

TECHNICAL MEMORANDUM #1

Plan and Policy Review

Date: December 31, 2010 Project #: 11168

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I. Purpose

This memorandum presents a review of state and local documents that provide the policy and regulatory framework for transportation planning in the Study Area, defined as the OR 126 corridor from the Crook County boundary east to downtown Prineville. The memorandum is the deliverable for Task 3, Plans and Policies Review in the project scope of work. This review focuses on policies, standards, and practices related to transportation planning for OR 126, with particular attention paid to access management and highway design (including cross-section design and roadside character). The following documents are reviewed in Section II for policies and regulations applicable to this planning process.

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II. Plan and Policy Review

STATE OF OREGON/ODOT

Oregon Transportation Plan (2006)

Originally adopted in 1992, the Oregon Transportation Plan (OTP) is a policy document developed by ODOT in response to federal and state mandates for systematic planning for the future of Oregon's transportation system. The OTP is intended to meet statutory requirements from ORS 184.618(1) to develop a state transportation policy and comprehensive long-range plan for a multi-modal transportation system that addresses economic efficiency, orderly economic development, safety, and environmental quality.

The 2006 OTP builds on the policy objectives of the 1992 plan, with an emphasis on maintaining assets in place, optimizing existing system performance through technology and better system integration, creating sustainable funding, and investing in strategic capacity enhancements.¹ Goals in the OTP include: Mobility and Accessibility; Management of the System; Economic Vitality; Sustainability; Safety and Security; Funding the Transportation System; and Coordination, Communication and Cooperation. Policies and strategies under many of these goals emphasize increasing coordination and cooperation among federal and state agencies, regional and local governments and private entities to achieve these goals.

The Implementation Framework section of the OTP describes how state modal and facility plans and local TSPs are expected to refine the OTP's broad policies and investment levels. The result of this planning process will be a corridor facility plan for OR 126. The State Agency Coordination Program defines a facility plan as: "a plan for individual transportation facilities that includes identification of needs for using the facility, an overall plan for improving the system and policies for operating the facility." Facility plans must be developed with public involvement, are intended to implement the OTP and the applicable modal/topic plan goals, policies, implementation strategies, and broad investment scenario, and, ultimately, must be adopted by the Oregon Transportation Commission (OTC).

Oregon Highway Plan (1999)²

The Oregon Highway Plan (OHP), an element and modal plan of the state's comprehensive transportation plan (OTP), guides the planning, operations, and financing of ODOT's Highway Division. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and local road, bicycle, pedestrian, transit, rail, and air systems.

¹ The OTP defines "asset management" as a "systematic process of maintaining, upgrading and operating physical assets cost-effectively. It combines engineering principles with sound business practices and economic theory, and it provides tools to facilitate a more organized, logical approach to decision-making. Asset management provides a framework for handling both short- and long-range planning."

² Current version available online (at <http://www.oregon.gov/ODOT/TD/TP/orhwyplan.shtml>) includes amendments covering November 1999 through January 2006)

The policies found within the OHP that apply to planning in the OR 126 corridor include:

Policy 1A: State Highway Classification System;
Policy 1B: Land Use and Transportation;
Policy 1C: State Highway Freight System;
Policy 1F: Highway Mobility Standards;
Policy 1G: Major Improvements;
Policy 2B: Off-System Improvements;
Policy 2E: Intelligent Transportation Systems (ITS);
Policy 2F: Traffic Safety;
Policy 3A: Classification and Spacing Standards;
Policy 3B: Medians;
Policy 3D: Deviations;
Policy 4A: Efficiency of Freight Movement;
Policy 4B: Alternative Passenger Modes;
Policy 4D: Transportation Demand Management;
Policy 4E: Park-and-Ride Facilities; and
Policy 5A: Environmental Resources.

Policy 1A: State Highway Classification System. The state highway classification system includes five classifications: Interstate, Statewide, Regional, District, and Local Interest Roads. In addition, there are four special purpose categories that overlay the basic classifications: special land use areas, statewide freight routes, scenic byways, and lifeline routes. These special designations supplement the highway classification system and are used to guide management, needs analysis, and investment decisions on the highway system.

OR 126 in Crook County is classified as a Statewide Highway and a Freight Route, and is considered a part of the National Highway System. The federal Intermodal Surface Transportation Efficiency Act of 1991 required the establishment of a National Highway System to provide an interconnected system of principal arterial routes that will serve “interstate and inter-regional travel.” ODOT has an obligation to ensure that the National Highway System in Oregon adequately performs this function of serving a larger geographic area.

According to Policy 1A, Statewide Highways (NHS):

“...typically provide inter-urban and inter-regional mobility and provide connections to larger urban areas, ports, and major recreation areas that are not directly served by Interstate Highways. A secondary function is to provide connections for intra-urban and intra-regional trips. The management objective is to provide safe and efficient, high-speed, continuous-flow operation. In constrained and urban areas, interruptions to flow should be minimal. Inside Special Transportation Areas (STAs), local access may also be a priority.”

OR 126 is also classified as an Expressway within the OHP from the western Crook County boundary (milepost 3.58) east to O'Neil Highway (milepost 17.92) in Prineville. As defined in the OHP, expressways are intended to provide "safe and efficient high speed and high volume traffic movements." The primary function of an expressway is to provide for interurban travel and connections to ports and major recreation areas with minimal interruptions; a secondary function is to provide for long distance intra-urban travel in metropolitan areas. The OHP makes a distinction between urban and rural areas, with speeds on expressways moderate to high in urban areas and high speeds in rural areas, where there are typically no pedestrian facilities and bikeways may be separated from the roadway.

Policy 1B: Land Use and Transportation. This policy recognizes the role of both the State and local governments related to the state highway system and calls for a coordinated approach to land use and transportation planning. This coordination must support highway mobility and safety as well as local comprehensive plans, compact development, transportation options, economic vitality, and overall livability for the communities through which state roads travel. This policy also recognizes that state highways serve as the main streets of many communities and strives to maintain a balance between serving local communities (accessibility) and the through traveler (mobility).³

Policy 1C: State Highway Freight System. This policy recognizes the need for the efficient movement of freight through the state and principally applies to designated Freight Routes such as OR 126 within the Study Area. This policy recognizes that improving and maintaining the efficiency of highway operations requires balancing the needs of freight movement with the needs of other users of the highway system. Highways included in this designation have higher highway mobility standards than other Statewide Highways (see Policy 1F).

Policy 1F: Highway Mobility Standards. This policy addresses state highway performance expectations when planning for state facilities or implementing a facility plan, and provides guidance for managing access and traffic control systems. Action 1F.1 states that highway mobility standards apply to all state highway sections. For OR 126, a Freight Route and Statewide Highway, the maximum volume to capacity (v/c) ratios for peak hour operating conditions are 0.75 for sections inside the UGB where posted speeds are less than 45 mph, and 0.70 for posted speeds of 45 mph and greater.⁴ Outside the UGB, the v/c ratio for peak hour operation conditions is 0.70.⁵ (See Table 1-1 in this memorandum.)

³ Outside of the Study Area, there is a Special Transportation Area designation on OR 126 within the City of Prineville, from Locust Street to Knowledge Street. The STA designation recognizes areas of compact development located on a state highway within an urban growth boundary where the need for appropriate local access outweighs the considerations of highway mobility. This designation modifies access standards for the highway and raises the maximum volume-to-capacity ratio permitted at intersections in this area, allowing a greater level of congestion before improvements would be required.

⁴ In areas where it is designated an Expressway; from O'Neil Highway to the US 26 "Y" it is only a Statewide Highway and a Freight Route, and the maximum v/c is 0.80 where the posted speed is less than 45 mph. See Table 4-6.

⁵ The Crook County Transportation System Plan notes that for statewide highways on the NHS system such as US 26, the applicable mobility v/c standard is 0.75 in unincorporated communities and 0.70 along rural lands (p. 4-1).

Table 1-1 Mobility Standards for Highways Outside the Portland Metropolitan Area UGB

Highway	Land Use Type/Speed Limits					
	Inside Urban Growth Boundary				Outside Urban Growth Boundary	
	STAs	MPO	Non-MPO outside of STAs where non-freeway speed limit <45 mph	Non-MPO where non-freeway speed limit ≥45 mph	Unincorporated Communities	Rural Lands
Interstate Highways and Statewide (NHS) Expressways	N/A	0.80	0.70	0.70	0.70	0.70
Statewide (NHS) Freight Routes	0.85	0.80	0.75	0.70	0.70	0.70
Statewide (NHS) Non-Freight Routes and Regional or District Expressways	0.90	0.85	0.80	0.75	0.75	0.70
Regional Highways	0.95	0.85	0.80	0.75	0.75	0.70
District/Local Interest Roads	0.95	0.90	0.85	0.80	0.80	0.75

Source: 1999 Oregon Highway Plan (OHP). For the purposes of this policy, the peak hour shall be the 30th highest annual hour. This approximates weekday peak hour traffic in larger urban areas. Interstates and Expressways shall not be identified as Special Transportation Areas.

Where the volume-to-capacity (v/c) ratio within a corridor is worse than the identified standards in the OHP, and identified transportation improvements cannot bring performance to standard within the planning horizon, the performance standard for the highway will need to improve performance as much as feasible and to avoid further degradation of performance (Action1F.5.) The policy allows for the adoption of alternative highway mobility standards in cases such as metropolitan areas trying to strictly manage their growth, STA's, and in areas with unique environmental and land use constraints.

Policy 1G: Major Improvements. This policy requires maintaining performance and improving safety by improving efficiency and management before adding capacity.

Policy 2B: Off-System Improvements. This policy recognizes that the state may provide financial assistance to local jurisdictions to make improvements to local transportation systems if the improvements would provide a cost-effective means of improving the operations of the state highway system.

Policy 2E: Intelligent Transportation Systems (ITS). This policy seeks to improve the safety and efficiency of transportation facilities, and to generally maximize operations in a cost-effective way. The policy requires coordination with the Oregon Intelligent Transportation Systems Strategic Plan.

Policy 2F: Traffic Safety. This policy emphasizes the state's efforts to improve safety for all users of the highway system. Action 2F.4 addresses the development and implementation of the Safety Management System to target resources to sites with the most significant safety issues.

Policy 3A: Classification and Spacing Standards. This policy addresses the location, spacing, and type of road and street intersections and approach roads on state highways. The primary function of Expressways is to provide connections to larger urban areas, ports and major recreation areas with minimal interruptions. Consistent with this function, the access management objectives for Statewide Highways that are also expressways include:

- *Provide for safe and efficient high speed and high volume traffic movements.*
- *Discourage private access.*
- *Eliminate, over time, existing approach roads as opportunities occur or alternate access becomes available.*
- *Purchase access rights and develop a local road network consistent with the function of the roadway.*
- *Control and appropriately space public road connections.*
- *Future grade separations (interchanges) may be considered.*
- *Include necessary compatible land use actions in local comprehensive plans.*
- *Discourage traffic signals*
- *Prohibit parking*
- *Construct nonreversible medians in the modernization of all multi-lane Expressways that have traversible medians.*

The policy includes standards for each highway classification. The adopted standards can be found in Appendix C of the OHP; generally, the minimum access spacing distance increases as either the highway's classification or posted speed increases. The access management spacing standards established in the OHP are implemented by OAR 734, Division 51, which is addressed later in this report.

Policy 3B: Medians. This policy establishes the state's criteria for the placement of medians in order to "enhance the efficiency and safety of the highways, and influence and support land use development patterns that are consistent with approved transportation system plans." Action 3B.1 directs the state to plan for a level of median that is consistent with the classification of the highway and specifies that corridor plans shall identify planned medians. Action 3B.2 directs the state to design and construct non-traversable medians for modernization of all rural, multi-lane Expressways, including Statewide (NHS), Regional and District highways.

Policy 3D: Deviations. This policy provides the foundation for requests for state highway approach permits that require deviation(s) from access management standards. Procedures for requesting deviations are included in OAR 734-051. Action 3D.5 identifies conditions to consider in evaluating requests for deviations: queuing that increases delays and unsafe operations, pedestrian and bicycle circulation, traffic controls, local road system requirements, improving connectivity to adjacent properties or local road system, potential use of channelization, or potential use of nontraversable medians.

Policy 4A: Efficiency of Freight Movement. This policy emphasizes the need to maintain and improve the efficiency of freight movement on the state highway system. Action 4A.3 generally supports Intelligent Transportation System Commercial Vehicle Operation technology in facilitating efficient freight movement.

Policy 4B: Alternative Passenger Modes. This policy encourages the development of alternative passenger services and systems as part of broader corridor strategies and promotes the development of alternative passenger transportation services located off the highway system to help preserve the performance and function of the state highway system.

Policy 4D: Transportation Demand Management. This policy establishes the state's interest in supporting demand management strategies that reduce peak period single occupant vehicle travel, thereby improving the flow of traffic on the state highway system.

Policy 4E: Park and Ride Facilities. Through this policy the state seeks to maximize the existing transportation system and passenger capacity by supporting and developing park-and-ride facilities. The Crook County TSP identifies an area near Les Schwab in the vicinity of OR 126 and Millican Road as a possible future park and ride location (Section 6.9 Future Park and Ride Locations).

Policy 5A: Environmental Resources. This policy intends to protect the natural and built environment – including air quality, fish and wildlife habitat, migration routes, vegetation, and water resources from impacts from state highways and ODOT facilities. Impacts to identified natural resources must be avoided or mitigated by any proposed construction or reconstruction projects on OR 126.

Oregon Bicycle and Pedestrian Plan (1995)

As a modal element of the Oregon Transportation Plan, the Oregon Bicycle and Pedestrian Plan provides guidance for planning, design, and operation of bicycle and pedestrian facilities and contains the standards and designs used on state highway projects for these facilities. The 1995 plan is comprised of the Policy and Action Plan (Part 1) and a Planning, Design, Maintenance, and Safety section (Part 2). The policy section provides background information, including relevant state and federal laws, and contains the goals, actions, and implementation strategies proposed by ODOT to improve bicycle and pedestrian transportation. The plan states that bikeway and walkway systems will be established on rural highways by widening shoulders as part of modernization projects, as well as on many preservation overlay projects, where warranted. For urban highways, implementation may take place:

- As part of modernization projects (bike lanes and sidewalks will be included);
- As part of preservation projects, where minor upgrades can be made;
- By restriping roads with bike lanes;
- With minor improvement projects, such as completing short missing segments of sidewalks;
- As bikeway or walkway modernization projects;
- By developers as part of permit conditions, where warranted.

Part Two addresses maintenance and construction issues, and establishes facility design standards for the following bicycle and pedestrian facilities: on-road bikeways (pp. 66-70), restriping existing roads with bike lanes (p. 86), walkways (pp. 91-92), multi-use paths (p. 117), signing and marking (starting p. 143), and street crossings and intersections (crosswalks, raised crosswalks and raised intersections, p. 111-112; intersections pp. 134-135). The plan section on street crossings (Section II.5) includes standards and guidance for crosswalks, intersections, medians, and islands and refuges.

Standard widths for bike lanes and walkways are six feet. Minimum widths are five feet for bike lanes and walkways, when bike lanes are adjacent to curbs or parking lanes, and four feet for bike lanes when they are on uncurbed shoulders or in other severely constrained areas. For shoulder bikeways, recommended for rural highways, the plan refers to Highway Design Manual standards. Widths should be six feet for roadways with ADT of 400-2000 and eight feet for roadways with ADT greater than 2000.

The Bicycle and Pedestrian Plan is in the process of being updated. While many new pedestrian and bicycle treatments have been developed and incorporated into the update, ODOT program staff reports that few design standards for bike and pedestrian facilities will change. However, staff indicates that standards for rumble strips may change, potentially making the strips “friendlier” to

bikes.⁶ Once adopted, the updated Oregon Bicycle and Pedestrian Plan Design Standards and Guidelines will be referenced where bicycle or pedestrian facilities are planned as part of improvements to OR 126.

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 provisions in the OAR apply to the roadways under state jurisdiction. The access management rules include spacing standards for various types of state roadways.⁷ These spacing standards are also presented in a series of tables in Appendix C of the OHP.

Tables 12, 13, 18, and 19 in the OHP address spacing for interchanges and intersections on Statewide Highways (NHS) in urban areas. A design exception is required to change these planning standards. OHP Table 13 provides the spacing requirements between unsignalized intersections on Statewide Highways. As shown in Table 1-2, the spacing standard for urban expressways is 2,640 feet; the spacing standard for rural expressways is 5,280 feet.

Table 1-2 Access Management Spacing Standards for Statewide Highways

Posted Speed ⁽⁵⁾	Rural Expressway **	Rural	Urban Expressway ** ***	Urban ****
≥55	5280	1320	2640	1320
50	5280	1100	2640	1100
40 & 45	5280	990	2640	990
30 & 35		770		720
≤25		550		520

Source: 1999 Oregon Highway Plan (OHP).

From O'Neil Highway (milepost 17.92) east through Prineville, OR 126 is not classified as an expressway and, outside of the STA, the spacing standards in Table 1-3 apply.

Table 1-3 Spacing Standards for Unsignalized Intersections on OR 126 in Prineville (Outside of STA)

Posted Speed (mph)	Spacing (feet)
30-35	720
40-45	990
50	1,100
55+	1,320

⁶ Note: This information was obtained from ODOT as part of a 2009 document review for the South US 97 Corridor Plan. Staff indicated that new standards were expected to reflect updated standards in AASHTO's Guide for the Development of Bicycle Facilities, and that these national standards were slated for update in 2009. (The 1999 edition of the Guide for the Development of Bicycle Facilities is available at AASHTO's online bookstore.) ODOT's 2009 Traffic Manual states that: "The Department of Transportation has adopted the AASHTO publication, Guide for the Development of Bicycle Facilities, to establish bikeway design and construction standards, to establish traffic control devices guidelines for bikeways, and recommend illumination standards (6.3 Bicycle Facilities)."

⁷ "Spacing Standards" mean Access Management Spacing Standards as set forth in OAR 734-051-0115 and specified in Tables 2, 3, and 4, which were adopted and made a part of Division 51 rules.

Tables 18 and 19 of the OHP present the spacing standards for interchanges and cross-roads on Expressways in urban areas. In general, 2,640 feet is required between the start and end of taper sections for interchanges and cross-road intersections. One mile is required between an at-grade intersection and ramp terminal intersection or the start or end of a taper section.

The access management rule also provides criteria for granting right of access and approach locations onto state highway facilities (OAR 734-051-0080) and for potential deviations from spacing standards (OAR 734-051-0135).

Recent legislation related to Access Management was included in Senate Bill 1024. A summary of the bill is provided below.

Senate Bill 1024

Implementation Plan Manager: Harold Lasley, Highway, 503-986-4216

Effective Date: March 4, 2010

Access management is used to balance access to developed land from highways, roads and streets with the safe and efficient movement of traffic. Access management regulates the physical connections to streets, roads and highways from public roads and private driveways. ODOT has the statutory responsibility to control access to state highways (ORS 374.305). Senate Bill 1024 will change access permit requirements so that businesses can have greater increases in traffic volumes at existing highway accesses without obtaining a new permit. Currently, new permits are required for traffic increases that could result from a minor building expansion or remodel. ODOT will also develop access standards that allow closer access spacing on highways that are traveled by less than 5,000 vehicles per day.

SB 1024 directs the department to work with stakeholders to develop proposed legislation to codify, clarify and bring consistency to issuance of access permits. The department must report to the Legislature prior to January 2011 on the proposed legislation.

Freight Moves the Oregon Economy (1999)

This report summarizes a variety of information about issues and needs surrounding the transport of freight by roads, rail lines, waterways, aircraft, and pipelines. The document's stated purpose is to demonstrate the importance of freight to the Oregon economy and identify concerns and needs regarding the maintenance and enhancement of current and future mobility within the state. Oregon is also in the process of developing a Statewide Freight Plan, which would build off of this document.

The report describes the federal National Highway System (NHS), a classification system that identifies the most significant highways for moving people and freight. OR 126 is part of the NHS and included in the OHP's State Highway Freight System. The report describes the State Highway Freight System as including all of the state's interstate highways and selected other highways important to moving freight. The importance of freight movement will be a consideration during the development of the OR Highway 126 Corridor Facility Plan as it pertains to access to OR 126 and balancing freight mobility needs with other highway functions.

Oregon Aviation Plan (2007)

The 2007 Oregon Aviation Plan (OAP) defines policies and investment strategies for Oregon's public use aviation system for the next 20 years. It further refines the goals and policies of the Oregon Transportation Plan and is part of the OTP. The plan assesses the condition of the existing aviation

infrastructure, the economic benefit of the aviation industry, and the national importance and state significance of each airport. It also provides an overview of the airports in the system and the jurisdictional responsibilities at all levels of government for the management, maintenance, operation, and funding of Oregon's airports. The plan contains policies and recommended actions to be implemented by Oregon Department of Aviation in coordination with other state and local agencies and the Federal Aviation Administration.

The Policy Elements of the OAP recognizes that increasing connectivity between transportation modes is an "important component for local jurisdictions when decisions are made to increase capacity at an airport, whether the increase is to expand an existing airport or to develop new facilities. Through the OAP, the State acknowledges that many surface transportation connections accessing airports cross local jurisdictional boundaries and that it is "essential to foster and maintain good intergovernmental communication and coordination (p. 1-14)."

The OAP categorizes airports based on functional role and service criteria. The Prineville Airport is classified as a Category IV local general aviation airport. These airports support local air transportation needs and special use aviation activities and primarily serve single-engine general aviation aircraft, but are capable of accommodating smaller twin-engine general aviation aircraft.

Information about the Prineville Airport can be found in the Individual Airport Reports that are part of the OAP. The Prineville Airport Individual Report describes the location of the airport and states that "access to the Airport is provided by State Route 126, which serves as a critical transportation link from central Oregon to the rest of the state (p. 17-34)." The airport is included in the National Plan of Integrated Airport Systems (NPIAS), which makes it eligible for federal funding. Based on survey data (Section 3.4), airport users are local businesses, recreational users, out-of-town business, agriculture, and tourism. Surrounding communities rely on the Airport for fire protection.⁸

Regarding future growth, the importance of aviation for growth from an economic perspective is ranked moderately low in survey results, although respondents noted that airport upgrades would increase economic growth for the surrounding communities. Respondents were unsure if the city of Prineville and Crook County would be supportive of a funding mechanism to finance future airport developments, such as improving terminal amenities. Expanded services at the airport may impact the volume of travelers. The report notes that the feasibility of a state operated and subsidized air shuttle service is being investigated. Air shuttle service would link various communities within the state, with the intent to facilitate commuting between smaller local communities. Survey respondents noted that some form of an air shuttle service would fulfill a community need and would likely promote economic growth for communities (p. 25-34).

⁸ Prineville residents and businesses are also served by two other airports: the Bend Municipal Airport (approximately 25 miles from Prineville) and the Roberts Field-Redmond Municipal Airport (approximately 16 miles from Prineville). The Bend Municipal Airport is classified as a Category II – Urban General Aviation airport by the Oregon Department of Aviation and has a single paved runway. The airport is used for recreation, local business, out-of-town business, tourism, and agriculture (Oregon Aviation Plan, 2007, Individual Airport Report). The following is from the City of Redmond's website: "Roberts Field-Redmond Municipal Airport (RDM) is owned and operated by the City of Redmond for the tri-county area. It is the fourth largest commercial service airport in Oregon serving all of Central Oregon. Commercial service is provided by Horizon Air (part of the Alaska Air Group); United Express and Delta Connection (provided by SkyWest Airlines); and Allegiant Air. These carriers offer approximately 46 arriving and departing flights daily to and from Denver, Las Vegas, Phoenix Mesa, Portland, Salt Lake City, San Francisco, and Seattle. RDM also serves air cargo and general aviation traffic, including extensive corporate and business travel. RDM is also home to Butler Air, Lancair, and the U.S.D.A. Forest Service.

Chapter 4 of the Individual Airport Report contains a list of Airport Capital Improvement Program (ACIP) projects, including runway extension, rehabilitating the terminal building, and rehabilitating the access road.⁹

ODOT Highway Design Manual (2003, last revised 2008)

The Highway Design Manual includes ODOT standards and procedures for the location and design of new construction, major reconstruction, and resurfacing, restoration or rehabilitation (3R) projects. The Highway Design Manual is used for all projects that are located on state highways. The following list of elements from the manual is not exhaustive, but provides examples of what will be referenced in developing projects or any implementation measures in the Highway 126 Corridor Plan.

- Chapter 4 (Right-of-Way) – procedures for land acquisition, easements, and access control;
- Chapter 5 (General Design Standards) – design speed, sight distance, vertical and horizontal alignment, roadbed cross-sections including shoulders, travel lanes, and medians, non-freeway median design, clearance, guardrail and concrete barriers, and access management;
- Chapter 7 (Rural Non-Freeway) – design standards for Rural Arterial Highways Design (for highway segments that are not designed to look and function like an Expressway);
- Chapter 8 (Urban Highways) – expressways, design speed, OHP designations, lane widths, pedestrian and bike facilities, medians, access management;
- Chapter 9 (Intersection and Interchange Design) – general design considerations, signalized and unsignalized intersections, roundabouts;
- Chapter 10 (Special Design Elements) - hydraulics and geotechnical design, environmental studies, transportation analysis, permit types; and
- Chapter 11 (Pedestrian and Bicycle) - general guidance for facilities on rural and urban highways, reference to the Oregon Pedestrian and Bicycle Plan.

The design standards in the manual will be integrated into the detailed design and engineering that will occur for projects once they are adopted in the Corridor Plan, incorporated into the local TSPs by reference, and are programmed as part of the City's and County's Capital Improvement Program (CIP) for transportation.

State Transportation Improvement Program (2000-present)

The State Transportation Improvement Program (STIP) is the programming and funding document for transportation projects and programs statewide. The projects and programs undergo a selection process managed by ODOT Regions or ODOT central offices. The document covers a period of four years and is updated every two years.

The Approved 2008-2011 STIP identified two projects within the study corridor, as summarized in Table 1-4. The Draft 2010-2013 STIP has been released for public review and identifies one project within the study corridor, which was also included in the 2008-2011 STIP. The final project list and details are subject to the STIP adoption process.

⁹ The Individual Airport Report for the Prineville Airport provides no further information or details about what improvements are necessary to the "access road."

Table 1-4 Draft and Approved STIP Projects within the OR 126 Facility Plan Corridor

Section	Total Cost	Description	Status	Year (FFY)
2008-2011 - Approved				
OR126 @ Powell Butte Hwy EA	\$750,000	Environmental Assessment Funded by Developer	Plan	2010
2ND St Egress to OR126/3RD ST (Prineville)	\$298,000	One block of new street construction	Final	2009
2010-2013 - Draft				
2ND St Egress to OR126/3RD ST (Prineville)	\$298,000	One block of new street construction	Construction	2009

House Bill 3379 Administrative Rule Background

House Bill (HB) 3379, passed during the 2009 legislative session, directed the Oregon Transportation Commission (OTC) to adopt an administrative rule to establish an application process that local governments may use for economic development projects if they are not able to meet the funding or timing requirements of the Transportation Planning Rule (TPR) related to state highways. The administrative rule describes how a local jurisdiction may work with the OTC and ODOT to do one of the following:

- Apply for a time extension to meet TPR requirements;
- Submit a plan proposing alternative methods of funding that will meet the standards adopted by the OTC;
- Apply to adjust traffic performance measures during an interim period prior to completion of construction of the proposed development; or
- Apply to allow various types of traffic performance measures other than volume to capacity ratios (v/c).

The OTC adopted the Administrative Rule in December 2010 and now provisions pertaining to the above can be found in OAR 731-017-005 through -0055.

LOCAL PLANS AND ORDINANCES

Crook County Comprehensive Plan (Last Amended 2002)

The Comprehensive Plan is a statement of public policy for the guidance of growth, development, and conservation of resources within the County. There is little background information in the Comprehensive Plan related to OR 126 and there are no policies that directly relate to the function or design of the highway. However, policies related to growth and transportation planning are relevant to future planning for OR 126.

The Comprehensive Plan describes the dynamic tension between rural and urban land uses and the County's role in providing a planning framework that both preserves agricultural land and provides for the smooth transition of rural to urban use. At the heart of this challenge are the valley areas to the west of Prineville, where the most productive croplands within the county are concentrated, and the Powell Butte area. The Comprehensive Plan details a number of amendments in the late 1990's that

allowed rural residential development to occur south of Highway 126 and generally north of Powell Butte and west of Stillman Road. Growth in these areas has put pressure on OR 126.

The policy framework set out in Chapter I is related to the urban growth boundary (UGB) and urbanization. These policies relate to the timing, location, and funding of public facilities. Pertinent to the Highway 126 Corridor Plan planning process, policies specifically address the role of transportation facilities in supporting or restricting growth. Chapter I includes the following implementation guidelines:

1. *The type, location and phasing of public facilities and services are factors which should be utilized to direct urban expansion.*
2. *The type, design, phasing and location of major public transportation facilities (i.e. all modes: air, rail, mass transit, highways, bicycle and pedestrian) and improvements thereto are factors which should be utilized to support urban expansion into urbanizable areas and restrict it from rural areas.*
3. *Financial incentives should be provided to assist in maintaining the use and character of lands adjacent to urbanizable areas.*
4. *Local land use controls and ordinances should be mutually supporting, adopted and enforced to integrate the type, timing and location of public facilities and services in a manner to accommodate increased public demands as urbanizable lands become more urbanized.*

Whether or not an area is served by transportation is part of two “urban development priority factors.” Urban development criteria require that development take into account the costs of providing transportation, provide for the efficient extension of the system, and have access to an existing improved arterial or collector (Factors 4. and 6., p. 12).

Other policies related to future growth and impacts to OR 126 include those addressing employment land. The first policy under the Industry Chapter is to “protect existing industrial development and establish the Airport and Railroad Industrial Sites as a high priority for industrial expansion.” The second policy is to direct growth to the “airport vicinity between Houston Lake Road and the Redmond Highway (c).”

The following Air, Water and Land Resource policy also relates to the transportation system, and may possibly influence the design of future OR 126 improvements:

6. *Provide for bicycling and walking as viable transportation alternatives and provide facilities for such (Transportation Element, Chapter IV).*

The Recreation chapter supports this policy with a statement that there is a need in the greater Prineville area for bicycle paths; the Transportation chapter includes several policies relating to the City of Prineville’s objective to encourage pedestrian and bicycle movement as a safe, feasible alternative to the automobile for the metro area.

Crook County Transportation System Plan (2005)

The Crook County Transportation System Plan (County TSP) addresses the County’s anticipated transportation needs through the year 2025. The long-range plan is intended to serve as a guide for managing existing County transportation facilities and developing transportation facilities to meet existing and future needs.

Transportation Goals and Policies are found in Section 2.0. County policies describe four phases of transportation improvements along OR 126, address Prineville Airport access onto OR 126, and

reference the County's IGA with ODOT regarding the Powell Butte jurisdictional transfer and associated improvements along OR 126. The following policies are found under Goal 1 – Mobility:

1.11. Future transportation improvements along OR 126 shall occur by a four phase process. These phases are: 1) passing lanes every 3-5 miles; 2) continuous four lane section; 3) grade separate the higher volume road intersections with interchanges and/or overpasses; 4) full access control with median barriers, frontage roads. Depending on the intersection, some elements of Phase 3 and Phase 4 can be intermixed.

1.12. Any transporting changes near the Prineville Airport must consider the current Prineville Airport Layout Plan when considering such changes. Crook County does not necessarily support the conclusions of the 1998 City of Prineville Transportation System Plan in regard to their preferred option to improve the airport industrial area access to OR 126. The City of Prineville is in the process of updating their transportation system plan and should closely coordinate the airport industrial area access issues to OR 126 with Crook County since part of the affected facility and traffic is on county roads. The ultimate solution should adequately connect Tom McCall Road and Millican Road together in an efficient manner with one interchange connection to OR 126.

1.13. Crook County recognizes that the IGA agreements with ODOT in regard to the Powell Butte jurisdictional transfer and the improvements along OR 126 provide the framework to implement the transportation improvements along those corridors. Specifically, the IGA addresses the planning and funding of the Powell Butte Highway interchange with OR 126 and the eventual four-lane widening of OR 126 from Redmond to Prineville. In addition, the IGA addresses the process to develop the Tom McCall Road/Millican Road interchange with OR 126.

It should be noted that the ultimate recommendations of the corridor facility plan may be inconsistent with these adopted policies. For example, if roundabouts adequately address issues at the “higher volume road intersections,” and become part of the preferred design for the facility, grade separation at these intersections will not be necessary (Policy 1.11 above). Recommendations for specific policy amendments will be developed as part of the implementation phase of the corridor facility plan planning process. Similarly, the IGA between ODOT and the County addressing the planning and funding issues in Powell Butte will need to be revisited and possibly revised, based on the outcomes of the corridor facility plan.

The Existing Conditions section of the TSP lists OR 126 as one of the five state highways that form the “backbone of Crook County’s street system (p. 3-6).” The TSP describes the facility as follows:

Oregon 126 is an east-west highway that connects Crook County to Deschutes County and eventually to the Oregon Coast. The highway is classified as a statewide highway and is a principal arterial. The highway is a two-lane facility with a 55 mph speed limit. There are five to six foot shoulders that exist along Oregon 126 in the Crook County section of highway (p. 3-7).¹⁰

¹⁰ Crook County staff questioned the accuracy of this description as it relates to existing shoulders along OR 126 in a December 15, 2010 Planning Project Management Team meeting. Ultimately, a recommendation to revise this TSP section may be an outcome of the OR Highway 126 Corridor Facility Plan process.

Table 3-1, Roadway Inventory, provides the posted speeds and roadway design for six specific segments of OR 126, from Prineville to the County line.

Section 4.0 Existing Conditions and Deficiencies includes a level of service and v/c analysis for the 30th highest hour A.M. and P.M. weekday peak hours for highway intersections in unincorporated Crook County. OR 126 intersections are included in Table 4-2, Existing Levels of Service; the analysis found that traffic operations at the major intersections are all acceptable.

Subsection 4.3, High Crash Locations, examines the safety of County highways. Based on crash data obtained from the Oregon Department of Transportation for the period between January 1, 2000 and December 31, 2002 and reasonable of evaluating the rate of crashes, no intersections on OR 126 were considered high crash locations and none met traffic signal warrants.¹¹ Four fatalities occurred along Oregon 126 within the two year period, but the analysis conducted for the County TSP concluded that there does not appear to be a pattern.

Finally in the Existing Conditions and Deficiencies section, bicycle and pedestrian facilities are examined. Section 4.8 points out that shoulders exist sporadically along the state highway system throughout unincorporated Crook County and identifies OR 126 for future consideration for shoulder widening projects to accommodate pedestrians and bicyclists. Bicyclists can also use O'Neil Highway between Prineville and Redmond, which has lower vehicular volumes.

Section 5.0, 2025 Travel Demand Forecast and Future Deficiencies, includes the County's future traffic volume projections (Section 5.4). The 2025 traffic volumes were forecasted based on annual historical growth factors along the state highways in Crook County. Table 5-7 summarizes the historical traffic counts and annual growth factors used to forecast the 2025 traffic volumes for the study area intersections. Based on the 2025 traffic volumes, levels of service and volume-to-capacity (v/c) ratios were calculated for the study area intersections. Both the A.M. and P.M. peak hours were analyzed for the 2025 condition. The levels of service and v/c ratio analyses are summarized in Table 5-9. The following three OR 126 intersections are projected to operate beyond the maximum V/C standard for unsignalized intersections:

- *OR 126/Powell Butte Highway – In the 2025 A.M. and P.M. peak hours, the northbound and southbound approaches are projected to operate above a v/c ratio of 1.00. The v/c ratio standard is 0.70 on OR 126 and 0.75 on Powell Butte Highway. The poor v/c ratio at the northbound and southbound approaches is primarily due to heavy through movement traffic volumes on OR 126 conflicting with turning movements on the side street approaches. In addition, in the P.M. peak hour, the westbound left turn from OR 126 to Powell Butte Highway is projected to operate at v/c ratio of 0.95.*
- *OR 126/Stillman Road SW – In the 2025 A.M. and P.M. peak hours, the northbound approach is projected to operate with a v/c ratio of over 1.00. These v/c ratios are well above the maximum v/c standard of 0.80 for the side street, Stillman Road. The poor v/c ratio is primarily due to heavy through movement traffic volumes on OR 126 conflicting with turning movements on the side street approach.*
- *OR 126/Millican Road SW – In the 2025 A.M. peak hour, the southbound approach is projected to operate with a v/c ratio of over 1.00. In the 2025 P.M. peak hour, the northbound and southbound approaches are projected to operate with a v/c ratio of*

¹¹ If an unsignalized intersection has five or more crashes per year, the Manual on Uniform Traffic Control Devices (MUTCD) allows the intersection for consideration of signalization.

over 1.00. These v/c ratios are well above the maximum v/c standard of 0.85 for the side street, Millican Road. The poor v/c ratio is primarily due to heavy through movement traffic volumes on OR 126 conflicting with turning movements on the side street approach.

Based on the v/c ratio analysis and level of service (Table 5-9) the TSP concludes that these three ODOT intersections will need future improvements. The TSP also anticipates that additional travel lanes on OR 126 may be necessary, based on the 2025 projected daily traffic volumes. Information in Section 5.5, Future Intersection and Roadway Capacity Deficiencies, reiterates the County's intent that transportation improvements along OR 126 occur in four phases (see Policy 1.11, cited above). The stated goal of this four-phase approach is "to incrementally improve an existing two-lane rural highway, culminating in a four-lane facility with grade-separated interchanges and frontage roads. The timing of improvements may be tied to volume-capacity (v/c) ratios, levels of service, crash rates per million vehicle miles, reducing types of crashes, or other performance standards. It is anticipated that a refinement study will need to be conducted along OR 126 to address the specific timing, phasing, and configuration of the improvements (p. 5-13)."

Section 5.7 summarizes improvement recommendations from the 1995 Crook County OR 126 Study for areas outside of Prineville's UGB. This section characterizes OR 126 as principally a rural corridor in the County, where side street approaches are typically stop-sign controlled and several major intersections are in need of turning lanes. Recommendations from the OR 126 Study and other improvements identified by local agencies are outlined in Table 1-5.¹²

Improving access to OR 126 in order to adequately serve the transportation needs of the airport industrial area is the one future deficiency identified from the City of Prineville's 1998 TSP (Section 5.8). The County TSP also cautions that the growth rates used to develop the 2025 traffic volumes are conservative and may not account for "accelerated traffic growth" due to residential growth in the County or destination resort sitings. The TSP states that traffic volumes should be monitored at least every three years in high growth areas such as Powell Butte, Juniper Canyon, OR 126 corridor, and the airport industrial area. (Section 5.9).

Section 6.0, Transportation System Alternatives Analysis, describes scheduled STIP projects in the County, including replacing the Crooked River Bridge along OR 126 in Prineville (2005) and passing lanes along OR 126 from Milepost 4.00 to Milepost 6.00 (2006) (Table 7-4 Roadway Capital Improvement List and Cost). This section also explores the options in the 1998 City of Prineville TSP for improving the OR 126 access to the Airport Industrial Area, noting that this was the one roadway improvement in the UGB that would have an impact to the County roadway system. The Millican Road intersection, along with the Powell Butte Highway intersection, is projected to operate below an acceptable level of service and/or v/c ratio and therefore is a candidate for a grade-separated rural interchange. The County's TSP recommends working with the City during their (2005) TSP update in defining a preferred alternative that "meets the airport's needs as well as the airport industrial area vehicle access needs to OR 126 (p 6-6)."

The TSP calls for a refinement study to develop interchange configurations for the OR 126/Powell Butte Highway intersection. The IGA agreement between Crook County and ODOT that transferred Powell Butte Highway to Crook County recognizes that ODOT will secure funding for the OR 126/Powell Butte Highway interchange. Other improvements called for in the County TSP include widening OR 126 (noting that there is an IGA agreement between the County and ODOT that

¹² In email correspondence dated December 28, 2010, the County has provided additional information regarding access locations to be considered for closure at the following locations: Wiley Road, Minson Road, DA Yates Road, Bozarth Road, Kissler Road, and Copley Road.

recognizes the need to provide four lanes along OR 126) and improving Millican Road from OR 126 to OR 20 to meet ODOT's standards for a Truck Route.

Table 1-5 State and Local Agency Identified Improvements

Reference	Improvement Type	Description (Timeframe)	Source	Status
1	Right-turn Lane	Eastbound OR 126 at Powell Butte Highway (2005)	Crook County OR 126 Study (1995)	Completed
2	Reconstruct Approach	Add lane to provide a left-turn and shared through-right lane northbound on Powell Butte Highway at OR 126 (2016)	Crook County OR 126 Study (1995)	Completed
3	Left-turn Lane	Westbound OR 126 at Stillman Road (2010-2015)	Crook County OR 126 Study (1995)	Not Completed
4	Major Street Left-Turn Lanes ¹	Undefined locations to be determined, as-needed, to reduce crashes	Crook County OR 126 Study (1995)	Not Completed
5	Access Improvements	Serve transportation needs of airport industrial area	City of Prineville TSP (1998)	Not Completed
6	Bridge Replacement	Crooked River Bridge (2005)	Statewide Transportation Improvement Program (STIP)	Completed
7	Passing Lanes	From milepost 4.00 to 6.00 (2006)	Statewide Transportation Improvement Program (STIP)	Completed
8	OR 126 Widening	Provide 4-lanes of travel	County TSP (2005)	Not Completed
9	Millican Road Improvements	Modifications from OR 125 to OR 20 to meet ODOT Standards for Truck Route	County TSP (2005)	Not Completed
10	Refinement Study	Develop Alternatives for OR 126/ Powell Butte Highway Interchange	County TSP (2005)	Not Completed
11	ITS Project	OR 126 Parrish and Minson System – VMS	County TSP (2005)	Unknown
12	ITS Project	Powell Butte Highway and OR 126 System – ATR & RWIS & CCTV	County TSP (2005)	Unknown

¹ These are considered a temporary solution and would eventually be eliminated as grade separated facilities were created as part of the four phase improvement process. "A consideration in the left turn warrant process should be the four phase improvement process to eventually build OR 126 into a four-lane, controlled access facility. Consideration for access control, consolidation of accesses onto OR 126, development of frontage roads, and other access management measures should be considered prior to and in conjunction with installing left turn lanes onto OR 126 (p. 5-15)."

Section 6.6 includes a list of ITS projects the Crook County Road Department plans to deploy in the County. ITS projects that include OR 126 include:

- *OR 126 Parrish and Minson – System – VMS*
- *Powell Butte Highway and OR 126 – System – ATR & RWIS & CCTV*

Modernization and operation projects are listed in Table 6-1.

Crook County Coordinated Transportation Plan (2007)

The Crook County Coordinated Transportation Plan (Coordinated Transportation Plan) is the County's coordinated human services transportation plan. The purpose of the Coordinated Transportation Plan is to improve transportation services for the disabled, seniors, and individuals with lower incomes by identifying opportunities to coordinate existing resources; providing a strategy to guide the investment of financial resources; and guiding the acquisition of future grants (p. 3). In order for a public transportation project to be eligible for Special Transportation Fund (STF)¹³ and/or Public Transit Division Discretionary Grant programs, it must come from, or be consistent with, the Coordinated Transportation Plan priorities. The plan's priorities will be used by the Crook County STF Committee and the ODOT Public Transit Division to review and recommend public transportation funding applications submitted by transportation providers and organizations.¹⁴ There are seven "High Priority" strategies for addressing the gaps and barriers to providing public transportation to the targeted populations. Of these, the following has implications for future trips on OR 126:

- Expand public transportation service hours of operation, weekends and weekday Evenings
- Expand Dial-A-Ride service boundaries beyond current 8-mile radius from downtown Prineville
- Increase the availability of inter-community services to Bend, Redmond, Madras

While the Coordinated Transportation Plan does not provide policy direction regarding future improvements on OR 126, meeting the unmet transportation needs and improving services for special populations may have implications for travel patterns on the highway.

Crook County Development Code

In addition to recommendations related to facility design and function, the corridor facility plan will include recommendations for modifications to local land use or land development ordinances that support the long-term operation of OR 126. Title 18 of the County Code is the Crook County zoning ordinance. Existing County zoning in the corridor is shown in Figure 2-2 in Technical Memorandum #2. The code does not explicitly permit transportation improvements outright in these zones.¹⁵

¹³ As noted in the Coordinated Transportation Plan, "the STF for Elderly and Disabled was established by the legislature in 1985, and is administered by the Public Transit Division of the Oregon Department of Transportation. Revenues come from two sources – a tax on cigarettes and the General Fund budget. Three quarters of the STF (75%) is distributed by formula to each county. The remaining 25% of STF funds are administered by ODOT through a competitive statewide grant program known as the discretionary application process. Funds can be used for the purchase or replacement of vehicles and other capital equipment, operations, planning and development. The amount of formula funds allocated to each county is based on population. (p. 7)"

¹⁴ A list of transportation providers in the county can be found under Subsection 3.2, Transportation Infrastructure. Included are private, public, and non-profit providers. Providers include bus and cab companies.

¹⁵ EFU-JA (Juniper Acres) permits outright the "minor betterment of existing public roads and highway-related facilities (Section 18.112.010)"; roadway improvements within the public right-of-way are permitted conditionally in the F-1 Forest Zone.

Adopted County road standards that govern development along OR 126 include requiring approval from ODOT where a subdivision requires an access approach to the highway (Section 17.36.020.14, Chapter 17.36, Design Standards). This requirement is reiterated in the County's final plat requirements, which states that the "necessary access permits shall be obtained prior to final plat approval" where access is requested to a state highway (Section 17.20.060.9). The Development Code does not require traffic impact analysis as part of legislative amendment approval or development review.

Where a subdivision abuts an existing or proposed arterial street, the County Planning Commission can require as part of subdivision approval "marginal access streets, reverse frontage lots with suitable depth, screen planting contained in a non-access reservation along the rear of side property line, or other treatment necessary for adequate protection of residential properties and to afford separation of through and local traffic (Section 17.36.020.11). Standards for road construction refer to American Association of State Highway and Transportation Officials guidelines and ODOT Standard Specifications for construction (Section 17.36.020.15).

City of Prineville Urban Area Comprehensive Plan (2007)

The Prineville Urban Area Comprehensive Plan (Plan) "anticipates community planning needs for all aspects of the urban environment" and serves as the City's policy guide for directing and managing growth within the Urban Growth Boundary (UGB). The Plan has few policies directly associated with planning on OR 126. However Chapter 5, Economy, contains demographic and background information related to employment that will have an impact on the transportation system, and OR 126 specifically. Chapter 5 includes the "recent development" of the Millican Highway connection from Highway 20 (Burns) to OR 126 at the industrial park" in a description of the City's locational advantages. It states that the addition of truck stop services near the intersection of the Millican Highway and OR 126 will help to serve the industry while reducing the negative impact of the truck traffic upon the rest of the community at the City center. The Les Schwab distribution plant is also located off of Millican.¹⁶

Existing conditions information includes the statement that car commuting in the County is higher than other places in Central Oregon due to the rural setting and distances from employment areas in Bend and Redmond. The Plan clearly states a desire to provide jobs in the community and reduce daily commuting to other cities. In addition, current lack of desirable industrial land in Bend and Redmond and the City's 2004 UGB expansion, which added over 540 acres of industrial land to the UGB, may influence commuting patterns and reduce traffic on OR 126 (p. 74, p. 78).

Chapter 5 identifies the Prineville Airport as a major industrial area and a top local priority for infrastructure planning and economic expansion incentives. This area includes the Tom McCall Industrial Park, over 100 acres owned by the County and private developers, the Prineville Industrial Park (Tom McCall Expansion), 118 acres of privately owned land, and the Prineville Airport Business/Industrial Park, which has sites available for industrial and commercial development (lease only). The economic analysis concludes that there is a need for additional industrial lands that are situated near the airport, which will require a future UGB expansion.¹⁷ The Plan includes the policy that "adequate public facilities must be planned, funded, and installed to serve industrial sites and commercial areas (p. 89)."

¹⁶ Prineville has the highest per capita of manufacturing jobs in the state, due in part to Les Schwab, which accounts for 50% of the City's private sector jobs (Comprehensive Plan, p.69).

¹⁷ Removing constrained land and land that has been identified for rezoning from industrial to other uses the Plan now estimates the long term industrial need at 1,393 acres (p. 84). It does not specify how much of this need should be accommodated near the airport.

Chapter 6, Transportation and Circulation, acknowledges the importance of the highway system to the City through Goal # 1 and a few of its associated policies:

- *Create a functional transportation system to maximize and extend the life of transportation facilities and improve livability throughout the Prineville community.*
- *The highway systems contribute to the local economy and bring goods and services into the community bolstering local commerce and tourism.*
- *The Prineville community desires to balance the highway needs of regional users with the local users in order to avoid creating highway improvements that sacrifice local values and damage economic interests.*
- *Innovative intersection designs such as roundabouts can reduce cost and improve livability.*

The Transportation chapter also describes operations and planned improvements at the Prineville Airport (p. 101). There are approximately 500 take-offs and landings per month with over 20,000 people per year using the Crook County airport. There are two runways and improved taxiway, which is sufficient to handle corporate jets and general use aviation aircraft. Most of Crook County's large business, commercial and heavy industrial firms use the airport. The Plan states that airport development and expansion is important for Crook County's overall economic growth and that the airport is in the process of expanding, consistent with the adopted Airport Expansion Plan.¹⁸

City of Prineville Transportation System Plan (2005)

The City of Prineville Transportation System Plan (TSP) serves as a guide for the management of existing transportation facilities and the design and implementation of future facilities within the City. Chapter 1 provides a review of the OHP, which includes the mobility standards for highways within the UGB. The information below is from *Table 1-1 Mobility Standards for Prineville UGB Area – Volume-to-Capacity Ratios for State Highways*.

Table 1-6: Mobility Standards for OR 126 in Prineville

Highway Route No.	From	To	Volume-to-Capacity Ratios		Highway Category
			Posted Travel Speed		
			< 45 mph	> = 45 mph	
OR 126	Prineville UGB	O'Neil Hwy	0.70	0.70	State / Expressway
OR 126	O'Neil Hwy.	US 26 ("Y")	0.80	0.75	State / NHS

Table 3-1 of the TSP, State Highway Classification, identifies Ochoco Highway as having a Statewide highway classification and describes the facility as:

Highway 126 to the west of Prineville and Highway 26 through and east of Prineville. It is the focus of the downtown commercial development and carries the greatest amount of traffic in the city.

Along with Highway 26, OR 126 is cited as the most important highway in Prineville (p. 13). Goals and objectives related to corridor planning along OR 126 include:

¹⁸ The Comprehensive Plan notes that the Airport Expansion Plan is in the Appendix; however, the Appendix is not included in the document that is posted on the City's website.

GOAL: Reduce congestion, improve circulation, and provide safe side-street access along Highway 126, Third Street, and Main Street.

Objectives

- A. Develop a safe and efficient arterial and collector system which maintains the integrity of the downtown business district and minimizes the impact on street-side parking.*
- B. Develop parallel, local streets to state highways to reduce conflict points on the highway system.*
- C. Improve intersection operations by enhancing traffic signal operations, installing new traffic signals (where warranted), actuating and coordinating traffic signals, and/or increasing sight distance as needed.*
- D. Provide signage directing vehicles to business, industrial, and recreational centers.*

GOAL: Preserve the function, capacity, level of service and safety of the transportation system.

Objectives

- A. Adopt access management standards, level of service policies and street design standards (including new standards for "local" streets) which balance the need for access with the need for automobile, pedestrian and bicycle safety and with the need for efficient movement of through traffic and which are consistent and compatible with those standards adopted by ODOT (1999 Oregon Highway Plan) and Crook County.*
- B. Work with ODOT to support airport facility improvements (including access to/from the airport and industrial areas) identified in the current airport master plan for Prineville Municipal Airport. (Note: from the Interim Corridor Strategy for Highway 126.)*

The inventory of existing transportation facilities (Chapter 3) describes the City's arterial network, which includes OR 126. US 26 and OR 126 merge on the west side of the City to form a single roadway bisecting Prineville from east to west. Named Third Street within city limits, US 26 has a major arterial street designation and is described in the TSP as the primary corridor of commercial development.

Chapter 3 includes a description of the Prineville Municipal Airport. Annexed in 1995, the airport is located west of the city, north of OR 126. It is a general aviation airport with two paved runways that is used by most of the large local business, commercial, and heavy industrial firms in the area, as well as the United States Forest Service. It is served by one fixed-base operator and there were approximately 30 general aviation aircraft based at the airport in 1994. At that time, there were an estimated 4,500 operations at the airport, which utilized approximately 4% of the airport's capacity.

Existing (2005) traffic conditions are found in Chapter 4. The 2005 two-way, p.m. peak hour traffic volumes reveal that the highest volumes occur on Third Street, with about 1,680 vehicles entering and exiting from the "Y" intersection of US 26 and OR 126. The analysis of existing conditions shows that the OR 126 / O'Neil Highway (eastbound left-turns at stopped approach to OR 126) and the OR 126 / US 26 (southbound left-turns at stopped approach within "Y") intersections exceed their respective V/C standard (Table 4-3). The "Y" intersection is described as follows:

The western entrance to Prineville at the junction of US 26 and OR 126 will become more congested with growing traffic conditions. Higher levels of truck traffic through

the “Y” configuration, controlled by two separate stop signs and yield indicators with single-lane merging at critical points is already problematic. Alternatives to easing traffic demand and better facilitation of through, truck traffic should be identified and evaluated in the Alternatives Analysis, including the option of a new roundabout to replace the existing “Y” configuration.

Chapter 5, Growth and Travel Forecasts, records that the annual traffic growth is expected to be 1.81 percent along state highways. This average growth rate reflects the historic growth in traffic due to new land developments within the UGB and greater Crook County, as well as growth in inter-city travel (p.5-2). Growth rates along OR 126, by mile point within the UGB are found in Table 5-1. Future 2025 traffic volumes are expected to be highest on Third Street between the “Y” connection (US 26/OR 126) and Juniper Street (Figure 5-2). Conditions at the intersections on OR 126 at O’Neil Highway and US 26, already exceeding mobility standards in 2005, are expected to significantly worsen by year 2025. In addition, by 2025 the OR 126/Tom McCall intersection will also exceed the mobility standards (p. 5-5). The 2025 traffic conditions on OR 126 in the airport area will warrant traffic signals at both Millican Road and Tom McCall Road (see Table 6-3).

Chapter 6 of the TSP summarizes the future transportation system alternatives the City explored to help alleviate the levels of traffic congestion expected by year 2025. Improvements to OR 126 are examined in the “build alternatives” as part of two sub-areas: Subarea 1 – Improvements to junction of OR 126 and US 26 (safety, access and capacity) and Subarea 2 - Improvements to OR 126 access in the Prineville Airport and industrial area (safety, access and capacity). Because it was assumed that a fully grade-separated interchange would be “extremely costly and perhaps unwarranted within the 20-year planning horizon,” the TSP focused on two types of intersection traffic control measures at the “Y” junction to increase capacity and multi-modal access at the junction: traffic signal and roundabout. The analysis of future traffic conditions indicates that a new traffic signal at the junction, even with additional turn lanes, would result in future traffic conditions that exceed the OHP mobility standard by 2025 (Figure 6-2). The TSP indicates that a roundabout design with slip lanes is the preferred alternative, but recommends that the City and ODOT pursue both roundabout concept options examined, and narrow the analysis to a final, recommended design for eventual construction (p. 6-4). The optimal improvement for Subarea 2 was determined to be an interchange at Tom McCall. The Tom McCall interchange option (Option #1) was found to be “the most desirable interchange option that optimized OR 126 operations, provided improved access and safety to the industrial area, and minimized the impact to the airport area operations (Figure 6-3).”

The street system alternatives analysis in Chapter 6 also includes an examination of how to improve access across Crooked River (Subarea 5). The intent is to provide alternate route connections to OR 126 (3rd Street), improve safety on OR 126, and potentially relieve future traffic congestion in the downtown Prineville area. The recommendations (p. 6-30) include:

- a. *Extend Crestview Road to the Crooked River Highway to add second river crossing and provide partial median control of OR 126 at Rimrock Road.*
- b. *Re-align and extend O’Neil Highway across the Crooked River to US 26 at 9th Street and provide full median control at the existing intersection of OR 126 and O’ Neil Highway.*

The City's transportation policies and street system plan are found in Chapter 7. The following policies are relevant to planning on OR 126:

Intergovernmental Coordination and Consistency

17. The City of Prineville should coordinate their transportation planning and construction efforts with those of the Crook County, the State of Oregon Department of Transportation, and other affected agencies as appropriate. Local transportation plans will be consistent with those developed at the regional and state level.

Arterial and Collector Street Intersections

4. Left-turn pockets should be incorporated into the design of all intersections of arterial streets with other arterial and collector streets, as well as collector streets with other arterial and collector streets.

Access Management

11. On State highways within the Prineville UGB, new direct access points should conform to Division 51 of the Oregon Administrative Rules. Alternatives to direct access including, but not limited to, shared driveways, frontage roads, side street or alley access, should be utilized where possible.

Development and Adoption of Access Management Standards

h.) All new access to State highways within the Prineville UGB should conform to Division 51 of the OAR.

Bicycle System Policies

4. The City of Prineville should actively work with ODOT to improve bicycling on State Highways within Prineville.

G. Freight Movement Policies:

Access to Streets and Highways

1. The City of Prineville shall create a street and highway system that provides direct and efficient access to, and between, Prineville Urban Area industrial and commercial centers and statewide transport corridors.

The City's Street Functional Classification map and policies identify state highways as arterials (p.7-15, Figure 7-1). However, it is expected that state highways will follow the guidelines of the OHP (p. 7-27). Table 7-3 includes the access management spacing standards for state highways and the designations for highway segments in Prineville.

The OR 126-related street improvements include:

[7] WYE Junction Roundabout: Complete project engineering and construct roundabout at the junction of US 26 and OR 126. This project provides significant long-term highway capacity, serves as a "gateway" feature and entrance to downtown Prineville, and helps manage access to OR 126 while providing sufficient access enhancements to local businesses [short-term].

[8] OR 126/McCall Road Interchange Improvement: Construct McCall Road interchange at OR 126 to improve access in the Prineville Airport Industrial Area [long-term].

[12] O'Neil Highway Re-alignment: Complete engineering and study then construct realignment of O'Neil Highway to intersect with US 26 at about Ninth Street. This project may require a minor re-alignment of Ninth Street to complete the major, four-legged intersection rather than an off-set of O'Neil Highway and Ninth Street (Northern Arterial) at US 26. This project provides significant relief to traffic congestion and enhances safety at the intersection of OR 126 and O'Neil Highway [long-term].

These identified improvements may change as a result of the evaluations conducted as part of the OR 126 Highway Corridor Facility Plan. The implementation section (p. 7-43) notes that none of the projects that involve state facilities are currently included in the STIP.

The Air Service Element of the TSP notes that the Prineville Airport is part of the Oregon Aviation System Plan (OASP) and is owned and operated by Crook County and the City of Prineville. The 2003 Prineville Airport Layout Plan and Airport Layout Plan Report are referenced, but not included as part of the TSP (see review of this report in this memorandum). The TSP summarizes the “concerns” addressed in the study, including land use planning for the airport and surrounding areas; encroachment of commercial enterprises onto airport environs; location of airport access road; location of terminal building; utilization of terminal and airport industrial area; and, location of additional aircraft hangar area (p. 7-41).

City of Prineville Land Use Code

The City of Prineville's Land Use Code implements the goals, policies, and objectives expressed in the City's Comprehensive Plan. Sections 153.045 through 153.064 (Use Zones) specify the allowed uses and associated regulations for each zoning district in the City. Nine different zoning designations are found along the OR 126 right-of-way within City limits, including various airport zones and Industrial Park zoning near the airport; Park Reserve around the State Park just west of downtown; General Residential southwest of downtown; Limited Industrial on the north side of the highway just west of downtown; and General Commercial on the south side of the road where it reaches downtown. Existing City zoning in the corridor is shown in Figure 2-2 in Technical Memorandum #2. City of Prineville zoning designations are shown on the following map.

Existing land uses and associated development requirements are explored in depth in Technical Memorandum #2 *Existing Conditions*. Transportation facilities are identified specifically in each zone as permitted and/or conditional uses. All the City zoning districts that OR 126 passes through allow maintenance and repair of existing roadways, as well as the construction of new facilities, if identified in an adopted transportation plan. In addition, a wide range of highway improvement activities are permitted outright in all zones and are exempt from local permit requirements, including the installation of additional lanes and pedestrian and/or bikeways within a highway right-of-way (Section 153.122).

Section 153.195 provides guidelines for access management, including specific guidelines for OR 126 (500 feet between driveways and/or streets and ¼ mile between street intersections). The standards are presented as “guidelines” that the reviewing authority “shall consider” in the review and approval of new development. This section also identifies other techniques and considerations for restricting access to arterials and collectors, but does not include any requirements for their use.

Additional requirements for access management are provided in some of the zones. Several of the zones along the OR 126 corridor (Airport Commercial, Airport Development, General Commercial, Limited Industrial, and Park Reserve) include a requirement that new development be designed so that traffic does not have to back onto a public street right-of-way to enter or leave the site. In the Airport Business-Industrial zone, the use of existing or future lower order roads for access is required,

rather than the state highway, and uses may be required to provide for shared access or frontage roads. In the Park Reserve zone, there is a general requirement that access points from public streets must be located to “minimize traffic congestion, noise and dust pollution and to protect scenic views and vistas”. In the Limited Industrial zone, there is a similar standard for access to “minimize traffic congestion, noise and dust pollution, and ... avoid directing traffic onto residential streets or onto streets passing directly through residential, school, hospital or other noise sensitive use areas and safety zones”.

Other requirements that apply to development within zones in the corridor that may have bearing on OR 126 design or operations include off-street parking requirements (Section 153.085), design and improvement standards for off-street parking and loading areas (including shared parking and minimum driveway widths, Section 153.086), landscaping requirements (Section 153.087). Street Cross-Sections are listed in Section 153.194, subsection (F). Highway 126 is classified as a major arterial in the City’s TSP; as part of this planning process and as necessary, highway design standards and local arterial requirements should be reconciled for this facility. Notably absent from the Land Use Code are development requirements related to traffic impact analysis (TIA); TIA requirements are found in Appendix A to the 2005 TSP.¹⁹

Airport Layout Plan Report (2003)

The Airport Layout Plan Report (Report) was developed jointly by the City of Prineville and Crook County, with the support of the Oregon Department of Aviation (ODA), so that the Prineville Airport could continue to qualify for federal Airport Improvement Program (AIP) grants for eligible facility improvement projects.²⁰ The Report verifies that this general aviation airport plays a significant role in providing access to the statewide transportation system, as well as both direct (i.e., employment) and indirect economic activity within the local community and region. The Report also points to the airport’s role in the joint effort by the City and County to attract new, large employers to the area, noting that the County owns most of the available undeveloped industrial land adjacent to the airport and that expanding a diversified industrial base within the county is a primary component of the region’s economic development strategy (p. 1-2). Report conclusions, starting on p. 1- 3, include the following, which have a bearing on land use and traffic in the vicinity of the airport:

11. The existing zoning associated with Prineville Airport does not fully comply with ORS Ch. 836.600 et. Seq (see Chapter Six for detailed discussion of existing zoning).

12. The east side of the airport currently accommodates all landside facilities. It is anticipated that this area will not have sufficient landside capacity to accommodate projected facility demands without redevelopment and/or reconfiguration of existing facilities. If existing facility configurations are maintained, expansion to the north side of Runway 10/28 will be required during the current planning period.²¹

13. The planned expansion of landside facilities into undeveloped areas of the airport will require the extension of utility service (water, electrical, telephone, sanitary sewer, etc.) and airport access roads. Utility improvements are not eligible for FAA funding, therefore will require local funding. Access roads that serve aviation developments are generally eligible for FAA funding.

¹⁹ The exception is the requirement for specific conditional uses, such as hospitals and churches, to show the “probable effect on the traffic volumes and patterns of abutting and nearby streets (Section 153.143).”

²⁰ The Airport Layout Plan Report was funded with the support of the Federal Aviation Administration (FAA). FAA’s approval of the updated Airport Layout Plan will enable AIP grant eligibility.

²¹ The Airport Layout Plan Report addresses a twenty-year planning period.

The Report's recommendations (p. 1-5) include upgrading and widening runways, adding taxiways, adding floodlighting to the existing terminal area and other existing landside areas (hangars, aircraft parking, etc.), and fencing along the airport's boundary. Transportation recommendations relevant to OR 126 facility planning include:

7. Any future improvements to Highway 126 in the vicinity of the airport should be designed to avoid creating obstructions to the approach surfaces of Runway 28 and 33, as depicted on the updated airspace drawings contained in this report.²²

20. Any planned improvements to Highway 126 in the vicinity of the airport should be designed to avoid any obstruction to the Prineville Airport's FAR Part 77 imaginary surfaces. In addition, any lighting associated with the highway in the vicinity of the airport should be designed to avoid producing excessive upward light emissions that could create a hazard for aircraft operating at the airport.

Chapter 2, Inventory and Forecasts, identifies the location of the airport as approximately three miles southwest of Prineville's city center, just north and west of State Route 126. This Chapter documents that currently all landside developments (hangars, aircraft parking, services, etc.) are located at the east end of the airport and are served by an access road that connects to OR 126. Citing information provided by the local chamber of commerce, Chapter 2 reports that the airport has three industrial parks nearby with more than 100 acres of land zoned for heavy industry (p. 2-7). The background information on the airport lists the patrons as a "variety of general aviation users, including business, commercial, and government aviation," as well as the United States Forest Service (USFS) and the Bureau of Land Management (BLM).

Under "Land Use Planning and Zoning," the Report states that the airport is located entirely within the City's UGB and city limits. Land is zoned- Airport Operations (A-O); Airport Development (A-D); Airport Business – Industrial (A-M); and Airport Commercial (A-C). City and/or County industrial zoning is located to the southeast, east, and north of the site, with the remaining areas in Crook County Exclusive Farm Use (EFU3) Zoning (p. 2-20).

The remainder of Chapter 2 deals with the methodology of updating the forecasts of aviation activity and translating future activity into gross facility needs for the 20-year planning period. Air traffic at the airport is predominately general aviation with a small amount of government activity, where business jet activity currently accounts for more than 12% of annual operations and is expected to increase in the future (p. 2-27). More than 430 aircraft are located within Prineville's airport service area (Table 2-17); Prineville currently accounts for about 17 percent of the area's aircraft, with Bend and Redmond accounting for more than 60 percent. The Report concludes that competition among airports (services and facilities) will continue being a primary factor affecting aviation activity at all airports within the local service area. The Report looked at national general aviation trends, as well as local population to predict future airport usage, and concludes that aviation activity at the airport has generally outpaced population growth in recent years. Long-term forecasts of Crook County population reflect a moderate increase (1.6 percent annual average growth) over the next twenty to forty years and airport activity is expected to increase at a slightly higher rate than County population. An annual average growth rate of 3.1 percent was used to project area-based

²² The Report notes that OR 126 crosses through the runway protection zones (RPZ) for Runway 33 and Runway 28 and that airport property extends south of the highway. The Report also states that it appears vehicles traveling on the highway remain below the runway approach surfaces and do not create an obstruction to the approaches. (p. 2-17, p. 3-19).

aircraft through the twenty-year planning period to provide a more aggressive projection. Aircraft operations are projected to increase at an average annual rate of 4.5 percent. The higher rate of growth in operations is based on the assumption that the average aircraft utilization at the airport will gradually increase from its current 120 operations per based aircraft to 160, which is equal to the airport's long-term historic average (p. 2-37).

Chapter 4 describes a preferred alternative for the airport layout, a refinement of an earlier concept ("Concept A") that involves the redevelopment of the existing east-side facilities located between the ends of Runways 28 and 33, Highway 126 and the main access taxiway. The aim of Concept A was to eliminate the "patchwork pattern of development" by maximizing the efficiency of existing developed areas (east landside area) to address facility needs before proceeding with the development of other parts of the airport (4-2). The preferred alternative supports redevelopment of east side facilities where feasible and designates large development areas and development reserves on the north side of Runway 10/28 for general aviation, agricultural, military and government aviation use. A previously-planned realignment of the main airport access road allows for the development of aviation-related facilities east of the existing access road, which currently cannot be accessed by aircraft without taxiing across the roadway. This new north airport access road would extend from an existing service point on Highway 126 and is described in the Airport Layout Plan (p. 4-15) as follows:

The existing airport access road will be realigned to accommodate a combination of aviation and aviation-related developments between Highway 126 and existing east landside development. The existing access road will be gated at the north and south ends of the development area to provided limited vehicle access. The area will be developed to accommodate aircraft hangars on both sides of the existing access road and hangar taxilanes will be extended to serve hangars located on the east side of the existing road.

In addition, the Airport Layout Plan calls for the following:

A location for an emergency services building is identified near the southeast corner of the airport. This facility is envisioned to provide emergency response services on the airport and to adjacent areas through direct access to Highway 126.