industrial, standard residential, minor residential and residential lanes are shown on the functional classification map. Developments on large tracts, lots, or parcels of land are required to address local circulation with their development applications, including all future streets for the development. Adopted circulation plans include the North, Southwest, and Southeast Circulation Plans and are available on the Medford Planning Departments website or available at the Department's office.

Medford's roadway functional classifications are based on the 20-year forecast conditions to ensure that roadways are built to accommodate forecasted need.

As illustrated in Exhibit 1, higher-order facilities such as arterials are primarily intended to move traffic and provide mobility while lower-order facilities such as local streets are primarily intended to provide access. Roadway design standards and access management policies balance the function of the different classifications of roadways.

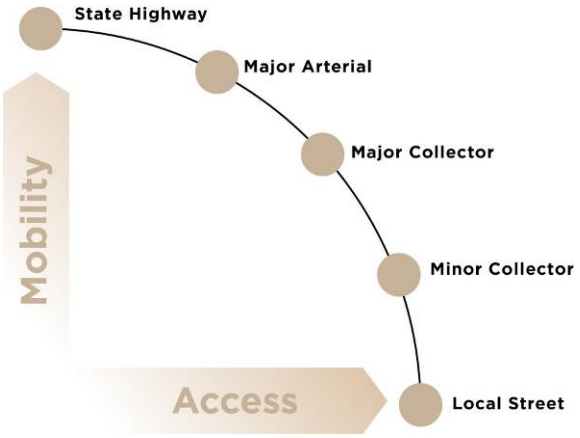
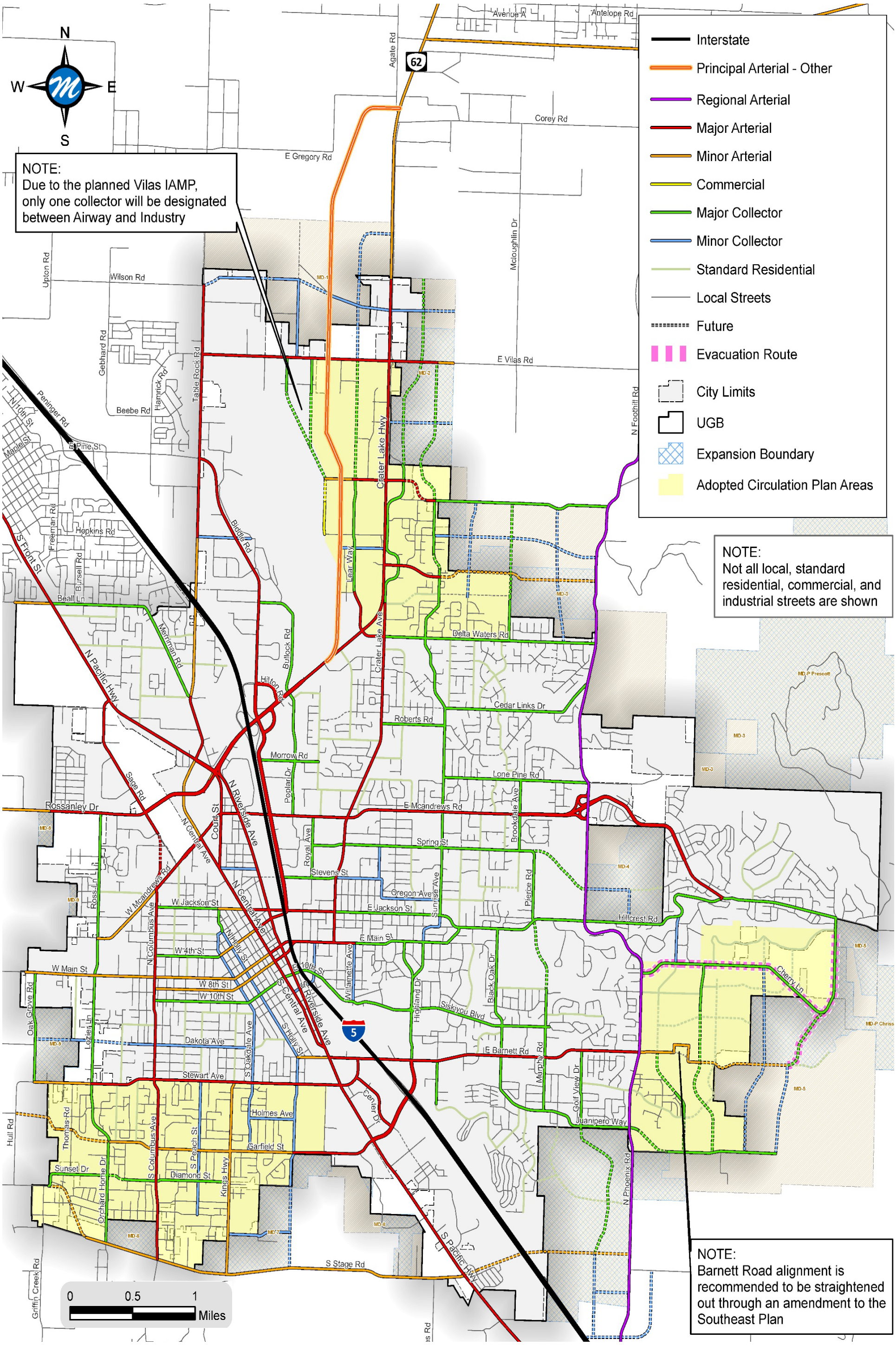


Exhibit 1 Relationship between Access, Mobility, and Functional Classification

Figure 18 Roadway Functional Classification



Roadway Cross-Sections

Medford's roadway cross-section standards apply to new and reconstructed roads. The cross-sections take into consideration roadway function and operational characteristics, including traffic volume, capacity, operating speed, and safety. The cross-sections ensure that as the road system develops, it will be capable of safely and efficiently serving the traveling public, while also accommodating orderly development of adjacent lands. The right-of-way required ensures that adequate space is provided to accommodate all modes of travel as well as utility needs.

The roadway cross-section standards are the desired cross sections. All new and unimproved (without curb and gutter) roads will be built to these standards. Existing improved (with curb and gutter) roads that do not meet these cross-section standards are considered Legacy Streets. Criteria for Legacy Streets are addressed separately, after the new roadway cross-sections.

Improvements on Jackson County roads should be coordinated with both Jackson County and the City of Medford; however, upgrades will typically follow City of Medford cross-sections within the city limits. State highways must meet ODOT's design and operating standards, as provided in the ODOT Highway Design Manual.

Cross-sections may be adjusted through an adopted plan, such as a downtown, neighborhood, or corridor plan, or based on project descriptions contained within this TSP. Streets that are likely to have alternative cross-sections developed through future neighborhood or corridor plans include (but are not limited to):

- Biddle Road
- Riverside Avenue
- Central Avenue
- West 8th Street
- Main Street
- Crater Lake Highway
- East Main Street
- McAndrews Road
- Barnett Road
- Columbus Avenue
- Stewart Ave
- Crater Lake Avenue

Major and Regional Arterials

The Major Arterial classification is primarily used for roadways with high traffic volumes, five traffic lanes, and inter-regional connections. Arterials are higher-order facilities that are generally intended to connect to several collector roadways or provide links to higher order interstate or highway facilities. Regional Arterials are Major Arterials, but are intended to have greater access control. One-hundred feet of right-of-way is required for Major Arterials to allow construction of a five-lane roadway section, bicycle facilities, and detached sidewalks with a landscaped planter strip. Where right-of-way is constrained on existing roadways, flexibility shall be provided to allow modifications such as 5-foot sidewalks plus tree wells or 7-foot curb-tight sidewalks if tree wells are not feasible. Major Arterials within the City of Medford include roadways such as McAndrews Road, N Phoenix Road, and Barnett Road. Both these classifications correspond to the FHWA Other Principal Arterial classification.

Exhibit 3, and Exhibit 4 show three variations of the Major and Regional Arterial cross-section. The first includes typical bicycle lanes. The second and third include cross-sections necessary to achieve a Level of Traffic Stress (LTS) 2, which is suitable for bicycling to a broad range of age and abilities. The separated bicycle lanes are the preferred cross-section for new roadways. Separated bicycle lanes do not require additional right-of-way but do require a change in the curb alignment. The approving authority may allow the other cross-sections where they better fit the area context and surrounding roadways. In the downtown or in other transit-oriented districts, street designs, including sidewalk width, planter strip use, and lane widths and numbers, may be adjusted through an adopted plan or code standards to create a "main-street" like atmosphere.

Additional Notes:

- Median lane can be reduced to 6 feet if a 2 foot wide raised median is built and is compatible with the area context and surrounding roadways in the view of the approving authority.

Exhibit 2 **Major Arterial/Regional Arterial**

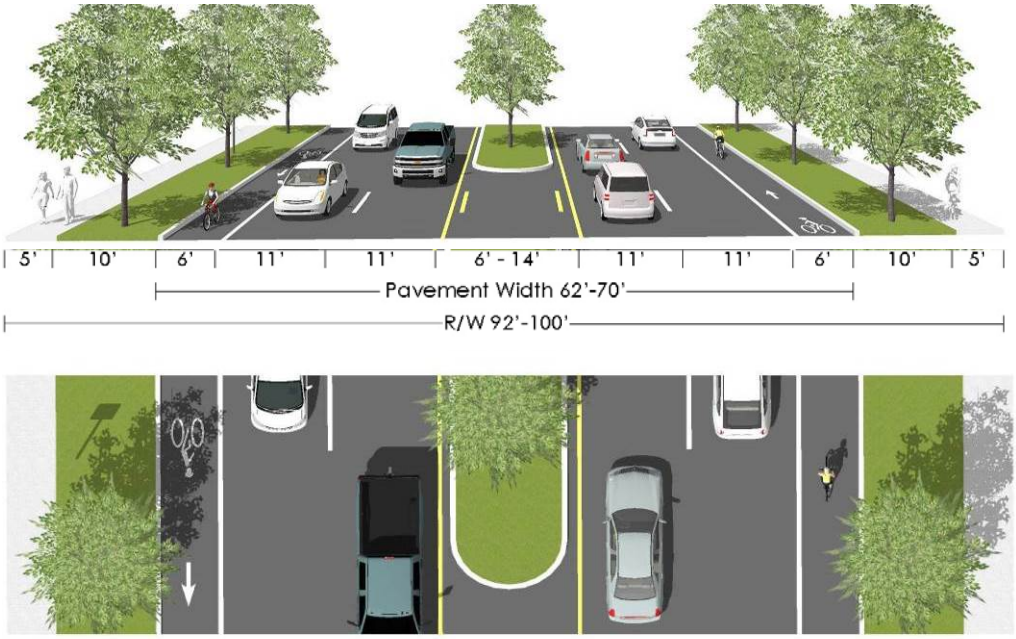


Exhibit 3 **Major Arterial/Regional Arterial With Buffered Bicycle Lanes (Low Stress for 35 mph and Lower)**

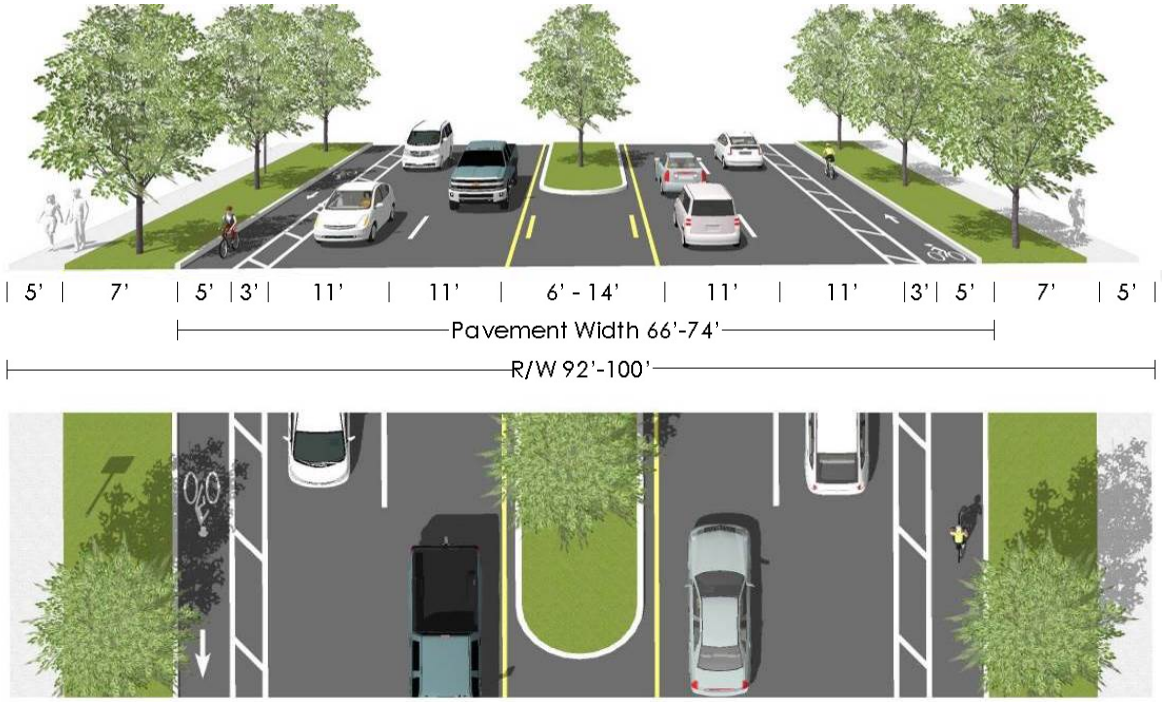
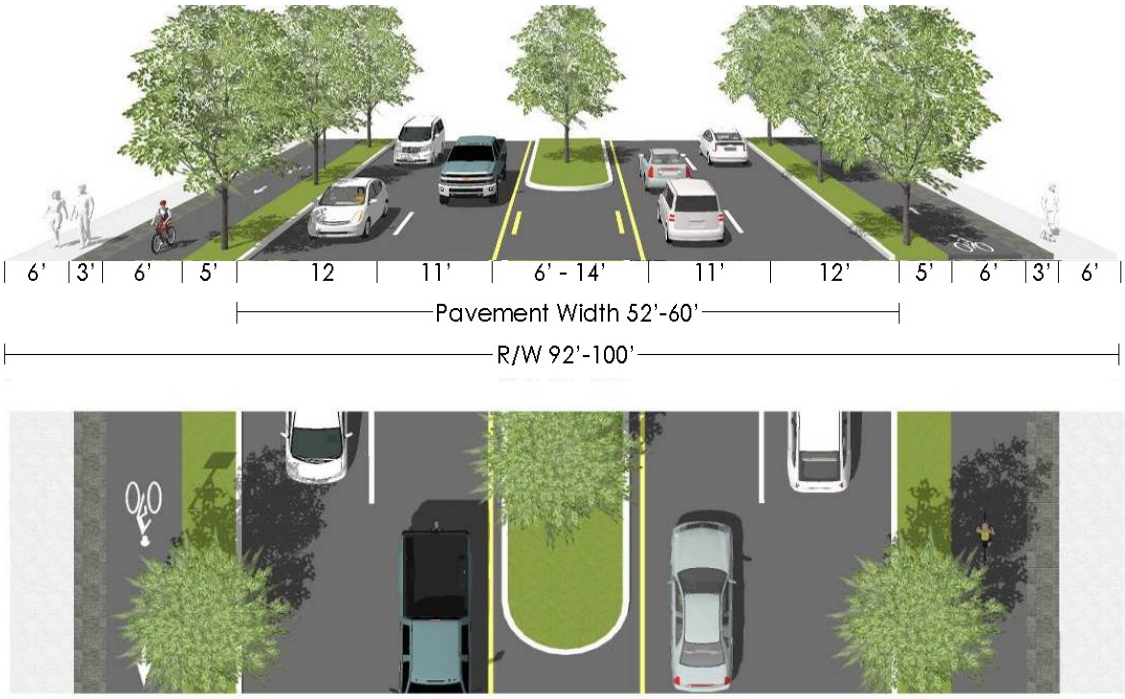


Exhibit 4 **Major Arterial/Regional Arterial With Separated Bicycle Lanes (Low Stress for 40 mph and Higher)**



Minor Arterials

The Minor Arterial classification further distinguishes between arterials with a five-lane cross-section (Major Arterials) and those with three traffic lanes (Minor Arterials). Minor Arterials generally serve slightly lower traffic volumes than Major Arterials. Where right-of-way is constrained on existing roadways, flexibility shall be provided to allow modifications such as 5-foot sidewalks plus tree wells or 7-foot curb-tight sidewalks if tree wells are not feasible. Minor Arterials within the City of Medford include roadways such as West Main Street and Kings Highway.

Exhibit 5, Exhibit 6, and Exhibit 7 show three variations of the Minor Arterial cross-section. The first includes typical bicycle lanes. The second and third include cross-sections necessary to achieve a Level of Traffic Stress (LTS) 2 (suitable for bicycling to a broad range of age and abilities). The separated bicycle lanes are the preferred cross-section for new streets. Separated bicycle lanes do not require additional right-of-way but do require a change in the curb alignment. The approving authority may allow the other cross-sections where they better fit the area context and surrounding roadways. In the downtown or in other transit-oriented districts, street designs, including sidewalk width, planter strip use, and lane widths and numbers, may be adjusted through an adopted plan or code standards to create a "main-street" like atmosphere.

Additional Notes:

- Median lane can be reduced to 6 feet if a 2 foot wide raised median is built and is compatible with the area context and surrounding roadways in the view of the approving authority.

Exhibit 5 Minor Arterial

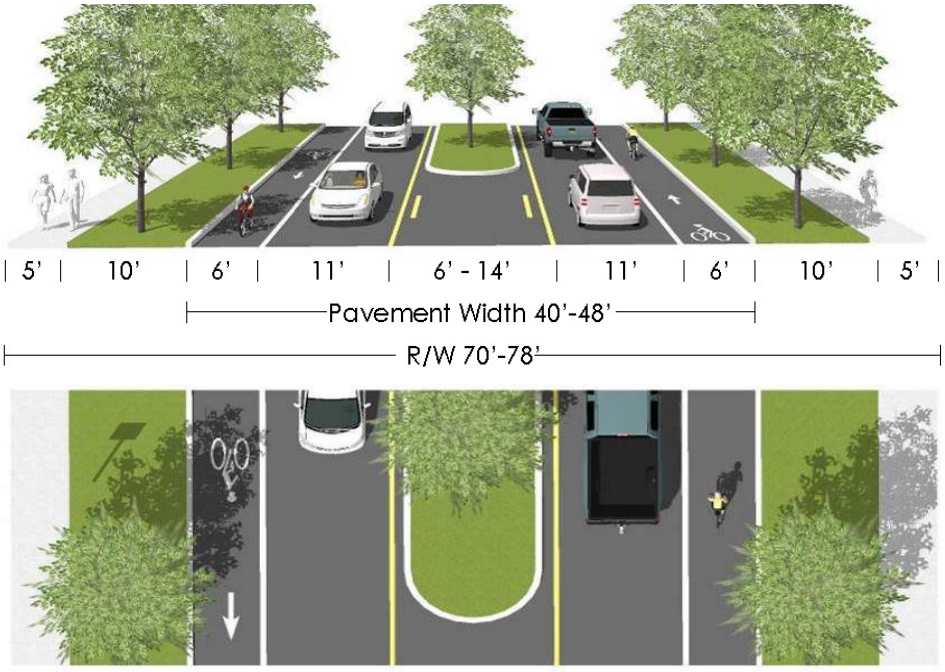


Exhibit 6 **Minor Arterial With Buffered Bicycle Lanes (Low Stress for 35 mph and Lower)**

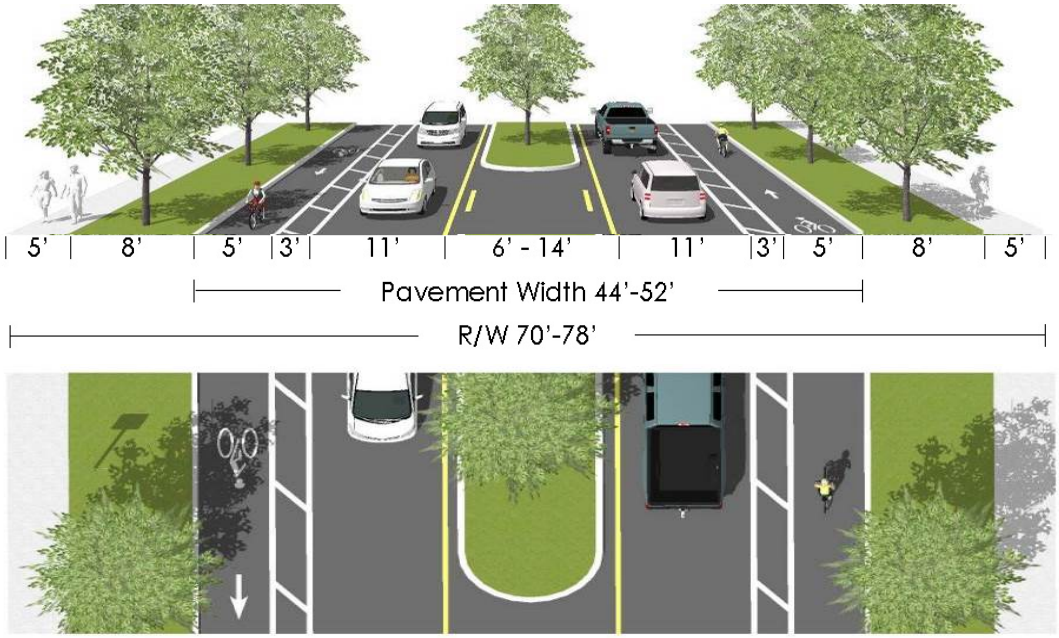
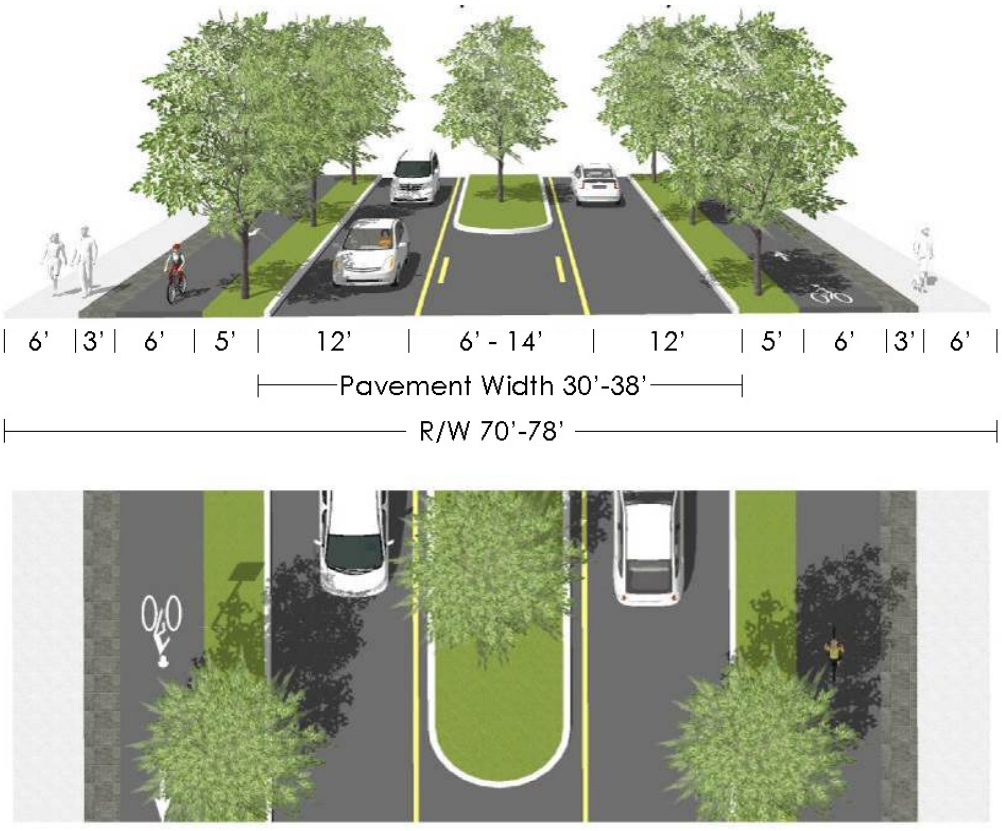


Exhibit 7 **Minor Arterial With Separated Bicycle Lanes (Low Stress for 40 mph and Higher)**



Major Collectors

The Major Collector classification is used for streets that link arterial and lower-order streets and serve moderate traffic volumes. Collectors serve both mobility and access functions with a three-lane roadway section, bicycle lanes, and detached sidewalks with a landscaped planter strip. Within this classification on-street parking is not provided. Where right-of-way is constrained on existing roadways, flexibility shall be provided to allow modifications such as 5-foot sidewalks plus tree wells or 7-foot curb-tight sidewalks if tree wells are not feasible. Major Collectors within the City of Medford include roadways such as Lozier Lane, Hillcrest Road, Siskiyou Boulevard, Black Oak Drive, and Springbrook Road.

The buffered bike lanes are the preferred cross-section for new roadways. The approving authority may allow the other cross-sections where they better fit the area context and surrounding roadways. In the downtown or in other transit-oriented districts, street designs, including sidewalk width, planter strip use, and lane widths and numbers, may be adjusted through an adopted plan or code standards to create a "main-street" like atmosphere.

Exhibit 8 Major Collector

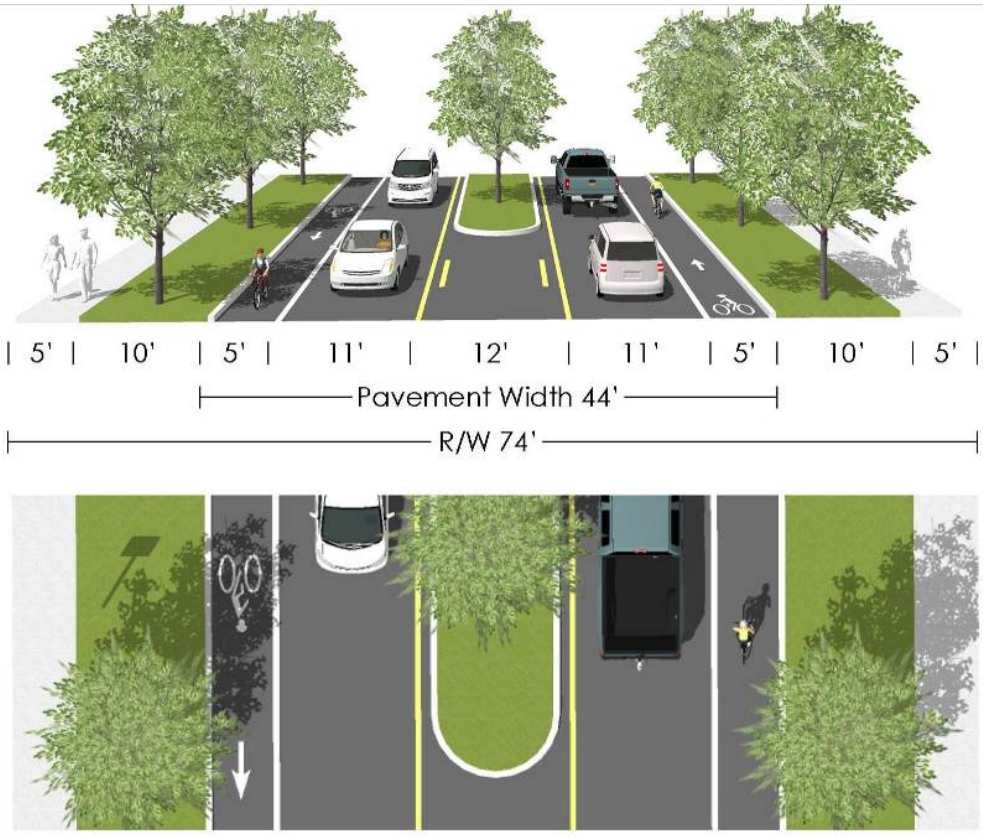
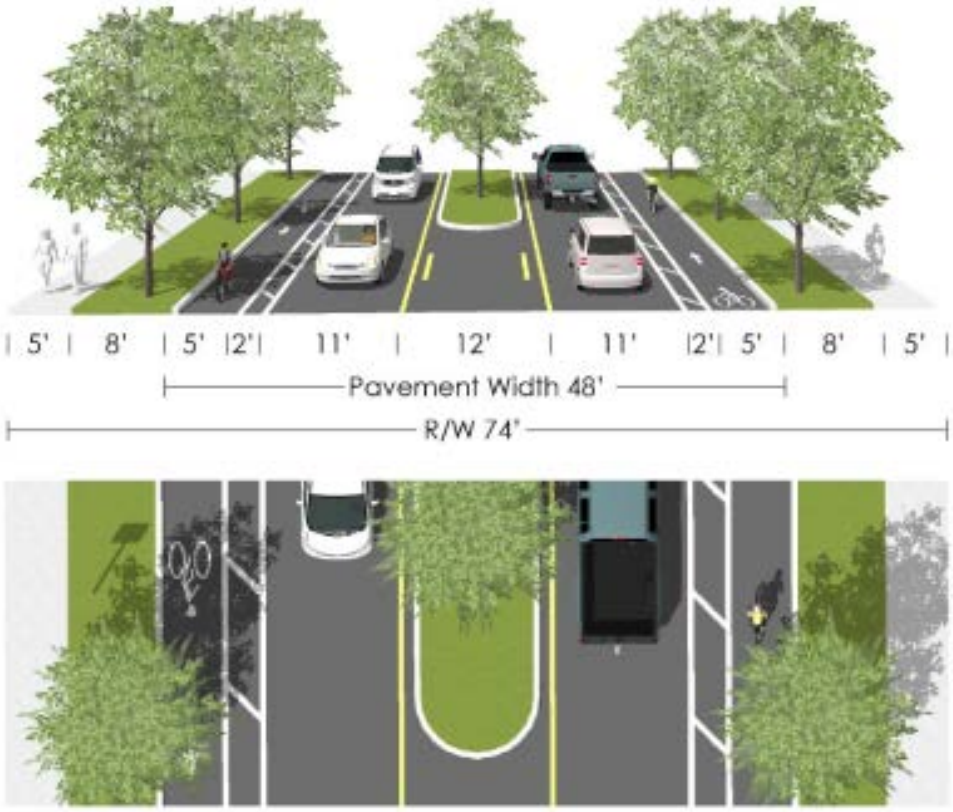


Exhibit 9 Major Collector With Buffered Bicycle Lanes (Low Stress for 35 mph and Lower)



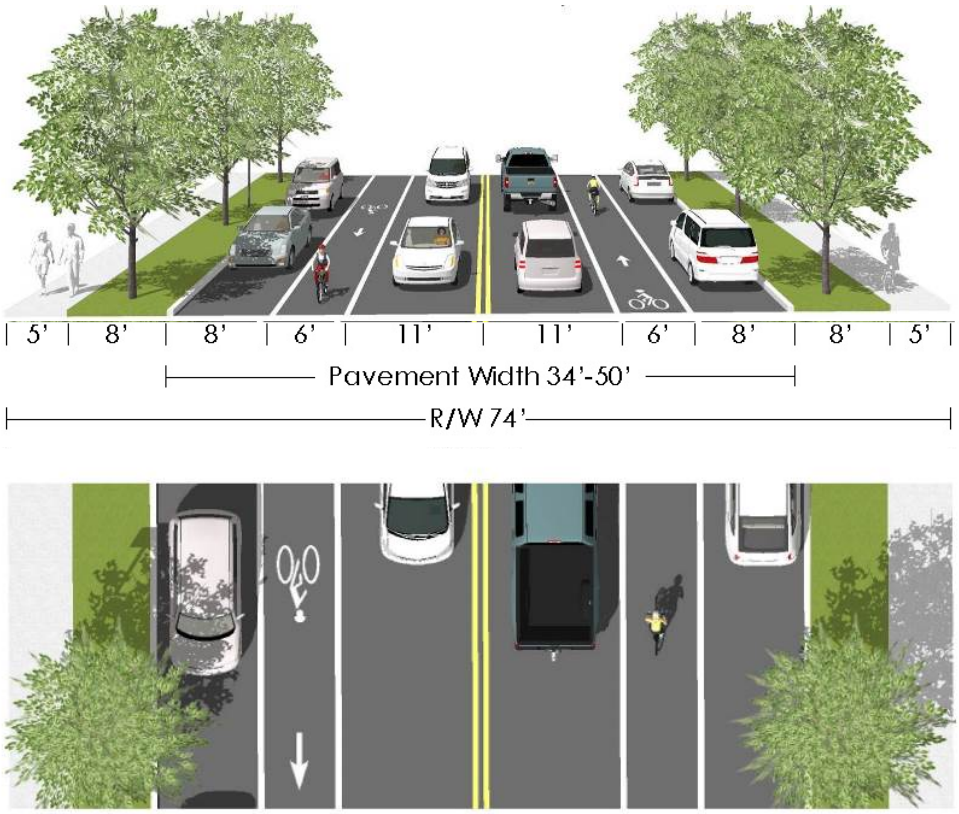
Minor Collectors

Minor Collectors place a greater emphasis on access than throughput as compared to major collectors and serve relatively low traffic volumes. Most Minor Collectors run through neighborhoods and link residential streets to higher-order collectors and arterials. This classification includes a similar paved width to major collectors but includes on-street parking and no center turn lane. Where right-of-way is constrained on existing roadways, flexibility shall be provided to allow modifications such as 5-foot sidewalks plus tree wells or 7-foot curb-tight sidewalks if tree wells are not feasible.

Additional Notes:

- Parking is not SDC creditable, done at developer's expense.
- The range in pavement width accounts for the possibility of no on-street parking.

Exhibit 10 Minor Collector



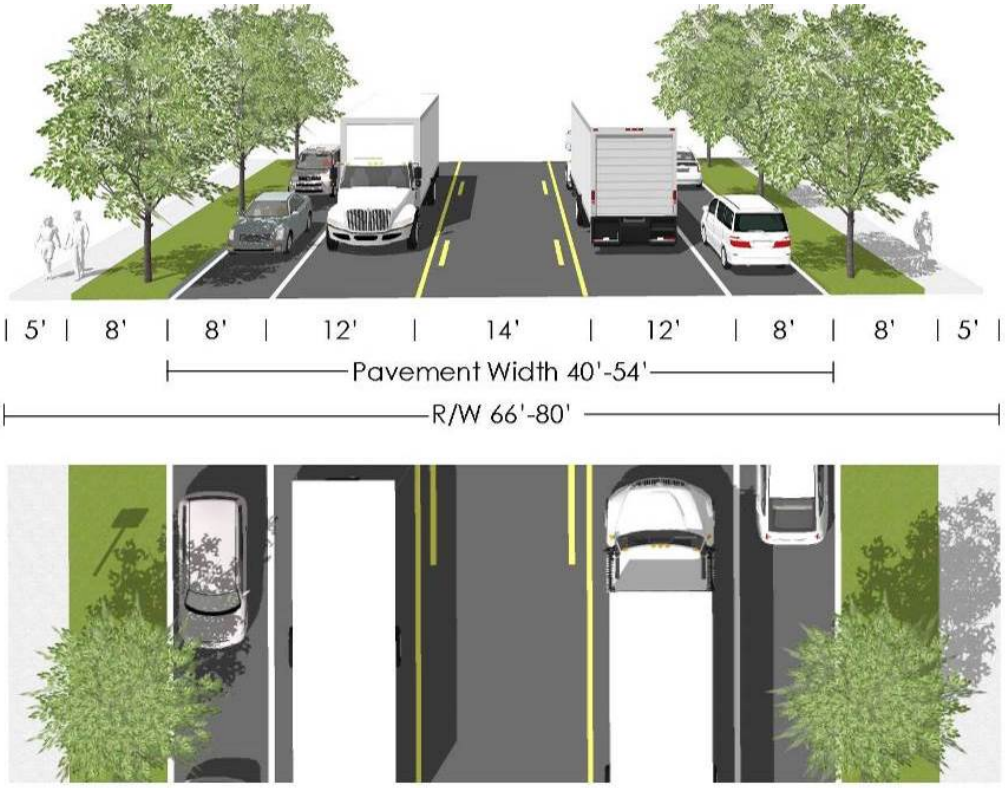
Industrial Street

The Industrial Street classification is used for local streets within or abutting industrially zoned lands. Industrial streets provide frontage and direct access to industrial uses and link them to collectors and arterials to facilitate mobility for vehicles and goods. This designation provides wider travel lanes and a center turn lane/median to accommodate heavy trucks. Industrial Streets also provide on-street parking, sidewalk, and planter strips on both sides of the street. This cross section is an option for industrially zoned lands when the commercial street standard is not adequate for the expected volume of truck traffic.

Additional Notes:

- Left-turn lane may be omitted at the developer's request with approval from the City Engineer.

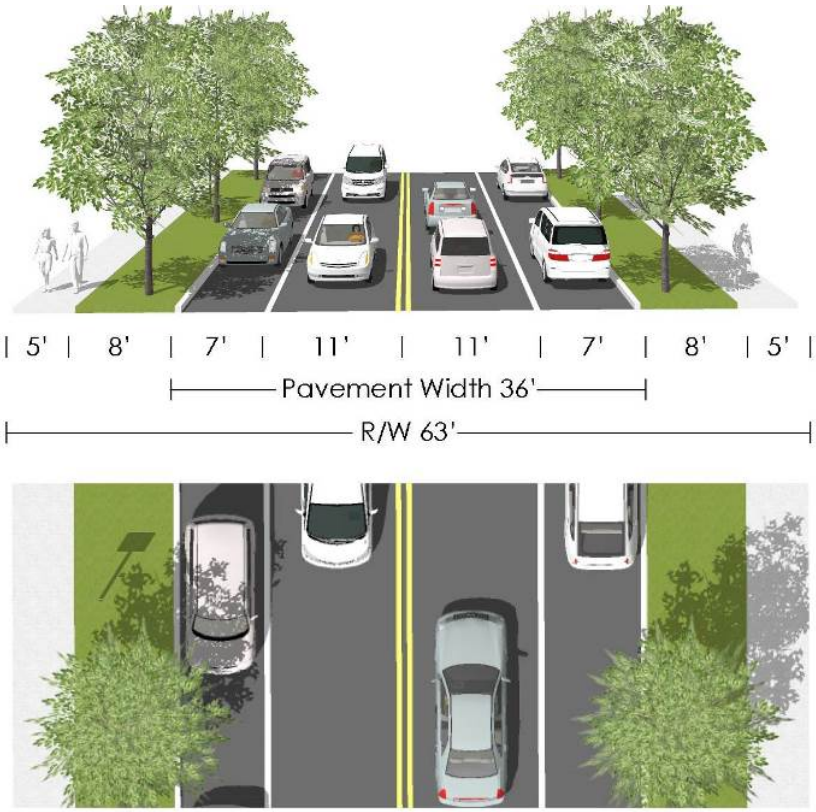
Exhibit 11 Industrial Street



Commercial Street

The Commercial Street classification is a local street that is intended to provide frontage and direct access to land uses within a commercially zoned district. Commercial streets link downtown and commercial centers with other parts of the City and provide vehicular and pedestrian mobility and access by providing one travel lane and on-street parking in each direction with a sidewalk and planter strip on both sides. The Municipal Code allows for adjustments in sidewalk width and planter strip use to create a “main street” atmosphere. The Commercial Street classification can also be used for industrially zoned lands where lower volume truck traffic is expected. This section is identical to Standard Residential. Six inches of right-of-way is to be provided behind the sidewalks.

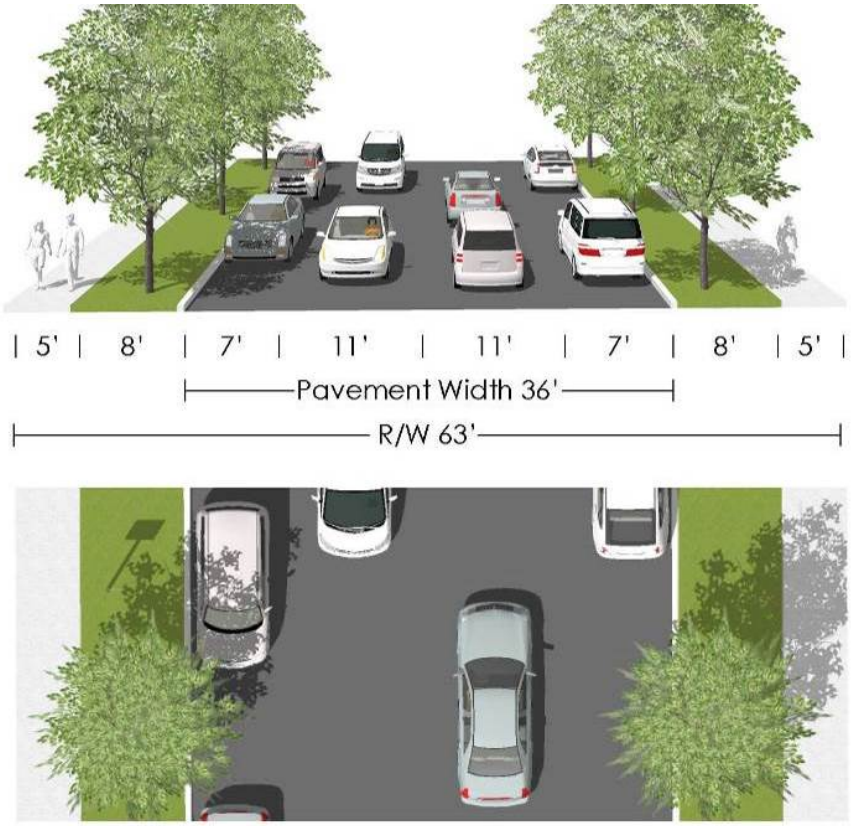
Exhibit 12 Commercial Street



Standard Residential Street

Standard residential street classification is a local street that prioritizes access over throughput and generally serves less than 2,500 vehicles per day. The standard residential street classification is the highest of the residential roadway classifications, connecting neighborhoods to collector roadways. This designation provides one travel lane and on-street parking in each direction with a sidewalk and planter strip on both sides. Typical volumes and speeds on Standard Residential streets are low enough to accommodate shared use of travel lanes between bicyclists and motorists. Six inches of right-of-way is to be provided behind the sidewalks to accommodate property survey monumentation.

Exhibit 13 Standard Residential Street



Minor Residential Street

Minor Residential Streets classification is a local street with low-volumes that provide immediate access to a maximum of 100 dwelling units on adjacent land. Minor Residential Streets have a two-lane cross-section and on-street parking on both sides. Given the narrow width and low-speed environment, cyclists are to share the road with motorists. A key consideration within this cross-section is the ability to maintain a 20-foot clear width for fire access, where use of on-street parking could leave only 14-feet. This requires clustered, off-set (staggered) driveways so parking spots are not located directly opposite each other. An option is available for a wider street section (33-feet) with narrowed planter strips to maintain the same right-of-way. Six inches of right-of-way is to be provided behind the sidewalks. Minor Residential Streets that are also Neighborhood Bikeways include pavement markings and may also include wayfinding signage and traffic calming devices (see Toolkit in Attachment A).

Exhibit 14 Minor Residential Street

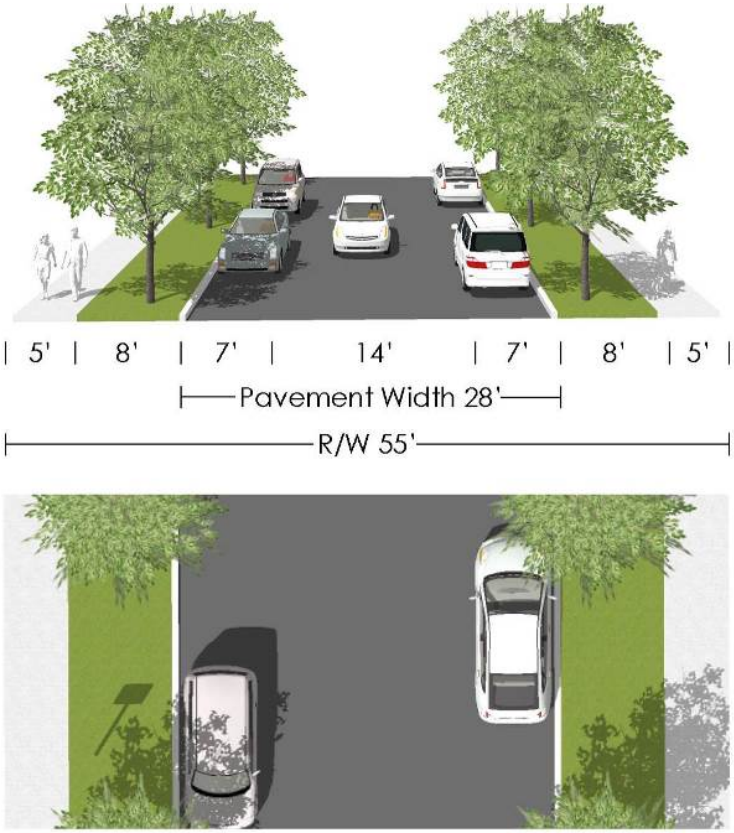
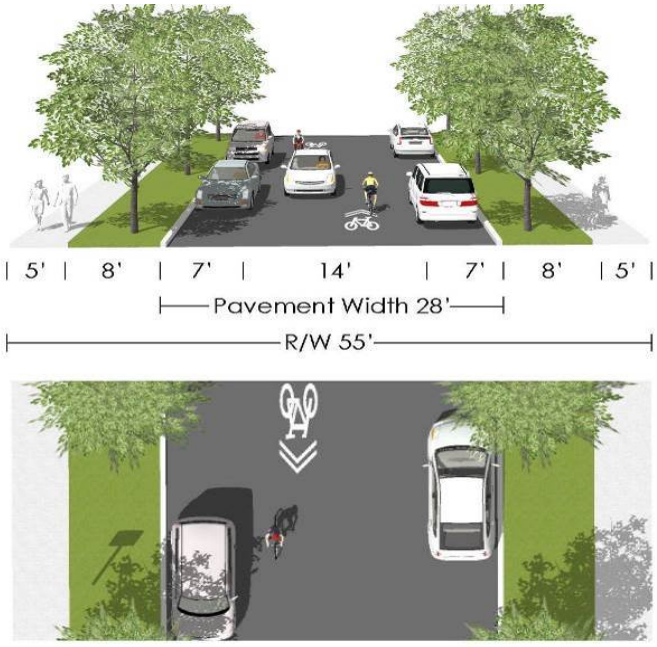


Exhibit 15 Minor Residential Street – Neighborhood Bikeway



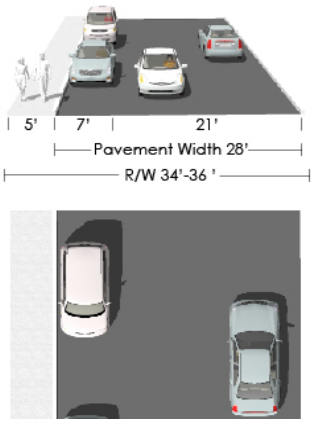
Residential Lane

Residential Lanes are the lowest-order of the local residential facilities. These roads can serve a maximum of 8 residences and extend no more than 450 feet. The terminus of residential lanes is an approved cul-de-sac adequate for turn-around maneuvers (minimum 37-foot paved radius). Six inches of right-of-way is to be provided behind the sidewalks or curb if no sidewalk is present. The right-of-way width provides for future sidewalks and landscape strips on both sides of the roadway.

Additional Notes:

- Additional 2 feet of right-of-way required for drainage behind the curb with no sidewalk when the road is on the outside border of a development. Not required when street is internal to the development and there is a Public Utility Easement (PUE) behind the curb.

Exhibit 16 Residential Lane



LEGACY STREETS

Legacy Streets are existing improved (with curb and gutter) higher order streets that do not meet the cross-section width standards, existing higher order streets that are mostly improved but have unimproved segments, or existing higher order streets that are predominantly surrounded by developed properties on both sides. Legacy streets generally fall into one or more of seven categories:

1. Facilities exist for all travel modes, but lanes are narrower than the current standard
2. Missing vehicle lanes
3. Missing center-turn-lanes
4. Missing planter strip and/or sidewalk
5. Missing bike facilities
6. Streets that are mostly improved to an old standard but have unimproved segments (gaps)
7. Existing streets that are predominantly surrounded by developed properties on both sides

As development happens on Legacy Streets, deviations from standard cross-section widths will allow improvement while reducing impacts to developed properties. The Medford Municipal Code will need to be updated to incorporate these policies.

1. If existing facilities for all modes of travel exist on an improved street but are narrower than the current standard; then no street improvements or right-of-way dedication will be required by development. Sidewalk reconstruction and right-of-way dedication will be required if additional width is needed to meet ADA requirements along the frontage of the development.

2. If the street is improved but is missing auto travel lanes, then right-of-way dedication sufficient to accommodate missing lanes will be required at time of development. No physical improvements of less than a full block length will be required, unless one of the other categories also applies.

3. If the street is improved but is missing the center-turn-lane, then right-of-way dedication sufficient to accommodate turn lanes will be required at time of development for properties within 200 feet of an intersection with a collector or arterial. If the property is greater than 200 feet from a collector or arterial intersection, no right-of-way will be required. No physical improvements, unless one of the other categories also applies.

4. If the street is improved but is missing planter strip or sidewalk, then sidewalk construction will be required by development. The City Engineer will be authorized to reduce the planter strip width to fit the area context and surrounding roadways. Right-of-way dedication shall be reduced to the back of sidewalk.

5. If the street is improved but is missing bike facilities, then seek alternatives in the priority listed below. Right-of-way dedication shall be reduced in accordance with the location of the back of sidewalk:
    - Seek alternate routes via local streets or off-street paths
    - Evaluate lane reconfigurations where alternate routes are not available.
    - Provide, and require by development, 14 foot wide sidewalks to serve as multi-use paths where alternate routes and lane reconfigurations are not feasible. Width may be reduced to 10 foot minimum where there are existing structures or utility infrastructure.

6. If the street is mostly improved, then the unimproved sections (gaps) will be built to match the abutting cross section. Right-of-way dedication shall be reduced in accordance with the location of the back of sidewalk.

7. If the existing street is predominantly surrounded by developed properties on both sides, then cross-sectional elements may be reduced in width or eliminated at the City Engineer's discretion in the priority order listed below:
    - Planter strip width reduction
    - Planter strip elimination
    - Parking lane elimination
    - Center turn lane elimination (except at higher-order intersections)
    - Lane narrowing
    - Bike Lane narrowing or elimination
    - Center turn lane elimination at higher-order intersections

The table below compares the legacy street alternatives versus a new street. The information is simplified for illustrative purposes. Legacy streets will be reviewed on a case-by-case basis and may include one or more categories below.

Table 4 Street Design Alternatives

Design Alternatives for Higher Order Streets (New Streets versus Legacy Streets)			
Street Type	**Categories**	**Typical Cross Section**	**Right-of-way Required**
New Street	Extension of existing stubbed streets	Follows adopted cross section	Yes
	Creation of a new street		
Legacy Street (existing streets that are partially or fully improved with the following constraints)	Lanes narrower than the current standard	Cross section is modified to provide for all modes by narrowing elements within the design (planter strip reduction or elimination reviewed first)	No
	Missing vehicle lanes or center turn lanes		Yes
	Missing planter strip and/or sidewalk		Maybe, but reduced
	Missing bike facilities		Maybe, if multi-use path installed
	Have unimproved (no curb and gutter) segments		Maybe, depends on existing right-of-way

Needed Roadway Projects

The needed roadway projects address identified, existing, and future roadway needs to accommodate future City growth including additional vehicle capacity, new connections, accommodation of all modes of travel, and safety. The projects include:

- **urban upgrades** to include bicycle facilities, sidewalks, and storm drainage (Table 5) which are generally needed to provide safe bicycle and pedestrian facilities, including access to transit and essential destinations, on existing roadways,
- **roadway widening** to provide additional travel lanes (Table 6) which are generally needed to provide additional vehicle capacity,
- **new roadways** and roadway extensions (Table 7) which generally support future growth and development but also provide some vehicle congestion relief and direct pedestrian and bicycle routes in some areas,
- **intersection improvements** including roundabouts, traffic signals, turn lanes, and equipment upgrades (Table 8) which are generally needed to provide both increased vehicle capacity and safety for all roadway users.

Each project has an identified Tier. Tier 1 projects are anticipated to be needed based on the TSP goals and objectives. Tier 1 projects represent those for which funding is likely to be available based on existing revenue sources. Tier 2 projects are needed but exceed the City's projected financial resources. Should additional improvement funding become available during the planning period, projects from the Tier 2 classification can be moved onto the Tier 1 classification and implemented.

Projects on ODOT facilities are identified in separate tables and are generally assumed to be funded by ODOT with regional, state, and federal funds. Projects on Jackson County Roads within the City of Medford are assumed to be funded by the City; however, Jackson County may participate with up to 50 percent if the City contributes 50% or more and agrees to take jurisdiction of the roadway. Projects within the City of Medford, in Jackson County's TSP, are identified in TSP Volume II for reference.

All roadway and intersection projects are shown in Table 5 through Table 12 and on Figure 19 and Figure 20. Figure 19 shows all Tier 1 projects and Figure 20 shows all Tier 2 projects.

Table 5 Roadway Urban Upgrade Projects

Roadway Urban Upgrade Projects					
Project #	**Location**	**Project Type**	**Description**	**Tier**	**Cost ($1,000)**
437	Delta Waters Road, Nome Court to Foothill Road	Urban Upgrade	Complete street improvements to Major Collector standard where one or both sides are not already completed	1 (Short-term)	$1,815
446	Springbrook Road, Pheasant Lane to Cedar Links Drive	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	1 (Short-term)	$0 [1]
447	Table Rock Road, Merriman Road to Interstate 5	Urban Upgrade	Upgrade to minor arterial standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	1 (Short-term)	$3,575
469	Foothill Road, Hillcrest Road to McAndrews Road	Urban Upgrade	Upgrade to regional arterial standard including two lanes in each direction, center-turn lane, bike facilities, and sidewalks	1 (Short-term)	$0[1]
606	Kings Highway, South Stage Road to Stewart Avenue	Urban Upgrade	Upgrade to minor arterial standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	1 (Long-term)	$8,495
609	Foothill Road, McAndrews Road to Delta Waters Road	Urban Upgrade	Upgrade to regional arterial standard including two lanes in each direction, center-turn lane, bike facilities, and sidewalks (part of the N. Phoenix / Foothill and S Stage Corridor)	1 (Mid-term)	$ 36,000[2]
610	Foothill Road, Delta Waters Road to North UGB	Urban Upgrade	Upgrade to regional arterial standard including two lanes in each direction, center-turn lane, bike facilities, and sidewalks (part of the N. Phoenix / Foothill and S Stage Corridor)	1 (Mid-term)	$ 4,555[2]
466	Spring Street, Crater Lake Avenue to Sunrise Avenue	Urban Upgrade	Major collector standard including one lane in each direction, center turn-lane, bike facilities, and sidewalks	1 (Mid-term)	$4,510
490	McAndrews Road, Ross Lane to Jackson Street	Urban Upgrade	Upgrade to minor arterial standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	1 (Mid-term)	$2,045
615	Stevens Street, Crater Lake Avenue to Wabash Avenue	Urban Upgrade	Upgrade to minor collector standard including one lane in each direction, bike facilities, and sidewalks	1 (Short-term)	$2,065
721	N Phoenix Rd, Juanipero Way to South UGB	Urban Upgrade	Upgrade to regional arterial standard including two lanes in each direction, center-turn lane, bike facilities, and sidewalks (part of the N. Phoenix / Foothill and S Stage Corridor)	1 (Long-term)	$ 7,800[2]
468	Spring Street, Sunrise Avenue to Pierce Road	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	1 (Long-term)	$4,210
496	Stewart Avenue, Lozier Lane to Dixie Lane	Urban Upgrade	Upgrade to major arterial standard including two lanes in each direction, center-turn lane, bike facilities, and sidewalks	1 (Long-term)	$2,645
460	12th Street, Central Avenue to Cottage Street	Urban Upgrade	Upgrade to minor collector standard including one lane in each direction, bike facilities, and sidewalks	1 (Long-term)	$695
640	Bullock Road, Crater Lake Highway to Lawnsdale Road	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	1 (Long-term)	$4,065
680	South Peach Street, Garfield Street to Archer Drive	Urban Upgrade	Upgrade to minor collector standard including one lane in each direction, bike facilities, and sidewalks	1 (Long-term)	$2,875
441	Black Oak Drive, Hillcrest Road to Acorn Way	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	2	$1,510

Roadway Urban Upgrade Projects

Project #	Location	Project Type	Description	Tier	Cost ($1,000)
472	Cedar Links Drive, Callaway Drive to Foothill Road	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	2	$2,035
612	Barneburg Road, Highland Drive to Sunrise Avenue connection	Urban Upgrade	Upgrade to major collector standard from Highland Drive to E. Main Street including one lane in each direction, center-turn lane, bike facilities, and sidewalks and upgrade to minor collector standard from E. Main Street to Sunrise Avenue including one lane in each direction, bike facilities, and sidewalks	2	$3,975
613	Highland Drive, Keene Drive to Main Street	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	2	$2,810
445	Cherry Lane, Old Cherry Lane to Hillcrest Road	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center-turn lane without curbed/landscaped median, bike facilities, and sidewalks	2	$11,500
456	Sunset Drive, South Stage Road to Orchard Home Drive	Urban Upgrade	Major collector roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$4,010
457	Pierce Road, Hillcrest Road to Spring Street	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	2	$2,800
458	Diamond Street, Columbus Avenue to Kings Highway	Urban Upgrade	Upgrade to major collector standard from McKenzie Drive to Kings Highway, including one lane in each direction, center turn-lane, bike facilities, and sidewalk. Stripe to major collector standard from Columbus Avenue to McKenzie Drive, including one lane in each direction, center turn-lane and bike facilities.	2	$ 2,150
462	Edwards Street, Court Street/Central Avenue to Riverside Avenue	Urban Upgrade	Upgrade to minor collector standard including one lane in each direction, bike facilities, and sidewalks	2	$1,665
465	Columbus Avenue, South Stage Road to Stewart Avenue	Urban Upgrade	Upgrade to major arterial standard including two lanes in each direction, center-turn lane, bike facilities, and sidewalks	2	$10,510
478	Coker Butte Road, eastern UGB to Springbrook Road	Urban Upgrade	Realign and upgrade to major collector standard including two lanes in each direction, center-turn lane, bike facilities, and sidewalks	2	$1,545
481	Coal Mine Road (realigned), North Phoenix Road to Santa Barbara Drive	Urban Upgrade	Realign and upgrade to major collector standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	2	$5,975
492	Cunningham Avenue, Orchard Home Drive to Warren Way	Urban Upgrade	Upgrade to minor arterial standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	2	$850
495	Coker Butte Road, International Way to Lear Way	Urban Upgrade	Upgrade to minor arterial roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$1,985
497	Highland Road, Siskyou Boulevard to Keene Way Drive	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	2	$1,135
600	Oak Grove Road, West Main Street to Stewart Avenue	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center turn-lane, bike facilities, and sidewalks	2	$4,335
603	West Stewart Avenue, Oak Grove Road to Lozier Lane	Urban Upgrade	Upgrade to minor arterial standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	2	$2,715

Roadway Urban Upgrade Projects

Project #	Location	Project Type	Description	Tier	Cost ($1,000)
605	South Stage Road, Orchard Home Drive to South Pacific Highway	Urban Upgrade	Upgrade to minor arterial standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	2	$23,985
614	Beall Lane, Merriman Road to City limits	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center-turn lane, bike facilities, and sidewalks	2	$4,345
625	Justice Road, east of North Medford Industrial Road to City Limits	Urban Upgrade	Upgrade to minor collector standard including one lane in each direction, bike facilities, and sidewalks	2	$1,790
634	Crater Lake Avenue, Delta Waters Road to Coker Butte Road	Urban Upgrade	Upgrade to major collector standard including two lanes in each direction, center turn-lane, bike facilities, and sidewalks	2	$5,655
648	Lone Pine Road, Edgevale Avenue to Foothill Road	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center turn-lane, bike facilities, and sidewalks	2	$930
649	Brookdale Avenue, McAndrews Road to Spring Street	Urban Upgrade	Upgrade to major collector standard including one lane in each direction, center turn-lane, bike facilities, and sidewalks	2	$1,305
669	Wabash Avenue, Stevens Street to Spring Street	Urban Upgrade	Upgrade to minor collector standard including one lane in each direction, bike facilities, and sidewalks	2	$1,460
670	Oregon Avenue, Stevens Street to Sunrise Avenue	Urban Upgrade	Upgrade to minor collector standard including one lane in each direction, bike facilities, and sidewalks	2	$3,615
679	Orchard Home Drive, South Stage Road to Cunningham Avenue	Urban Upgrade	Construct new major collector standard (center turn-lane, bike facilities, and sidewalks)	2	$4,500
706	Barnett Road, Lone Oak Drive to eastern UGB	Urban Upgrade	Upgrade to minor arterial standard including one lane in each direction, center-turn, lane, bike facilities, and sidewalks	2	$6,900
715	Hondeleau Lane, Springbrook Road to City Limits	Urban Upgrade	Upgrade to minor collector standard including one lane in each direction, bike facilities, and sidewalks	2	$590
717	Table Rock Road, New Interstate 5 overcrossing and overcrossing of Bear Creek and Lone Pine Creek	Urban Upgrade	Upgrade to minor arterial standard including one lane in each direction, center-turn lane, bike facilities, sidewalks and new overcrossing of Interstate 5	2	$25,000
718	Vilas Road, Crater Lake Highway to expansion boundary	Urban Upgrade	Upgrade to major arterial standard west of Springbrook Rd including two lanes in each direction, center-turn lane, bike facilities, and sidewalks. Upgrade to minor arterial east of Springbrook Road including one lane in each direction, center-turn lane, bike facilities, and sidewalks.	2	$3,945
720	Airport Road, Table Rock Road to Biddle Road	Urban Upgrade	Upgrade to minor collector standard including one lane in each direction, bike facilities, and sidewalks	2	$1,400
				Tier 1	$22,505
				Tier 2	$209,770
				TOTAL	$232,275

[1] Projects 469 and 446 have no cost because their costs are already budgeted in the FY18-FY19 biennial budget

[2]A total of $15,000,000 has been assigned to the N. Phoenix / Foothill Corridor and the S Stage Extension and Overcrossing of I-5 combined in the short term. Total Project costs, and projected time frames, for individual segments are shown but not included in the total funding allocation. Sources for the balance of the funding will be identified through future partnerships and policy decisions.

Table 6 Roadway Widening Projects

Roadway Widening Projects					
Project #	**Location**	**Project Type**	**Description**	**Tier**	**Cost ($1,000)**
611	North Phoenix Road from Barnett Road to Juanipero Way	Widening	Widen to regional arterial standard including two lanes in each direction, center turn-lane, bike facilities, and sidewalks (part of the N. Phoenix / Foothill and S Stage Corridor)	1 **(Long-term)**	$ 7,600[1]
536	Garfield Street, Holly Street to Kings Highway	Widening	Widen to minor arterial standard including one lane in each direction, center turn-lane, bike facilities, and sidewalks	2	$4,175
632	Vilas Road, Table Rock Road to eastern UGB	Widening	Widen to major arterial standard including two lanes in each direction, center turn-lane, bike facilities, and sidewalks	2	$17,045
645	Sage Road, Columbus Avenue to North Pacific Highway	Widening	Widen to major arterial standard including two lanes in each direction, center turn-lane, bike facilities, and sidewalks	2	$11,500
				Tier 1	**$ -**
				Tier 2	**$40,320**
				TOTAL	**$40,320**

[1]A total of $15,000,000 has been assigned to the N. Phoenix / Foothill Corridor and the S Stage Extension and Overcrossing of I-5 combined in the short term. Total Project costs, and projected time frames, for individual segments are shown but not included in the total funding allocation. Sources for the balance of the funding will be identified through future partnerships and policy decisions.

Table 7 New Roadways and Roadway Extensions

New Roadways and Roadway Extensions Projects					
Project #	**Location**	**Project Type**	**Description**	**Tier**	**Cost ($1,000)**
413	Columbus Avenue, West McAndrews Road to Sage Road	New Roadway	Realign, extend Columbus Avenue to Sage Rd, and widen to major arterial standard including center-turn lane, bike facilities, and sidewalks	1 (Short-term)	$4,425
475	Coker Butte Road, Crater Lake Avenue to Springbrook Road	New Roadway	Realign and upgrade to major arterial standard including two lanes in each direction, center-turn lane, bike facilities, and sidewalks.	1 (Mid-term)	$3,400
537a	South Stage Road, South Pacific Highway to North Phoenix Road	New Roadway	Complete the environmental process and purchase right-of-way for a new minor arterial roadway (includes center turn-lane, bike facilities, and sidewalks) and overcrossing of I-5 (part of the N. Phoenix / Foothill and S Stage Corridor)	1 (Short-term)	$3,000[1]
537b	South Stage Road, South Pacific Highway to North Phoenix Road	New Roadway	Construct new minor arterial roadway (includes center turn-lane, bike facilities, and sidewalks) and overcrossing of I-5 (part of the N. Phoenix / Foothill and S Stage Corridor)	1 (Long-term)	$47,000[1]
621	Owen Drive, Springbrook Road to Torrent Street	New Roadway	Construct new minor arterial roadway (includes center turn-lane, bike facilities, and sidewalks)	1 (Short-term)	$525
708	South Stage Road, City Limits to Orchard Home Drive	New Roadway	Realign S Stage Rd and construct new minor arterial roadway (includes center turn-lane, bike facilities, and sidewalks)	1 (Short-term)	$4,345
467	Lear Way, Coker Butte Road to Vilas Road	New Roadway	Construct new major collector roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$6,465
535	Barnett Road, North Phoenix Road to Lone Oak Drive	New Roadway	Realign and construct new minor arterial roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$4,455
471	Spring Street, Pierce Road to Foothill Road	New Roadway	Construct new major collector roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$3,955
482	Owen Drive, McLoughlin Drive to Foothill Road	New Roadway	Construct new minor arterial roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$5,100
484	Stanford Avenue, Barnett Road to Coal Mine Road	New Roadway	Construct new major collector roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$6,000
485	Bellinger-Cunningham Avenue Connector, Hull Road to Orchard Home Drive	New Roadway	Construct new minor arterial roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$6,835
486	Springbrook Road, Owen Drive to Coker Butte Road	New Roadway	Construct new major collector roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$4,210
489	Diamond Street, Orchard Home Drive to Sandstone Drive	New Roadway	Construct new major collector roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$640
539	N/S Collector Street in SE Medford TOD	New Roadway	Construct new minor collector roadway (includes one lane in each direction, bike facilities, and sidewalks)	2	$5,410
601	Dakota Avenue, Collinwood Court to Oak Grove Road/Madrona Lane	New Roadway	Construct new minor collector roadway (includes one lane each direction, bike facilities, and sidewalks)	2	$3,510
604	Holly Street, Garfield Street to South Stage Road	New Roadway	Construct new minor collector roadway (includes one lane in each direction, bike facilities, and sidewalks)	2	$6,475

New Roadways and Roadway Extensions Projects

Project #	Location	Project Type	Description	Tier	Cost ($1,000)
607	Stevens Street connection to Oregon Avenue	New Roadway	Construct new minor collector roadway (includes one lane each direction, bike facilities, and sidewalks)	2	$310
624	Wilson Road, Table Rock Road to City Limits	New Roadway	Construct new minor collector roadway (includes one lane each direction, bike facilities, and sidewalks)	2	$3,885
627	Crater Lake Avenue, Coker Butte Road to northern UGB	New Roadway	Construct new major collector roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$8,580
628	Lear Way, Vilas Road to northern city limits	New Roadway	Construct new minor collector roadway (includes one lane each direction, bike facilities, and sidewalks)	2	$1,900
629	Airway Dr /Industry Dr, Vilas Road to Coker Butte Road	New Roadway	Construct new major collector roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$9,345
630	Springbrook Road, Coker Butte Road to Vilas Road	New Roadway	Construct new major collector roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$8,055
631	East-West collector between Coker Butte Road and Vilas Road, Crater Lake Highway to eastern UGB	New Roadway	Construct new minor collector roadway (includes one lane each direction, bike facilities, and sidewalks)	2	$3,950
677	Golf View Drive, Juanipero Way to southern expansion boundary	New Roadway	Construct new major collector (minor collector south of South Stage Road extension) roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$10,760
678	East-West collector along southern UGB, Golf View Drive to North Phoenix Road	New Roadway	Upgrade to minor collector standard including one lane in each direction, bike facilities, and sidewalks	2	$2,140
681	Experiment Station Road, Kings Highway to Holly Street	New Roadway	Construct new minor collector standard (includes one lane in each direction, bike facilities, and sidewalks)	2	$3,830
703	Dakota Avenue extension to Lozier Lane	New Roadway	Construct new minor collector standard (includes one lane in each direction, bike facilities, and sidewalks)	2	$2,290
704	N/S Collector Street in SE Medford TOD	New Roadway	Construct new major collector standard (includes one lane in each direction, bike facilities, and sidewalks and no curbed/landscaped center median)	2	$3,310
705	Lone Oak Drive Extension	New Roadway	Construct new major collector standard (includes center turn-lane, bike facilities, and sidewalks)	2	$8,160
709	Owen Drive, Torrent Street to McLoughlin Drive	New Roadway	Construct new minor arterial roadway (includes center turn-lane, bike facilities, and sidewalks)	2	$3,845
710	McLoughlin Drive, Ford Drive to Northern Expansion Boundary	New Roadway	Construct new major collector roadway (includes one lane in each direction, center-turn lane, bike facilities, and sidewalks)	2	$1,935
711	Spring Street, Foothill Road to Urano Lane	New Roadway	Construct new minor collector roadway (includes one lane in each direction, bike facilities, and sidewalks)	2	$2,645
712	Urano Lane, Hillcrest Road to Spring Street	New Roadway	Construct new minor collector roadway (includes one lane in each direction, bike facilities, and sidewalks)	2	$1,835

New Roadways and Roadway Extensions Projects					
Project #	**Location**	**Project Type**	**Description**	**Tier**	**Cost ($1,000)**
713	Fairfax Street, Delta Waters Road to northern expansion boundary	New Roadway	Construct new minor collector roadway (includes one lane in each direction, bike facilities, and sidewalks)	2	$4,180
714	Cheltenham Way, Ford Drive to northern expansion boundary	New Roadway	Construct new minor collector roadway (includes one lane in each direction, bike facilities, and sidewalks)	2	$2,370
716	Hondeleau Lane, City Limits to eastern expansion boundary	New Roadway	Construct new minor collector roadway (includes one lane in each direction, bike facilities, and sidewalks)	2	$1,045
722	Murphy Road extension to Pierce Road	New Roadway	Construct new minor collector roadway (includes one lane in each direction, bike facilities, and sidewalks)	2	$3,830
				Tier 1	**$27,695**
				Tier 2	**$176,255**
				TOTAL	**$203,950**

[1]A total of $15,000,000 has been assigned to the N. Phoenix / Foothill Corridor and the S Stage Extension and Overcrossing of I-5 combined in the short term. Total Project costs, and projected time frames, for individual segments are shown but not included in the total funding allocation. Sources for the balance of the funding will be identified through future partnerships and policy decisions.

Table 8 Intersection Projects

City Intersection Projects					
Project #	**Location**	**Description**	**Tier**	**Timeframe**	**Cost ($1,000)**
I-12	Crater Lake Avenue & Owens Drive	Install traffic signal or roundabout when warranted	1	Short-term	$0[1]
I-14	Highland Drive & East Main Street	Install traffic signal or roundabout when warranted	1	Short-term	$0[1]
I-17	South Pacific Highway & Stewart Avenue	Intersection improvements such as second southbound left and second eastbound left-turn	1	Long-term	$3,000
I-22	McAndrews Road at Foothill Road Ramps	Install traffic signals	1	Short-term	$0[1]
I-24	Phoenix Road & Barnett Road	Intersection improvements such as second SBTH lane, WBTH lane, and phasing all lefts as protected/permitted (part of the N. Phoenix / Foothill and S Stage Corridor)	1	Long-term	$880
I-26	Springbrook Road & Cedar Links Drive	Install roundabout	1	Short-term	$0[1]
I-27	Springbrook Road & Spring Street	Install traffic signal or roundabout when warranted	1	Short-term	$0[1]
I-03	12th Street & Riverside Avenue	Replace/upgrade traffic signal and increase vertical clearance	1	Short-term	$400
I-05	Biddle Road & Stevens Street	Replace/upgrade traffic signal	1	Mid-term	$400
I-13	Creek View Drive & North Phoenix Road	Install traffic signal when warranted. Remove traffic signal at Albertson's access and convert to right-in/right-out only (part of the N. Phoenix / Foothill and S Stage Corridor) (Also, see SE Plan)	1	Long-term	$400
I-15	Hillcrest Road & Pierce Road	Install traffic signal or roundabout when warranted	1	Long-term	$400
I-21	Main Street & Lindley Street	Replace/upgrade traffic signal	1	Mid-term	$400
I-04	Biddle Road & Lawnsdale Road	Update signal phasing and install protected/permitted signal heads in northbound and southbound directions	1	Short-term	$160
I-08	Crater Lake Avenue & Brookhurst Street	Replace/upgrade traffic signal to increase vertical clearance and optimize signal timing/phasing	1	Long-term	$400
I-39	Crater Lake Avenue & East Vilas Road	Re-align Crater Lake Ave to the east and install traffic signal	1	Long-term	$400
I-73	Foothill Road & Delta Waters Road	Install turn lanes and traffic signal or roundabout when warranted (part of the N. Phoenix / Foothill and S Stage Corridor)	1	Mid-term	$2,200
I-78	Highland Drive & Barnett Road	Intersection improvements such as second northbound right-turn lane (protected)	1	Mid-term	$1,500
I-40	Crater Lake Highway & East Vilas Road	Monitor needs after construction of Crater Lake Highway Bypass	1	Long-term	$5
I-45	Foothill Road & Lone Pine Road	Intersection control improvements such as right-in/right-out only due to proximity to planned signal at McAndrews ramp - TBD by intersection further analysis and safety analysis (part of the N. Phoenix / Foothill and S Stage Corridor)	1	Mid-term	$400
I-75	Valley View Drive & Hillcrest Road	Install traffic signal or roundabout when warranted	1	Long-term	$2,200
Pr3	Signal System Upgrades	Upgrade signal controllers to Advanced Traffic Controllers, upgrade communications to signals, and other signal technology upgrades	1	Short-term & Mid-term	$1,984

City Intersection Projects

Project #	Location	Description	Tier	Timeframe	Cost ($1,000)
I-06	Columbus Avenue & Prune Street	Monitor warrants for enhanced pedestrian crossing or traffic signal	2	When warranted	$50
I-58	Main Street & Barneburg Road	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-07	Court Street & Ohio Street	Modify existing signal to add westbound left turn lane	2	When warranted	$400
I-69	South Columbus Avenue & South Stage Road	Install traffic signal or roundabout when warranted	2	When warranted	$2,200
I-02	10th Street & Cottage Street	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-19	Keene Way & Barneburg Road	Install traffic signal or roundabout when warranted	2	When warranted	$2,200
I-85	Willamette Avenue and Siskiyou Boulevard	Install traffic signal when warranted	2	When warranted	$400
I-72	Calle Vista Drive & North Phoenix Road	Install center median that will result in right-in/right-out turns only and install sidewalk along North Phoenix Road (See SE Plan)	2	When warranted	$357
I-74	Shamrock Drive & North Phoenix Road	Install center median that will result in right-in/right-out turns only (See SE Plan)	2	When warranted	$210
I-28	10th Street & Columbus Avenue	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-29	4th Street & Oakdale Avenue	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-30	8th Street & Hamilton Street	Monitor warrants for enhanced pedestrian crossing or traffic signal.	2	When warranted	$5
I-31	8th Street & Orange Street	Monitor warrants for enhanced pedestrian crossing or traffic signal.	2	When warranted	$5
I-33	Biddle Road & Airport Road	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-35	Brookdale Avenue & Spring Street	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-36	Coker Butte Road & Springbrook Road	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-37	Columbus Avenue & 4th Street	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-38	Cottage Street & Main Street	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-41	Diamond Street & Kings Highway	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-42	Diamond Street & South Columbus Avenue	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-43	East Vilas Road at Airway Drive or Industry Drive	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-44	East Vilas Road & Lear Way	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-46	Foothill Road & Spring Street (extension)	Install traffic signal when warranted	2	When warranted	$400
I-47	Garfield Street & Kings Highway	Install traffic signal or roundabout when warranted	2	When warranted	$400

City Intersection Projects					
Project #	Location	Description	Tier	Timeframe	Cost ($1,000)
I-48	Garfield Street & South Holly Street	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-49	Garfield Street & South Peach Street	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-50	Hillcrest Road & Barneburg Road &	Geometric improvements such as re-alignment or roundabouts	2	When warranted	$4,400
I-52	Hillcrest Road & Sunrise Avenue	Geometric improvements such as re-alignment or roundabouts	2	When warranted	$2,200
I-54	Juanipero Way and North Phoenix Road	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-56	Kings Highway & South Stage Road	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-57	Lozier Lane & Cunningham Avenue	Install traffic signal or roundabout when warranted	2	When warranted	$400
I-59	Main Street & Hamilton Street	Monitor warrants for enhanced pedestrian crossing or traffic signal.	2	When warranted	$400
I-63	McAndrews Road & Riverside Avenue	Intersection improvements such as re-striping westbound approach to one through, a shared through/right, and a right-turn lane, signal modifications, and second westbound right-turn lane when needed	2	When warranted	$245
I-65	Oak Grove Road & Stewart Avenue	Install traffic signal or roundabout when warranted	2	When warranted	$2,200
I-66	Orchard Home Drive & South Stage Road	Install traffic signal or roundabout when warranted	2	When warranted	$2,200
I-67	Orchard Home Drive & Sunset Drive	Install traffic signal or roundabout when warranted	2	When warranted	$2,200
I-68	Owen Drive & Springbrook Road	Install traffic signal or roundabout when warranted	2	When warranted	$2,200
I-70	West Jackson Street & West McAndrews Road	Install traffic signal or roundabout when warranted	2	When warranted	$2,200
I-71	Willamette Avenue & Main Street	Install traffic signal or roundabout when warranted	2	When warranted	$2,200
				Tier 1	**$15,129**
				Tier 2	**$34,272**
				TOTAL	**$49,401**

[1] Intersection projects I-12, I-14, I-22, I-26, and I-27 have no cost because their costs are already budgeted in the FY18-FY19 biennial budget.

Note: For projects designated "When Warranted", traffic studies and associated signal warrants will determine when a signal or roundabout should be installed. The city will implement roundabouts rather than traffic signals wherever feasible.

Projects on ODOT Facilities

The following includes projects on ODOT facilities, as derived from ODOT corridor plans as well as intersection improvement needs identified by the City through the TSP update process. ODOT has three corridor plans effective within the City of Medford including the *OR 99 Corridor Plan*, the *I-5 Rogue Valley Corridor Plan*, and the *OR 62 Bypass Project*. The following provides a summary of each plan, including the transportation system improvements projects identified in each plan.

OR 62 Bypass Project

The *OR 62 Bypass Project* will result in a new four-lane access-controlled expressway from I-5 to OR 62 north of White City. Phase 1 is under construction and is reflected in the TSP maps. It will start on OR 62 east of Bullock Road and Poplar Drive and extend north on the west side of OR 62 up to Corey Road, north of the Medford city limits. When the bypass opens, it will have a grade separated crossing at Vilas Road with no interchange. An interchange at Vilas Road was anticipated as part of Phase 1 but was not funded for construction with Phase 1 and is not currently in the financially constrained RTP. The Phase 2 improvements are documented in the **OR 62: I-5 to Dutton Road Project Final Environmental Impact Statement (2013)** and include extension of the bypass further north from Corey Road to Dutton Road, north of White City, and a split-diamond interchange for OR 62, the OR 62 Bypass, and I-5 (exit 30). Interchange Area Management Plans are planned for a future interchange of the OR 62 Bypass and Vilas Road and for the proposed Exit 30 split-diamond interchange with the OR 62 Bypass. The split-diamond interchange will result in reduced traffic volumes at the intersections of OR 62 at Biddle Road Ramp, Hilton Road, Poplar Drive and Bullock Road.

OR 62 Refinement Plan

Completion of the OR 62 Corridor Project is expected to significantly reduce traffic volumes along the old segment of OR 62 from Medford to White City. This refinement plan would identify potential improvements to OR 62, including access management, streetscape enhancements, pedestrian crossing treatments, sidewalk and bicycle facility improvements, and transit needs. The plan should also consider local traffic needs as well as the potential to reduce the number of travel lanes. This plan should be jointly prepared by the City of Medford and Jackson County.

Table 9 OR 62 Corridor Projects in Medford

OR 62 Corridor Projects in Medford					
Project #	**Location**	**Description**	**Tier**	**Timeframe**	**Cost ($1,000)**
OR62-1	OR62 Bypass/Vilas Road	Prepare an Interchange Area Management Plan for the planned interchange at OR 62 Bypass and Vilas Road	ODOT Tier 1	Near-term	$150
OR62-2	OR62 Bypass/Vilas Road	Construct interchange at OR 62 Bypass and Vilas Road	ODOT Tier 2	Long-term	$188-$440
OR62-3	I-5/OR 62	Prepare an Interchange Area Management Plan for the planned split-diamond interchange at I-5/OR 62 that incorporates the OR 62 Bypass	ODOT Tier 1	Near-term	$300
OR62-4	I-5/OR 62	Construct split-diamond interchange at I-5/OR 62/OR 62 Bypass	ODOT Tier 2	Long-term	$188-$440
OR62-5	OR 62	Prepare an OR 62 Corridor Refinement Plan, plan to identify potential improvements to OR 62, including access management, streetscape enhancements, pedestrian crossing treatments, sidewalk and bicycle facility improvements, and transit needs. Prepare in coordination with Jackson County.	City Tier 2	Near-term	$300

OR 99 Corridor Plan

The *OR 99 Corridor Plan* was adopted by ODOT in June 2015. The plan focuses on the section of OR 99 that extends from Garfield Street in South Medford, through the communities of Phoenix and Talent, to S Valley View Road at the north end of Ashland. This multimodal plan examines how the highway operates both now and over the next 20 years. It identifies strategies to preserve and improve highway safety and capacity consistent with a District Highway classification and local policies. It also incorporates improvements for all travel modes. Table 10 summarizes the transportation system improvement projects identified in the OR 99 Corridor Plan. The priorities and cost estimates reflect the priorities and cost estimates identified in the plan.

Table 10 OR 99 Corridor Plan Improvement Projects in Medford

OR 99 Corridor Plan Improvement Projects in Medford					
ODOT Plan Project #	**Location**	**Type**	**Description**	**ODOT Plan Priority**	**Cost ($1,000) (STIP/MTIP/ CIP)**
Corridor Improvements					
1	OR 99 from Garfield Street to Charlotte Ann Road	Corridor	Construct sidewalks along the west side of OR 99	Medium	$165
2	OR 99 from Charlotte Ann Road to Coleman Creek Road	Corridor	Modify striping of existing 5-lane roadway cross section to add bike lanes	High	$300
3	OR 99 from Charlotte Ann Road to Coleman Creek Road	Corridor	Construct continuous sidewalks on both sides of OR 99	Medium	$3,300
4	OR 99 from Charlotte Ann Road to Coleman Creek Road	Corridor	Install median islands at multiple locations where pedestrian crossings occur	Medium	$50 Per location
Transportation System Management Strategies					
TSM1	OR 99 Corridor	Corridor	Develop a traffic operations emergency plan	High	$25
TSM2	OR 99 Corridor	Corridor	Conduct speed zone studies to reassess posted speeds when lane restriping, lane conversion, or pedestrian crossing projects are implemented	Ongoing	$10 to $15 per location
TSM3	OR 99/South Stage Road Intersection	Corridor	Modify traffic signal timing to add clearance intervals and protected left-turn phases in the east-west direction	High	$25
TSM4	OR 99 from Northridge Terrace to Coleman Creek Road	Corridor	Evaluate potential access modifications to address high crash frequency	High	TBD

I-5 Rogue Valley Corridor Plan

The *I-5 Rogue Valley Corridor Plan* was adopted by ODOT in March 2012. The plan focuses on the 25 mile section of I-5 that extends from Interchange 11 south of Ashland to Interchange 35 north of Central Point. The plan assesses existing and future transportation conditions and identifies strategies and improvements to enhance transportation safety and capacity within the corridor. Table 11 summarizes the transportation system improvement projects identified in the *I-5 Rogue Valley Corridor Plan*. The priorities and cost estimates reflect the priorities and cost estimates identified in the plan.

Table 11 I-5 Rogue Valley Corridor Plan Improvement Projects

I-5 Rogue Valley Corridor Plan Improvement Projects					
ODOT Plan Project #	**Location**	**Type**	**Description**	**ODOT Plan Priority**	**Cost (STIP/MTIP/ CIP)**
Corridor Concepts—Safety Enhancement Measures					
6	Medford Viaduct Shoulder	Corridor	Add a 12-foot right side shoulder by reconstructing and widening the existing viaduct structure.	High	$$
7	Incident Response System	Corridor	Deploy incident response system to patrol I-5 during peak crash periods and expand the existing Traffic Operations Center (TOC).	High	$
Corridor Concepts — Transportation System Management Measures					
9	OR 99 Corridor Coordinated Traffic Signal System	Corridor	Implement a more comprehensive coordinated and adaptive traffic signal system on targeted segments in urbanized areas of OR 99 between Interchanges 11 and 35.	High	$
10	Ramp Metering	Corridor	Install ramp meters to restrict the total flow of traffic entering the freeway, temporarily storing it on the ramps and thus regulating traffic flow along the mainline.	High	$
Corridor Concepts — Capacity Enhancement Measures					
12	Auxiliary Travel Lanes	Corridor	Add a northbound auxiliary lane from Exit 27 to 33 and southbound auxiliary lanes from Exit 27 to 30.	Medium	$$$
12	Auxiliary Travel Lanes	Corridor	Add a northbound auxiliary lane from Exit 21 to 27 and from Exit 33 to 35 and a southbound auxiliary lane from Exit 13 to 27.	Low	$$$
13	Enhanced Local Arterial/Collector Connections	Corridor	Improve local street connections between Central Point and North Medford (Interchange 30 to 35) to provide viable local alternative routes.	Low	$$$$
14	Enhanced Local Arterial/Collector Connections	Corridor	Improve local street connections between Medford and Phoenix (Interchange 30 to 24) to provide viable local alternative routes.	Medium	$$$$

16	Expanded Medford Viaduct	Corridor	Expand or replace the existing viaduct structure to accommodate three lanes and minimum shoulders in both directions.	Medium	$$
17	Expanded Medford Viaduct	Corridor	Expand or replace the existing viaduct structure to accommodate three lanes and standard shoulders in both directions.	Medium	$$$$
18	Expanded Medford Viaduct	Corridor	Expand or replace the existing viaduct structure to accommodate three lanes and standard shoulders in both directions stacked vertically.	Medium	$$$$
Corridor Concepts — Capacity Enhancement Measures					
21	Variable Speed Limits	Corridor	Install variable speed limits (VSL)—digital signage that displays posted speed limits that change based on road, traffic, and weather conditions.	Medium	$$
Corridor Concepts — Transportation Demand Management Measures					
23	Bus Service Improvements	Corridor	Reduce headways, expand coverage and hours of service, and add new routes to destinations not currently served.	Medium	$$
24	Commuter Rail	Corridor	Add commuter rail on the CORP between Central Point and Ashland.	Low	$$$$
25	Bus Rapid Transit	Corridor	Add a dedicated bus lane and implement signal prioritization on non-rural portions of OR 99 from Ashland to Central Point. These improvements would allow the bus to operate separately, without interference from other modes.	Low	$$$

ODOT Intersection Projects

The following includes intersection projects on ODOT facilities that were identified through the TSP update process. As described in Section 3 Existing Conditions and Future Needs Assessment, the following intersections require further analysis as part of an IAMP and/or an alternative mobility target.

- **South Medford Interchange (I-5/Garfield Street)** and **Garfield Street/Center Drive** – These intersections are projected to operate at volume-to-capacity ratios above 1.0 even with the South Stage Road Extension. These intersections need alternative mobility targets (Project I-83 and I-84) or to be evaluated further as part of an update to the Exit 27 IAMP which should also incorporate the City's intersections including Highland Drive/Barnett Road and Riverside Avenue/Pacific Highway/Stewart Avenue.
- **OR62 (Crater Lake Highway)/Bullock Road/Poplar Drive** - This intersection is projected to operate at a volume-to-capacity ratio above 1.0 with Phase 1 of the OR62 Bypass. ODOT has a split diamond interchange planned for the I-5/OR62 interchange as part of a future phase of the OR62 Bypass. This will significantly reduce the traffic volumes at this location and it is not included in the modeling for the TSP. ODOT will be conducting an IAMP at this location (Exit 30). This intersection may need an alternative mobility target until the split diamond interchange is considered part of the financially constrained Regional Transportation Plan (Project I-81).
- **OR 99 (Pacific Highway)/Table Rock Road** – This intersection is projected to operate at a volume-to-capacity ratio above 1.0. It would be improved but still not meet ODOT's mobility targets by converting the second southbound left-turn lane to a shared through-left with split phasing. This intersection needs to be studied as part of the Exit 30 IAMP and may need alternative mobility target (Project I-79).
- **OR99/OR62/OR238** - This intersection is projected to operate at a volume-to-capacity ratio above 1.0 . This intersection needs to be studied as part of the Exit 30 IAMP and may need alternative mobility target (Project I-80).

Table 12 summarizes the above intersection projects along with one safety project identified in the Jackson County TSP.

Other ODOT Roadway Projects

Table 12 also identifies two urban upgrade projects on ODOT facilities that are not identified in any of the corridor projects described above. These include OR 99 (North Pacific Highway) north of OR 62 and OR 238 (Rossanley Drive) near the western city limits.

Table 12 Other ODOT Roadway and Intersection Projects

ODOT Intersection Projects					
Project #	**Location**	**Description**	**Tier**	**Timeframe**	**Cost ($1,000)**
I16	South Pacific Highway and South Stage Road	Update signal timing and phasing to add clearance intervals and protected left-turn phases in the east-west direction and to monitor continued pattern of turning and angle collisions in the east-west direction (See OR 99 Rogue Valley Corridor Plan)	ODOT	Mid-term	$25
I79	North Pacific Highway & Table Rock Road	Intersection to be studied as a part of ODOT's Exit 30 IAMP - intersection may need alternative mobility target if no solution identified	ODOT	Near-term	NA
I80	North Pacific Highway & Crater Lake Highway	Intersection to be studied as a part of ODOT's Exit 30 IAMP - intersection may need alternative mobility target if no solution identified	ODOT	Near-term	NA
I81	Crater Lake Highway /Bullock Road/Poplar Drive	Intersection to be studied as a part of ODOT's Exit 30 IAMP - intersection may need alternative mobility target but split diamond interchange anticipated to mitigate issue	ODOT	Near-term	NA
I83	Garfield Street & South Medford I-5 Interchange	Intersection to be studied as a part of an update to ODOT's Exit 27 IAMP - intersection may need alternative mobility target if no solution identified	ODOT	Mid-term	NA
I84	Center Drive & Garfield Street	Intersection to be studied as a part of an update ODOT's Exit 27 IAMP - intersection may need alternative mobility target if no solution identified	ODOT	Mid-term	NA
TS10	OR 99/Elm Street	Convert Elm Street at OR 99 to right-in/right-out movements only on both sides of the highway, install median barrier (this project is identified in the Jackson County TSP).	ODOT	Unknown	NA
650	OR 238 (Rossanley Drive), Ross Lane to West City limit	Upgrade to major arterial standard including two lanes in each direction, center-turn lane, bike facilities, and sidewalks.	ODOT	Long-term	NA

Figure 19 **Roadway, Intersection, Bicycle, and Pedestrian Tier 1 Projects**

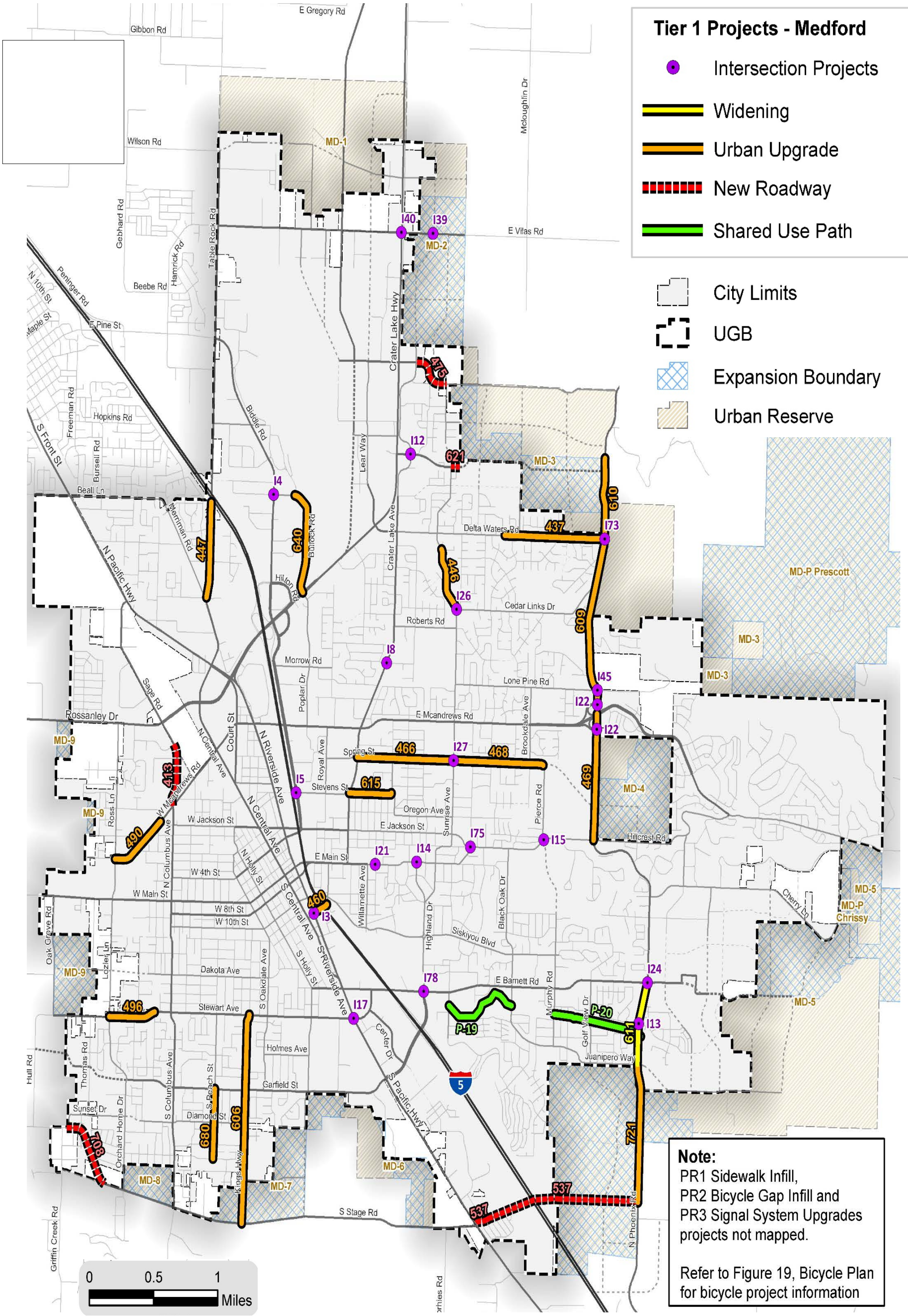
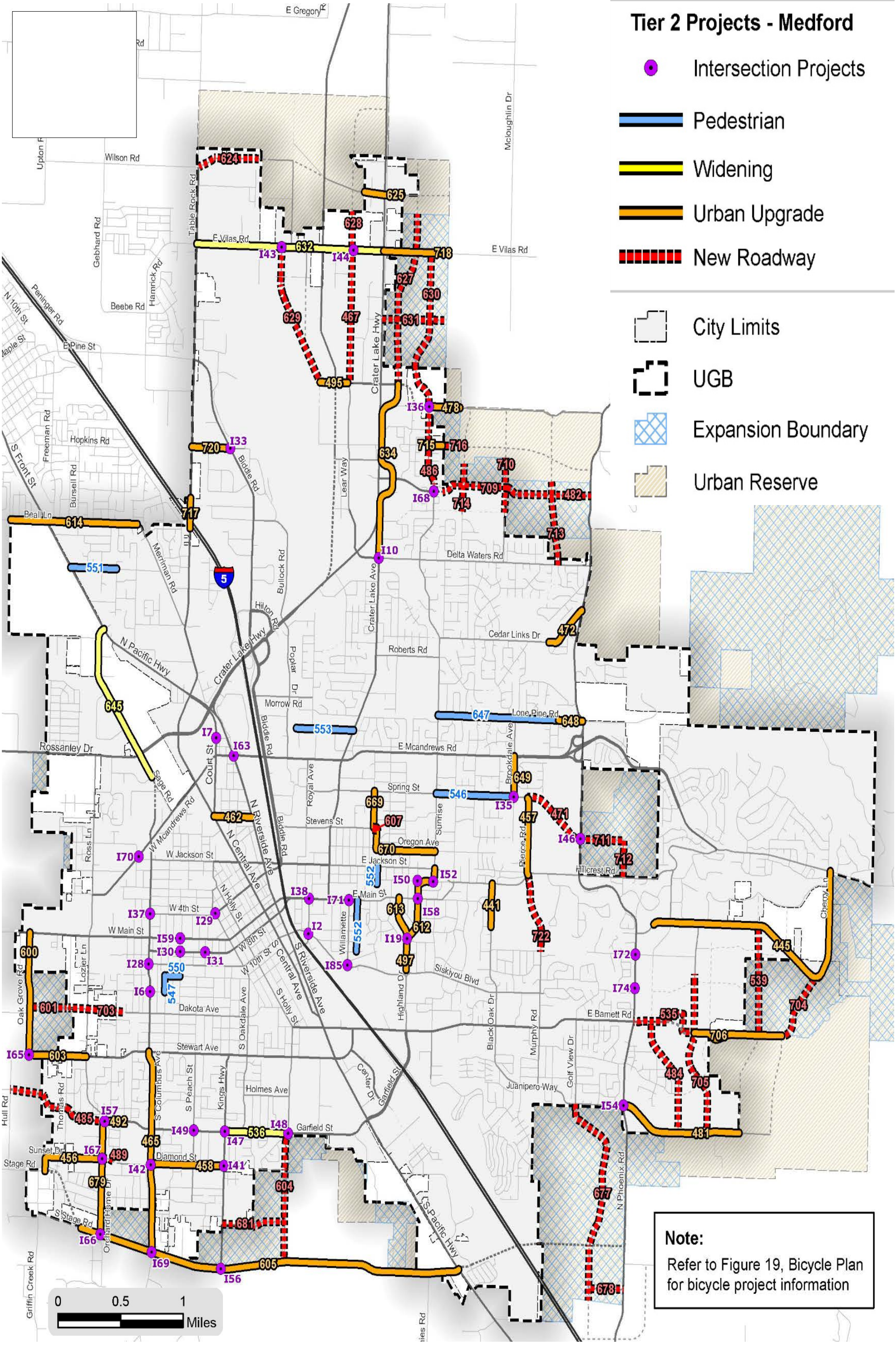


Figure 20 **Roadway and Intersection, Bicycle, and Pedestrian Tier 2 Projects**

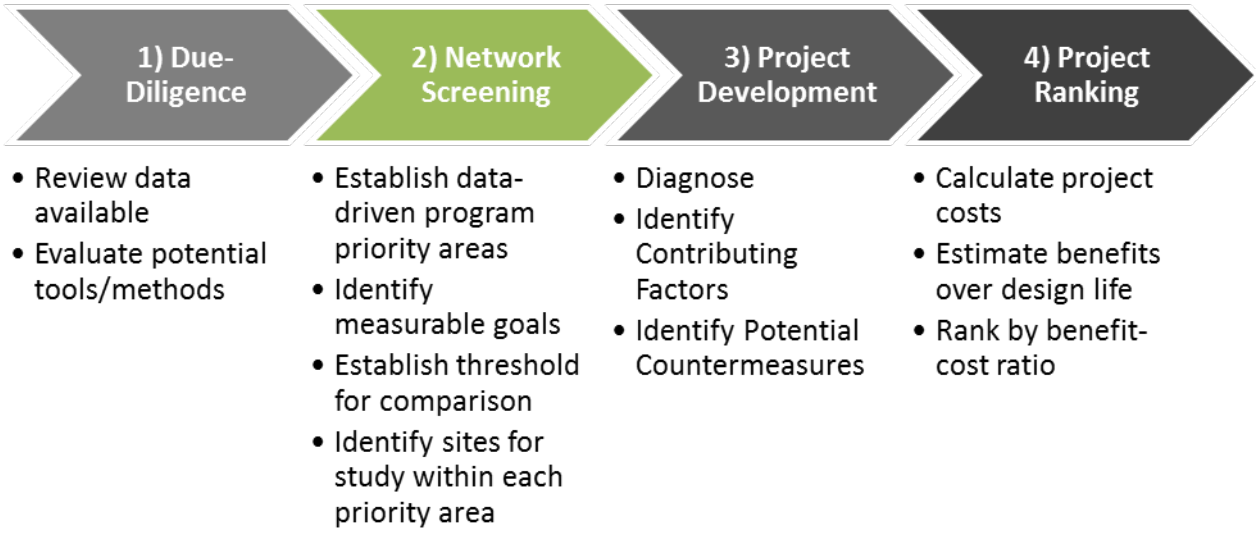


SAFETY PLAN

The City of Medford will use the intersections and segments identified in the safety network screening (*see Safety Technical Memo in TSP Volume II)*, along with all other ODOT SPIS and ARTS sites to enhance the project prioritization and design process and to remain consistent with ODOT's plans. Per the network screening process, the City will move into the project development phase, as shown in Exhibit 17 to further evaluate the locations identified in the *Safety Technical Memo* and work towards developing a Safety Program with prioritized project recommendations.

The project development phase will include a detailed review of crash data, traffic data and characteristics, and geometry at each site. Site visits will be completed to observe conditions and behavior at each location when possible. The goal of this step is to diagnose possible issues to assist in developing the most appropriate safety treatment recommendations at each location. Once projects have been identified, further prioritization will occur using a cost/benefit analysis that considers the effectiveness of the proposed treatment and the cost of the treatment.

Exhibit 17 Steps in Network Screening Project Development Process



In addition to developing safety treatment recommendations for the top sites identified through the network screening process (see Figure 10), the City will consider the top sites when prioritizing TSP projects. Table 13 lists all proposed intersection, roadway and bicycle projects from this TSP that overlap with the top sites identified through the network screening process. The results of the analysis can and should provide insight into the City's project prioritization process so that the City of Medford can move forward towards meeting the goals of its Transportation System Plan.

Table 13 Top Twenty Safety Locations, Overlapping Indicators and Projects

Safety Locations				
Rank	**Location**	**Project Type**	**Overlapping Safety Indicators**	**Overlapping TSP Projects**
1	Lozier Lane & Stewart Avenue	Intersection	ARTS Intersection	
2	Stewart Avenue & Riverside Avenue	Intersection	ODOT 90th Percentile Crash Rates	I17
3	Crater Lake Highway & Bullock Road	Intersection	ODOT 90th Percentile Crash Rates	I81
4	Crater Lake Highway & Exit 30 NB	Intersection	ODOT 90th Percentile Crash Rates	OR62-3 and OR62-4
5	Crater Lake Highway & Delta Waters Road	Intersection	ODOT 90th Percentile Crash Rates, ARTS Intersection	OR62-5
6	Pacific Highway & Crater Lake Highway	Intersection	ODOT 90th Percentile Crash Rates	I80
7	Garfield Street and I-5 On/Off-Ramps	Intersection	ODOT 90th Percentile Crash Rates	I83
8	Vilas Road & Table Rock Road	Intersection	ARTS Intersection	County Intersection
9	McAndrews Road & Biddle Road	Intersection	ODOT 90th Percentile Crash Rates, ARTS	
10	Riverside Avenue & Barnett Barnett Road	Intersection	ODOT 90th Percentile Crash Rates, ARTS	
11	Table Rock Road & Biddle Road	Intersection	ODOT 90th Percentile Crash Rates	County Intersection
12	Crater Lake Highway & Whittle Avenue	Intersection		OR62-5
13	Riverside Avenue & Jackson Street	Intersection	ARTS Intersection	
14	Crater Lake Highway & Vilas Road	Intersection	ODOT 90th Percentile Crash Rates	I40
15	Barnett Road & Highland Drive	Intersection	ODOT 90th Percentile Crash Rates	I78
16	Garfield Street & Pacific Highway	Intersection	ODOT 90th Percentile Crash Rates	
17	Crater Lake Highway & Exit 30 SB	Intersection	ODOT 90th Percentile Crash Rates	OR62-3 and OR62-4
18	McAndrews Road & Crater Lake Avenue	Intersection	ODOT 90th Percentile Crash Rates, ARTS	
19	Delta Waters Road & Crater Lake Avenue	Intersection	ODOT 90th Percentile Crash Rates	
20	Rossanley Drive & Ross Lane	Intersection		
1	N Pacific Highway	Non-Interstate Roadway	Top 5% On-Highway SPIS	
2	Crater Lake Avenue	Non-Interstate Roadway	ARTS Pedestrian Frequency and Severity	

Safety Locations

Rank	Location	Project Type	Overlapping Safety Indicators	Overlapping TSP Projects
3	Poplar Drive	Non-Interstate Roadway		
4	Crater Lake Highway	Non-Interstate Roadway	Top 5% On-Highway SPIS, ARTS Bike-Risk	OR62-5
5	Table Rock Road	Non-Interstate Roadway Segment		B67
6	Crater Lake Avenue	Non-Interstate Roadway Segment	ARTS Pedestrian Frequency and Severity Corridor, ARTS Bicycle Frequency and	
7	N Pacific Highway	Non-Interstate Roadway		
8	Crater Lake Highway	Non-Interstate Roadway	Top 5% On-Highway SPIS, ARTS Bike Risk-	OR62-5
9	E McAndrews Road	Non-Interstate Roadway	ARTS Bicycle Frequency and Severity	
10	S Columbus Avenue	Non-Interstate Roadway Segment	ARTS Pedestrian Frequency and Severity Corridor. ARTS Bicycle Frequency and	I28, B151
11	Exit 30 NB On-Ramp	Non-Interstate Roadway Segment		OR62-3 and OR62-4
12	Crater Lake Highway	Non-Interstate Roadway	Top 5% On-Highway SPIS	OR62-5
13	Crater Lake Highway	Non-Interstate Roadway	Top 5% On-Highway SPIS, ARTS Bike Risk-	OR62-5
14	Poplar Drive	Non-Interstate Roadway	Top 5% Off-Highway SPIS	B22
15	Crater Lake Highway	Non-Interstate Roadway Segment	Top 5% On-Highway SPIS, ARTS Bike Risk-Based Corridor. ARTS Ped Risk-Based	OR62-5
16	Crater Lake Highway	Non-Interstate Roadway Segment	Top 5% On-Highway SPIS, ARTS Bike-Risk Based Corridor	OR62-5
17	Crater Lake Highway	Non-Interstate Roadway	Top 5% On-Highway SPIS, ARTS Bike Risk-	OR62-5
18	Crater Lake Highway	Non-Interstate Roadway	Top 5% On-Highway SPIS, ARTS Bike Risk-	OR62-5
19	Biddle Road	Non-Interstate Roadway		B107
20	S Columbus Avenue	Non-Interstate Roadway Segment	Top 5% Off-Highway SPIS, ARTS Pedestrian Frequency and Severity Corridor. ARTS	B151

PEDESTRIAN PLAN

The City of Medford needs to complete the pedestrian network plan to address the sidewalk gaps identified in Section 3, Existing Conditions and Future Needs Assessment (Figure 14). Per the city's goals and objectives, the priority for filling gaps should be near schools, activity centers and essential destinations, transit routes, and transit oriented districts. The pedestrian plan includes prioritized projects, a program for completing sidewalk infill projects on an annual basis, and a toolkit of treatments and solutions to improve pedestrian facilities and crossings. The pedestrian projects include:

- **Sidewalk Projects** (Table 14) primarily focused on sidewalk infill surrounding schools;
- **Roadway Urban Upgrade Projects** (Table 5) as described in the Street Plan;
- Sidewalk Infill Program (Project Pr1, Table 15) as described in the Pedestrian Plan; and,
- **Shared Use Paths** (Table 16).

Sidewalk Projects and Roadway Urban Upgrade projects are shown in Figure **19** while shared use paths are shown in Figure 21**.**

Table 14 and 15 also include a sidewalk infill program project which will include the City dedicating $250,000 (or $5,000,000 over the planning period) annually to high priority sidewalk infill projects, potential infill sites identified in

Table 15.

Toolkit

The past decade has seen the introduction of a variety of treatment options aimed at enhancing the transportation system for bicyclists and pedestrians. **Attachment A** of the TSP is a **Bicycle and Pedestrian Toolkit** which provides a toolbox of bicycle- and pedestrian-related treatment options for implementation in the City of Medford, including:

- Bicycle facilities
- Pedestrian facilities
- General crossing treatments
- Railroad crossing treatments
- Bicycle intersection treatments
- Pedestrian/bicycle amenities
- Traffic calming treatments

For each treatment, an image, relative cost estimate, description, benefits, constraints, typical applications, and design considerations are provided, as well as resources for further information. This toolbox will be used throughout project development to identify potential treatments to address existing gaps and deficiencies for the pedestrian network.

Table 14 Sidewalk Projects and Infill Program

Sidewalk Projects and Infill Program					
Project #	**Location**	**Project Type**	**Description**	**Tier**	**Cost ($1,000)**
Pr1	Various sidewalk gap locations with focus on high-priority areas including schools, activity centers and essential destinations, transit routes, and transit oriented districts (TOD)	Pedestrian	Construct sidewalks or other pedestrian facilities at high-priority locations ($250,000 annually)	1 **(Short-term, Mid-term & Long-term)**	$5,000
546	Lone Pine School Area (Spring Street, Springbrook Road to Brookdale Avenue, excluding segment between Valley View Drive and Modoc Avenue)	Pedestrian	Install sidewalks	2	$1,240
547	Washington School area (Plum Street, 11th Street to Prune Street)	Pedestrian	Install sidewalks	2	$210
550	Washington School area (11th Street, Lincoln Street to Hamilton Street)	Pedestrian	Install sidewalks	2	$530

551	Howard School area (Mace Road, Connell Avenue to North Pacific Highway)	Pedestrian	Install sidewalks	2	$390
552	Roosevelt School area (Ashland Avenue, Oregon Avenue)	Pedestrian	Install sidewalks	2	$2,085
553	Wilson School area (Grand Avenue)	Pedestrian	Install sidewalks	2	$920
647	Lone Pine Road, Springbrook Road to Edgevale Avenue Sidewalk Infill	Pedestrian	Install sidewalks	2	$1,940
				Tier 1	**$5,000**
				Tier 2	**$7,315**
				TOTAL	**$12,315**

Table 15 Pr1 Sidewalk Infill Program

Pr1 Sidewalk Infill Locations on Arterial and Collector Streets			
Street	**Segment (From – To)**	**Street**	**Segment (From – To)**
8th Street	East of Lincoln Street – West of Hamilton Street	8th Street	East of Hamilton Street – West of Orange Street
10th Street	Cottage Street – Bear Creek Greenway	10th Street	Cottage Street – Siskiyou Boulevard
Biddle Road	Table Rock Road – Airport Road	Biddle Road	Lawnsdale Road – O'Hare Parkway
Biddle Road	Bear Creek Greenway – Approximately 670 feet north	Black Oak Drive	South of Randolph Street – Lawrence Avenue
Brookdale Avenue	McAndrews Road – Lone Pine Road	Cedar Links Drive	Springbrook Road – West of Brighton Circle
Central Avenue	McAndrews Road – north of Edwards Street	Columbus Avenue	W. Jackson Street – South of McAndrews Road
Dakota Avenue	Hamilton Street – Grant Avenue	Dakota Avenue	Columbus Avenue – Hamilton Street
Dakota Avenue	Jeanette Avenue – Columbus Avenue	Delta Waters Road	Crater Lake Avenue – east of Crater Lake Avenue
Delta Waters Road	East of Cody Street – east of Provincial Street	Diamond Street	East of Herrin Lane – west of Louise Avenue
Highway 99	Stewart Avenue – South Stage Road	Hillcrest Road	Valley View Drive – Ruhl Park
Hillcrest Road	Modoc Avenue – Black Oak Drive	Hillcrest Road	Black Oak Drive – N. Phoenix Road
E. Jackson Street	Academy Place – N. Berkeley Way	W. Jackson Street	Columbus Avenue – Priddy Street
Juanipero Way	Lawrence Avenue – west of La Loma Drive	Lone Pine Road	East of Springbrook Road – Valley View Drive
Lone Pine Road	Montana Drive – east of Montana Drive	Lone Pine Road	East of Papago Drive – west of Inverness Drive
Lone Pine Road	West of Thrasher Lane – east of Edgevale Avenue	East Main Street	Eastwood Drive – Valley View Drive
McAndrews Road	Oak Street – Central Avenue	McAndrews Road	Columbus Avenue – Oak Street
McAndrews Road	Sweet Road – Columbus Avenue	McAndrews Road	Wabash Avenue – Springbrook Road
McAndrews Road	Springbrook Road – Brookside Avenue	Murphy Road	Juanipero Way – Larson Creek
N. Phoenix Road	Barnett Road – South of Calle Vista Drive	N. Phoenix Road	Calle Vista Drive – north of Calle Vista Drive

Pr1 Sidewalk Infill Locations on Arterial and Collector Streets			
Street	**Segment (From – To)**	**Street**	**Segment (From – To)**
Siskiyou Boulevard	Willamette Avenue – Bear Creek Park	Siskiyou Boulevard	10th Street – Willamette Ave
Springbrook Road	South of Brookside Drive – Lone Pine Road	Stewart Avenue	Plum Street – Grape Street
Stewart Avenue	Highway 99 – West of Railroad Tracks	Table Rock Road	Berrydale Avenue – south of Berrydale Avenue
Table Rock Road	Berrydale Avenue – north of Berrydale Avenue	Valley View Drive	E. Main Street – Hillcrest Road
Willamette Avenue	Siskiyou Boulevard – south of 11th Street	Willamette Avenue	11th Street – north of 10th Street

Table 16 Shared Use Path Projects

Shared Use Path Projects					
Project #	**Location**	**Project Type**	**Description**	**Tier**	**Cost ($1,000)**
P19	Larson Creek	Bicycle/Pedestrian	Construct Shared Use Path	1 (Short-term)	$811
P20	Larson Creek	Bicycle/Pedestrian	Construct Shared Use Path	1 (Short-term)	$810
P1	Swanson Creek	Bicycle/Pedestrian	Construct Shared Use Path	2	$7,346
P2	Vilas Road	Bicycle/Pedestrian	Construct Shared Use Path	2	$2,923
P3	Crater Lake Highway	Bicycle/Pedestrian	Construct Shared Use Path	2	$3,818
P4	Owen to Foothills	Bicycle/Pedestrian	Construct Shared Use Path	2	$2,306
P5	Lone Pine Creek	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,285
P6	Cedar Links	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,928
P7	Foothills Road	Bicycle/Pedestrian	Construct Shared Use Path	2	$2,860
P8	Delta Waters to Prescott Park	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,588
P8A	Cedar Links Connector	Bicycle/Pedestrian	Construct Shared Use Path	2	$43
P9	Lone Pine to Prescott Park	Bicycle/Pedestrian	Construct Shared Use Path	2	$2,608
P10	Dunbar Irrigation Canal	Bicycle/Pedestrian	Construct Shared Use Path	2	$2,558
P11	Hillcrest	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,273
P12	Vista Point	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,361
P13	Roxy Ann Drive	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,890
P13A	Roxy Ann Connector	Bicycle/Pedestrian	Construct Shared Use Path	2	$567
P13B	Chrissy Park	Bicycle/Pedestrian	Construct Shared Use Path	2	$668
P14	Irrigation Canal	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,058
P15	Village Center Greenway	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,399
P16	Larson Creek Connector	Bicycle/Pedestrian	Construct Shared Use Path	2	$265
P17	Summerfield Greenway	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,928
P18	North Larson Creek	Bicycle/Pedestrian	Construct Shared Use Path	2	$2,722

Shared Use Path Projects

Project #	Location	Project Type	Description	Tier	Cost ($1,000)
P21	Larson Creek	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,701
P21A	Larson Creek Connector	Bicycle/Pedestrian	Construct Shared Use Path	2	$806
P22	Coal Mine Road	Bicycle/Pedestrian	Construct Shared Use Path	2	$680
P23	North Phoenix Road	Bicycle/Pedestrian	Construct Shared Use Path	2	$882
P24	Stage Road Extension	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,714
P25	Stage Road	Bicycle/Pedestrian	Construct Shared Use Path	2	$4,297
P26	South 99W Corridor	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,890
P27	KOGAP Development	Bicycle/Pedestrian	Construct Shared Use Path	2	$781
P28	Center Drive Connector	Bicycle/Pedestrian	Construct Shared Use Path	2	$466
P29	Columbus Avenue	Bicycle/Pedestrian	Construct Shared Use Path	2	$3,238
P30	Griffen Creek Extension	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,676
P31	Dakota Avenue	Bicycle/Pedestrian	Construct Shared Use Path	2	$1,512
P32	Oak Grove Road	Bicycle/Pedestrian	Construct Shared Use Path	2	$668
P33	Midway Park	Bicycle/Pedestrian	Construct Shared Use Path	2	$554
P34	Midway Road	Bicycle/Pedestrian	Construct Shared Use Path	2	$693
P35	Airport Connector	Bicycle/Pedestrian	Construct Shared Use Path	2	$995
P36	Airport Connector	Bicycle/Pedestrian	Construct Shared Use Path	2	$88
P37	Table Rock Road	Bicycle/Pedestrian	Construct Shared Use Path	2	$2,092
P38	Holmes Park - Dellwood Ave and Modoc to dead end of Dellwood Ave	Bicycle/Pedestrian	Construct Multi-Use Path	2	$164
P39	Kennedy School - Keene Way Dr to Delta Waters Rd	Bicycle/Pedestrian	Construct Multi-Use Path	2	$164
				Tier 1	$1,621
				Tier 2	$67,455
				TOTAL	$69,076

Costs assumptions associated with each project type are as follows:

- Construct Multi-use Path: Applies costs for constructing a 12-foot multi-use trail.

Bike Plan

To provide a connected bicycle network that serves both transportation and recreation purposes, Medford will create an interconnected network of bicycle routes serving a range of needs, from long regional bicycle trips, to short neighborhood rides. This will be achieved through a network of low-stress bicycle facilities such as multi-use paths (such as the Bear Creek Greenway), on-street bicycle lanes that have increased separation from vehicles on higher speed roadways, and neighborhood streets that have signage and "sharrow" pavement markings to help with wayfinding and driver awareness.

The bicycle plan includes prioritized projects, a program for evaluating street reconfigurations for constrained areas without right-of-way for widening, and a toolkit of treatments and solutions to improve bicycle facilities and treatments for bicyclists at intersections. The bicycle projects include:

- **Neighborhood Bikeway Projects** (Table 18);
- **Urban Upgrade Projects** (Table 5) as described in the Street Plan;
- **Bicycle Facility Projects** (Table 19) including reconfigurations and reconstructions; and,
- **Shared Use Paths** (Table 16).

The bicycle projects and future bicycle network are shown in Figure 21. Figure 21 identifies existing bicycle lanes, existing bicycle lanes that require improvements to be lower stress (e.g. comfortable and attractive to a broad spectrum of users), existing and future neighborhood bikeways that will formalize already low-stress routes, future bike facilities from roadway improvement projects, and roadways that require reconfiguration or reconstruction to incorporate a bicycle facility.

Table 19 also includes a programmatic funding allocation focusing on the roadways identified for neighborhood bikeways or other bicycle facility projects. This program will include the City dedicating $100,000 per year to implementing bicycle projects on high priority network gaps including those that provide access to schools, activity centers, transit routes, and transit oriented development areas.

Toolkit

As noted in the Pedestrian Plan, the past decade has seen the introduction of a variety of treatment options aimed at enhancing the transportation system for bicyclists and pedestrians. **Attachment A** of the TSP is a **Bicycle and Pedestrian Toolkit** which provides a toolbox of bicycle- and pedestrian-related treatment options for implementation in the City of Medford. This will be particularly useful for the roadways that require reconfiguration or reconstruction to accommodate a bicycle facility where right-of-way is constrained and an alternative to the City's cross-sections may be necessary. The treatments for bicycles at intersections and at multi-use path crossings of major roadways are critical elements of ensuring that a facility is safe, comfortable, and attractive to users.

Alternate Routes

In planning for future bicycle facilities, some gaps of the bicycle network have proven difficult to fill. Although it is the City's intent to provide for the most complete bicycle network possible, sometimes it proves safer and more cost effective to plan for an alternative route. Through the analysis of the bicycle network and the gaps that exist, the City has determined a list of roadways that would best be served by an alternative route for bicycle facilities due to right-of-way constraints, roadway geometry, or other physically limiting characteristics. The results of the alternative routes analysis can be found below in Table 17.

Table 17 Bicycle Network Alternative Routes

Bicycle Network Alternative Routes		
Street	**Segment (From – To)**	**Alternative Route**
Oakdale Avenue	Garfield Street – 2nd Street	Holly Street
Barnett Road	Ellendale Avenue – N. Phoenix Road	Larson Creek Greenway
Crater Lake Avenue	E. Main Street – Delta Waters Road	Keen Way Drive and Royal Avenue/ Corona Avenue
Cottage Street	Siskiyou Boulevard – E. Main Street	Tripp Street and other local streets
Willamette Avenue	E. 11th Street – E. Main Street	Vancouver Avenue and Ashland Avenue
10th Street	Columbus Avenue – Oakdale Avenue	8th Street
4th Street	Columbus Avenue – Oakdale Avenue	Main Street and Pennsylvania Avenue

Table 18 Neighborhood Bikeway Projects

Neighborhood Bikeway Projects					
Project #	Location	Project Type	Description	Tier	Cost ($1,000)
B10	Dellwood Avenue, west of Black Oak Drive to Murphy Road	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$11.30
B2	Prune Street, Lozier Lane to Plum Street; Plum Street, Prune Street to Dakota Avenue	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$16.00
B3	Beatty Street, Manzanita Street, Niantic Street, Maple Street, Bartlett Street from McAndrews Road to Jackson Street	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$24.42
B4	Holly Street, Jackson Street to Monroe Street	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$23.50
B6	Keene Way Drive, Bradbury Street; Crater Lake Avenue to Roberts Road	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$14.42
B7	Keene Way Drive, Brookhurst Street to Camelia Avenue	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$2.55
B8	Keene Way Drive, Camelia Avenue to Keene Drive	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$29.83
B9	Fortune Drive, Eastwood Drive, Keene Way Drive, Keene Drive, Groveland Avenue, Dellwood Avenue; Willamette Avenue to Modoc Avenue	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$27.68
B18	Oak Street, Jackson Street to 2nd Street; 2nd Street, Oak Street to Rose Avenue; Rose Avenue, 2nd Street to W. Main St	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$1.29
B19	Ridge Way, Wabash Avenue to Keene Way Drive	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$2.67
B20	Corona Avenue, Grand Avenue to McAndrews Road	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$4.15

Neighborhood Bikeway Projects					
Project #	Location	Project Type	Description	Tier	Cost ($1,000)
B24	Corona Avenue, Roberts Road to Grand Avenue	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$7.78
B25	Roberts Road, Corona Avenue to Melody Lane	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$8.73
B26	Melody Lane, Roberts Road to Brookhurst Street	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$2.54
B30	Whittle Avenue, Crater Lake Highway to Roberts Road	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$14.38
B163	Holly Street, Barnett Rd to Stewart Ave	Bicycle	Sign and Stripe Neighborhood Bikeway	2	$4.13
				Tier 1	**-**
				Tier 2	**$195**
				TOTAL	**$195**

Costs assumptions associated with each project type are as follows:

- Sign and Stripe Neighborhood Bikeway: Applies costs for installing wayfinding, sharrows, and signage on both sides of the roadway.

Table 19 Bicycle Facility Projects

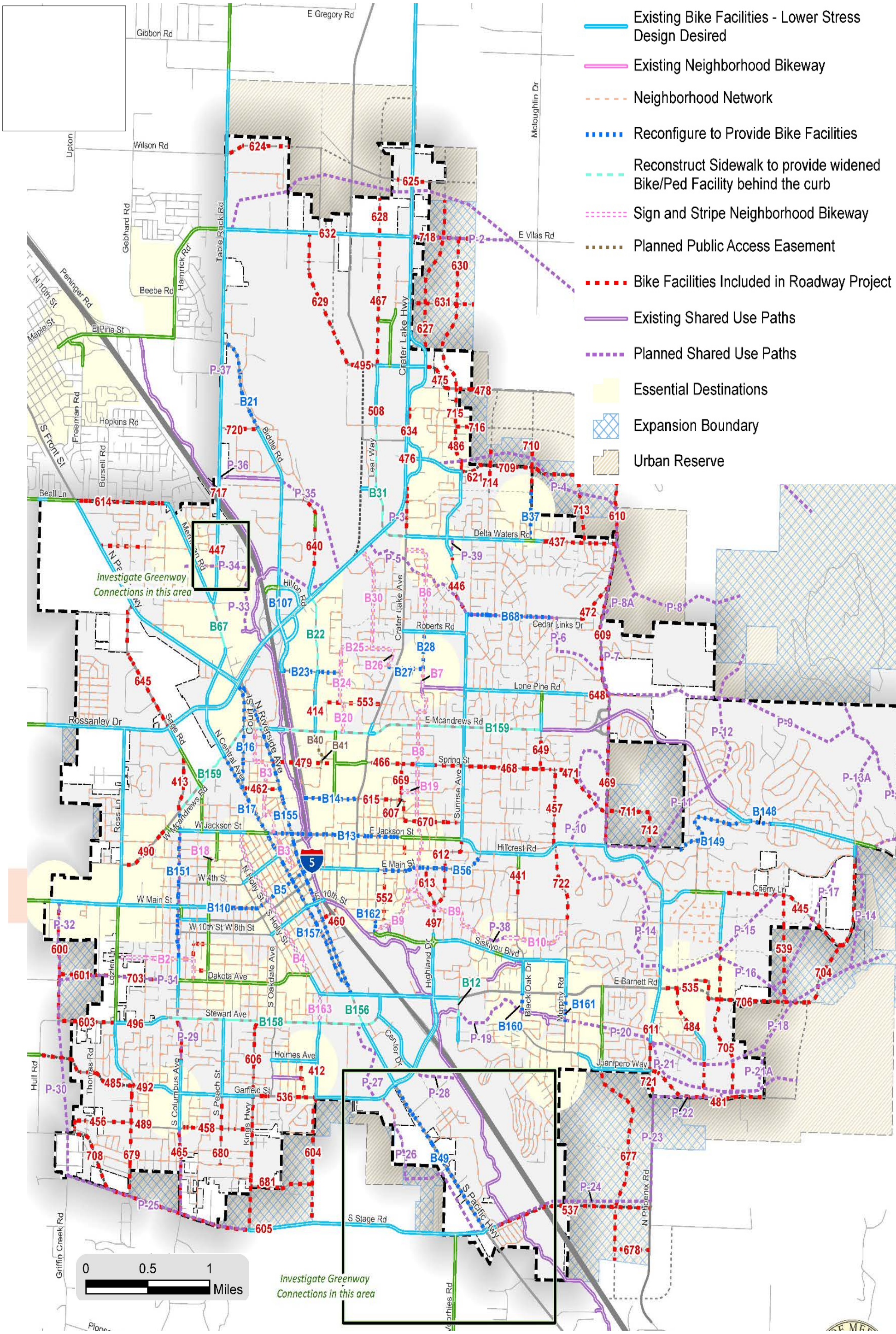
Bicycle Facility Projects					
Project #	**Location**	**Project Type**	**Description**	**Tier**	**Cost ($1,000)**
B49	South Pacific Highway, Garfield Street to South Stage Road	Bicycle	Reconfigure to Provide Bike Facilities	ODOT	$12,675.00
PR2	Various bicycle network gap locations with focus on high-priority areas including schools, activity centers and essential destinations, transit routes, and transit oriented development areas	Bicycle	Evaluate and construct potential roadway reconfigurations to accommodate bicycle facilities through re-striping and/or minor reconstruction at high-priority locations ($100,000 annually)	1 (Short-term, Mid-term & Long-term)	$2,000.00
B107	Biddle Road, South of Knutson Avenue to Morrow Road	Bicycle	Reconfigure to Provide Bike Facilities	2	$185.00
B110	Main Street, Columbus Avenue to Oakdale Drive	Bicycle	Reconfigure to Provide Bike Facilities	2	$95.00
B12	Ellendale Drive, Barnett Road to Hospitality Way	Bicycle	Widen sidewalk to provide 14' wide bike/pedestrian facility behind the curb	2	$245.00
B13	Jackson Street, Central Avenue to East of Pearl Street	Bicycle	Reconfigure to Provide Bike Facilities	2	$160.00
B14	Stevens Street, Biddle Road to Crater Lake Avenue	Bicycle	Reconfigure to Provide Bike Facilities	2	$65.00
B148	Hillcrest Road, Highcrest Drive to McAndrews Road	Bicycle	Provide Bike Facilities within existing curb	2	$35.00
B149	Hillcrest Road, Bel Air Court to McAndrews Road	Bicycle	Provide Bike Facility in the uphill direction.	2	$25.00
B151	Columbus Avenue, Prune Street to McAndrews Road	Bicycle	Reconfigure to Provide Bike Facilities	2	$145.00
B152	Cardinal Avenue, Lear Way to Crater Lake Highway	Bicycle	Reconfigure to Provide Bike Facilities	2	$35.00
B155	Riverside Ave, Highway 62 to Barnett Rd	Bicycle	Reconfigure to Provide Bike Facilities	2	$335.00
B156	Riverside Ave, Barnett Rd to Stewart Ave	Bicycle	Widen sidewalk to provide 14' wide bike/pedestrian facility behind the curb	2	$405.00
B157	Central Ave, 4th St to Barnett Rd	Bicycle	Reconfigure to Provide Bike Facilities	2	$150.00

Bicycle Facility Projects

Project #	Location	Project Type	Description	Tier	Cost ($1,000)
B158	Stewart Ave, west of Dixie Lane to Center Drive	Bicycle	Widen sidewalk to provide 14' wide bike/pedestrian facility behind the curb	2	$3,345.00
B159	McAndrews Rd, Columbus Ave to Brookdale Ave	Bicycle	Widen sidewalk to provide 14' wide bike/pedestrian facility behind the curb	2	$6,340.00
B16	Court Street, Rossanley Drive to Edwards Street	Bicycle	Reconfigure to Provide Bike Facilities	2	$105.00
B160	Black Oak Dr, Barnett Rd to Larson Creek Greenway	Bicycle	Reconfigure to Provide Bike Facilities	2	$15.00
B161	Murphy Rd, Barnett Rd to Larson Creek Greenway	Bicycle	Reconfigure to Provide Bike Facilities	2	$25.00
B162	Willamette Ave, E 11th St to Siskiyou Blvd	Bicycle	Reconfigure to Provide Bike Facilities	2	$15.00
B17	Central Avenue, McAndrews Road to Jackson Street	Bicycle	Reconfigure to Provide Bike Facilities	2	$115.00
B21	Biddle Road, Table Rock Road to South of Airport Road	Bicycle	Reconfigure to Provide Bike Facilities	2	$130.00
B22	Poplar Drive, Crater Lake Highway to Morrow Road	Bicycle	Widen sidewalk to provide 14' wide bike/pedestrian facility behind the curb	2	$935.00
B23	Morrow Road, Biddle Road to Corona Avenue	Bicycle	Reconfigure to Provide Bike Facilities	2	$95.00
B27	Brookhurst Street, Melody Lane to Keene Way Drive	Bicycle	Reconfigure to Provide Bike Facilities	2	$40.00
B28	Keene Way Drive, Roberts Road to Brookhurst Street	Bicycle	Reconfigure to Provide Bike Facilities	2	$35.00
B31	Delta Waters Road, Lear Way to Crater Lake Avenue	Bicycle	Widen sidewalk to provide 14' wide bike/pedestrian facility behind the curb	2	$1,655.00
B37	McLoughlin Drive, Ford Drive to Delta Waters Road	Bicycle	Reconfigure to Provide Bike Facilities	2	$45.00
B40	Public Access, McAndrews Road to Royal Avenue (Town Centre Dr)	Bicycle	Planned Public Access Easement	2	NA
B41	Public Access, Royal Avenue to Market Street	Bicycle	Planned Public Access Easement	2	NA
B5	Main Street, Oakdale Ave to Almond Street	Bicycle	Reconfigure to Provide Bike Facilities	2	$165.00
B56	Main Street, Willamette Avenue to Valley View Drive, and Valley View Drive, Main Street to Hillcrest Road	Bicycle	Reconfigure to Provide Bike Facilities	2	$130.00

Bicycle Facility Projects					
Project #	Location	Project Type	Description	Tier	Cost ($1,000)
B67	Table Rock Road, Merriman Road to W Table Rock Road	Bicycle	Widen sidewalk to provide 14' wide bike/pedestrian facility behind the curb	2	$730.00
B68	Cedar Links Drive, Springbrook Road to Wilkshire Drive	Bicycle	Reconfigure to Provide Bike Facilities	2	$205.00
				Tier 1	$2,000
				Tier 2	$16,005
				ODOT	$12,675
				TOTAL	$30,680

Figure 21 Bicycle Plan



TRANSIT PLAN

The Rogue Valley Transit District (RVTD) is in the process of updating their Transit Master Plan for transit operations. In order to provide consistency between the Transit Master Plan and the 2038 TSP it has been determined that future amendments to the 2038 TSP and Medford Municipal Code will be necessary. Review of the Transit Master Plan for inclusion in the TSP shall be considered in the year 2020, or post Transit Master Plan adoption. Therefore, the City of Medford's transit plan includes the following main elements:

- Create more transit supportive areas
- Coordinate with RVTD and other partners to enhance transit service
- Improve traffic operations for buses on transit routes
- Improve access to existing and future transit routes for pedestrians and bicyclists

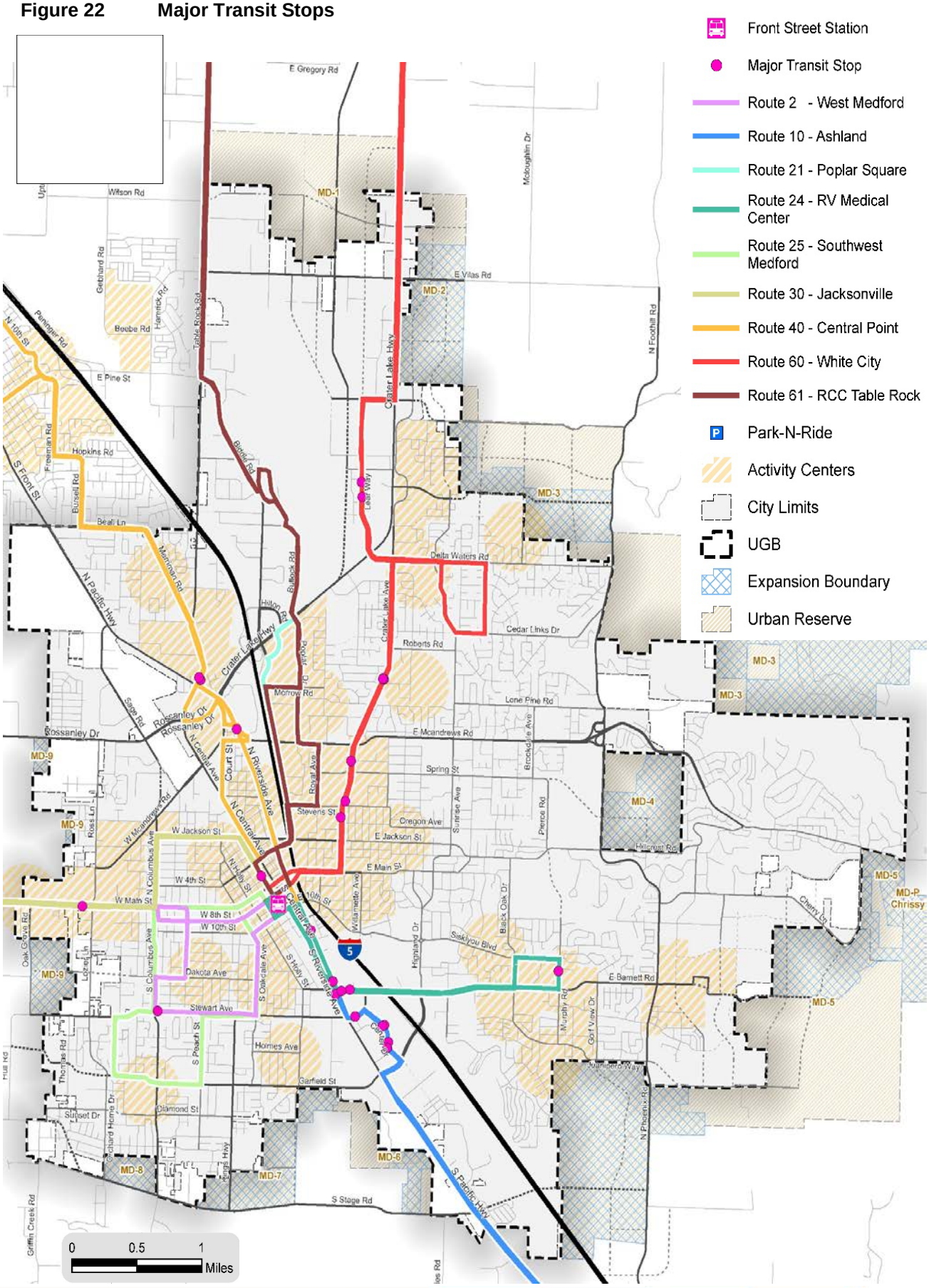
Near-term actions include the following:

- Partner with RVTD in identifying potential new transfer centers outside of downtown Medford, identifying future transit routes and services, and prioritizing service enhancements during RVTD's Transit Master Plan update occurring in 2018-19.
- Consider all existing RVTD transit routes in Figure 16 as high-priority locations for roadway and intersection projects that will improve operations.
- Plan for Transit Signal Priority (see Transportation System Management Plan) on all arterials with existing or future transit service.
- Consider the transit stops with the highest average daily ons and offs (shown in Figure 16) as high-priority locations for the sidewalk infill program and roadway urban upgrades.

Major Transit Stops and Routes

To facilitate a more robust and transit-supportive land use pattern it is important to recognize the most frequently used transit routes and stops. Within the Medford Municipal Code are sections referencing Figure 22 that require certain design considerations for site development. In order to ensure consistency with the RVTD Transit Master Plan it will be important to coordinate development of major transit stops and routes as transit service expands and changes over time.

Figure 22 Major Transit Stops



FREIGHT/RAIL/INTERMODAL PLAN

The City of Medford's freight routes are shown in Figure 3 along with Jackson County and ODOT's freight routes, and the National Highway System's freight routes and intermodal connections. Medford's freight routes are used by the freight community to access various land uses within the city and augment and support the Jackson County, ODOT, and NHS freight network. The designation does not impact a roadway's physical or operational characteristics; however, the City's Roadway Design Standards ensure that the roadways are built to support freight traffic.

There are many roadway improvement projects shown on Figure 19 that are on designated freight routes. The freight improvement needs identified in the RVMPO Freight Study that have not been addressed to date are summarized in

Table **20** along with the TSP plan to address these needs. As shown, all of the freight improvement needs from the RVMPO Freight Study are addressed by the OR 62 Bypass and roadway and intersection improvement projects identified in Medford's TSP.

Table 20 RVMPO Freight Related Needs and Street Projects

Location	Improvement Need	Priority	TSP Project
Highway 62, I-5 to Table Rock Road	Establish a traffic signal interconnect to minimize truck stopping	Complete	The City has installed interconnect and an adaptive signal timing system to address the improvement need. Additionally, freight should move to the OR 62 Bypass; however, the OR 62 Corridor Refinement Plan will address any additional needs on OR 62. OR 62 is also addressed in the City's TSM Plan.
Foreign Trade Zone area	Needs improved connection between the FTZ and Highway 62 expressway	High	Proposed extension of Coker Butte Road west of Highway 62 to address this need
Highway 62 at Delta Waters Road	Address congestion problems	High	OR 62 Bypass will address congestion problems in this corridor
Crater Lake Avenue at Vilas and Highway 62	Improve traffic circulation	High	Crater Lake Avenue will be realigned further east at Vilas Road to address this issue.

Rail

The Rogue Valley Commuter Rail Project

The Rogue Valley Commuter Rail Project Report, created in March 2007, discusses the opportunity for the CORP facilities to be utilized to expand transportation options in the region. This study reflects the unavailability of the ODOT rail cars previously available for the project and aims to provide information that could be used to approach the Federal Transit Administration (FTA) for potential funding under the agency's "Small Starts Program". This report was an update to previous studies done by RVMPO exploring the potential for using the Central Oregon and Pacific Railroad (CORP) mainline that runs parallel to Highway 99 as a commuter rail between Central Point and Ashland. The report provides equipment options, capital costs, and ridership capacity findings for bi-directional commuter rail operation.

The City of Medford does not hold direct responsibility for the operations and maintenance of the Central Oregon & Pacific Railroad, however can take action to encourage safety surrounding the rail corridor. The foll7owing list outlines these actions:

- Consistent with Oregon Rail Plan recommendations, establish city policy that:
    - Seeks to avoid or minimize the number of future railroad at-grade crossings when new streets are planned for growing portions of the community;
    - Avoids creating intersections of major streets and railroads where possible;
    - Locates new parallel streets at least 500 feet from railroads to allow for industrial development between the tracks and the highway;
    - Plans community development (particularly residential uses) with sensitivity to rail noise and other potential conflicts.
- Consider additional railroad protection at existing Clark, Joseph, and Fir Street crossings.
- Support the improvement of the at-grade railroad crossing on South Stage Road.
- Provide for ongoing maintenance and repair of streets at existing at-grade crossings.
- Work with railroads and appropriate state agencies to minimize the blockage of public streets at railroad crossings to facilitate traffic movement, especially emergency service vehicles.
- Encourage efforts to make intercity passenger rail service available in the Medford area.

TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS (TSMO) PLAN

TSMO is a set of integrated transportation solutions intended to improve the performance of existing transportation infrastructure. Transportation Demand Management (TDM) and Transportation System Management (TSM) strategies are two complementary approaches to managing transportation and maximizing the existing system. TDM addresses *demand* on the system: the number of vehicles traveling on the roadways each day. TDM measures include any method intended to shift travel demand from single-occupant vehicles to non-auto modes or carpooling, travel at less congested times of the day, etc. TSM addresses the *supply* of the system: using strategies to improve system efficiency without increasing roadway widths or building new roads. TSM measures are focused on improving operations by enhancing capacity during peak times, typically with advanced technologies to improve traffic operations.

Successful implementation of TSMO strategies relies on the participation of a variety of public and private entities. Strategies can be implemented by the City, a neighborhood, or particular employer. In addition, they can be categorized as policies, programs, or physical infrastructure investments. Table 21 provides a summary of potential measures that can be implemented within the City of Medford and which entities are generally in the position to implement each one. As the City continues to grow and develop over the next 10 to 20 years, the City can review applicability of these strategies. Additional information on potential strategy implementation for the most feasible strategies for the City of Medford are discussed below.

Table 21 Transportation System Management and Operations Strategies

TSMO Strategy	TDM or TSM?	Type of Investment	City	TMA[5]	Developers	Transit Provider	Employers	State
Parking management	TSM/TDM	Policy	P		S	S	S	
Limited/flexible parking requirements	TDM	Policy	P		S		S	
Access management	TSM/TDM	Policy/ Infrastructure	P		S			P
Connectivity standards	TSM/TDM	Policy/ Infrastructure	P		S			P
Congestion pricing	TSM/TDM	Policy/ Infrastructure	P			S		P
Alternative Work Schedules	TDM	Program/Policy	S				P	
Frequent transit service	TDM	Program	S		S	P		
Free or subsidized transit passes	TDM	Program	S			P or S	P	
Preferential carpool parking	TDM	Program/Policy	P & S		P or S		P	
Carpool match services	TDM	Program	S	P			S	
Parking cash out	TDM	Program		S		S	P	

[5] There is not currently a TMA within the RVMPO. These would apply if a TMA is formed.

TSMO Strategy	TDM or TSM?	Type of Investment	City	TMA[5]	Developers	Transit Provider	Employers	State
Carsharing program support	TDM	Program	P	S	P	P	P	
Bicycle facilities	TDM	Infrastructure	P		S		S	P
Pedestrian Facilities	TDM	Infrastructure	P		S			P
Regional ITS	TSM	Infrastructure	S					P
Regional traffic management	TSM	Infrastructure	S					P
Advanced signal systems	TSM	Infrastructure	P			S		S
Real time traveler data	TSM	Infrastructure	S					P
Arterial corridor management	TSM	Infrastructure	P					S

TMA: Transportation Management Association – A TMA does not currently exist in the City of Medford
P: Primary role
S: Secondary/Support role

[5] There is not currently a TMA within the RVMPO. These would apply if a TMA is formed.

Transportation System Management (TSM)

Transportation System Management (TSM) focuses on low cost strategies within existing transportation infrastructure to enhance operational performance. Finding ways to better manage transportation while maximizing urban mobility and treating all modes of travel as a coordinated system is a priority. TSM strategies include signal improvements, traffic signal coordination, traffic calming, access management, local street connectivity, and intelligent transportation systems (ITS). Traffic signal coordination and systems typically provide the most significant tangible benefits to the traveling public. The primary focus of TSM measures are region-wide improvements, however there are a number of TSM measures that the City could use in a smaller scale environment. The following sections discuss TSM measures that could be appropriate for the City of Medford. The following sections provide an overview of a broad range of TSMO measures that are being planned and implemented by Rogue Valley Municipal Planning Organization (RVMPO), ODOT, Jackson County, and the City of Medford and identify and explain additional TSM techniques that are most applicable to the City of Medford.

Signal Systems Improvements

Signal retiming and optimization offer a relatively low cost option to increase system efficiency. Retiming and optimization refers to updating timing plans to better match prevailing traffic conditions and coordinating signals. Timing optimization can be applied to existing systems or may include upgrading signal technology, such as signal communication infrastructure, signal controllers, or cabinets. Signal retiming can reduce travel times and be especially beneficial to improving travel time reliability. In locations with relatively high pedestrian use, signal retiming can facilitate pedestrian movements through intersections by increasing minimum green times to give pedestrians enough time to cross during each cycle, eliminating the need to push pedestrian crossing buttons. Signals can also include bicycle detectors to facilitate bicycle movements.

Signal upgrades often come at a higher cost and usually require greater coordination between jurisdictions. However, upgrading signals provides an opportunity to incorporate advanced signal systems to further improve the efficiency of a transportation network. Strategies include coordinated signal operations across jurisdictions, centralized traffic signal control, adaptive or active signal control, and transit and/or freight signal priority. These advanced signal systems can reduce delay, travel time, and the number of stops for transit, freight, and other vehicles. In addition, these systems may help reduce vehicle emissions and improve travel time reliability.

Transit signal priority systems use sensors to detect approaching transit vehicles and alter signal timing to improve transit performance. This improves transit travel times, reliability of transit travel times, and overall transit attractiveness.

Adaptive or active signal control systems improve the efficiency of signal operations by actively changing the allotment of green time for vehicle movements and reducing the average delay for vehicles. Adaptive or active signal control systems require several vehicle detectors at intersections in order to adequately detect traffic flows, in addition to hardware and software upgrades. *Crater Lake Highway currently has an adaptive signal system.*

Traffic responsive control uses data collected from traffic detectors to change signal timing plans for intersections. The system uses data collected from the detectors to automatically select a timing plan best suited to current traffic conditions. This system is able to determine times when peak-hour timing plans begin or end, potentially reducing vehicle delays. *Barnett Road is currently planned to be upgraded to have traffic responsive control.*

Truck signal priority systems use sensors to detect approaching heavy vehicles and alter signal timing to improve truck freight travel. While truck signal priority may improve travel times for trucks, its primary purpose is to improve the overall performance of intersection operations by clearing any trucks that would otherwise be stopped at the intersection and subsequently have to spend a longer time getting back up to speed. Implementing truck signal priority requires additional advanced detector loops, usually placed in pairs back from the approach to the intersection.

In order to support future ITS projects including traffic signal operations, the City of Medford and Jackson County should require the installation of three-inch conduit along arterial and selected collector roadways during roadway improvement projects where overhead electric is not available. ITS projects can require additional fiber optic cable to serve the new equipment along a roadway. A three-inch conduit would ensure adequate wiring capacity to accommodate future ITS projects. *The City should develop a plan for future conduit extension from the existing fiber optic cable network.*

Real-Time Traveler Information

Traveler information consists of collecting and disseminating real-time transportation system information to the traveling public. This includes information on traffic and road conditions, general public transportation and parking information, interruptions due to roadway incidents, roadway maintenance and construction, and

weather conditions. Traveler information is collected from roadway sensors, traffic cameras, vehicle probes, and more recently, media access control (MAC) devices such as cell phones or laptops. Data from these sources are sent to a central system and subsequently disseminated to the public so that drivers track conditions specific to their cars and can provide historical and real-time traffic conditions for travelers.

When roadway travelers are supplied with information on their trips, they may be able to avoid heavy congestion by altering a travel path, delaying the start of a trip, or changing which mode they use. This can reduce overall delay and fuel emissions. Traveler information projects can be prioritized over increasing capacity on roadway, often with high project visibility among the public.

Real-Time Transit Information

Transit agencies or third-party sources can disseminate both schedule and system performance information to travelers through a variety of applications, such as in-vehicle, wayside, or in-terminal dynamic message signs, as well as the Internet or wireless devices. Coordination with regional or multimodal traveler information efforts can increase the availability of this transit schedule and system performance information.

These systems enhance passenger convenience and may increase transit attractiveness by encouraging travelers to consider transit as opposed to driving alone. They require cooperation and integration between agencies for disseminating the information. *RVTD has implemented real-time data with their One Bus Away app.*

Rogue Valley Regional ITS Plan

The Rogue Valley Regional ITS Plan, adopted December 2016, provides a 10-year road map for improving transportation system operations by enhancing safety, addressing congestion hotspots, providing traveler information, and assisting transportation system operators in implementing traffic management strategies that meet the needs of the region. The plan's focus is on maximizing the efficiency of existing transportation infrastructure, which enhances the overall system performance and reduces the need to add roadway capacity.

Table 22 summarizes the projects and strategies listed in the Rogue Valley Regional ITS plan that are located within the City of Medford.

Table 22 Rogue Valley High Priority ITS Projects and Programs in the City of Medford

Project/Program Number	Name	Description/Location	Priority	Responsible Party
Traffic Operations Management				
TM01	Install or Upgrade Communications	Install communications to all ITS field devices, allowing agencies remote access to control and monitor devices. Options to consider include: Fiber communications, wireless options (cellular, WiFi, DSRC, radio), and Fiber sharing partnerships	High	ODOT, local agencies
TM02	Traffic Signal Interconnect, Connect to ODOT Central Traffic	Hwy 62 (interconnect and connection to CSS)	High	ODOT, local agencies

Project/Program Number	Name	Description/Location	Priority	Responsible Party
	Signal Server (CSS), Signal Timing Improvements, Adaptive Signal Systems	Barnett Rd, McAndrews Rd, Stewart Ave, Siskiyou Blvd, Hwy 99 (updated signal timing, possible adaptive signals)		
TM03	Upgrade Signal Controllers	Hwy 99 Corridor	High	ODOT, local agencies
TM05	Improve and Monitor Traffic Signal Detection	Improve traffic signal detection for both vehicles and bicycles, and monitor failed detection.	High	ODOT, local agencies
TM06	South Medford Interchange Improvements	Investigate targeted solutions to the congestion that occurs around the south Medford interchange.	High	ODOT
TM08	Install Additional PTZ Cameras	Install additional pan-tilt-zoom (PTZ) cameras to monitor roadway conditions	High	ODOT, local agencies
TM09	Install Speed Feedback Signs	Install dynamic feedback signs that measure the speed of individual vehicles.	High	ODOT
Weather Event Management				
W02	Install Grip Factor Sensors and Warning Systems	Foothill Road (prone to icy conditions) McAndrews Road (15% grade)	High	Jackson County, Medford
Traveler Information				
TI01	Install Variable Message Signs	Throughout OR 62 expressway, OR 99, and I-5	High	ODOT, local agencies
TI02	Improve Real-time Traveler Information by Working with Third Party Information Service Providers (ISPs)	Create partnerships with ISPs, such as Waze, to gain access to travel time data and related products to better provide travelers with real-time roadway information	High	ODOT, private partnerships, media
TI03	Increase Use of TripCheck Traveler Information Portal (TTIP) Local Entry Tool	TTIP Local Entry Tool allows local agencies to input information that will be displayed through the TripCheck website. It allows travelers to visit a single website for both ODOT and local agency information. Agencies can enter information about planned events, such as maintenance and construction, parades, races, and other events that effect traffic.	High	ODOT, private partnerships, media
Emergency and Incident Management				
EM01-03	Emergency and Incident Management	Emergency and Incident Management strategies focus on improving response during an incident, reducing incident clearance times and increasing safety for both responders and travelers.	High	ODOT, local response agencies, Oregon State Police, ESCO,
Data Management and Performance				
DM01	Performance Measure Repository	Develop a plan to identify performance measures and data needs for the Rogue Valley region. Determine a regular interval (annual, quarterly, etc.) to publish data. Develop coordination plan/policy for maintenance and construction information sharing across agencies and create a data repository (located at the DOT or MPO).	High	ODOT, local agencies, RVCOG
Freight Management				
F02	Truck Signal Priority	OR 62 at I-5 exit 30 Hwy 99 (downtown Medford)	High	ODOT, local agencies
Public Transportation				
P01	Coordinate Transit Signal Priority on Key Corridors	Install Transit Signal Priority detection and transponders along select corridors and transit vehicles to provide an early green, queue jump, or extended green for transit vehicles to help reduce transit delay.	High	RVTD, Josephine Community Transit, ODOT, local agencies

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) is a policy tool as well as a general term used to describe any action that removes single-occupant vehicle trips from the roadway network during peak travel demand periods. As growth in the City of Medford occurs, the number of vehicle trips and travel demand in the area will also increase. The ability to change a user's travel behavior and provide alternative mode choices will help accommodate this potential growth in trips.

The following section provides more detail on programming and parking strategies that may be effective for managing transportation demand and increasing system efficiency in the City of Medford, especially within the next 10 to 20 years.

Programming solutions can provide effective and low cost options for reducing transportation demand. Some of the most effective programming strategies can be employer-implemented and are aimed at encouraging non-single-occupancy vehicle (SOV) commuting. Examples of these strategies are discussed below.

Alternative Work Schedules

Employer supported alternative work schedules can reduce peak-period commute travel and help accommodate ridesharing and transit use. Examples of alternative work schedules include flextime, compressed work week, and staggered shifts. Flextime means that employees are allowed some flexibility in their daily work schedules. Flextime can reduce peak-period congestion and make ridesharing and transit use more feasible. One study found that flextime can save an average of seven minutes per day in commute time while another study found that flextime and telework together can reduce peak hour vehicle commute trips by 20 to 50 percent. (Victoria Transportation Planning Institute – VTPI). Compressed work week means that employees work fewer but longer days, such as four 10-hours days, or nine 9-hour days in a two week period. Compressed work weeks can reduce vehicle travel as participants make fewer commute trips; however, some studies have found that the reductions are minimal, in part, because participants make other trips during non-work days (VTPI). Staggered shifts means that shifts are staggered to reduce the number of employees arriving and leaving a worksite at one time. Staggered shifts can reduce peak-period congestions around large employment centers.

Carpool Match Services

Carpooling can have a significant impact on peak-period vehicle travel and congestion. One study found that carpool programs can attract five to fifteen percent of commute trips if they offer only information and encouragement and ten to thirty percent if they also offer financial incentives such as parking cash out or vanpool subsidies (VTPI). Employers can play a role in encouraging carpooling by sharing information, providing preferential carpool parking, and allowing employees the flexibility in workday schedules.

Collaborative Marketing

Cities, employers, future transit service providers, and developers can collaborate on marketing to get the word out to residents about transportation options that provide an alternative to SOVs.

The TDM action plan includes:

- Support continued efforts by RVTD and ODOT to develop productive TDM measures that reduce commuter vehicle miles and peak hour trips.
- Encourage high speed communication development in all parts of the city (fiber optic, digital cable, DSL, etc). The objective would be to allow employers and residents the maximum opportunity to rely upon systems other than the transportation system for conducting business and activities during peak periods.
- Encourage developments that effectively mix land uses to reduce vehicle trip generation. These plans may include development linkages (particularly non-auto) that support greater use of alternative modes.
- Continue implementing motor vehicle parking ratios (minimum and maximum) for new development and consider reducing parking ratios.
- Continue implementing building orientation and transit planning requirements for new development.
- Continue implementing street connectivity requirements.
- Continue requiring new employment development to install bicycle racks and create requirements for existing buildings to install bicycle racks as part of tenant improvement requirements.
- Implement bicycle, pedestrian, motor vehicle and transit system improvements as presented in this TSP.

PARKING STRATEGIES

Limited and/or Flexible Parking Requirements

Cities set policies related to parking requirements for new development. In order to allow development that encourages multimodal transportation, cities can set parking maximums and low minimums and/or allow for shared parking between uses. Cities can also provide developers the option to pay in-lieu fees instead of constructing additional parking. This option provides additional flexibility to developers that can increase the likelihood of development, especially on smaller lots where surface parking would cover a high portion of the total property.

Cities can also set policies that require parking provision to the rear of buildings, allowing buildings in commercial zones to directly front the street. This urban form creates a more appealing environment for walking and window-shopping. In-lieu parking fees support this type of development for parcels that do not have rear- or side-access points.

Parking Management

Parking plays a large role in transportation demand management, and effective parking resource management can encourage use of non-single-occupancy vehicle modes. Cities can tailor policies to charge for public parking in certain areas and impose time limits on street parking in retail centers. Cities can also monitor public parking supply and utilization in order to inform future parking strategy.

Parking Management Plan

Parking, whether for vehicles or bicycles, is an essential element needed at the beginning and end of each trip. As the regional center for entertainment, shopping, and employment, the location and amount of adequate parking is an important factor in the City's continued growth and prosperity. It also is the City's responsibility to be a leader within the region to manage and implement sound parking principles that help to achieve the State's requirements to achieve a 10 percent reduction in the number of parking spaces per capita in the Metropolitan Planning Organization (MPO) area over the planning period. Careful consideration of the amount and type of parking reductions must be balanced with land use practices that help create vibrant community centers and neighborhoods and provide opportunities to increase travel by other modes.

The Medford Code contains the following key parking provisions:

- Minimum and maximum parking standards for vehicles;
- Bicycle parking standards;
- Parking exemptions for non-residential uses in the Downtown Parking District and the Southeast Overlay District Commercial Center;
- Provisions to reduce required parking spaces.

Parking Management Strategies

On-Street

- For the areas where on-street parking will be added or remain (Downtown or other Transit Oriented Districts), these spaces should be managed to assist in slowing traffic, facilitating pedestrian movement and efficiently supporting local businesses and residences consistent with the land use and mobility goals for each street.
- Consider use of residential parking permits to limit impacts of overflow parking from nearby employment centers, schools or other institutional uses where parking supply limits are implemented.
- Consider allowing use of available on-street parking to satisfy parking requirements for development. The availability of parking to meet this demand could be determined through a parking utilization analysis.
- Provide on-street carpool or vanpool parking spaces in preferential locations. These spaces should be given preference in location and allowable parking duration over general purpose on-street parking spaces.

Off-Street

- Review the minimum and maximum parking standards and determine if the standards can be reduced city-wide and especially in Downtown and other Transit Oriented Developments/Districts (TOD).
- Consider offering parking incentives for carpools or vanpools such as preferential parking, free parking or other incentives.
- Consider reducing or waiving required off-street parking spaces for new uses in existing buildings.

- Offer incentives, such as elimination or reduction of parking requirements or reduced System Development Charges, for the construction of mixed-use buildings/projects.
- Stipulate that adjacent uses share parking facilities in order to reduce the overall parking need. Reduce the amount of parking by 50 percent of the total required for each separate use and establish appropriate conditions for this reduction.

Access Management

Access management is a set of measures regulating vehicular access to streets, roads, and highways from public roads and private driveways. Access management is a policy tool which seeks to balance mobility, the need to provide efficient, safe, and timely travel with access to individual properties. Proper implementation of access management techniques should guarantee reduced congestion, reduced accident rates, less need for roadway widening, energy conservation, and reduced air pollution. Measures may include, but are not limited to, restrictions on the type and amount of access to roadways, and use of physical controls, such as signals and channelization including raised medians, to reduce impacts of approach road traffic on the main facility.

The City's access management policy maintains and enhances the integrity (capacity, safety, and Level-of-Service) of city streets. Numerous driveways or street intersections increase the number of conflicts and potential for collisions and decrease mobility and traffic flow. The City of Medford, as with every city, needs a balance of streets that provide access with streets that serve mobility. The following identifies access management techniques and strategies that help to preserve transportation system investments while promoting safety and limiting congestion.

The following access management strategies will allow the City of Medford to continue to improve local access and mobility:

- Continue enforcing City access spacing standards according to a roadway's jurisdiction and functional classification;
- Continue to require access consolidation over time to move in the direction of the standards at each opportunity.
- Continue to work with land use development applications to consolidate driveways where feasible.
- Identify potential transportation improvement projects that provide left turn lanes where warranted for access onto cross streets.
- Construct raised medians to provide for right-in/right-out driveways as appropriate.

Access Spacing Standards

ODOT and the City of Medford have separate access spacing standards. Access management standards for approaches to state highways vary based on the classification of the highway and highway designation, type of area, and posted speed. The current spacing standards for ODOT facilities are included in the **Oregon Highway Plan, Appendix C**.

City Standards

The City of Medford's access spacing standards are in the Medford Municipal Code Section 10.550.

Driveway Access Spacing Adjustments

Driveway access spacing adjustments may be provided to parcels whose highway/street frontage, topography, natural resources or physical barriers would otherwise preclude access that meets access spacing standards. Approval of an adjustment could impose conditions that: 1) the access may be closed at such time that reasonable access becomes available to a local public street and 2) the establishment of joint/cross access easements. The review authority may also require a given land owner to work in cooperation with adjacent land owners to provide either joint access points, front and rear cross-over easements, or a rear access upon future redevelopment.

The requirements for obtaining an adjustment from ODOT's minimum spacing standards are documented in OAR 734-051-3050. The requirements for obtaining an adjustment from the City's spacing standards are documented in Medford Municipal Code Section 10.550.

Access Consolidation through Management

From an operational perspective, access management measures limit the number of redundant access points along roadways. This enhances roadway capacity, improves safety, and benefits circulation. The City should complement access spacing enforcement with provision of alternative access points. Under state law each parcel must have access to public right-of-way, but such access may be via an easement on adjoining property. Parcels are not entitled to "direct" access to the public right-of-way.

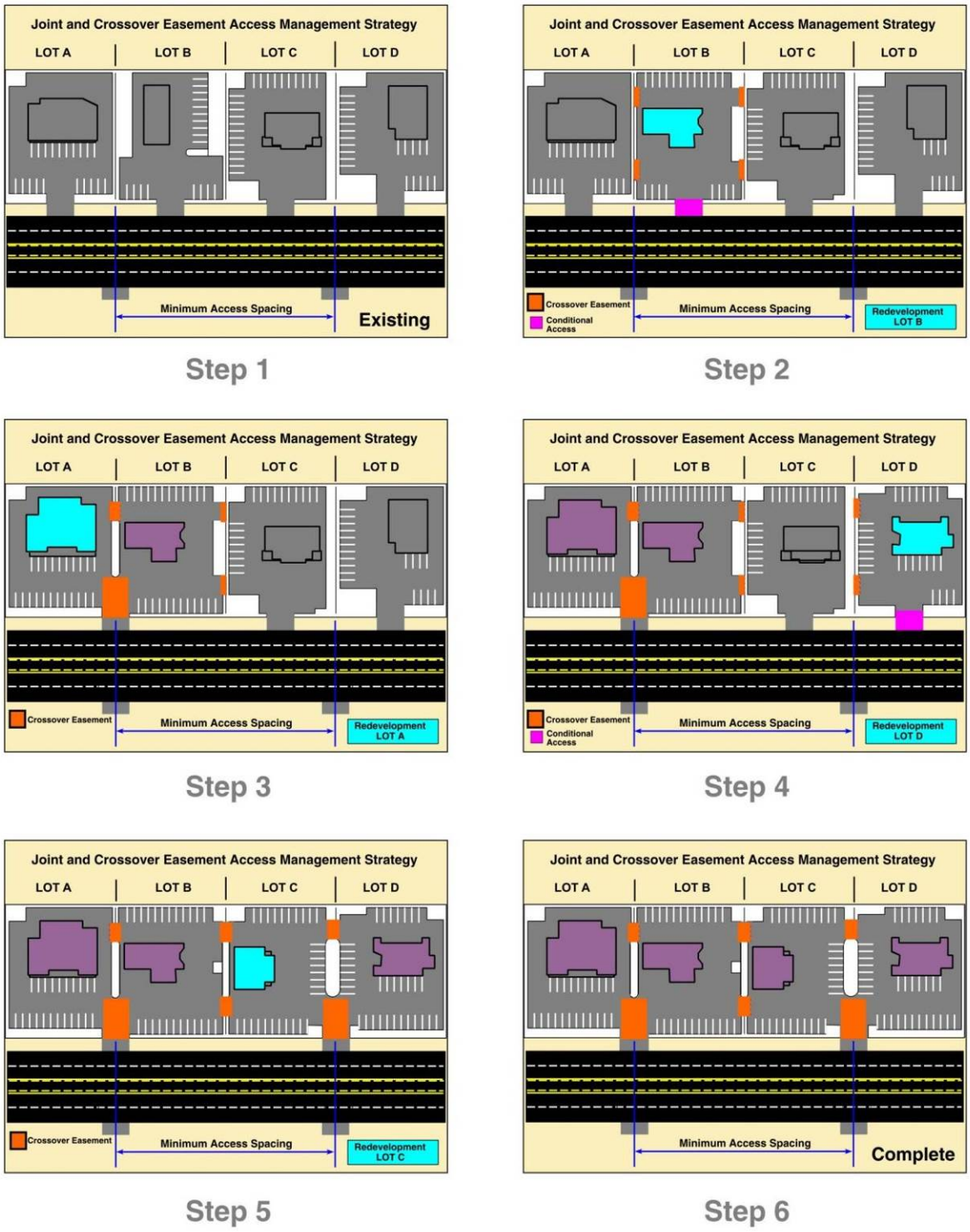
As part of every land use action, the City should evaluate the potential need for conditioning a given development proposal with the following items in order to maintain and/or improve traffic operations and safety along the arterial and collector roadways.

- Developments with frontage on two roadways should locate their driveways on the lower functional classified roadway.
- Access driveways should align with opposing driveways.
- The City may permit multiple driveways so long as they meet the driveway access spacing standards.
- If spacing standards cannot be met, the City should try to consolidate access points with neighboring properties.
- Where standards cannot be met and joint access is not feasible, the City should grant temporary conditional access by providing cross access easements on compatible parcels (considering topography, access, and land use) to facilitate future access between adjoining parcels.

Exhibit 18 illustrates the potential application of cross access easements and access consolidation over time to achieve access management objectives. As illustrated in the exhibit, by using these guidelines, all

driveways can eventually move in the overall direction of meeting driveway access spacing standards as development and redevelopment occur along a given street.

Exhibit 18 Application of an Example of Potential Driveway Consolidation



Traffic Signal Spacing

Traffic signals that are spaced too closely on a corridor can result in poor operating conditions and safety issues due to the lack of adequate storage for vehicle queuing. The City's traffic signal spacing standard is 1,320 feet per Medford Municipal Code 10.463. Traffic signals should only be implemented when warranted to enhance safety and promote mobility. ODOT identifies half mile as the desirable spacing of signalized intersections on regional and statewide highways but recognizes that shorter signal spacing may be appropriate due to a number of factors including existing road layout and land use patterns[6]. Signal spacing below ODOT or City standards should be studied in detail to consider traffic signal coordination and the impacts of vehicle flow, queuing, and safety within the area. At that time adjacent signals and the spacing between them can be evaluated.

Street Connectivity

Many of the residential neighborhoods in Medford are served by a network of cul-de-sacs and dead end streets. These streets can be desirable to residents because they can limit traffic speeds and volumes on local streets, but cul-de-sacs and dead end streets result in longer trip distances, increased reliance on arterials for local trips, and limited options for people to walk and bike to the places they want to go. By providing connectivity between neighborhoods, out-of-direction travel and vehicle miles traveled (VMT) will be reduced, congestion will be improved on roads such as N Phoenix Rd, E Barnett Rd, Crater Lake Ave, Table Rock Rd. Additionally, improved connectivity will reduce public safety-response time.

The City's standards for street connectivity and maximum block length are identified in Medford Municipal Code 10.426 and they help ensure that future development results in well-connected streets. Incremental improvements to the street system are planned to provide route choices for motorists, bicyclists and pedestrians while accounting for potential neighborhood impacts. The quality of the transportation system is enhanced by making connectivity improvements to the pedestrian and bicycle system separate from street connectivity.

Figure 23 and Table 23 identify locations and conceptual alignments of potential future local street connections. These do not represent all future local streets but identify locations where there is a lack of connectivity in an existing network that needs to be addressed by the City or through future development. In limited cases, a short length of new road would be necessary for improved connectivity. In most cases, potential local street and neighborhood route connections represent streets to be constructed by future development and extension of existing stub end streets. Pedestrian connections from any cul-de-sac should be considered as future development and redevelopment occurs. The goal is to continue to improve connectivity for all modes of transportation. In each case, the specific alignments may be modified dependent upon future development review.

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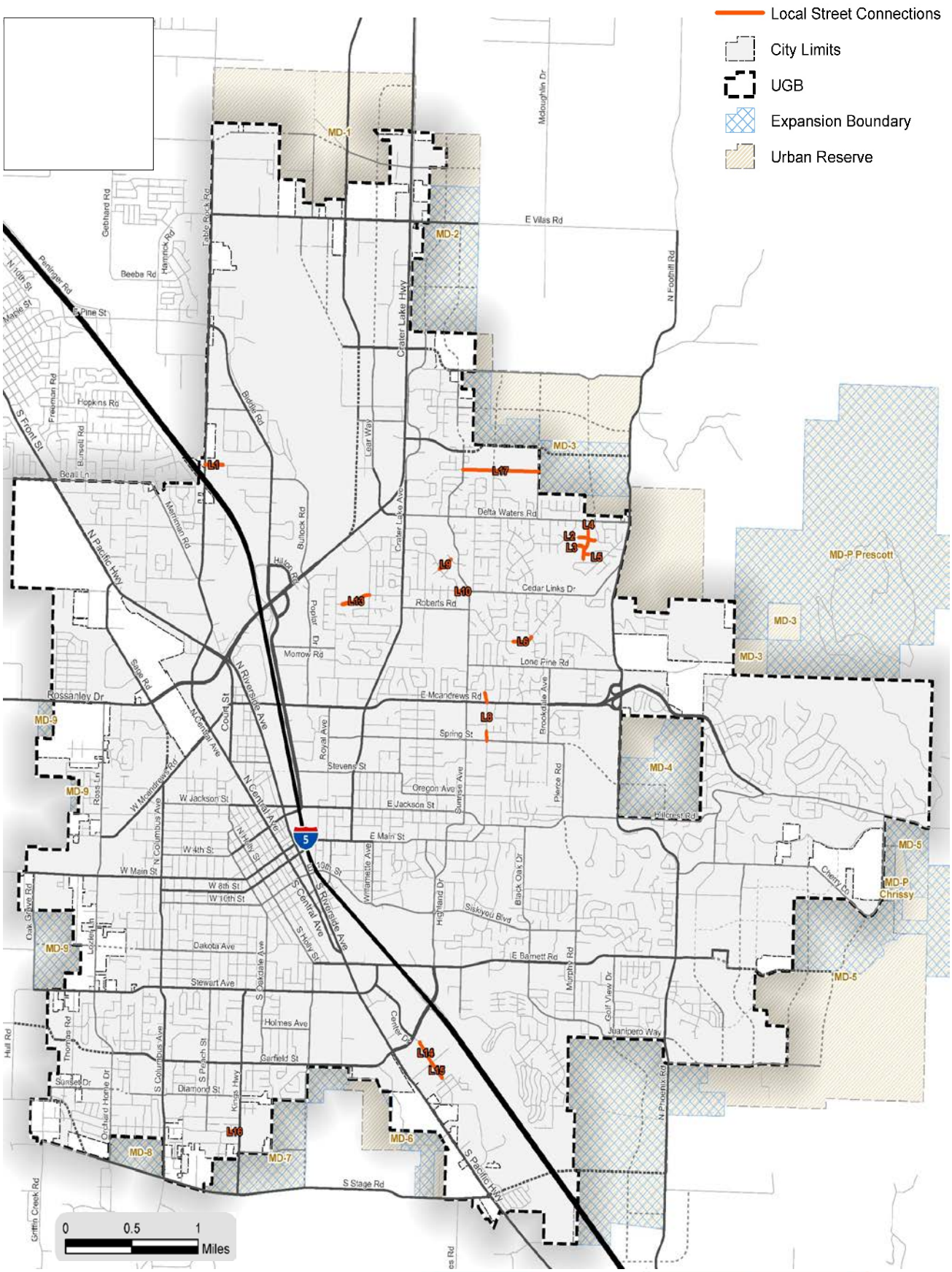
[6] MUTCD signal warrants must be met based on ODOT methodology and OAR 734-020-460 (1) A traffic signal shall not be installed unless one or more of the warrants identified in the MUTCD are met or will be met consistent with the requirements of OAR 734-020-0490. The satisfaction of a warrant or warrants, however, is not in itself justification for a traffic signal. Installation of a signal must be approved by the State Traffic Engineer on a regional or state highway.

Table 23 Street Connections

Project Number	Name	Type
L1	Gilman Road Extension to Table Rock	Local Street
L2	Viewpoint Dr Extension to Tiffany Street Extension	Local Street
L3	Bryson Way Extenstion to Tiffany Street Extension	Local Street
L4	Tiffany Street Extension to Augustine Drive	Local Street
L5	Wheatridge Extension to Tiffany Street Extension	Local Street
L6	Wilkshire Rd to Roberts Dr Connection	Local Street
L7	Murphy Rd extension from Country Club Drive to Hillcrest Rd.	Local Street
L8	Valley View Drive extensions to McAndrews Road and to Spring Street	Local Street
L9	Bell Court connection to Temple Drive at Montelimar Drive	Local Street
L10	Cedar Links Dr extension to Perri Pl through residential	Local Street
L13	Grandview Avenue extension to Steelhead Run	Local Street
L14	Center Drive extension to Charlotte Ann Road	Local Street
L15	Highgate Street extension to Charlotte Ann Road	Local Street
L16	Archer Drive extension to Kings Highway	Local Street
L17	Ford Drive, Springbrook Road to eastern UGB	Local Street

Figure 23 Street Connectivity



MODAL GOALS AND STANDARDS

The plan strives to develop a transportation system that accommodates all modes of travel for its users. By developing streets that serve different modes, travelers are able to choose the best form of travel to their intended destination whether it is on foot, by bicycle, transit, or use of a vehicle. The City has identified and operated under the Level-of-Service (LOS) "D" standard.

This LOS "D" mobility standard will continue into the future with two exceptions. Due to cost and community impacts, the following intersections will have a mobility standard of Level-of-Service "E":

- South Pacific Highway & Stewart Avenue
- Highland Drive and Barnett Road

The priority projects selected within the plan help to maintain these Level-of-Service mobility standards and expand the opportunities to create a multi-modal system within identified neighborhoods.

WATER

Medford does not have significant water based transportation systems or facilities, therefore no City plans or projects have been identified for the water system within the City of Medford.

AIR TRANSPORTATION PLAN

The Airport Master Plan, updated 2013, focuses on the development of the aviation facility and surroundings to accommodate future demands. The Airport Master Plan forecasts an annual growth rate of 2.4% in passenger enplanements-per-capita. Improvements off-site of the airport from the Airport Master Plan are described below along with how the TSP addresses them.

Table 24 Airport Master Plan Off-Site Improvements

Airport Master Plan Imrovement Need	TSP Project
Improve existing and likely future traffic operations at the intersection of Highway 62 with Poplar Drive by adding additional vehicle turning lanes.	Further consideration of potential modifications of the Highway 62/Poplar Drive intersection will be considered as part of the I-5/OR-62 IAMP and are envisioned as part of the OR 62 By-pass Phase 2 project. (Projects OR62-3 and OR62-4).
Improve the intersection of Highway 62 with Delta Waters Road and West Vilas Road.	Operational issues at these locations will be mitigated by the OR 62 Bypass. Further review of these intersections will be considered as part of the OR 62 Refinement Plan (Project OR62-5).
Address long-term improvement needs at the existing at-grade intersection of Highways 99, 62, and 238 which could include future grade-separation.	This intersection is projected to operate at a Level-of-Service "E" but over capacity. This intersection needs to be studied as part of the Exit 30 IAMP and may need alternative mobility target (Project I-80).
Support and encourage provision of public transportation services to the airport to meet the travel needs of passengers, employees, and other airport visitors.	Medford will partner with RVTD in identifying future transit routes and services, and prioritizing service enhancements during RVTD's Transit Master Plan update occurring in 2018-19.

PIPELINE

The private utilities providing natural gas and electricity to the City identified no long-term needs with their transmission systems. No other City plans or projects have been identified for the pipeline system within Medford.

SECTION 6 /// KEY CODE & POLICY AMENDMENTS

Key code and policy amendments changes required to implement the *TSP*

Key Code and Policy Amendments

Chapter 6: Key code and policy amendments changes required to implement the *TSP*.

- Update the LOS standards
- Establish a roundabout analysis policy in the Public Works Department
- Modify the Municipal Code related to pro-rata share requirements for traffic signals and roundabouts
- Provide an exemption from trip generation calculations for residences built over commercial
- Modify the submittal requirements for Traffic Impact Analyses (TIA) to include a specific safety analysis and mitigation requirement for vehicles as well as pedestrian, bicycle, and transit modes
- Provide an allowance for alternative mitigation measures; circumstances under which they can be used will be defined during implementation

Amend the City's concurrency and transportation facility adequacy requirements by adopting local procedures that apply the Oregon Transportation Planning Rule as the determinant of facility adequacy.

- Modify the code to address building orientation and transit planning requirements for new development, including defining major transit stops into code language
- Implement changes related to the TDM action plan under Parking Strategies section
- Evaluate the number of permitted driveways, driveway consolidation standards, and cross access easement requirements
- Update the cross access requirements for private development in the land development code and insert the Potential Driveway Consolidation diagram into the Land Development Code
- Create requirements for existing buildings to install bicycle racks and remove unutilized driveway approaches as part of tenant improvements
- Codify changes related to legacy street standards as outlined in the Legacy Streets section
- Provide the Planning Commission with the flexibility to modify the planter strip and right-of-way widths based on surrounding context and improvements
- Codify the evaluation criteria related to streets with missing bicycle lanes
- Work with ODOT to create alternate mobility targets for State facilities within City limits
- Research and then create standards that require conduit along arterial and selected collector roadways during roadway improvement projects where overhead electrical transmission is not available.
- Identify and enact additional funding for priority Tier 2 projects

Code Changes Related to the Transportation Planning Rule

- Land Use Approvals for Transportation Projects (0045 (1))
- Protecting Future Operations (0045 (2)(b))
- Off-site improvements (0045 (3)(c))
- Transit Oriented Development (0045 (4)(g) and (5)(b))
- Demand Management Program (0045 (5)(b))
- Review of parking standards (carpool preference, minimum/maximum standards, on-street allowance, shared parking, cross access easements) (0045 (5)(c))

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