Technical Memorandum

Date:	Friday, September 25, 2020
Project:	US 97 North Bend Interchange
To:	Rick Williams, ODOT
From:	Andrew Johnson, HDR
Subject:	**Memo #1: Study Definition, Goals and Objectives**

1.0 Purpose and Introduction

This memo will define the project context and study area and outline the project purpose, goals and objectives for the US 97 North Interchange Study. The purpose of the US 97 North Interchange Study is to develop a project concept that enhances safety and operations on US 97 and the local street network while improving connectivity and access to residential and commercial uses along US 97. The US 97 North Interchange Study is a partnership between the Oregon Department of Transportation (ODOT), the City of Bend, Deschutes County and the Bend Metropolitan Planning Organization.

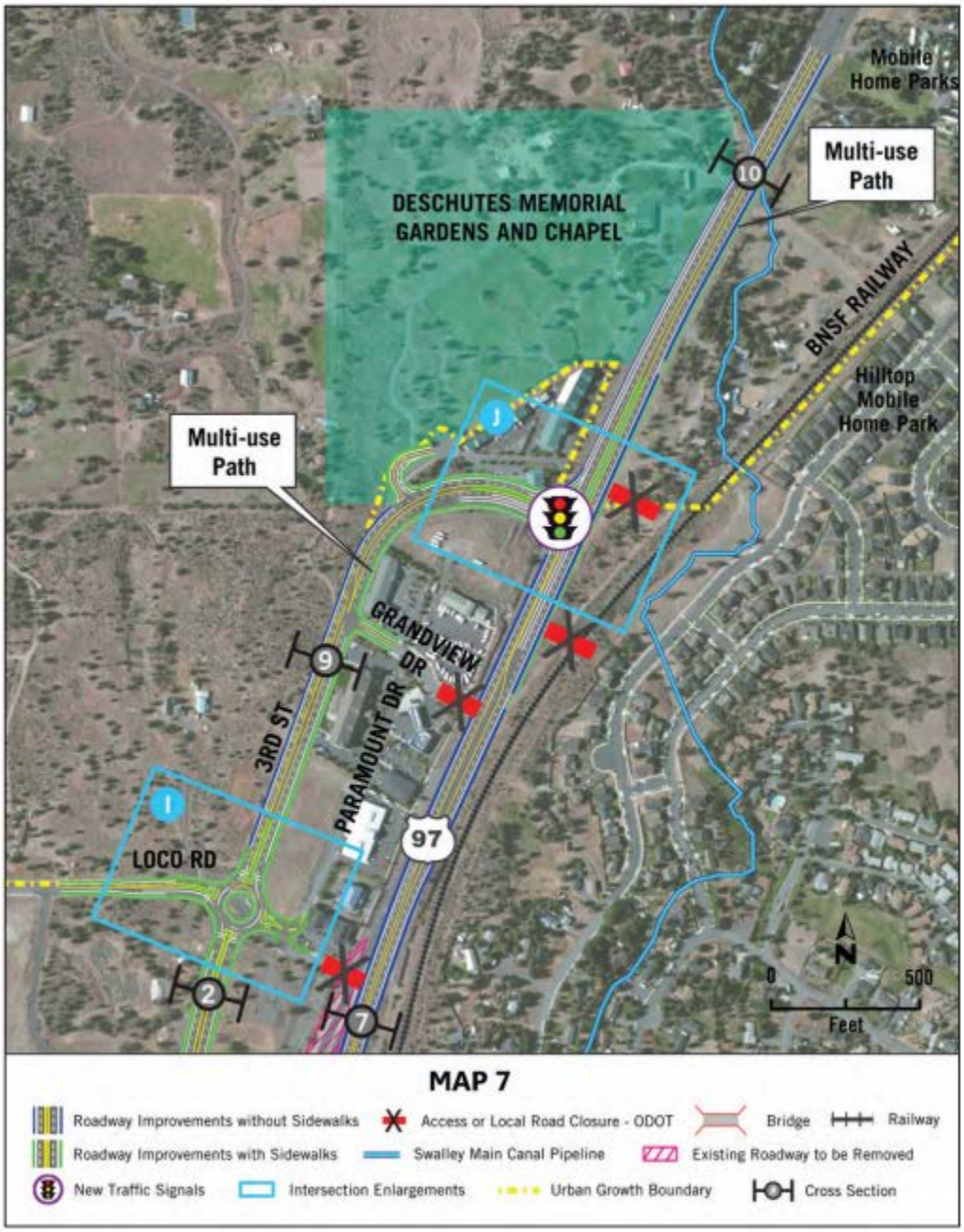
1.1 Project Context

US 97 is the primary north-south highway running through the state and Central Oregon. US 97 serves as the main thoroughfare in the City of Bend, providing access to commercial, residential and community properties. Currently, US 97 has two lanes in each direction with a center median. The section of US 97 in the study area has a posted speed limit of between 40 miles per hour (mph) on the south end and 55 mph on the north end. US 97 is classified as a Statewide Highway and Freight Route in the Oregon Highway Plan. US 97 is considered an Expressway and Reduction Review Route designations for US 97, which will be taken into account when making design and management decisions.

Deschutes County and the City of Bend have experienced continued population growth resulting in additional demands on the transportation infrastructure. Deschutes County is one of the fastest growing counties in the state and the population has grown by 25 percent in the last 10 years. Substantial additional growth is anticipated in the northern edge of Bend within current urban reserves and planned developments north of Cooley Road both east and west of US 97.

The North Corridor Final Environmental Impact Study (FEIS) was completed in 2014 and identified long-term solutions to maintain a safe and efficient corridor along US 97 in northern Bend. The preferred alternative includes a new alignment of US 97 to the east of the existing US 97 alignment and converting existing US 97 into an extension of the current 3rd Street. This alternative would improve safety at the Cooley Road intersection and provide more throughput traffic on the corridor as is displayed in Figure 1. The preferred alternative from the FEIS will reroute US 97 from Empire Avenue to north of Grandview Drive leading to a traffic signal on US 97 at Grandview.

Figure 1. Preferred Alternative US 97 North Corridor FEIS Project



Note: The design shown in this exhibit is conceptual in nature. Further refinements may be made during the final design process. Where roadway improvements shown in this exhibit end, the improvements will transition to the existing roadway cross section.

Note: https://www.bendoregon.gov/home/showdocument?id=39795 page ES-25

1.1.1 Policy Review

Appendix A summarizes the plans, policies, targets, and standards that are applicable to the US 97 Bend North Interchange Study. There are a number of state, regional, and local planning documents that contain policies and regulations relevant to developing a plan for transportation

improvements in the project study area. Relevant policies, projects, and design elements will be considered in the development of the preferred concept and, where appropriate, identify where adopted plans may need to be amended to reflect study recommendations to ensure consistencies between plans.

Appendix A provides a list of the planning documents and policies that were reviewed and indicates how each is relevant to planning for transportation improvements and the US 97 Bend North Interchange Study, using three general categories:

- *Policies*: Indicates that the document contains policies which will need to be reflected and inform the Study.
- *Design standards*: Indicates that the document includes design standards for transportation facilities (e.g. street cross sections and classifications).
- *Project list*: documentation of a list of specific planned projects which may be located in the Vicinity Area or Study and should be incorporated or considered in the future no-build scenario and development of the interchange study.

1.2 Project Study Area

The project study area is approximately 1.5 miles in length along US 97 from north of Fort Thompson Lane to south of Grandview Drive. It runs approximately 200 feet east of the railroad and west of Harris Way as shown in Figure 2. The future interchange must connect US 97 to the planned extension of 18th Street and will serve Juniper Ridge and areas on the northeast side of US 97 as well as a future extension of 3rd Street on the west side.

Figure 2 displays the larger project vicinity area that may be affected by the proposed interchange. The project vicinity area captures study area intersections, transportation facilities and land uses to be considered when evaluating alternatives.

Figure 2. Project Study and Vicinity Area

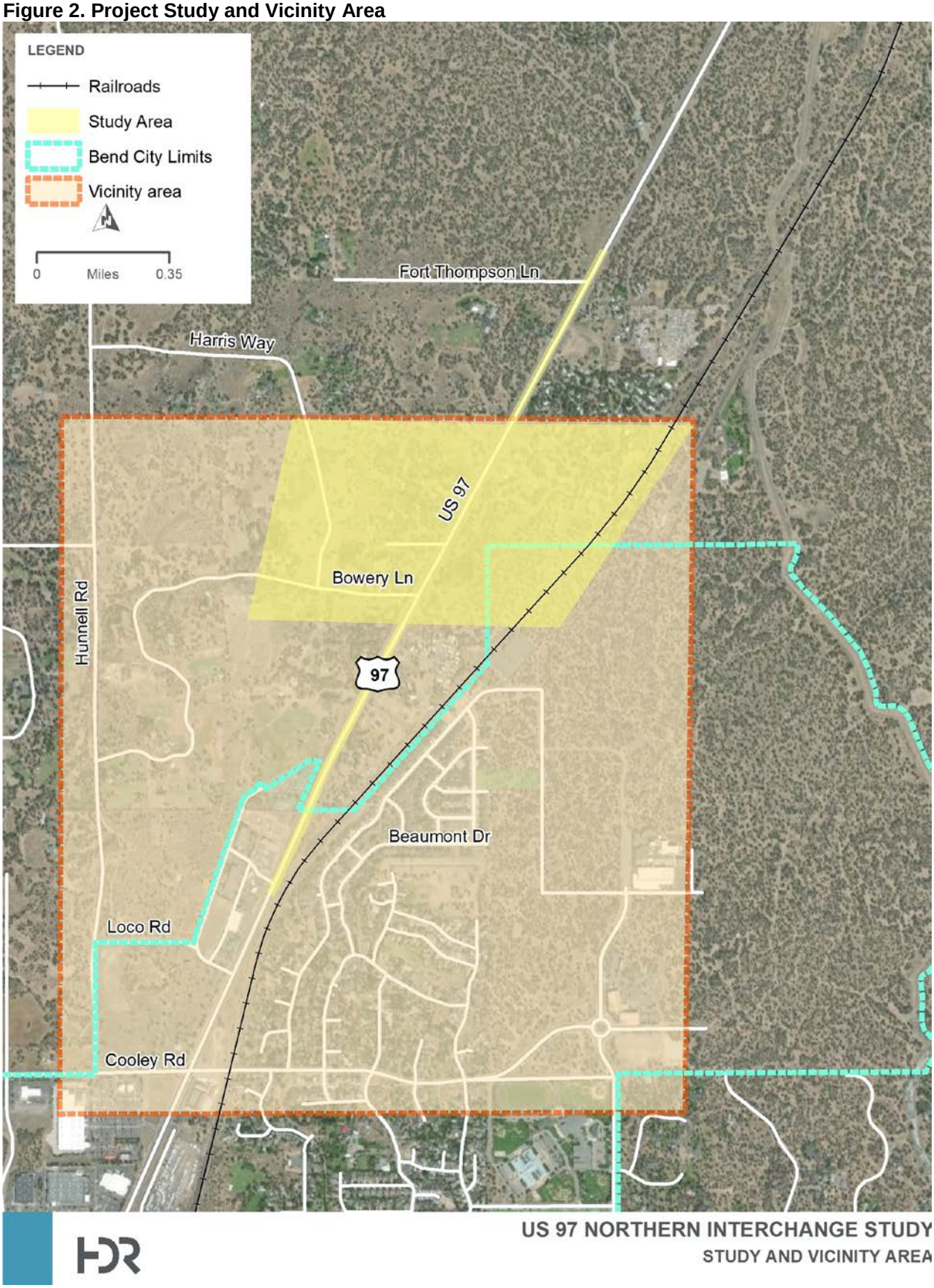
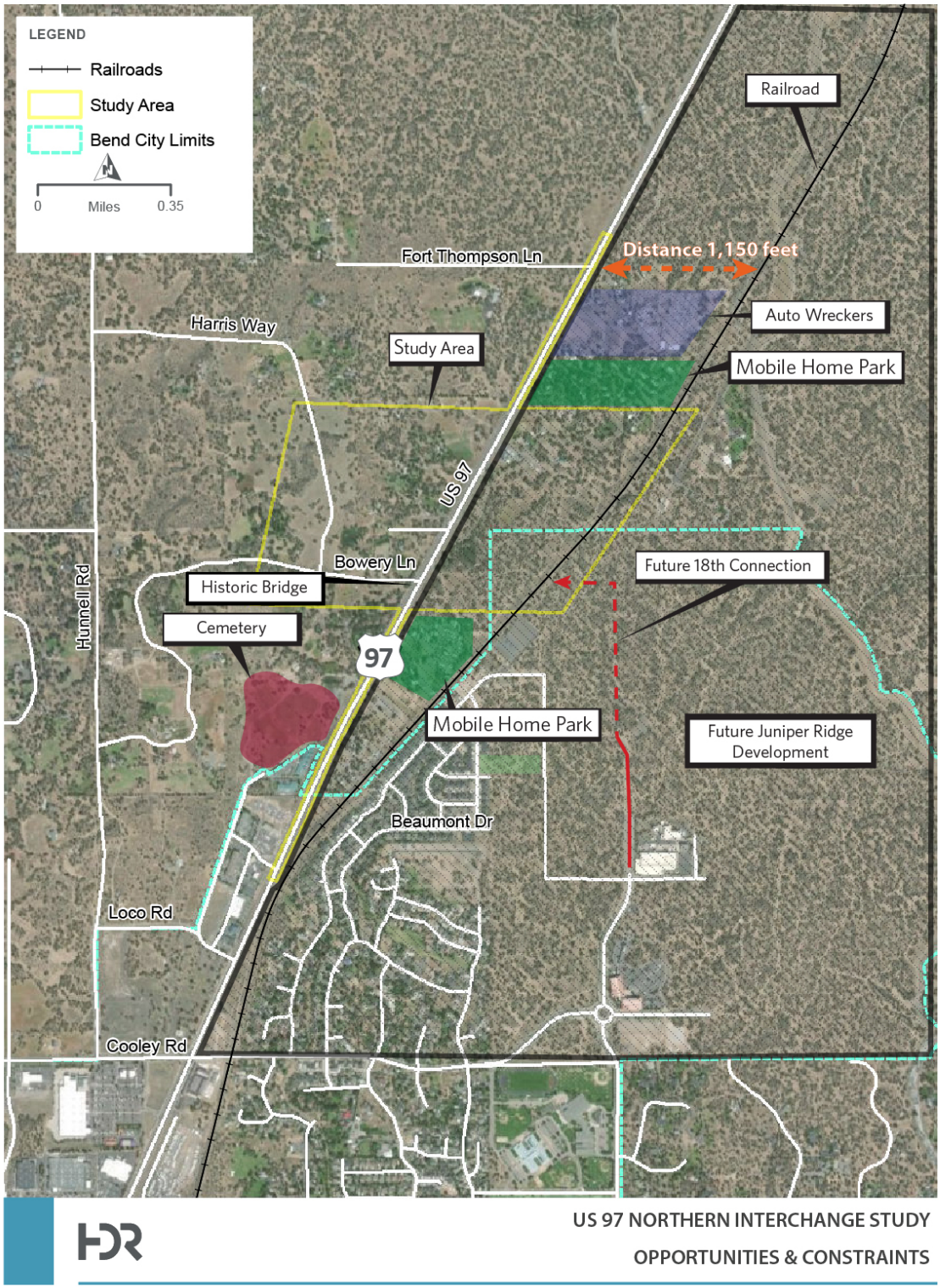


Figure 3 displays the opportunities and constraints in the study area. These constraints and opportunities will be considered in the evaluation of future interchange concepts. The map illustrates the most conducive general location to a future connection to US 97 in order to avoid potential impacts, streamline the future environmental process and maximize overall benefit to the transportation system and surrounding land uses. Concepts will be developed inside the yellow study area shown in Figure 3.

Figure 3. Opportunities and Constraints Map



2.0 Goals and Objectives

Table 1 below summarizes the study goals and is organized into four categories:

- Develop an interchange design that meets the long term growth needs for residences and businesses near the northern boundary of Bend.
- Develop an interchange connection based on the established corridor vision with significant public and stakeholder involvement and support.
- Develop an interchange design that improves safety for all modes on US 97 and local streets.
- Develop an interchange design that improves local access to businesses and residences.

Table 1 also introduces objectives to support and implement the US 97 Bend North Interchange Study purpose. The project Goals, Objectives and Evaluation Criteria will be used to develop, screen, evaluate and refine project concepts as defined below.

Table 1. Goal and Objectives for the US 97 Bend North Interchange Study

Project Goals	Objectives
Develop an interchange concept that meets the long-term need for surrounding land uses.	Consider long term growth needs of Juniper Ridge to the east of US 97 north of Cooley Road.
	Address long term growth needs the area west of US 97 north of Cooley Road.
	Preserve and provide adequate business access and vitality by improving conditions for existing businesses or by maximizing values for property owners.
	Improve livability for adjacent neighborhoods.
	Accommodate future development or redevelopment.
	Consider the visual sequence of project elements as an entry/exit node to the City of Bend.
Develop an interchange connection based on the established shared corridor vision with significant public and stakeholder involvement in order to utilize public funds effectively and efficiently.	Avoid and minimize impacts to resources in the project study area to streamline environmental process.
	Involve stakeholders and public in a meaningful manner in the decision making process throughout the project.
	Develop a prioritized implementation strategy/action plan.
	Create a US 97 corridor that aligns with the extension of the parkway vision.
	Ensure public funds are invested efficiently and effectively.

Project Goals	Objectives
Develop an interchange design that improves safety by reducing fatalities and serious injuries and provides for all modes.	Improve safety for drivers, bicyclists and pedestrians.
	Evaluate safety through analysis of crash data and identification of risk factors.
	Maintain or enhance efficient travel for regional traffic along US 97.
	Maintain or enhance efficient travel for local trips.
	Improve the comfort of or add facilities for people walking or bicycling along the corridor and crossing the corridor, including the multi-use path along US 97.
	Accommodate transit operations in facility designs.
Develop an interchange design that improves local access and east-west connectivity for all modes of travel.	Add or enhance opportunities to cross US 97 for all modes of travel specifically, bicyclist and pedestrians
	Improve connectivity between the US 97 corridor and the business district between US 97 and US 20 at the northern end of Bend.
	Provide adequate access to businesses along the US 97 corridor for both customers and freight/delivery.
	Reduce the number of local trips on US 97.
	Design to accommodate freight movement
	Minimize out-of-direction travel.
Develop a project that supports ODOT's value of equity.	Providing an equitable process to serve all.

3.0 Evaluation Framework

Our evaluation framework is fundamentally the application of goals, objectives and evaluation criteria in two stages. The first stage is concept development and screening, the second stage is concept evaluation and refinement. The purpose of the first stage of evaluation is to develop design concepts that achieve the project goals and objectives and screen out the least performing concepts. For the first stage of evaluation, each concept will be compared against the no-build scenario using the goals and objectives noted above. The second stage of evaluation will feature more detailed analysis using evaluation criteria and weighted scoring, followed by concept refinement to maximize the performance of the remaining concepts.

This two-step process will allow a consistent evaluation and a focused design effort. The end result will be a preferred alternative that responds to the goals, objectives and evaluation criteria developed and applied by the Technical Advisory Committee, Stakeholder Advisory Committee and public interests in the fall of 2020. The manner in which the preferred alternative responds

to evaluation criteria will be documented in the evaluation scoring matrix to help build a defensible, robust record for why project decisions were made to help inform future design efforts during final design.

Appendix A. Plans and Policy Review

MEMORANDUM

Plans and Policy Review (Task 3.2)

US 97 North Interchange Study

DATE June 29, 2020

TO Camille Alexander and Andrew Johnson, HDR

FROM Darci Rudzinski and Emma Porricolo, APG

CC US 97 North Interchange Study Project Team

This memorandum summarizes the plans, policies, targets, and standards that are applicable to the US 97 North Interchange Study. There are a number of state, regional, and local planning documents that contain policies and regulations relevant to developing a plan for transportation improvements in the vicinity of Bowery Lane and US 97, specifically one exploring a grade-separated interchange at this intersection. Relevant policies, projects, and design elements will need to be considered in the development of the US 97 North Interchange Study and, where appropriate, the Study will identify where adopted plans should be amended to reflect US 97 North Interchange Study recommendations to ensure consistencies between plans.

Table 1 provides a list of the planning documents and policies that were reviewed and indicates how each is relevant to planning for transportation improvements and the US 97 North Interchange Study, using three general categories:

- *Policies*: Indicates that the document contains policies which will need to be reflected and inform the Study.
- *Design standards*: Indicates that the document includes design standards for transportation facilities (e.g. street cross sections).
- *Project list*: Indicates that the document includes a list of specific planned projects which may be located in the Vicinity Area or Study Area (defined in Technical Memorandum #1 Studies Definitions and Background) and should be incorporated or considered in the development of the Study.

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Table 1. Plans and Policy Review

Document	Purpose and Summary	Policies	Design Standards	Project List	Action Items
Oregon Statewide Planning Goals	The Statewide Planning Goals set a framework for planning in Oregon. Each goal has policies and guidelines related to their objective. The goals most relevant to the US 97 North Interchange Study are: 1. Goal 1 – Citizen Involvement 2. Goal 2 – Land Use Planning 3. Goal 9 – Economic Development 4. Goal 11 – Public Facilities Planning 5. Goal 12 – Transportation 6. Goal 14 – Urbanization	✓			- **Goal 1.** Public involvement activities for the US 97 North Interchange Study will be guided by and assessed according to Goal 1. - **Goal 2**. Existing and future land use needs will influence recommended transportation improvements; plan recommendations will be coordinated and considered for their effect on future use and operations in the Study Area according to Goal 2. - **Goal 9**. The US 97 North Interchange Study will demonstrate the ways in which the preferred alternative selected for future improvements to the interchange supports this goal and the economic development policies adopted in the jurisdictions' comprehensive plans. - **Goal 11**. Consideration of standards for existing and future public facilities will be included in the development of the US 97 North Interchange Study. - **Goal 12**. State transportation policy will guide the US 97 North Interchange Study objectives, design, and development. Goal 12 policies are implemented by the Transportation Planning Rule (OAR 660-012). - **Goal 14**. The Study Area encompasses land in both the City of Bend and Deschutes County. The project will consider growth expectations, including those for the Urban Reserve Area, and related agreements between the two jurisdictions.

Document	Purpose and Summary	Policies	Design Standards	Project List	Action Items
Oregon Transportation Plan (2006)	The Oregon Transportation Plan (OTP) is a comprehensive plan that addresses the future transportation needs of the State of Oregon through the year 2030. The primary function of the OTP is to establish goals, policies, strategies, and initiatives that guide the development of the State's transportation modal plans, such as the Oregon Highway Plan and Oregon Bike and Pedestrian Plan. The OTP emphasizes several key initiatives for implementation, which are: • Maintaining and maximizing the assets in place; • Optimizing the performance of the existing system through technology; • Integrating transportation, land use, economic development and the environment; • Integrating the transportation system across jurisdictions, ownerships and modes; • Creating sustainable funding; and • Investing in strategic capacity enhancements.	✓			These documents that identify facility needs, an overall plan for improving the system, and policies for operating the facility - that help implement the OTP. The OTP sets policy that directs the State to maximize performance of the existing transportation system-- for example, through the use of technology and system management--before considering larger and costlier additions to the system. Pursuant to the OTP, this Study will need to implement the OTP and the applicable modal/topic plan goals, policies, implementation and broad investment scenarios. Its development must provide opportunities for public review in accordance with the State Agency Coordination Program and federal requirements
Oregon Highway Plan	The Oregon Highway Plan (OHP) is a modal plan of the OTP that guides ODOT's Highway Division in planning, operations, and financing. Several key policies which will inform the IAMP are: - *Policy 1A: State Highway Classification System*. Classifies state highways into four levels of importance. - *Policy 1B: Land Use and Transportation*. Describes how ODOT will work with local governments and others to link land use and transportation in transportation plans.	✓	✓		US 97 is currently classified as a highway of statewide significance; it is designated as an expressway and as a freight route on the National Highway System. Appendix C of the OHP lists spacing standards for freeways, state highways, and interchanges, which regulates US 97. It is expected that the Study will comply with safety, access, and mobility targets found in the OHP; findings of compliance will support Oregon

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	- *Policy 1C: State Highway Freight System*. Describes the State Highway Freight System to design an efficient and reliable system for freight. It also designates "Reduction Review Routes". - *Policy 1F: Highway Mobility Policy.* Sets mobility targets for the state highway system. - *Policy 1G: Major Improvements.* Establishes policies for maintaining performance and improving safety on the highway system. This first policy is to maintain existing functionality of the highway system. It includes policies that apply to all new bypasses. - *Policy 2B: Off-System Improvements.* The policy recognizes that the state may provide financial assistance to local jurisdiction if the improvements provide a cost-effective means of improving operations of the state highway system. - *Policy 3A: Classification and Spacing Standards*. Designates spacing standards for state highways, found in Appendix C of the OHP. - *Policy 3C: Interchange Access Management Areas.* Addresses management of grade-separated interchange areas to ensure safe and efficient operation between connecting roadways.				Transportation Commission adoption of the Study as an amendment to the OHP. If adopted, it will be one of the many special facility plans that have amended the OHP over the years. -
Transportation Planning Rule (OAR 660-012)	The Transportation Planning Rule (TPR) implements Statewide Planning Goal 12. The TPR provides the connection between local development codes and access management, coordinated land use review procedures, and other standards, allowances, and	✓			Preferred Study improvements may entail local policy and code amendments to ensure consistency with Study recommendations; code amendments must comply with TPR Section -0045. Improvements included in an adopted Study are

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	requirements to protect road operations and safety. Key sections are: - Section -0045 – Describes the requirements for local governments to amend land use regulations to implement in their Transportation System Plans (TSP) to ensure consistency with applicable federal and state requirements. - Section -0060 – Describes what may be relied upon as a planned improvement, for purposes of determining whether an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation significantly effects an existing or planned transportation facility. - Section -0065 – Describes transportation improvements, facilities, and services permitted on rural lands. Replacement of an intersection with an interchange is permitted, as is realignment of existing roads and new access roads and collectors within a built or committed exception area, or in other areas where the function of the road is to reduce local access to, or local traffic on, a state highway. - -0070 – Describes the process and requirements for transportation facilities and improvements on rural lands that do not meet -0065 requirements, therefore requiring a goal exception.				considered planned improvements for purposes of complying with Section -0060. A new interchange that replaces an existing intersection is permitted within the Study Area, including related improvements on rural lands. Any new access roads or collectors that are proposed outside of the UGB must be limited to two travel lanes to be consistent with the TPR. A Goal 12 Goal Exception is not expected to be necessary for improvements within the Study Area.
Access Management Rule (OAR 734-051)	Oregon Administrative Rule (OAR) 734-051 defines the State's role in managing access to highway facilities in order to maintain functional use and safety and to preserve public investment. The rule includes spacing standards for varying types of state roadways and criteria for granting right of access and	✓	✓		The Study must comply with Division 51 spacing standards (see OHP Appendix C, Table 12 Interchange Spacing; Table 14 Access Management Spacing Standards for Statewide Highways with Annual Average Daily Traffic (AADT) of More Than 5,000 Vehicles). It must also comply with the

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	approach locations onto state highway facilities. The Rule attempts to balance the safety and mobility needs of travelers along state highways with the access needs of property and business owners. Key sections of the Access Management Rule for the US 97 Study are: - OAR 734-051-4020 (Standards and Criteria for Approval of Private Approaches) - OAR 734-051-7010 (Access Management in Highway Facility Plans) - OAR 734-051-5120 (Access Management in Project Delivery)				applicable criteria for facility plans and the project delivery rule, which includes the acknowledgement of property impacts in the evaluation of preferred alternatives.
Highway Design Manual	The Highway Design Manual (HDM) includes ODOT standards and procedures for the location and design of new construction, major reconstruction, and resurfacing, restoration or rehabilitation (3R) projects. The HDM is used for all projects that are located on state highways, and establishes ODOT standards and procedures for the location and design of new construction, major reconstruction, and resurfacing/restoration/rehabilitation projects. The manual is used for all projects that are located on state highways. Design standards for state highways are dependent on the highway's functional classification and the project type. Chapter 9 of the HDM addresses interchange design, including design standards, guidelines, and process for designing interchanges for State Highways. ODOT, through the Engineering Services Unit, and FHWA must approve the reconstruction of an interchange on the Interstate system.	✓	✓		The Study alternatives will be developed to be consistent with the applicable HDM Standards for interchanges. Any proposed bicycle or pedestrian improvements associated with the preferred alternatives will also need to be consistent with the HDM. Note that HDM mobility thresholds are generally more restrictive than the OHP mobility targets to ensure a useful design life for the improvement being made; however, there is a design exception process that allows variation from the HDM when appropriate.

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Guidelines for Addressing Title VI and Environmental Justice in Transportation Planning	Title VI Guidance for Transportation Planning was released by the ODOT in July 2009. It provides direction to local governments, MPOs, and ODOT staff in annual reporting to the FHWA and Federal Transit Administration (FTA) regarding the compliance of planning, design, and construction activities with Title VI. The guide provides direction for planning activities in particular, with an emphasis on activities related to identifying Title VI populations in planning study areas, developing and conducting targeted outreach to these populations, and documenting activities and findings.	✓			The Study will evaluate and address Title VI and Environmental Justice populations to ensure the planning project complies with related Title VI federal requirements and minimize unjust impacts on marginalized communities. As part of documenting existing conditions in the Study Area, the Study planning process will use recent United States Census data to identify and map Title 6 and Environmental Justice populations, including minority populations, elderly, low-income, and other protected groups. This information will inform transportation alternatives evaluation from the perspective of benefits and impacts to protected populations.
Deschutes County Transportation System Plan (2012)	The TSP provides a roadmap to meet the needs of air, automobile bicycle, freight, pedestrian rail, transit and other modes of transportation in the County. The TSP includes policies, standards, and projects for the County transportation system. County roads in the Study Area that are located outside city limits include Bowery Lane and Harris Way, both classified as rural local roads. Hunnell Road, located in the Vicinity Area, is under County ownership north of Loco Rd, and is classified as a rural collector. Chapter 5.3 discusses planned improvements and policies related to function classifications, proposed road network, performance standards, and more. Chapter 5.5 has bike and pedestrian requirements and route selections. Chapter 6 discusses the transportation finance plan.	✓	✓	✓	The policies, standards, and projects in the TSP will be considered in the development of the Study. Before OTC adoption as an amendment to the OHP, an Study will need to be adopted as an amendment to the TSP; therefore, it will need to be found consistent with or modify the standards and policies in the TSP. The needs analysis in Chapter 4 discusses the future interchange. The TSP notes the County's concerns about the EIS (discussed below), which cites concerns of traffic circulation effects on County roads, specifically east of Hunnell Road, south of Fort Thompson, and north of Cooley Road. The main concern listed is Hunnell Road and its potential to become a future north-south connector between Tumalo Road and the triangle formed by US 20, US 97, and Cooley Road.

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					The TSP was adopted before the completion of the FEIS; as recommended by the FEIS, County projects were subsequently added to Table 5.3 T1 but are not within this project's Study Area. Of the proposed projects listed in the County TSP, Chapter 5, only one is located in the Vicinity Area – a proposed multi-use path along the railroad east of US 97.
City of Bend Comprehensive Plan (Updated 2016)	The Bend Comprehensive Plan includes goals and policies that provide a framework for decisions to ensure they are consistent with the physical characteristics, goals, and resources of the community. The extensive document provides adopted goals and policies regarding land use and transportation, which establish a framework upon which the City bases its decisions and actions. Key chapters of the Comprehensive Plan regarding IAMP decisions are: - *Chapter 7: Transportation Systems.* This chapter provides objectives and policies for transportation in the community. Policy 7-11, requires the City and County to coordinate their TSPs to encourage continuity in roadway classification design standards outside the UGB and in the urban reserve. For roadways located in the urban reserve areas, Bend must seek approval from the County for the improvement of facilities to meet urban standards (Policy 7-15). Further, transportation facilities currently located on rural lands (outside UGBs) may not be constructed to an urban standard until the area is brought into the UGB (Policy 7-16).	✓		✓	The Study should be consistent with goals and polices of the Comprehensive Plan, especially those related to transportation and urbanization objectives for the Study Area. The transportation policies stress the importance of bicycle and pedestrian infrastructure, including construction of bike lanes and sidewalks on arterials and major collectors. They also establish the Bend trail system locations, which are governed by the Bend Urban Area Bicycle and Pedestrian System Plan, shown in Figure 7-2 (link, Chapter 7, pg. 21). The Bicycle and Pedestrian Plan cites existing shared roadways in the Vicinity Area and plans for future bicycle lanes along the railroad east of US 97 and along a potential new road west of US 97. The importance of and approach to access control is also found in Comprehensive Plan policies. In accordance with Comprehensive Plan policies road, bicycle, and pedestrian projects in urban reserve areas are governed by the County's road and street standards, and the standards are coordinated between the two jurisdictions. Study area recommendations may ultimately need to be considered and reflected in concept planning

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	Policy 7-71 commits the City to work with ODOT to plan for specific improvements needed to grade separate Cooley Road from US 97 and the railroad. Policies 7-73 and 7-74 specifically address the Bend Parkway, accepting the findings of US 97 Bend North Corridor Project Preferred EIS Alternative and indicating future implementation work needed for the Robal Road connection and Empire Avenue interchange. The complete list of transportation polices can be found here. - *Chapter 11: Growth Management.* This chapter addresses urban development within the Urban Growth Boundary and includes opportunity areas to promote efficient use of existing land. Juniper Ridge is an opportunity area located in the Vicinity Area; it is identified as a future industrial and professional office employment district. The North Triangle is an expansion area that is in the UGB but has not been annexed into the City. Specific expansion area policies for North Triangle (located between US 97 and US 20, south of Rodgers Road) will guide development west of the interchange. Urbanization in the North Triangle area in intended to be planned through a City-initiated Area Plan. Annexation can occur once a plan is completed. However, Policy 11-122 allows				for the North Triangle as part of a future Area Plan. North Triangle Area Plan project work may be initiated by the City prior to completion of the Study; findings from that planning work may inform Study recommendations. Ultimately, an Study would be adopted as a TSP amendment; the TSP is the transportation element of the Comprehensive Plan. If City goals and policies are not consistent with recommended Study implementation measures, additions or amendments to the Comprehensive Plan may be prepared and proposed as a part of the Study adoption.

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	annexations that are a minimum of 40 contiguous acres to be approved prior to the completion of an Area Plan, if a master plan (property owner-initiated) is developed for the area proposed to be annexed. The other policies for the North Triangle area (Policy 11-122 to 11-131) establish types of uses and their proposed land coverage, required housing density, affordable housing requirements, and more. The section of the North Triangle area that is located in the Vicinity Area is subject to the Affordable Housing Policy, requiring a certain level of affordable units in the area.				
Bend Development Code	The Bend Development Code (BDC) regulates all land development within Klamath County that is not within an incorporated city, including land within the Klamath Falls Urban Growth Boundary (UGB) that is not inside city limits. For the IAMP, key sections of the BDC are: - 3.1.200: Block design standards - 3.1.300: Multimodal access and circulation - 3.1.400: Vehicle access management - 3.4.200 Transportation Improvements Standards - 2.7.2030: Juniper Ridge Overlay Zone. For the employment subdistrict, there are specific limitations on vehicle trip generation, a street plan that governs and supersedes the general block length standard, and specific cross sections for streets in the subarea.		✓	✓	Future growth in the Vicinity Area will be based on zoning and development standards associated with the zone districts (see Figure X in TM #2). Additional standards govern the Juniper Ridge Area in the northeast of the Vicinity Area pursuant to an overlay. Development standards and requirements are discussed in more detail in TM #2. As the Study process progresses and recommendations are formed, the standards of the Development Code will guide local street improvements within the UGB. Study recommended improvements on the local street system may require City Engineering approval.

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Bend Urban Area Transportation System Plan (2000, updated 2016)	The Bend Urban Area Transportation System Plan (TSP) provides a policy and plan framework that will continue to enable Bend to design a balanced transportation system for the near-term and the extended future. Strategies for planning and implementing a wide range of transportation components are addressed in the TSP, including automobile, public transportation, bicycle, and pedestrian travel. The TSP addresses the transportation system within the Bend UGB, as well as urban reserve areas. The TSP includes an overview of existing conditions, goals, future conditions, and improvement projects for the transportation system, which includes public transportation, bicycle and pedestrian facilities, the street system (locations, designs, and functional classifications), and potential funding sources. The TSP was completed in 2000, projects since have updated the TSP periodically. In 2014, the TSP was updated to include evaluation of the Bend Parkway North Corridor; plans for US 97 were updated following the adoption of a preferred alternative for the area through the Environmental Impact Statement (EIS) study (see Final EIS summary in this table). The TSP acknowledges the preferred alternative's key benefits to the transportation system, which focus on capacity for development in the surrounding area, connectivity, safety and traffic management, and better emergency services access. The update also identified areas sensitive to street access to the Parkway. The local TSP update responded to a condition of securing FHWA's signature on the Final EIS that the preferred alternative for the US 97 Bend North Corridor Project	✓	✓	✓	The policies, standards, and projects of the TSP, either proposed or already construction, will be considered in the development of the Study. The Study should be adopted by the City as a refinement plan to the TSP to ensure consistency between state and local plans. There are TSP projects located within the Vicinity Area (described in ILTUP Table 9.1 and 9.2), but not the Study Area. The 2020 TSP update includes project descriptions and locations for needed local transportation improvements in the Triangle UGB expansion area. Additionally, maps in ILUTP (see Attachment A) show existing and proposed locations of streets, bicycle, and pedestrian infrastructure, and multi-use trials in the Bend UGB. The proposed infrastructure should be considered and potentially incorporated into the development of the interchange design, to the extent feasible given the proposed locations are primarily conceptual.

Document	Purpose and Summary	Policies	Design Standards	Project List	Action Items
	be consistent with locally adopted plans. For more information, see pg. 119 of the TSP. In 2016, the Integrated Land Use and Transportation Plan (ILUTP) was adopted as Appendix F of the TSP. The purpose of the ILUTP is to describe what can be done to lessen increase in VMT and "demonstrate progress towards increasing transportation choices and reducing automobile reliance," which ultimately will help plan for an effective transportation system for the City's growth. The ILTUP includes specific standards and implementing policies. The ILTUP's focus is on undeveloped or underdeveloped areas that were identified as opportunity or expansion areas. It includes street network and bicycle/pedestrian network projects for those areas, including the North Triangle and Juniper Ridge located in the project vicinity area. The attached maps (Attachment A) from the ILUTP show existing and proposed locations of streets, bicycle and pedestrian infrastructure, and multi-use trials in the Bend UGB. The City is currently updating the TSP with adoption expected in Fall 2020. Draft Transportation Projects shown in Attachment A and Programs (Chapter 5) includes projects expected in the Triangle UGB expansion area. Specific timing for implementation is dependent on market conditions related to the pace of development. Projects include a new two-lane, east-west collector at the norther terminus of Clausen Road (Project C-75) and the Hunnell Road extension (two-lane collector, Project C-66).				

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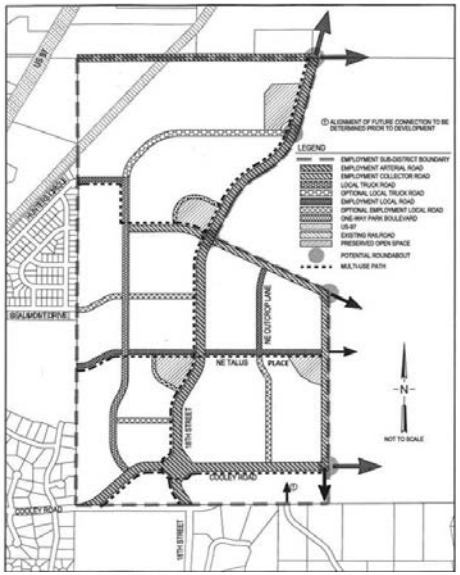
2020 – 2024 Bend Capital Improvement Plan	The Capital Improvement Program (CIP) identifies infrastructure improvement projects within a 5-year time period that are necessary to enhance service levels, address existing deficiencies, and provide for future growth. The 5-year CIP is updated annually, along with the biennial budget, and is coordinated with departments within the City.			✓	Improvements recommended in US 97 Study will be available for inclusion in a future City's CIP and may be coordinated with other programmed projects in the CIP, where applicable.
Strategic Implementation Plan for Walking and Biking (2015)	The plan includes policies for prioritization and projects to achieve a unified pedestrian and biking transportation system through the incremental but systematic deployment of safe and accessible facilities. It establishes the location of Capital Improvement Plan (CIP) projects of high importance to support and encourage increased levels of walking and biking in targeted areas of the community. The plan also discusses funding source for those projects.	✓		✓	Parkway over/under crossings for the US 97 Study was listed on the 2014 Project priorities list. The project is listed as, "US 97 safety crossing with ODOT, City of Bend and Bend MPO to determine mitigation to congestion and strategies for multimodal comfort/performance and connectivity." This plan was completed prior to the UGB Expansion in 2016. It identified areas near the interchange as key opportunities areas in the UGB expansion where new urban area planning will identify additional opportunities for new multimodal projects.
Juniper Ridge Urban Renewal Plan (2005) **and Zoning Overlay Street Network**	The Juniper Ridge Urban Renewal Plan adopted the urban renewal district and developed plans for Juniper Ridge to become an industrial and employment center. The Juniper Ridge Overlay (BDC 2.7.2030), implements to Urban Renewal Plan and provides standards specifically for the Juniper Ridge community, including the development of the conceptual street network. Specific development standards have only been developed for the Employment Sub-district, not the residential, town center, or educational sub-districts of Juniper Ridge.		✓	✓	The proposed street network for Juniper Ridge should be appropriately connected to the local roadway and interchange improvement recommendations that result from this planning process. The Street Network Map reflects conceptual locations; if modifications are needed to the street network design for the interchange plan, the BDC should be updated accordingly. Additionally, the Urban Renewal District funds, active through 2035, could be a potential funding source for improvements to the City's transportation system identified in the Study.

Document	Purpose and Summary	Policies	Design Standards	Project List	Action Items
	In the BDC, Figure 2.7.2030.B.1 (see Attachment A) shows conceptual alignments for the Employment Sub-district; precise street alignments will be determined through development review. Figure 2.7.2030.B. is incorporated into the TSP. Refinements to the concept are shown on the Proposed Right of Way Alignments figure, available from the City. Cross sections for each road classification are also found in the Overlay Standards Figures 2.7.2030.C.1. – C.3. Alternative cross-sections that respond to site-specific circumstances may be approved by the City Engineer. Figure 2.7.2030.B Employment Sub-District Transportation Plan Map  				

Document	Purpose and Summary	Policies	Design Standards	Project List	Action Items
US 97 Bend North Corridor Final Environmental Impact Statement (2014)	The Final Environmental Impact Statement (FEIS) was a joint effort between the Oregon Department of Transportation (ODOT) and Federal Highway Administration (FHWA) to improve the 6-mile corridor on US 97 in Deschutes County and Bend. Congestion at approaches, traffic flow within the corridor, and safety were the key issues along the corridor addressed by the study. The report includes a review of the purpose and need for improvements, an overview of the impacts of various alternatives, and a preferred alternative for the transportation system. The alternatives were studied and analyzed to identify their long-term and temporary impacts to the local environment. The preferred alternatives map shows the proposed changes throughout the Vicinity Area. Maps 6 and 7, see Attachment A, are located in the Vicinity Area.		✓	✓	The Study is a continuation of the FEIS and will use the preferred alternative as a starting point in the process of designing the interchange and the Study process. Some key concerns and considerations in developing the FEIS, which still remain and are likely continued concerns to take into account in the Study process are impacts on: - Changes in approaches and travel routes along the interchange - Access for emergency service providers - Business and residential displacements - Economic development, minimizing impacts to these economic lands, such as avoiding the bisection of parcels greater than 5 acres in size. - Quality of life

Attachment A:

- TSP Maps
- Draft TSP Chapter 5 Transportation Projects and Programs
- Juniper Ridge Street Plan
- EIS Preferred Alternative Maps

Note: North Third Street roadway classification to change when Highway 97 is realigned. See TSP 6.5.1

NOTE: The proposed roadway alignments shown on this map are general in nature. Precise roadway alignments will need to comply with City of Bend street standards and other engineering and design work that will be conducted as part of the land development process.

This map is for reference purposes only. The information was derived from Deschutes County and City of Bend GIS. Care was taken in the creation of this map, but it is provided "AS IS." Please contact the City of Bend to verify map information or to report any errors.

Map prepared by City of Bend GIS
S:\GMD Public\UGB\Transportation \TSP Amendments\Maps\draft\TSPRoads2016.mxd

CITY OF BEND

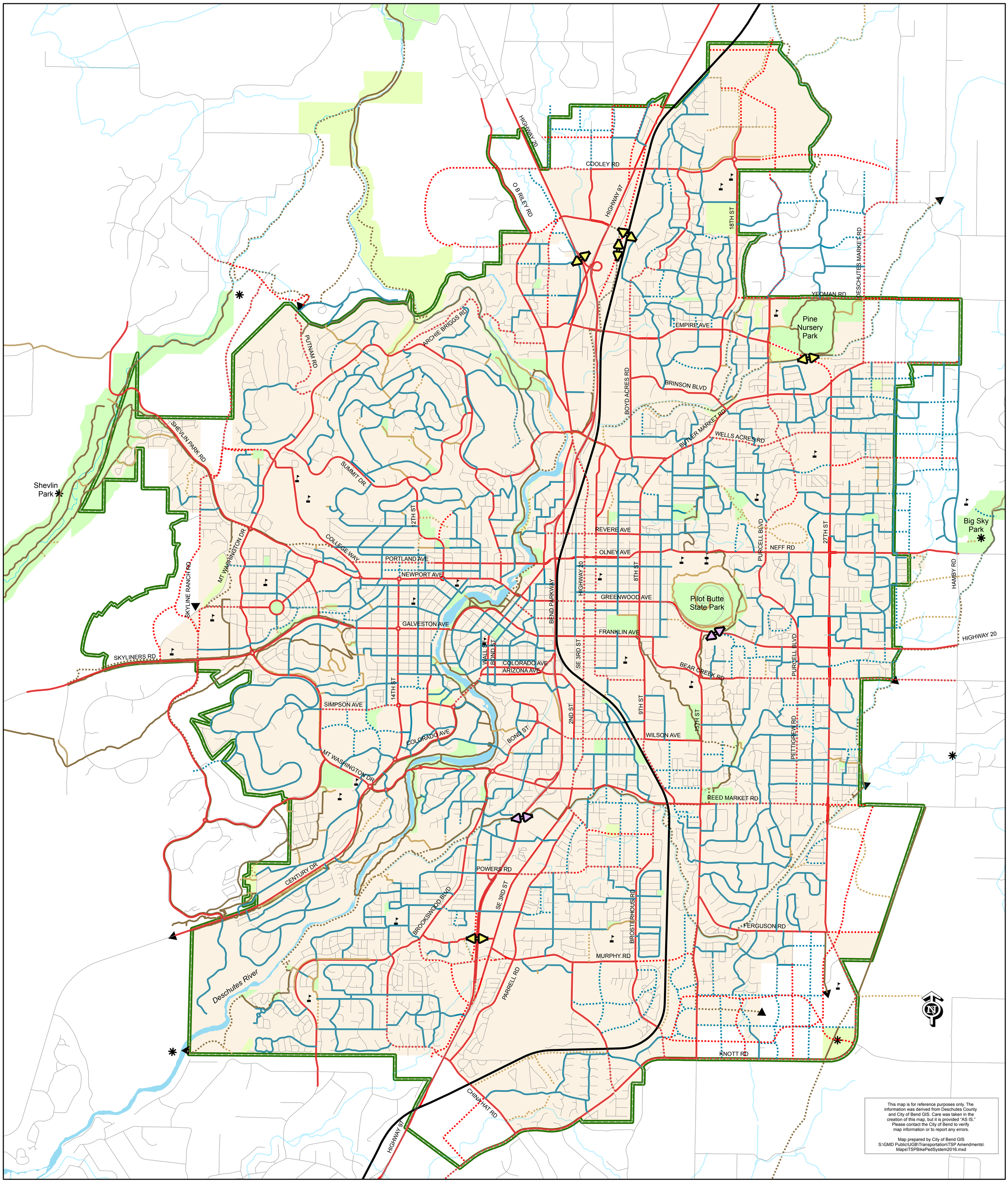
Figure 9.4: Bend Urban Area Street System

July 2016

0 0.25 0.5 1 1.5 2 Miles

Legend

- Expressway
- Proposed Expressway
- Principal Arterial
- Proposed Principal Arterial
- Major Arterial
- Proposed Major Arterial
- Minor Arterial
- Proposed Minor Arterial
- Major Collector
- Proposed Major Collector
- Frontage Road
- Proposed Frontage Road
- Railroad
- Deschutes River
- Tumalo Creek
- City Limits
- UGB - Urban Gowth Boundary



CITY OF BEND

Figure 9.5: Bend Urban Area Bicycle and Pedestrian System

July 2016

0 0.25 0.5 1 1.5 2 Miles

Legend

- Existing Bicycle Lane
- Future Bicycle Lane
- Existing Shared Roadway
- Future Shared Roadway
- Existing Multi-Use Path, Primary
- Future Multi-Use Path, Primary
- Existing Multi-Use Path, Connector
- Future Multi-Use Path, Connector
- Rails with Trails Opportunity Corridor
- Developed Parks
- Undeveloped Parks
- Proposed Major Roadway & Trail Grade Separation
- Existing Major Roadway & Trail Grade Separation
- Canal, Unpiped
- Connection
- Destination
- Schools
- City Limits
- UGB - Urban Gowth Boundary

Figure 7. Expansion area driven project map

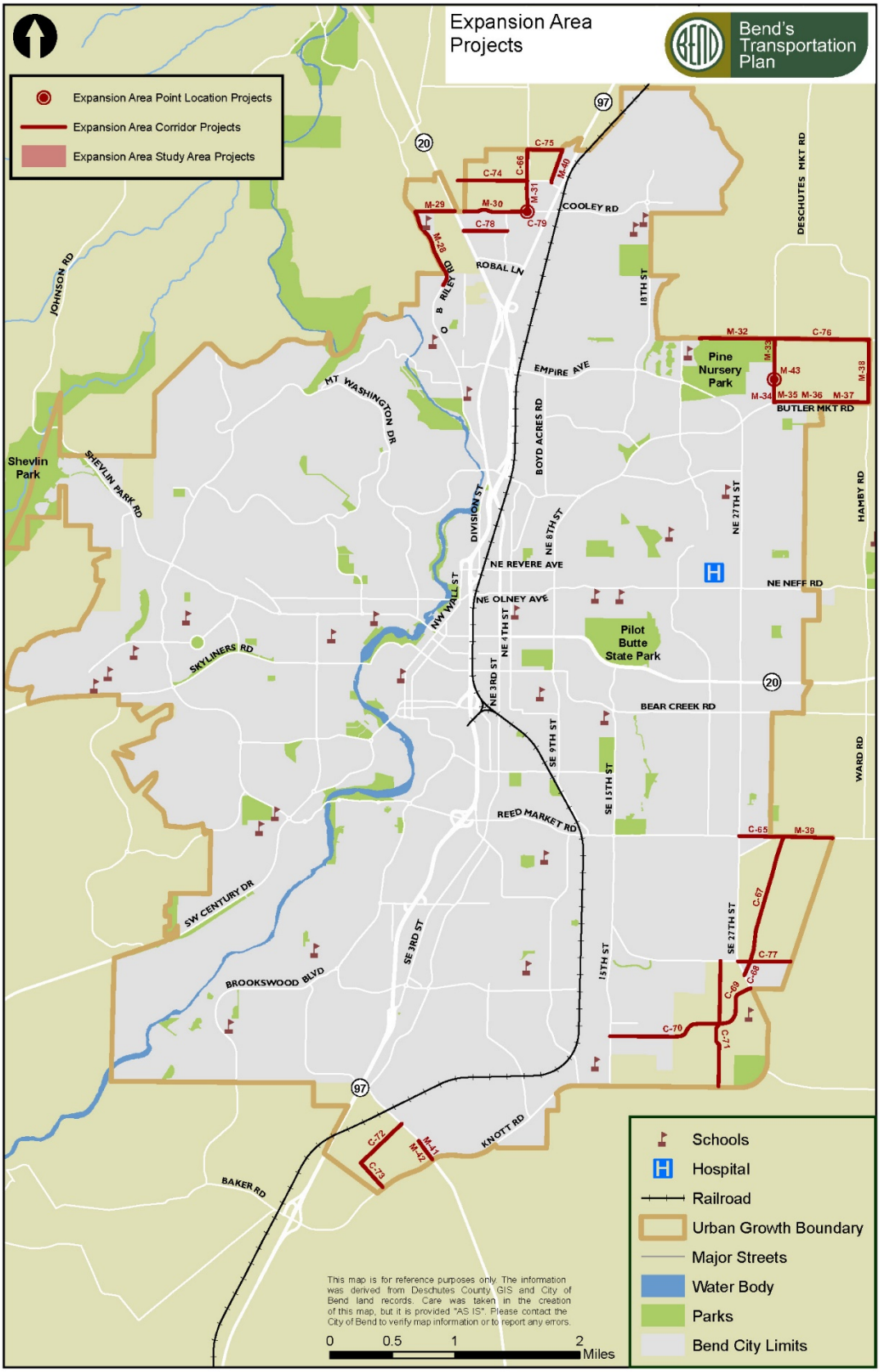
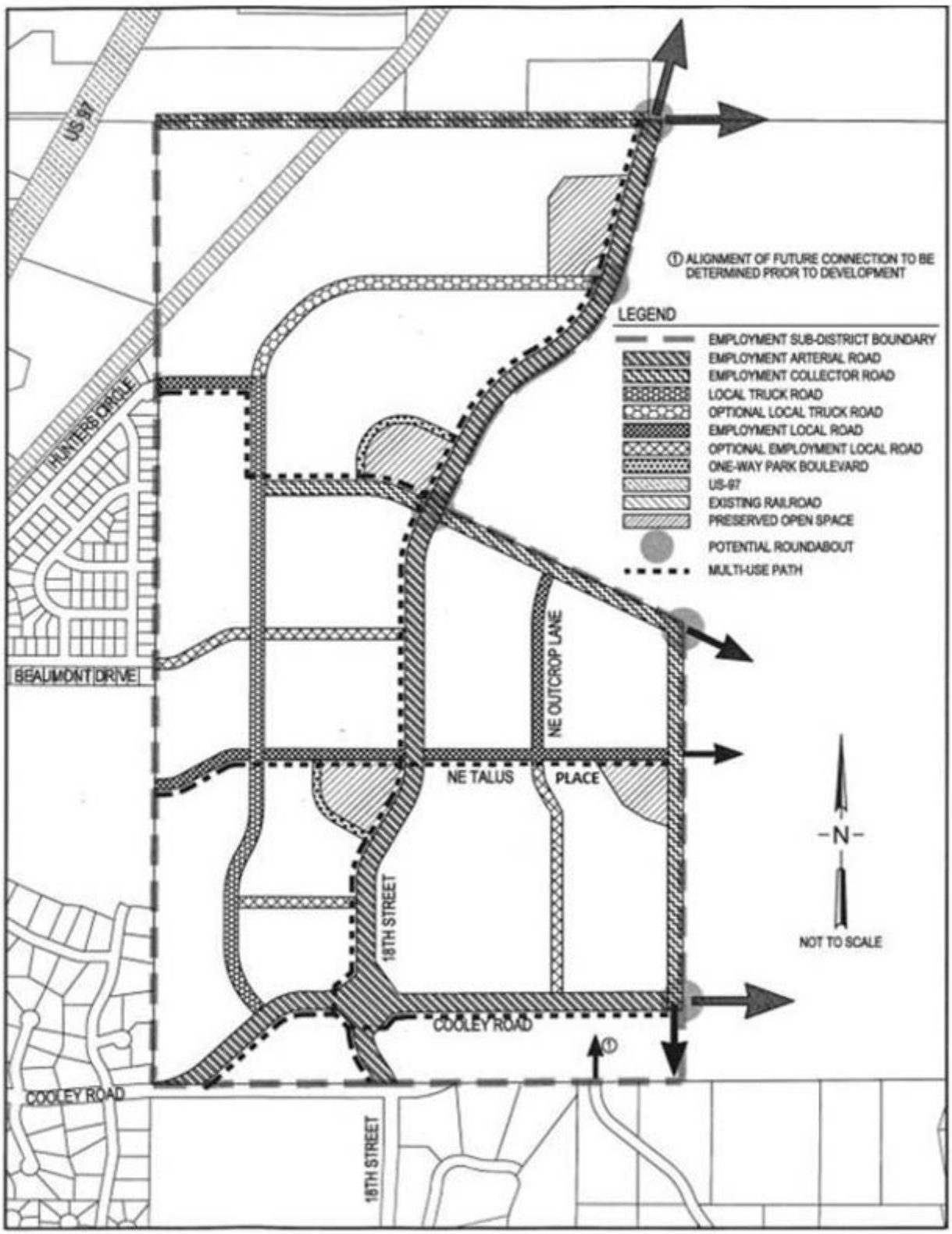
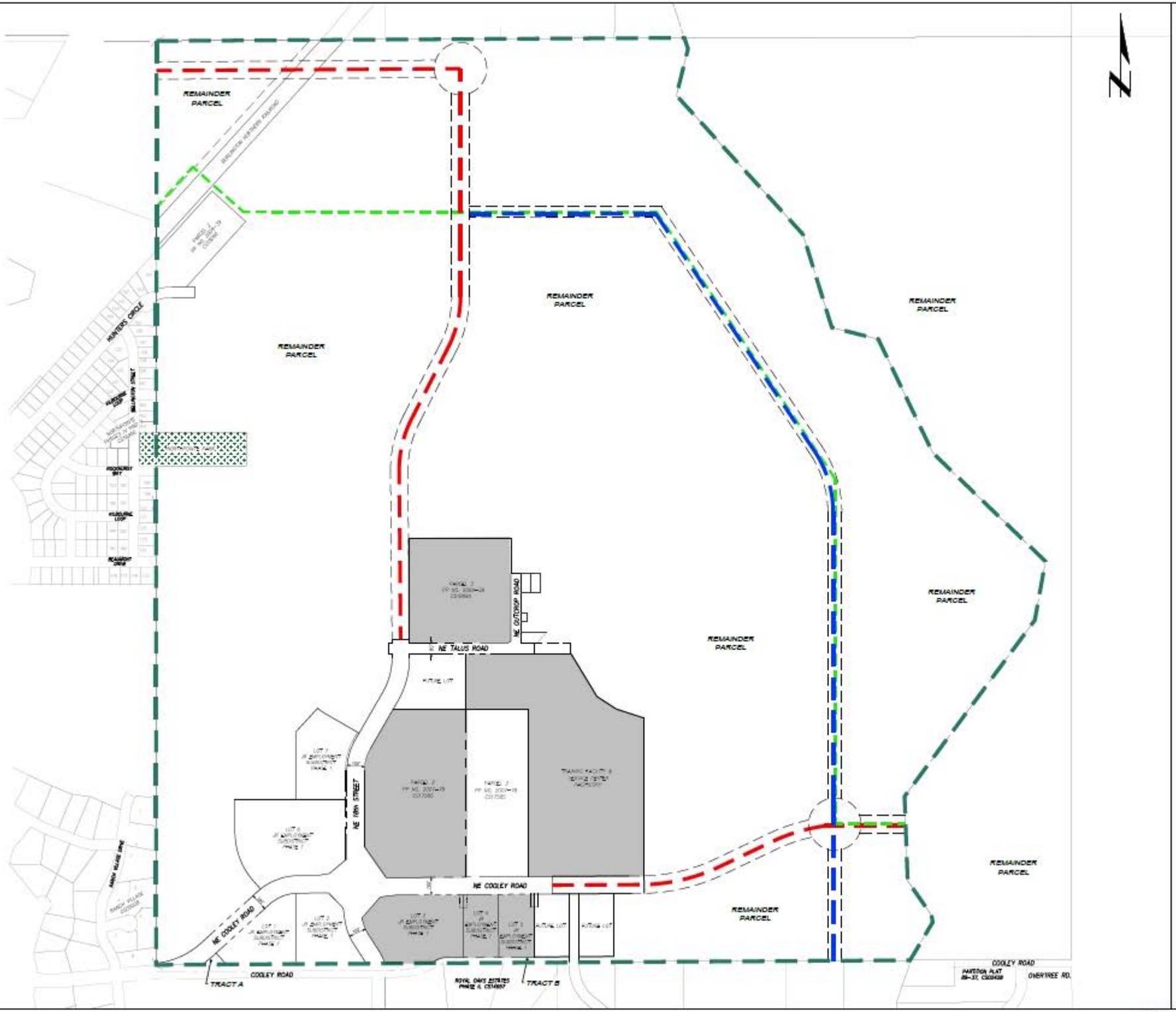


Figure 2.7.2030.B

Employment Sub-District Transportation Plan Map





JUNIPER RIDGE OVERLAY ZONE

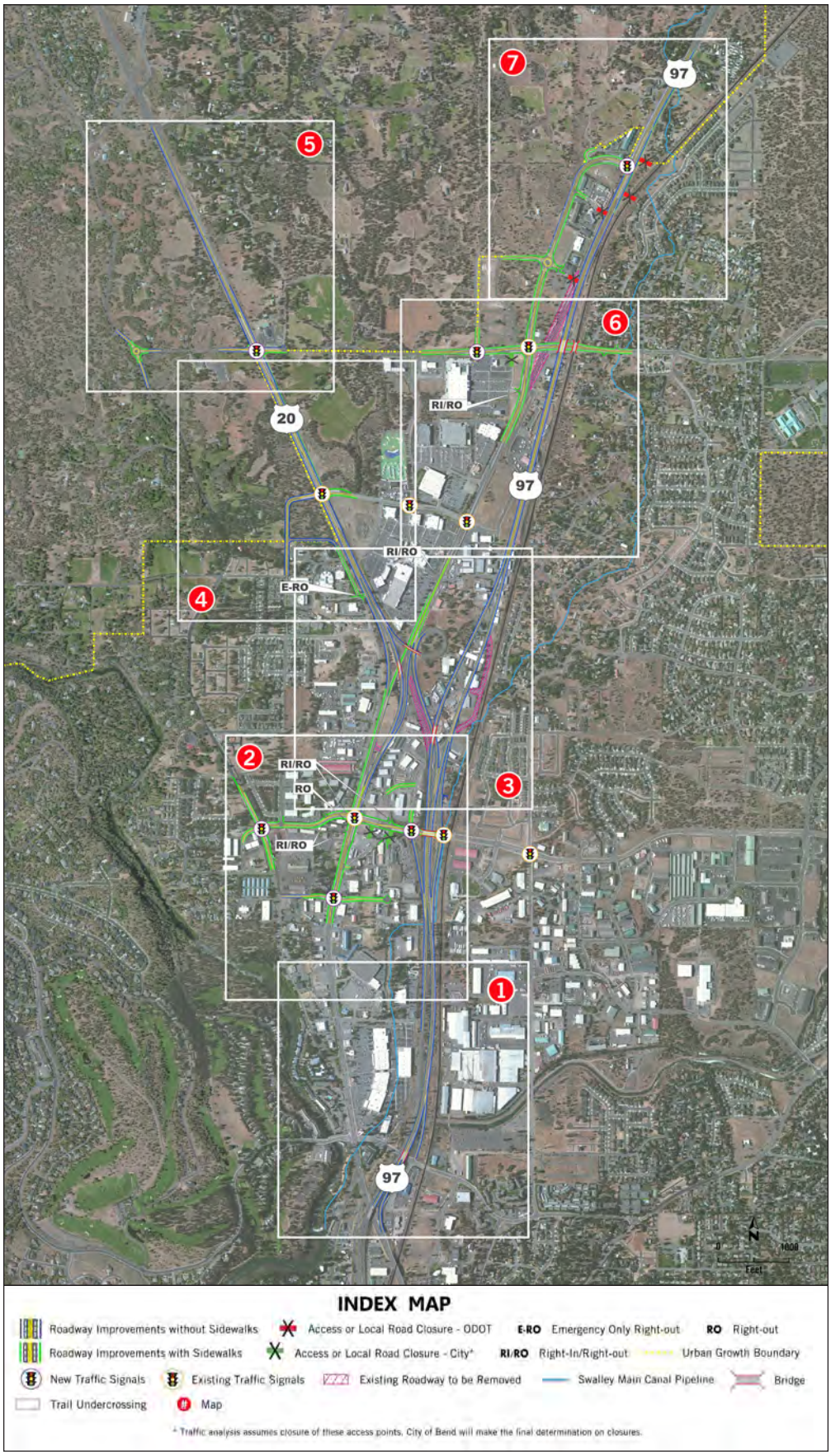
PROPOSED RIGHT OF WAY ALIGNMENTS

- BOUNDARY - ~500 ACRES
- ARTERIAL ROAD
- COLLECTOR ROAD
- NORTH INTERCEPTOR
- PARK - BPRD
- UNAVAILABLE LOTS

CITY OF BEND

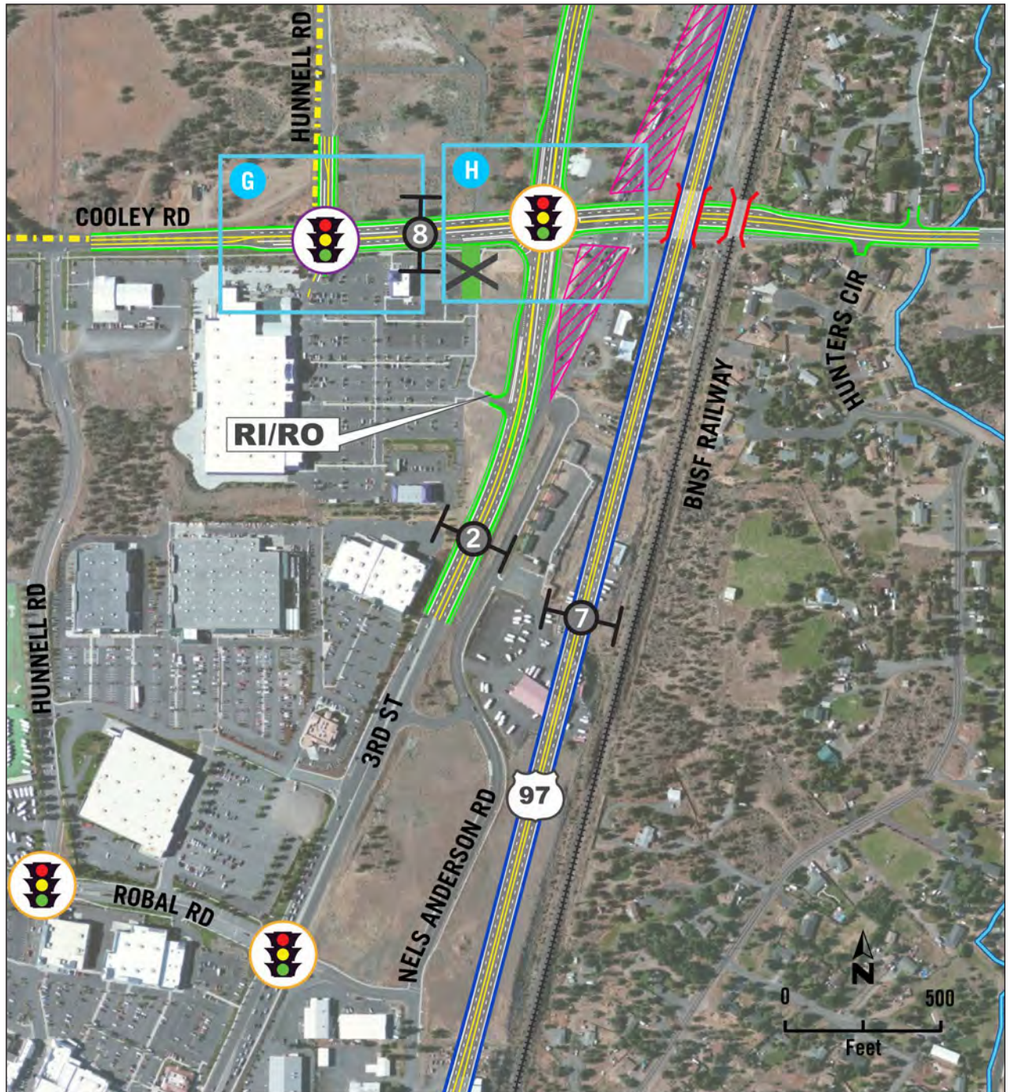
PREPARED BY: M. STUART, CITY OF BEND. PRINT DATE: APRIL 30, 2020. SOURCES: CITY OF BEND, DESCHUTES COUNTY

Exhibit ES-5 FEIS: *Preferred Alternative Mapset Index*

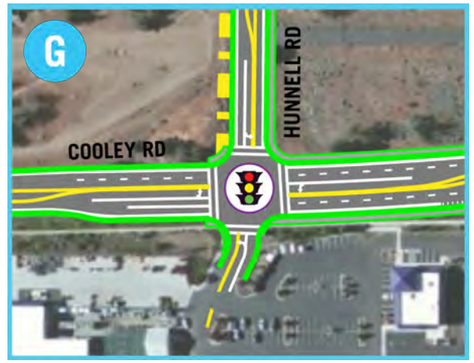


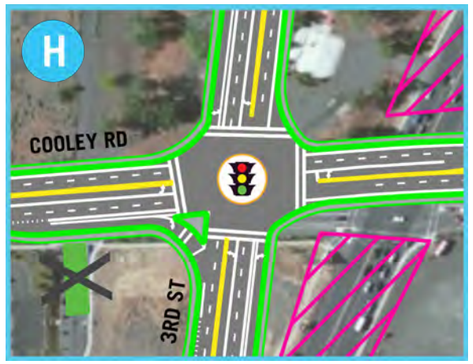
Note: This new exhibit was added to the Final EIS to show the design of the Preferred Alternative.

Exhibit ES-5 FEIS: *Preferred Alternative (Map 6)*

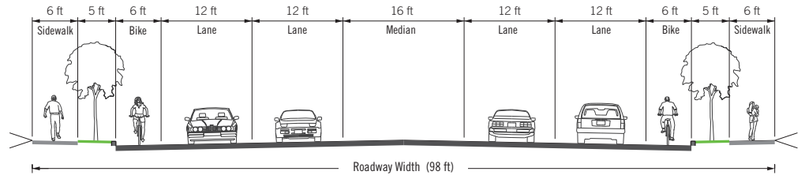


Note: The design shown in this exhibit is conceptual in nature. Further refinements may be made during the final design process. Where roadway improvements shown in this exhibit end, the improvements will transition to the existing roadway cross section.

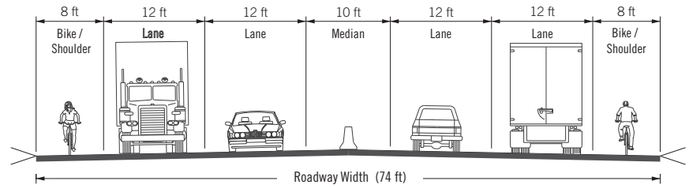




2 3rd Street south of Loco Road



7 US 97 between Empire Avenue and 3rd Street



8 Cooley Road east of Hunnell Road

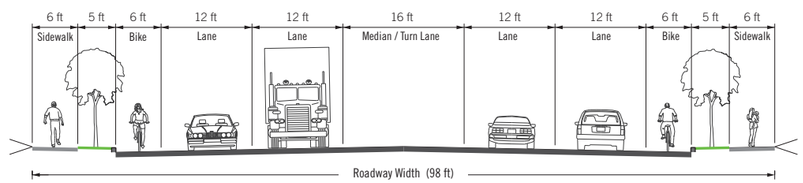
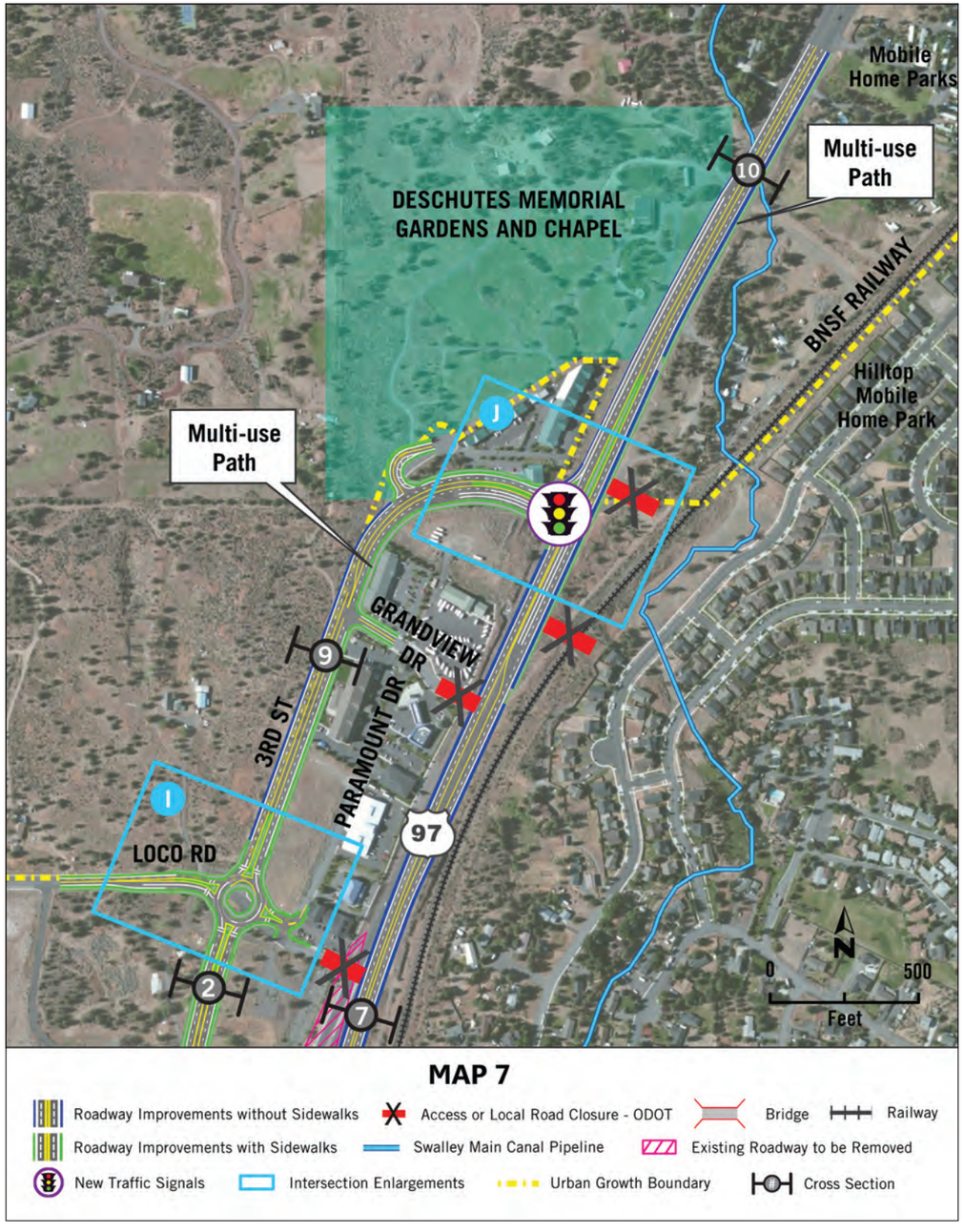


Exhibit ES-5 FEIS: *Preferred Alternative (Map 7)*



Note: The design shown in this exhibit is conceptual in nature. Further refinements may be made during the final design process. Where roadway improvements shown in this exhibit end, the improvements will transition to the existing roadway cross section.