



Prepared by



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**WHEELER COUNTY
TRANSPORTATION SYSTEM PLAN**

Prepared for:

**Wheeler County, Oregon
and
Oregon Department of Transportation**

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

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CHAPTER 1: INTRODUCTION

The Wheeler County Transportation System Plan (TSP) guides the management of existing transportation facilities and the design and implementation of future facilities for the next 20 years. This TSP constitutes the transportation element of the County's comprehensive plan and satisfies the requirements of the Oregon Transportation Planning Rule (TPR) established by the Department of Land Conservation and Development. It identifies and prioritizes transportation projects for inclusion in the Oregon Department of Transportation's (ODOT's) Statewide Transportation Improvement Program (STIP).

Although individual TSPs were not prepared for the cities of Fossil, Mitchell, and Spray in conjunction with this County TSP, relevant issues and concerns raised by representatives of each city are addressed throughout this document.

PLANNING AREA

The Wheeler County TSP primarily covers the unincorporated areas of Wheeler County but also addresses issues raised within the incorporated cities of Fossil, Mitchell and Spray. The Wheeler County planning area is shown on **Figure 1-1** and the planning areas for each of the incorporated cities are shown on **Figures 1-2** through **1-4**. Roadways included in the TSP fall under several jurisdictions: the incorporated cities, Wheeler County, and the State of Oregon.

Wheeler County was established in 1899 and is located in north central Oregon. It is 1,713 square miles in area. The county's population as of 1998 was 1,600 with slightly more than 50 percent of the population (895) concentrated in the cities of Fossil, Mitchell and Spray. Fossil is the county seat and the largest city in the county, with approximately 530 people representing 33 percent of the population. Wheeler County is primarily bordered by Wasco and Jefferson Counties to the west, Grant County to the east, Crook County to the south, and Gilliam County to the north. The elevation at Fossil and Mitchell is 2,650 feet above mean sea level and much of the county's rugged terrain transitions between mountainous valleys such as the John Day Valley and expansive plateaus. The county sits in the heart of the Columbia Basin wheat area and receives only about 15 inches of precipitation a year. Portions of the Ochoco and Umatilla National Forests cover approximately 20 percent of the county.

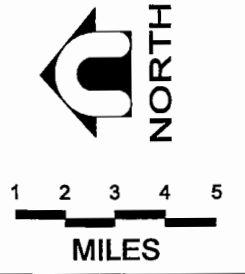
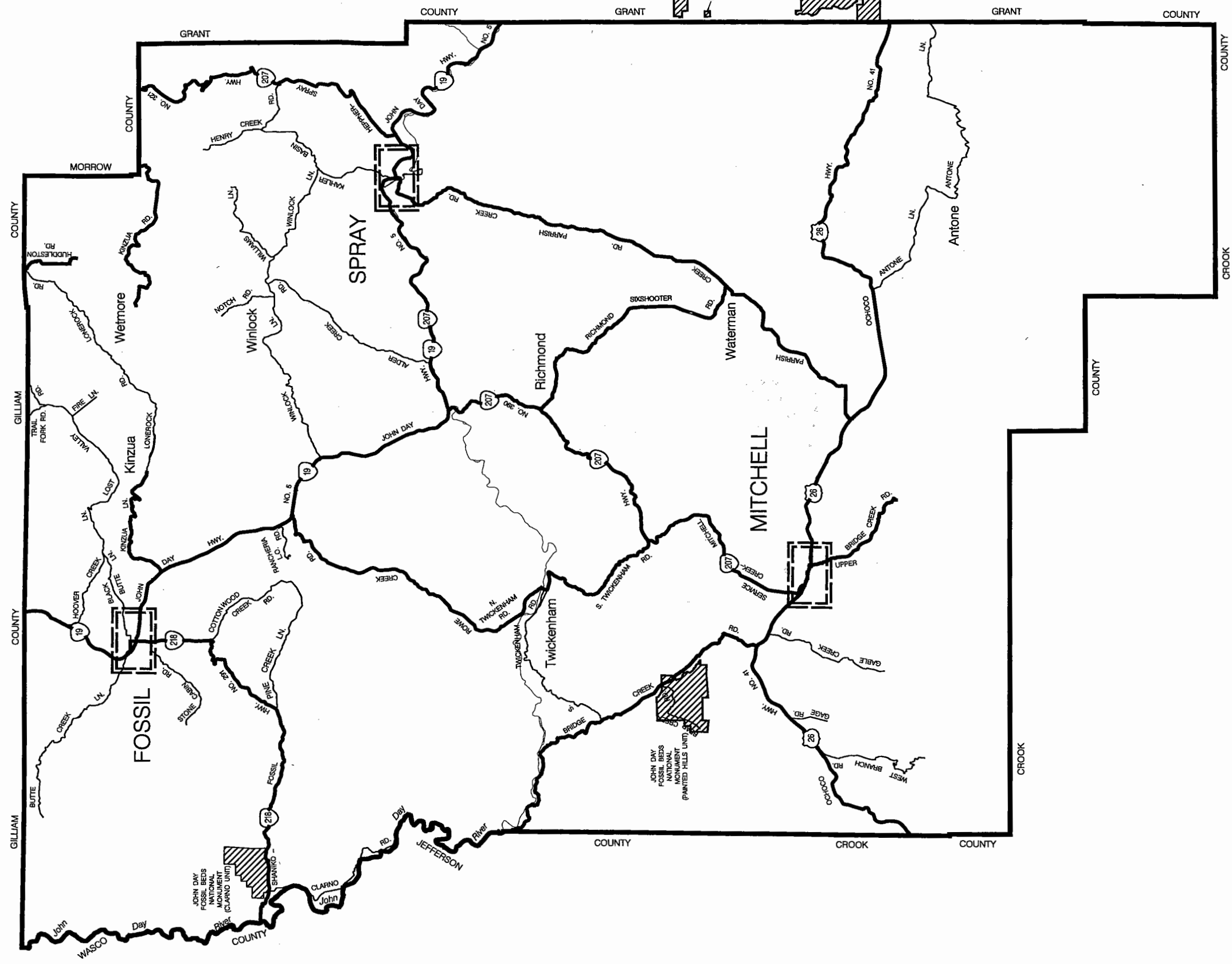
The primary east-west routes through the county include US Highway 26 (Ochoco Highway), OR highway 19 (John Day Highway), and OR Highway 218 (Shaniko-Fossil Highway). The main north-south routes include OR 19, OR Highway 207 (Service Creek-Mitchell Highway) and OR Highway 207 (Heppner-Spray Highway). When OR 19 changes its travel direction from north-south to east-west it shares its alignment with OR 207 from Service Creek until just east of Spray where OR 207 veers north toward Heppner.

Wheeler County's economy is based primarily in agriculture, with an average farm size of about 4,300 acres. Lumber and tourism are important secondary industries.

PLANNING PROCESS

The Wheeler County TSP was developed through a series of technical analyses combined with systematic input and review by the county, the cities, the local working group, the Transportation Advisory Committee (TAC), ODOT, and the public. The TAC consisted of staff, elected and appointed officials, residents, and business people from Wheeler County and the Cities of Fossil, Mitchell, and Spray. Key elements of the process include:

- Involving the Wheeler County community (Chapter 1);



LEGEND:
 - - - - - AREA OF MUTUAL CONCERN (A.M.C.) BOUNDARY

FIGURE 1-1
Wheeler County Planning Area

- URBAN GROWTH BOUNDARY (U.G.B.)
- CITY LIMITS

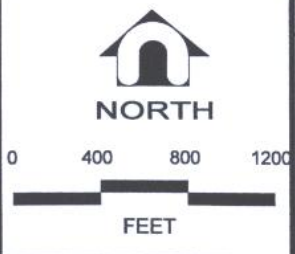
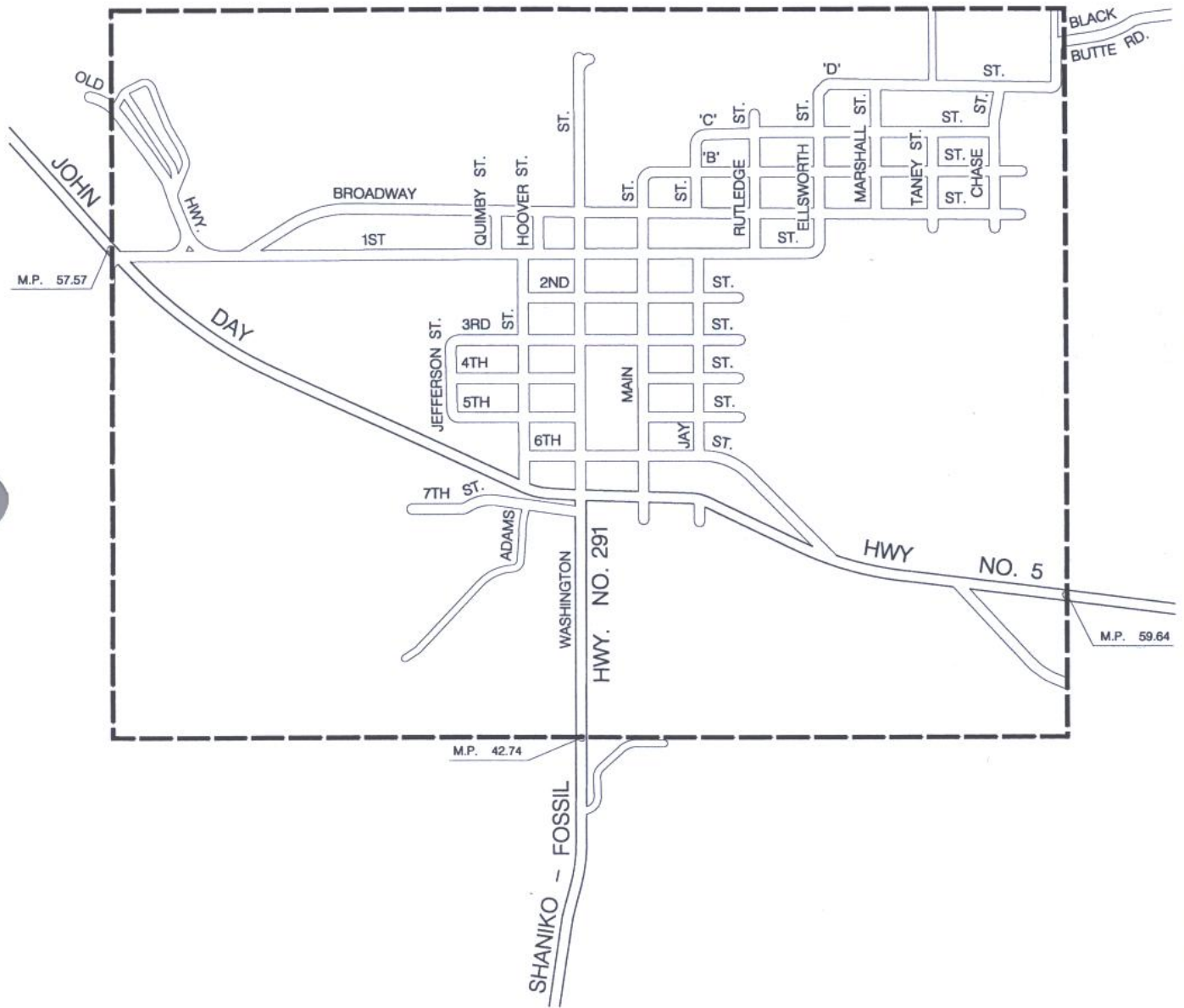


FIGURE 1-2
Fossil Planning Area
 WHEELER COUNTY TSP

- - - - - URBAN GROWTH
 BOUNDARY (U.G.B.)
 ······ CITY LIMITS

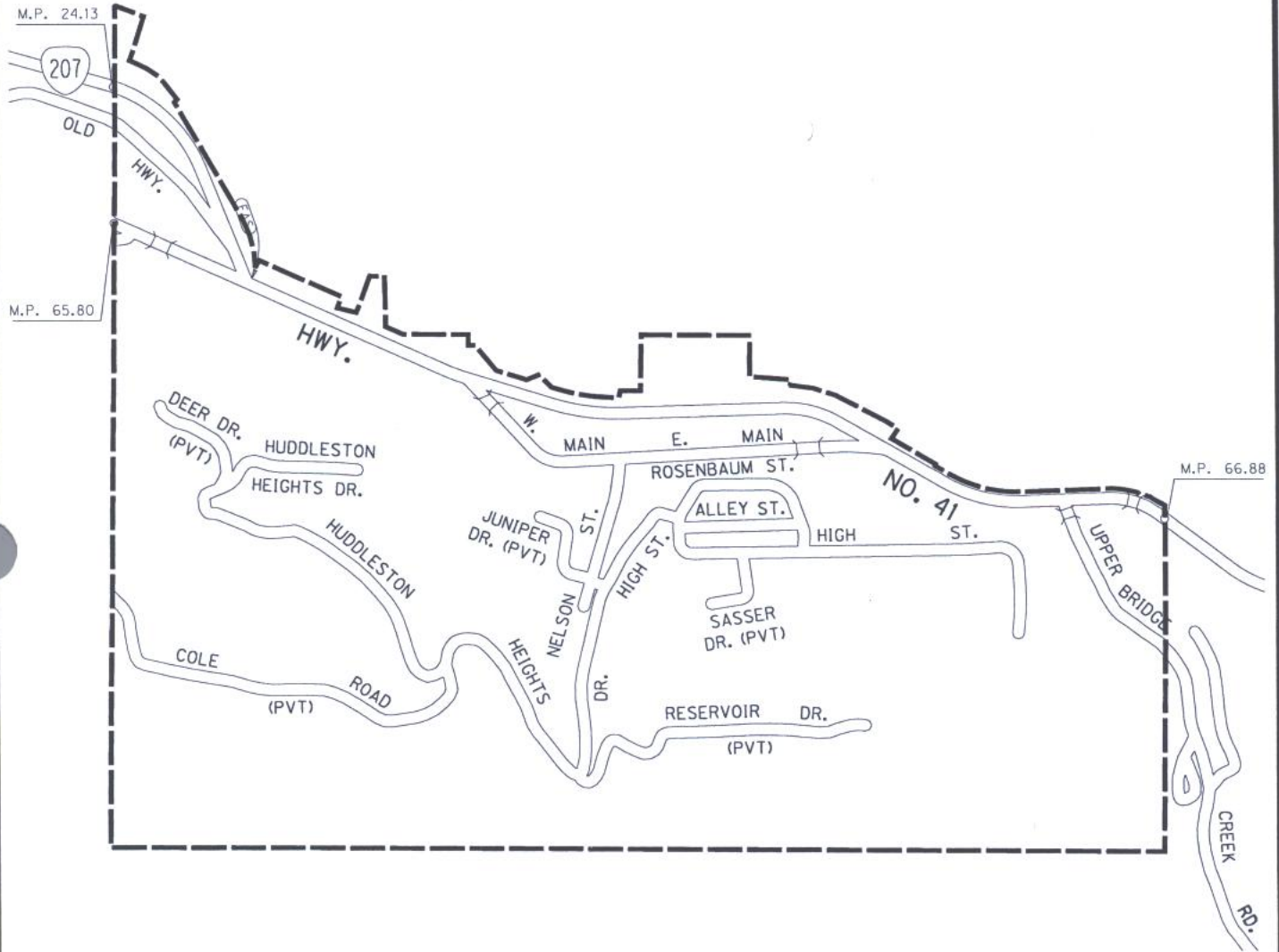
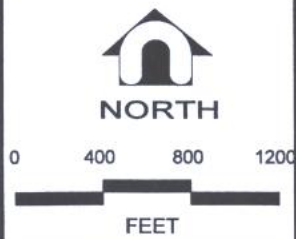


FIGURE 1-3

Mitchell Planning Area



WHEELER COUNTY TSP

- - - - - URBAN GROWTH
 BOUNDARY (U.G.B.)
 CITY LIMITS

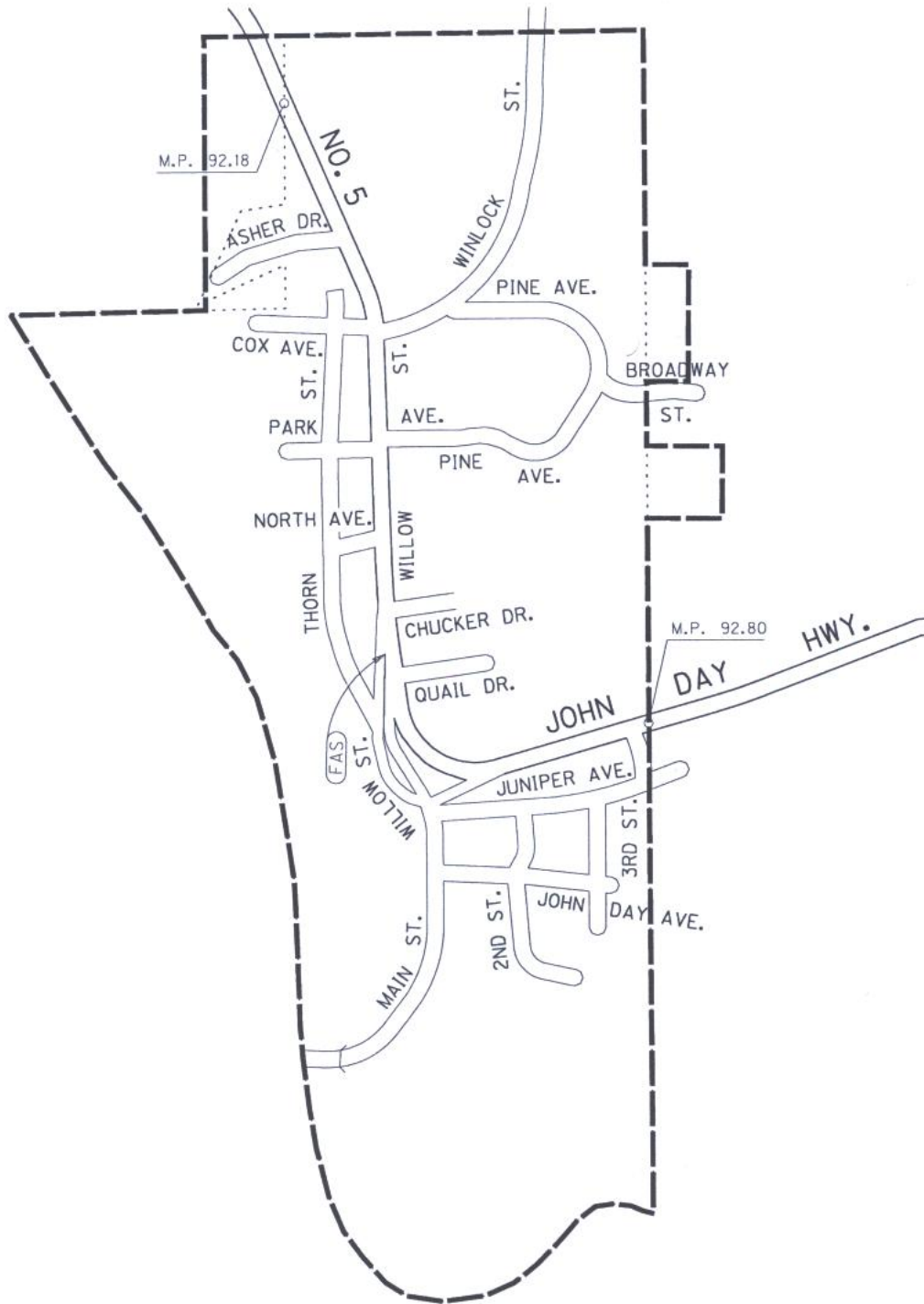
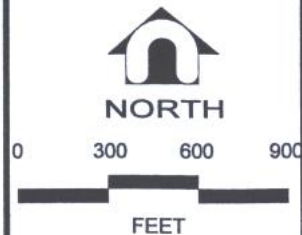


FIGURE 1-4

Spray Planning Area



WHEELER COUNTY TSP

- Defining goals and objectives (Chapter 2);
- Reviewing existing plans and transportation conditions (Chapters 3 and 4; Appendices A-D);
- Developing population, employment, and travel forecasts (Chapter 5; Appendix E);
- Developing and evaluating potential transportation system improvements (Chapter 6);
- Developing the Transportation System Plan and Capital Improvement Program (Chapter 7);
- Developing Funding Options and a Financial plan (Chapter 8); and
- Developing recommended policies and ordinances (Separate Document).

Community Involvement

Community involvement was an integral component in the development of the Wheeler County TSP. Because the County's TSP also incorporates issues and concerns raised by representatives of the cities of Fossil, Mitchell, and Spray regarding similar transportation and land use issues, a public involvement program involving all the jurisdictions was used. Several different techniques were utilized to involve each local jurisdiction, ODOT, and the general public.

A combined management team and TAC provided guidance on technical issues and direction regarding policy issues to the consultant team. Staff members from each local jurisdiction, ODOT, and a local resident from each community served on this committee. This group met six times during the course of the project.

The second part of the community involvement effort consisted of community meetings within Wheeler County. The first public meeting was held in January 2001 in Fossil. The general public was invited to learn about the TSP planning process and provide input on transportation issues and concerns. A second public meeting was held in March 2001 in Fossil to accomplish similar goals.

The third part of the community involvement process involved formal presentations before elected officials within the county. The first presentation to the planning commission was made in May 2001. The second presentation, made in June 2001, involved formal adoption of the county TSP. The public was notified of the meetings through public announcements in the local newspapers.

Goals and Objectives

Based on input from the county, the management team/TAC, identified county stakeholders, and the community, a set of goals and objectives were defined for the TSP. These goals and objectives were used to make decisions about various potential improvement projects. They are described in Chapter 2.

Review and Inventory of Existing Plans, Policies, and Public Facilities

To begin the planning process, all applicable Wheeler County transportation and land use plans and policies were reviewed. As needed, local land use plans and policies for the cities of Fossil, Mitchell, and Spray were also reviewed.

An inventory of public facilities was conducted within the county and the three incorporated cities of Fossil, Mitchell, and Spray related to the following transportation modes: roads, water, air, rail, public transportation, bicycle, walking, and pipeline. Wheeler County supplied information related to County roads and no additional county road inventory was conducted by the consultant. The purpose of these efforts was to understand the history of transportation planning in Wheeler County, including the street system improvements planned and implemented in the past, and how the county is currently managing its ongoing

development. A brief review of existing plans and policies are described in this Chapter with a more detailed review presented in Appendix A of this report.

The inventory of existing facilities catalogs the current transportation system. The results of the inventory are described in Chapter 3, while Chapter 4 describes how the system operates. Appendix B summarizes the inventory of the existing arterial and collector street system and Appendix C provides a brief inventory of the county road network.

Future Transportation System Demands

The Oregon Transportation Planning Rule requires the TSP to address a 20-year forecasting period. Future traffic volumes for the existing plus committed transportation systems were projected using ODOT's *Level 1 - Trending Analysis* methodology, which is based primarily on historical traffic volume growth. The overall travel demand forecasting process is described in Chapter 5.

Transportation System Potential Improvements

Once the 20-year transportation demand forecasts were developed, it was possible to re-evaluate the capability of existing public facilities to accommodate forecast increased demand related to the following transportation modes: automobiles, water, air, rail, public transportation, bicycle, walking, and pipeline. Any deficiencies in the existing public infrastructure to accommodate forecast future demand provided one source of identifying potential transportation system improvements. Other potential transportation improvements were identified based on a qualitative review of safety, environmental, socioeconomic, and land use impacts. These improvements were developed with the help of the local working group, and they attempt to address the concerns specified in the goals and objectives (Chapter 2). The potential improvements were evaluated in Chapter 6 and recommended for short-range (0-5 years), intermediate-range (5-10 years), and long-range (10-20 years) implementation under the Transportation System Plan presented in Chapter 7.

Transportation System Plan

The TSP addresses each mode of transportation and provides an overall implementation program. The street system plan was developed from the forecasting and potential improvements evaluation described above. The bicycle and pedestrian plans were developed based on current usage, land use patterns, requirements set forth by the TPR, and input from county and local jurisdictions. The public transportation, air, water, rail, and pipeline plans were developed based on discussions with the owners and operators of those facilities and discussions with statewide planners from ODOT. Chapter 7 details the TSP elements for each mode and presents the overall Capital Improvement Program (CIP) to be implemented over the 20-year planning horizon prioritized as short-range (0-5 years), intermediate-range (5-10 years), and long-range (10-20 years) projects.

Funding Options

Wheeler County will need to work with ODOT and the incorporated jurisdictions to finance new transportation projects over the 20-year planning period. An overview of funding and financing options that may be available to the community are described in Chapter 8.

Policies and Ordinances

Adopted Wheeler County comprehensive plan policies and implementing zoning and subdivision ordinances are included as a separate document to the TSP. These policies and ordinances are intended to support the TSP and satisfy the requirements of the TPR and represent the necessary implementing language to adopt the TSP as the transportation component of the County Comprehensive Plan. The county, and the cities as

needed, will need to consider amending their comprehensive plan policies and zoning codes as part of the TSP adoption process.

The county's Comprehensive Plan is the regulating plan directing the county's provision of public services and directing future development of all public facilities and infrastructure. Upon formal adoption, the TSP is will serve as the transportation component of the Comprehensive plan and guide Wheeler County in providing necessary transportation infrastructure and services within the county through year 2020. Preparation of a functional and usable plan that represents the county's goals and objectives is of primary importance.

RELATED DOCUMENTS

The Wheeler County TSP addresses the regional and rural transportation needs in the county. There are several other documents that address specific transportation elements or areas in Wheeler County. These documents were reviewed to ensure that the Wheeler County TSP is consistent with other transportation policies and plans already in effect or being developed. This section lists the applicable documents that were reviewed while a brief summary of the document elements that pertain to transportation planning, policies, and operations is outlined in Appendix A.

County and City Planning Documents

- Wheeler County Comprehensive Plan
- Wheeler County Strategic Initiatives for Community and Economic Development
- City of Fossil Comprehensive Plan
- City of Mitchell Comprehensive Plan
- City of Spray Comprehensive Plan

Other State Plans

- Oregon Transportation Plan
- Oregon Highway Plan- 1999
- Oregon Bicycle and Pedestrian Plan
- Oregon Transportation Planning Rule
- Interim Corridor Strategy for the Sisters to Ontario Corridor

CHAPTER 2: GOALS AND OBJECTIVES

The purpose of the TSP is to provide a guide for Wheeler County to meet its transportation goals and objectives. The following goals and objectives were developed from information contained in the county's comprehensive plan and public concerns as expressed during public meetings. An overall goal was drawn from the plan, along with more specific goals and objectives. Throughout the planning process, each element of the plan was evaluated against these parameters.

OVERALL TRANSPORTATION GOAL

To provide and encourage a safe, convenient, and economic transportation system.

Policies

1. Work with the cities of Fossil, Mitchell, and Spray to develop joint policies concerning County roads within city limits;
2. Assist ODOT in setting project priorities in planning improvements to maintain all state highways within and serving the county;
3. Maintain and improve County roads, based on available funds, location of school bus and mail routes, and agricultural and forest uses to meet present and future needs;
4. Support current and planned projects to assist the transportation disadvantaged;
5. Develop and upgrade highway facilities in such a manner that valuable soil, timber, water, scenic, historic, or cultural resources are not damaged or impaired;
6. Provide adequate signage along major and minor county roads for the purpose of easy identification;
7. Design new roads and highways to preserve and enhance natural and scenic resources, i.e., new roads should not be constructed in areas identified as sensitive wildlife areas;
8. Comply with all applicable state and federal noise, air, water, and land quality regulations;
9. The general policy of the Planning Commission will be not to create a traffic hazard in the granting of variances, conditional uses permits, and zone amendments; and
10. Encourage active pedestrian and bicycle use within urban areas and along state highways.

Goal 1

Preserve the function, capacity, level of service, and safety of the state highways.

Objectives

- A. Develop access management standards that will meet the requirements of the TPR and also consider the needs of the affected communities;
- B. Promote alternative modes of transportation (e.g., walking, biking);
- C. Promote transportation demand management programs (e.g., dial-a-ride transit, carpooling);
- D. Develop passing lanes as warranted;
- E. Examine the need for specific pedestrian crossing locations in urban areas; and

- F. Develop procedures to minimize impacts to and protect transportation facilities, corridors, or sites during the development review process.

Goal 2

Improve and enhance safety and traffic circulation and preserve the level of service on local street systems.

Objectives

- A. Develop an efficient road network that would maintain a level of service (LOS) D or better;
- B. Improve and maintain existing roadways (e.g., pavement condition, bike lanes, crosswalks);
- C. Ensure planning coordination between the local jurisdictions, the county and the state;
- D. Identify truck routes to focus truck traffic to a limited number of roads in urban areas;
- E. Encourage citizen involvement in identifying and solving local problem spots; and
- F. Encourage development of connective sidewalk systems in urban areas.

Goal 3

Identify the 20-year roadway system needs to accommodate developing or undeveloped areas without undermining the rural nature of the county while meeting access management standards and safety needs.

Objectives

- A. Continue to develop the road system as the principal mode of transportation both for access to the county and within the county;
- B. Adopt policies and standards that address street connectivity, spacing, and access management;
- C. Improve access into and out of the county for goods and services; and
- D. Improve the access on, to and off of arterial roadways to encourage growth while maintaining access management standards and safety needs.

Goal 4

Increase the use of alternative modes of transportation (walking, bicycling, rideshare/carpooling, and dial-a-ride transit) through improved access, safety, and service.

Objectives

- A. Provide adequate shoulders on rural collector and arterial roads to support biking and walking;
- B. Develop a county bicycle plan;
- C. Identify needs for bike lanes and sidewalks in urban areas and develop programs to fulfill needs;
- D. Promote alternative modes and rideshare/carpool programs through community awareness and education;
- E. Encourage development to occur near existing community centers where services are presently available so as to reduce the dependence on automotive transportation;
- F. Plan for provision of transportation services to transportation disadvantaged; and

- G. Seek Transportation and Growth Management (TGM) and other funding for projects evaluating and improving the environment for alternative modes of transportation.

Goal 5

Ensure that the road system within the county is adequate to meet public needs, including the transportation disadvantaged.

Objectives

- A. Meet identified maintenance and level of service standards on the county roads;
- B. Direct commercial development and use access onto major arterials by means of improved county roads;
- C. Ensure that roads created in land division and development be designed to tie into existing and anticipated road circulation patterns;
- D. Review and revise, if necessary, street cross section standards for local, collector, and arterial streets to enhance safety and mobility;
- E. Analyze the safety of traveling speeds and consider modifying posted speeds as necessary; and
- F. Continue to monitor the needs of the transportation disadvantaged (e.g., children under the driving age, people with limited physical mobility) people and provide support as required.

Goal 6

Improve coordination among Wheeler County, ODOT, the Federal Highway Administration (FHWA), the Forest Service, and the local jurisdictions.

Objectives

- A. Cooperate with ODOT in the implementation of the STIP;
- B. Encourage improvement of state highways;
- C. Work with the local jurisdictions in establishing cooperative road improvement programs, funding alternatives, and schedules;
- D. Work with the local jurisdictions in establishing the right-of-way needed for new roads identified in the TSP; and
- E. Take advantage of federal and state highway funding programs.

CHAPTER 3: EXISTING TRANSPORTATION SYSTEM INVENTORY

As part of the planning process, David Evans and Associates, Inc. (DEA) conducted an inventory of the existing transportation system in Wheeler County. This inventory covered the street system as well as the pedestrian, bikeway, public transportation, rail, air, water, and pipeline systems as they apply to Wheeler County.

ROADWAY SYSTEM

The most common understanding of transportation is of roadways carrying cars and trucks. Most transportation dollars are devoted to building, maintaining, or planning roads to carry automobiles and trucks. The mobility provided by the personal automobile has resulted in a great reliance on this form of transportation. Likewise, the ability of trucks to carry freight to nearly any destination has greatly increased their use.

Encouraging the use of cars and trucks must be balanced against costs, livability factors, the ability to accommodate other modes of transportation, and negative impacts on adjacent land uses; however, the basis of transportation in all American cities is the roadway system. This trend is clearly seen in the existing Wheeler County transportation system, which consists predominantly of roadway facilities for cars and trucks. The street system will most likely continue to be the basis of the transportation system for at least the 20-year planning period; therefore, the emphasis of this plan is on improving the existing street system for all users.

The existing road system inventory was reviewed for all highways (arterials), major and minor collector roadways, and local roadways within Wheeler County that are included in the TSP planning area, as well as all public streets within the three incorporated cities of Fossil, Mitchell, and Spray. Appendix B lists the complete inventory for state highways and urban streets prepared by DEA. DEA did not conduct inventories of the county road system. All county road information described herein is based on conversations with Wheeler County staff.

The roads in the unincorporated or rural areas of Wheeler County fall under two jurisdictions: county and state. The state highways generally function as major or principal arterials throughout the county. **Figure 3-1** shows the functional classification of the state and county road system. Functional classification of state highways in the incorporated cities of Fossil, Mitchell, and Spray are shown on **Figures 3-2** through **3-4**.

County Roads

Although the state highway system forms the backbone of the roadway system in Wheeler County, county roads are a vital part of the circulation system. Often times, County roads provide a more direct connection to destinations.

Description

Wheeler County has 31 roads under its jurisdiction covering approximately 260 miles. Of these roadway miles, approximately 6 miles (2 percent) are paved, another 72 miles (28 percent) are oil mat, nearly 125 miles (48 percent) are gravel, and the remaining 57 miles (22 percent) are dirt roads.

These roadways are an integral part of the transportation system. In addition to providing alternate and in some cases more direct routes than the state highways, they also serve rural areas, connecting them with state highways, recreational areas, other rural areas, and cities. The Wheeler County Roadmaster identified four county roads as being particularly critical due to their function of providing connectivity and agricultural farm-to-market access. These county roads are estimated to carry the highest volume of daily traffic of all county roads and include the following:

- Rowe Creek Road;
- Kahler Basin Road;
- Bridge Creek/Burnt Bridge Road; and
- Parrish Creek/Waterman Road.

The Wheeler County Road Department follows ODOT's roadway classification system for all roads under county jurisdiction dividing county roads into three classification levels: major collectors, minor collectors, and local roads. Only state highways are classified at the arterial level. Of the 31 county roads, all or part of five county roads are classified as rural major collectors and four are classified as minor collectors. The remaining 23 county roads are classified as local roads. Three out of the four identified critical county roads are classified as either major or minor collector roads. A brief summary of county road type and functional classification is provided in Appendix C.

Road Conditions

Wheeler County has established roadway condition categories to rate all county roads. These categories do not correlate to ODOT pavement condition standards discussed later in this chapter under the state highway section in chapter 3. The four road condition categories include: Good, Fair, Poor, and Unimproved. A brief definition of the road condition categories used by Wheeler County Road Department staff is provided.

Good- May be oil mat or gravel, have acceptable drainage system, limited road shoulder, surface width greater than 18 feet, road alignment acceptable in most places.

Fair- May be oil mat or gravel, needs improved drainage system, almost no road shoulder, road surface breaking up (either oil mat or gravel), surface width less than 18 feet, road alignment needs improved for motorist safety.

Poor- Usually gravel or dirt structure, poor drainage system, no road shoulder, road base failure or non-existent, surface width 10 feet or less, road alignment needs improved for motorist safety.

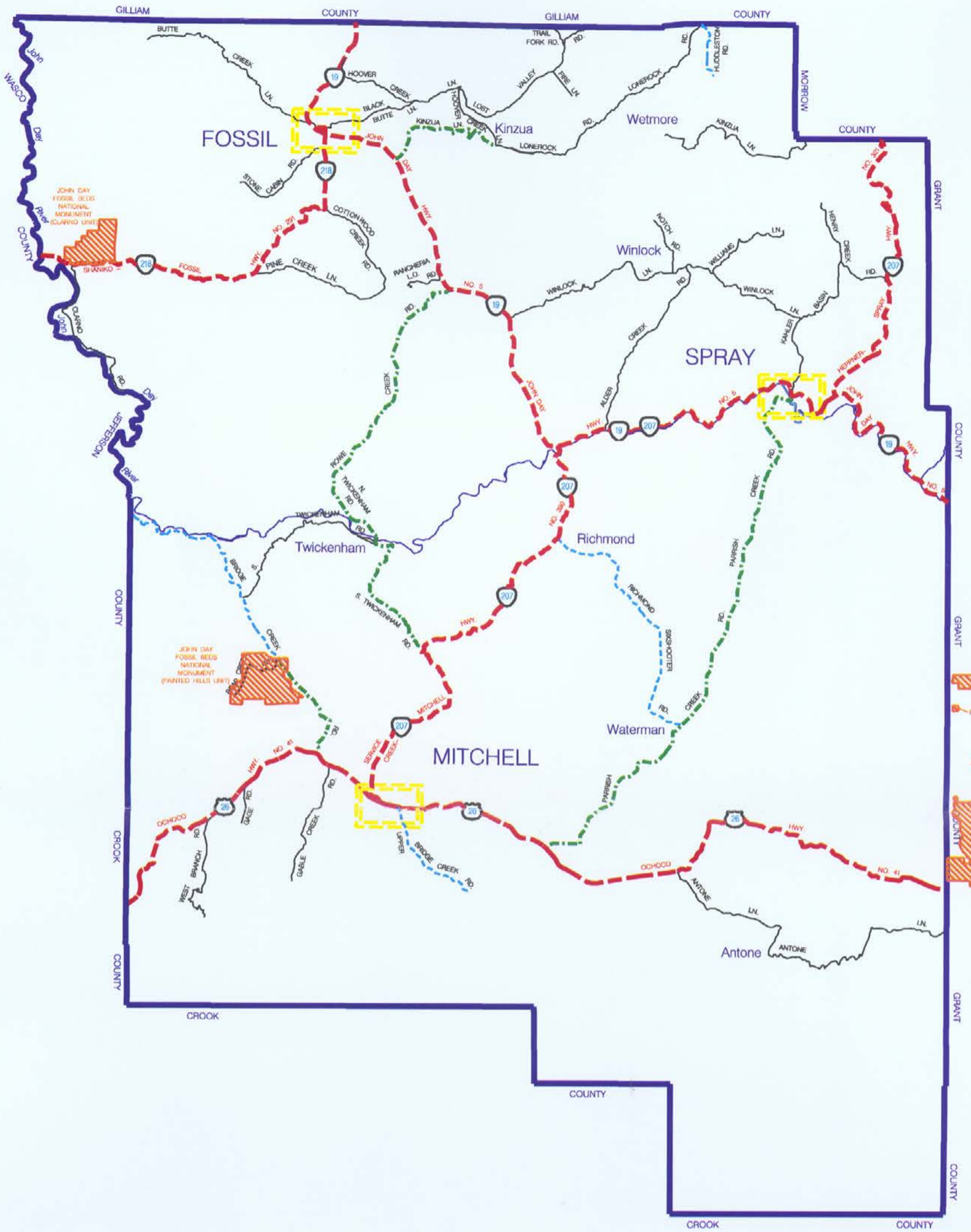
Unimproved- Usually dirt structure, very little drainage system, no road shoulder, road surface turns to mud when it rains, no road base, surface width 10 feet or less, road alignment poor.

Of the nearly 260 miles of county roads in Wheeler County approximately 34 percent (90 miles) are in good condition, approximately 45 percent (117 miles) are in fair condition, and approximately 7 percent (17 miles) are estimated to be in poor condition. The remaining 14 percent (38 miles) of the county roads are unimproved roads.

Maintenance

Wheeler County has not adopted a formalized county roadway maintenance program, pavement management system, or 5-year maintenance plan. Typical of larger primarily rural counties in Oregon with limited budgets and personnel, the county has worked to develop maintenance processes that make sense and are manageable for the size of the county and its associated road system. The county primarily addresses roadway maintenance on an "as needed" basis.

Wheeler County maintenance staff members develop a work plan of prioritized projects each year. Projects are identified through roadway inspection by maintenance crews and through the help of citizens that inform the county of maintenance needs, especially in rural areas not routinely traveled by maintenance personnel. The



- Fossil Beds - Foree Area
- Fossil Beds - Cathedral Area
- Micro Area
- John Day Fossil Beds National Monument (Sheep Rock Unit)

NORTH

1 2 3 4 5
MILES

- LEGEND:**
- AREA OF MUTUAL CONCERN (A.M.C.) BOUNDARY
 - INTERSTATE
 - PRINCIPAL ARTERIAL
 - MAJOR COLLECTOR
 - MINOR COLLECTOR
 - LOCAL COUNTY ROAD

FIGURE 3-1
Existing Roadway Classification

- URBAN GROWTH BOUNDARY (U.G.B.)
- ARTERIAL
- CITY LIMITS
- INTERSTATE
- COLLECTOR
- MINOR STREET

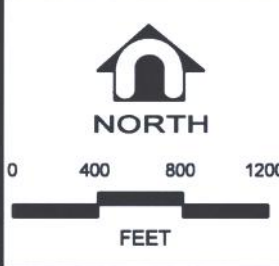
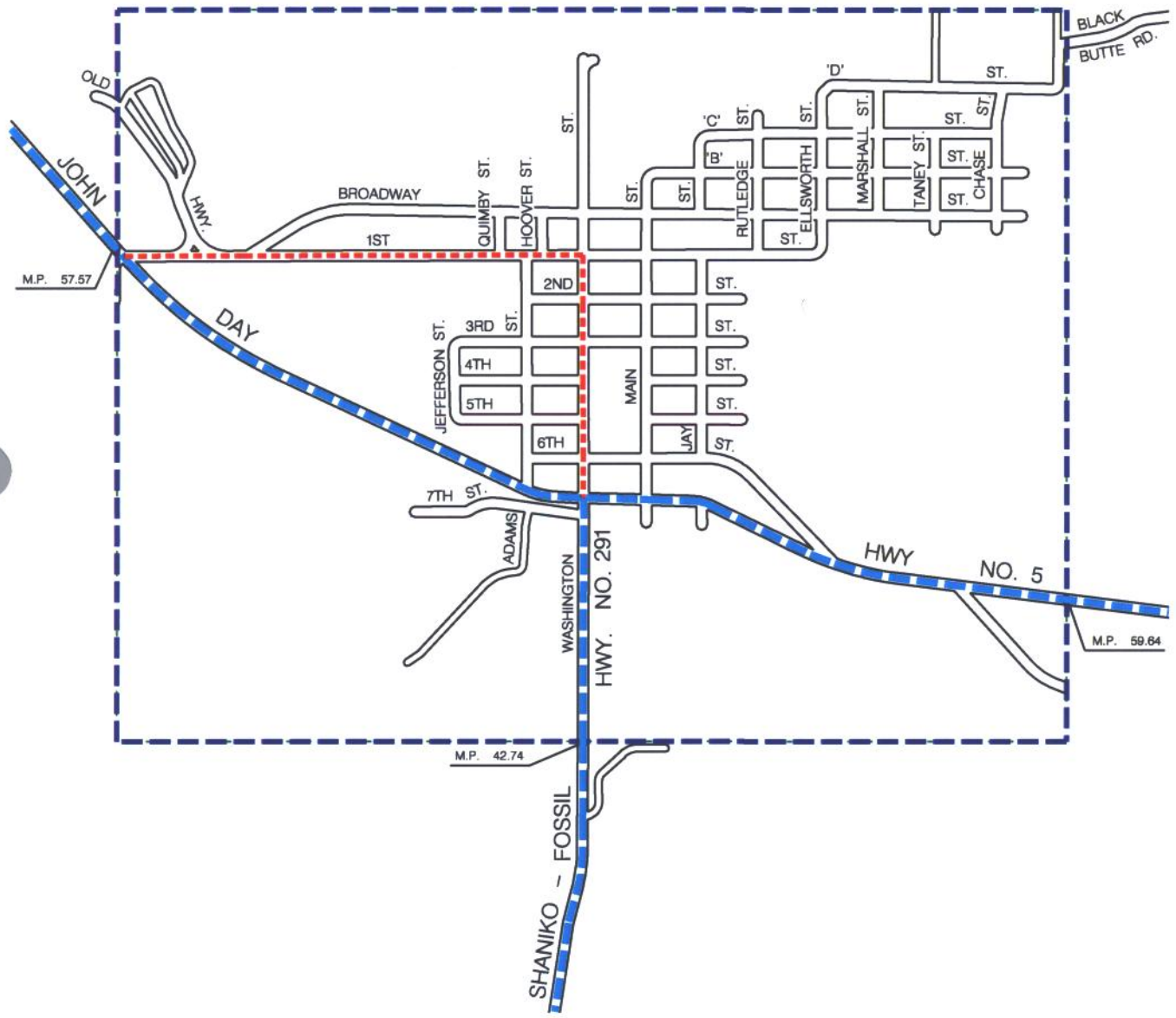


FIGURE 3-2
Fossil Existing Street Classification
 WHEELER COUNTY TSP

- URBAN GROWTH BOUNDARY (U.G.B.)
- ARTERIAL
- CITY LIMITS
- INTERSTATE
- COLLECTOR
- MINOR STREET

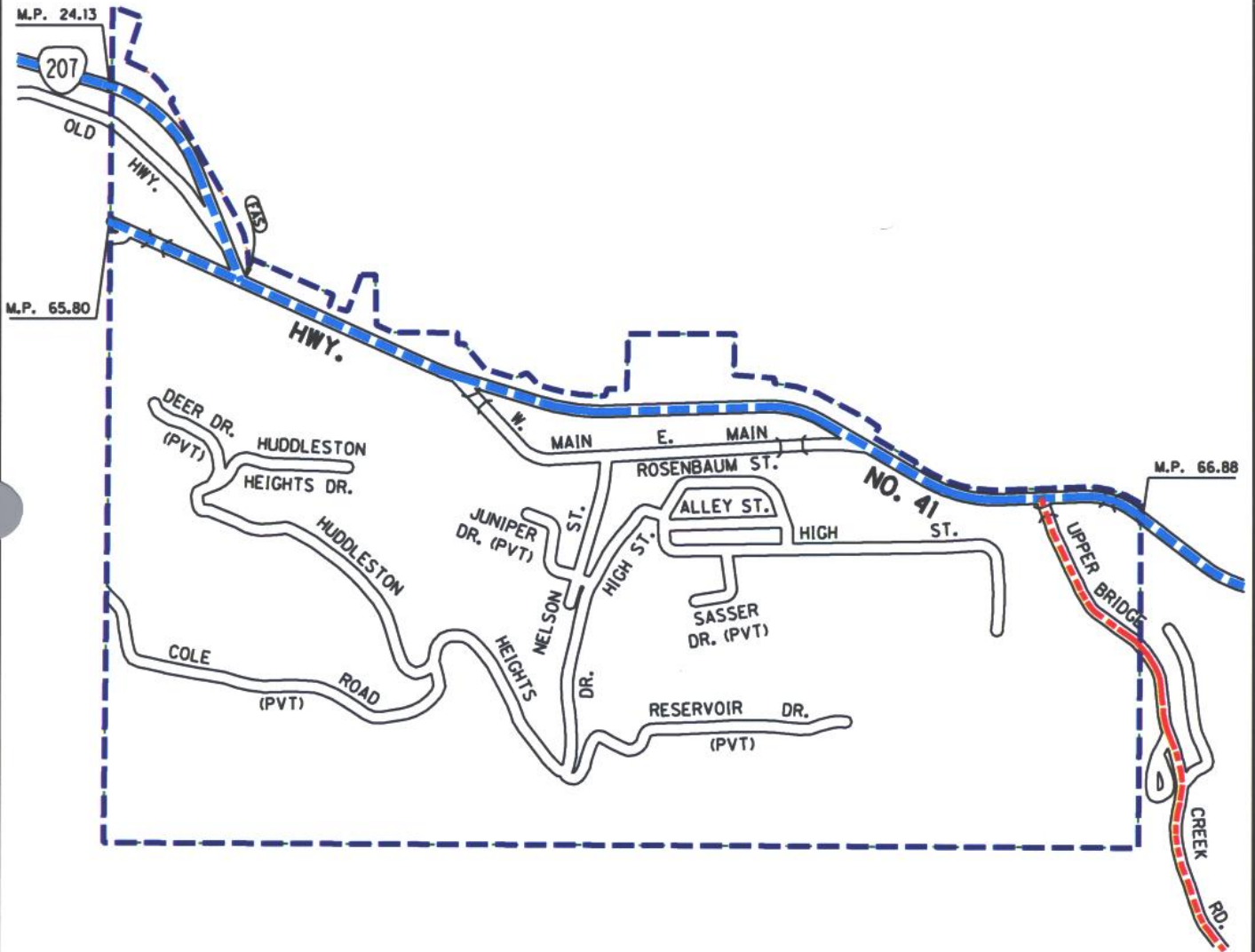
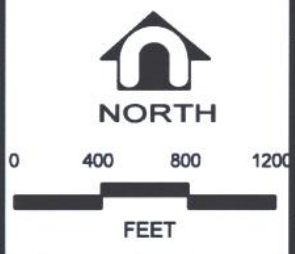


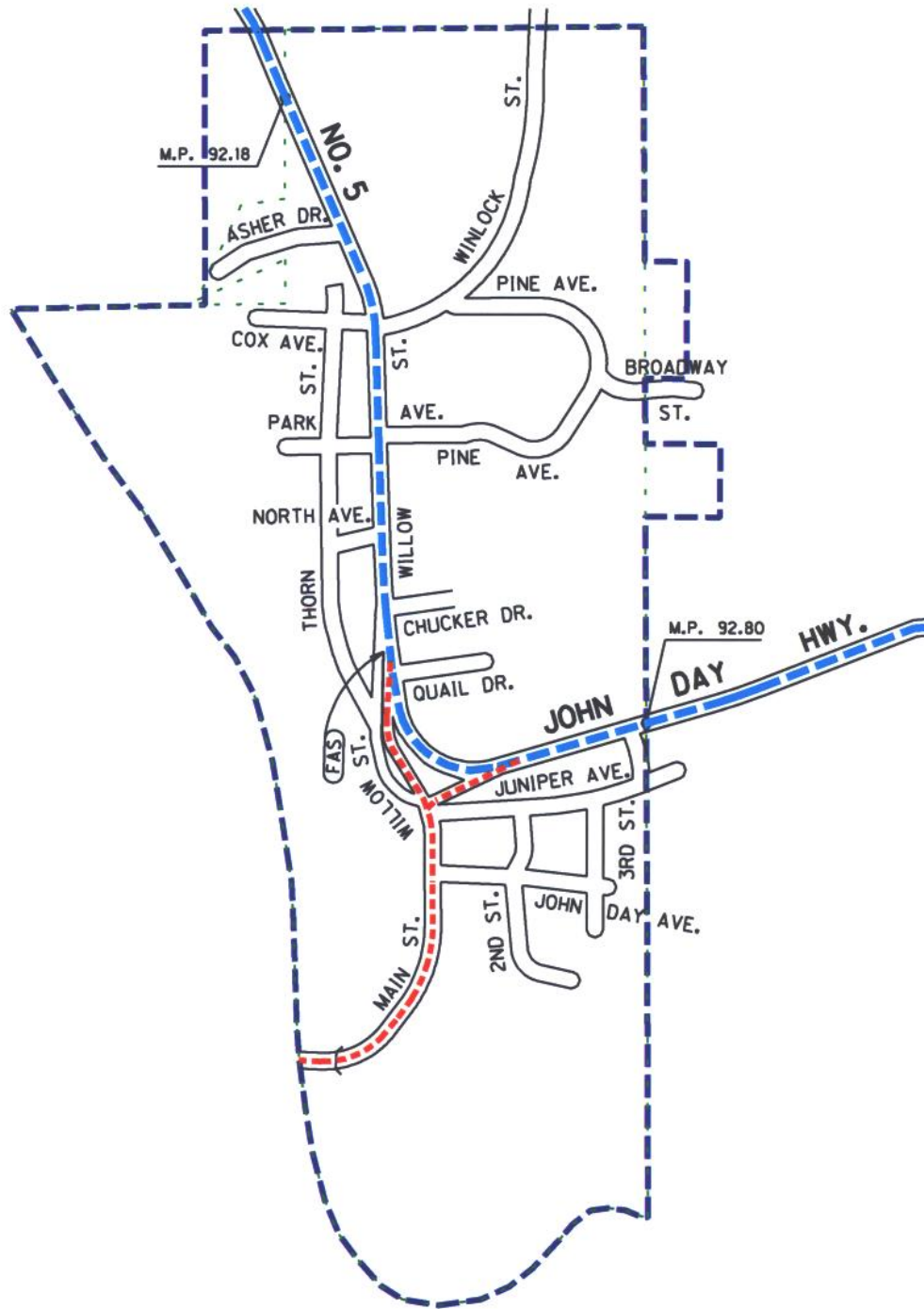
FIGURE 3-3

Mitchell Existing Street Classification



WHEELER COUNTY TSP

- URBAN GROWTH BOUNDARY (U.G.B.)
- INTERSTATE
- MINOR STREET
- ARTERIAL
- CITY LIMITS
- COLLECTOR



NORTH

0 300 600 900



FEET

FIGURE 3-4

Spray Existing Street Classification

WHEELER COUNTY TSP

annual work plan is reviewed by the Wheeler County Court. Like many counties, Wheeler County's maintenance department is responsible for all aspects of road maintenance including, but not limited to, pavement rehabilitation, roadway signing and lighting needs, ditch and culvert clearing, pavement markings, and more. The county additionally snow plows/sands 992 miles of county roads each year.

The Wheeler County maintenance department consists of a working Roadmaster and seven additional crew members and is based in Fossil. The Wheeler County Roadmaster described the following typical maintenance practices within the county:

- Paved Roads - The county has not been paving new roads and is not likely to in the near future, primarily due to budget constraints. The county approaches maintenance of paved roads on an "as needed" basis without any formal routine or preventive maintenance plan. Maintenance activities range from filling potholes to overlays.
- Oil Mat Roads - The County currently chip seals four miles each year. The life cycle to chip seal all oil mat roads in Wheeler County was estimated to take approximately 12 years. Since chip sealed roads do not last 12 years the annual amount of oil mat roads receiving chip seal treatment must be increased to maintain sufficient road quality. Reference to chip seal and oil mat roads is used interchangeably in Wheeler County. They refer to the same type of pavement treatment.
- Gravel Roads - Gravel roads in Wheeler County receive perhaps the most routine maintenance. According to the roadmaster, the majority of gravel roads in the county are "bladed" twice annually: once in the spring and once in the fall.
- Dirt Roads - Dirt roads in Wheeler County are "bladed" once each year.

The county additionally provides services to the cities of Fossil, Mitchell, and Spray. The county performs roadway maintenance such as ditch and culvert clearing, patching and chip sealing roads, hauling gravel for site preparations, and more. The Wheeler County Maintenance department also provides maintenance for the 0.51 miles of road it owns in the City of Spray consisting of portions of Main Street and Cox Street.

Existing Rural Roadway Standards

Roadway standards relate the cross sectional design of a roadway to its function. The function is determined by operational characteristics such as traffic volume, operating speed, safety, and capacity. Roadway standards are necessary to provide a community with roadways, which are relatively safe, aesthetic, and easy to administer when new roadways are planned or constructed. There are currently no agreed upon roadway standards in Wheeler County. In the past, roads were built to guidelines provided by the Wheeler County Roadmaster or the Wheeler County Court. The county's existing roads are generally two lanes wide. Paved and chip sealed roads are generally 22 feet wide with little or no shoulders, and gravel roads are generally 18 feet wide with no shoulders. The existing right-of-way along county roads is a total of 60 feet with 30 feet on each side of centerline.

New county road standards will be prepared as part of the roadway modal plan presented in Chapter 7.

State Highways

State highways often function as major arterial streets, forming the primary roadway network within and through a region. They provide a continuous road system that distributes traffic between cities. Generally, major arterial streets are high capacity roadways that carry high traffic volumes with minimal localized activity.

In Wheeler County, the state highways/major arterial streets often serve statewide, regional, and local traffic demands.

Discussion of the Wheeler County street system must include the state highways that traverse the planning area. Although Wheeler County has no direct control over the state highways, the highways heavily influence adjacent development as well as traffic patterns. Wheeler County is served by the five state highways listed below. These highways serve as the major routes through the county with commercial and industrial development focused along the corridors. **Table 3-1** lists the highways within Wheeler County.

**TABLE 3-1
STATE HIGHWAYS**

State Highway Number	Highway Name	ODOT Highway Number	Classification
US 26	Ochoco Highway	41	Statewide
OR 19	John Day Highway	5	Regional
OR 207	Heppner-Spray Highway	321	Regional
OR 207	Service Creek-Mitchell Highway	390	District
OR 218	Shaniko-Fossil Highway	291	District

Source: ODOT Traffic Volume Table-1999

State Highway Classification System

The *1999 Oregon Highway Plan* (OHP) classifies the state highway system into five categories based on function: interstate, statewide, regional, district, and local interest roads. Wheeler County highway classifications are listed in **Table 3-1**.

According to the OHP, the primary function of a statewide highway is to “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.” Providing connections for intra-urban and intra-regional trips is a secondary function. The management objective for statewide highways is to “provide safe and efficient, high-speed, continuous-flow operation.”

The primary function of a regional highway is to “provide connections and links to regional centers, Statewide of Interstate Highways, or economic or activity centers of regional significance.” Serving land uses to the surrounding areas of these highways is a secondary function. The management objective for regional highways is to “provide safe and efficient, high-speed, continuous-flow operation in rural areas and moderate to high-speed operations in urban and urbanizing areas.”

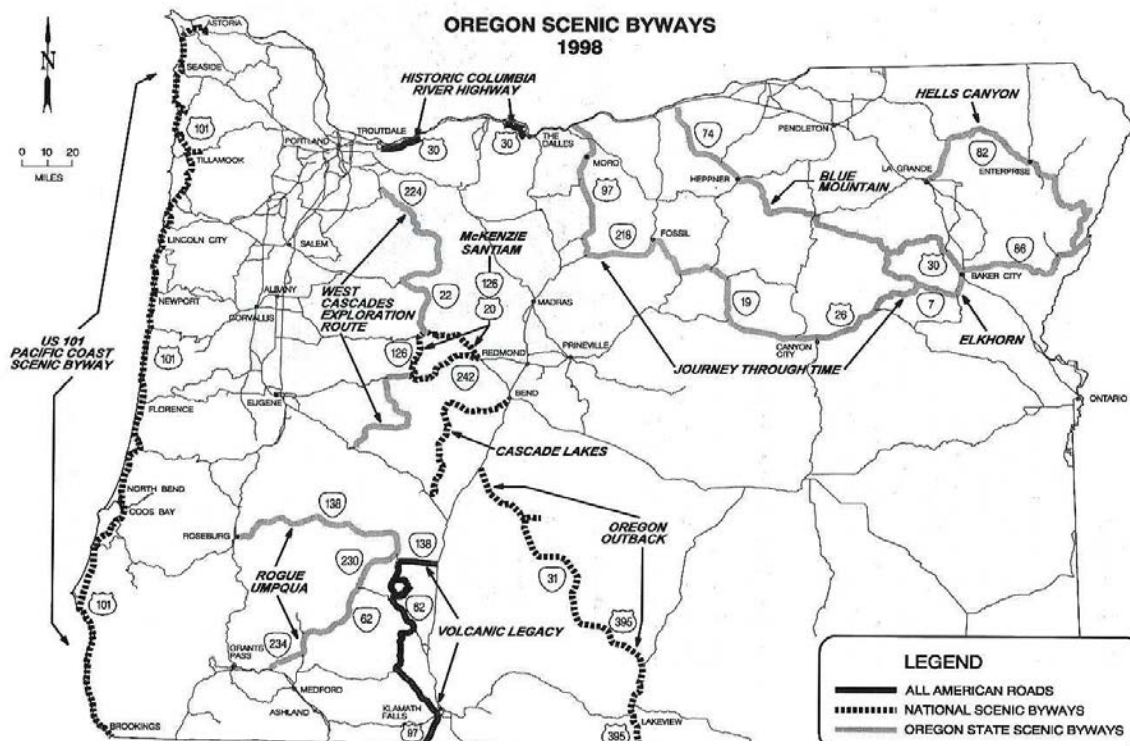
The OHP states that district highways are facilities of county-wide significance and function largely as county and city arterials or collectors. The primary function of a district highway is to “provide connections and links between small urbanized areas, rural centers and urban hubs, and also serve local access and traffic.” The management objective for a district highway is to “provide safe and efficient, moderate to high-speed continuous-flow operation in rural areas reflecting the surrounding environment and moderate to low-speed operation in urban and urbanizing areas for traffic flow and for pedestrian and bicycle movements.

Special Purpose Classification System

In addition to the state highway classification system, the OHP established four special purpose classifications: land use, statewide freight route, scenic byways, and lifeline routes. These were established to address the special

expectations and demands placed on segments of the highway system by land uses, the movement of trucks, the Scenic Byway designation, and significance as a lifeline or emergency response route. Both the highway classification system and the special purpose classifications were developed to guide management, needs analysis, and investment decisions regarding state highway facilities.

The only special purpose classification that applies to the highways in Wheeler County is scenic byways. The OHP indicates that twelve scenic byways have been established throughout the state, with the "Journey Through Time" scenic byway traveling through Wheeler County. The "Journey Through Time" scenic byway traverses Wheeler County from Wasco County on OR 218 heading east to Fossil. In Fossil, it follows an alignment along OR 19 toward Service Creek before heading east through Spray and into Grant County. The "Journey Through Time" scenic byway follows the tracks of early settlers through the remnants of gold rush boom towns and celebrates 50 million years of Oregon History. **Figure 3-5** illustrates the locations of Oregon scenic byways.



Source: 1999 Oregon Highway Plan (pp. 68).

Figure 3-5. ODOT Established Oregon Scenic Byways

To protect the scenic assets of the "Journey Through Time" scenic byway, ODOT will establish guidelines for aesthetic and design elements within the public right-of-way that are suitable to Scenic Byways. These guidelines will be established to preserve and enhance the scenic value of this area while accommodating critical safety and performance needs.

US 26 (Ochoco Highway)

US Highway 26 (Ochoco Highway) is a highway of statewide importance. Beginning on the Oregon Coast at the junction of US 101, the highway travels east to Portland, southeast to Prineville, and then winds through Eastern Oregon before continuing into Idaho. US Highway 26 is one of the main east-west highways through central Oregon. Throughout Wheeler County, the posted speed on US 26 is 55 mph except within the city limits

of Mitchell where the speed is reduced to 40 mph. The highway is a two-lane roadway except for a 1.3 mile passing lane heading westbound near the Jefferson County line. The route is comprised of numerous curves and moderate grade changes resulting in localized rural speed reductions ranging from 30 to 45 mph. The highway has roadway shoulders on both sides of the highway that are typically four to six feet wide and partially paved. Some shoulders are fully paved and support bicycle use; however the intermittent shoulder paving and presence of loose gravel shoulder sections provides a discontinuous shoulder bikeway system along the highway.

OR 19 (John Day Highway)

OR Highway 19 (John Day Highway) is a highway of regional importance. OR Highway 19 enters Wheeler County from Gilliam County and heads south through Fossil to Service Creek before heading east through Spray into Grant County. ODOT has designated the segment of OR 19 between OR 218 and Grant County as a Scenic Byway. OR Highway 19 serves as the main street through Spray forming the downtown business area.

The highway is a two-lane roadway with a posted speed of 55 mph except within the city limits of Fossil and Spray where speeds are reduced to 35 mph. The route is comprised of numerous curves and moderate grade changes resulting in localized rural speed reductions ranging from 25 to 45 mph. Although the highway traverses moderate intermittent upgrades in both directions, there are no passing lanes along the highway within Wheeler County. The highway has shoulders on both sides of the roadway that are typically four to six feet wide comprised of loose gravel or a combination of asphalt and gravel. Due to intermittent paving and the presence of loose gravel the shoulders are not adequately designed to accommodate bicycle use.

OR 207 (Heppner-Spray Highway)

OR Highway 207 (Heppner-Spray Highway) is a highway of regional importance. The highway enters Wheeler County from Morrow County on a fairly steep descent into the John Day River valley; the highway emerges into the valley after approximately 10 miles through mountainous terrain. Within Wheeler County, the highway is a two-lane roadway with a posted speed of 55 mph. The route is comprised of numerous curves and moderate grade changes resulting in localized rural speed reductions ranging from 20 to 45 mph. Although the highway traverses fairly steep intermittent upgrades in both directions, there are no passing lanes along the highway within Wheeler County. The highway has shoulders on both sides of the roadway that are typically two to six feet wide comprised of loose gravel. Due to the presence of loose gravel the shoulders are not adequately designed to accommodate bicycle use.

OR 207 (Service Creek-Mitchell Highway)

OR Highway 207 (Service Creek-Mitchell Highway) is a highway of district importance. OR Highway 207 begins at the connection to OR 19 near Service Creek and runs north-south to the City of Mitchell. The highway is a two-lane roadway with a posted speed of 55 mph. The route is comprised of numerous curves and severe grade changes resulting in localized rural speed reductions ranging from 20 to 45 mph. The highway traverses Donnelly grade between OR 19 and Richmond Six Shooter Road. Although the highway traverses steep intermittent upgrades in both directions, there are no passing lanes along the highway. The highway has shoulders on both sides of the roadway that are typically two to four feet wide comprised of loose gravel or a combination of asphalt and gravel. Due to minimal pavement and the presence of loose gravel the shoulders are not adequately designed to accommodate bicycle use.

OR 218 (Shaniko-Fossil Highway)

OR Highway 218 (Shaniko-Fossil Highway) is a highway of district importance. ODOT has designated OR 218 in Wheeler County as a Scenic Byway. The highway enters Wheeler County from Wasco County on a fairly

steep incline to the top of a mountain before descending into the City of Fossil. The highway is a two-lane roadway with a posted speed of 55 mph except within the city limit of Fossil where the speed is reduced to 25 mph. The route is comprised of numerous curves and severe grade changes resulting in localized rural speed reductions ranging from 15 to 45 mph. Although the highway traverses steep intermittent upgrades in both directions, there are no passing lanes along the highway within Wheeler County. The highway has shoulders on both sides of the roadway that are typically two to four feet wide comprised of loose gravel. The shoulders are not adequately designed to accommodate bicycle use.

Pavement Conditions

Oregon state highways are surveyed and assessed annually by ODOT staff to determine current pavement conditions. The most recent available data is from the summer of 1997. The five pavement condition categories used include: Very Good, Good, Fair, Poor, and Very Poor. A brief definition of the pavement condition categories used by ODOT for both asphalt and Portland cement concrete pavements is provided.

Very Good

Asphalt pavements in this category are stable, display no cracking, patching or deformation and provide excellent riding qualities. Nothing would improve the roadway at this time. Concrete pavements in this category provide good ride quality, display original surface texture, and show no signs of faulting (vertical displacement of one slab in relation to another). Jointed, reinforced pavements display no mid-slab cracks and continuously reinforced pavements may have tight transverse cracks with no evidence of spalling (or chipping away).

Good

Asphalt pavements in this category are stable and may display minor cracking (generally hairline and hard to detect), minor patching, and possibly some minor deformation. These pavements appear dry or light colored, provide good ride quality, and display rutting less than 1/2 inch deep.

Concrete pavements in this category provide good ride quality. Original surface texture is worn in wheel tracks exposing coarse aggregate. Jointed, reinforced pavements may display tight mid-slab transverse cracks, and continuously reinforced pavements may show evidence of minor spalling. Pavements may have an occasional longitudinal crack but no faulting is evident.

Fair

Asphalt pavements in this category are generally stable while displaying minor areas of structural weakness. Cracking is easier to detect, patching is more evident (although not excessive), and deformation is more pronounced and easily noticed. Ride quality is good to acceptable.

Concrete pavements in this category provide good ride quality. Jointed, reinforced pavements may display some spalling at cracks and joint edges with longitudinal cracks appearing at less than 20 percent of the joints. A few areas may require a minor level of repair. Continuously reinforced pavements may show evidence of spalling with longitudinal cracks appearing in the wheel paths on less than 20 percent of the rated section. Shoulder joints may show evidence of deterioration and loss of slab support and faulting may be evident.

Poor

Asphalt pavements in this category are marked by areas of instability, structural deficiency, large crack patterns (alligatoring), heavy and numerous patches, and visible deformation. Ride quality ranges from acceptable to poor.

Concrete pavements in this category may continue to provide acceptable ride quality. Both jointed and continually reinforced pavements display cracking patterns with longitudinal cracks connecting joints and transverse cracks occurring more frequently. Occasional punchout (or pothole) repair is evident. Some joints and cracks show loss of base support.

Very Poor

Asphalt pavements in this category are in extremely deteriorated condition marked by numerous areas of instability and structural deficiency. Ride quality is unacceptable. Concrete pavements in this category display a rate of deterioration that is rapidly accelerating.

Pavement conditions along the five state highway segments within Wheeler County vary in both the rural and urban areas. There are nearly 160 miles of state highway in Wheeler County. Approximately 55 percent of the highway mileage in Wheeler County is in Good or Very Good pavement condition while 20 percent is in Fair condition. Therefore, approximately 75 percent of all highway mileage meets ODOT's standard of "fair or better" pavement condition. The remaining 25 percent (40 miles) of highway mileage is in Poor pavement condition.

Roughly 40 percent of the Poor condition state highway pavement is located along US 26 between Antone and the Grant County line. Another 25 percent is located along OR 207 (Heppner-Spray Hwy) between Porter Creek and one mile south of Kahler Basin Road. Approximately 30 percent is located along OR 207 (Service Creek-Mitchell Hwy) between Shoofly Creek and 1.5 miles north of Meyers Canyon Bridge and between one mile north of US 26 and US 26. The remaining five percent is located along OR 218 between the Wasco County line and one quarter mile west of Indian Canyon Road to the John Day Fossil Beds National Monument. **Table 3-2** summarizes the state highway pavement conditions as of 1999.

**TABLE 3-2
1999 STATE HIGHWAY PAVEMENT CONDITIONS**

Highway	Milepost	Section Description	1999 Pavement Condition
US 26	50.10 – 60.30	Crook Co. line to West Br. Creek	Very Good
	60.30 – 66.61	West Br. Creek to Mitchell	Fair
	66.61 – 81.60	Mitchell to Antone	Good
	81.60 – 96.89	Antone to Grant Co. line	Poor
OR 19	52.06 – 59.64	Gilliam Co. line to Fossil	Good
	59.64 – 74.0	Fossil to MP 74.0	Fair
	74.0 – 104.73	MP 74.0 to Grant Co. line	Good
OR 207 (Heppner-Spray Hwy)	24.65 – 25.81	Morrow Co. line to Porter Creek	Fair
	25.81 – 35.0	Porter Creek to MP 35.0	Poor
	35.0 – 40.96	MP 35.0 to OR 19	Good
OR 207 (Service Creek-Mitchell Hwy)	0.00 – 5.55	OR 19 to Six Shooter Rd	Good
	5.55 – 8.85	Six Shooter Rd to Shoofly Creek	Fair
	8.85 – 19.2	Shoofly Creek to MP 19.2	Poor
	19.2 – 23.3	MP 19.2 to MP 23.3	Fair
	23.3 – 24.32	MP 23.3 to Mitchell	Poor
OR 218	23.07 – 26.3	Wasco Co. line to MP 26.3	Poor
	26.3 – 29.0	MP 26.3 to MP 29.0	Very Good
	29.0 – 34.3	MP 29.0 to MP 34.3	Good
	34.3 – 37.58	MP 34.3 to MP 37.58	Fair
	37.58 – 39.1	MP 37.58 to MP 39.1	Very Good
	39.1 – 42.98	MP 39.1 to Fossil	Good

Source: 1999 Pavement Condition Report – Oregon Department of Transportation Pavements Unit

Bridges

Wheeler County bridge inventory data from October 2000 was obtained from ODOT's Bridge Maintenance Section and reviewed. Two mutually exclusive elements are used to rate bridge conditions: structural deficiency and functional obsolescence. Structural deficiency is determined based on the condition rating for the deck, superstructure, substructure, or culvert and retaining walls. It may also be based on the appraisal rating of the structural condition or waterway adequacy. Functional obsolescence is determined based on the appraisal rating for the bridge deck geometry, underclearances, and approach roadway alignment. It may also be based on the appraisal rating of the structural condition or waterway adequacy.

The third element used to evaluate bridge conditions is the sufficiency rating, which is a complex formula that takes into account four separate factors to obtain a numeric value rating the ability of a bridge to service demand. The scale ranges from zero to 100 with higher ratings indicating optimal conditions and lower ratings indicating insufficiency. The sufficiency rating is not applied until a bridge is already either structurally deficient or functionally obsolete. Once identified as either structurally deficient or functionally obsolete any bridge with a rating of 80 or less requires rehabilitation and any bridge with a rating of 50 or less requires replacement.

County Bridges

Wheeler County owns and maintains six bridges, which are included in the state bridge inspection inventory. The six county-owned bridges are located throughout Wheeler County with one located on East Main Street in the city of Mitchell, one on Twickenham Road, two on Parrish Creek Road, one on Antone Lane, and one on Bridge Creek Road. Based on discussion with ODOT Region 4 bridge section staff two of the county-owned

bridges were identified as needing some form of rehabilitation. Bridge No. 69C05 located on the eastern end of Main Street in Mitchell will require approach and bridge rail replacement within the next 5 years (2000-2005) and some form of more comprehensive rehabilitation potentially ranging from bridge deck replacement to structural upgrades between 10 and 20 years from now (2011-2020). Bridge No. 69C03 located on Antone Lane will need to be replaced within the next 10 years (2000-2010).

State Bridges

The state owns and maintains 54 bridges located on state highways in both rural and urban Wheeler County. There are 31 bridges located on US 26, 15 bridges located on OR 19, two bridges on OR 207 (Heppner-Spray Hwy), five bridges on OR 207 (Service Creek-Mitchell Hwy) and one bridge located on OR 218.

ODOT Region 4 bridge section staff have identified nine state-owned bridges are currently substandard or are estimated to become substandard within the 20-year planning horizon. The following nine state-owned bridges will require some form of rehabilitation or replacement within the next 20 years:

- Bridge No. 07486 on US 26, 0.41 miles west of Mitchell;
- Bridge No. 07372 on US 26, 0.33 miles west of Mitchell;
- Bridge No. 07487 on US 26, 0.26 miles west of Mitchell;
- Bridge No. 07489 on US 26, 0.08 miles west of Mitchell;
- Bridge No. 07490 on US 26, 0.02 miles west of Mitchell;
- Bridge No. 07491 on US 26 in Mitchell;
- Bridge No. 07492 located on the western end of Main Street in Mitchell;
- Bridge No. 17094 on US 26, 2.87 miles east of Mitchell; and
- Bridge No. 02235 on OR 19, 0.47 miles east of OR 207 (Service Cr.-Mitchell Hwy).

ODOT bridge staff estimates that Bridge No. 17094 will need to be replaced within the 20-year planning horizon. The remaining eight identified state-owned bridges will require approach and bridge rail replacement within the next 5 years (2000-2005) and some form of more comprehensive rehabilitation potentially ranging from bridge deck replacement to structural upgrades between 10 and 20 years from now (2011-2020).

Urban Roads

The primary focus of the Wheeler County TSP is the evaluation of transportation operations within the rural areas of the county. However, the Transportation Advisory Committee (TAC) agreed that relevant local issues within the cities of Fossil, Mitchell, and Spray should be addressed within the Wheeler County TSP. As such, a detailed transportation inventory was conducted in each city.

Within Fossil, Mitchell, and Spray, all public roadways were inventoried (see Appendix B) by DEA in October 2000 and the following information was collected:

- street classification and jurisdiction;
- street width, shoulder width, and right-of-way;
- number of travel lanes;
- presence of on-street parking, sidewalks, or bikeways;
- speed limits;
- presence of curb and gutter; and
- general pavement conditions.

General pavement conditions were subjectively evaluated based on field observations using a 1994 report provided by the ODOT Pavements Unit titled, *Pavement Rating Workshop, Non-National Highway System*. This report thoroughly defines the characteristics that pavements must display to be categorized as Very Good, Good, Fair, Poor, and Very Poor. The report also provides color photographs of roadways that display these characteristics, which aids in field investigation and rating of pavement condition.

City of Fossil

Fossil has developed an established traditional grid system of local streets with blocks spaced at approximately 200-250 feet. Paved local street widths range from 10-50 feet with most streets measuring 20-22 feet. Paved on-street parking is provided in some locations, while shoulder parking on grass or gravel occurs along most streets. Most shoulders are six feet or wider and are comprised of some combination of gravel and grass. Terrain is fairly flat throughout the city. The speed is typically 25 mph except within established signed school zones where the speed is reduced to 20 mph when children are present.

Fossil has the only traffic control signal in the county with a flashing four-way STOP beacon at the intersection of Main and First Streets. Traffic control often reflects the importance and use of a road within a city. Based on observed STOP signs in Fossil, primary local streets appear to be the following:

- Washington Street;
- Main Street;
- Broadway Street; and
- 1st Street.

Although these streets provide some direct access to traffic, they appear to form the spine of the street system and have a greater function of providing mobility by collecting and distributing traffic within the city and between the highway system. Other local streets appear to have a primary function of providing local access and connections to the primary local roads.

The majority of roads within the UGB are paved and appear to be in Fair to Good pavement condition. The following sections of road are nearing a Poor level of pavement condition:

- 5th Street- Adams Street to Jefferson Street; and
- Marshall Street- C Street to A Street.

A complete listing of local street pavement conditions is provided in Appendix B.

City of Mitchell

Mitchell's roadway system has not developed into an established traditional grid system, largely due to terrain constraints. Many of the city's local streets are built on moderate to steep grades. Paved local street widths range from 10-40 feet with most streets measuring 18-22 feet. Paved on-street parking is provided in some locations, while shoulder parking on grass or gravel occurs along other streets. Most shoulders are six feet or wider and are comprised of some combination of gravel and grass. The speed is typically 25 mph except within established signed school zones where the speed is reduced to 20 mph when children are present.

Traffic control often reflects the importance and use of a road within a town. Based on observed STOP signs in Mitchell, primary local streets appear to be the following:

- W. Main Street;
- S.E. High Street; and
- S. Nelson Street.

Although these streets provide some direct access to traffic, they appear to form the spine of the street system and have a greater function of providing mobility by collecting and distributing traffic within town and to the highway system. Other local streets appear to have a primary function of providing local access and connections to the primary local roads.

The majority of roads within the UGB are paved and appear to be in Fair to Good pavement condition. The only local street that appears to be at or nearing a Poor level of pavement condition is S.E. Alley Street from SE High Street to SE Rosenbaum Street.

A complete listing of local street pavement conditions is provided in Appendix B.

City of Spray

Spray's roadway system has developed around the John Day Highway (OR 19) with most roads feeding the highway. The terrain is generally flat. Paved local street widths range from 9-30 feet with most streets measuring close to 20 feet. Paved on-street parking is limited, while shoulder parking on grass or gravel occurs along many other streets. Most shoulders are four feet or wider and are comprised of some combination of gravel and grass. The speed is typically 25 mph except within established signed school zones where the speed is reduced to 20 mph when children are present.

Traffic control often reflects the importance and use of a road within a town. Based on observed STOP signs in Spray, the primary local streets appear to be the following:

- Main Street;
- Pine Avenue; and
- Thorn Street.

The John Day Highway is clearly the spine of the roadway system in Spray serving as the main street in the city. However, these other primary local streets, in addition to providing some direct access to traffic, appear to serve a greater function of providing mobility by collecting and distributing traffic within town and to the highway system. Other local streets appear to have a primary function of providing local access and connections to the primary local roads.

The majority of roads within the UGB are paved and appear to be in Fair to Good pavement condition. The only local street that appears to be at or nearing a Poor level of pavement condition is North Street between OR 19 and Thorn Street.

A complete listing of local street pavement conditions is provided in Appendix B.

PEDESTRIAN SYSTEM

The most basic transportation option is walking. Walking is one of, if not the most popular forms of exercise in the United States and can be performed by people of all ages and all income levels. However, it is not often considered a means of travel. This is mainly because pedestrian facilities such as sidewalks, multi-use paths, and adequate roadway shoulders are generally an afterthought and not planned as an essential component of the

transportation system. In times of limited funding, pedestrian improvement projects are often the first to be cut from capital improvement programs at all levels.

Rural

The level of pedestrian travel along most county roads and state highways within the rural areas of Wheeler County is considered negligible. This is largely due to the fact that distances between homes and most activities such as recreation and work in rural Wheeler County exceed the average pedestrian trip length of 1/2 mile. The shorter trips that most people are willing to make by walking supports the fact that the majority of pedestrian traffic in Wheeler County is focused within the Cities of Fossil, Mitchell, and Spray.

Most state highway shoulders in rural Wheeler County are at least two feet wide and should adequately and safely serve pedestrian needs.

Urban

The shorter trips that most people are willing to make by walking supports the fact that the majority of pedestrian traffic in Wheeler County is focused within the Cities of Fossil, Mitchell, and Spray. The majority of pedestrian facilities including sidewalks are also located within these cities. A brief description of the existing urban pedestrian systems follows.

City of Fossil

The flat terrain and relatively small scale of the City of Fossil is conducive to pedestrian travel. The city has developed around a traditional grid street system with block spacing of 200-250 feet. Although the city scale supports walking, pedestrian facilities are generally lacking.

Sidewalks comprise the majority of Fossil's pedestrian system. Fossil has the most complete sidewalk system in the County, yet it is generally fragmented with many sidewalks extending for only a portion of a block and others located on one side of a block only. Some sidewalks appear very new and are in good condition while others are in poor condition and should be replaced to provide safe pedestrian use. Most sidewalks abut the adjacent street, but some are set back from the street by 10-12 feet and buffered by a landscaping strip. Sidewalk widths range from 3-9 feet with most sidewalks measuring 4 or 6 feet.

The City of Fossil has primarily focused sidewalk development to connect and serve the city's activity centers including the elementary school, the community senior housing center- Haven House, and local eating and shopping establishments. These community resources likely generate higher levels of pedestrian traffic. Other activity centers not currently connected by sidewalks include the courthouse, the Arthur Glover Park, the Asher clinic, and the Wheeler High School.

Figure 3-6 illustrates the locations of Fossil's existing sidewalks and identifies existing substandard sidewalks. On all other city streets, pedestrians share the road with motor vehicles. Fossil's relatively low traffic volumes and speeds support the safe interaction of pedestrians and motor vehicles on many roads.

In addition to sidewalks within Fossil's UGB, the eastern roadway shoulder along OR Highway 19 between Adams Street and First Street has been widened to provide a 6-foot shoulder for use by pedestrians.

City of Mitchell

Mitchell has areas of flat terrain that support pedestrian travel but also has a number of streets with steep grades exceeding 6 percent. Some of these grades may be too steep for safe travel by some residents, especially in

winter weather conditions. Although the small city scale supports walking, pedestrian facilities are generally lacking.

Sidewalks comprise the majority of Mitchell's pedestrian system. The sidewalk system is fragmented with many sidewalks extending for only a portion of a block and others located on one side of a block only. Most sidewalks appear to be in fair to good condition but some segments are in poor condition and should be replaced to provide safe pedestrian use. Sidewalks abut the adjacent streets and range in width from 3-6 feet with most sidewalks measuring 5 or 6 feet.

The City of Mitchell has primarily focused sidewalk development to connect the Mitchell Elementary and High School with activity centers along Main Street including restaurants, shopping, and the City Park. A relatively steep gravel pedestrian path along High Street, which provides pedestrian connectivity between the schools and downtown, supplements the sidewalk system.

Figure 3-7 illustrates the location of Mitchell's existing sidewalks and pedestrian path. On all other city streets, pedestrians share the road with motor vehicles. Mitchell's relatively low traffic volumes and speeds support the safe interaction of pedestrians and motor vehicles on many roads.

City of Spray

The City of Spray is relatively flat with a small city scale that is conducive to pedestrian travel. However, pedestrian facilities are lacking. As shown in **Figure 3-8**, Spray has just two segments of sidewalk, one along OR Highway 19 adjacent to the Spray Elementary and High School and one located in front of the Spray Museum. Pedestrians must travel between other city activity centers such as the Museum, area shopping, and the city park by walking along the city streets and sharing the traveled way with motor vehicles.

While the relatively low traffic volumes and speeds in Spray can support the safe interaction of pedestrians and motor vehicles along a roadway, sidewalks do provide a safer pedestrian experience, especially for children or others that are not comfortable walking in the street.

BIKEWAY SYSTEM

Like pedestrians, bicyclists are often overlooked when considering transportation facilities. Bicycles take up little space on the road or parked, do not contribute to air or noise pollution, and offer relatively higher speeds than walking.

Rural

There are no dedicated bicycle facilities along county roads in Wheeler County. Bicycle travel along unpaved county roads, roughly 70 percent, would be expected to be negligible.

Along state highways, bicyclists can be adequately served with sufficient shoulders. The *1995 Oregon Bicycle and Pedestrian Plan* recommends shoulder bikeways be paved to a minimum of 4-foot width. Four to eight-foot shoulders typically allow bicyclists to ride far enough from the edge of pavement to avoid debris and avoid conflict with passing vehicles. However, the Plan goes on to say that shoulder design practices outlined in the ODOT Highway Design Manual specifying shoulder widths as narrow as 2 feet along low volume rural collector and local roadways are adequate to serve bicyclists. Highways with shoulders less than four feet wide do not serve as shoulder bikeways; rather they serve as shared roadway facilities with bicyclists and motor vehicles expected to safely share the roadway.

- URBAN GROWTH BOUNDARY (U.G.B.)
- CITY LIMITS
- SIDEWALKS
- ⌵ STOP SIGNS
- BUILDING NAMES
- PED / BIKE PATH ON WIDE SHOULDER (6' PAVED ASPHALT)

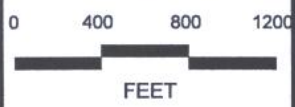
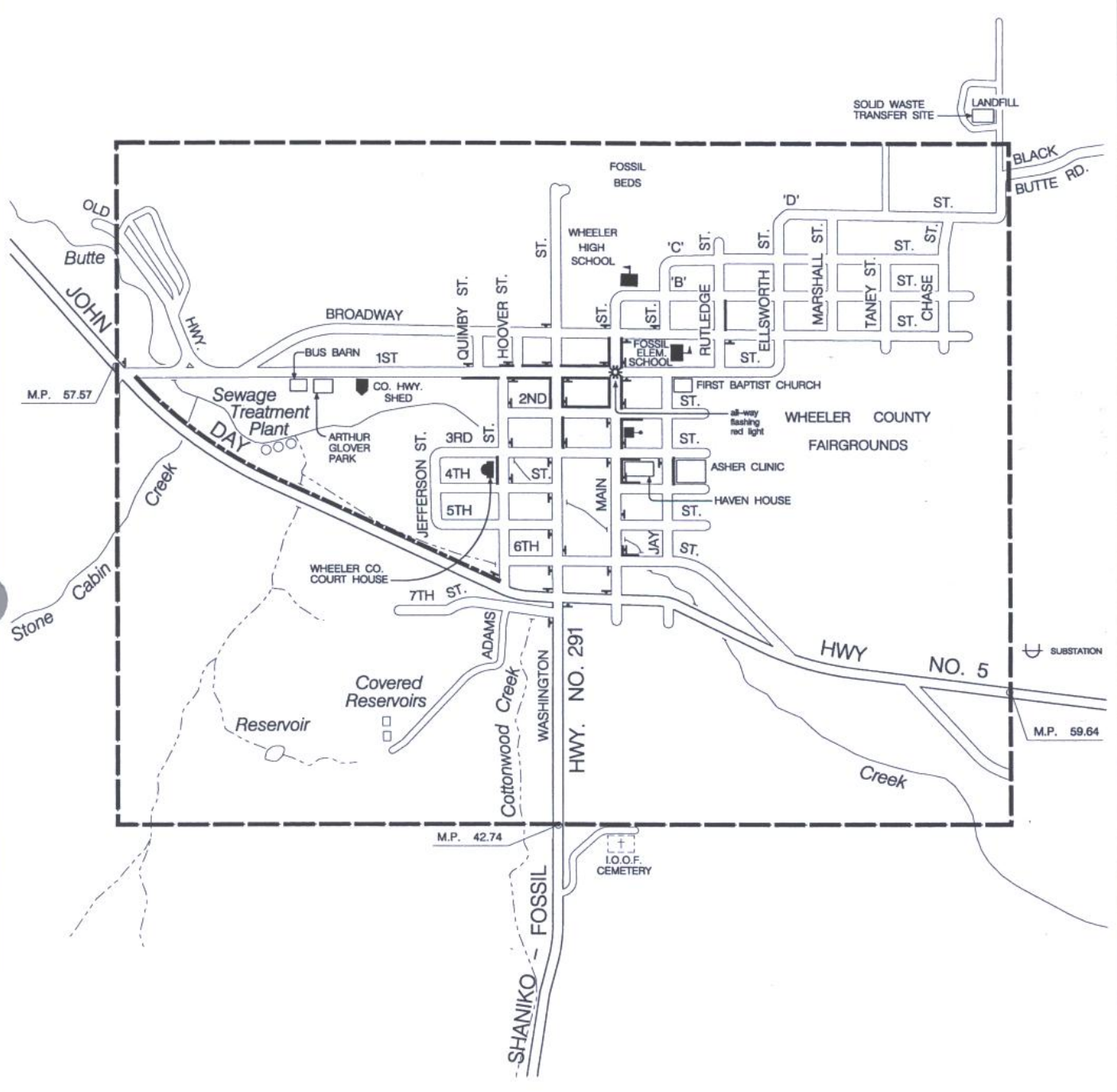


FIGURE 3-6

Fossil Existing Pedestrian Facilities

WHEELER COUNTY TSP

- - - - - URBAN GROWTH
 BOUNDARY (U.G.B.)
 CITY LIMITS

———— SIDEWALKS
 ———— STOP SIGNS
 ———— 4-6' GRAVEL PEDESTRIAN PATH

(PVT) PRIVATE ROADS NOT
 MAINTAINED BY THE CITY

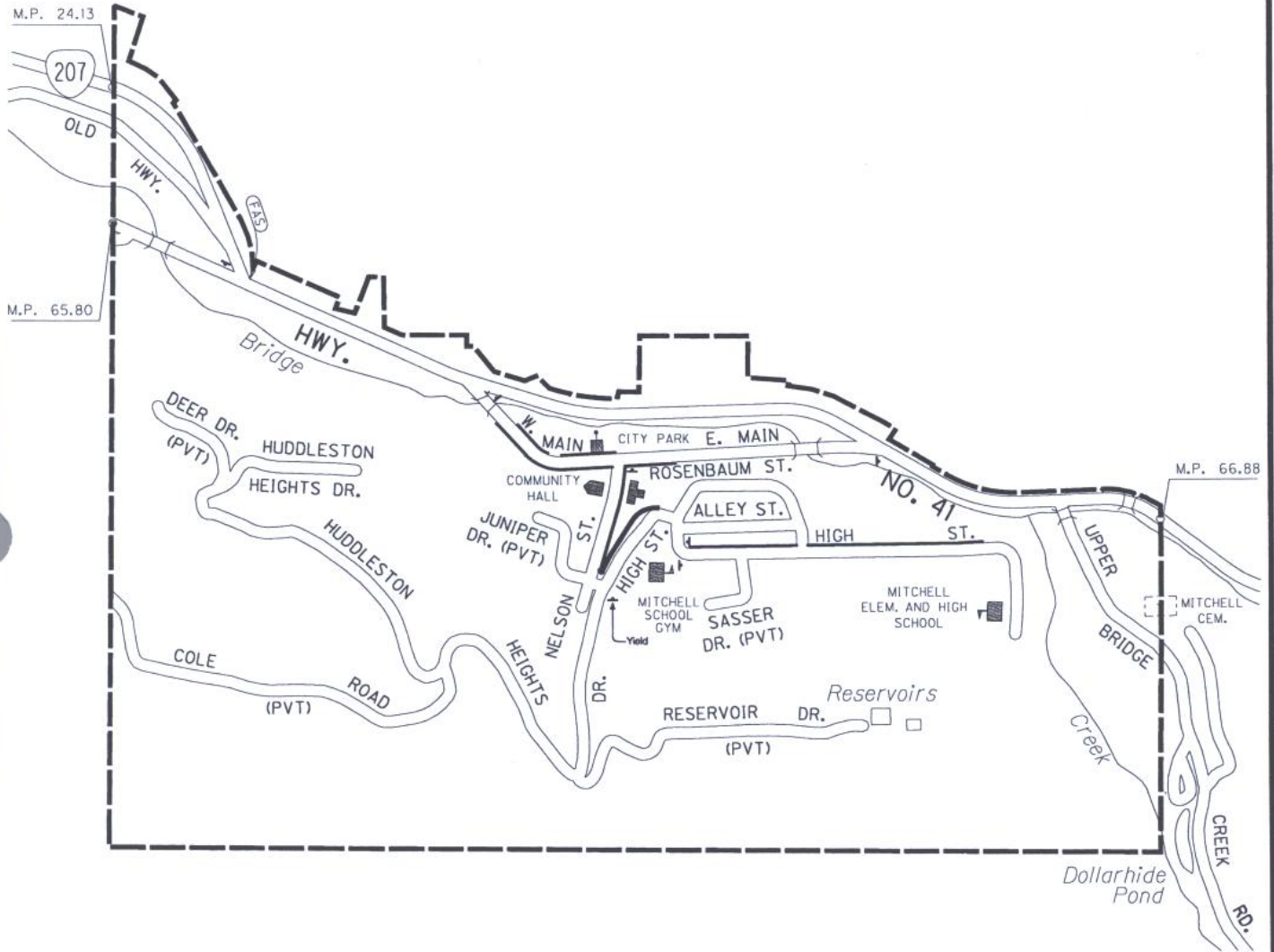
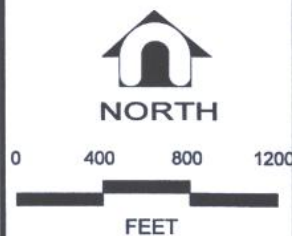


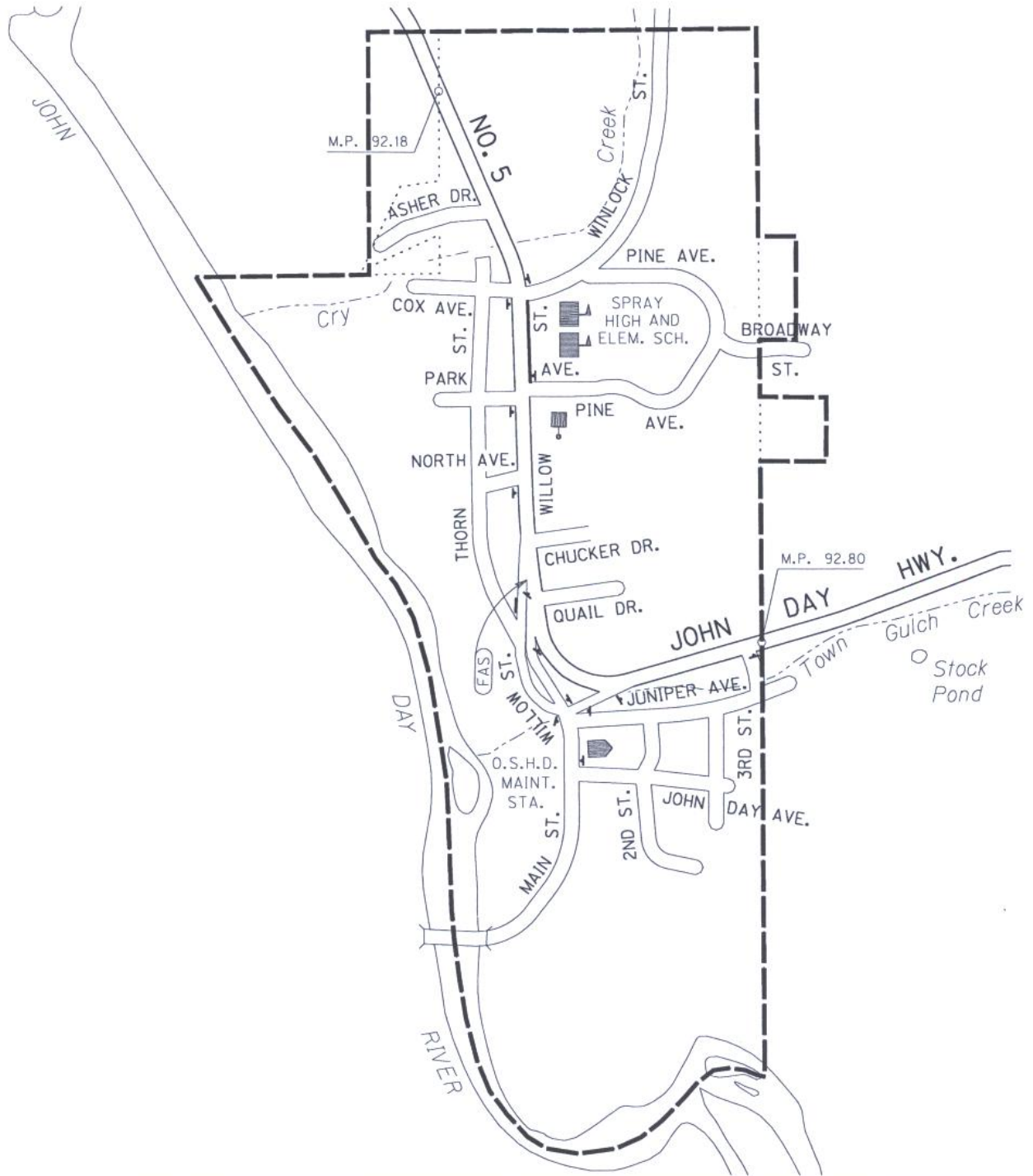
FIGURE 3-7

Mitchell Existing Pedestrian Facilities



- - - - - URBAN GROWTH
 BOUNDARY (U.G.B.)
 CITY LIMITS

———— SIDEWALKS
 T STOP SIGNS



NORTH

0 300 600 900



FEET

FIGURE 3-8

Spray Existing Pedestrian Facilities

WHEELER COUNTY TSP

Based on review of ODOT's most current highway video log and review of the *1997 Oregon Bicycling Guide Map*, the majority of state highway miles in Wheeler County have paved shoulders less than 4 feet wide meaning that they do not serve as shoulder bikeways. This does not make them inadequate for bicycle use, but generally requires bicyclists to share the roadway with motor vehicles.

Intermittent segments of OR 19 and US 26 adequately serve as shared roadway facilities through the urban areas of Fossil, Mitchell, and Spray, where speeds and traffic volumes are relatively low. Although bicycle use along rural highway segments in Wheeler County is low, and likely predominated by recreational users, the discontinuity of adequate shoulders along highways discourages bicycle use. With a large majority of all roadway mileage in the county being unpaved (gravel or dirt), the state highway system provides the only viable link for bicyclists to destinations within and outside of the county.

Urban

In a typical city, a short trip that would be taken by bicycle is around two miles. Judging from the size of the cities of Fossil, Mitchell, and Spray, many bicycle trip lengths would be much shorter. None of these three cities have dedicated bike lanes. Within Fossil's UGB, the eastern roadway shoulder along OR Highway 19 between Adams Street and First Street has been widened to provide a 6-foot shoulder for use by bicyclists and pedestrians.

Based on the relatively low traffic volumes and speeds in each town, it is reasonable to expect bicyclists and motor vehicles to safely share the roadway. It is unlikely that lack of bike lanes reduces bicycle use in these cities. However, bicycle amenities such as bike parking and storage facilities may have some impact.

PUBLIC TRANSPORTATION

Residents of Wheeler County have access to three types of public transportation services provided within the county- demand responsive transit services, county-wide school bus service, and scheduled regional bus service. A brief discussion of each follows.

Demand Responsive Transit Service

The Wheeler County Transportation Service provides county-wide demand responsive (or dial-a-ride) transit service operated by the Wheeler County Court for the elderly (60+) and persons with disabilities. The service will accommodate the general public on a "space available" basis. The program currently operates one 6-person minivan, one 12-14 person small bus and one 10-person van. The bus and minivan are wheelchair accessible. Plans are underway to acquire one additional small bus equipped with a wheelchair lift by 2001.

Since service is county-wide, one vehicle is assigned to the cities of Fossil, Mitchell, and Spray at all times to service the cities and surrounding area. The service has a program coordinator who works with local committees in each city to plan scheduled trips. The program coordinator manages service requests and authorizes each trip. Vehicles are rotated to fulfill transportation needs. Requests for service are typically placed to the county program coordinator 48 hours in advance of a trip although the program coordinator will attempt to fill "late" requests but cannot guarantee them. The service is door-to-door picking up and dropping off riders at the locations of their choosing. Trip priority is given to people with medical needs, however, the program coordinator attempts to match the most suitable transportation for the individual while attempting to coordinate rides and most efficiently utilize volunteer drivers and vehicles.

This non-profit service is primarily funded by ODOT Special Transportation Fund (STF) dollars and donations and utilizes volunteer drivers. People using the service are asked to pay a donation fee. Suggested fees are \$1.00 within the county and \$2.00 outside the county, but no riders are turned away if unable to pay. The

service is widely used with primary destinations being outside the county to the larger areas for medical, shopping, and trips of interest. Wheeler County replaces their vehicle fleet consistent with ODOT Transit Division recommendations.

Service requests can be placed through the Wheeler County Program Coordinator (Candy Humphreys) located in the City of Spray by calling (541) 468-2859 locally or by calling toll free (800) 721-8425.

Regional Bus Service

The Grant County Transportation Service provides county-wide and regional bus service (called the “People Mover”) between John Day in Grant County and Bend in Deschutes County with intermediate stops in the cities of Mt. Vernon, Dayville, Mitchell, Prineville, and Redmond. The only scheduled stop within Wheeler County is located in the City of Mitchell.

Buses leave John Day on Monday, Wednesday, and Friday mornings destined to Bend and return the same day. Unlike dial-a-ride service, passengers must catch the People Mover at assigned locations within each city. Residents of Mitchell catch the bus at the Bridgecreek Cafe. Within Bend, there is some flexibility in where passengers are dropped and picked up. The People Mover service is funded through grants and passenger fares. Residents traveling from Mitchell to Bend pay \$11.25 one-way (\$9.25 for seniors).

Service requests can be placed through the Grant County service coordinator located in John Day by calling (541) 575-2370.

School Bus Service

School bus service represents a substantial level of transit use in Wheeler County. Each of the three school districts in Wheeler County located in the cities of Fossil, Mitchell, and Spray provide their own school bus service. Mitchell and Spray own and maintain their own buses. Fossil contracts bus services through the Mid-Columbia Bus Company.

TRANSPORTATION DISADVANTAGED

The transportation disadvantaged are generally those people that either due to age, economic status, or physical or mobility impairment do not have access to mainstream transportation modes such as automobiles, bicycles, or walking. Young children for instance are generally dependent upon parents to serve their transportation needs. Many elderly people that can no longer drive are dependent on other transportation sources including demand responsive or “dial-a-ride” transportation. It is important for communities to understand what segment of the population is considered transportation disadvantaged and to take steps to plan service to these people.

Populations with Specific Transportation Needs

Certain populations have been identified as having more intensive transportation needs than the general population. These populations include people under the legal driving age, those under the poverty level, and those with mobility limitations.

The Portland State University (PSU) Center for Population Research and Census estimated the Wheeler County population at 1,600 residents in 1998. The Center further estimated that, in 1996, approximately 22 percent of the population were under the age of 18. Because the purpose of this analysis is to determine the number of people with specific transportation needs, DEA used PSU’s age disaggregation to estimate that 320, or about 20 percent of the population, are under the age of 16, the legal driving age in Wheeler County.

According to the 1990 US Census, 291 people, or 20.8 percent of the 1,396 persons living in Wheeler County at the time, were below the poverty level. Poverty statistics are based on a threshold of nutritionally-adequate food plans by the Department of Agriculture for the specific size of the family unit in question. The distribution of the population below poverty level shows that a larger proportion of younger persons than older persons are affected by this indicator, as shown in **Table 3-3**.

TABLE 3-3
WHEELER COUNTY POVERTY STATUS - 1990 US CENSUS RESULTS

Age	People Below Poverty Level	Total Age Group Population	Percent of Total Age Group Population Below Poverty
11 and under	58	192	30.2%
12 to 17	30	113	26.5%
18 and older	203	1,091	18.6%
Total	291	1,396	20.8%

Source: US Bureau of the Census, 1990

Economic status has traditionally been linked with auto ownership. People living below the poverty line are less likely to be able to afford ever increasing ownership and operating costs associated with auto use. Lack of access to the automobile has also traditionally been linked with inability to access better paying jobs above the poverty line since many poor people do not live within walking or biking distance to these jobs.

Mobility impairments can impact a person's access to destinations outside of the home unless specially equipped transportation is available. As mentioned previously, Wheeler County does provide handicapped access to residents on a county-wide basis through dial-a-ride transit services. Provision of specialty services to more rural residents may need to be addressed by the county. The US Bureau of the Census reports that 4.6 percent of the population in Wheeler County had a mobility limitation in 1990. Persons were identified as having a mobility limitation if they had a health condition (physical and/or mental) that lasted for six or more months and which made it difficult to go outside the home alone. A temporary health problem, such as a broken bone that was expected to heal normally, was not considered a health condition. **Table 3-4** summarizes the mobility status of Wheeler County residents as reported in the 1990 US Census.

TABLE 3-4
WHEELER COUNTY MOBILITY STATUS - 1990 US CENSUS RESULTS

Age	Mobility Limitation			Total Population in Age Groups	Percent of Total Age Group Population with Mobility Limitation
	Male	Female	Total		
16 to 64	10	2	12	826	1.5%
65 to 74	2	13	15	182	8.2%
75 and over	17	8	25	117	21.4%
Total	29	23	52	1,125	4.6%

Source: US Bureau of the Census, 1990

Using the proportion of the population with a mobility limitation and below the poverty level¹ in 1990, DEA estimated the number of people with specific transportation needs in 1998. Children under the age of six were not included under the assumption that their transportation needs would be provided for in some way—most likely by parents.

Table 3-5 indicates that as of 1998, over 37 percent of the Wheeler County population may have specific transportation needs. There is likely to be some overlap between the 4.6 percent of the population with mobility limitations and the 18.7 percent below the poverty level; therefore, the sum of the figures may slightly overstate the proportion of the population with specific transportation needs.

Another segment of the population with specific transportation needs is the elderly, which are no longer able to drive. Specific data regarding the portion of elderly residents no longer driving was not available for review, but conversations with the Wheeler County Transportation Service coordinator indicate that a large segment of dial-a-ride users within the county are elderly. Some portion of these elderly riders likely no longer drive. As county residents continue to age, it is conceivable that Wheeler County will need to increase specialty transit service within the county over the 20 year planning horizon.

TABLE 3-5
ESTIMATED 1998 WHEELER COUNTY POPULATION WITH SPECIFIC
TRANSPORTATION NEEDS

Demographic Group	Percent of Total County Population	Estimated Number
Persons between the ages of 5 and 15	14.0%	224
Persons 16 and older under the Poverty Level	18.7%	299
Persons 16 and older with Mobility Limitations	4.6%	74
Total Specific Transportation Needs Populations	37.3%	597

Source: US Bureau of the Census, 1990

¹ DEA used the US Census Bureau's age disaggregation to estimate that 18.7 percent of the Wheeler County population 16 and older was under the poverty level in 1990.

RAIL SERVICE

There are no rail tracks, and therefore no rail service, within Wheeler County. The nearest access to passenger rail service via Amtrak is located in Wishram, Washington. The closest in-state passenger service is located in Chemalt, Oregon. Amtrak coordinates with a number of charter bus services to provide transportation to train stations.

AIR SERVICE

Wheeler County has three operational air service facilities registered with the Oregon State Aviation Department including two private airstrips and a helicopter pad operated by the Oregon State Forest Department (OSFD). The Collins Landing Strip is privately owned by Collins Ranches, Inc. and is located 21 miles northwest of Mitchell at an elevation of 1,500 feet. The asphalt runway measures 2,800 feet long by 30 feet wide.

The Kinzua General Aviation Recreational Airport is privately owned by Pioneer Resources, LLC and is located 8.5 miles east of Fossil at an elevation of nearly 4,000 feet. The gravel runway measures 3,200 feet long by 35 feet wide.

The Oregon State Forest Department maintains a helicopter pad located 5 miles southeast of Fossil at an elevation of 3,200 feet. The gravel pad measures 45 feet by 60 feet.

Until a few years ago, an airstrip was used near Mitchell. The site is located on the side of a hill and comprised of a dirt airstrip that was susceptible to rutting. The site was not maintained and deemed hazardous largely because of transverse rutting caused by water runoff. Because of the site's location on Bureau of Land Management (BLM) property, it was not subject to ODOT maintenance inspection and regulation. In recent years, ODOT visited Mitchell and performed an informal site assessment and selection, finding that the airstrip could more suitably be located about 1/2 mile away where terrain was more appropriate. This location was also on BLM land.

The nearest public use airport to Wheeler County is Condon State Airport's - Pauling Field in Condon, OR. This facility is owned by the state and has one concrete runway measuring 3,500 feet by 60 feet. The facility is equipped with medium intensity runway lighting, supporting nighttime operations. The airport primarily serves private and charter users but is not staffed.

One of the nearest passenger-use airports is located in Pendleton. Eastern Oregon Regional Airport in Pendleton is a tower controlled airport with 40,600 annual operations. Passenger service includes 16 scheduled flights per day by Horizon Airlines, with flights to Portland and Seattle. The airfield is also home to 60 locally owned fixed-wing aircraft, four rotor, and eight CH-47 Chinook helicopters with the Oregon Army Air Guard. Other passenger-use airports close to Wheeler County are located in Bend and Redmond.

Air Life of Oregon, a medically urgent air transportation service based in Bend, OR, serves medical emergencies in Wheeler County. Air Life flies people who were in an accident or have a medical emergency to the nearest appropriate medical facility. Air Life of Oregon has one helicopter and one Pilatus PC-12 airplane (fixed-wing). Due to runway length requirements for airplanes, the only service available to the residents of Wheeler County is the helicopter. The three main locations where the helicopter lands in Wheeler County are the Asher Clinic in Fossil, the High School in Mitchell, and the Rodeo Grounds in Spray. These locations are preferred due to safety, accessibility, and lighting. **Table 3-6** summarizes the Air Life flight statistics over the last 4 years for Wheeler County.

**TABLE 3-6
AIR LIFE SERVICE LEVELS IN WHEELER COUNTY**

Location	1997	1998	1999	2000¹
Asher Clinic/Fossil ²	15	15	8	6
Mitchell ²	2	1	1	3
Spray ²	3	3	6	3
Wheeler County Total	20	19	15	12

1. Includes data from January through October.

2. Data represents city Ambulance coverage areas.

Source: Conversation with Air Life of Oregon Staff Member, November 2000

The nearest medical center to Wheeler County is St. Charles Medical Center in Bend, OR. It is the only Level II trauma center in the state of Oregon located east of the Cascade Mountains. Air Life usually transports all medical emergencies in Wheeler County to St. Charles Medical Center.

Due to the inability for the helicopter to fly in harsh weather conditions, Air Life is currently identifying potential runways/airstrips located in Eastern Oregon. An inventory list of all runways/airstrips with a minimum length of 3000 feet are being identified as potential landing areas for the PC-12 airplane (fixed wing). Accessibility to Wheeler County will be increased with the use of these new runways/airstrips.

PIPELINE SERVICE

Although not often considered as transportation facilities, pipelines carry liquids and gases very efficiently. The use of pipelines can greatly reduce the number of trucks and rail cars carrying fluids such as natural gas, oil, and gasoline.

There are currently no pipelines in Wheeler County used for the commercial transfer of oil, natural gas, or other products.

WATER TRANSPORTATION

The TSP process evaluates only the commercial use of water systems to move goods and services. Recreational water use is not evaluated. There is currently no commercial water movement of goods and services in Wheeler County.

CHAPTER 4: CURRENT TRANSPORTATION CONDITIONS

As part of the planning process, the current operating conditions for the transportation system were evaluated. This evaluation focused primarily on street system operating conditions since the automobile is by far the dominant mode of transportation in Wheeler County. Census data were examined to determine travel mode distributions.

TRAFFIC VOLUMES

ODOT reports traffic count data on the state highways (rural and urban sections) every year at the same locations. The most current volumes available are from 1999 and date back at least as far as 1978. ODOT annually counts one-third of the state highway system meaning Wheeler County highways are counted once every three years. Wheeler County Traffic volumes for locations not physically counted during a certain year are estimated based on nearby regional traffic volume growth trends. The most recent actual counts along state highways in Wheeler county were conducted in 1997 and 2000, however the 2000 data will not be available for review until mid-2001. All of the traffic volume data was obtained from the *ODOT Daily Traffic Volume Tables*.

Average Daily Traffic

Average Daily Traffic (ADT) represents the typical average volume of traffic in all lanes passing a given roadway location in both directions over a 24-hour period. The ADT is measured for some period of time greater than one day and less than one year and provides a snapshot of the magnitude of use along a particular roadway.

County Roads

Wheeler County has not typically collected or maintained traffic count information along county roads. With help from ODOT, Wheeler County road department was able to collect ADT volumes during the winter of 2000. **Figure 4-1** illustrates typical winter weekday volumes along county roads in Wheeler County except for the two locations along Bridge Creek Road, which are counted by ODOT every two years. If county roads are susceptible to seasonal variations the traffic volumes along Wheeler County roads could be expected to increase between 25 and 40 percent during other times throughout the year. Tourism and recreational uses are possible reasons for traffic volume fluctuations.

State Highways

The 1999 ADT volumes on US 26, OR 19, OR 207 (Heppner-Spray Highway), OR 207 (Service Creek-Mitchell Highway), and OR 218 in Wheeler County are shown in **Figure 4-2**. Traffic volumes are highest in the cities and drop off in the rural sections.

The volumes shown in **Figure 4-2** are average volumes for the year. Summertime is the season when volumes are highest. ADT data from Automatic Traffic Recorder (ATR) stations near Wheeler County indicated that during the summer season, volumes are about 5 to 40 percent higher than average volumes. Rural highway sections in Wheeler County are assumed to follow the same pattern, with smaller increases in the urban areas. The summertime variations are due, in part, to increases in freight movement related to agricultural harvesting and recreational and tourism uses in Wheeler County.

US 26 (Ochoco Highway)

US Highway 26 carries the highest traffic volumes in Wheeler County. Traffic volumes for the rural segments range from 1,100 vehicles per day (vpd) west of Mitchell and to 790 vpd east of Mitchell. Traffic levels are highest inside the urban area of Mitchell. The ADT volumes peak at 1,200 vpd near the west city limits before tapering off to 930 at the east city limits.

OR 19 (John Day Highway)

OR Highway 19 carries the second highest traffic volumes in the county. Rural highway segments carry traffic levels ranging from 450 vpd at the Gilliam/Wheeler County line to an average of 425 vpd for the section between Fossil and Spray to 250 vpd at the Wheeler/Grant County line. Traffic levels are highest in the urban areas of Fossil and Spray. Fossil experiences traffic levels of 340 to 610 vpd throughout its city limits while Spray experiences traffic levels of 370 to 600 vpd throughout its city limits.

OR 207 (Heppner-Spray Highway)

Traffic volumes on the rural section of OR 207 in Wheeler County range from 160 vpd near the junction with OR 19 to 140 vpd near the Wheeler/Morrow County line.

OR 207 (Service Creek-Mitchell Highway)

Rural traffic volumes on OR 207 range from 110 vpd near the junction with OR 19 to 150 vpd west of Mitchell. Traffic volumes within Mitchell city limits increase to 160 vpd.

OR 218 (Shaniko-Fossil Highway)

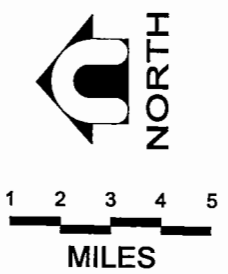
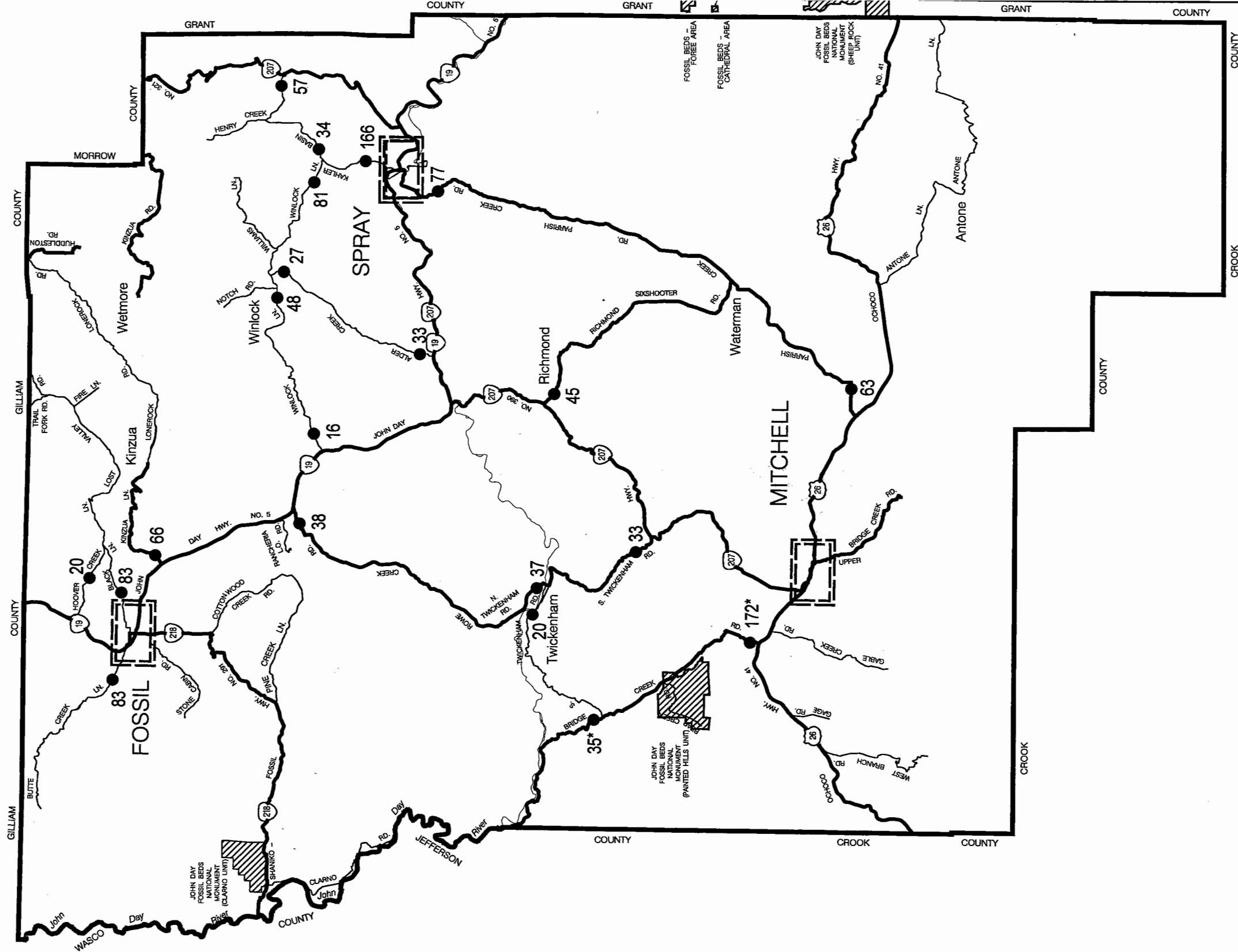
Rural highway segments on OR 218 carry traffic volumes ranging from 170 to 190 vpd west of Fossil. Traffic volumes within Fossil range from 260 vpd at the south city limits to 440 vpd near the junction with OR 19.

Design Hour Volumes

The design hourly volume (DHV) is the hourly volume that is used for design. For any roadway, it represents the 30th highest hourly traffic volume recorded along the roadway segment throughout the year. For example, if you counted the total number of vehicles in both directions at a specific roadway location for every hour throughout the year and then ranked the hourly volumes from highest to lowest, the 30th highest hourly volume of the year would represent the DHV. Past examples have shown that the 30th highest hourly volume as a percentage of ADT fluctuates minimally each year, even in cases of significant ADT variations.

The only locations along state highways in Oregon where hourly roadway volumes are counted on a daily basis throughout the year are at ODOT's automatic traffic recorder (ATR) stations. Information regarding ADT, 30th highest hourly volume, vehicle classification, seasonal variations, and more are available.

The 1999 design hour volumes on the state highways in Wheeler County were generated from a trendline equation developed by comparing ADT volumes versus design hour volumes at eight ATR stations near Wheeler County. **Table 4-1** lists the ATR data used to generate the trendline and **Figure 4-3** illustrates the trendline relationship between ADT and DHV at the eight ATR sites. The data points fall very close to the linear regression line that best fits the data.



- LEGEND:**
- 55 2000 ADT VOLUMES
- COUNTED IN JANUARY 2001
 - 55* 2000 ADT VOLUMES
- COUNTED BY ODOT EVERY 2
YEARS (LAST COUNT JUNE 2000)

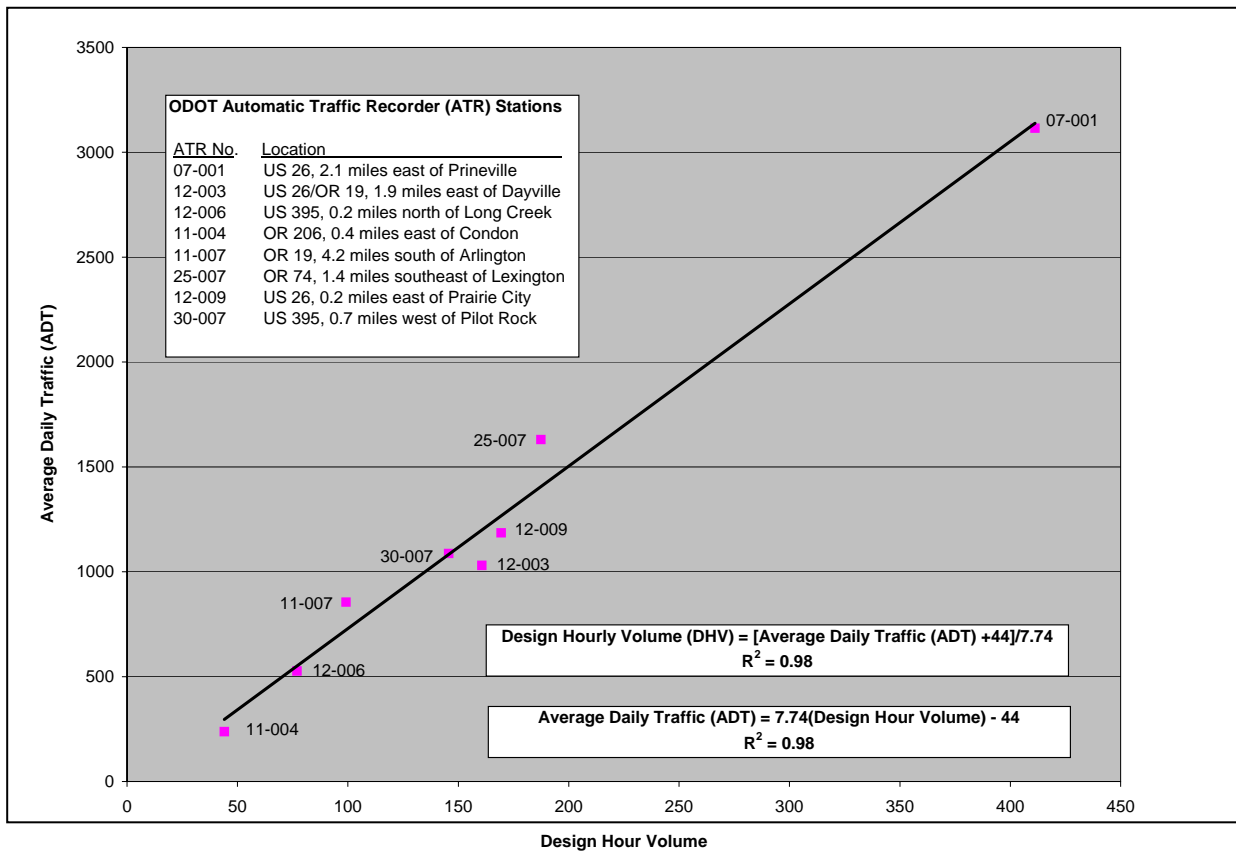
Average Daily Traffic (ADT) -
Represents the typical average volume of traffic in all lanes passing a given roadway location in both directions over a 24-hour period. The ADT is measured for some period of time greater than one day and less than one year.

FIGURE 4-1
2000 Average Daily Traffic (ADT) Volumes Along County Roads

**TABLE 4-1
RELATIONSHIP BETWEEN ADT AND DHV FROM ATR SITES NEAR WHEELER COUNTY**

ATR		1999		
Number	Location	ADT	Design Hour %	Design Hour Vol.
07-001	US 26, 2.1 miles east of Prineville	3,115	13.2%	411
12-003	US 26/OR 19, 1.9 mile east of Dayville	1,030	15.6%	161
12-006	US 395, 0.2 miles north of Long Creek	527	14.6%	77
11-004	OR 206, 0.4 miles east of Condon	238	18.5%	44
11-007	OR 19, 4.2 miles south of Arlington	855	11.6%	99
25-007	OR 74, 1.4 miles southeast of Lexington	1,630	11.5%	187
12-009	US 26, 0.2 miles east of Prairie City	1,185	14.3%	169
30-007	US 395, 0.7 miles west of Pilot Rock	1,087	13.4%	146

Source: 1999 Oregon Department of Transportation Daily Traffic Volume Tables



Source: Trendline relationship generated by David Evans and Associates, Inc. from 1999 ODOT Traffic Volume Table data

Figure 4-3. Relationship Between Average Daily Traffic (ADT) and Design Hourly Volumes (DHV)

The equation of the trendline is also shown on the figure and provides a strong correlation between the two variables. This means that ADT is a good predictor of DHV and vice versa. The trendline equations on **Figure 4-3** can be used to estimate ADT if DHV is known or to predict DHV if ADT is known. The trendline equation was used to determine DHVs along state highways in Wheeler County where ODOT maintains ADT records. The resulting DHVs are reported on **Figure 4-2** along with ADT volumes.

CAPACITY ANALYSIS

ODOT Highway Mobility Standards

ODOT has established several policies in the Oregon Highway Plan (OHP) that enforce general objectives and approaches for maintaining highway mobility. Of these policies, the Highway Mobility Standards (Policy 1F) establish maximum volume to capacity (V/C) ratio standards for peak hour operating conditions for all highways in Oregon. The V/C ratio represents the ratio of measured traffic demand volume on a highway section divided by the maximum volume that the highway section can process under prevailing roadway and traffic conditions (capacity).

The V/C standards apply to the state highways in Wheeler County and the OHP policy specifies that the V/C standards be maintained for ODOT facilities through a 20-year horizon.

The OHP Highway Mobility Standards that apply to the highways located in Wheeler County are as follows:

- Where there are no intersections along the highway, the V/C ratio shall not exceed 0.70 along US 26, OR 19 and OR 207 (Heppner-Spray Highway), and 0.75 along OR 207 (Service Creek-Mitchell Highway) and OR 218.
- At unsignalized intersections and road approaches where the highway approaches are not stopped, the V/C ratio shall not exceed 0.70 for US 26, OR 19 and OR 207 (Heppner-Spray Highway) and 0.75 for OR 207 (Service Creek-Mitchell Highway) and OR 218. An exception to these standards is where the highway approach must stop or yield right-of-way (such as the termination point of a highway or at the intersection of state highways). The V/C ratio in this case shall not exceed 0.80.

Capacity and Level-of-Service Criteria

Although the OHP Highway Mobility Standards are the overriding operations standard for Oregon Highways, level of service (LOS) is a widely recognized and accepted measure and descriptor of traffic operations and is therefore also presented. Transportation engineers have established various standards for measuring traffic operations of roadways and intersections. Each standard is associated with a particular Level-of-service (LOS) and/or the Volume-to-Capacity (V/C) ratio. Both the LOS and V/C ratio concepts require consideration of factors that include traffic demand, capacity of the intersection or roadway, delay, frequency of interruptions in traffic flow, relative freedom for traffic maneuvers, driving comfort, convenience, and operating cost.

Six standards have been established to define LOS. They range from LOS "A" where traffic flow is relatively free flowing to LOS "F" where the highway or intersection is totally saturated with traffic and movement is very difficult. V/C ratios range from 0.0 to greater than 1.0. When the V/C ratio is near 0.0, traffic conditions are generally good with free flow travel conditions present on the roadway segments. As the V/C ratio approaches 1.0, traffic becomes more congested along roadways and "platoons" of traffic are formed, while at intersections traffic conditions become more unstable with longer delays. Appendix D provides a qualitative description of LOS and V/C for two-lane rural highways and intersections.

The state highways in Wheeler County were analyzed under both rural and urban conditions. Capacity along the roadway segments was evaluated in two different ways: rural roadway operations and traffic operations at major intersections. The rural sections of the highways (those outside the incorporated cities) with the highest volumes were evaluated as part of the rural roadway operations analysis. The highest volume locations along the highway within the three incorporated cities in Wheeler County were evaluated as part of the intersection operations analysis.

Rural Highway Operations

Rural highway LOS operations were determined using procedures outlined in the *1997 Highway Capacity Manual*, Special Report 209, published by the Transportation Research Board. Analysis of rural two-lane highway sections takes into account several variables including the magnitude, type, and directional distribution of traffic as well as roadway features such as the percentage of no-passing zones, general terrain, and lane and shoulder widths. Each of these variables affects the capacity of the rural highway. Although roadway capacity is largely fixed by roadway features, it does vary based on the composition of traffic. The presence of large trucks reduces roadway capacity due to their size and performance characteristics, especially along upgrades. Therefore, the capacity values presented in **Table 4-2** are unique to the geometric and prevailing traffic conditions in 1999. Future calculation of V/C ratios should include recalculation of roadway capacity to account for potential changes in roadway features or traffic composition.

For each of the eight rural highway segments in Wheeler County, rural highway operations were analyzed under forecast two-way design hour volumes. Rural highway design speed was assumed to be 60 mph and the directional traffic split was assumed to be 60/40 meaning that 60 percent of the total two-way highway volume is assumed to travel in the peak direction during the design hour. The remaining variables differed by location for each rural highway segment. Since all rural segments have multiple ADT volumes reported, a worst case analysis was performed using the highest reported volume for each segment.

The resulting V/C ratio and LOS for each Wheeler County rural highway segment is shown in **Table 4-2**. All rural segments of the state highways currently operate well within V/C ratio standards outlined in the 1999 OHP and operate under generally free flowing conditions at LOS A or B.

**TABLE 4-2
SUMMARY OF OPERATIONS ON TWO-LANE HIGHWAYS**

Location	1999 Design Hour Volume¹	1999 V/C²	1999 LOS
US 26 Crook/Wheeler Co. line and Mitchell	150	0.09	B
US 26 Mitchell to Wheeler/Grant Co. line	105	0.08	B
OR 19 Gilliam/Wheeler Co. line and Fossil	70	0.04	A
OR 19 between Fossil and Spray	90	0.06	B
OR 19 Spray to Wheeler/Grant Co. line	50	0.03	A
OR 207 (Heppner-Spray) between Morrow/Wheeler Co. line and OR 19	30	0.02	A
OR 207 (Service Creek-Mitchell) between OR 19 and Mitchell	45	0.04	B
OR 218 between Wasco/Wheeler Co. line and Fossil	30	0.04	B

1. Values rounded up to the nearest 5.

2. The volume used to compute V/C ratio is the Design Hour Volume divided by the appropriate peak hour factor listed in table 8-3 of the 1997 Highway Capacity Manual.

Source: David Evans and Associates, Inc.

Under the OHP, rural two-lane highways located outside a UGB are allowed to operate with a v/c ratio no higher than 0.70 to 0.80 depending on the highway classification. Based on procedures outlined in the Highway Capacity Manual (HCM) for two-lane highways, this highway mobility standard equates to LOS E operations except under mountainous no-passing conditions. Under mountainous no-passing conditions, v/c ratios in excess of 0.78 represent LOS F.

Considering the highest volume county roads have traffic volumes similar to OR 207 (Heppner-Spray Hwy) and OR 218, all county roads are estimated to currently operate under generally free flowing conditions (LOS A or B).

Operations at Intersections

Traffic operations at select intersections within Wheeler County were evaluated using procedures outlined in the 1997 Highway Capacity Manual for unsignalized intersections. The highest volume intersection locations in the county were selected to provide a worst case analysis.

The highest traffic volumes in Wheeler County occur along the highways in the urban areas of Fossil, Mitchell, and Spray. Accordingly, one intersection within each urban area was analyzed to determine existing intersection operations. At each of the intersections, minor street approaches to the main highway are controlled by STOP signs. The three intersections analyzed include:

- OR 19 and OR 218/Washington Street in Fossil;
- US 26 and Main Street in Mitchell; and
- OR 19 and Main Street in Spray.

To support the planning level evaluation of each intersection, traffic operations were analyzed using two-way design hour volumes for each highway. The design hour volumes were adjusted to reflect a 60/40-peak directional traffic split. To provide a conservative analysis, volumes on the minor streets approaching the highways were assumed to equal one-half the corresponding highway volume. This applied to all minor approaches except at the intersection of OR 19 and OR 218/Washington Street in Fossil where the appropriate two-way design hour volume was used for the OR 218 approach.

Under these assumptions, the highway intersections operate at LOS A for all movements at all three intersections. This indicates that all other lower-volume intersections or driveways accessing any rural or urban portion of the highways are operating at LOS A as well.

TRANSPORTATION DEMAND MANAGEMENT MEASURES

Transportation Demand Management (TDM) measures consist of efforts taken to reduce the demand on an area's transportation system. TDM measures include such things as alternative work schedules, carpooling, and telecommuting.

Alternative Work Schedules

One way to maximize the use of the existing transportation system is to spread peak traffic demand over several hours instead of a single hour. Statistics from the 1990 US Census show the spread of departure to work times over a 24-hour period (see **Table 4-3**). (Workers who indicated they worked at home are not included in **Table 4-3**.) Over 29 percent of the total employees depart for work between 7:00 and 8:00 a.m. Another 46 percent depart in either the hour before or the hour after the morning peak hour.

**TABLE 4-3
WHEELER COUNTY DEPARTURE TO WORK DISTRIBUTION**

Departure Time	1990 Census	
	Trips	Percent
12:00 a.m. to 4:59 a.m.	11	2.6
5:00 a.m. to 5:59 a.m.	25	5.8
6:00 a.m. to 6:59 a.m.	105	24.5
7:00 a.m. to 7:59 a.m.	126	29.4
8:00 a.m. to 8:59 a.m.	94	21.9
9:00 a.m. to 9:59 a.m.	29	6.8
10:00 a.m. to 10:59 a.m.	7	1.6
11:00 a.m. to 11:59 a.m.	2	0.4
12:00 p.m. to 3:59 p.m.	11	2.6
4:00 p.m. to 11:59 p.m.	19	4.4
Total	429	100.0

Source: US Bureau of Census, 1990 Census

Assuming an average nine-hour workday, the corresponding afternoon peak can be determined for work trips. Using this methodology, the peak work travel hour would occur between 4:00 and 5:00 p.m., which corresponds with the peak hour of activity measured for traffic volumes.

Travel Mode Distribution

The 1990 US Census data include statistics for journey to work trips. The results for Wheeler County presented in **Table 4-4** clearly indicate that the automobile is the primary mode of travel for most residents in Wheeler County. In 1990, 66 percent of all trips to work were in an auto, van, or truck. Trips in single-occupancy vehicles accounted for 86 percent of all private vehicle trips, and carpooling accounted for 14 percent.

Table 4-5 presents 1990 US Census data on commute trip times. Use of the automobile for commuting is not surprising for people with home-to-work travel times exceeding five minutes, since a five minute automobile trip could cover a number of miles while a five minute walking trip will likely cover about one-quarter to one-half mile.

The 27 percent of work trips in Wheeler County that took less than five minutes as of 1990 represent the trips that could most reasonably be made by walking. As of 1990, 17 percent of all home-to-work trips in Wheeler County were made by walking, far above the statewide average for walking of 4.2 percent. As of 1990, 130 home-to-work trips took less than five minutes and 82 occurred by walking. It is not known exactly how many trips met both criteria. It is however apparent that room exists to increase walking within the county.

**TABLE 4-4
WHEELER COUNTY JOURNEY TO WORK TRIPS**

Trip Type	1990 Census	
	Trips	Percent
Private Vehicle	317	65.6
<i>Drove Alone</i>	272	85.8
<i>Carpooled</i>	45	14.2
Public Transportation	5	1.0
Motorcycle	4	0.8
Bicycle	0	0.0
Walk	82	17.0
Other	21	4.4
Work at Home	54	11.2
Total	483	100.0

Source: US Bureau of Census, 1990 Census

A commonly used threshold for acceptable walking distances is one-quarter mile. At a reasonable walking pace of 240 feet per minute, an average person can walk one-quarter mile in 5.5 minutes. Therefore, the opportunity for increased walking appears to exist in the county. However, for walking to occur safely and efficiently, there needs to be acceptable infrastructure (e.g., sidewalks, roadway shoulders) in place to support it. Since most pedestrian facilities, although fragmented, exist in the cities of Fossil, Mitchell, and Spray, these three cities are the most likely places to incur increased pedestrian usage.

**TABLE 4-5
WHEELER COUNTY TRAVEL TIME TO WORK DISTRIBUTION**

Departure Time	1990 Census	
	Trips	Percent
Less than 5 minutes	130	26.9
5 to 9 minutes	93	19.3
10 to 14 minutes	39	8.0
15 to 19 minutes	36	7.5
20 to 29 minutes	22	4.6
30 to 39 minutes	34	7.0
40 to 59 minutes	18	3.7
60 to 89 minutes	35	7.2
More than 90 minutes	22	4.6
Worked at home	54	11.2
Total	483	100.0

Source: US Bureau of Census, 1990 Census

The complete lack of reported bicycle usage as a commute mode was lower than many other primarily rural Oregon counties in 1990. Since the US Census data does not include trips to school or other non-work activities, overall bicycle usage may be higher. There are no roadways in Wheeler County with dedicated bicycle lanes on them, however, portions of state highways do have adequate shoulders to accommodate bicycle use. In addition to bicycle lanes, bicycle parking, showers, and locker facilities can help to encourage bicycle commuting.

ACCIDENT ANALYSIS

DEA reviewed accident data along the state highways within Wheeler County to identify high accident locations, potential accident patterns, and any potential safety concerns at these locations. The two sources of accident data reviewed included:

- Accident summaries generated by ODOT's Transportation Development Branch for the three-year period from January 1, 1997 to December 31, 1999.
- Accident summaries generated from the ODOT Accident Summary Database for locations along the state highways in Wheeler County.

ODOT's Accident Summary Database calculates two useful factors for comparison with statewide statistics based on accident information over the three-year period studied. The first factor is a computed average three-year accident rate, which compares the number of accidents with the ADT volume and the length of the segment analyzed. The accident rate for a stretch of roadway is typically calculated as the number of accidents per million vehicle miles (acc/mvm) traveled along that segment of roadway. The second factor is the Safety Priority Index System (SPIS) value. This factor evaluates accident frequency, severity, and traffic volumes to create an index for prioritizing state highway locations with safety concerns.

Additionally, ODOT produces detailed accident reports along all state highways. The detailed accident reports include the number of fatalities and injuries, property damage only versus injury accidents, roadway surface conditions, time of day, and cause of accident. The detailed reports also indicate the overall accident frequencies and rates for sections of each highway.

Historic

Table 4-6 presents the accident rates for state highways in Wheeler County and the Oregon statewide average accident rates for rural and urban non-freeway primary and secondary state highways from January 1, 1997 to December 31, 1999.

There were no reported accidents along state highways within the urban areas of Fossil, Mitchell, and Spray over the three-year period analyzed. Therefore **Table 4-6** only indicates accident rate information for the rural sections of the highways in Wheeler County.

Based on 1999 accident data, accident rates for the rural segments of all Wheeler county highways are below or slightly above statewide averages for similar highways. Accident rates dropped significantly along two rural segments of OR 19 and one segment of OR 218 from 1998 to 1999. However, with such low ADTs in Wheeler County, a one or two accident decrease can (and did) result in this level of improvement.

For the rural portions of OR 218 south of Fossil there were no reported accidents in 1999. This reveals an improvement over 1997 and 1998 when the accident rates were roughly one-and-a-half to two times the statewide averages.

TABLE 4-6
HISTORIC ACCIDENT RATES FOR STATE HIGHWAYS
 (Accidents per Million Vehicle Miles Traveled)

Highway	1999	1998	1997
Primary State Highways			
<i>US 26 (Ochoco River Highway)</i>			
Rural: Crook/Wheeler Co. line to Mitchell	0.31	0.47	0.15
Rural: Mitchell to Wheeler/Grant Co. line	0.47	0.83	0.60
<i>OR 19 (John Day Highway)</i>			
Rural: Gilliam/Wheeler Co. line to Fossil	1.07	1.07	1.07
Rural: Fossil to Service Creek-Mitchell Hwy	0.61	na	na
Rural: Service Creek-Mitchell Hwy to Spray	0.64	1.97	0.65
Rural: Spray to Heppner-Spray Hwy	Na	2.96	na
Rural: Heppner-Spray Hwy to Wheeler/Grant Co. line	Na	na	1.19
Secondary State Highways			
<i>OR 207 (Heppner-Spray Highway)</i>			
Rural: Morrow/Wheeler Co. line to John Day Hwy	1.19	na	na
<i>OR 207 (Service Creek-Mitchell Highway)</i>			
Rural: Junction John Day Hwy to Mitchell	0.85	1.74	na
<i>OR 218 (Shaniko-Fossil Highway)</i>			
Rural: Wasco/Wheeler Co. line to Pine Creek Lane	Na	1.77	na
Rural: Pine Creek Lane to Fossil	Na	3.70	1.85
Average for all Rural Non-freeway Primary State Highways	0.88	0.85	0.83
Average for all Rural Non-freeway Secondary State Highways	1.11	1.17	1.14

Source: 1999 Oregon Department of Transportation Accident Rate Tables

Table 4-7 contains detailed accident information on US 26, OR 19, OR 207 (Heppner-Spray Hwy), OR 207 (Service Creek-Mitchell Hwy), and OR 218 in Wheeler County from January 1, 1997 to December 31, 1999. It shows the number of fatalities and injuries, property damage only accidents, the total number of accidents, and the overall accident frequencies and rates for the segments of these roadways in Wheeler County.

There were no reported accidents along state highways within the urban areas of Fossil, Mitchell, and Spray over the three-year period analyzed. Therefore **Table 4-7** only indicates accident rate information for the rural sections of the highways in Wheeler County.

US 26 (Ochoco Highway)

Within Wheeler County during the three-year period analyzed, there were 24 ODOT-reported accidents, 12 of which were reported as property damage only. The 24 accidents resulted in no fatalities, two severe injuries, twelve moderate injuries, and four minor injuries. All of the accidents occurred along rural sections of the highway. Most accidents (14) occurred during daylight hours and nearly 42 percent involved wet or icy pavement conditions. The most common types of accidents involved vehicles hitting fixed objects (10), non-collision (8), and miscellaneous collisions involving livestock or deer/elk (4). Half of the accidents involving vehicles that hit fixed objects occurred under wet or icy pavement conditions. The accidents were scattered along the roadway segment and there were no particular locations that showed a consistent accident pattern. Accident rate information for 1997-1999 shows that the rural sections of US 26 between Crook County and Mitchell and between Mitchell and Grant County have three-year accident rates of 0.32 and 0.64, respectively. Both of these accident rates are less than the statewide average for similar highways (0.85) indicating no safety issues along US 26.

TABLE 4-7
RURAL HIGHWAY ACCIDENT SUMMARIES
(January 1, 1997 to December 31, 1999)

Location	Fatalities	Injuries	PDO ¹	Total Accidents	Accident Frequency (acc/mi/yr)	Accident Rate (acc/mvm)
US 26 (Ochoco Hwy)						
Crook Co. to Mitchell (MP 50.03 - 65.80)	0	3	3	6	0.13	0.32
Mitchell to Grant Co. (MP 66.88 - 98.36)	0	15	9	18	0.19	0.64
OR 19 (John Day Hwy)						
Gilliam Co. to Fossil (MP 52.06 - 57.57)	0	0	3	3	0.18	1.04
Fossil to Spray (MP 59.64 - 92.18)	1	1	5	7	0.07	0.54
Spray to Grant Co. (MP 92.80 - 104.73)	0	0	2	2	0.06	0.52
OR 207 (Heppner-Spray Hwy)						
Morrow Co. to John Day Hwy (MP 24.65 - 40.91)	1	0	0	1	0.02	0.43
OR 207 (Service Creek-Mitchell Hwy)						
John Day Hwy to Mitchell (MP 0.00 - 24.13)	1	8	3	6	0.08	0.87
OR 218 (Shaniko-Fossil Hwy)						
Wasco Co. to Fossil (MP 23.07 - 42.74)	0	5	1	4	0.07	1.25

1. PDO: Property Damage Only Accident.

Source: Oregon Department of Transportation Accident Summary Database Investigative Report

OR 19 (John Day Highway)

There were 12 ODOT reported accidents along OR 19 in Wheeler County during the three-year period analyzed resulting in one fatality, one moderate injury, and ten with property damage only. All accidents occurred along rural sections of the highway, five occurred during daylight hours, and five occurred under wet roadway conditions. The most common types of accidents involved vehicles hitting miscellaneous objects such as livestock or deer/elk (7), non-collision (3) and hitting fixed objects (2). Over half of the accidents involving vehicles that hit miscellaneous objects occurred under wet pavement conditions. The accidents were scattered along the roadway segment although a high number of the accidents involving livestock or deer/elk occurred around the city of Fossil. The accidents occurred despite several warning signs along OR 19. Accident rate information for 1997-1999 shows that the rural section of OR 19 between Gilliam County and Fossil has a three-year accident rate (1.04) which exceeds the statewide average for similar highways (0.85). The three-year accident rates for the remaining rural sections along OR 19 are less than the statewide average.

OR 207 (Heppner-Spray Highway)

There was only one ODOT reported accident along OR 207 within Wheeler County during the three-year period analyzed. The accident occurred one-half mile north of Haystack Creek near milepost 35.8, and resulted in one fatality. This location only experienced one accident in the three-year period, but due to the severity of the accident it received a SPIS value of 45.12, just below the state's 2000 cutoff value of 48.02.

OR 207 (Service Creek-Mitchell Highway)

There were six ODOT reported accidents along OR 207 in Wheeler County during the three-year period analyzed resulting in one fatality, one severe injury, six moderate injuries, and one minor injury. All accidents occurred along rural sections of the highway, all but two occurred during daylight hours, and two involved trucks. The most common type of accident involved vehicles hitting fixed objects (4). Drinking was involved in half of the accidents involving vehicles that hit fixed objects. The accidents were scattered along the highway and there were no particular locations that showed a consistent accident pattern. The location of the fatality accident, milepost 17.90, received a SPIS value of 37.88, below the state's 2000 cutoff value of 48.02. Accident rate information for 1997 to 1999 shows the rural segment of OR 207 between the John Day Highway and Mitchell has a three-year accident rate (0.86) slightly exceeding the statewide average for similar highways (0.85).

OR 218 (Shaniko-Fossil Highway)

Within Wheeler County during the three-year period analyzed, there were four ODOT reported accidents. The four accidents resulted in no fatalities and five moderate injuries. All of the accidents occurred along rural sections of the highway. Most accidents (3) occurred during nighttime hours, 50 percent involved wet pavement conditions, and non-collision accidents (2) were the most common type. The accidents were scattered along the roadway segment and there were no particular locations that showed a consistent accident pattern. Accident rate information for 1997-1999 shows that the rural section of OR 218 between Wasco County and Fossil has a three-year accident rate of 1.24, greater than the statewide average for similar highways (1.14).

CHAPTER 5: TRAVEL FORECASTS

The traffic volume forecasts for Wheeler County are based solely on historic growth on the state highway system. Forecasts were only prepared for the state highway system in the county, since the volumes on these roadways are much higher than on any of the county roads. Traffic forecasts were prepared for rural sections of each state highway and for urban sections where appropriate in the cities of Fossil, Mitchell, and Spray. Because of the link between transportation growth and population trends, both historic and projected Wheeler County population growth trends are presented for comparison to historic and projected traffic growth trends.

LAND USE

Land use and population growth is accounted for in the historic traffic volume trends used to forecast future traffic levels on state highways. Population forecasts were developed for comparison to forecast traffic volumes and to better determine the potential locations of future transportation needs. The amount of population growth, and where it occurs, has the potential to affect traffic and transportation facilities in the study area.

Population projections in Wheeler County are based on historic growth rates and forecasts by the State of Oregon Office of Economic Analysis (OEA). Factors that will affect the future population growth rate in Wheeler County include employment opportunities, available land area for development, and community efforts to manage growth.

A detailed description of existing and future land use projections, including the methodology and data sources used, is contained in the Population and Employment Analysis located in Appendix E. As the primary population centers in the county, the analysis also includes population estimates for the Cities of Fossil, Mitchell, and Spray.

Historic Population Trends

Historic population figures (1960-1980) were compiled from data reported by the U.S. Census Bureau and are reported in **Table 5-1**. Current population estimates were provided by Portland State University's Center for Population Research and Census (PSU CPRC), which develops annual population estimates for cities and counties for the purpose of allocating certain state tax revenues.

TABLE 5-1
WHEELER COUNTY HISTORIC POPULATION GROWTH TRENDS

	1960	1970	1980	1990	1999	Growth		
						Number	Rate (AAGR ¹)	
						1960-99	1960-99	1990-99
Wheeler County	2,722	1,849	1,513	1,408	1,600	(1,122)	-1.35%	1.43%
Fossil	672	511	535	399	545	(127)	-0.54%	3.53%
Mitchell	236	196	183	163	200	(36)	-0.42%	2.30%
Spray	194	161	155	149	165	(29)	-0.41%	1.14%
State of Oregon	1,768,687	2,091,385	2,633,105	2,842,321	3,300,800	1,209,415	1.61%	1.68%

1. Average Annual Growth Rate (compounded).

Source: Portland State University Center for Population Research and Census (1990-1999 data); Oregon Blue Book (City historic data); U.S. Census Bureau (County historic data)

Population levels in most of Eastern Oregon are close to, or actually lower than, those experienced earlier in the century. Counties included in this phenomenon include Baker, Gilliam, Harney, Union, Grant, and Wallowa

Counties. Wheeler County experienced a population decline of almost 900 people between 1960 and 1970. The population decline continued to a far smaller degree from 1970 through 1990, reflecting a general slowdown in the state's economy. As a result, the population of Wheeler County in 1990 was lower than at any time since 1960. Wheeler County has experienced modest growth in the last decade since 1990 growing at 1.4 percent per year.

Population trends in the urban areas of Fossil, Mitchell, and Spray have followed similar historic population trends as the county. However, from 1970 to 1980, when Wheeler County experienced a population decline of over 300 people, the cities actually experienced a modest population increase of five people. This indicates that the population decline affected rural Wheeler County residents. From 1990 to 1999, all three cities have experienced population increases and growth rates in Fossil and Mitchell have outpaced the county growth rate. However, with such low population bases in these cities, very modest increases in the number of new residents can result in higher growth rates.

Projected Population Trends

Population and employment projections (2000 through 2020) are based on the State of Oregon Office of Economic Analysis (OEA) projections. The OEA's projections were developed in January 1997 and include long-term (through year 2040) state population forecasts disaggregated by county. Employment information was developed from OEA's county-level employment forecasts (also completed in January 1997), which were based on covered employment payrolls reported by the Oregon Employment Department.

The OEA used business-cycle trends (as reflected by the Employment Department's employment forecasts) as the primary driver of population and employment for the short-term projections. Long-term forecasts shifted to a population-driven model, which emphasized demographics of the resident population, including age and gender of the population, with assumptions regarding life expectancy, fertility rate, and immigration.

David Evans and Associates, Inc. (DEA) used a similar methodology based on the OEA's county-distribution methodology to develop population and employment forecasts for each of the cities in Wheeler County. DEA calculated a weighted average growth rate for each jurisdiction (weighting recent growth more heavily than past growth) and combined that average growth rate with the projected countywide growth rate. This methodology assumes that growth rates will be similar over time. Often the physical constraints of any area limit its ability to sustain growth rates beyond the state or county average for long periods of time. Such constraints include availability of land and housing, congestion, and other infrastructure limitations.

Using this methodology, **Table 5-2** illustrates that Wheeler County is expected to experience a population gain of over 500 people during the next 20 years. This represents an increase of over 30 percent from 2000 to 2020. Like much of rural Oregon, the economy of Wheeler County remains largely seasonal, with a large sector of employment being agriculture-based. Therefore, population increases are difficult to predict, and may not be as stable as the forecasts appear to imply.

The majority of Wheeler County's forecast population growth between 2000 and 2020 is expected to occur within the cities of Fossil, Mitchell, and Spray. Of the total 533-person growth forecast to occur in Wheeler County from 2000 to 2020, nearly 90 percent of the growth is expected to occur in these three urban areas. Fossil is forecast to experience slightly over one-half of the total county population growth.

**TABLE 5-2
WHEELER COUNTY FORECAST POPULATION GROWTH TRENDS**

									1999-2020 Change
--	--	--	--	--	--	--	--	--	-------------------------

	1999	2000	2005	2010	2015	2020	Number	Total Growth	AAGR ¹
Wheeler County	1,600	1,697	1,833	1,966	2,100	2,230	630	39.4%	1.6%
Fossil	545	579	669	759	834	909	364	26.7%	2.5%
Mitchell	200	222	242	260	280	300	100	31.1%	2.0%
Spray	165	176	191	206	215	229	64	21.6%	1.6%

1. Average Annual Growth Rate (compounded).

Source: Portland State University Center for Population Research and Census (1997 population estimates); State Of Oregon Office of Economic Analysis (forecasts)

TRAFFIC VOLUMES

Traffic volume projections along state highways in Wheeler County are based solely on historic traffic volume growth trends.

Historic

Before projecting future traffic growth, it is important to examine past growth trends on the Wheeler County roadway system. Historic data is only available for the state highway system in Wheeler County; however, these roadways carry far more traffic than any other roadways in the county.

ODOT reports traffic count data on the state highways (rural and urban sections) every year at the same locations. The most current volumes available, and the ones reported in this TSP, are from 1999. ODOT annually counts one-third of the state highway system every three years. Traffic volumes for locations not physically counted during a certain year are estimated based on nearby regional traffic volume growth trends. The most recent actual counts along state highways in Wheeler county were conducted in 1997 and 2000, however the 2000 data will not be available for review until mid-2001.

Historical growth trends on the state highways in Wheeler County were established using the ADT volume information presented in the ODOT Traffic Volume Tables for the years 1979 through 1999. The ADT volumes were obtained for each of these years at several locations along each highway. Average traffic growth rates were determined along rural and urban highway segments as presented in **Table 5-3**.

Over the past 20 years, traffic levels have grown throughout most of Wheeler County. The rate of growth along some highway segments seems high, but only because the base highway volumes in 1979 were so low. For example, from 1979 to 1999, the rural section of US 26 from the Crook County line to the City of Mitchell has averaged nearly 5 percent per year growth. This seemingly high growth rate has resulted in the addition of less than 550 daily vehicles to this stretch of road. If this same highway segment experienced another 550-vehicle increase in traffic over the next 20 years, the resulting growth rate would only be 2.5 percent per year because it is based on a higher beginning 1999 volume of 1,100.

This trend of seemingly high traffic volume growth rates, yet relatively small net traffic volume gains, is exhibited along all highways in Wheeler County. The only highway segment experiencing negative growth over the historical 20-year period is the rural section of OR 207 (Heppner-Spray Highway), which has experienced a negative growth rate of -0.52 percent per year.

TABLE 5-3
HISTORIC TRAFFIC GROWTH RATES ON STATE HIGHWAYS

Highway Section	Milepost	Historic ADT Volumes ¹		Annual Linear Growth Rate ¹ 1979-1999	Total Growth 1979-1999
		1979	1999		
US 26					
Rural- Crook/Wheeler Co. line to Mitchell	50.03 - 65.80	563	1,100	4.76%	95.3%
Urban- Mitchell	65.80 - 66.88	597	1,077	4.02%	80.4%
Rural- Mitchell to Wheeler/Grant Co. line	66.88 - 98.36	470	758	3.06%	61.3%
OR 19					
Rural- Gilliam/Wheeler Co. line to Fossil	52.06 - 57.57	360	465	1.46%	29.2%
Urban- Fossil	57.57 - 59.64	453	492	0.42%	8.5%
Rural- Fossil to Spray	59.64 - 92.18	251	424	3.44%	68.8%
Urban- Spray	92.18 - 92.80	373	453	1.07%	21.4%
Rural- Spray to Wheeler/Grant Co. line	92.80 - 104.73	217	280	1.46%	29.2%
OR 207 (Heppner-Spray Highway)					
Rural- Morrow/Wheeler Co. line to OR 19	24.65 - 40.91	160	143	-0.52%	-10.4%
OR 207 (Service Creek-Mitchell Highway)					
Rural- OR 19 to Mitchell	0.00 - 24.13	125	268	5.70%	114.0%
Urban- Mitchell	24.13 - 24.30	160	295	4.22%	84.4%
OR 218					
Rural- Wasco/Wheeler Co. line to Fossil	23.07 - 42.74	83	163	4.85%	97.0%
Urban- Fossil	42.74 - 42.96	245	350	2.14%	42.9%

1. Average daily traffic volumes along highway segments defined by beginning and ending mileposts.

Source: 1999 ODOT Traffic Volume Tables; information compiled by David Evans and Associates, Inc.

In general, historic compound average annual traffic volume growth on the rural sections of the state highways far exceeded the 20-year compound historic population growth in Wheeler County. Although Wheeler County has experienced population gains during this decade (1.43 percent per year since 1990), during the 19-year period between 1980 and 1999, Wheeler County population increased at a lesser rate of about 0.3 percent per year. While population increased slightly over the 20-year period, rural traffic volumes grew far more reflecting the modern trend toward an increase in per capita vehicle miles traveled and the increase in commercial and tourist traffic.

Due to a lack of historic traffic volumes for the county roads, growth trends on the county road system cannot be observed.

Forecasting Methodology

Future traffic volume forecasts along state highways in Wheeler County were developed by ODOT's Transportation Planning and Analysis Unit (TPAU). The TPAU forecasts are based on a *Level 1-Trending Forecast*² analysis methodology based on available existing and historical traffic data. This methodology assumes that traffic demand on the state highways will grow over the 20-year planning period according to the linear 20-year historical traffic growth trendline rate. TPAU developed a comprehensive summary of statewide traffic growth trendlines to support development of the 1999 OHP. They intend to update the trendlines every few years and, for consistency, want statewide transportation analysis to be based on their growth rates.

TPAU develops historical traffic growth trendlines by plotting the ADT volumes for each reported highway location in the years where actual ODOT counts were taken. They also investigate suspect count information and adjust volumes as needed. Using a linear regression process, the linear trendline that best fits the volume

² ODOT Transportation System Planning Guidelines, August 1995, p. 29.

data points is determined. This historical trendline is then used to forecast future traffic volumes over the 20-year planning horizon. As new data is added to TPAU's database, the trendlines are refined.

State highway locations that have displayed increasing 20-year historical traffic growth are assumed to continue to grow according to the 20-year historical linear trendline growth rate. Locations displaying negative historical traffic growth are assumed to remain unchanged, displaying neither increased or decreased traffic volume growth. This supports TPAU's belief that negative traffic volume growth is not sustained over long periods of time.

Trendline Comparisons

Table 5-4 summarizes the forecast 2020 traffic volumes and resulting 20-year traffic volume growth rates. State highway volumes throughout Wheeler County are generally expected to grow over the next 20 years. However, comparisons between forecast growth rates in **Table 5-4** and historical growth rates from **Table 5-3** indicate that total growth and growth rates are expected to decline throughout the county by 2020. Five of the 13 highway segments are forecast to experience a larger net traffic volume increase over the next 20 years than they experienced over the last 20 years.

Some of the forecast 2000 and reported 1999 volumes from **Tables 5-4** and **5-3**, respectively, reflect higher 1999 volumes. This can occur when comparing volumes from ODOT's Traffic Volume Tables and those forecast using a trendline. Anytime a trendline is generated, some yearly traffic volume data points will generally fall above or below the trendline. In the case of some Wheeler County state highway segments, the ODOT-reported 1999 volumes fall above the trendline. This in no way affects the trendline methodology that is primarily focused on forecasting 2020 volumes.

Based on TPAU's trendlines, the rural section of OR 19 from the Gilliam County line to Fossil and the urban section within Fossil have displayed negative historical growth. Accordingly, these highway sections are not forecast to grow over the next 20 years.

Future Traffic Volumes

Table 5-4 summarizes the average forecast 2020 traffic volumes along rural and urban state highway sections in Wheeler County. Future 2020 ADT and DHV volumes at all locations reported by ODOT are shown in **Figure 5-1**. Rural highway traffic volumes are expected to range in growth from 0.0 percent along OR 19 between the Gilliam County line and Fossil to 47.8 percent along US 26 between the Crook County line and Mitchell. Urban highway growth is expected to range from 0.0 percent in Fossil to 53.3 percent in Mitchell.

**TABLE 5-4
FUTURE FORECAST TRAFFIC GROWTH RATES ON STATE HIGHWAYS**

Highway Location	Milepost	2000 ADT	2020 ADT	Annual Linear Growth Rate ¹ 2000-2020	Total Growth 2000-2020
US 26					
Rural- Crook/Wheeler Co. line to Mitchell	50.03 - 65.80	1,185	1,752	2.39%	47.8%
Urban- Mitchell	65.80 - 66.88	1,147	1,680	2.33%	46.5%
Rural- Mitchell to Wheeler/Grant Co. line	66.88 - 98.36	757	855	0.65%	13.0%
OR 19					
Rural- Gilliam/Wheeler Co. line to Fossil	52.06 - 57.57	410	410	0.0%	0.0%
Urban- Fossil	57.57 - 59.64	472	472	0.0%	0.0%
Rural- Fossil to Spray	59.64 - 92.18	363	427	0.89%	17.7%
Urban- Spray	92.18 - 92.80	463	546	0.90%	18.0%
Rural- Spray to Wheeler/Grant Co. line	92.80 - 104.73	283	303	0.36%	7.1%
OR 207 (Heppner-Spray Highway)					
Rural- Morrow/Wheeler Co. line to OR 19	24.65 - 40.91	145	159	0.46%	9.2%
OR 207 (Service Creek-Mitchell Highway)					
Rural- OR 19 to Mitchell	0.00 - 24.13	274	334	1.10%	21.9%
Urban- Mitchell	24.13 - 24.30	310	475	2.67%	53.3%
OR 218					
Rural- Wasco/Wheeler Co. line to Fossil	23.07 - 42.74	168	206	1.12%	22.3%
Urban- Fossil	42.74 - 42.96	325	355	0.46%	9.2%

1. Average traffic volumes along highway segments defined by beginning and ending mileposts.

Source: Growth rates provided by ODOT's Transportation Planning and Analysis Unit (TPAU)

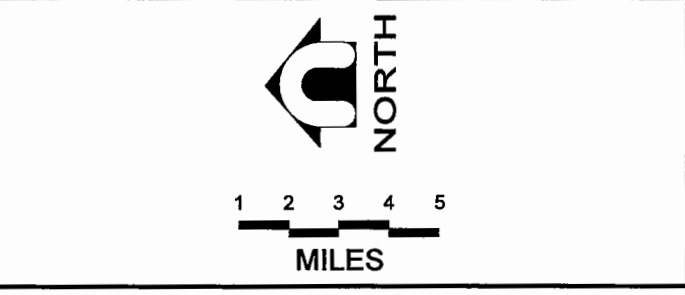
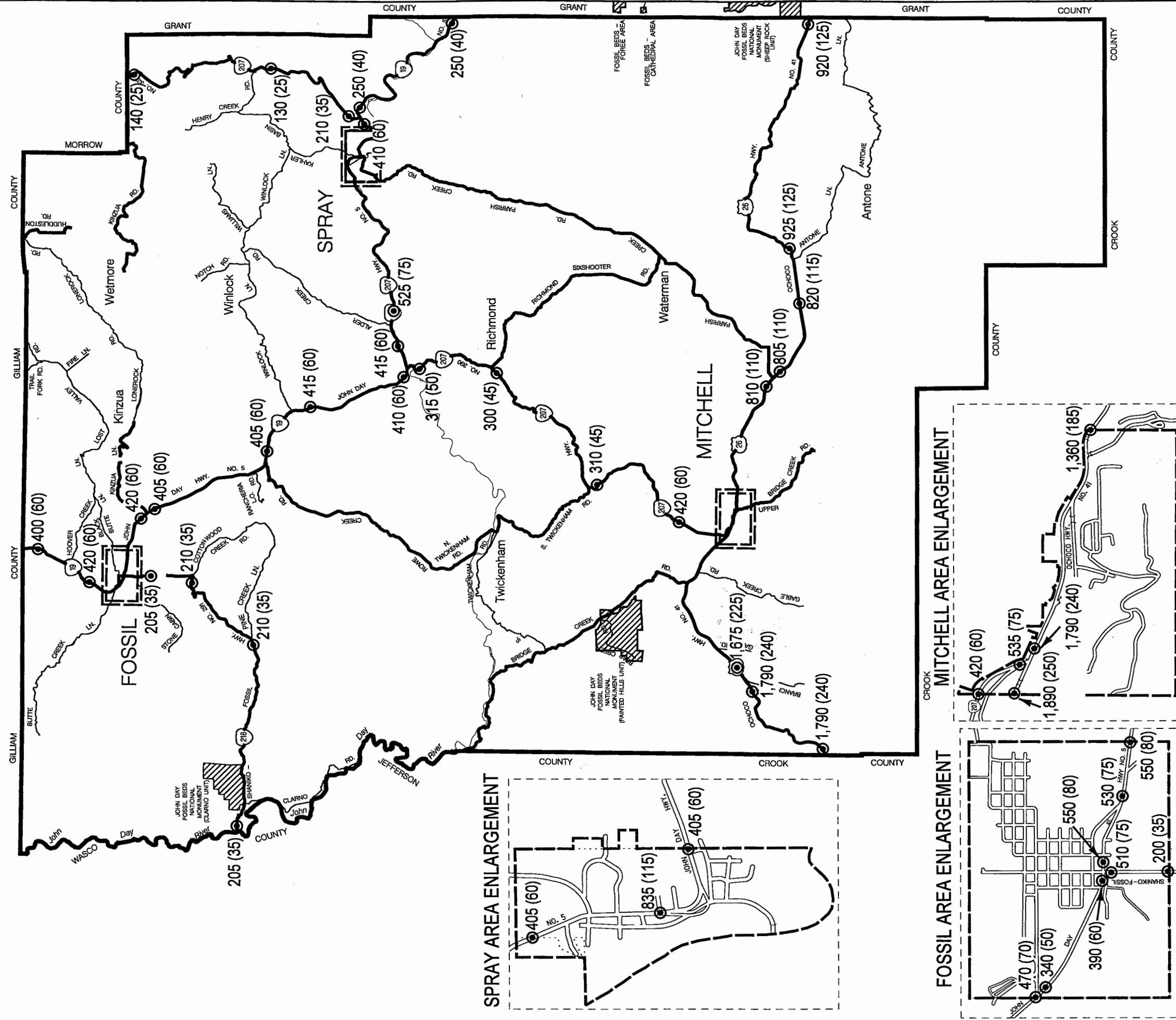
HIGHWAY SYSTEM CAPACITY

Future year 2020 traffic operations analyses were performed on the rural sections of state highways and at select intersections in Wheeler County. The future year design hour volumes were generated in accordance with the forecasting procedures outlined previously. Analyses were conducted for the same rural highway and intersection locations and in the same manner as outlined in Chapter 4 (*Current Transportation Conditions*).

Rural Roadway Operations

Rural highway operations were determined using procedures outlined in the *1997 Highway Capacity Manual*, Special Report 209, published by the Transportation Research Board. Evaluation of future rural two-lane highway sections was conducted using forecast 2020 design hour volumes. Evaluation was conducted at the same locations and in the same manner as described in Chapter 4. No changes in roadway features or traffic composition (e.g. large truck percentage) for individual rural highway sections were assumed for 2020.

The resulting future forecast 2020 Design Hour Volume, V/C ratio, and LOS for each Wheeler County rural highway segment are shown in **Table 5-5**. All rural segments of the state highways currently operate well within V/C ratio standards outlined in the 1999 OHP and operate under generally free flowing conditions at LOS A or B.



LEGEND:

----- AREA OF MUTUAL CONCERN (A.M.C.) BOUNDARY

● 550 (80) 2020 ADT VOLUMES (2020 DESIGN HOUR VOLUMES)

FIGURE 5-1
2020 Average Daily Traffic (ADT) Volumes and (DHV) Design Hour Volumes Along State Highways

**TABLE 5-5
SUMMARY OF OPERATIONS ON TWO-LANE HIGHWAYS**

Location	2020 Design Hour Volume¹	2020 V/C²	2020 LOS
US 26 Crook/Wheeler Co. line and Mitchell	240	0.13	B
US 26 Mitchell to Wheeler/Grant Co. line	125	0.09	B
OR 19 Gilliam/Wheeler Co. line and Fossil	60	0.04	A
OR 19 between Fossil and Spray	60	0.04	A
OR 19 Spray to Wheeler/Grant Co. line	60	0.04	B
OR 207 (Heppner-Spray) between Morrow/Wheeler Co. line and OR 19	35	0.02	A
OR 207 (Service Creek-Mitchell) between OR 19 and Mitchell	45	0.04	B
OR 218 between Wasco/Wheeler Co. line and Fossil	35	0.05	B

1. Values rounded up to the nearest 5.

2. The volume used to compute V/C ratio is the Design Hour Volume divided by the appropriate peak hour factor listed in table 8-3 of the 1997 Highway Capacity Manual.

Source: David Evans and Associates, Inc.

Operations at Intersections

Traffic operations at select intersections within Wheeler County were evaluated under forecast 2020 design hour traffic volumes using procedures outlined in the 1997 Highway Capacity Manual. The evaluation was conducted at the same three intersections and in the same manner as described in Chapter 4. No changes in intersection configuration or traffic control were assumed for 2020. The three intersections evaluated included:

- OR 19 and OR 218/Washington Street in Fossil;
- US 26 and Main Street in Mitchell; and
- OR 19 and Main Street in Spray.

Under forecast 2020 design hour volumes, the highway intersections are expected to operate at LOS B or better at all three intersections. This indicates that all other lower-volume intersections or driveways accessing any rural or urban portion of the highways are operating at LOS B or better as well.

Capacity Issues

Overall two-lane rural highway and unsignalized intersection operations in Wheeler County are expected to continue to operate at LOS A or B under worst-case future 2020 design hour volumes. This indicates that there are no identified capacity constraints or issues within the county including the urban areas of Fossil, Mitchell and Spray.

CHAPTER 6: IMPROVEMENT OPTIONS ANALYSIS

As required by the Oregon Transportation Planning Rule, transportation alternatives were formulated and evaluated for the Wheeler County Transportation System Plan. These potential improvements were developed with the help of the TAC and the individual communities and attempt to address the concerns specified in the goals and objectives for this TSP (Chapter 2).

IMPROVEMENT PROJECTS

Each of the potential transportation system projects was developed to address specific deficiencies, safety issues, or access concerns. Projects were not limited to roadway issues, although most projects are roadway-related. Projects are primarily located along state highways and many are located within the urban areas of Fossil, Mitchell, and Spray. The potential projects identified in this chapter are above and beyond any other projects that have been identified for implementation in Wheeler County either through ODOT's Statewide Transportation Improvement Program (STIP), the county's road maintenance program, or any other program.

For ease of referencing each project, the following project lists are separated by location. All projects located in rural areas of the county are designated by the first letter of the county name "W" and a sequential project number (e.g., Project W1, W2, etc.). Projects located in the urban areas of Fossil, Mitchell, and Spray follow a similar numbering scheme and are designated by the first letter of the city name and a project number. For example, the first projects listed in the cities of Fossil, Mitchell, and Spray are designated F1, M1, and S1, respectively.

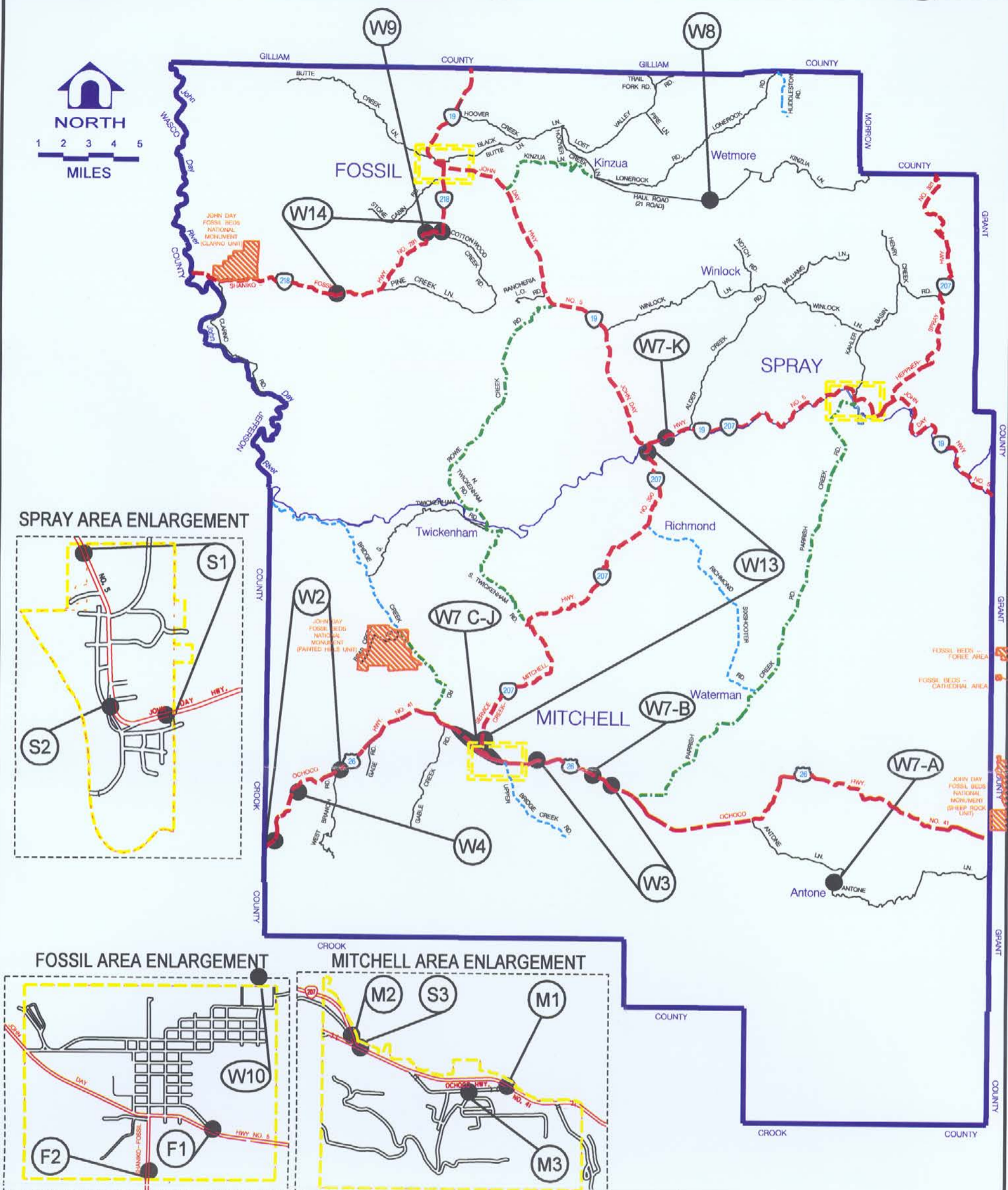
The potential project lists include a total of 26 projects. Each project includes a brief overview, discussion of potential impacts, planning level cost estimate, and a recommendation to include or remove the project from further consideration. **Figure 6-1** indicates the general location of each project within the county. Detailed locations are described under each project and some projects are accompanied by specific project figures depicting the projects in greater detail.

EVALUATION CRITERIA

As discussed in the remaining sections of this chapter, not all of the evaluated improvement projects were recommended for implementation. These recommendations were based on available standards, warrants, need, costs and benefits relative to traffic operations, the transportation system, and community livability.

Each improvement option was evaluated with regard to applicable impacts including impacts to traffic; safety; environmental factors, such as air quality, noise, and water quality; and socioeconomic and land use impacts, such as right-of-way requirements and impacts on adjacent lands. A final factor in the evaluation of the potential transportation improvements was cost. Costs were estimated in 2000 dollars based on preliminary alignments for each potential transportation system improvement. Final review of each project resulted in a recommendation of whether the project should be implemented.

The project evaluations and cost estimates provided in this chapter are for planning purposes only. Any project ultimately implemented would require a more detailed study of site specific issues that may affect final design, location, and cost.



ROADWAY PROJECTS			WHEELER COUNTY POTENTIAL IMPROVEMENT PROJECTS		
MAP LOCATOR	ROAD NUMBER	PROJECT DESCRIPTION	MAP LOCATOR	ROAD NUMBER	PROJECT DESCRIPTION
W2	US 26	POTENTIAL CLIMBING LANES	F1	OR 19	INSTALL INTERSECTION AHEAD WARNING SIGNS
W3	US 26	POTENTIAL CLIMBING LANES	F2	OR 218	EXTEND SPEED ZONE TO FOSSIL UGB
W4	US 26	INSTALL 2 SCENIC PULLOUTS	F3	CITY STREETS	FOSSIL SIDEWALK CONNECTIVITY (SEE FIG 6-5)
W7	VARIOUS	UPGRADE SUBSTANDARD BRIDGES	M1	US 26	INSTALL EXCLUSIVE LEFT-TURN LANE TO MITCHELL
W8	21 ROAD	ESTABLISH NEW COUNTY ACCESS ROAD	M2	OR 207	INTERSECTION IMPROVEMENTS AT OR 207 & US 26
W9	OR 218	INSTALL WARNING SIGNS NEAR SHARP CURVES	M3	MAIN ST	REPAVE MAIN STREET
W10	OR 19	CONSTRUCT NEW ROAD FROM INDUSTRIAL SITE	M4	CITY STREETS	MITCHELL SIDEWALK CONNECTIVITY (SEE FIG 6-7)
W11	VARIOUS	UPGRADE SUBSTANDARD SHOULDERS (SEE REPORT)	S1	OR 19	EXTEND AND LOWER SPEED ZONE ALONG OR 19
W12	VARIOUS	LOCALIZED SHOULDER IMPROVEMENTS (SEE REPORT)	S2	OR 19	INTERSECTION REFINEMENTS
W13	OR 207	SAFETY IMPROVEMENTS	S3	US 26	INSTALL ADDITIONAL DIRECTIONAL SIGNING TO SPRAY
W14	OR 218	SAFETY IMPROVEMENTS	S4	CITY STREETS	SPRAY SIDEWALK CONNECTIVITY (SEE FIG 6-14)

LEGEND:

- URBAN GROWTH BOUNDARY (UGB)
- GENERAL ROADWAY LOCATION
- PROJECT NUMBER
- GENERAL PROJECT LIMITS

FIGURE 6-1
Potential Improvement Projects
 WHEELER COUNTY TSP

EVALUATION OF WHEELER COUNTY POTENTIAL IMPROVEMENT PROJECTS

Through the transportation analysis conducted by DEA and input provided from the public involvement program, several potential improvement projects were identified within the rural areas of Wheeler County ranging from construction of new highway climbing lanes to location and construction of a new public use airstrip.

This section of the TSP describes the potential improvement projects within the rural areas of Wheeler County and their associated impacts and costs. The 14 projects identified within the rural areas of Wheeler County include:

1. Implement transportation demand management strategies;
2. Increase climbing lane capacity along US 26 between the City of Mitchell and Crook County;
3. Increase climbing lane capacity along US 26 between the City of Mitchell and Keyes Summit;
4. Install scenic pullouts along US 26;
5. Construct a public use airstrip in Wheeler County;
6. Replace dial-a-ride transit fleet;
7. Upgrade substandard bridges;
8. Establish new county access road between Kinzua and Wetmore;
9. Install warning signs along OR 218 near sharp curves;
10. Construct new roadway linking Fossil industrial site and OR 19;
11. Upgrade substandard shoulders along state highways;
12. Localized shoulder improvements along state highways;
13. Safety improvements along OR 207; and
14. Safety improvements along OR 218.

Project W1. Implement Transportation Demand Management (TDM) Strategies

Overview: One of the goals of the Oregon Transportation Planning Rule (TPR) is to reduce the reliance on the automobile. The TPR recommends that counties evaluate TDM measures as part of their Transportation System Plans. These TDM strategies are designed to change the demand on the transportation system by providing facilities for other modes of transportation, implementing carpooling programs, and developing other transportation measures within the community, such as staggering work schedules at local businesses. These types of TDM strategies may be more effective in a large urban city, but some strategies can still be useful in the rural and urban areas of Wheeler County.

One of the more useful TDM measures for Wheeler County involves development of facilities for alternative modes of transportation. This would include paved shoulders and paths, sidewalks, and bike lanes, which would accommodate pedestrians and bicyclists.

It is recognized that most county roads are not paved and not used by many pedestrians or bicyclists. At a minimum, Wheeler County should therefore consider upgrading all priority county roads as funding becomes available to include the addition of 4- to 6-foot paved shoulders, depending on the amount of traffic on the roadway. This would allow pedestrians and bicyclists to travel separately from the traffic on the road. All future street improvement projects in the urban areas of Fossil, Mitchell, and Spray should include a pedestrian

facility, such as a walkway or sidewalk, and should also consider bicycle lanes or paths where needed. These facilities may be especially needed along highways due to crossing widths, posted speeds, and traffic volumes. It is understood that all urban local streets in Wheeler County can safely accommodate bicyclists on shared roadways.

Impacts: Providing adequate facilities for pedestrians and bicyclists increases the livability of rural and urban areas of the county, and improves driver, pedestrian, and bicycle safety.

Cost: The costs for several types of facilities, which promote walking and biking in the county are summarized below.

- *Paved Shoulders* – The cost to install paved shoulders on both sides of an existing road is approximately \$25 per linear foot. Includes shoulders measuring 4 feet wide and built with 9-inches of aggregate and 4-inches of asphalt;
- *Multi-Use Paths* – A 10-foot wide multi-use path would cost approximately \$16 per linear foot. This includes 2 inches of asphalt over 4 inches of aggregate;
- *Concrete Sidewalks* – The estimated cost to install new sidewalks on one side of an existing street is approximately \$25 per linear foot. This includes a 5-foot wide walkway composed of 4 inches of concrete over 2 inches of aggregate. Add \$5 per foot if replacing an existing substandard sidewalk; and
- *Bike Lanes* – The cost to install bike lanes on both sides of an existing road is around \$45 per linear foot. This cost includes widening the roadway by 5 feet on both sides, installing curbs, using a fill composed of 4 inches of asphalt over 9 inches of aggregate, and placement of an 8-inch painted stripe.

These costs are for stand-alone improvements; the costs can be substantially reduced when they are included as needed in roadway improvement projects throughout Wheeler County.

Recommendation: Implementing TDM strategies would provide needed facilities for pedestrians and bicyclists, increase the safety of the roadway system, and enhance the quality of life in Wheeler County. Therefore, the TDM strategies summarized above are recommended. A total cost for TDM projects was not determined since individual TDM projects were not identified.

Project W2. Increase Climbing Lane Capacity along US 26 between Mitchell and Crook County

Overview: ODOT Region 4 staff has identified the potential need to increase climbing lane capacity for traffic along westbound US 26 between milepost 56.0 near West Branch Road and the 4720-foot summit of the Ochoco Mountain Pass near the Wheeler County/Crook County line. An existing 1.3-mile climbing lane is located along westbound US 26 near the Crook County line. Increased climbing lane capacity could result from extending the current climbing lane or by constructing an additional climbing lane or lanes. Increased climbing lane capacity can improve traffic operations along highways and enhance safety by separating faster and slower moving traffic and by allowing better visibility and safety during passing.

ODOT follows the American Association of State Highway and Transportation Officials (AASHTO) climbing lane criteria specifying that three criteria should be satisfied to justify a climbing lane. AASHTO further states that a climbing lane should be installed if each of the following three criteria are met:

1. **Upgrade traffic flow rate exceeds 200 vehicles per hour (vph)**- the two-way design hour volume near the area in question is 150 vph today and forecast to be 240 vph in 2020. Considering a directional traffic flow split of 60/40, the total upgrade traffic is currently 90 vph and forecast to be 145 vph in 2020. Therefore, this criteria is not met today nor expected to be met even under forecast 2020 traffic volumes.

2. **Upgrade truck flow rate exceeds 20 vph-** the existing truck percentage is approximately five percent of the total traffic based on ODOT ATR data at nearby locations along US 26. The existing upgrade truck flow rate was calculated by multiplying the design hour volume (150 vph today and 240 vph in 2020) by the 60/40 directional split and then multiplying by five percent, resulting in five upgrade trucks during the design hour. In 2020 the truck flow rate is estimated to equal seven upgrade trucks. Therefore this criteria is not satisfied today and is not forecast to be met in 2020.
3. **One of the following condition exists**
 - a. A 10-mph or greater speed reduction is expected for a typical heavy truck.
 - b. Level of Service of E or F exists on the grade.
 - c. A reduction of two or more levels of service is experienced when moving from the approach segment to the grade.

This criteria is satisfied considering the typical heavy truck is expected to experience a speed reduction of at least 10-mph between milepost 56.0 and the county line based on AASHTO truck speed charts.

Only one reported accident occurred from 1997 through 1999 along US 26 between milepost 56.0 and the county line and it was not passing related. In terms of traffic operations, existing and future operations are expected to operate well within capacity taking into account expected and forecast truck and RV usage.

Impacts: Increased climbing lane capacity can improve traffic operations along highways and enhance safety by separating faster and slower moving traffic and by allowing better visibility and safety during passing.

Cost: Based on the current roadway rehabilitation project along US 26 near Antone, the unit cost to develop climbing lanes is estimated at \$400,000 per mile per lane. This cost does not include right-of-way acquisition costs. Overall project cost would be dependent upon the final design length of the project. A benefit/cost analysis was not conducted, however with few accidents, a v/c ratio of 0.09, and LOS B traffic flow operations today and forecast for 2020, benefits associated with this project would be difficult to justify.

Recommendation: This stretch of US 26 lacks an accident history, currently operates at a v/c ratio of 0.09 and LOS B, and is forecast to operate at a v/c ratio of 0.13 and LOS B in 2020. It fails to meet two of the three AASHTO climbing lane criteria under existing and forecast 2020 traffic volumes. Based on these findings and the expected high project cost, DEA does not recommend implementation of additional climbing lanes at this time. Increased climbing lane capacity should be pursued if and when all three AASHTO climbing lane criteria are met.

Project W3. Increase Climbing Lane Capacity along US 26 between Mitchell and Keyes Creek Summit

Overview: ODOT Region 4 staff has identified the potential need to increase climbing lane capacity for traffic along eastbound US 26 between the eastern city limits of Mitchell and the 4382-foot summit of the Keyes Creek Mountain Pass. Increased climbing lane capacity can improve traffic operations along highways and enhance safety by separating faster and slower moving traffic and by allowing better visibility and safety during passing.

ODOT follows AASHTO's climbing lane criteria specifying that the following three criteria should be satisfied to justify a climbing lane and AASHTO states that a climbing lane should be installed if each of the following three conditions are met:

1. **Upgrade traffic flow rate exceeds 200 vehicles per hour (vph)-** the two-way design hour volume near the area in question is 130 vph today and forecast to be 185 vph in 2020. Considering a directional traffic flow split of 60/40, the total upgrade traffic is currently 80 vph and forecast to be 110 vph in

2020. Therefore, this criteria is not met today nor expected to be met even under forecast 2020 traffic volumes.

2. **Upgrade truck flow rate exceeds 20 vph-** the existing truck percentage is approximately five percent of the total traffic based on ODOT ATR data at nearby locations along US 26. The existing upgrade truck flow rate was calculated by multiplying the design hour volume (130 vph today and 185 vph in 2020) by the 60/40 directional split and then multiplying by five percent, resulting in four upgrade trucks during the design hour. In 2020 the truck flow rate is estimated to equal six upgrade trucks. Therefore this criteria is not satisfied today and is not forecast to be met in 2020.
3. **One of the following condition exists**
 - a. A 10-mph or greater speed reduction is expected for a typical heavy truck.
 - b. Level of Service of E or F exists on the grade.
 - c. A reduction of two or more levels of service is experienced when moving from the approach segment to the grade.

This criteria is satisfied considering the typical heavy truck is expected to experience a speed reduction of at least 10-mph between the eastern city limits of Mitchell and the Keyes Creek summit based on AASHTO truck speed charts.

Of the six accidents reported from 1997 through 1999 along US 26 between the eastern city limits of Mitchell and the Keyes Creek summit, only one accident was caused by a vehicle traveling eastbound and it was not passing related. In terms of traffic operations, existing and future operations are expected to operate well within capacity taking into account expected and forecast truck and RV usage.

Impacts: Increased climbing lane capacity can improve traffic operations along highways and enhance safety by separating faster and slower moving traffic and by allowing better visibility and safety during passing.

Cost: Based on the current roadway rehabilitation project along US 26 near Antone, the unit cost to develop climbing lanes is estimated at \$400,000 per mile per lane. This cost does not include right-of-way acquisition costs. Overall project cost would be dependent upon the final design length of the project. A benefit/cost analysis was not conducted, however with few accidents, a v/c ratio of 0.08, and LOS B traffic flow operations today and forecast for 2020, benefits associate with this project would be difficult to justify.

Recommendation: This stretch of US 26 lacks an accident history, currently operates at a v/c ratio of 0.08 and LOS B, and is forecast to operate at a v/c ratio of 0.09 and LOS B in 2020. It fails to meet two of the three AASHTO climbing lane criteria under existing and forecast 2020 traffic volumes. Based on these findings and the expected high project cost, DEA does not recommend implementation of additional climbing lanes at this time. Increased climbing lane capacity should be pursued if and when all three AASHTO climbing lane criteria are met.

Project W4. Install Scenic Pullouts along US 26

Overview: ODOT staff members have identified two locations along US 26 for development of scenic pullouts to provide bicyclists and motorists with an opportunity to pull off the highway, beyond the shoulder, to admire the area scenery. The locations identified are for traffic heading eastbound near milepost 53.0 and milepost 54.3.

Impacts: Providing scenic pullouts increases safety for automobiles and bicyclists by creating a safe place for automobile and bicycle traffic to stop and admire the scenery rather than trying to observe the scenery while driving.

Cost: Based on the current roadway rehabilitation project along US 26 near Antone, the unit cost to develop a pullout is estimated at \$17,000 per turnout resulting in an estimated overall project cost of \$34,000. Right-of-way acquisition is not included in this project cost.

Recommendation: There is no apparent reason not to implement this project except that scarce state funding for roadway projects could be used elsewhere.

Project W5. Construct a Public Use Airport in Wheeler County

Overview: The potential need for a public use airport has been identified within Wheeler County which is one of the few county's in Oregon not currently served by a public use airport. The Oregon State Aviation Plan does not identify Wheeler County as having a current need for a new public use airport.

ODOT Aviation Section staff has indicated that Wheeler County can pursue the establishment of a public use airport but the need for such a facility must be demonstrated to gain state or federal funding and the following issues must first be considered:

- Why is a public use airport needed? (e.g. emergency response, economic development, agricultural use, fish and game use, etc.)
- Why can't a nearby airport fill the need?
- Does a suitable location exist to serve the identified need(s)?
- Who would use the airport?
- What types of aircraft need to be served?
- Would a dirt runway be suitable or does it need to be paved?

Impacts: Developing a public use airport would increase accessibility to Wheeler County for both public and private use. A public use airport could support expanded emergency response air services and increased economic development including tourism.

Cost: A public use airport typically requires a 3,000-3,500 foot runway. If paved and lit, it could take 3-5 years to build at \$3-4 million. If dirt and unlit, could be built within one year for \$50K to \$1 million. A public use airport typically needs Federal Aviation Administration (FAA) review and airspace analysis as well as a liability add-on to the existing municipal insurance policy (which can be costly).

ODOT aviation believes that if a new public use airport were developed in Wheeler County, it would most likely be funded through economic development funds. However, funding could also occur by directive from the state legislature with advocacy from the ODOT State Aviation section if clear need can be established. If the airport were funded locally, only state approval would be needed (not FAA). If the airport were federally funded, a local 10 percent match would be required and the application and justification process would be more comprehensive.

Recommendation: Public officials and residents of Wheeler County should continue to discuss the future need of a public use airport in the county. If people feel strongly about this issue, and a need can be established, the county should work with the State Aviation Section staff to develop the necessary plans and justification to apply for funding and begin necessary siting studies and other planning functions.

Project W6. Replace Dial-a-Ride Transit Fleet

Overview: The Wheeler County Transportation Service provides county-wide demand responsive (or dial-a-ride) transit service operated by the Wheeler County Court for the elderly (60+) and persons with disabilities.

The program currently operates one 1998 6-person minivan, one 1992 12-14 person small bus and one 1996 10-person van. The bus and minivan are wheelchair accessible. Plans are underway to acquire one additional small bus equipped with a wheelchair lift by 2001. The existing 1992 small bus will be used for approximately one additional year after the new bus is received.

ODOT maintains standards specifying vehicle replacement intervals based on age and mileage. Wheeler County’s small bus requires replacement every seven years or 200,000 miles and the county’s minivan and large van require replacement every four years or 100,000 miles.

Impacts: Failing to replace transit vehicles as needed may result in loss of dial-a-ride transit service in Wheeler County. This would substantially impact a large segment of the county population that depends on the service to provide mobility.

Cost: Based on the vehicle replacement intervals identified above, Wheeler County will need to replace all of their dial-a-ride transit vehicles a number of times of the 20-year planning horizon. **Table 6-1** summarizes the estimated replacement cycle. Vehicle costs were assumed to grow at a compound annual growth rate of two percent per year.

**TABLE 6-1
ESTIMATED COST TO REPLACE DIAL-A-RIDE TRANSIT VEHICLES THROUGH 2020**

Vehicle	2000 cost	Assumed Replacement Year Based on Age¹					Estimated 20-year Cost
1992 small bus	\$55,000		2007		2014		\$135,800
1996 large van	\$20,000	2001	2005	2009	2013	2017	\$120,300
1998 mini-van	\$40,000	2002	2006	2010	2014	2018	\$245,300
Total							\$501,400

1. Small bus and mini-van costs include wheelchair lifts. Large van cost does not include wheelchair accessibility, which adds approximately \$20,000 to the vehicle cost.

2. Replacement cycles may vary depending on actual miles driven.

Source: Cost information provided by ODOT Transit planning; overall costs computed by David Evans and Associates, Inc.

Wheeler County receives 80 percent funding for their transit program from ODOT grants and provides the other 20 percent of funding from county resources. This funding system is assumed to continue over the next 20 years.

Recommendation: Wheeler County should continue to apply for funding to replace their transit vehicle fleet as needed during the next 20 years.

Project W7. Upgrade Substandard Bridges

Overview: Based on discussions with staff from the ODOT Region 4 bridge section, 11 of the 60 bridges in Wheeler County are either currently substandard or are estimated to become substandard within the 20-year planning horizon for a variety of reasons ranging from age to increased traffic demands. Of the 11 bridges identified, two are under county ownership. The following 11 bridges will require some form of rehabilitation or replacement within the next 20 years.

- Bridge No. 69C03 located on Antone Lane, 7 miles from US 26 (County);
- Bridge No. 69C05 located on the eastern end of Main Street in Mitchell (County);
- Bridge No. 07486 on US 26, 0.41 miles west of Mitchell (State);
- Bridge No. 07372 on US 26, 0.33 miles west of Mitchell (State);

- Bridge No. 07487 on US 26, 0.26 miles west of Mitchell (State);
- Bridge No. 07489 on US 26, 0.08 miles west of Mitchell (State);
- Bridge No. 07490 on US 26, 0.02 miles west of Mitchell (State);
- Bridge No. 07491 on US 26 in Mitchell (State);
- Bridge No. 07492 located on the western end of Main Street in Mitchell (State);
- Bridge No. 17094 on US 26, 2.87 miles east of Mitchell (State); and
- Bridge No. 02235 on OR 19, 0.47 miles east of OR 207 (Service Cr.-Mitchell Hwy) (State).

ODOT bridge staff has indicated that nine of the 11 bridges will require approach and bridge rail replacement within the next five years (2000-2005). These nine bridges will also require some form of more comprehensive rehabilitation potentially ranging from bridge deck replacement to structural upgrades between 10 and 20 years from now (2011-2020). ODOT estimates that the remaining two bridges (Bridge Nos. 69C03 and 17094) will need to be replaced within the 20-year planning horizon with Bridge No. 69C03 requiring replacement within the next ten years (2000-2010). ODOT and Wheeler County will continue to monitor bridges through biennial inspections to determine potential replacement needs.

Safety: Substandard bridges cannot adequately service the demand placed on them because of some design deficiency such as being too narrow for today's standards. They need to be upgraded as discussed above. ODOT bridge staff has not assigned a rehabilitation priority to the nine bridges not being replaced and feels that each bridge is a similar priority today. If these bridges serve a high traffic demand, they may be a high priority for upgrades.

Impacts: If the bridges are not repaired or replaced, limitations on usage may affect users of the facilities. This could include long routes to divert traffic off bridges that cannot safely service demand. Limitations on bridge use could affect the economy of some of the resource-based industries in the area.

Cost: ODOT estimates a unit cost to replace approach and bridge rails at \$200 per lineal meter. The level of rehabilitation needed for each bridge may vary and associated unit costs could range from \$200-\$800 per square meter for minimum and maximum rehabilitation. ODOT estimates the unit cost to replace and remove a bridge at \$800 per square meter and \$90 per square meter, respectively. **Table 6-2** summarizes the estimated cost to upgrade bridges. The costs are in year 2001 dollars.

**TABLE 6-2
CONSTRUCTION COSTS FOR UPGRADING SUBSTANDARD BRIDGES**

Substandard Bridges			Rail Replacement	Rehabilitation ¹	Total Cost
Map Identifier		Jurisdiction	0-5 years (\$000)	10-20 years (\$000)	(\$000)
Bridge Replacement					
W7-A	Bridge No. 69C03 on Antone Lane east of Mitchell	County	na	na	\$91 ²
W7-B	Bridge No. 17094 on US 26, 2.87 miles east of Mitchell	State	na	na	\$112
Bridge Rehabilitation					
W7-C	Bridge No. 69C05 on Main Street in Mitchell	County	\$21	\$46-\$182	\$66-\$203
W7-D	Bridge No. 07486 on US 26, 0.41 miles west of Mitchell	State	\$16	\$26-\$104	\$42-\$120
W7-E	Bridge No. 07372 on US 26, 0.33 miles west of Mitchell	State	\$17	\$34-\$136	\$51-\$154
W7-F	Bridge No. 07487 on US 26, 0.26 miles west of Mitchell	State	\$21	\$47-\$187	\$68-\$208
W7-G	Bridge No. 07489 on US 26, 0.08 miles west of Mitchell	State	\$22	\$52-\$207	\$74-\$230
W7-H	Bridge No. 07490 on US 26, 0.02 miles west of Mitchell	State	\$21	\$47-\$187	\$68-\$208
W7-I	Bridge No. 07491 on US 26 in Mitchell	State	\$21	\$49-\$197	\$71-\$219
W7-J	Bridge No. 07492 on Main Street in Mitchell	State	\$16	\$24-\$98	\$40-\$113
W7-K	Bridge No. 02235 on OR 19, east of OR 207	State	\$17	\$33-\$131	\$50-\$148
		Total	\$173	\$357-\$1,429	\$733-\$1,805

1. Costs vary depending on level of rehabilitation needed for each bridge.
2. Replacement of Bridge No. 69C03 is recommended as a medium priority project (2006-2010), although the condition of the bridge should be closely monitored.
3. Replacement of Bridge No. 17094 is recommended as a low priority project (2011-2020), although the condition of the bridge should be closely monitored.

Source: ODOT Region 4 Bridge Section staff, costs computed by DEA

Recommendation: Existing substandard bridges and those expected to become substandard in the next 20 years should be rehabilitated per guidance provided by ODOT. Priority for bridge improvements will be a function of several factors including severity of deficiency, demand for the facility, and availability of funding.

Project W8. Establish New County Access Road between Kinzua and Wetmore

Overview: Historically, the public could travel from OR 19 near Fossil to national forest lands near Wetmore by traveling a route along Kinzua Lane and Lonerock Road in northern Wheeler County (see **Figure 6-1**). Over the years, road deterioration has left portions of Lonerock Road non-traversable during the winter months.

Some years ago, the Pioneer Resources Timber Company developed an east-west logging haul road extending eastward from the vicinity of the Kinzua Lane/Lonerock Road intersection east of Fossil to Kinzua Road near Wetmore. This haul road is traversable during winter months and provides a better roadway than the northern Kinzua Lane/Lonerock Road route.

Over the years, it appears that logging operations may have damaged a portion of Kinzua Lane just east of the haul road access. This damage has generally left Kinzua Lane non-traversable year-round. The haul road has therefore become the most viable route between OR 19 and Wetmore and is a road of importance to the traveling public.

Wheeler County is interested in establishing some form of agreement with the land owner for long-term use of haul road through easement or other process. Issues to be discussed include access, roadway maintenance, and designation of roadway ownership. Wheeler county staff has identified resolution of this issue as a high priority project to be completed within the next 5 years.

Impacts: If access to this haul road were restricted, it would deprive the public from the most direct route between OR 19 and Wetmore. Overall roadway connectivity within the county is a priority.

Cost: Cost is dependent upon the type of agreement formed by the County and landowner. Annual maintenance costs could conceivably amount to \$30,000.

Recommendation: Wheeler County should take the lead in establishing some form of agreement with the land owner for long-term access to haul road through easement or other means. Issues to be discussed include access, roadway maintenance, and designation of roadway ownership.

Project W9. Install Warning Signs along OR 218 near Sharp Curves

Overview: The section of OR 218 near milepost 38 is located approximately 4.5 miles south of Fossil and is comprised of steep grades and a fairly sharp system of curves requiring localized speed reductions to 15 mph. A representative from the City of Fossil Road Department has indicated that additional warning signs are needed to better inform the public of the roadway conditions. This project involves installing warning signs identifying upcoming curves and appropriate speeds as well as ice warning signs. **Figure 6-2** illustrates the existing and future placement of the warning signs along OR 218 near the sharp curves located near milepost 38.

The existing reverse turn sign is located at the exit of the hairpin turn near milepost 38.0. Reverse turn signs are intended to identify two successive curves or turns that are separated by a tangent less than 600 feet. The distance between the sharp curve and the existing reverse turn sign is approximately 1,000 feet and the first curve is relatively flat. Therefore, drivers may be uninformed of the severity of the second curve ahead. Additionally, the roadway alignment leading to and from the sharp curve is relatively straight and flat and does not necessarily alert drivers of the potential hazards ahead.

This project involves placing separate warning signs for each of the two curves with the appropriate advisory speed plate corresponding to each curve. The placement of the signs will follow the Manual on Uniform Traffic Control (MUTCD) guidelines.

In addition to the curve warning signs, ice warning signs should be placed preceding the second curve. The ice signs will be used to warn motorists of potentially icy locations on the road. A City of Fossil Road Department representative has indicated that OR 218 through the second curve is prone to freezing conditions in the winter months and feels that ice warning signs should be located prior to the curve in both directions to warn motorists of the potential danger. The placement of the ice sign in correspondence with the curve warning sign shall follow the guidelines outlined in the MUTCD.

This section of OR 218 does not have a high accident rate based on ODOT accident records, but it did record one accident within the three years analyzed, and local officials indicate that this section of OR 218 has been a problem in the past.

Impacts: Installing warning signs near the sharp curves along OR 218 could improve safety by providing drivers with advance warning of potentially hazardous roadway conditions.

Cost: The cost to remove the existing warning sign is approximately \$75. The cost to install one warning sign with an advisory plate is approximately \$125. Therefore, the total cost to remove one sign and install four warning signs is approximately \$575.

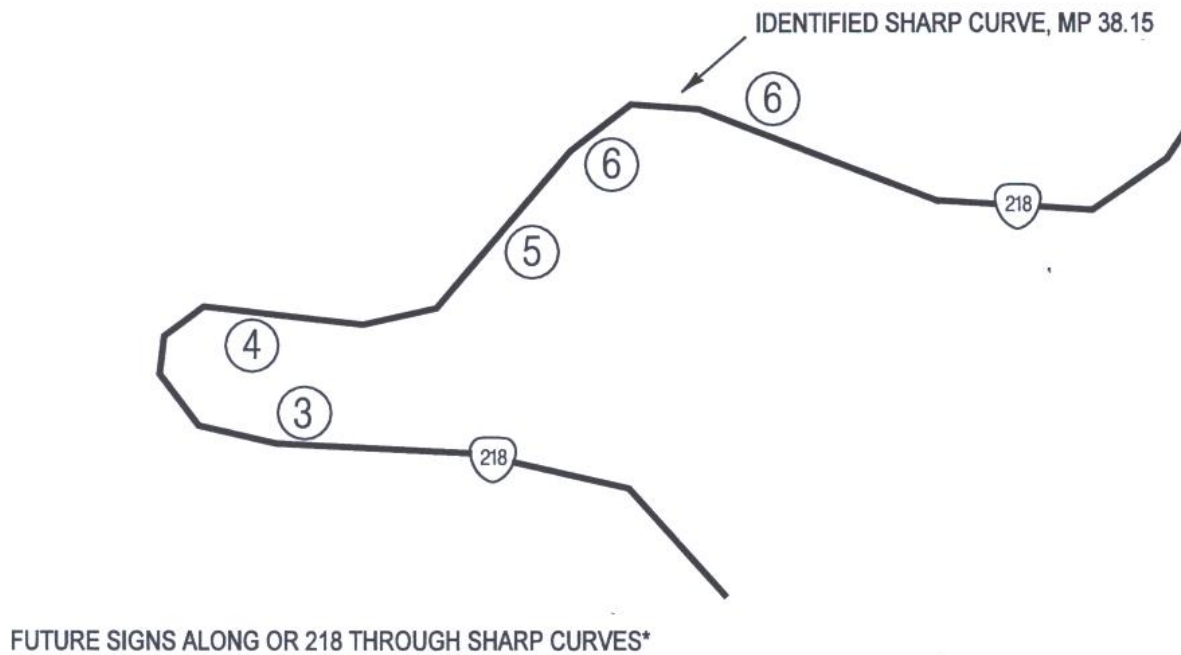
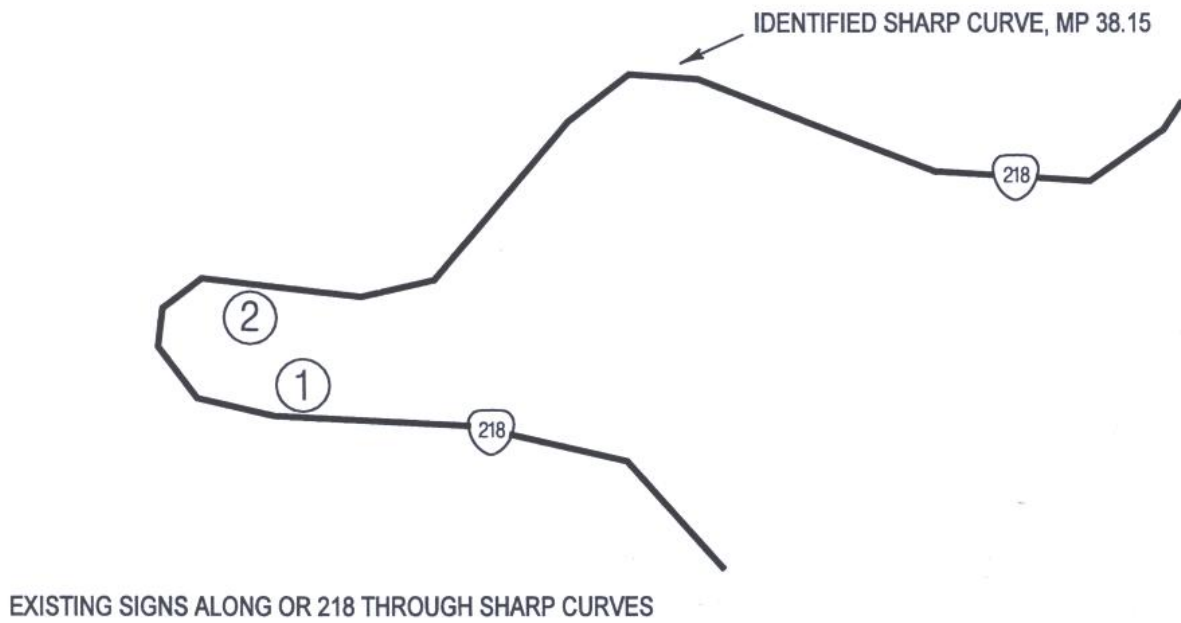
Recommendation: It is recommended that ODOT install the recommended warning signs. Final placement and speeds shall be determined by ODOT in accordance with the MUTCD.

Project W10. Construct New Roadway Linking Fossil Industrial Site and OR 19

LEGEND:



See the Manual on Uniform Traffic Control Devices (MUTCD) for the exact size, color, and writing for all signs.



*The final placement of the signs will be in accordance with the guidelines outlined in the MUTCD.

**The final speed plate shall be determined by ODOT using accepted traffic engineering procedures.



FIGURE 6-2

Location and Type of Warning Signs Along OR 218 near Sharp Curves

Wheeler County TSP

Overview: This project was identified as a need to draw a tenant to the proposed industrial site in Fossil. The proposed industrial site is located north of the city limits and has access to the city of Fossil roadway network via Taney Street. Access to the industrial site could also be achieved from D Street north of the Solid Waste Transfer Site. The proposed road would provide a new direct connection between OR 19 and the 5-acre industrial site via D and Taney Streets. The north-south road would connect to OR 19 just east of the substation located east of the Fossil city limits. Wheeler County will have jurisdiction of the new roadway linking the industrial site and OR 19.

Based on preliminary investigation of ODOT's video log, this proposed road would meet access spacing standards for a regional highway if the new road accesses OR 19 approximately 990 feet east of the substation. The proposed access could be located closer to Fossil if either ODOT grants a minor deviation to the access spacing standards in the OHP or the substation access is removed from OR 19 and connected to the proposed industrial road. The minor deviation would allow the new road to access OR 19 770 feet east of the substation.

The proposed industrial site road would function as a local collector road. Wheeler County roadway design standards, to be established in Chapter 7, will need to be reviewed to determine the final design of the road. **Figure 6-3** illustrates the conceptual roadway alignment linking the industrial site and OR 19.

Impacts: A new industrial site road would provide a direct connection between OR 19 and the 5-acre industrial site located just north of Fossil. This would eliminate the need for industrial related traffic and specifically many large trucks to circulate through town and may in fact be a necessity to draw an industrial tenant. There are no apparent negative impacts from this project outside of the fact that it would be costly.

Cost: Major factors affecting the final cost of this road include alignment, cross-section, provision of bike lanes and sidewalks, access to other street connections, right-of-way acquisition. Assuming the road is built as a limited access facility and follows the proposed alignment with connection to OR 19, and assuming it is built with two 12-foot travel lanes and directional 4-foot paved shoulders, the cost could be \$1.0 million. Sidewalks, curbs, gutters, and other roadway features would all add to the cost and could result in an estimated \$1.7 million project.

Recommendation: This road would provide direct access to the industrial site from OR 19 and would help to maintain the livability of existing Fossil streets by keeping industrial-related traffic and trucks from circulating through town. The proposed road could also be designed to link to the existing street system in Fossil to provide increased connectivity. Based on the overall project cost, Wheeler County and Fossil may want to tie construction of the road to a commitment from an industrial tenant to locate to Fossil once the road is built.

Project W11. Upgrade Substandard Shoulders along State Highways

Overview: This project was identified to upgrade substandard shoulders along the state highways in Wheeler County. Based on prevailing and forecast traffic volumes, all state highways within Wheeler County require a minimum of four-foot directional paved shoulders according to the *1995 Oregon Bicycle and Pedestrian Plan*. Based on review of ODOT's most current highway video log and review of the *1997 Oregon Bicycling Guide Map*, the majority of state highway miles in Wheeler County have shoulders measuring less than four feet wide meaning that they do not serve as shoulder bikeways. This does not necessarily make them inadequate for bicycle use, but generally requires bicyclists to share the roadway with motor vehicles.

Recommended shoulder widths follow guidelines outlined in the *1995 Oregon Bicycle and Pedestrian Plan* as summarized in **Table 6-3**.

**TABLE 6-3
RECOMMENDED PAVED SHOULDER WIDTHS ON
RURAL HIGHWAYS**

Traffic Volumes	(Highways)
ADT under 250	4 ft
ADT under 400	4 ft
ADT over 400 and DHV* under 100	6 ft
DHV 100-200	6 ft
DHV 200-400	8 ft
DHV over 400	8 ft

* DHV (Design Hour Volume) is the expected two-way traffic volume in the peak design hour (usually at commuter times), usually 10 to 20% of ADT.

Source: *Oregon Pedestrian and Bicycle Plan, page 67*

Where highway shoulders are insufficient to act as shoulder bikeways, appropriately wide paved shoulders should be added to each side of the highway as routine maintenance and/or rehabilitation projects occur. **Figure 6-4** illustrates the proposed shoulder improvements along state highways.

Impacts: The addition of appropriately wide shoulders will improve safety for bicyclists, pedestrians, and motorists along state highways and improve pavement stability near the travel lanes.

Cost: The estimated cost to install 4- to 8-foot paved shoulders along both sides of the state highways in Wheeler County could range from \$10 to \$40 per linear foot. The \$10 per linear foot cost assumes that adequately wide gravel shoulders exist today and require minimal shoulder preparation prior to paving with 4-inches of asphalt. The \$40 per linear foot cost assumes the shoulders do not exist today and would need to be constructed with 9-inches of aggregate and 4-inches of asphalt.

Based on review of available data and ODOT's most recent highway video log, DEA estimates that approximately 90 percent of the 160 state highway centerline miles (or 144 centerline miles) will require some level of shoulder widening over the next 20 years to meet established ODOT design standards. Assuming an average cost of \$25 per linear foot to account for various degrees of needed construction, shoulder widening could conceivably cost \$19 million in 2000 dollars. Costs may be reduced to approximately \$10 million if ODOT deviates from established design standards and builds only 4-foot shoulders. Costs may increase depending on special construction requirements. It should be noted that shoulder widening as part of a larger roadway project can be substantially more economical to construct.

Recommendation: Appropriately wide shoulders should be added to both sides of the highway as routine maintenance and/or rehabilitation projects occur.

Project W12. Localized Shoulder Improvements along State Highways

Overview: This project differs from Project W11 in that it identifies priority localized shoulder widening projects along state highways in Wheeler County to be completed prior to routine maintenance or rehabilitation projects.

Wheeler County road department representatives have identified primary locations to receive localized shoulder widening as illustrated in **Figure 6-4** and described below:

- - - - - URBAN GROWTH
 BOUNDARY (U.G.B.)
 CITY LIMITS

• • • CONCEPTUAL ROADWAY ALIGNMENT
 □ BUILDING NAMES

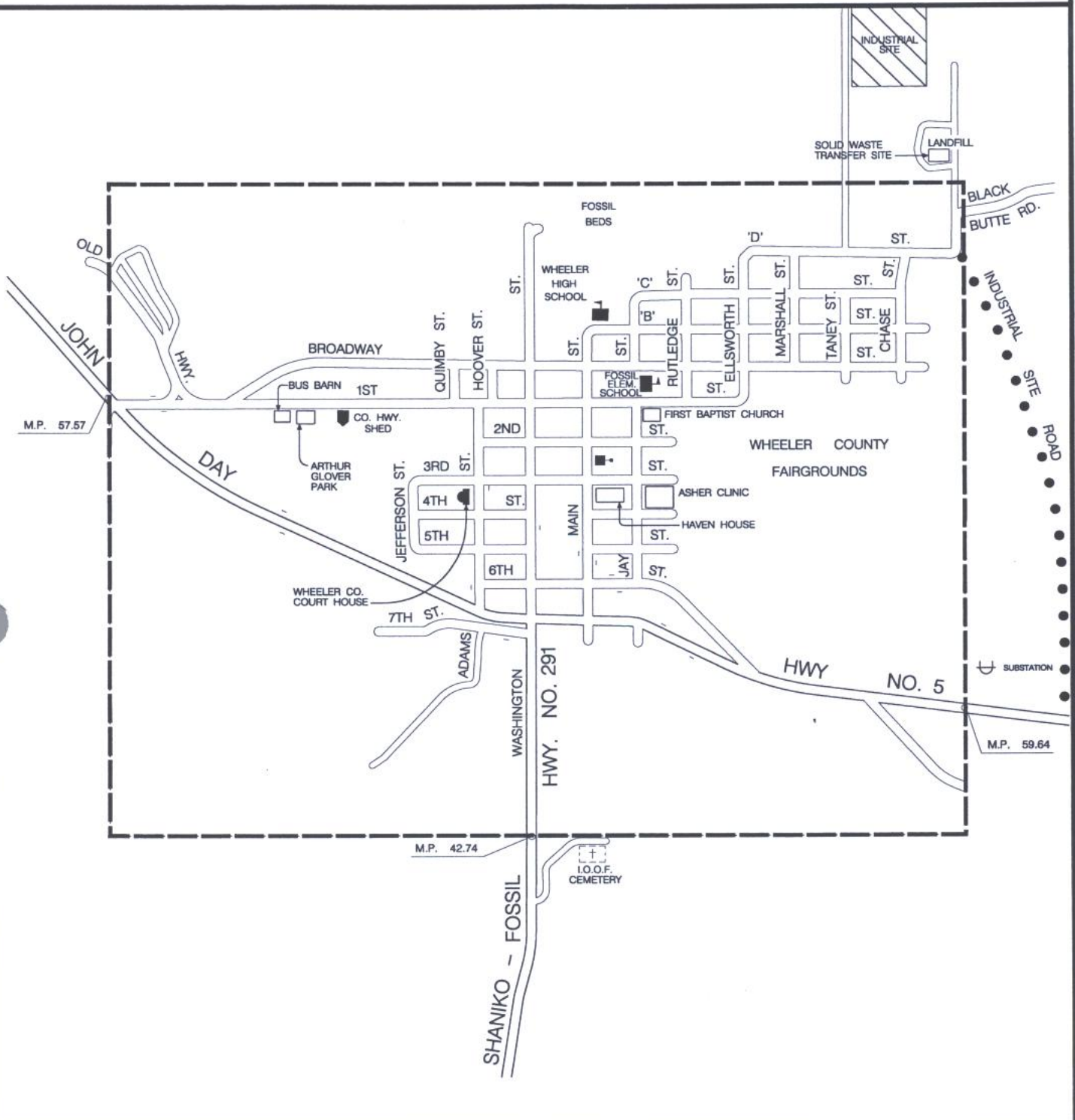
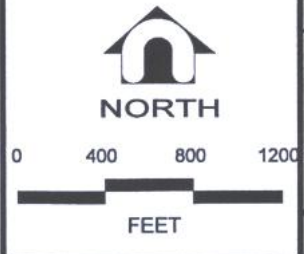
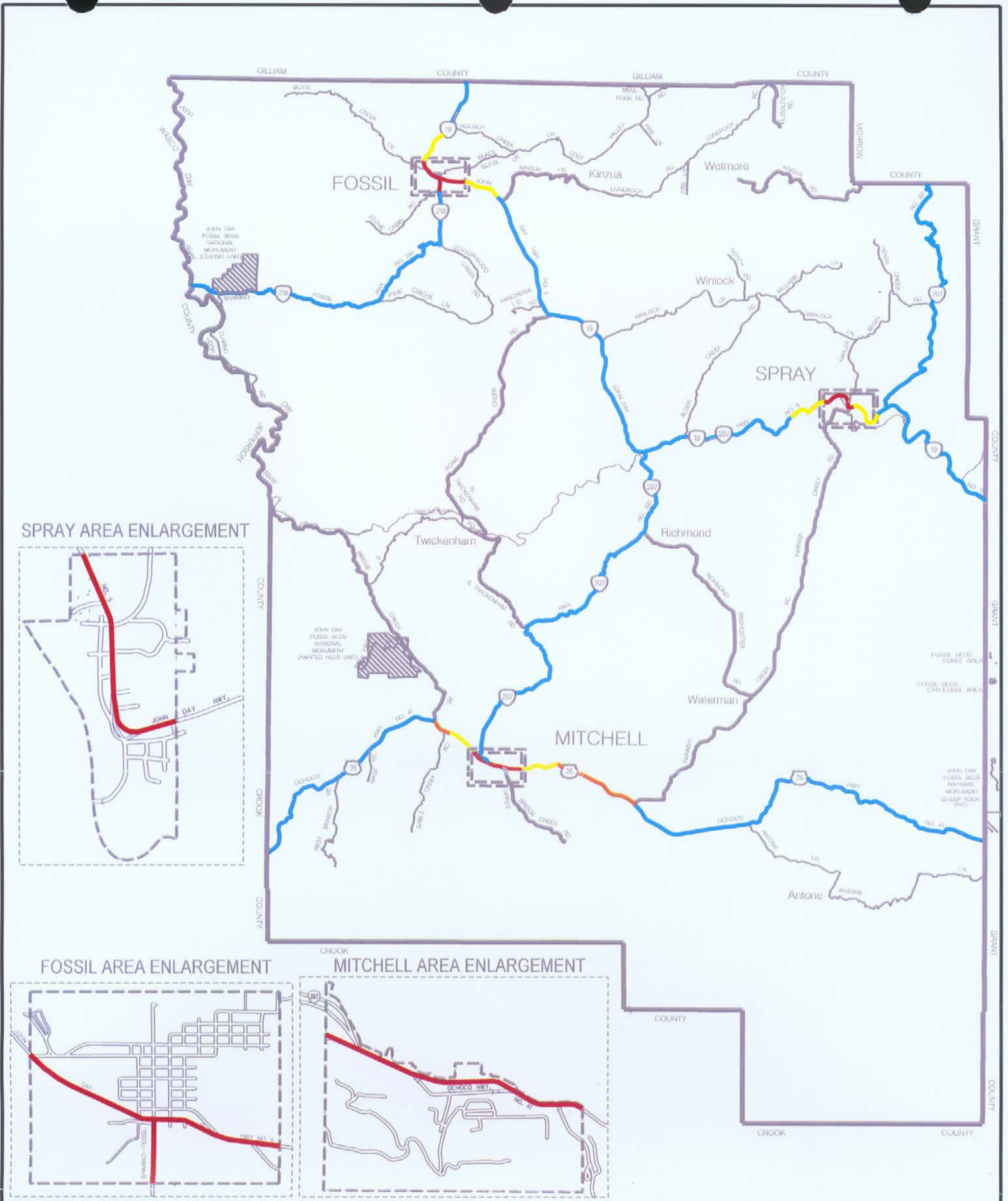


FIGURE 6-3

New Roadway Linking Fossil Industrial Site and OR 19



WHEELER COUNTY TSP



LEGEND:

LOCALIZED SHOULDER IMPROVEMENTS -

- PRIORITY 1
- PRIORITY 2
- PRIORITY 3
- UPGRADE SUBSTANDARD SHOULDERS TO APPROPRIATE WIDTH BASED ON TABLE 6-3 IN REPORT

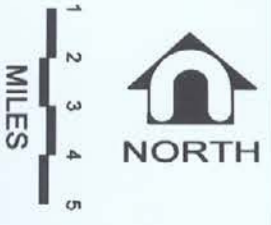


FIGURE 6-4

Wheeler County Shoulder Improvements along State Highways

- Priority one locations: each side of state highways within each of the three urban areas of Fossil, Mitchell, and Spray;
- Priority two locations: each side of state highways for a distance of two miles beyond the Fossil, Mitchell, and Spray UGBs in each direction; and
- Priority three locations: each side of US 26 between Bridge Creek Road and Parrish Creek Road.

Impacts: The addition of appropriately wide shoulders will improve safety for bicyclists, pedestrians, and motorists along state highways.

Cost: A detailed cost estimate was calculated for the localized shoulder improvement projects within Wheeler County. **Table 6-4** summarizes the localized projects shoulder cost estimate. The estimated cost to install 6 to 8-foot paved shoulders along both sides of the state highways in Wheeler County could range from \$10 to \$40 per linear foot. The \$10 per linear foot cost assumed the shoulders exist today and require minimal shoulder preparation prior to paving with 4-inches of asphalt. The \$30 per linear foot cost assumes the shoulders do not exist today and would need to be constructed with 9-inches of aggregate and 4-inches of asphalt. Costs may increase depending on special construction requirements. It should be noted that shoulder widening as part of a larger roadway project can be substantially more economical to construct.

Recommendation: Wheeler County should strive to complete the localized shoulder widening projects described herein over the 20-year planning horizon.

**TABLE 6-4
LOCALIZED PROJECT SHOULDER COST ESTIMATE**

Highway (Location)	Action	Side of Highway	Total Length	Unit Cost per Foot	Total Cost
Priority 1					
OR 19 (Within Fossil UGB) (MP 57.57-59.64)	Add 6' paved shoulders	Both	9,400 ft	\$20	\$188,000
OR 218 (Within Fossil UGB) (MP 42.74-42.96)	Add 4' paved shoulders	Both	1,200 ft	\$15	\$18,000
US 26 (Within Mitchell UGB) (MP 65.80-66.88)	Add 8' paved shoulders	Both	5,700 ft	\$10	\$57,000
OR 19 (Within Spray UGB) (MP 92.18-92.80)	Add 6' paved shoulders	Both	3,300 ft	\$25	\$82,500
Priority 2					
OR 19 (MP 55.57- 57.57) (MP 59.64- 61.64)	Add 6' paved shoulders	Both	21,120 ft	\$20	\$422,400
US 26 (MP 63.80- 65.80) (MP 66.88- 68.88)	Add 8' paved shoulders Add 6' paved shoulders	Both	21,120 ft	\$15	\$316,800
OR 19 (MP 90.18- 92.18) (MP 92.80- 94.80)	Add 6' paved shoulders Add 4' paved shoulders	Both	21,120 ft	\$25	\$528,000
Priority 3					
US 26 (Bridge Creek Rd (MP 62.57)-MP 63.80) (MP 68.88-Parrish Creek Rd (MP 75.23))	Add 8' paved shoulders Add 6' paved shoulders	Both	6,500 ft 33,500 ft	\$15 \$10	\$432,500
Total			122,960 ft		\$2,045,200

Source: Wheeler County road department representatives, costs computed by DEA

Project W13. Safety Improvements along OR 207

Overview: Local residents of Wheeler County have expressed concern over existing conditions along OR 207 (Service Creek-Mitchell Hwy) especially through the Donnelly Grade area between OR 19 (milepost 0.00) and Richmond Six Shooter Road (milepost 5.55). OR 207 is a district level highway and traverses areas of mountainous terrain such as Donnelly Grade. The highway is comprised of numerous curves and steep grades resulting in localized rural speed reductions ranging from 20 to 45 mph. Sight distance through curves is limited in some areas.

General concerns expressed by local Wheeler County residents and public officials include the following:

- Narrow pavement and shoulders;
- Lack of guardrail;
- Poor pavement condition;
- Pavement sinkholes near Mitchell;
- Poor sight distance along some curves through Donnelly Grade; and
- Inaccurate superelevation near intersection with South Twickenham.

Figure 6-5 presents a view along OR 207 looking northbound at milepost 3.0- a location exhibiting most of the types of deficiencies noted by local residents.



Figure 6-5. Looking Northbound Along OR 207 near milepost 3.0.

The ODOT accident database indicates that OR 207 had six reported accidents within the three-year period from 1997 through 1999. One of the six accidents resulted in a fatality. Vehicles hitting fixed objects caused four of the six accidents along OR 207. The accident rate for OR 207 between OR 19 and Mitchell was greater than the statewide average for all rural non-freeway primary highways in 1998 but below the statewide average in 1997 and 1999. Wheeler County and ODOT representatives have expressed concerns regarding the accident history along OR 207 and believe that additional accidents have occurred but have not been reported.

The ODOT District 10 maintenance crew is in the process of rehabilitating sections of OR 207. A number of projects being completed through routine maintenance address specific public concerns including:

- Adding four-foot gravel shoulders where needed;
- Completing chip sealing, specifically through Donnelly Grade (MP 0.0 to 10.0) in 2002; and
- Repair of existing sinkholes near Mitchell (MP 23.0 to 24.0).

The superlevation project near the intersection of OR 207 and South Twickenham could be rehabilitated through scheduled pavement rehabilitation (chip sealing) or additional maintenance practices.

In addition to already scheduled maintenance, ODOT has also identified possible locations to install guardrail along OR 207 (see **Table 6-5**). Guardrail installation is not currently scheduled.

TABLE 6-5
POSSIBLE LOCATIONS FOR GUARDRAIL ALONG OR 207

Beginning and Ending Mileposts*	(West Side)	(East Side)
0.3 - 0.5	X	X
0.5 - 1.2 & 1.4 - 2.0		X
2.1 - 2.3	X	X
2.3 - 4.9		X
4.9 & 6.1	X	X
8.2 - 9.1	X	
9.1 - 9.2 & 9.4 - 9.8	X	X
11.8, 12.0, 12.5	X	
13.0		X
13.5	X	X
14.3 - 14.5, 15.0, 15.2, 15.3 - 16.0, 16.2 - 16.3, 17.0, 17.2 - 17.3	X	
17.8 - 18.2 & 18.8 - 18.9		X
20.3 - 20.5 & 20.7 - 21.0	X	
21.0		X
21.4 & 23.2 - 24.4	X	
24.0		X

* These mileposts are approximates.

Source: ODOT District 10 representatives

With the exception of guardrail installation, the only public concern not currently being addressed through routine ODOT maintenance along OR 207 is localized sight distance improvements primarily through Donnelly Grade. Up to four curve locations have been initially identified for potential sight distance improvements. At each location, improved sight distance would be created through excavation of embankments rather than roadway realignment. The four curves are located between mileposts 2.9 and 3.9.

Impacts: It is expected that ODOT routine maintenance scheduled to occur by 2002 will address many of the public concerns regarding OR 207 to some degree. Increased guardrail use could improve safety and improve driver comfort in driving the road. Localized curve improvements would improve sight distance. Even with

roadway improvements as described herein, OR 207 will remain a generally mountainous roadway with steep grades and numerous curves requiring speed reductions. Due to terrain restrictions, portions of this highway could not feasibly be realigned to support 55-mph travel. However, the improvements cited should improve safety and the overall driver comfort experienced during travel along this highway.

Cost: The cost for ODOT routine maintenance to add some shoulders, chip seal pavement, correct superelevation and repair known sinkholes is not included in this project cost since it is already scheduled to occur. The project cost includes only guardrail installation and localized sight distance improvements through curves. ODOT representatives estimate the unit cost to install guardrail at \$12 per linear foot. The estimated total cost for guardrail installation could range between \$600,000 and \$800,000 depending upon final design.

Based on estimated costs for localized curve improvements along OR 218 the costs to improve the curves along OR 207 between milepost 2.9 to 3.9 could cost between \$50,000 to \$300,000 each. These costs include rock blasting/drilling, excavation, shoulder widening, and pavement widening. Therefore, depending on the total number of localized curve improvements, not to exceed four, the total cost could range between \$650,000 and \$2,000,000. Costs will vary based on final design and environmental issues.

Recommendation: Guardrail installation and localized curve improvements in addition to ODOT's scheduled routine maintenance would improve sight distance, safety, and overall driver comfort along OR 207. Considering the accident history and existing deficiencies along OR 207 this project is recommended as a high priority project.

Project W14. Safety Improvements along OR 218

Overview: Local residents of Wheeler County have expressed concern over existing conditions along OR 218. OR 218 is a district level highway which traverses areas of mountainous terrain. The highway is comprised of numerous curves and steep grades resulting in localized speed reductions ranging from 15 to 45 mph. Sight distance through curves is limited in some areas. This project would involve localized curve improvements at three locations along OR 218. The approximate locations for curve improvements are 39.15, 37.9, and 31.35. This project involves rock cutting to increase sight distance, minor straightening to improve alignment, and adding shoulders to increase safety. The posted speed along OR 218 is 55 mph.

ODOT's accident database indicates that OR 218 had four reported accidents within the three-year period from 1997 through 1999. Two of the accidents occurred on straight sections and two occurred on curve sections along OR 218. The accident rate for OR 218 between the Wheeler County line and Fossil was over the statewide average for all rural non-freeway primary highways in 1998 but below the statewide average in 1997 and 1999. Wheeler County and City of Fossil representatives have expressed concerns regarding the accident history along OR 218 and believe that additional accidents have occurred but have not been reported.

Impacts: Even with the proposed curve improvements OR 218 will remain a generally mountainous roadway with steep grades and curves requiring speed reductions. Localized curve improvements at the three proposed locations along OR 218 should improve sight distance, safety, and overall driver comfort experienced during travel along this highway.

Cost: Based on discussion with Wheeler County road department staff the estimated project costs were determined. Widening/opening-up each of the curves at mileposts 39.15 and 37.9 is estimated to cost \$50,000 per curve. This cost includes minor rock blasting, excavation, shoulder widening, and pavement widening.

The estimated cost for localized curve improvements at milepost 31.35 is \$300,000. This cost includes drilling/blasting 10,000 hard yards of fill, excavating, re-establishing the grade, sub base, and base, and

pavement widening. It also includes an estimated \$100,000 to cover environmental issues. Therefore, the estimated total cost for the three localized curve improvements is \$400,000.

Recommendation: Localized curve improvements at the three locations would improve sight distance, safety, and overall driver comfort along OR 218. Considering the accident history and existing sharp system of curves this project is recommended as a high priority project.

EVALUATION OF CITY OF FOSSIL POTENTIAL IMPROVEMENT PROJECTS

Through the transportation analysis and input provided from the public involvement program, three potential improvement projects were identified within the City of Fossil. This section of the TSP provides an overview and associated impacts and costs for the following projects:

- F1. Install intersection ahead warning signs along OR 19 near 7th Street;
- F2. Extend the speed zone along OR 218 to the Fossil urban growth boundary (UGB); and
- F3. Improve sidewalk connectivity.

Project F1. Install Intersection Ahead Warning Signs along OR 19 near 7th Street

Overview: The originally proposed project involved construction of an exclusive left-turn refuge lane along southbound OR 19 for traffic turning left on to 7th Street. This project was identified to improve sight distance. Today, northbound OR 19 traffic approaches 7th Street after emerging from a curve on the highway. City of Fossil representatives have expressed concern that northbound traffic does not have enough time to perceive and slow down to avoid hitting southbound traffic turning left from OR 19 on to 7th Street. The project was redefined to include installation of intersection ahead warning signs for both directions along OR 19 near 7th Street. The final design and placement of the signs will follow the MUTCD guidelines. An example of the intersection ahead warning sign to be located along OR 19 prior to 7th Street in both directions is shown in **Figure 6-6**.

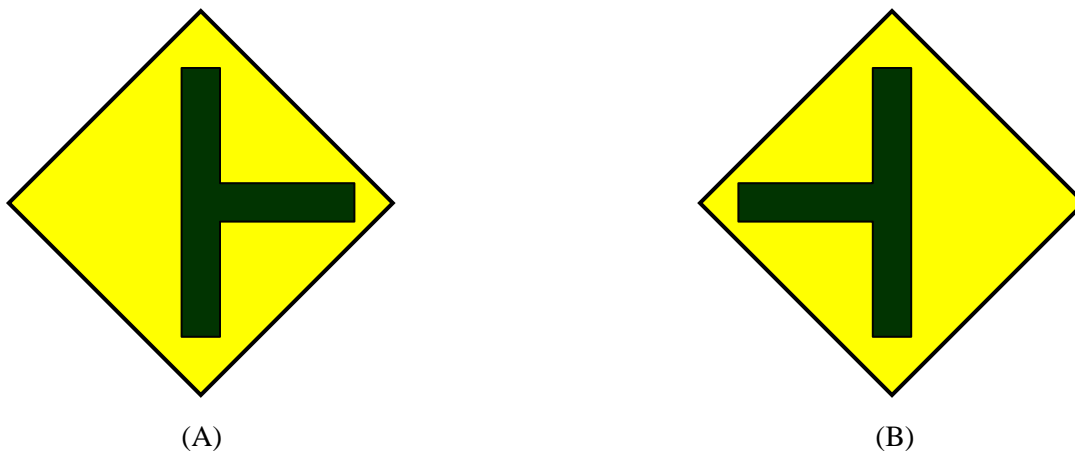


Figure 6-6. Intersection Ahead Warning Signs, (A) Northbound traffic, (B) Southbound traffic

DEA evaluated ODOT's left-turn lane criteria prior to the redefinition of the project. For completeness, the warrant results are provided. The criteria states that a left-turn lane should be installed if one of the following criteria is met:

- **Volumes-** this criteria is intended for application where the combined opposing and advancing traffic volume is the principal reason for considering a left-turn lane. **Figure 6-7** illustrates the left-turn volume curves from ODOT's Design Manual. At the location in question, the existing two-way design hour volume is 75 vehicles per hour (vph). At this traffic volume level, and with an existing posted speed of 45 mph, over 100 southbound left-turn movements would be required to meet the volume criteria. This criteria is not currently met nor expected to be met in 2020.

- **Crash History-** there is no accident history at this location, so the crash history criteria is not met.
- **Special needs-** the most applicable special need may be geometric/safety needs based on sight distance, alignment, operating speeds, nearby access movements, and other safety related concerns. A special need has not necessarily been demonstrated.

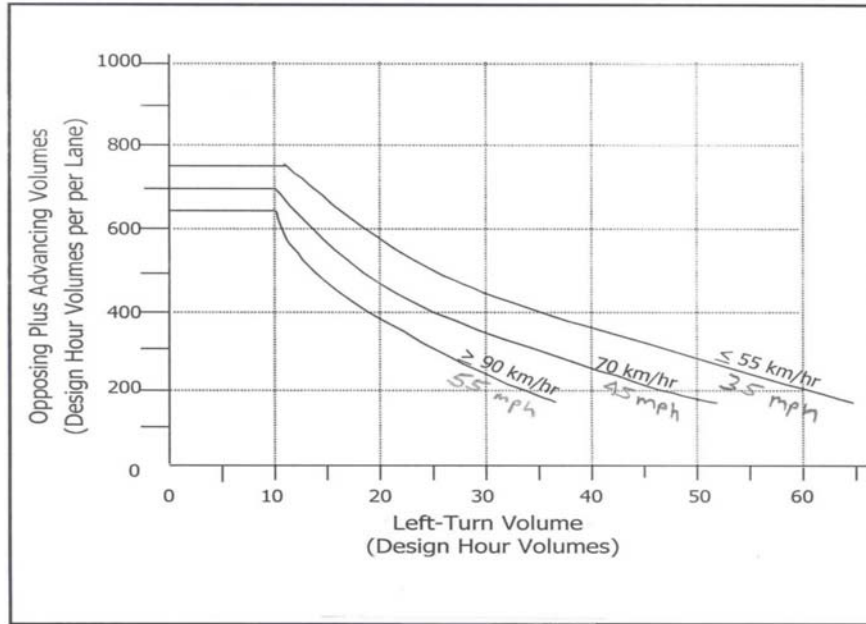


Figure 6-7. ODOT Left-Turn Volume Criteria Curve

Impacts: Installing intersection ahead warning signs along OR 19 near 7th Street would improve roadway safety by providing drivers with advance warning of potentially hazardous roadway conditions. This intersection has no existing accident history and existing roadway capacity is estimated to result in a v/c ratio of less than 0.10 and LOS A for the southbound travel direction along OR 19 today and in 2020 based on forecast volumes.

Cost: Installation of intersection ahead warning signs is estimated to cost \$200.

Recommendation: It is recommended that ODOT install the recommended intersection ahead warning signs. Final placement shall be determined by ODOT in accordance with the MUTCD.

Project F2. Extend the Speed Zone along OR 218 to the Fossil Urban Growth Boundary (UGB)

Overview: This project would involve extension of the existing speed zone on OR 218 to the Urban Growth Boundary (UGB) of Fossil. The existing 25-mph speed zone ends 1,025 feet south of the intersection with OR 19. Local officials would like to extend the speed zone 650 feet further south to include additional homes along OR 218. ODOT studied the speed zone extension on OR 218 in July 1998 and denied extension based on the study results. The reason cited was insufficient traffic volumes. Minimum traffic volumes required are eight total vehicles in one hour or 25 total vehicles in three hours.

The original 25 mph speed zone was established based on a number of Oregon Revised Statutes (ORS Nos. 801.430, 810.180, 811.105) requiring a 25 mph zone through residential districts. The speed zone ends at its current location because the spacing between accesses (driveways and roads) beyond the existing speed zone limit increases beyond 150 feet.

Impacts: Extension of the speed zone could result in slower traffic speeds and could improve livability and safety for the remaining homes along OR 218 within the UGB not currently served by the existing speed zone.

Cost: ODOT does not charge local agencies for speed studies and would likely not charge to relocate the speed zone signs if speed zone extension is approved.

Recommendation: The existing OR 218 speed zone should be extended as described herein if and when ODOT traffic study results warrant this action. The City of Fossil will need to periodically request that ODOT conduct a speed zone study to determine if warrants are met. Without ODOT traffic approval, this speed zone extension will not occur.

Project F3. Improve Sidewalk Connectivity

Overview: The most basic transportation option is walking. However, it is not often considered as a means of travel. The presence of sidewalks is generally lacking in Fossil. Where sidewalks are present, they are generally fragmented and often not on both sides of a street. Sidewalks are primarily located in the vicinity of community resources that generate higher levels of pedestrian traffic located along Main and 1st Streets. Fossil has identified a need to fill in the gaps to the existing sidewalk system. In addition to establishing new sidewalks, the city would like to repair and reconstruct substandard sidewalks to support safe and efficient use by pedestrians (see **Figure 6-8**).

On low volume, primarily residential, local roadways, pedestrians and autos can generally both safely share the roadway. On higher pedestrian use routes, sidewalks can help provide pedestrians with a stronger sense of safety since they are physically separated from the traveled roadway.

- **Main Street-** The existing sidewalk system along Main Street has gaps and does not fully serve residents and visitors walking between restaurants, shopping, the park, and other activities. As a primary town roadway and one of heaviest pedestrian routes, the sidewalk system along Main Street should be repaired and completed to consist of sidewalks along both sides of the road between B Street and OR 19;
- **Washington Street-** City of Fossil officials have identified the need for the sidewalk system along Washington Street to be repaired and completed to consist of sidewalks along both sides of the road between Broadway Street and 3rd Street;
- **Adams Street-** The sidewalk system along Adams Street has been identified by city of Fossil officials to consist of sidewalks along both sides of the road between 1st Street and 3rd Street;

- URBAN GROWTH BOUNDARY (U.G.B.)
- CITY LIMITS
- EXISTING SIDEWALKS
- FUTURE SIDEWALKS
- PED / BIKE PATH ON WIDE SHOULDER (6' PAVED ASPHALT)
- +++++ REPAIR / RECONSTRUCT EXISTING SIDEWALKS

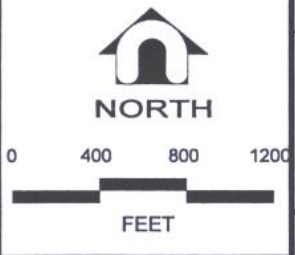
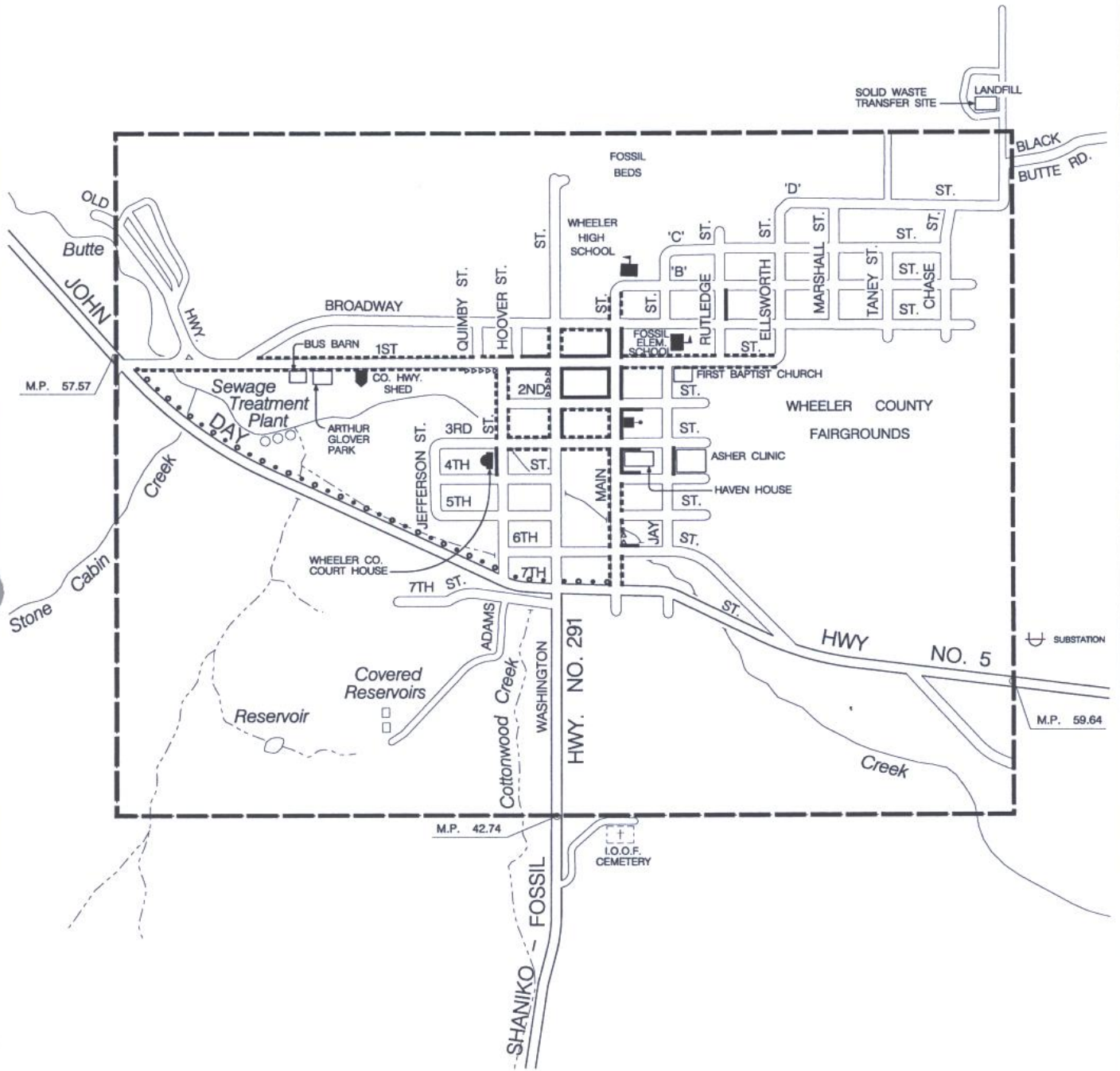


FIGURE 6-8
Fossil Potential Pedestrian System Plan
 WHEELER COUNTY TSP

- **1st Street-** As one of the primary streets in the city, and as one of the heaviest pedestrian traveled roadways due to its proximity to restaurants, schools, and the park, the sidewalk system along 1st Street should be repaired and completed to consist of sidewalks along both sides of the road between Broadway Street and Ellsworth Street as well as a sidewalk along the south side of the road between OR 19 and Broadway Street;
- **OR 19-** Fossil city officials have indicated completing the shoulder widening along OR 19 between Adams and Main Street in addition to the other proposed sidewalks would result in a pedestrian loop encompassing the city; and
- **Other Sidewalks-** In addition to completing the sidewalks along the primary streets, Fossil city officials identified adding sidewalks along the south side of Broadway and 2nd Streets between Washington and Main Street. They also indicated adding sidewalks to both sides of 3rd Street between Adams and Main Street.

Impacts: The addition of sidewalks along the streets identified would improve connectivity of residential, school, and commercial downtown land uses.

Cost Estimate: The estimated cost to install new concrete sidewalks and to repair/reconstruct existing sidewalks on one side of the street is around \$25 per linear foot and \$30 per linear foot, respectively. This includes a five foot wide walkway composed of 4 inches of concrete over 2 inches of aggregate. The estimated cost to widen the shoulder along the north side of OR 19 is around \$15 per linear foot. **Table 6-6** summarizes the pedestrian facility cost estimate.

**TABLE 6-6
PEDESTRIAN FACILITIES COST ESTIMATE - FOSSIL**

Street (Area)	Action	Sidewalk Location	Total Length	Unit Cost per Foot	Total Cost
Main Street (B Street to OR 19)	Construct new sidewalk Repair substandard sidewalk	East side	700 ft 100 ft	\$25 \$30	\$17,500 \$3,000
Main Street (B Street to OR 19)	Construct new sidewalk	West side	1,230 ft	\$25	\$30,750
Washington Street (Broadway Street to 1 st Street)	Construct new sidewalk	East side	200 ft	\$25	\$5,000
Washington Street (Broadway Street to 3 rd Street)	Construct new sidewalk Repair substandard sidewalk	West side	400 ft 200 ft	\$25 \$30	\$10,000 \$6,000
Adams Street (1 st Street to 3 rd Street)	Construct new sidewalk	Both sides	850 ft	\$25	\$21,250
Broadway Street (Washington Street to Main Street)	Construct new sidewalk	South side	300 ft	\$25	\$7,500
1 st Street (Broadway Street to Ellsworth Street)	Construct new sidewalk	North side	2,340 ft	\$25	\$58,500
1 st Street (OR 19 to Adams Street)	Construct new sidewalk Repair substandard sidewalk	South side	2,800 ft 225 ft	\$25 \$30	\$70,000 \$6,750
2 nd Street (Washington Street to Main Street)	Construct new sidewalk	South side	300 ft	\$25	\$7,500
3 rd Street (Adams Street to Main Street)	Construct new sidewalk	Both sides	1,200 ft	\$25	\$30,000
OR 19 (Adams Street to Main Street)	Widen shoulder	North side	600 ft	\$15	\$9,000
	Total		11,445 ft		\$282,750

Source: City of Fossil representatives, costs computed by David Evans and Associates, Inc.

Recommendation: Fossil residents would benefit from improved sidewalk and sidewalk connectivity. A connected sidewalk system supports and promotes pedestrian travel, which may lead to slightly decreased auto use. Sidewalks also improve pedestrian safety, while maintaining vehicle mobility, by separating pedestrians from the traveled way. Sidewalk expansion/improvements in Fossil is recommended.

EVALUATION OF CITY OF MITCHELL POTENTIAL IMPROVEMENT PROJECTS

Through the transportation analysis and input provided from the public involvement program, four potential improvement projects were identified within the City of Mitchell. This section of the TSP provides an overview and associated impacts and costs for the following projects:

- M1. Install an exclusive left-turn refuge lane to the eastern business loop entrance to Mitchell;
- M2. Intersection improvements at intersection of OR 207 and US 26;
- M3. Repave Main Street in Mitchell; and
- M4. Improve sidewalk connectivity.

Project M1. Install an Exclusive Left-turn Lane to the Eastern Business Loop Entrance to Mitchell

Overview: The originally proposed project was to involve construction of a center two-way turn lane along US 26 from 100 feet west of OR 207 to 100 feet east of the eastern business loop entrance to Mitchell; approximately 0.8 miles. Upon review with TAC members the project was redefined to only involve construction of an exclusive left-turn lane to the eastern business loop entrance to Mitchell. The TAC indicated that the majority of westbound traffic destined to Mitchell enters at the eastern business loop entrance. Therefore, considering the travel speeds at the bottom of Keyes Creek, the poor sight distance, and the westbound left-turning traffic; only an exclusive left-turn lane to the eastern business loop was analyzed. The roadway alignment along US 26 through town is relatively flat with minor curves, which limit sight distance near both business loop entrances to Mitchell. The current cross-section of US 26 consists of two 12-foot travel lanes with 4-foot paved shoulders on both sides and would require widening to construct an exclusive left-turn lane to the eastern business loop entrance to Mitchell.

Even though there were no reported accidents along this section of highway within the three years analyzed from 1997 through 1999, both county and ODOT Region 4 officials indicate that operations along this section of highway would be improved with the addition of an exclusive left-turn lane to the eastern business loop entrance to Mitchell.

DEA used ODOT's left-turn lane criteria to evaluate if a left-turn lane is warranted. The criteria states that a left-turn lane should be installed if one of the following criteria is met:

- **Volumes-** at the eastern business loop entrance, the existing two-way design hour traffic volume is 130 vph. At this volume, and with a posted speed of 45 mph based on recently approved speed zone refinements, approximately 60 westbound left turns would be required to meet the volume criteria. Assuming 40 percent of 130 vph design hour traffic (or 52 vph) travels westbound, this would mean all westbound highway traffic plus an additional eight vehicles would need to turn into the Mitchell business loop to meet the criteria. Considering this is unrealistic, the volume criteria is not currently met nor expected to be met in 2020.
- **Crash History-** along US 26 within the Mitchell city limits there is no accident history from 1997 through 1999, so the crash criteria is not met.
- **Special needs-** the most applicable special need may be geometric/safety needs based on sight distance, alignment, operating speeds, nearby access movements, and other safety related concerns. Wheeler County shall work with ODOT representatives to determine which special needs issues occur near the eastern business loop entrance resulting in this criteria being met.

Impacts: Adding a westbound exclusive left-turn lane along US 26 to the eastern business loop entrance to Mitchell could improve safety and increase capacity by reducing the speed differential between through and turning traffic by providing a waiting area for turning traffic until an acceptable gap occurs in the opposing traffic stream.

Cost: The existing paved section of US 26 in question is approximately 32-feet wide with two 12-foot travel lanes and two 4-foot shoulders. To accommodate the exclusive left-turn lane, the roadway would need to be widened by approximately 18-feet to include a 14-foot center turn lane and to allow upgrade of shoulders to 6 feet. The eastbound left-turn lane approaching OR 207 should be approximately 100 feet long to serve one semi-trailer truck. The estimated project cost is \$160,000, which includes all engineering, construction, and contingency costs.

Recommendation: ODOT states that an exclusive left-turn lane should be considered when it is demonstrated that overall safety and/or operations of the intersection and/or roadway will be improved. Even though the exclusive left-turn lane to the eastern business loop entrance to Mitchell does not meet one of ODOT's left-turn lane warrants this project is recommended based on local concerns. Locals indicated that considering sight distance, speed at bottom of Keyes Creek summit, and traveling characteristics (e.g. speeding through town and traveling in packs) an exclusive left-turn lane would improve overall traffic safety and operations near the eastern business loop entrance to Mitchell. This project is recommended as a high priority.

Project M2. Intersection Improvements at Intersection of OR 207 and US 26

Overview: The originally proposed project at this intersection was to involve restriping the existing southbound OR 207 approach to US 26 to provide exclusive right-turn and left-turn lanes. Upon further review, it appears the proposed striping change is not desirable because it would make traffic operations along the parallel approach road confusing and potentially unsafe. The project was redefined to include intersection improvements to increase sign distance and clarify traffic right of way. **Figure 6-9** provides an existing view of the intersection.



Figure 6-9. Looking Northbound Along OR 207 from US 26

Intersection improvements could include cutback of the existing northeast corner of the intersection's embankment (see far right middle portion of figure 6-5) to improve sight distance for southbound OR 207 traffic seeking to turn left. Also, the parallel approach road along the Old Highway to OR 207 (see oncoming car in middle of road in Figure 6-5) should receive a YIELD sign to ensure traffic yields to OR 207 traffic.

DEA evaluated left-turn warrants prior to the management team deciding that the intersection restriping is not desirable. For completeness, the warrant results are provided. DEA used ODOT's left-turn lane criteria to evaluate. The criteria states that a left-turn lane should be installed if one of the following criteria is met:

- **Volumes-** at the location in question, the design hour volume along US 26 is 150 vph. At this traffic volume level, and with opposing traffic traveling at a posted speed of 45 mph along US 26, over 60 southbound left-turn movements from OR 207 would be needed during the design hour to meet the volume criteria. The total OR 207 design hour volume is only 45 vph so this criteria is not currently met nor expected to be met in 2020.
- **Crash History-** the crash criteria is not met considering there is no accident history at this location.
- **Special needs-** the most applicable special need may be geometric/safety needs based on sight distance, alignment, operating speeds, nearby access movements, and other safety related concerns. A special need has not necessarily been demonstrated.

Impacts: The intersection improvements discussed including slope cutting and installation of a YIELD sign would improve sight distance and overall safety of the intersection. Re-striping the southbound OR 207 approach for exclusive right and left-turn lanes would be potentially confusing for some drivers and would not appreciably improve intersection operations that are already very good.

Cost: Slope cutting and installation of a YIELD sign is estimated to cost \$5,000.

Recommendation: The intersection improvements described herein should be completed within the next 5 years.

Project M3. Repave Main Street in Mitchell

Overview: This project would involve repaving Main Street in Mitchell. Main Street is the business loop for US 26 through Mitchell. The only accesses to Mitchell from US 26 are the eastern and western business loop entrances. Improvements would consist of patching existing pavement where needed and then overlaying entire roadway. Local officials identified this project as a need.

Impacts: This project would improve community livability and driver safety for the residents of Mitchell and for the many that use Main Street to access the city of Mitchell.

Cost: Based on discussions with ODOT's Pavement Section, the unit cost to simply overlay an existing urban road is approximately \$70,000 per lane mile assuming a 2-inch hot mix asphalt concrete overlay. A 12-foot wide lane that is one-mile long represents one lane-mile. If the existing road must first be ground down and then repaved as discussed above, the unit cost increases to approximately \$150,000 per lane-mile. Total roadway reconstruction would be even costlier.

Existing Main Street pavement width ranges from 19 to 40 feet with on street parking allowed in some areas. It is primarily a 20-foot road and there are approximately 0.9 lane-miles of pavement along Main Street. Therefore, the cost to repave Main Street as it is paved today could potentially range from \$63,000 to \$135,000.

Recommendation: The city of Mitchell should strive to complete this paving project within the next 20-year planning horizon and should coordinate with Wheeler County to potentially share the project cost.

Project M4. Improve Sidewalk Connectivity

Overview: The most basic transportation option is walking. However, it is not often considered as a means of travel. The presence of sidewalks is generally lacking in Mitchell. The existing sidewalk system has gaps and sidewalks are often not located on both sides of a street. Sidewalks are primarily located in the vicinity of community resources that generate higher levels of pedestrian traffic located along Main, Nelson, and High Streets. In addition to sidewalks, Mitchell maintains a relatively steep gravel pedestrian path along High Street, which provides pedestrian connectivity between High Street and Main Street.

Mitchell has identified a need to fill in the gaps to the existing sidewalk system and to repair and reconstruct substandard sidewalks and the pedestrian path to support safe and efficient use by pedestrians. **Figure 6-10** illustrates Mitchell's existing pedestrian facilities and potential facility improvements to occur over the next 20 years.

On low volume, primarily residential local roadways, pedestrians and autos can generally both safely share the roadway. On higher pedestrian use routes, sidewalks can help provide pedestrians with a stronger sense of safety since they are physically separated from the traveled roadway. Mitchell's City Council identified the following pedestrian facility needs over the next 20 years:

- **Main Street-** The existing sidewalk system along Main Street has gaps and does not fully serve residents and visitors walking between restaurants, shopping, the park, and other activities. As the primary town roadway and heaviest pedestrian route, the sidewalk system along Main Street should be repaired and completed to consist of a southern sidewalk between the US Post Office and the Oregon Hotel and a northern sidewalk between the Old Gas Station and the Old Post Office;
- **Nelson Street-** Nelson Street has a substandard sidewalk along the east side of the roadway between Main Street and the pedestrian path. Adding an additional sidewalk along the west side of the roadway would limit the street width and result in essentially a one-lane road. Therefore, Mitchell would like to see the existing easterly sidewalk repaired/reconstructed as needed.
- **High Street-** High Street currently has a sidewalk along the north side of the roadway between the school buildings and the gymnasium and the city identified the need for a parallel sidewalk on the south side of the roadway as part of their *2001 Needs and Issues Inventory Sponsor Priority List*. This sidewalk would serve school children and residents alike and provide a safe connection between school buildings and the gymnasium;
- **Pedestrian Path-** The relatively steep gravel pedestrian path, which provides connectivity between the schools and downtown, runs between High Street and Nelson Street. Mitchell officials would like to improve the safety and ease of use of this path by potentially adding handrail, new steps, and/or benches (i.e. long steps) to support safe and efficient use by pedestrians. Improvements to the path are recommended rather than adding a sidewalk to High Street between the top of the hill and Nelson Street due to insufficient street width.

Impacts: The addition of sidewalks or sidewalk/pedestrian path improvements along the streets identified would improve connectivity of residential, school, and commercial downtown land uses.

Cost Estimate: The estimated cost to install new concrete sidewalks and to repair/reconstruct existing sidewalks on one side of the street is around \$25 per linear foot and \$30 per linear foot, respectively. This includes a five foot wide walkway composed of 4 inches of concrete over 2 inches of aggregate. The estimated cost to repair/reconstruct the existing pedestrian path is around \$15 per linear foot. **Table 6-7** summarizes the pedestrian facility cost estimate.

**TABLE 6-7
PEDESTRIAN FACILITIES COST ESTIMATE - MITCHELL**

Street (Area)	Action	Sidewalk Location	Total Length	Unit Cost per Foot	Total Cost
Main Street (US Post Office to Oregon Hotel)	Repair/reconstruct substandard sidewalk	South side	660 ft	\$30	\$19,800
Main Street (Old Gas Station to Old Post Office)	Repair/reconstruct substandard sidewalk	North side	480 ft	\$30	\$14,400
Nelson Street (Pedestrian Path to Main Street)	Repair/reconstruct substandard sidewalk	East side	560 ft	\$30	\$16,800
High Street (School Buildings to Gymnasium)	Construct new sidewalk	South side	1,500 ft	\$25	\$37,500
(High Street to Nelson Street)	Repair/reconstruct Pedestrian Path		520 ft	\$15	\$7,800
	Total		3,720 ft		\$96,300

Source: City of Mitchell representatives, costs computed by David Evans and Associates, Inc.

Recommendation: Mitchell residents would benefit from improved sidewalk and sidewalk connectivity. A connected sidewalk system supports and promotes pedestrian travel, which may lead to slightly decreased auto use. Sidewalks also improve pedestrian safety, while maintaining vehicle mobility, by separating pedestrians from the traveled way. Sidewalk expansion/improvements in Mitchell is recommended.

EVALUATION OF CITY OF SPRAY POTENTIAL IMPROVEMENT PROJECTS

Through the transportation analysis and input provided from the public involvement program, four potential improvement projects were identified within the City of Spray. This section of the TSP provides an overview and associated impacts and costs for the following projects:

- S1. Extend the speed zone to the urban growth boundary (UGB) as well as lower to 30 mph;
- S2. Intersection refinements at the intersection of OR 19, Main Street, and Willow Street;
- S3. Install additional directional signing to Spray along US 26 near OR 207; and
- S4. Improve sidewalk connectivity.

Project S1. Extend the Existing OR 19 Speed Zone in Spray and lower it to 30 mph

Overview: This project would involve extension of the existing speed zone on OR 19 to the UGB. The current speed zone starts at the city limits approximately 475 feet south of the UGB. In addition to extending the speed zone to encompass the entire UGB, local officials would like to lower the speed from 35 mph to 30 mph to provide safer and lower speed interaction between highway users and elderly residents of Spray.

Impacts: Extension of the speed zone as well as lowering the speed from 35 mph to 30 mph would improve community livability and driver safety for people living along and driving on OR 19 within the UGB.

Cost: ODOT does not charge local agencies for speed studies and would likely not charge to relocate the speed zone signs if speed zone extension is approved.

Recommendation: The existing OR 19 speed zone in Spray should be extended as described herein if and when ODOT traffic study results warrant this action. The City of Spray will need to periodically request that ODOT conduct a speed zone study to determine if warrants are met. Without ODOT traffic approval, this speed zone extension will not occur.

Project S2. Intersection Refinements at the Intersection of OR 19, Main Street, and Willow Street;

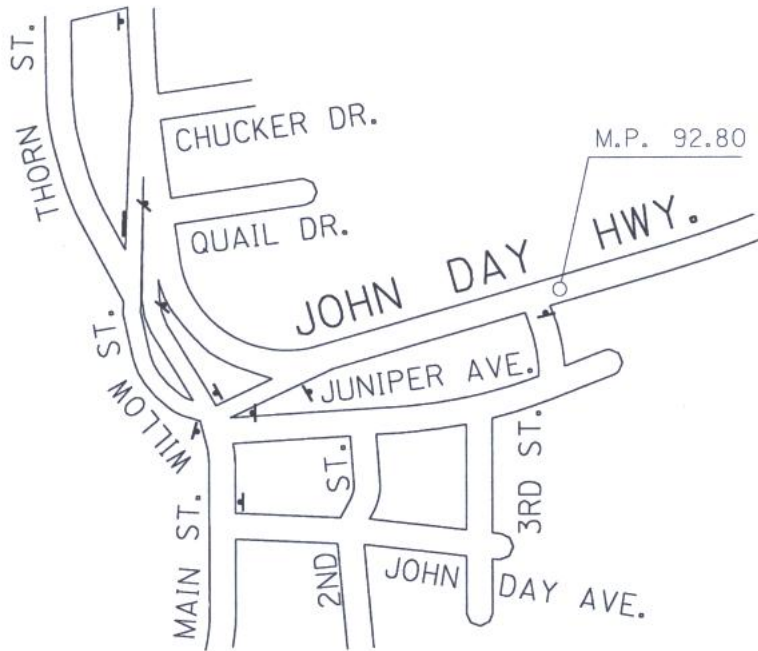
Overview: The purpose of this project is to provide a safer access to OR 19. This project was identified in conversation with TAC members as well as local residents (stakeholders). Two options were evaluated for access management of the intersection of OR 19 with Main Street and Willow Street.

Option 1: Remove existing Willow Street access and realign Main Street access to OR 19

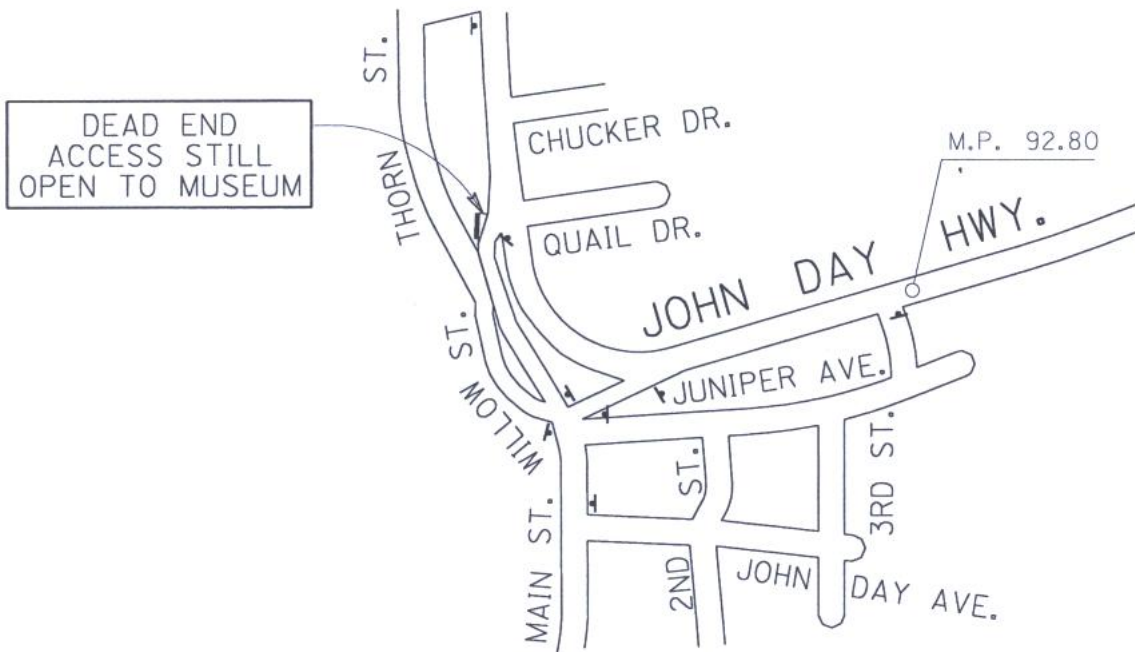
Option 1 consists of consolidating the two existing Main and Willow Street accesses into one by removing the existing Willow Street access and realigning Main Street to access OR 19 directly across from Quail Drive near the existing Willow Street access. This design results in a 4-leg intersection with improved sight distance. Pedestrian facilities would be integrated into the final design of this project.

Figure 6-11 illustrates the existing and revised intersection configurations for Option 1. Although the Willow Street access to OR 19 would be removed, traffic can still access the Museum. All remaining streets in the area are unaffected by the consolidation of access points. Too many access points along busy roads leads to an increased number of conflict points between vehicles entering and exiting driveways and through vehicles on the road. ODOT considers access consolidation beneficial.

- SIDEWALKS
- STOP SIGNS



EXISTING INTERSECTION CONFIGURATION ALONG OR 19 IN SPRAY



FUTURE INTERSECTION CONFIGURATION ALONG OR 19 IN SPRAY



NORTH

(not to scale)

FIGURE 6-11

Existing and Future Intersection Configurations: Option 1

WHEELER COUNTY TSP

Impacts: Access consolidation along OR 19 at Main Street and Willow Street would improve traffic operations and safety by eliminating potential conflicts as well as increasing intersection sight distance.

Cost: A detailed cost estimate was not prepared as part of the TSP. The cost could vary greatly based on the final design, location, and materials used. The final project cost to consolidate the two existing accesses by eliminating the Willow Street access and then realigning the Main Street access to OR 19 is estimated to range from \$300,000 to \$500,000.

Option 2: Realign Main Street to access OR 19 in the middle of curve and lower OR 19 elevation

Option 2 consists of realigning Main Street to access OR 19 in the middle of the Main Street curve while lowering the elevation of the highway to the elevation of Main Street. This design would again increase intersection sight distance. **Figure 6-12** illustrates the existing and future intersection configurations for Option 2. Pedestrian facilities would be integrated into the final design of this project.

Impacts: Realignment of Main Street as well as lowering OR 19 to the same elevation as Main Street would improve traffic operations and safety. The realignment of Main Street to the middle of the curve would improve roadway sight distance in both directions.

Cost: Considering the high cost to lower the elevation of the highway to the elevation of Main Street, a detailed cost estimate was not prepared as part of the TSP. The cost could vary greatly based on the final design, location, and labor costs. Final project costs could approach \$2-3 million.

Recommendation: ODOT should conduct a benefit cost analysis to determine the feasibility of this project. If found to be feasible, Option One should be considered for implementation since it is lower cost and consolidates highway access points.

Project S3. Install Additional Directional Signing to Spray along US 26 near OR 207;

Overview: City of Spray officials have identified a need to include Spray on the highway directional signing along US 26 near the city of Mitchell. **Figures 6-13 to 6-14** provide views of existing directional signing along US 26 directing travelers to destinations along OR 207. Currently the city of Spray is not listed on the major directional sign along US 26 near OR 207. Rather the city is only identified heading westbound by a sign indicating Spray next right. This project involves changing the directional signing to display more importance for the city of Spray as a possible destination by putting Spray on the major directional signing along US 26 near Mitchell. The five existing signs, two advanced, two intersection, and Spray next right, should be replaced with four 3-destination directional signs as part of this project. An example of signing which could accommodate Spray and other destinations along OR 207 is shown in **Figure 6-15**.



Figure 6-13. Looking Northwest- Intersection of US 26 and OR 207 Near Mitchell with Signing Directing Travelers to Service Creek and Fossil.

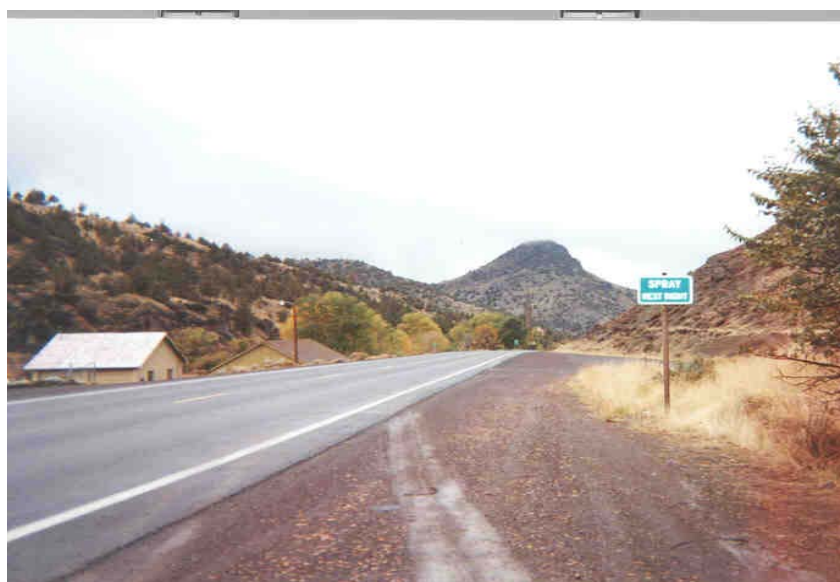
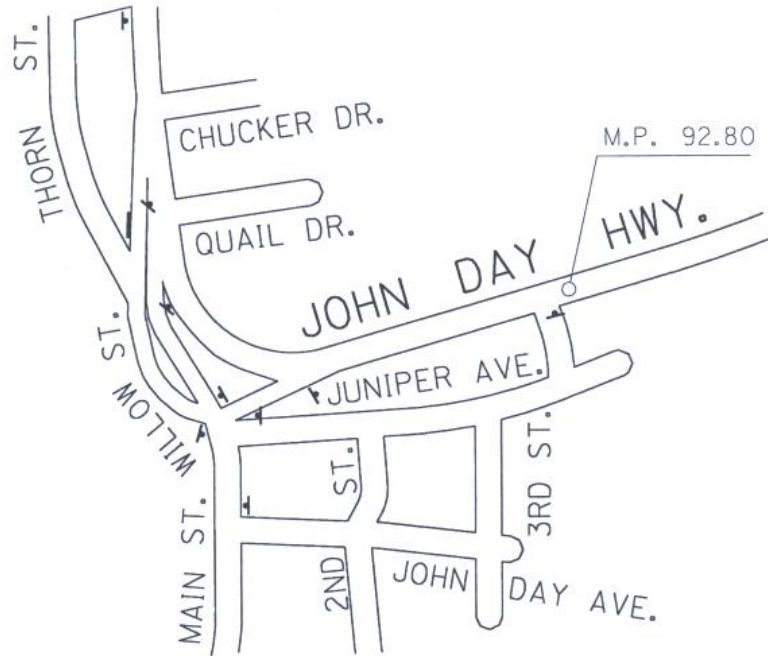
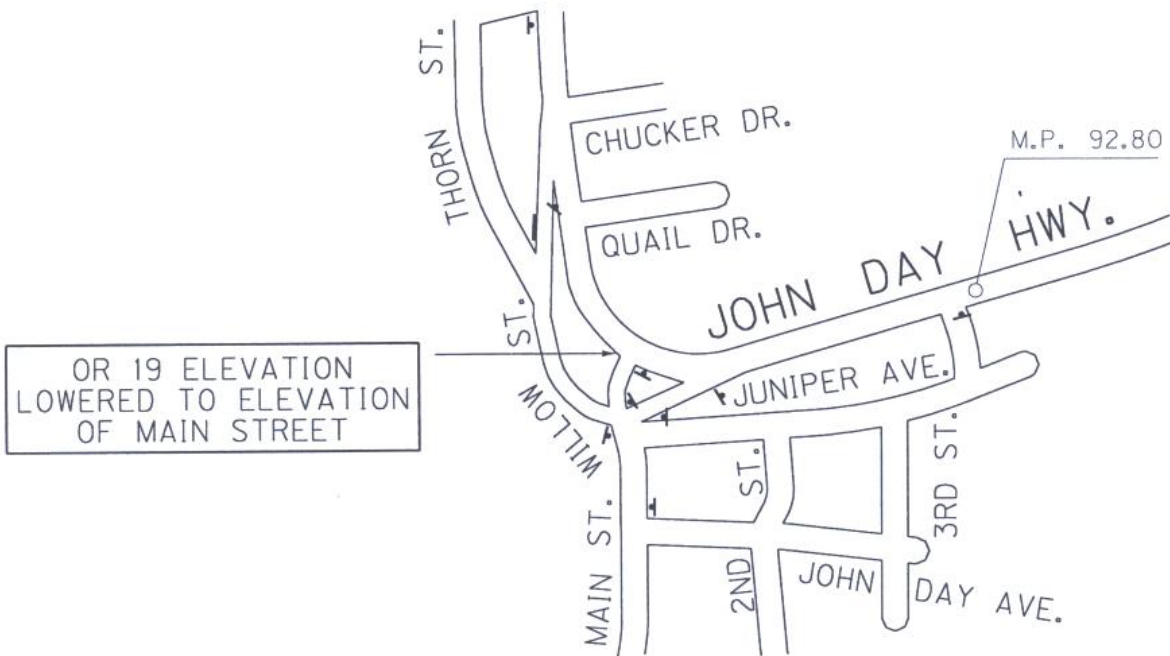


Figure 6-14. Looking West along US 26- 650 feet east of US 26/OR 207 Intersection near Mitchell with Signing Directing Travelers to Spray.

- SIDEWALKS
- ⊥ STOP SIGNS



EXISTING INTERSECTION CONFIGURATION ALONG OR 19 IN SPRAY



FUTURE INTERSECTION CONFIGURATION ALONG OR 19 IN SPRAY



NORTH

(not to scale)

FIGURE 6-12

Existing and Future Intersection Configurations: Option 2

WHEELER COUNTY TSP



Figure 6-15. Example of 3+ Location Directional Sign.

Impacts: The addition of Spray on the directional signing along US 26 near OR 207 better directs the traveling public to Spray. This could benefit tourism in the city of Spray.

Cost: The cost to remove the five existing signs is approximately \$300. The cost to install four 3-destination directional signs is approximately \$2200. Therefore, the total cost to replace the five signs with four new ones is approximately \$2500.

ODOT region 4 staff indicated that one of the intersection directional signs has been replaced by a 3-destination directional sign during annual maintenance. The remaining three directional signs will be replaced within the next ten years. ODOT staff mentioned that if Spray was willing to pay the replacement costs the remaining three directional signs could be replaced sooner.

Recommendation: It is recommended that ODOT install the new signs with the city of Spray included on the directional signing along US 26 near OR 207.

Project S4. Improve Sidewalk Connectivity

Overview: The most basic transportation option is walking. However, it is not often considered as a means of travel. The presence of sidewalks is generally lacking in Spray. Spray has just two segments of sidewalks, one along OR 19 adjacent to the Spray Elementary and High School and one located in front of the Spray museum.

On low volume, primarily residential, local roadways, pedestrians and autos can generally both safely share the roadway. On higher pedestrian use routes, sidewalks can help provide pedestrians with a stronger sense of safety since they are physically separated from the traveled roadway.

Spray has identified primary locations to receive sidewalks and grouped them into three priorities. The highest priority sections are along the east side of OR 19 between Pine Avenue and North Avenue and along the west side of OR 19 between North Avenue and Willow Street. The second priority sections are along both sides of OR 19 between the northern UGB limit and Winlock Street and along the west side of OR 19 between Cox

Street and North Avenue. The third priority sections are along both sides of Main Street between Juniper Avenue and the western city limits (see **Figure 6-16**).

While some may argue that pedestrian use between certain areas does not support development of sidewalks, others may argue that pedestrian use between these areas is not very high because sidewalks don't exist; and that use would increase upon development of the sidewalk system.

Impacts: The addition of sidewalks along the streets identified would improve connectivity of residential, school, and commercial downtown land uses.

Cost Estimate: The estimated cost to install new concrete sidewalks on one side of an existing street is around \$25 per linear foot. This includes a five foot wide walkway composed of 4 inches of concrete over 2 inches of aggregate. **Table 6-8** summarizes the pedestrian facility cost estimate.

**TABLE 6-8
PEDESTRIAN FACILITIES COST ESTIMATE - SPRAY**

Street (Area)	Action	Sidewalk Location	Total Length	Unit Cost per Foot	Total Cost
Priority 1					
OR 19 (Pine Avenue to North Avenue)	Construct new sidewalk	East side	270 ft	\$25	\$6,750
OR 19 (North Avenue to Willow Street)	Construct new sidewalk	West side	430 ft	\$25	\$10,750
Priority 2					
OR 19 (Northern UGB to Winlock Street)	Construct new sidewalk	Both sides	2,170 ft	\$25	\$54,250
OR 19 (Cox Avenue to Park Avenue)	Construct new sidewalk	West side	370 ft	\$25	\$9,250
OR 19 (Park Avenue to North Avenue)	Construct new sidewalk	West side	270 ft	\$25	\$6,750
Priority 3					
Main Street (Juniper Avenue to Western City limit)	Construct new sidewalk	Both sides	2,120 ft	\$25	\$53,000
Total			5,630 ft		\$140,750

Source: City of Spray representatives, costs computed by David Evans and Associates, Inc.

Recommendation: Spray residents would benefit from improved sidewalk connectivity. A connected sidewalk system supports and promotes pedestrian travel, which may lead to slightly decreased auto use. Sidewalks also improve pedestrian safety, while maintaining vehicle mobility, by separating pedestrians from the traveled way. Sidewalk expansion in Spray is recommended.

- URBAN GROWTH BOUNDARY (U.G.B.)
- EXISTING SIDEWALKS
- CITY LIMITS
- FUTURE SIDEWALKS

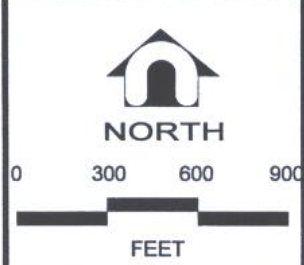
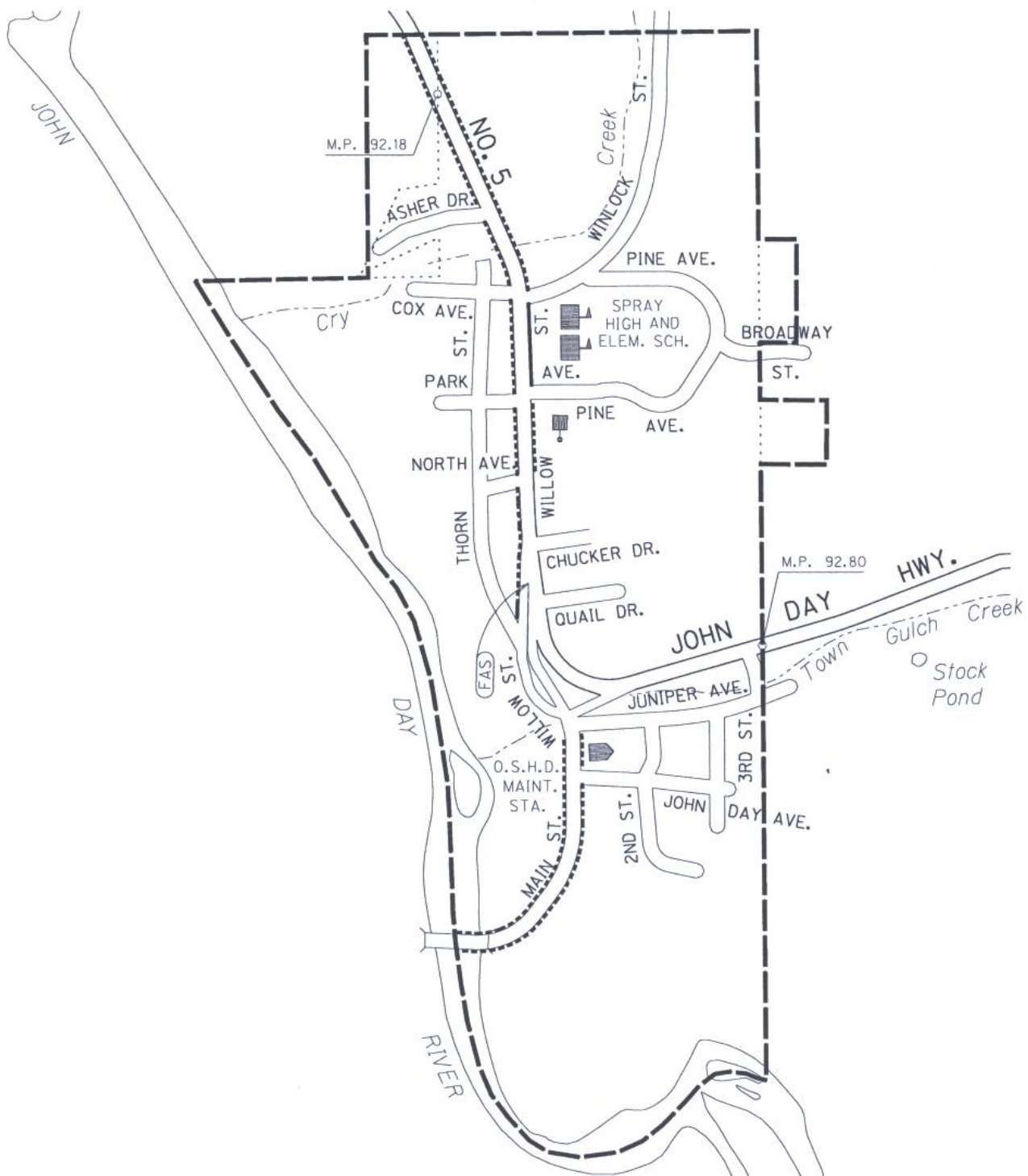


FIGURE 6-16
Spray Potential Pedestrian System Plan
 WHEELER COUNTY TSP

OTHER URBAN POTENTIAL IMPROVEMENT PROJECTS

One additional potential project impacts applies to each of the urban areas and is therefore presented just once in this section rather than repeated under each of the city project lists. The project involves amending current zoning and development codes to support increased mixed-use development.

Project: Revise Zoning and Development Codes

Overview: One of the goals of the Oregon Transportation Planning Rule (TPR) is to reduce reliance on the single-occupant automobile. One method of reducing reliance on automobiles is to amend zoning and development codes to allow mixed-use developments and increased density in certain areas. Specific amendments include allowing neighborhood commercial uses within residential zones and allowing residential uses within commercial zones. Such code amendments can result in shorter travel distances between land uses, thereby encouraging residents to use alternative modes of transportation, such as walking and cycling throughout the community.

These code revisions are more effective in medium- to large-sized cities (with over 25,000 residents), than in cities such as Condon, where they may not be as appropriate. Because of the relatively small size of Fossil, Mitchell, and Spray, the decision of what mode of transportation to use when making a trip inside the city is generally not influenced by distance. The longest distance between city limit boundaries in Fossil is approximately two miles, a distance short enough to walk, ride a bike, or drive. Distances between different land uses, such as residential and commercial, are even shorter.

Impacts: Although the primary goal of TDM strategies is to reduce the number of vehicle trips made within a jurisdiction, especially during peak periods, street capacity for automobiles and trucks is generally not an issue in Fossil, Mitchell, and Spray. Nevertheless, altering land use codes to encourage some level of mixed uses, bringing compatible businesses and residents closer together, can be beneficial for both. Retailers may gain more exposure from people walking by, rather than driving by, their shops. For residents, more walking and biking can enhance the sense of community, local vitality, and security. With more emphasis on walking or biking in the city, conditions such as air quality and noise levels would be improved as well.

Cost Estimate: No direct costs are associated with making the zoning code amendments.

Recommendation: Revisions to zoning and development codes are not applicable to Fossil, Mitchell, and Spray. Because of the small size of the cities, the relationship between land uses is already similar to the mixed use zoning patterns that are recommended in larger urban areas. Increasing density is also likely to have little effect on communities that are expected to experience population increases ranging from 50 to 330 residents in the next 20 years.

SUMMARY

Table 6-9 summarizes the recommendations of the street system modal plan based on the evaluation process described in this chapter. Chapter 7 discusses how these improvement options fit into the modal plans for the Wheeler County area.

**TABLE 6-9
TRANSPORTATION IMPROVEMENT OPTIONS: RECOMMENDATION SUMMARY**

Option	Recommendation
Wheeler County Improvement Options	
W1. Implement TDM strategies.	• Implement
W2. Increase climbing lane capacity along US 26 between Mitchell and Crook County.	• Not recommended at this time
W3. Increase climbing lane capacity along US 26 between Mitchell and Keyes Cr. Summit.	• Not recommended at this time
W4. Install scenic pullouts along US 26.	• Implement
W5. Construct a public use airstrip in Wheeler County.	• Wheeler County officials/ residents work with State Aviation Section to develop necessary plans and specifications
W6. Replace dial-a-ride transit fleet.	• Implement
W7. Upgrade substandard bridges.	• Implement
W8. Establish new county access road between Kinzua and Wetmore.	• Implement
W9. Install warning signs along OR 218 near sharp curves.	• Implement
W10. Construct new roadway linking Fossil industrial site and OR 19.	• Implement as industrial site development occurs
W11. Upgrade substandard shoulders along state highways.	• Implement as routine maintenance and/or rehabilitation projects occur
W12. Localized shoulder improvements along state highways.	• Implement
W13. Safety improvements along OR 207.	• Implement
W14. Safety improvements along OR 218.	• Implement
City of Fossil Improvement Options	
F1. Install intersection ahead warning signs along OR 19 near 7 th Street.	• Implement
F2. Extend the speed zone along OR 218 to the Fossil UGB.	• Work with ODOT to implement once warrants are met
F3. Improve sidewalk connectivity.	• Implement
City of Mitchell Improvement Options	
M1. Install an exclusive left-turn lane to the eastern business loop entrance to Mitchell.	• Implement
M2. Intersection improvements at intersection of OR 207 and US 26.	• Implement
M3. Repave Main Street in Mitchell.	• Implement
M4. Improve sidewalk connectivity.	• Implement
City of Spray Improvement Options	
S1. Extend and lower the speed zone along OR 19.	• Work with ODOT to implement once warrants are met
S2. Intersection refinements at the intersection of OR 19, Main Street, and Willow Street.	• Implement
S3. Install additional directional signing to Spray along US 26 near OR 207.	• Implement
S4. Improve sidewalk connectivity.	• Implement
Other Urban Potential Improvement Options	
O1. Revise Zoning and Development Codes.	• Implement

Source: TAC and management team recommendations

CHAPTER 7: TRANSPORTATION SYSTEM PLAN

The purpose of this chapter is to outline detailed operational plans for each of the transportation systems within Wheeler County and for applicable transportation systems in the incorporated urban areas of Fossil, Mitchell, and Spray. Components of the TSP include roadway standards, access management guidelines, transportation demand management measures, modal plans, and a system plan implementation program.

The Wheeler County TSP addresses each of the transportation modes that exist and are interconnected throughout the county. This is typically the area outside the urban growth boundaries of incorporated cities. Some areas inside the urban boundaries of the Cities of Fossil, Mitchell, and Spray have been included in this plan. It is expected that Wheeler County will ultimately adopt this TSP as the transportation component of their Comprehensive Plan. The three cities may adopt this TSP, or specific portions herein, as the transportation component, or to supplement the existing transportation component, of their Comprehensive Plans. Areas within a city's urban growth boundary (UGB), where the County has jurisdiction over a specific roadway or bridge, would require coordination as necessary through a joint management agreement between the County and cities on potential transportation improvement projects.

RURAL ROADWAY STANDARDS

Development of the Wheeler County TSP provides the County and incorporated Cities of Fossil, Mitchell, and Spray with an opportunity to review and revise roadway design standards to more closely fit with the functional roadway classification, and the goals and objectives of the TSP.

Functional Classification

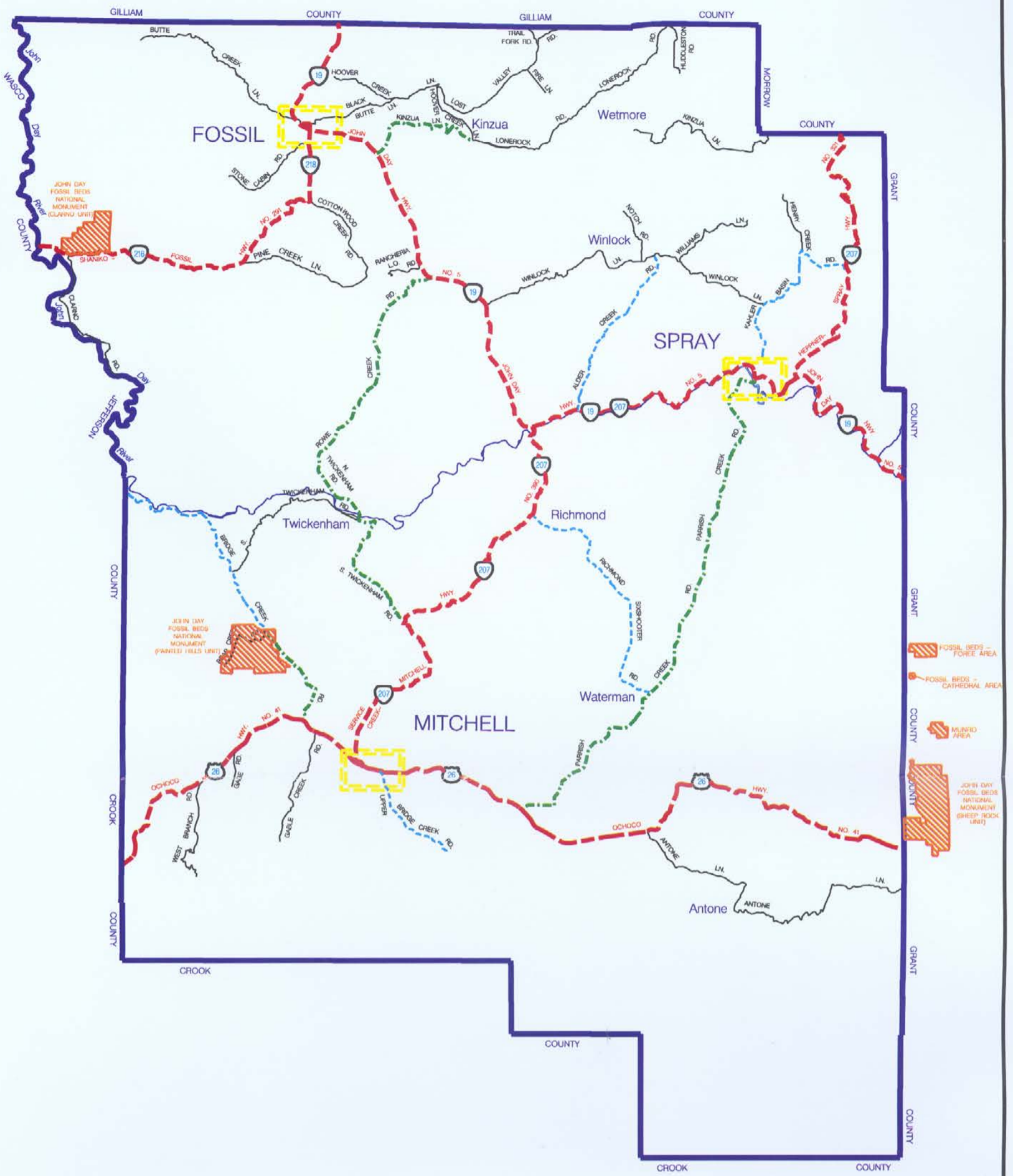
Wheeler County currently classifies all County roads based on the functional classification system developed by the Federal Highway Administration (FHWA). Under this system, all County roads are classified as either major collector roads, minor collector roads, or local roads. The development of the Wheeler County TSP provides the county with an opportunity to review and revise the functional classification of rural county roads and the corresponding road design standards.

The functional classification of a road system relates the design of a roadway to its function. The function is determined by operational characteristics such as travel demand, road capacity, and the operating speed of the roadway. Based on the existing and anticipated future use of the county roadway system, and the professional judgement of Wheeler County roadway department officials, the classifications of some of the county roads has been revised. **Figure 7-1** illustrates the roadway functional classification system for Wheeler County.

Wheeler County Rural Road Standards


Wheeler County has not traditionally established rural roadway design standards specifying the cross-sectional footprint of roadways in terms of number and width of roadway lanes, the type of roadway surface, and the presence of pedestrian and bicycle facilities within the overall roadway right of way. County road standards for major collector roads, minor collector roads, and local county roads are shown graphically in **Figure 7-2** and summarized in **Table 7-1**. At their discretion, Wheeler County may choose to deviate from the adopted design standards for those roadways under county control.

The road standards in this TSP represent a deviation from historical roadway design practices. Based on information provided by Wheeler County staff, the majority of County roads, regardless of functional classification, have traditionally been built approximately 20 feet wide with a gravel surface. This standard practice varies from the adopted standards to be applied to newly constructed or reconstructed County roads.




LEGEND:

- AREA OF MUTUAL CONCERN (A.M.C.) BOUNDARY
- INTERSTATE
- PRINCIPAL ARTERIAL
- MAJOR COLLECTOR
- MINOR COLLECTOR
- LOCAL COUNTY ROAD



NORTH



MILES

Map obtained from ODOT FTP site and revised by Wheeler County Road Department staff.

FIGURE 7-1

Functional Classification

**TABLE 7-1
RURAL ROADWAY DESIGN STANDARDS- WHEELER COUNTY**

Classification	Right-of-Way Width	Roadway		Shoulder	
		Width ¹	Surface	Width	Surface
Major Collector	60 ft	32-40 ft	Paved	4-8 ft	Paved
Minor Collector	60 ft	24-32 ft	Paved/gravel	2-4 ft	Paved/gravel
Local Road	60 ft	24-28 ft	Paved/gravel	2-4 ft	Paved/gravel
Radius for cul-de-sac turn-around	50 ft	40 ft			

1. Pavement width may vary based on desired travel lane and shoulder widths.

Source: David Evans and Associates, Inc.

Paved shoulder widths follow guidelines outlined in the *Oregon Bicycle and Pedestrian Plan* as summarized in **Table 7-2**. In areas where traffic volumes warrant only 2-foot shoulders, the County may wish to increase shoulder width to at least four feet to safely accommodate bicycle and/or pedestrian traffic as needed. Expected 20-year traffic volumes in Wheeler County do not warrant shoulder widths in excess of four feet except along a few of the state highways. However, the county may wish to increase shoulder width to better accommodate pedestrian and bicycle use.

**TABLE 7-2
PAVED SHOULDER WIDTHS ON RURAL ROADS**

Traffic Volumes	Local Streets	Major and Minor Collectors	Arterial Streets (Highways)
ADT under 250	2 ft	2 ft	4 ft
ADT under 400	2 ft	2 ft	4 ft
ADT over 400 and DHV* under 100	4 ft	4 ft	6 ft
DHV 100-200	6 ft	6 ft	6 ft
DHV 200-400	6 ft	8 ft	8 ft
DHV over 400	8 ft	8 ft	8 ft

* DHV (Design Hour Volume) is the expected two-way traffic volume in the peak design hour (usually at commuter times), usually 10 to 20% of ADT.

Source: *Oregon Pedestrian and Bicycle Plan*, page 67

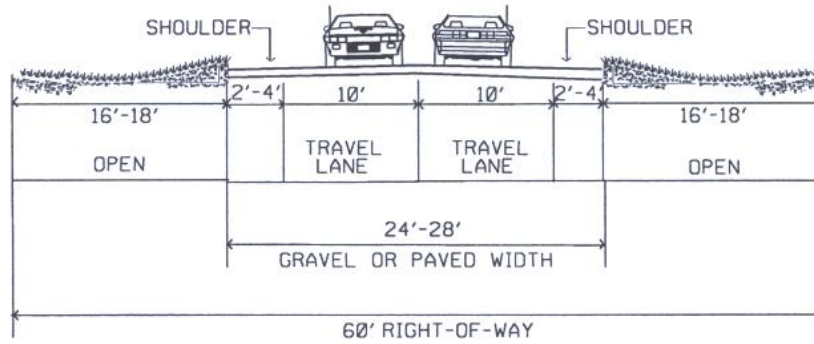
Rural Local Roadways

Local roadways provide access to adjoining lands and are for short travel distances. The adopted standard for a rural local roadway specifies a 24- to 28-foot roadway within a 60-foot right-of-way, as shown in **Figure 7-2**. Rural Local roads consist of one 10-foot travel lane in each direction and two to four-foot directional shoulders. The travel lanes and shoulders may be paved or gravel.

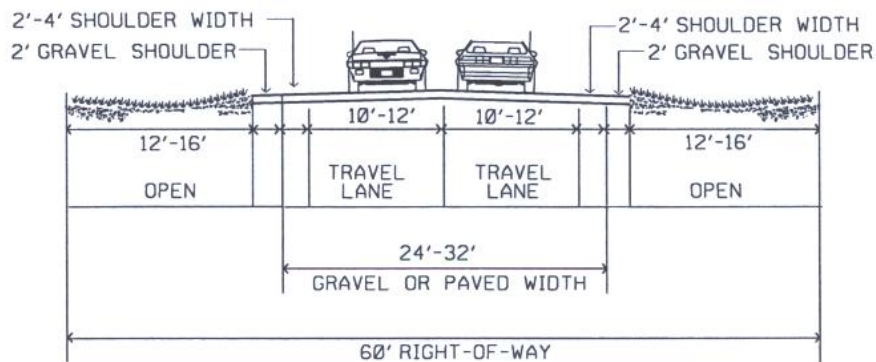
With narrower 10-foot travel lanes, this road standard reduces right-of-way needs, construction cost, stormwater run-off, and vegetation clearance. Anticipated traffic volumes, as shown in **Table 7-2** determine the width of the shoulder. On-street parking is not allowed on local roads.

Rural Minor Collector Roadways

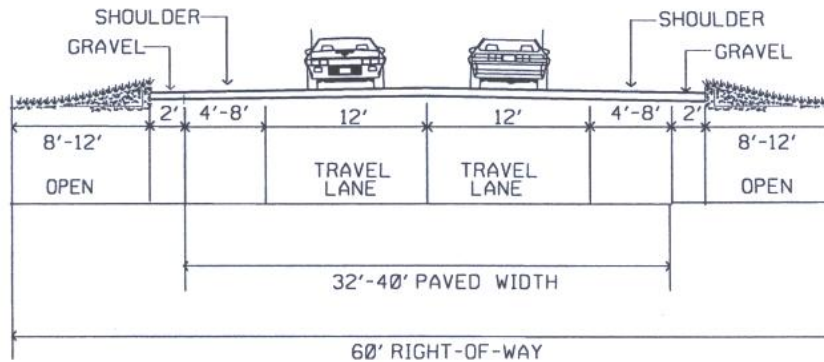
Minor collector roadways are primarily intended to serve abutting lands and local access needs of neighborhoods. **Figure 7-2** illustrates a minor collector cross section with 60-foot right-of-way and a 24- to 32-foot paved or gravel



Local Roads



Minor Collector Roads



Major Collector Roads

FIGURE 7-2

Rural Street Standards
Local, Minor Collector and Major
Collector Roadways

roadway surface. This road standard consists of one ten- to 12-foot travel lane in each direction and two to four-foot directional shoulders. As shown in **Table 7-2**, roadway shoulder widths vary depending upon the level of roadway and existing or forecast traffic volumes. The roadway surface may be paved or gravel. On-street parking is not allowed.

Rural Major Collector Roadways

Major collector roadways link traffic to the arterials (highways) to provide intra-county service to towns or large traffic generators not served directly by an arterial. Major collector roadways are intended to provide higher capacity resulting in service of greater traffic volumes. Throughput of traffic is a higher priority than access to abutting property. Access may be managed more strictly.

Figure 7-2 displays a cross section with a 60-foot right-of-way and a 32- to 40-foot paved width consisting of one 12-foot travel lane per direction and four to eight-foot directional shoulders. The overall roadway and right of way widths are determined in part by shoulder requirements. As shown in **Table 7-2**, roadway shoulder widths vary depending upon the level of roadway and existing or forecast traffic volumes. The roadway surface for major collector roadways will be paved. On-street parking will not be allowed on major collector roadways.

Pavement Design

Unlike the roadway design standards presented in **Figure 7-2** which illustrates the cross-section design of future roads, pavement design standards address the material type and depth of the various roadway layers (e.g., pavement surface, base rock, etc.). Pavement design is sensitive to key design parameters such as heavy truck volumes, environmental conditions, and soil conditions. Pavement designs may differ based on many variables including the types of materials used, the design truck volumes to be served, and the desired pavement design life. Because of greater traffic volumes, and specifically truck volumes, arterials (e.g. highways) would be expected to be thicker than major collectors, minor collectors, or local roads.

As a planning document, the development of detailed pavement design standards is outside the scope of this TSP. Development of such standards constitutes a separate and detailed evaluation. However, experience in other rural eastern Oregon counties indicates that past pavement performance has been well served by designing asphalt pavements with a minimum of 6-inches of base rock and 2.5-inches of asphalt.

Gravel roads are typically built with a minimum of 12-inches of base rock placed and compacted in four-inch lifts. Base rock is covered by a fine layer of dirt or clay (dirt preferred) and finished with a three to four-inch layer of surface gravel. Surface gravel is replaced during routine maintenance.

These minimum guidelines should be followed in future asphalt or gravel pavement designs unless the results of a pavement design warrant changes. Detailed pavement designs may follow procedures outlined in the 1986 *AASHTO Guide for Design of Pavement Structures* published by the American Association of State Highway Transportation Officials.

Highway Road Standards

ODOT has jurisdiction over all state highways (arterials) in the county and will ensure that all highway projects are designed in accordance with ODOT highway design standards.

Truck Routes

Truck tractor-trailer combinations are the most common type of freight carrier and move the greatest amount of goods and commodities throughout Oregon. Freight movement plays a major role in transportation through

Wheeler County even though none of the major freight corridors identified in the *1999 Oregon Highway Plan* are located within Wheeler County. The nearest major freight corridors are I-84 and US 97.

To ensure that the mobility of trucks is preserved in Wheeler County, designated truck routes have been identified. **Figure 7-3** summarizes the county roads that are approved truck routes and identifies any weight-restricted roads or bridges within Wheeler County. It separates the approved truck routes into two groups depending on the maximum overall length allowed. Appendix J contains all relevant information about truck routes and weight restrictions along county roads. For truck route information and maps regarding the state highways refer to Appendix I or <http://www.odot.state.or.us/trucking/od/maps.htm>. Additional information regarding trucks can be found at <http://www.odot.state.or.us/trucking/menu.htm>.

Bike Lanes

For the most part, rural roadways do not require separate bikeway facilities such as bicycle paths or dedicated bike lanes. In general, bicyclists are accommodated on the shared roadway or on a shoulder, depending on traffic volumes. Low volume roadways where motorists can safely pass a bicyclist due to the low likelihood of encountering an oncoming vehicle support shared roadway use. Higher vehicular and/or bicycle volume roadways may be better served by shoulder bikeways. Additionally, in areas with high bicycle use, a pathway should be considered, preferably located on both sides of the roadway, separated from the roadway by at least five feet of greenbelt or drainage ditch. In general, the shoulder widths recommended by the *1995 Oregon Bicycle and Pedestrian Plan* for rural roadways, which take into account traffic volumes and other considerations, are adequate for bicycle travel.

Sidewalks

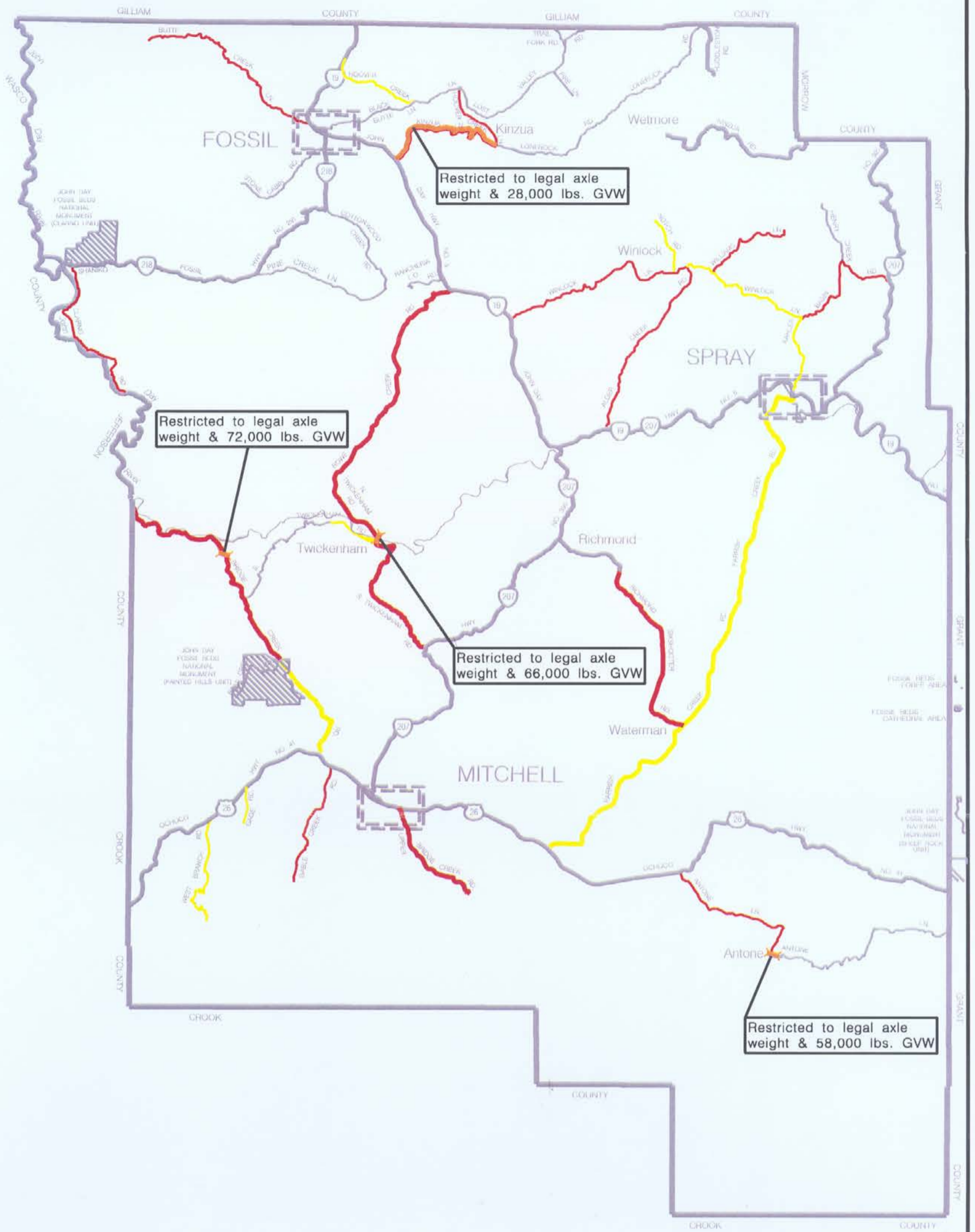
Rural roadways generally do not require separate pedestrian facilities. Pedestrians can typically be accommodated on the shoulder of the roadway. In areas with high pedestrian activity, a pathway should be considered, preferably located on both sides of the roadway and separated from the roadway by at least five feet of greenbelt or drainage ditch.

ACCESS MANAGEMENT

Access management along a roadway corridor incorporates planning, design, and implementation of land use and transportation policies and strategies that control the flow of traffic between the roadway and the surrounding land. Access management policies and strategies apply to driveways and other roadways and are designed to achieve a balance between the need to provide safe and efficient travel with the ability to access individual destinations. Implementation of appropriate roadway access management measures can provide substantial benefits to a community, including:

- Protecting the functional operation of a roadway, thus delaying or preventing costly roadway improvements;
- Improving safety conditions along roadways for all users, including pedestrians and bicyclists;
- Facilitating a more constant traffic flow, thus reducing congestion, delays, overall vehicle miles of travel (VMT), fuel consumption and air pollution; and
- Promoting more desirable compact land development patterns.

Access management is an important tool for promoting safe and efficient travel for both local and long distance users along a roadway. Research has clearly shown a direct correlation between the number of access points and collision rates. Typically, as the number of access points increases so do collision rates. Experience



LEGEND:

WHEELER COUNTY ROADS APPROVED AS TRUCK ROUTES. BASED ON MAXIMUM ALLOWABLE TRUCK LENGTHS SUMMARIZED IN APPENDIX J TABLES

- MAXIMUM OVERALL TRUCK LENGTHS BASED ON TABLE J-1
- MAXIMUM OVERALL TRUCK LENGTHS BASED ON TABLE J-2
- WEIGHT RESTRICTED ROADS OR BRIDGES IN WHEELER COUNTY

NORTH

1 2 3 4 5
MILES

* FOR TRUCK ROUTE INFORMATION ALONG STATE HIGHWAYS REFER TO APPENDIX E OR ODOT'S WEBSITE

FIGURE 7-3
Truck Routes along County Roads and Weight Restricted Roads/Bridges

throughout the United States has also shown that a well-managed access plan for a street system can minimize local cost for transportation improvements needed to provide additional capacity and/or access improvements along unmanaged roadways. Therefore, it is essential that all levels of government maintain the efficiency of existing roadways through better access management.

Access Management Techniques

Access management can be accomplished through a number of strategies and specific techniques that differ in large urban areas versus rural areas. Based on existing and forecast levels of traffic and development in Wheeler County, the most suitable access management strategy would appear to be management of the number of access points and their spacing. The following techniques describe how the number of access points to a road can be restricted or reduced:

- Restrictions on spacing between access points (driveways) and public/private roads based on the type of development and the speed along the road;
- Sharing of access points between adjacent properties;
- Providing driveway access via collector or local roadways where possible;
- Constructing frontage roads to separate local traffic from through-traffic;
- Offsetting driveways at proper distances to produce T-intersections that minimize the number of conflict points between traffic using the driveways and through traffic;
- Installing median barriers to control conflicts associated with left-turn movements (in or out of driveway or roadway); and
- Installing barriers to the property along the arterial to restrict access width to a minimum.

Access Management Requirements for Highways

In Oregon, state statutory law, and several state policies and supporting documents guide planning and management of the State Highway System (SHS) including access management of highway segments within both urban and rural areas. Owners of property located adjacent to state highways in Oregon have a “common law” right of access to the state highway, but are required to obtain an approach³ road permit from the Oregon Department of Transportation (ODOT). ODOT is not required to issue an approach road permit if reasonable access is available (e.g., by means of a city street or county road).

Statewide Planning Goal 12 serves as the State’s general transportation policy and the Transportation Planning Rule (TPR) guides state, regional and local implementation of Goal 12. The TPR requires ODOT and local governments to prepare Transportation System Plans (TSPs) that identify facility and service improvements adequate to meet identified needs over a 20-year planning period. All local TSPs must be consistent with the state TSP and associated modal and facility plans.

The Oregon Transportation Plan (OTP) is the State’s TSP and the Oregon Highway Plan (OHP) is the highway-specific modal element of the OTP. The OHP describes goals, policies, and strategies designed to meet the transportation goals outlined in the states TSP. The TPR also requires that local TSPs consider new connections

³ As defined in Oregon Administrative Rules (OAR) Division 51, *Public approach* refers to a public roadway connection serving multiple properties, which is owned and operated by a public entity, and provides connectivity to the local road system (OAR 734-051-0040(40)); *Private approach* refers to a private roadway or driveway connection serving one or more properties that does not provide connectivity to the local road system (OAR 734-051-0040(36)).

to arterials and state highways that are consistent with designated access management categories (OAR 660-12-020(2)(b)). The current OHP, adopted by the Oregon Transportation Commission (OTC) in July 1999, contains an access management goal (Goal 3) and several policies that provide guidance for access management along various types of state highway segments.

Access Management Standards for Highways

Access management along all state highways in Oregon is regulated by policies specified in the adopted 1999 Oregon Highway Plan (OHP). The OHP specifies an access management classification system for state facilities and establishes standards and guidelines to be applied when making access management assignments for highways based upon their classification.

As identified in Chapter 3 and summarized again in **Table 7-3**, Wheeler County has one Statewide highway, two Regional highways, and two District highways. The access spacing standards for each level of highway are summarized in the following sections.

**TABLE 7-3
STATE HIGHWAYS**

State Highway Number	Highway Name	ODOT Highway Number	Highway Classification
US 26	Ochoco Highway	41	Statewide
OR 19	John Day Highway	5	Regional
OR 207	Heppner-Spray Highway	321	Regional
OR 207	Service Creek-Mitchell Highway	390	District
OR 218	Shaniko-Fossil Highway	291	District

Source: ODOT Traffic Volume Table-1999

General Highway Access Spacing Standard

The 1999 OHP maintains access management standards that vary for the Statewide, Regional, and District level highways within Wheeler County. The standards further vary based on a number of other criteria including:

- Posted highway speed;
- Highway location in rural or urban areas;
- Whether adjacent accesses are streets only with no driveways between or where driveway-to-driveway or driveway-to-street accesses are being considered; and
- Urban areas where the highway passes through a designated Urban Business Area (UBA) or Special Transportation Area (STA).

Table 7-4 summarizes the ODOT access spacing standards for highways in Wheeler County. The table clearly indicates that spacing increases as the highway classification and posted speed increase. Spacing also increases within rural areas where the need for access generally decreases and where the public expects to encounter fewer accesses. These standards apply to both streets and driveway approaches and are measured from the center of one access to the center of the next access on the same side of the road. They generally apply to unsignalized access points.

The urban section of US 26 (Statewide highway) through Mitchell where the posted speed is 40 mph requires minimum access spacing of 990 feet between two adjacent streets with no driveways in between. This standard

may be relaxed to 740 feet if ODOT grants a minor deviation. Along this same stretch of highway, the access spacing standard for adjacent driveways or between streets and driveways is also 990 feet (530 feet with deviation). The general access spacing standard is 600 feet between for the urban sections of OR 19 (Regional highway) through Fossil and Spray where the posted speed is 35 mph regardless of whether spacing is for streets only or driveways. These standards apply to both streets and driveway approaches and are measured from the center of one access to the center of the next access on the same side of the road. These standards apply to unsignalized access points.

Deviations to Access Spacing Standards

Under some circumstances, deviations to the general access spacing standard are allowed. The two types of deviations are minor and major. The minor deviation limits to the access spacing standards are shown in **Table 7-4**. A permit for an access under a minor deviation is allowed per the review of the district highway engineer. Any request for an access at less than the minor deviation spacing standard shall be considered a major deviation. Although there are no spacing standards for a major deviation, the process for state approval is lengthy and thorough. To process a major deviation application, a technical group must be established to assist the regional highway engineer with the review. Rejected applications for an access permit under a major and minor deviation can be appealed through a formal appeals process.

Special Circumstances

In some cases, access will be allowed to a property at less than the designated spacing standards, but only where a right of access exists, that property does not have reasonable access, and the designated spacing cannot be accomplished. Other options such as joint access should be considered before allowing accesses at less than the designated standards. Additionally, ODOT may be required to purchase property, which becomes landlocked meaning that no reasonable access exists.

**TABLE 7-4
1999 OREGON HIGHWAY PLAN
RURAL AND URBAN ACCESS SPACING STANDARDS FOR STATE HIGHWAYS**

<i>Street-to-Street Access Spacing Standards (No Driveways between Streets)</i>			
Highway	Posted Speed	Rural & Urban Spacing¹	Rural/Urban Street Deviation²
Statewide	≥55 mph	1320 ft	1150/1000 ft
	50 mph	1100 ft	900/810 ft
	40 & 45 mph	990 ft	810/740 ft
	30 & 35 mph	770 ft	675/600 ft
	≤25 mph	550 ft	525/400 ft
Regional	≥55 mph	990 ft	870/870 ft
	50 mph	830 ft	640/640 ft
	40 & 45 mph	750 ft	550/550 ft
	30 & 35 mph	600 ft	375/375 ft
	≤25 mph	450 ft	350/350 ft
District	≥55 mph	700 ft	660/660 ft
	50 mph	550 ft	525/525 ft
	40 & 45 mph	500 ft	475/475 ft
	30 & 35 mph	400 ft	325/325 ft
	≤25 mph	400 ft	245/245 ft
<i>Driveway-to-Driveway or Driveway-to-Street Access Spacing Standards</i>			
Highway	Posted Speed	Rural & Urban Spacing¹	Rural/Urban Driveway Deviation²
Statewide	≥55 mph	1320 ft	950/870 ft
	50 mph	1100 ft	700/640 ft
	40 & 45 mph	990 ft	560/530 ft
	30 & 35 mph	770 ft	400/350 ft
	≤25 mph	550 ft	280/250 ft
Regional	≥55 mph	990 ft	700/700 ft
	50 mph	830 ft	540/540 ft
	40 & 45 mph	750 ft	460/460 ft
	30 & 35 mph	600 ft	300/300 ft
	≤25 mph	450 ft	220/220 ft
District	≥55 mph	700 ft	650/650 ft
	50 mph	550 ft	475/475 ft
	40 & 45 mph	500 ft	400/400 ft
	30 & 35 mph	400 ft	275/275 ft
	≤25 mph	400 ft	200/200 ft

¹Spacing standards apply to rural and urban non-expressways.

²Minor deviation standards.

Source: 1999 OHP- Appendix C

Access Management Implementation

Access management guidelines are generally not intended to eliminate existing intersections or driveways. Rather, they should be applied as new development occurs. Over time, as land is developed and redeveloped, access to roadways will need to meet appropriate access guidelines. However, where there is a recognized problem, such as an unusual number of collisions, access management techniques and standards can be applied to retrofit existing roadways.

To summarize, access management strategies consist of managing the number of access points and providing traffic and facility improvements. The solution is a balanced, comprehensive program that provides reasonable access while maintaining the safety and efficiency of traffic movement.

Wheeler County Access Management Standards

Wheeler County currently has no established access management and access spacing standards. Wheeler County should consider developing access management standards to be implemented as new development occurs or as redevelopment occurs. Access standards should be reviewed and applied during the County's development review process before building permits are issued. County staff may wish to use established state highway access spacing standards as a starting point in developing access standards for County roads.

By law, Wheeler County has authority to prescribe access management standards. According to Oregon Revised Statute (ORS) 374.425, "In connection with the acquisition of real property for right of way for a thoroughway described in ORS 374.420, the county court or board of county commissioners may prescribe the location, width, nature and extent of any right of access that pertains to such real property." [Amended by 1965 c.364 s.2]

When developing access management standards to be applied to new development or redevelopment, the County should address access spacing relative to existing driveways and public roads based on the level of County road, access design, intersection and roadway sight distance, signing, illumination, and coordination of design with other utilities. Other factors may also be applied. The County should publish these standards as part of their subdivision ordinance so that developers clearly understand what is expected of them when preparing development plans.

MODAL PLANS

The Wheeler County modal plans have been formulated using information collected and analyzed through a physical inventory, forecasts, goals and objectives, and input from the TAC and area residents. The plans consider transportation system needs for Wheeler County and the Cities of Fossil, Mitchell, and Spray during the next 20 years assuming the growth projections discussed in Chapter 5. The changes in land use patterns and growth of the population will guide the timing for individual improvements in future years. Specific projects and improvement schedules may need to be adjusted depending on how rapidly and where growth occurs within Wheeler County.

Roadway System Plan

The Wheeler County roadway system plan encompasses all of the roadway and bridge projects identified to date by Wheeler County and ODOT over the 20-year planning horizon. It provides a consolidated list of the many projects that have been identified by various sources. The three primary sources of identified roadway and bridge projects include:

- Wheeler County's five-year working road and bridge maintenance plan;
- ODOT's final 2000-2003 Statewide Transportation Improvement Program (STIP); and
- Input from the Wheeler County TSP public involvement process.

Projects identified in Wheeler County's road and bridge plan are considered necessary routine maintenance needs based on field observations by county staff; therefore, they were not evaluated through the TSP public involvement process for implementation. Projects identified under ODOT's STIP are already state funded and

scheduled to take place over the next four-year planning horizon, and are included in the 20-year transportation project list.

Projects identified through the TSP public involvement process were evaluated in Chapter 6 (Potential Improvement Option Analysis). Some of the projects were recommended for implementation and inclusion in the county's 20-year transportation project list.

Recommended TSP projects are prioritized for short-term (0-5 years), intermediate-term (5-10 years), or long-term (10-20 years) implementation. The following sections outline the identified projects under the three sources listed above. Where available, planning level cost estimates are provided.

Wheeler County Five-Year Working Road and Bridge Maintenance Plan

Wheeler County has developed a five-year working road and bridge maintenance plan to identify priority projects that the county would like to accomplish from 2001-2005. These projects represent Wheeler County's routine maintenance needs, and were not evaluated through the TSP public involvement process for implementation. The county clearly understands the impact that available funding and resources may have on accomplishing these projects. Inclusion of a project in this list does not guarantee completion within the five-year planning horizon. Based on periodic review, the county may add or delete projects from their "working plan", as they deem necessary. A key component of the Wheeler County five-year working road and bridge maintenance plan is flexibility. The road department routinely adapts its work schedule to changing priorities. Therefore, estimated completion dates for particular projects have not been determined.

The road and bridge maintenance plan includes pavement rehabilitation and bridge maintenance projects. **Table 7-5** summarizes the identified road and bridge maintenance projects with a short project description, project location, and cost estimate. The projects are not listed in any particular order. Projects in Wheeler County's road and bridge maintenance plan do not constitute capital improvement projects, which require funds to be raised. The projects are funded by the county's annual budget for roadway improvements and are therefore not included in the county's 20-year transportation project list presented later in this chapter. Project costs were estimated by Wheeler County road department representatives.

**TABLE 7-5
WHEELER COUNTY FIVE-YEAR WORKING ROAD AND BRIDGE MAINTENANCE PROJECTS**

Road	Location	Project Description	Estimated Cost
Road Maintenance Projects			
Alder Creek Rd	Various	Extend culverts and improve fish passages	\$50,000
	Near milepost 5.0	Align road, replace cattle guard	\$30,000
Bridge Creek Rd (a.k.a. Burnt Ranch)	Near milepost 4.0	Remove and rebuild road structure	\$60,000
	Near milepost 3.0	Remove rocky point	\$10,000
	Various	Clean out, remove, and replace culverts	\$10,000
South Twickenham (a.k.a. Girds Creek)	Various	Remove slide	\$5,000
	Various	Remove rocky point, realign road, & install new cattle guard	\$60,000
Kahler Basin Rd	Various	Extend culverts and improve fish passages	\$50,000
	Various	Remove rock corners and realign road	\$80,000
	Hwy 19 - Hwy 207	Chip seal 10.41 miles	\$80,000
Kinzua Ln	Hwy 19 - end of asphalt	Level oil mat section (7.15 miles)	\$25,000
	End of asphalt - FS Bndry ¹	Acquire easement and improve gravel road (10 miles)	\$30,000
Parrish Creek/ Waterman Flat Rd	5.5 mile oil mat section	Build shoulders	\$30,000
	JD R Br ² - end of asphalt	Chip seal 5.5 miles	\$40,000
	Various	Extend culverts	\$30,000
	3 mile section	Gravel 3 miles	\$25,000
Richmond Six Shooter Rd	Hwy 207 - 0.5 miles east	Rebuild road (0.5 miles - oil mat)	\$80,000
	2.0 mile section	Cut back brush, widen, and gravel	\$20,000
Rowe Creek Rd (or N Twickenham)	15.63 mile section	Build shoulders (15.63 miles of oil mat section)	\$80,000
	Near milepost 6.0	Remove rock bluff	\$90,000
	T Bridge ³ - north 4 miles	Chip seal	\$40,000
Upper Bridge Creek (a.k.a. Dollarhide Rd)	Hwy 26 - 0.2 miles south	Add base rock and gravel, widen road (0.2 mile section)	\$50,000
	Various	Add culverts	\$20,000
	Various	Extend/replace culverts	\$10,000
County road system	All gravel roads	Add gravel, clean culverts and ditches, and grade roads	\$80,000/yr.
Bridge Maintenance Projects			
Rock Creek (Bridge No. 69C03)	Antone	Clean underside and replace running planks	\$20,000
TOTAL			\$1,425,000⁴

1. FS Bndry = Forest Service Boundary

2. JD R Br = John Day River Bridge

3. T Bridge = Twickenham Bridge

4. Cost includes five years worth of rehabilitating all gravel county roads.

Source: Wheeler County five-year working road and bridge maintenance plan

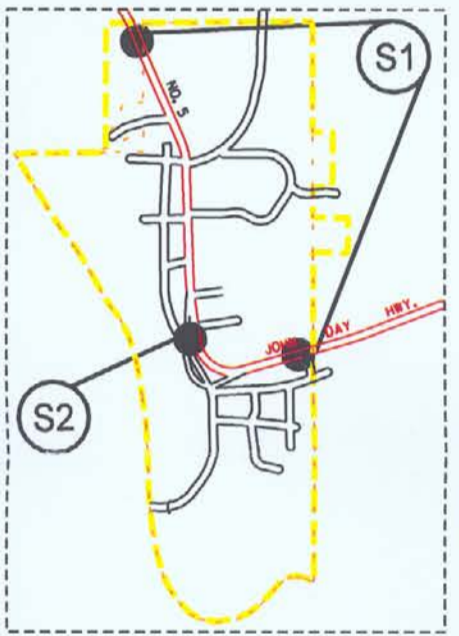
Statewide Transportation Improvement Program (STIP) Projects

The 2000-2003 Statewide Transportation Improvement Program (STIP) is the state's transportation capital improvement program, listing the schedule of transportation projects for the four-year period from 2000 to 2003. Projects in the STIP are funded mainly through federal and state gas tax revenues, but also include local government funding and other state and federal funding sources. The STIP includes projects on the state, city, and county transportation systems as well as projects in the National Parks, National Forests, and Indian Reservations. This program is updated every two years. The STIP lists specific projects, the counties in which they are located, their construction year, and estimated cost.

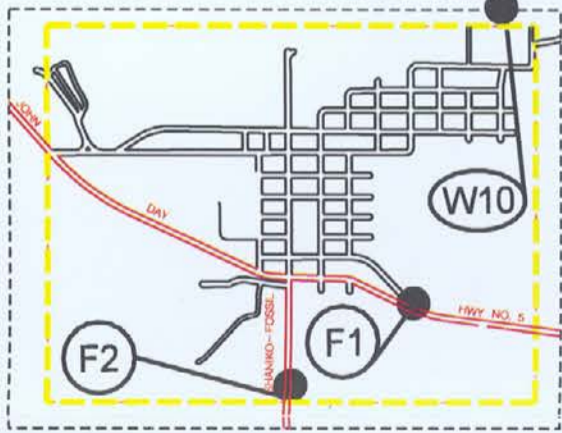
The current 2000-2003 STIP identifies three projects within Wheeler County. These projects are identified in **Figure 7-4**.



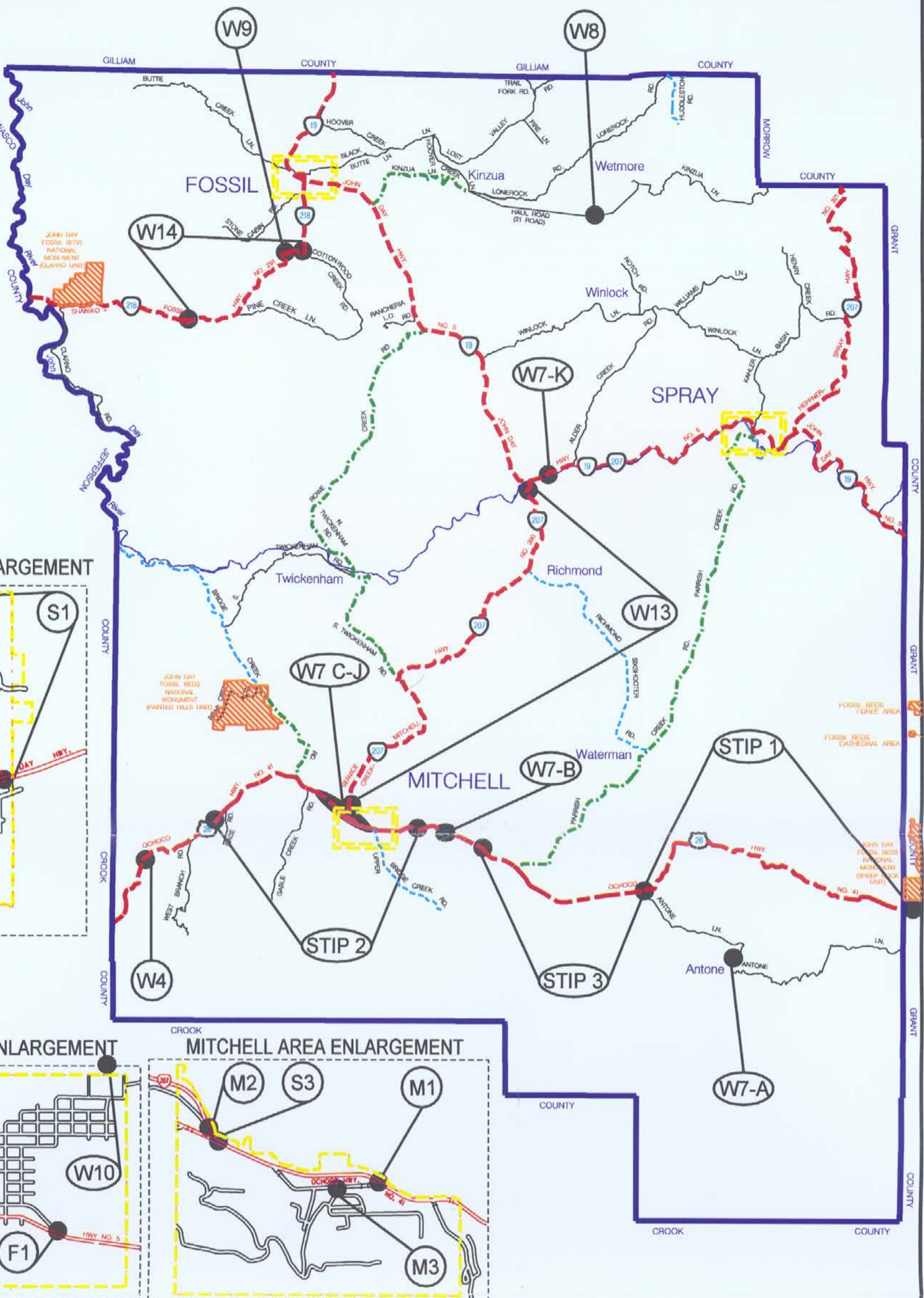
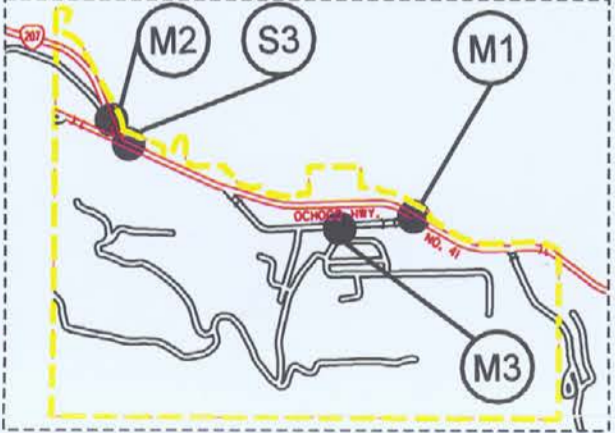
SPRAY AREA ENLARGEMENT



FOSSIL AREA ENLARGEMENT



MITCHELL AREA ENLARGEMENT



WHEELER COUNTY POTENTIAL IMPROVEMENT PROJECTS

MAP LOCATOR	ROAD NUMBER	PROJECT DESCRIPTION	MAP LOCATOR	ROAD NUMBER	PROJECT DESCRIPTION
W4	US 26	INSTALL 2 SCENIC PULLOUTS	STIP 2	US 26	CHIP SEAL (MP 60.0-68.0)
W7	VARIOUS	UPGRADE SUBSTANDARD BRIDGES	STIP 3	US 26	CHIP SEAL (MP 73.2-81.6)
W8	21 ROAD	ESTABLISH NEW COUNTY ACCESS ROAD	F1	OR 19	INSTALL INTERSECTION AHEAD WARNING SIGNS
W9	OR 218	INSTALL WARNING SIGNS NEAR SHARP CURVES	F2	OR 218	EXTEND SPEED ZONE TO FOSSIL UGB
W10	OR 19	CONSTRUCT NEW SIGNS NEAR INDUSTRIAL SITE	M1	US 26	INSTALL EXCLUSIVE LEFT-TURN LANE TO MITCHELL
W11	VARIOUS	UPGRADE SUBSTANDARD SHOULDERS (SEE REPORT)	M2	OR 207	INTERSECTION IMPROVEMENTS AT OR 207 & US 26
W12	VARIOUS	LOCALIZED SHOULDER IMPROVEMENTS (SEE REPORT)	M3	MAIN ST	REPAVE MAIN STREET
W13	OR 207	SAFETY IMPROVEMENTS	S1	OR 19	EXTEND AND LOWER SPEED ZONE ALONG OR 19
W14	OR 218	SAFETY IMPROVEMENTS	S2	OR 19	INTERSECTION REFINEMENTS
STIP 1	US 26	PAVEMENT PRESERVATION (MP 81.6-98.4)	S3	US 26	INSTALL ADDITIONAL DIRECTIONAL SIGNING TO SPRAY

LEGEND:

- URBAN GROWTH BOUNDARY (UGB)
- GENERAL ROADWAY LOCATION
- PROJECT NUMBER
- GENERAL PROJECT LIMITS

FIGURE 7-4

Street System Plan

- US 26 Pavement Preservation - The project involves pavement preservation along US 26 between mileposts 81.6 near Antone Lane and 98.4 near Birch Creek Road. In addition to overlaying the surface the project also includes erosion control, rock scaling, installation of a 1.5-mile westbound climbing lane near milepost 88, and three slow moving vehicle turnouts. Construction is scheduled to begin in federal fiscal year 2002. The project was initially estimated to cost \$3.17 million dollars, but upon receiving an additional \$3 million for erosion control, rock scaling, and installation of a climbing lane and three heavy vehicle turnouts the final cost is approximately \$6.17 million.
- US 26 Chip Seal - The 8-mile segment of US 26 between mileposts 60.0 near Gage Road and 68.0 approximately 1 mile east of Mitchell is planned to receive a chip seal. Construction is scheduled to begin in federal fiscal year 2001 at an estimated cost of \$118,000.
- US 26 Chip Seal - The nearly 8.5-mile segment of US 26 between mileposts 73.2 near Keyes Creek summit and 81.6 near Antone Lane is planned to receive a chip seal. Construction is scheduled to begin in federal fiscal year 2001 at an estimated cost of \$127,000.

No projects were identified within Wheeler County in the draft 2002-2005 STIP.

Other Roadway and Bridge Improvement Projects

In addition to the projects identified previously, 16 roadway projects and 11 bridge projects were identified for implementation within Wheeler County. The roadway and bridge projects are located throughout the county in both rural and urban areas. These roadway and bridge projects were identified through the Wheeler County public involvement process and project evaluation presented in Chapter 6. The 16 recommended roadway projects and 11 bridge projects are illustrated in **Figure 7-4**.

Table 7-6 summarizes the identified roadway improvement projects to be implemented over the 20-year planning horizon along with a short description of project location, project description, and estimated cost.

**TABLE 7-6
ROADWAY SYSTEM IMPROVEMENT PROJECTS**

Project No.	Road	Project Description	Estimated Cost (x \$1000)
W4	US 26	Install two scenic pullouts	\$34
W8	Road 21 (Haul Rd)	Establish new county access road between Kinzua and Wetmore	\$30 ¹
W9	OR 218	Install warning signs near sharp curves (MP 38)	\$.6
W10	New Industrial Rd	Construct new roadway linking industrial site and OR 19	\$1,000 to \$1,700 ³
W11	Various Highways	Upgrade substandard shoulders along state highways	\$10,000 to \$19,000 ³
W12	Various Highways	Localized shoulder improvements along state highways	\$2,045
W13	OR 207	Safety improvements along OR 207	\$600 to \$2,000 ³
W14	OR 218	Safety improvements along OR 218	\$400
F1	OR 19	Install intersection ahead warning signs	\$.2
F2	OR 218	Extend speed zone south to the Fossil UGB	NA ²
M1	US 26	Install westbound left-turn lane to eastern business loop entrance	\$160
M2	OR 207	Intersection improvements at intersection of OR 207 and US 26	\$5
M3	Main Street	Repave Main Street in Mitchell	\$63 to \$135 ⁴
S1	OR 19	Extend and lower speed zone along OR 19 within Spray UGB	NA ²
S2	OR 19	Intersection refinements at intersection of OR 19/Main/Willow St.	\$300 to \$500 ³
S3	US 26	Install additional directional signing to Spray near Mitchell	\$2.5
TOTAL			\$14,640- \$26,012

1. Cost is dependent upon the type of agreement formed between Wheeler County and the landowner.
2. ODOT does not charge local agencies for speed studies and would likely not charge to relocate speed zone signs if speed zone changes are approved.
3. Cost is dependent upon final design
4. Cost is dependent upon if the existing road must be ground down and then repaved or just repaved.

Source: Chapter 6, Wheeler County TSP

Table 7-7 summarizes the identified bridge projects to be implemented over the 20-year planning horizon along with a brief description of project location and cost estimate for project rehabilitation/replacement.

**TABLE 7-7
BRIDGE IMPROVEMENT PROJECTS**

Project No.	Substandard Bridges	Jurisdiction	Rail		Total Cost (\$000)
			Replacement 0-5 years (\$000)	Rehabilitation ¹ 10-20 years (\$000)	
Bridge Replacement					
W7-A	Bridge No. 69C03 on Antone Lane east of Mitchell	County	Na	na	\$91 ²
W7-B	Bridge No. 17094 on US 26, 2.87 miles east of Mitchell	State	Na	na	\$112 ³
Bridge Rehabilitation					
W7-C	Bridge No. 69C05 on Main Street in Mitchell	County	\$21	\$46-\$182	\$66-\$203
W7-D	Bridge No. 07486 on US 26, 0.41 miles west of Mitchell	State	\$16	\$26-\$104	\$42-\$120
W7-E	Bridge No. 07372 on US 26, 0.33 miles west of Mitchell	State	\$17	\$34-\$136	\$51-\$154
W7-F	Bridge No. 07487 on US 26, 0.26 miles west of Mitchell	State	\$21	\$47-\$187	\$68-\$208
W7-G	Bridge No. 07489 on US 26, 0.08 miles west of Mitchell	State	\$22	\$52-\$207	\$74-\$230
W7-H	Bridge No. 07490 on US 26, 0.02 miles west of Mitchell	State	\$21	\$47-\$187	\$68-\$208
W7-I	Bridge No. 07491 on US 26 in Mitchell	State	\$21	\$49-\$197	\$71-\$219
W7-J	Bridge No. 07492 on Main Street in Mitchell	State	\$16	\$24-\$98	\$40-\$113
W7-K	Bridge No. 02235 on OR 19, east of OR 207	State	\$17	\$33-\$131	\$50-\$148
Total			\$173	\$357-\$1,429	\$733-\$1,805

3. Costs vary depending on level of rehabilitation needed for each bridge.

4. Replacement of Bridge No. 69C03 is recommended as a medium priority project (2006-2010), although the condition of the bridge should be closely monitored.

5. Replacement of Bridge No. 17094 is recommended as a low priority project (2011-2020), although the condition of the bridge should be closely monitored.

Source: Chapter 6, Wheeler County TSP

Pedestrian System Plan

The pedestrian system plan addresses pedestrian facility needs within rural areas of the county and within the urban areas of Fossil, Mitchell, and Spray.

Rural

In rural areas, it is typical to accommodate pedestrians and bicyclists on roadway shoulders. Currently, many of the shoulders on both County roads and state highways in Wheeler County can not safely accommodate pedestrians. Therefore, when Wheeler County's roads are paved, repaved, or reconstructed, shoulders should be widened to meet the standards shown in **Figure 7-2**.

Where ODOT shoulder standards (see **Table 7-2**) are not currently met along state highways, appropriately wide paved shoulders should be added to each side of the highway as routine maintenance and/or rehabilitation projects occur. Some highway segments, based on traffic volumes and potential higher bicycle use, should be built with wider shoulders. In areas where existing bicycle use is a safety concern due to poor sight distance or other reasons, ODOT should consider localized shoulder widening projects not associated with scheduled pavement rehabilitation. It should be noted that shoulder widening as part of a larger roadway project can be substantially more economical to construct.

Multi-use paths are popular in rural areas, especially when they provide a viable alternative to a busy highway. Multi-use paths should follow the design standards of the *1995 Oregon Pedestrian and Bicycle Plan*. No paved separated multi-use paths are currently located in Wheeler County and no projects are identified at this time.

Urban

The shorter trips that most people are willing to make by walking supports the fact that the majority of pedestrian traffic in Wheeler County is focused within the Cities of Fossil, Mitchell, and Spray. The majority of pedestrian facilities including sidewalks and paths, although limited, are also located within these cities. Where sidewalks are present, they are generally fragmented and often not on both sides of a street. The sidewalk inventories revealed sidewalks are primarily located in the vicinity of community resources, such as schools, shops, and churches, which generate higher levels of pedestrian traffic. Additional interconnected pedestrian facilities should be implemented in the cities of Fossil, Mitchell, and Spray when feasible.

Because of the small sizes of Fossil, Mitchell, and Spray and the limited public resources available for transportation system improvements, sidewalk construction on a large scale does not appear feasible without some form of state or federal grant assistance. Therefore, the cities are focused on phasing construction to ensure that key streets have sidewalks on at least one side of the street. **Figures 7-5** through **7-7** illustrate how the cities sidewalk improvements enhance pedestrian connectivity throughout the three cities.

Pedestrian access on walkways should be provided continuously between businesses, parks, and adjacent neighborhoods. Ordinances specifying these requirements are included in a separate document titled "Implementing Policies and Ordinances."

The primary goal of establishing a pedestrian system is to improve pedestrian safety; however, an effective sidewalk system has several qualitative benefits as well. Providing adequate pedestrian facilities increases the livability of a city. When pedestrians can walk on a sidewalk, separated from vehicular street traffic, it makes the walking experience more enjoyable and may encourage walking, rather than driving, for short trips. Sidewalks enliven a downtown and encourage leisurely strolling and window shopping in commercial areas. This "Main Street" effect improves business for downtown merchants and provides opportunities for friendly interaction among residents. It may also have an appeal to tourists as an inviting place to stop and walk around.

All new sidewalk construction in the three cities should include curb cuts for wheelchairs at every street corner to comply with the Americans with Disabilities Act (ADA). The addition of crosswalks should also be considered at all major intersections. As street improvements are made to the existing street system, projects involving the construction of new sidewalks may require on-street parking to be implemented in place of parking on grass or gravel shoulders.

In Chapter 6, three projects (F3, M4, and S4) recommended improving sidewalk connectivity within each of the three cities. **Table 7-8** summarizes these projects, the local preference for prioritizing pedestrian improvements, and estimated cost.

**TABLE 7-8
PEDESTRIAN SYSTEM PROJECTS**

Street	Description	Local Priority	Cost
Fossil Pedestrian Facilities			
Main St.	Construct/repair sidewalk along east side between B Street and OR 19	High	\$20,500
Main St.	Construct sidewalk along west side between B Street and OR 19	Medium	\$30,750
Washington St.	Construct sidewalk along east side between Broadway and 1 st Street	Low	\$5,000
Washington St.	Construct/repair sidewalk along west side between Broadway and 3 rd Street	Medium	\$16,000
Adams St.	Construct sidewalks along both sides between 1 st and 3 rd Street	Medium	\$21,250
Broadway St.	Construct sidewalk along the south side between Washington and Main Street	Low	\$7,500
1 st St.	Construct sidewalk along north side between Broadway and Ellsworth Street	Medium	\$58,500
1 st St.	Construct/repair sidewalk along south side between OR 19 and Adams Street	High	\$76,750
2 nd St.	Construct sidewalk along the south side between Washington and Main Street	High	\$7,500
3 rd St.	Construct sidewalk along both sides between Adams and Main Street	High	\$30,000
OR 19	Widen shoulder along north side between Adams and Main Street	Low	\$9,000
Subtotal Fossil High Priority Projects			\$134,750
Subtotal Fossil Medium Priority Projects			\$126,500
Subtotal Fossil Low Priority Projects			\$21,500
Mitchell Pedestrian Facilities			
Main St.	Construct/repair sidewalks along both sides between US Post office and Oregon Hotel	High	\$34,200
Pedestrian Path	Repair/reconstruct pedestrian path between High and Nelson Street	High	\$7,800
Nelson St.	Repair/reconstruct sidewalk along east side between pedestrian path and Main Street	Medium	\$16,800
High St.	Construct sidewalk along the south side between School Buildings and Gym	Low	\$37,500
Subtotal Mitchell High Priority Projects			\$42,000
Subtotal Mitchell Medium Priority Projects			\$16,800
Subtotal Mitchell Low Priority Projects			\$37,500
Spray Pedestrian Facilities			
OR 19	Construct an east side sidewalk between Pine and North Avenue	High	\$6,750
OR 19	Construct a west side sidewalk between North Avenue and Willow Street	High	\$10,750
OR 19	Construct sidewalks along both sides between the Northern UGB and Winlock Street	Medium	\$54,250
OR 19	Construct a west side sidewalk between Cox and Park Avenue	Medium	\$9,250
OR 19	Construct a west side sidewalk between Park and North Avenue	Medium	\$6,750
Main St.	Construct sidewalks along both sides between Juniper Avenue and the western city limits	Low	\$53,000
Subtotal Spray High Priority Projects			\$17,500
Subtotal Spray Medium Priority Projects			\$70,250
Subtotal Spray Low Priority Projects			\$53,000
Total High Priority Projects			\$194,250
Total Medium Priority Projects			\$213,550
Total Low Priority Projects			\$112,000
Total			\$519,800

Note: Unit costs of \$25-\$30 per lineal foot used to determine project costs. The cost may be substantially lower based on final sidewalk design and whether Wheeler Co. Road Department or city maintenance performs part or all of the construction.

Source: Chapter 6, Wheeler County TSP; City representatives indicated priority

- URBAN GROWTH BOUNDARY (U.G.B.)
- EXISTING SIDEWALKS
- PED / BIKE PATH ON WIDE SHOULDER (6' PAVED ASPHALT)
- - - - - CITY LIMITS
- - - - - FUTURE SIDEWALKS
- »»»»»»»»»» REPAIR / RECONSTRUCT EXISTING SIDEWALKS

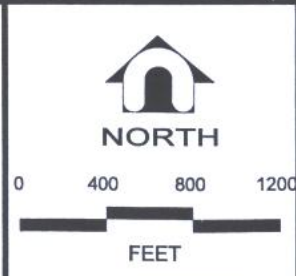
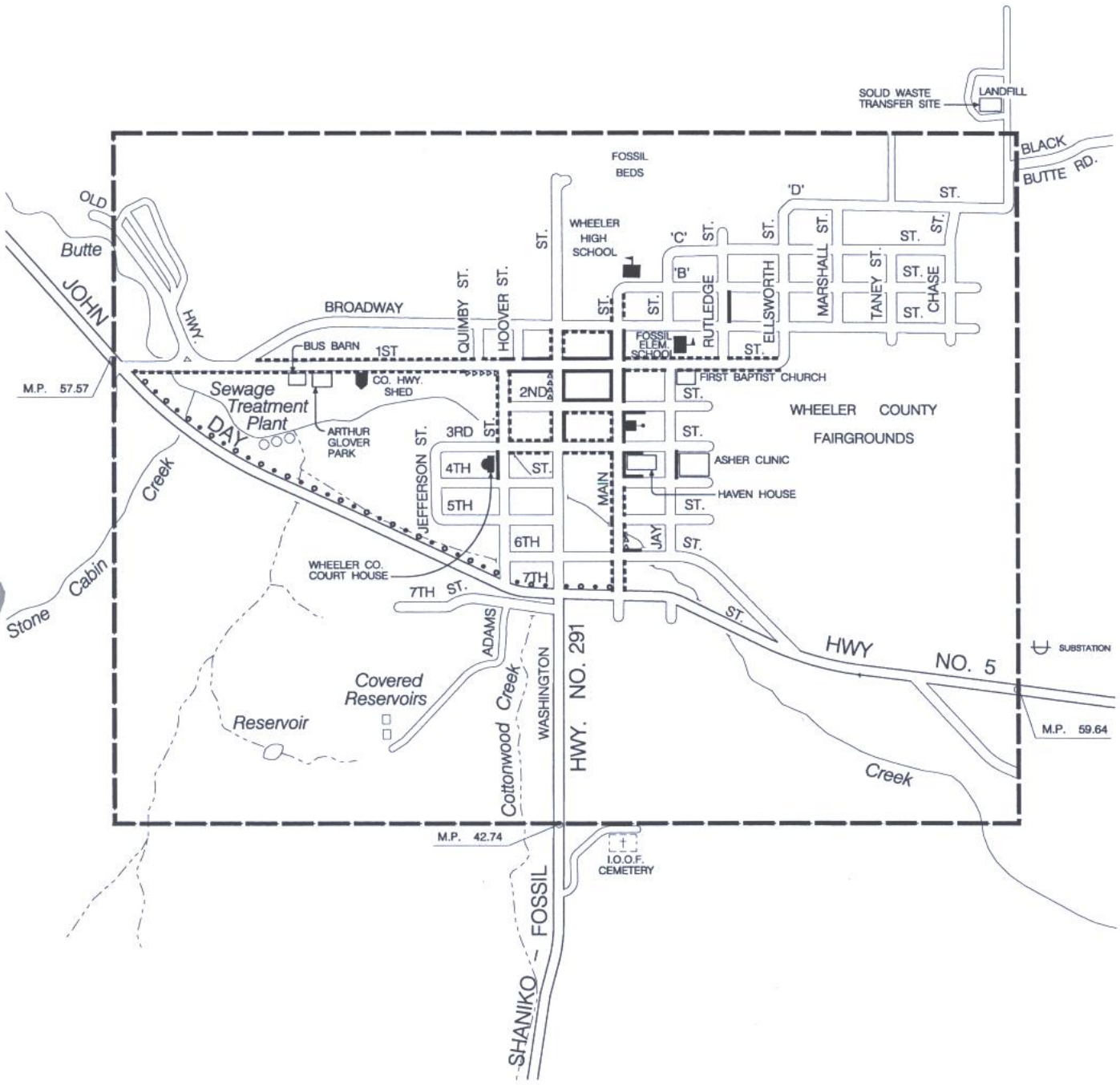


FIGURE 7-5
**Pedestrian System Plan
 - Fossil**

WHEELER COUNTY TSP

- URBAN GROWTH BOUNDARY (U.G.B.)
- EXISTING SIDEWALKS
- CITY LIMITS
- FUTURE SIDEWALKS

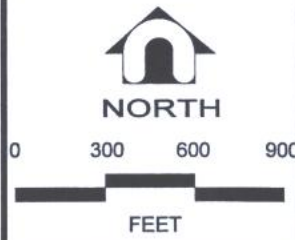
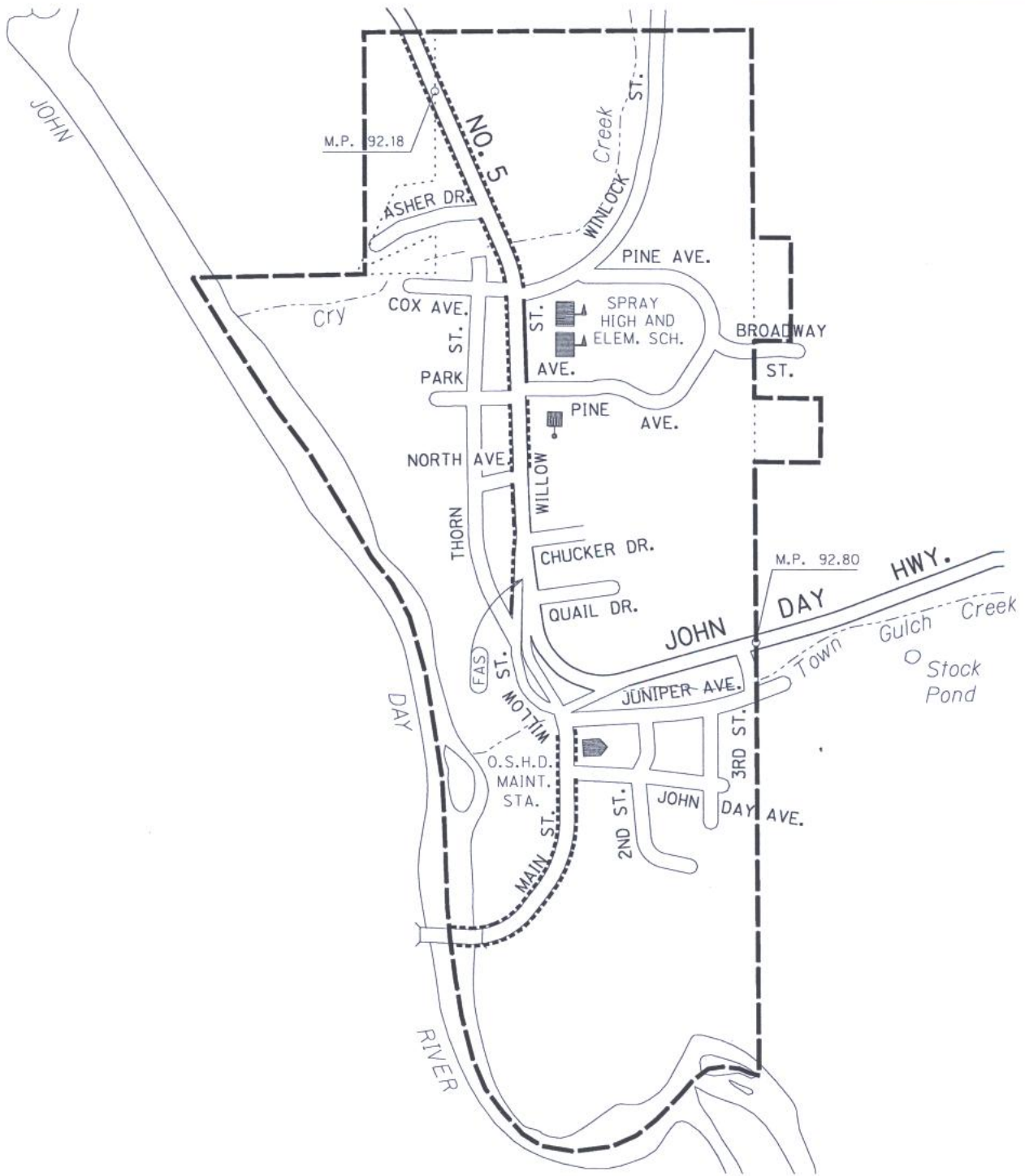


FIGURE 7-7

Pedestrian System Plan - Spray

WHEELER COUNTY TSP

Bicycle System Plan

The bicycle system plan addresses bicycle facility needs within rural areas of the county along county roads and state highways and within the urban areas of Fossil, Mitchell, and Spray.

County Roads

At present, nearly 50 percent of County roads in Wheeler County are gravel surfaced. Existing gravel shoulders present bicyclists with a potentially dangerous situation because of the lack of stability inherent in gravel. Gravel can redirect bicycle tires and lead to accidents. A bicycle redirected onto the traveled road could be very serious.

Only County roads that are paved (asphalt or chip seal) and provide appropriately wide paved shoulders offer a safe facility for bicycle use. Along County roads where the County intends to provide for safe bicycle use and efficient bicycle connectivity, the county will need to pave existing gravel roads and ensure that new roads are built and paved to the standards provided in this chapter.

County roads where paved shoulders are less than four feet wide constitute a shared roadway facility where motor vehicle traffic and bicyclists share the road. Drivers wanting to pass a bicyclist would potentially need to swing wide to pass bicyclists. Where paved shoulders are at least four feet wide, a shoulder bikeway exists and bicyclists can ride completely separated from motor vehicle traffic. Drivers can pass bicyclists within their own lane. A shoulder bikeway provides a bicyclists with greater separation from traffic and can provide a safer feeling for bicyclists. Wider shoulders also provide bicyclists with a larger area to avoid roadway debris without needing to swerve into the travel lane.

Urban Roads

The 1995 *Oregon Bicycle and Pedestrian Plan* describes the applicability of shared roadway bikeway facilities along roadways with low speeds (≤ 25 mph) and low daily traffic volumes ($\leq 3,000$ vpd). These low volume, low speed, roadways typically accommodate the safe and efficient shared mobility of motorists and bicyclists. Average daily traffic volumes are not forecast to reach even 1,000 vpd in Fossil, or Spray but will reach nearly 1,800 vpd along US 26 in Mitchell over the 20-year planning horizon.

Bicycle parking is limited in the urban areas and may limit bicycle use. Amenities such as covered bike parking or secured bike lockers may be considered to promote bicycle use. Bike racks should be installed near community activity centers and in front of all public facilities (schools, post office, library, city hall, and parks). Typical rack designs cost about \$50 per bike plus installation. An annual budget of approximately \$1,500 to \$2,000 should be established for Fossil, Mitchell, and Spray so each city can begin to place racks where needs are identified and to respond to requests for racks at specific locations.

Highways

Based on forecast 2020 traffic volume along state highways throughout Wheeler County, **Table 7-9** summarizes the appropriate paved shoulder widths that should be built along each highway.

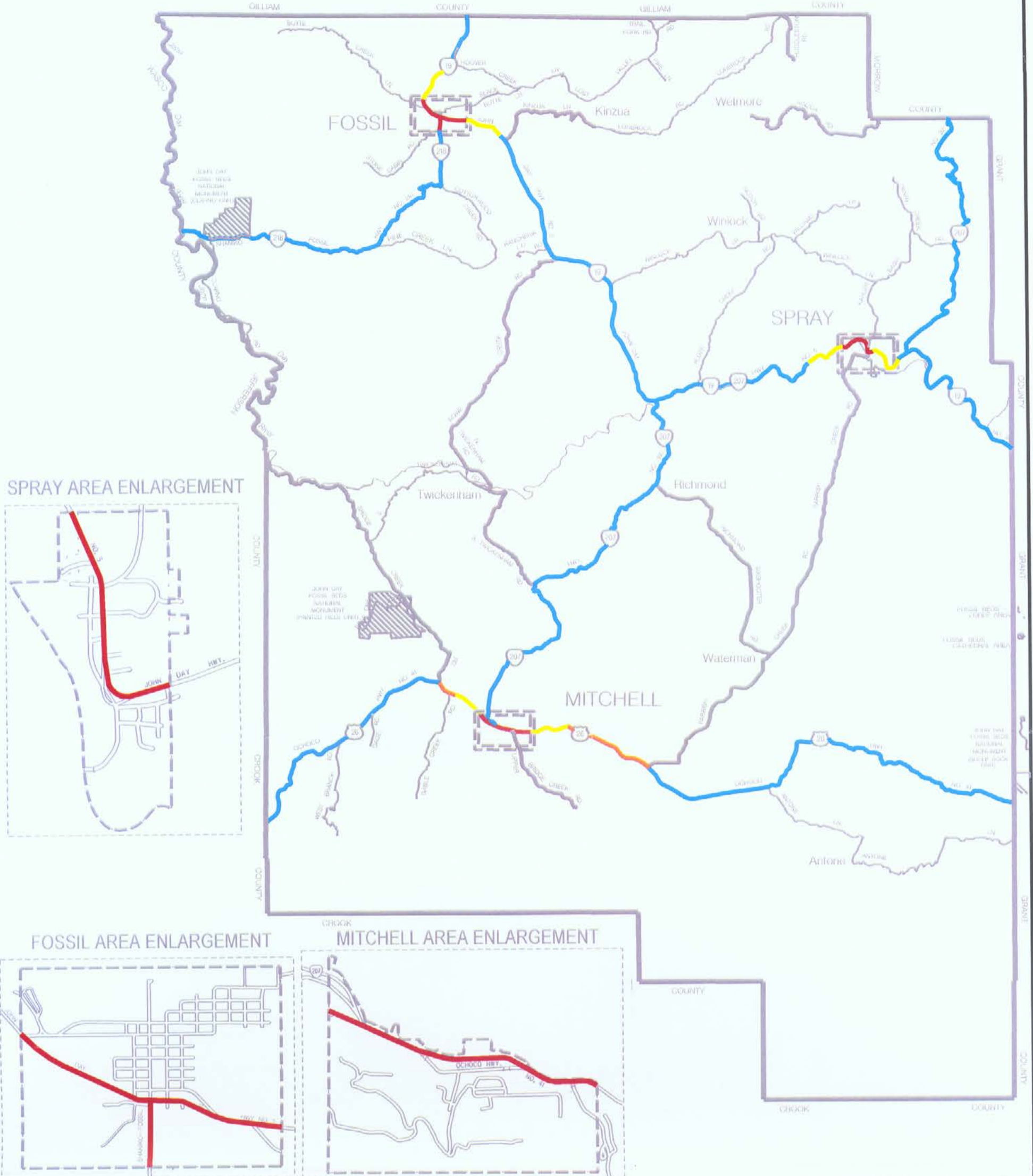
**TABLE 7-9
SHOULDER WIDTHS ON STATE HIGHWAYS**

Highway Section	2020 ADT	2020 DHV	2020 Paved Shoulder Widths (ft)
US 26			
Rural- Crook/Wheeler Co. line to Mitchell (MP 50.03 - 65.80)	1750	230	8
Urban- Mitchell (MP 65.80 - 66.88)	1680	220	8
Rural- Mitchell to Wheeler/Grant Co. line (MP 66.88 - 96.89)	855	120	6
OR 19			
Rural- Gilliam/Wheeler Co. line to Fossil (MP 52.06 - 57.57)	410	60	6
Urban- Fossil (MP 57.57 - 59.64)	475	70	6
Rural- Fossil to Spray (MP 59.64 - 92.18)	430	60	6
Urban- Spray (MP 92.18 - 92.80)	550	80	6
Rural- Spray to Wheeler/Grant Co. line (MP 92.80 - 104.73)	305	40	4
OR 207 (Heppner-Spray Highway)			
Rural- Morrow/Wheeler Co. line to OR 19 (MP 24.65 - 40.96)	160	30	4
OR 207 (Service Creek-Mitchell Highway)			
Rural- OR 19 to Mitchell (MP 0.00 - 24.13)	335	50	4
Urban- Mitchell (MP 24.13 - 24.32)	475	70	6
OR 218			
Rural- Wasco/Wheeler Co. line to Fossil (MP 23.07 - 42.74)	210	30	4
Urban- Fossil (MP 42.74 - 42.96)	355	50	4

Source: Traffic forecasts from Chapter 6 of the Wheeler county TSP, shoulder standards from Table 7-2 of the TSP

Based on forecast traffic volumes, all state highways throughout Wheeler County require a minimum of 4-foot directional paved shoulders, with segments along US 26, OR 19, and OR 207 (Service Creek-Mitchell Hwy) requiring 6- to 8-foot paved shoulders. Where highway shoulders are not currently in accordance with published ODOT standards, appropriately wide paved shoulders should be added to each side of the highway as routine maintenance and/or rehabilitation projects occur. In areas where existing bicycle use is a safety concern due to poor sight distance or other issues, ODOT should consider localized shoulder widening projects not associated with scheduled pavement rehabilitation. It should be noted that shoulder widening as part of a larger roadway project can be substantially more economical to construct.

In Chapter 6, two projects (project numbers W11 and W12) describe upgrading substandard shoulders throughout Wheeler County. Project W11 involves adding appropriately wide paved shoulders to each side of the highway as routine maintenance and/or rehabilitation projects occur. The unit cost to add appropriately wide shoulders ranges between \$10 to \$40 per linear foot depending upon the various degree of construction required, resulting in an estimated project cost between \$10 and \$19 million. In areas of high bicycle usage or where existing bicycle use is a safety concern, Project W12 identifies primary locations where Wheeler County would like to receive localized shoulder widening in the next five years regardless of whether associated pavement rehabilitation is planned. Wheeler County has grouped the primary locations into three priorities (high, medium, and low). **Table 7-10** summarizes the location, appropriate width of shoulder, and estimated cost for the primary locations to receive shoulder widening as localized projects. **Figure 7-8** illustrates the proposed shoulder improvements through routine maintenance and localized projects along state highways.



LEGEND:

LOCALIZED SHOULDER IMPROVEMENTS -

- PRIORITY 1
- PRIORITY 2
- PRIORITY 3
- UPGRADE SUBSTANDARD SHOULDERS TO APPROPRIATE WIDTH BASED ON TABLE 7-7 IN REPORT

NORTH

MILES

1 2 3 4 5

FIGURE 7-8

Shoulder Improvements along State Highways in Wheeler County

**TABLE 7-10
LOCALIZED PROJECT SHOULDER COST ESTIMATE**

Highway (Location)	Action	Side of Highway	Total Length	Unit Cost per Foot	Total Cost
Priority 1					
OR 19 (Within Fossil UGB) (MP 57.57-59.64)	Add 6' paved shoulders	Both	9,400 ft	\$20	\$188,000
OR 218 (Within Fossil UGB) (MP 42.74-42.96)	Add 4' paved shoulders	Both	1,200 ft	\$15	\$18,000
US 26 (Within Mitchell UGB) (MP 65.80-66.88)	Add 8' paved shoulders	Both	5,700 ft	\$10	\$57,000
OR 19 (Within Spray UGB) (MP 92.18-92.80)	Add 6' paved shoulders	Both	3,300 ft	\$25	\$82,500
Priority 2					
OR 19 (MP 55.57-MP 57.57) (MP 59.64-MP 61.64)	Add 6' paved shoulders	Both	21,120 ft	\$20	\$422,400
US 26 (MP 63.80-MP 65.80) (MP 66.88-MP 68.88)	Add 8' paved shoulders Add 6' paved shoulders	Both	21,120 ft	\$15	\$316,800
OR 19 (MP 90.18-MP 92.18) (MP 92.80-MP 94.80)	Add 6' paved shoulders Add 4' paved shoulders	Both	21,120 ft	\$25	\$528,000
Priority 3					
US 26 (Bridge Creek Rd (MP 62.57)-MP 63.80) (MP 68.88-Parrish Creek Rd (MP 75.23))	Add 8' paved shoulders Add 6' paved shoulders	Both	6,500 ft 33,500 ft	\$15 \$10	\$432,500
Total High Priority Projects					\$345,500
Total Medium Priority Projects					\$1,267,200
Total Low Priority Projects					\$432,500
Total			122,960 ft		\$2,045,200

Note: Unit costs of \$10-\$40 per lineal foot used to determine project costs. The cost may be substantially lower based on final shoulder design and whether project is constructed as part of a larger roadway project.

Source: Wheeler County representatives, costs computed by David Evans and Associates, Inc.

Transportation Demand Management Plan

Through transportation demand management (TDM), peak travel demands can be reduced or spread to more efficiently use the transportation system, rather than building new or wider roadways. Techniques, which have been successful and could be initiated to help alleviate some traffic congestion, include carpooling and vanpooling, alternative work schedules, bicycle and pedestrian facilities, and programs focused on high-density employment areas.

In Wheeler County, where traffic volumes are low and the population and employment is small, implementing TDM strategies is not practical in most cases. However, the pedestrian and bicycle improvements recommended earlier in this chapter are also considered TDM strategies. By providing these facilities, Wheeler County is encouraging people to travel by other modes than the automobile. In rural communities, TDM strategies include providing mobility options.

Intercity commuting may be a factor in Wheeler County where residents live in one city and work in other cities. Where this occurs, people should be encouraged to carpool with a fellow coworker or someone who works in the same area. Wheeler County should consider creating a rideshare program, which could further boost carpooling ridership.

No costs have been estimated for the TDM plan. Grants may be available to set up programs; other aspects of Transportation Demand Management can be encouraged through ordinance and policy.

Public Transportation Plan

The Oregon Transportation Plan indicates that intercity passenger service should be available for an incorporated city or group of cities within five miles of one another having a combined population of over 2,500 and located 20 miles or more from the nearest Oregon city with a larger population and economy. Services should allow a round trip to be made within a day.

Wheeler County does not meet these requirements nor does it appear needed or economically feasible to provide intercity transit within the county. However, if in the future Wheeler County identifies a need or desire to begin such service, state support is usually necessary to get this kind of service started. For regular intercity service to have a chance of success, it must attract riders from the general public, not just the elderly. Ideally it should connect with Greyhound service. Further, it must run at regularly scheduled times so that people may depend on the service.

The Wheeler County Transportation Service provides countywide demand responsive (or dial-a-ride) transit service operated by the Wheeler County Court for the elderly (60+) and persons with disabilities. The service has a program coordinator who works with local committees in each city to plan scheduled trips. Since service is countywide, one vehicle is assigned to the cities of Fossil, Mitchell, and Spray at all times to service the cities and surrounding area.

The program currently operates one 1998 6-person minivan, one 1992 12-14 person small bus and one 1996 10-person van. The bus and minivan are wheelchair accessible. Plans are underway to acquire one additional small bus equipped with a wheelchair lift by 2001. The existing small bus will be used for approximately one additional year after the new bus is received.

Wheeler County will continue to replace their transit vehicle fleet as needed during the next 20 years based on established vehicle replacement standards from ODOT. Failure to replace transit vehicles based on ODOT's vehicle replacement intervals may result in a loss of dial-a-ride transit service for Wheeler County.

The Grant County Transportation Service provides county-wide and regional bus service (called the "People Mover") between John Day in Grant County and Bend in Deschutes County with intermediate stops in the cities of Mt. Vernon, Dayville, Mitchell, Prineville, and Redmond. The only scheduled stop within Wheeler County is located in the City of Mitchell. Unlike dial-a-ride service, passengers must catch the People Mover at assigned locations within each city.

School bus service is provided for each of the three school districts in Wheeler County located in the cities of Fossil, Mitchell, and Spray. Mitchell and Spray own and maintain their own buses. Fossil contracts bus services through the Mid-Columbia Bus Company. Expansion of the school bus services is not required at this time.

There is no identified need to expand the dial-a-ride program or people Mover services within Wheeler County over the next 20 years. However, Wheeler County shall continue to monitor usage and demand levels over the years and investigate service expansion as the need arises.

Rail Service Plan

There is no existing rail infrastructure within Wheeler County. Based on discussions with ODOT's freight and passenger rail planners, there is no identified need or plans for rail service development within Wheeler County over the next 20 years.

Air Service Plan

Wheeler County has three operational air service facilities registered with the Oregon State Aviation Department. Two private airstrips include the Collins Landing Strip located 21 miles northeast of Mitchell and the Kinzua General Aviation Recreational Airport located 8.5 miles east of Fossil. The third facility is a helicopter pad operated by the Oregon State Forest Department (OSFD) located 5 miles southeast of Fossil.

The nearest public use airport to Wheeler County is Condon State Airport's - Pauling Field in Condon, OR. This facility is owned by the state and has one concrete runway measuring 3,500 feet by 60 feet. The facility is equipped with medium intensity runway lighting, supporting nighttime operations. The airport primarily serves private and charter users but is not staffed.

One of the nearest passenger-use airports is located in Pendleton. Eastern Oregon Regional Airport in Pendleton is a tower-controlled airport with 40,600 annual operations. Passenger service includes 16 scheduled flights per day by Horizon Airlines, with flights to Portland and Seattle. The other closest passenger-use airports to Wheeler County are located in Bend and Redmond.

Air Life of Oregon, a medically urgent air transportation service based in Bend, OR, serves medical emergencies in Wheeler County. Air Life provides helicopter service to the Asher Clinic in Fossil, the High School in Mitchell, and the Rodeo Grounds in Spray. Due to runway length requirements for airplanes, fixed-wing Air Life service is not available in Wheeler County.

Some residents and public officials of Wheeler County have identified the need to pursue development of a public use airstrip in Wheeler County. Public officials and residents of Wheeler County should continue to discuss the future need of a public use airport within the county. If people feel strongly about this issue, and a need can be established, the county should work with the State Aviation Section to develop the necessary plans and justification to apply for funding and begin necessary siting studies and other planning functions.

Pipeline Service Plan

There is no existing pipeline infrastructure within Wheeler County and development is not identified to occur over the next 20 years.

Water Transportation Plan

The TSP process evaluates only the commercial use of water systems within Wheeler County to move goods and services. Recreational water use is not evaluated. There is no identified plan to develop commercial movement of goods and services in Wheeler County by water over the next 20 years.

TRANSPORTATION SYSTEM PLAN IMPLEMENTATION PROGRAM

Implementation of the Wheeler County Transportation System Plan will require changes to the County comprehensive plan, subdivision ordinances, and zoning code. It also involves preparation of a 20-Year Capital Improvement Plan (CIP). These actions will enable Wheeler County to address both existing and emerging transportation issues throughout the county in a timely and cost effective manner. This implementation program

is focused on providing Wheeler County with the tools to amend the comprehensive plan and zoning ordinance to conform with the Oregon Transportation Planning Rule and to fund and schedule transportation system improvements.

One part of the implementation program is the formulation of a 20-year transportation project list. The purpose of the project list is to detail the identified transportation system improvements needed as Wheeler County grows and to provide a process to fund and schedule the identified transportation system improvements. It is expected that the 20-year transportation project list can be integrated into the existing County CIP and the ODOT STIP, and the CIPs of the various cities in Wheeler County involved in related projects. This integration is important since the Transportation System Plan proposes that county, city, and state governmental agencies fund all or portions of the transportation improvement projects.

Model policy and ordinance language that conforms with the requirements of the Transportation Planning Rule is included in a separate document titled "Implementing Policies and Ordinances." The proposed ordinance amendments will require approval by the Wheeler County Planning Commission and adoption by the Wheeler County Court. The City Councils of Fossil, Mitchell, and Spray are encouraged to discuss the elements of the Wheeler County TSP that affect their communities and consider revisions to their Comprehensive Plans as needed to incorporate applicable elements of the County TSP.

20-Year Transportation Project list

The 20-year transportation project list is presented in **Table 7-11** and consists of the potential projects reviewed in Chapter 6 of the TSP that were recommended for implementation over the next 20 years. For consistency, recommended projects maintain their original project number for ease of reference between Chapters 6 and 7 of this report. Recommended projects are listed by the following priorities:

- High Priority (next 0 to 5 years)
- Medium Priority (5 to 10 years)
- Low Priority (10 to 20 years)

These priorities are based on current need, the relationship between transportation service needs and the expected growth of the county, and a reasonable balance of near and long-term expenditures. The following schedule indicates priorities and may be modified to reflect the availability of finances or the actual growth in population and employment.

Estimated year 2000 project costs are associated with the jurisdiction responsible for coordinating funding. For example, the City of Fossil has the responsibility to coordinate funding for local sidewalk improvements. The city may do this by paying for improvements themselves or by applying for a state or federal grant to fund the project. Estimated project costs include design, construction, and some contingency costs. They are preliminary estimates and do not include right-of-way acquisition, water or sewer facilities, or detailed intersection design.

Rural Projects

Of the 23 improvement projects identified in Wheeler County, 12 are located within rural areas of the County. The total estimated cost of rural projects is approximately \$33.9 million not including the potential cost of building a public use airstrip that is conceptual at this point. The breakout of cost by priority is as follows: estimated high priority project cost is \$28.9 million, medium priority cost is \$3.0 million, and low priority cost is \$2.0 million excluding potential airport development costs.

It should be noted that \$6.4 million of the total \$33.9 million in identified projects is accounted for in the three STIP projects along US 26. These projects are fully funded and will be constructed this year. Excluding the three STIP projects along US 26 and the general upgrading of substandard shoulders project (Project W11 - \$19 million), the total estimated cost for the rural projects is \$8.5 million.

Urban Projects

The City of Fossil has identified three improvement projects to be completed within the 20-year planning horizon. The total estimated cost for the three City of Fossil improvement projects is approximately \$283,000. The breakout of cost by priority is as follows: estimated high priority cost is \$135,000, medium priority cost is \$126,500, and low priority cost is \$21,500.

The City of Mitchell has identified four improvement projects to be completed within the 20-year planning horizon. The total estimated cost for the four City of Mitchell improvement projects is approximately \$396,300. The breakout of cost by priority is as follows: estimated high priority cost is \$342,000, medium priority cost is \$16,800, and low priority cost is \$37,500.

The City of Spray has identified four improvement projects to be completed within the 20-year planning horizon. The total estimated cost for the four City of Spray improvement projects is approximately \$643,250. The breakout of cost by priority is as follows: estimated high priority cost is \$520,000, medium priority cost is \$70,250, and low priority cost is \$53,000.

**TABLE 7-11
PRIORITIZED 20-YEAR TRANSPORTATION PROJECT LIST**

Project Number/Description	Estimated Cost Allocation			
	County	State	City	Total
High Priority (2000-2005)				
W6 Replace dial-a-ride transit fleet	\$501,400			\$501,400
W7 Short term Bridge rehabilitation (see Table 7-7)		\$173,000		\$173,000
W8 Establish new county access road between Kinzua and Wetmore	\$30,000 ³			\$30,000 ³
W11 General shoulder widening along state highways		\$19,000,000 ²		\$19,000,000 ²
W12 Localized shoulder improvements - high priority		\$345,500		\$345,500
W13 Safety improvements along OR 207		\$2,000,000 ²		\$2,000,000 ²
W14 Safety improvements along OR 218		\$400,000 ²		\$400,000 ²
F1 Install intersection ahead warning signs along OR 19 near 7 th Street		\$200		\$200
F2 Extend speed zone south along OR 218 to Fossil UGB			NA ⁴	NA ⁴
F3 City of Fossil high priority pedestrian facilities			\$134,750	\$134,750
M1 Install exclusive left-turn lane to eastern business loop entrance		\$160,000		\$160,000
M2 Intersection improvements at intersection of OR 207 and US 26		\$5,000		\$5,000
M3 Repave Main Street in Mitchell	\$135,000 ²			\$135,000 ²
M4 City of Mitchell high priority pedestrian facilities			\$42,000	\$42,000
S1 Extend and lower speed zone along OR 19			NA ⁴	NA ⁴
S2 Intersection refinements at intersection of OR 19/Willow/Main St.		\$500,000 ²		\$500,000 ²
S3 Install additional directional signing to Spray along US 26 near Mitchell			\$2,500	\$2,500
S4 City of Spray high priority pedestrian facilities			\$17,500	\$17,500
STIP 1 ¹ Pavement preservation on US 26 from MP 81.6 - 98.4		\$6,170,000		\$6,170,000
STIP 2 ¹ Chip seal along US 26 from MP 60.0 - 68.0		\$118,000		\$118,000
STIP 3 ¹ Chip seal along US 26 from MP 73.2 - 81.6		\$127,000		\$127,000
Medium Priority (2006-2010)				
W4 Install two scenic pullouts along US 26		\$34,000		\$34,000
W7 Intermediate term Bridge rehabilitation (see Table 7-7)		\$91,000		\$91,000
W9 Install warning signs along OR 218 near sharp curves (MP 38)		\$570		\$570
W10 Construct new roadway linking industrial site and OR 19	\$1,700,000 ²			\$1,700,000 ²
W12 Localized shoulder improvements - medium priority		\$1,267,200		\$1,267,200
F3 City of Fossil medium priority pedestrian facilities			\$126,500	\$126,500
M4 City of Mitchell medium priority pedestrian facilities			\$16,800	\$16,800
S4 City of Spray medium priority pedestrian facilities			\$70,250	\$70,250
Low Priority (2011-2020)				
W1 Implement TDM measures		TBD		TBD
W5 Construct a public use airstrip in Wheeler County	TBD			TBD
W7 Long term Bridge rehabilitation (see Table 7-7)		\$1,541,000 ²		\$1,541,000 ²
W12 Localized shoulder improvements - low priority		\$432,500		\$432,500
F3 City of Fossil low priority pedestrian facilities			\$21,500	\$21,500
M4 City of Mitchell low priority pedestrian facilities			\$37,500	\$37,500
S4 City of Spray low priority pedestrian facilities			\$53,000	\$53,000
Subtotal High Priority Projects	\$666,400	\$28,998,700	\$196,750	\$29,861,850
Subtotal Medium Priority Projects	\$1,700,000	\$1,392,770	\$213,550	\$3,306,320
Subtotal Low Priority Projects	\$0	\$1,973,500	\$112,000	\$2,085,500
WHEELER COUNTY TOTAL	\$2,366,400	\$32,364,970	\$522,300	\$35,253,670

Notes

- 2000-2003 STIP project.
- The higher cost estimate has been illustrated; the ranges are shown in Table 7-6 and Table 7-7.
- Cost is dependent upon the type of agreement formed by Wheeler County and the landowner.
- ODOT does not charge local agencies for speed studies.

TBD - To Be Determined

Source: TAC recommendations based on Chapter 6, Wheeler County TSP

CHAPTER 8: FUNDING OPTIONS AND FINANCIAL PLAN

The Transportation Planning Rule requires TSPs to include an evaluation of the funding environment for identified improvements. This evaluation must include a listing of all identified transportation improvement projects, estimated costs to implement those improvements, and a review of potential funding mechanisms. Wheeler County’s TSP identifies 23 specific capital improvement projects over the next 20 years. This section of this TSP provides an overview of some funding and financing options that may be available to Wheeler County and local jurisdictions to fund these improvements.

While many parts of Oregon are experiencing increased development pressure, many of the transportation projects needed to support the resulting increases in population and traffic remain unfunded. Wheeler County will need to work with its incorporated cities and ODOT to secure and allocate the necessary funds for any proposed new transportation projects over the 20-year planning horizon, which will be determined by the rate of population and employment growth experienced by the community. This TSP assumes Wheeler County will grow at the rate forecast by the State of Oregon Office of Economic Analysis over the next 20 years. If population growth exceeds this rate, the improvements may need to be accelerated. Slower than expected growth will relax the improvement schedule.

HISTORICAL STREET IMPROVEMENT FUNDING SOURCES

In Oregon, state, county, and city jurisdictions work together to coordinate transportation improvements. **Table 8-1** shows the distribution of road revenues for the different levels of government within the state by jurisdiction level. Although these numbers were collected and tallied in 1991, ODOT estimates that these figures accurately represent the current revenue structure for transportation-related needs.

**TABLE 8-1
SOURCES OF ROAD REVENUES BY JURISDICTION LEVEL**

Revenue Source	Jurisdiction Level			Statewide Total
	State	County	City	
State Road Trust	58%	38%	41%	48%
Local	0%	22%	55%	17%
Federal Road	34%	40%	4%	30%
Other	8%	0%	0%	5%

Source: ODOT 1993 Oregon Road Finance Study

At the state level, nearly half (48 percent in Fiscal Year 1991) of all road-related revenues are allocated from the State Highway Fund, which includes funds from fuel taxes, weight-mile taxes on trucks, and vehicle registration fees. As shown in **Table 8-1**, the State Road Trust is a considerable source of revenue for all levels of government. Federal sources (generally the Federal Highway Trust account and Federal Forest Revenues) comprise another 30 percent of all road-related revenue. The remaining sources of road-related revenues are generated locally and include property taxes, Local Improvement Districts (LID), bonds, traffic impact fees, road user taxes, general fund transfers, receipts from other local governments, and other miscellaneous sources.

The State of Oregon generates 94 percent of its highway revenues from user fees, compared to 78 percent nationally. This fee system, including fuel taxes, weight distance charges, and registration fees, is regarded as equitable because it places the greatest financial burden upon those who create the greatest need for road maintenance and improvements. Unlike many states that have indexed user fees to inflation, Oregon has static road-revenue sources. For example, rather than assessing fuel taxes as a percentage of price per gallon, Oregon’s fuel tax is a fixed amount (currently 24 cents) per gallon.

Transportation Funding in Wheeler County

Historically, sources of road revenue for Wheeler County have included federal forest fees, state highway fund revenue, federal grants, interest earnings from the investment of the fund balance, and other sources. Transportation revenues and expenditures for Wheeler County are shown in **Table 8-2** and **Table 8-3**.

**TABLE 8-2
WHEELER COUNTY TRANSPORTATION-RELATED REVENUES**

	1997-1998 Actual	1998-1999 Actual	1999-2000 Adopted	2000-2001 Adopted
Beginning Fund Balance	\$0	\$0	\$1,168,740	\$1,015,198
Resources				
Interest	\$92,806	\$54,823	\$72,000	\$50,000
Miscellaneous	\$837	\$18,824	\$5,000	\$6,000
Federal Forest Fees	\$161,157	\$49,608	\$50,000	\$40,000
Road Work for Others	\$31,548	\$62,511	\$10,000	\$3,000
State Motor Vehicle Fund	\$103,201	\$101,804	\$103,000	\$104,000
Sheriff Gas Payment	\$5,836	\$6,577	\$8,000	\$10,000
Federal Sale of Public Land	\$4,789	\$2,448	\$2,000	\$2,000
FAS Allotment Exchange	\$0	\$67,485	\$65,000	\$77,000
Misc. Other Revenue	\$52,542	\$13,368	\$21,800	\$19,550
Total Revenue	\$452,716	\$377,448	\$336,800	\$311,550
Total including Beginning Fund Balance	\$452,716	\$377,448	\$1,505,540	\$1,326,748

Source: Wheeler County

As shown in **Table 8-2**, revenues have been declining since 1997. The actual revenue in the 1997-1998 budget was \$452,716 compared to the adopted 2000-2001 budget that expects \$311,550. However, as a part of a budget restructuring, there was an infusion of nearly \$1.17 million in the 1999-2000 road fund budget that now gives the county a cushion they did not have in the past.

Wheeler County’s most stable income source is the State Motor Vehicle Fund, which has accounted for at least 20 percent of the road fund’s revenue, and is replacing the federal forest fees as the primary revenue source. Federal forest fees have declined significantly in recent years from \$161,157 in the 1997-1998 to \$40,000 for 2000-2001. However, in coming years this funding source may again increase as new federal regulations are expected to divert more money to counties that lost revenue when timber receipts declined. Another source of income is Federal Aid Secondary (FAS) Allotments, which have increased considerably in the past four budget cycles. FAS Allotments are federal funds given to the county, which are then passed through to the state for road projects within the county limits.

As shown in **Table 8-3**, Wheeler County has spent between \$33,010 and \$90,640 annually in capital improvements. The bulk of expenditures in the road fund are for personal services and materials and services

relating to maintenance. The 1997-1998 and 1999-1999 budgets show a significant difference in revenue and expenditures. Discussions with Wheeler County staff indicate that this is due to the loss of timber receipt monies that historically went in to the Road Fund. Many of the road projects initially budgeted for were never funded. The 1999-2000 budget and later budgets have been adjusted for this loss.

TABLE 8-3
WHEELER COUNTY TRANSPORTATION-RELATED EXPENDITURES

	1997-1998 Actual	1998-1999 Actual	1999-2000 Adopted	2000-2001 Proposed
Personal Services	\$448,282	\$446,499	\$446,339	\$445,663
Materials and Services	\$570,600	\$508,270	\$470,838	\$423,080
Capital Outlay	\$52,500	\$90,640	\$90,506	\$33,010
Transfers to Other Funds	\$32,000	\$32,000	\$32,000	\$72,000
General Operating Contingency	\$0	\$0	\$156,000	\$138,000
Unappropriated Ending Fund Balance	\$0	\$0	\$309,857	\$214,995
Total	\$1,103,382	\$1,077,409	\$1,505,540	\$1,326,748

Source: Wheeler County

The County also accounts for funds intended for the purchase of road improvement equipment in a Road Equipment Reserve. Reserve revenue and expenditures shown in **Table 8-4** are typically transferred from the general road fund.

TABLE 8-4
WHEELER COUNTY ROAD EQUIPMENT RESERVE

	1997-1998 Actual	1998-1999 Actual	1999-2000 Adopted	2000-2001 Proposed
Beginning Fund Balance	\$0	\$0	\$211,000	\$218,016
Resources				
Investment Earnings	\$13,885	\$9,899	\$8,000	\$12,000
Sales of Surplus Equipment	\$0	\$0	\$2,000	\$1,000
Total	\$13,885	\$9,899	\$221,000	\$231,016
Expenditures				
Road Equipment Purchase	\$35,487	\$18,884	\$81,100	\$20
Operating Contingency	\$0	\$0	\$22,000	\$30,000
Unappropriated Ending Fund Balance			\$117,900	\$200,996
Total	35,487	18,884	\$221,000	\$231,016

Source: Wheeler County

Transportation Revenue Outlook in Wheeler County

ODOT's policy section recommends certain assumptions in the preparation of transportation plans. In its Financial Assumptions document prepared in May 1998, ODOT projected the revenue of the State Highway Fund through year 2020. The estimates are based on not only the political climate, but also the economic structure and conditions, population and demographics, and land use patterns. The latter is particularly important for state-imposed fees because one of the goals of Oregon's Transportation Planning Rule (TPR) requires a ten-percent reduction in per-capita vehicle miles of travel (VMT) in Metropolitan Planning Organizations (MPO) planning areas by 2015, and a 20-percent reduction by 2025. This requirement will affect the 20-year forecast for fuel tax revenue. ODOT recommends the following assumptions:

- Fuel tax will increase by one cent per gallon per year (beginning in year 2002), with an additional one cent per gallon every fourth year;
- Vehicle registration fees would be increased by \$10 per year in 2002, and by \$15 per year in year 2012;
- Revenues will fall halfway between the revenue-level generated without the TPR and the revenue level if TPR goals were fully met;
- The revenues will be shared among the state, counties, and cities on a “50-30-20 percent” basis rather than the previous “60-24-16 percent” basis; and
- Inflation occurs at an average annual rate of 3.6 percent (as assumed by ODOT).

Figure 8-1 shows a 1998 forecast from ODOT in both current-dollar (shown in 2000 dollars) and inflation-adjusted constant (2000) dollars. As highlighted by the constant-dollar data, the highway fund is expected to grow more slowly than inflation early in the planning horizon until fuel-tax and vehicle-registration fee increases occur in year 2002, then increase somewhat faster than inflation through year 2015, then (again) more slowly than inflation.

Wheeler County is highly susceptible to changes in the State Highway Fund because it is expected to remain a significant source of funding for the county. The amount actually received from the State Highway Fund will depend on a number of factors, including the amount of revenue generated by state gasoline taxes, vehicle registration fees, and other sources. It will also depend on population growth in Wheeler County because the distribution of state highway funds is based on an allocation formula that includes population as a variable.

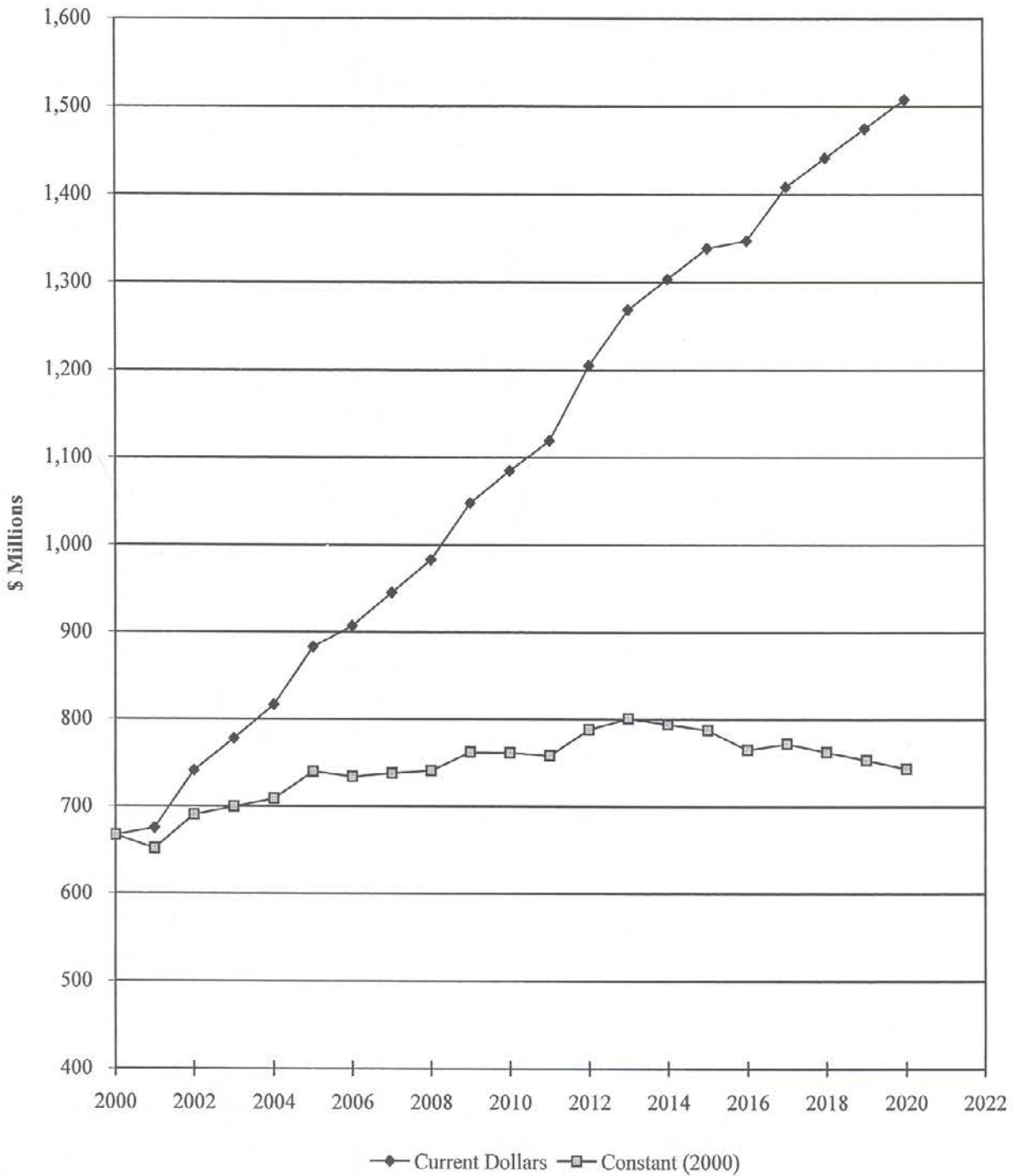
REVENUE SOURCES

Financing the recommended transportation system improvements requires expenditure of capital resources, so it is necessary to consider a range of funding sources. A number of potential revenue sources are described in this section. Not all revenue sources may be appropriate for Wheeler County, but is provided to illustrate the range of options currently available to finance transportation improvements during the next 20 years.

Property Taxes

Property taxes have historically been the primary revenue source for local governments. However, property tax revenue goes into general fund operations, and is not typically available for street improvements or maintenance. This limitation, in addition to the passage of Ballot Measures 5 and 47 that significantly reduced property tax revenue have forced jurisdictions to search for alternative funding sources. The dependence of local governments on this revenue source is partly due to the fact that property taxes are easy to implement and enforce. Property taxes are based on real property (i.e., land and buildings) which has a predictable value and appreciation. In contrast, income and sales taxes can fluctuate with economic trends or unforeseen events. Property taxes can be levied through: 1) tax base levies, 2) serial levies, and 3) bond levies. The most common method uses tax base levies that do not expire and are allowed to increase by six percent per annum, whereas serial levies are limited to a fixed amount of money and time period. Bond levies are designated for specific projects and are limited by time based on the debt load of the local government or the project.

The historic dependence on property taxes has changed with the passage of Ballot Measure 5 in 1990. Ballot Measure 5 amended the Oregon Constitution to limit the property tax rate for purposes other than payment of certain voter-approved general obligation debts. Under full implementation, the tax rate for all local taxing authorities is limited to \$15 per \$1,000 of assessed valuation. As a group, all non-school taxing authorities are limited to \$10 per \$1,000 of assessed valuation. All tax base, serial, and special levies are subject to the tax rate limitation. Ballot Measure 5 requires that all non-school taxing district's property tax rate be reduced if together they exceed \$10 per \$1,000 per assessed valuation by the county. If the non-debt tax rate exceeds the



Source: Oregon Department of Transportation (1998)

FIGURE 8-1

State Highway Fund
(in Millions of Dollars)

WHEELER COUNTY TSP

constitutional limit of \$10 per \$1,000 of assessed valuation, then all of the taxing districts' tax rates are reduced on a proportional basis. The proportional reduction in the tax rate is commonly referred to as compression of the tax rate.

Oregon voters passed Ballot Measure 47, an initiative petition, in November 1996, which is a constitutional amendment that reduces and limits property taxes and limits local revenue and replacement fees. The measure limits 1997-98 property taxes to the lesser of the 1995-96 tax minus 10 percent, or the 1994-95 tax. It limits future annual property tax increases to three percent, with some exceptions. Local governments' lost revenue may be replaced only with state income tax, unless voters approve replacement fees or charges. Tax levy approvals in certain elections require 50 percent voter participation.

The state legislature created Ballot Measure 50, which retains the tax relief of Measure 47 but clarifies some legal issues. Voters approved this revised tax measure in May 1997.

The League of Oregon Cities (LOC) estimated that direct revenue losses to local governments, including school districts, totaled \$467 million in fiscal year 1998, \$553 million in 1999, and increasing thereafter, although the actual revenue losses to local governments depends on actions of the Oregon Legislature. LOC also estimates that the state had revenue gains of \$23 million in 1998, \$27 million in 1999, and increasing thereafter because of increased personal and corporate tax receipts due to lower property tax deduction.

These measures have a direct impact on the ability of cities to pay for transportation improvements out of general funds or other funds created through property taxes. In addition, it may affect cities' abilities to create alternative funding sources if those sources are perceived to be in replacement of property tax revenue.

System Development Charges

System Development Charges (SDCs) are becoming increasingly popular for funding public works infrastructure needed for new local development. Generally, the purpose of a SDC is to allocate portions of the costs associated with capital improvements on the developments that increase demands on transportation, sewer or other infrastructure systems.

Local governments have the legal authority to charge property owners and/or developers fees for improving local public works infrastructure to meet the projected demand resulting from their developments. Charges are most often targeted toward improving community water, sewer, or transportation systems. To collect SDCs, cities and counties must have specific infrastructure plans in place that comply with state guidelines.

Typically, an SDC is collected when new building permits are issued that help fund the construction of transportation facilities necessitated by new development. This is calculated three separate ways depending on the type of development:

- Transportation SDCs are based on trip generation of the proposed development;
- Residential calculations are based on the assumption that a typical household will generate a given number of vehicle trips per day; and
- Nonresidential use calculations are typically based on square footage and number of employees for the type of business or industrial uses.

A key legislative requirement for charging SDCs is the link between the need for the improvements and the developments being charged.

State Gas Taxes, License Fees, and Vehicle Weight/ Mile Taxes

The State of Oregon allocates gas tax revenue to cities and counties for road construction and maintenance projects. The state collects gas taxes, vehicle registration fees, overweight/overheight fines and weight/mile taxes and then distributes a portion of the revenue to incorporated cities and counties through an allocation formula that is based on population. Oregon's vehicle registration fee, at \$30 every two years, is a relatively minor source of revenue for highways and roads, generating less than 10 percent of the total highway user tax and fee revenue. In 1990, vehicle registration fees were increased by 50 percent, the first increase in 40 years. Compared to other states, Oregon's registration fee is low; registration fees in other states range from a low of \$8.00 annually in Arizona to \$125 annually in Minnesota. Like other Oregon counties, Wheeler County uses its State Gas Tax allocation to fund street construction and maintenance.

Local Gas Taxes

The Oregon Constitution permits counties and incorporated cities to levy additional local gas taxes with the stipulation that the money generated from the taxes will be dedicated to street-related improvements and maintenance within the jurisdiction. At present, only a few local governments (including the cities of Woodburn and The Dalles and Multnomah and Washington Counties) levy a local gas tax. Wheeler County may consider raising its local gas tax as a way to generate additional street improvement funds. However, with relatively few jurisdictions exercising this tax, an increase in the cost differential between gas purchased in Wheeler County and gas purchased in neighboring counties may encourage drivers to seek less expensive fuel elsewhere. Any action will need to be supported by careful analysis to minimize the unintended consequences of such an action.

Vehicle Registration Fees

Oregon Revised Statutes (ORS) grant counties and special districts the right to establish registration fees for vehicles, although cities currently do not have the legislative authority to impose local registration fees. Counties and districts are limited to a maximum of \$30 for a two-year period on allowed classes of motor vehicles. To establish an ordinance imposing the fee, the county must first obtain the approval of the county electors. The ordinance must be filed with the Department of Transportation. The governing body of the county must enter into an intergovernmental agreement with the department outlining the rules for administration of laws authorizing county and district registration fees and for the collection of the fees. The owner of any vehicles subject to multiple fees is allowed a credit or credits with respect to such fees so that the total of such fees does not exceed \$30.

Although vehicle registration fees have not yet been imposed by any local jurisdictions in the state, Wheeler County could impose a registration fee for all passenger cars and other specified classes of vehicles licensed within the county. The county must pay at least 40 percent of the money to cities within the county unless a different distribution is agreed to between the county and the cities within the jurisdiction of the county. The funds may be used for any purpose for which the money for registration fees may be used.

Local Improvement Districts

The Oregon Revised Statutes allow local governments to form Local Improvement Districts (LIDs) to construct public improvements. LIDs are most often used by cities to construct localized projects such as streets, sidewalks or bikeways. The statutes allow formation of a district by either the local government or property owners. Cities that use LIDs are required to have a local LID ordinance that provides a process for district formation and payback provisions. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The costs can be allocated based on property frontage or other methods such as trip generation. The types of allocation methods are only limited by

the Local Improvement Ordinance. The cost of LID participation is considered an assessment against the property which is a lien equivalent to a tax lien. Individual property owners typically have the option of paying the assessment in cash or applying for assessment financing through the local government. Since the passage of Ballot Measure 5, cities have most often funded local improvement districts through the sale of special assessment bonds.

Federal Timber Receipts

On October 30, 2000, President Clinton signed the Secure Rural Schools and Community Self-Determination Act. This legislation is expected to stabilize, and in some cases significantly increase, federal timber sale payments to state and county governments. This law replaces the previous system that tied annual timber receipts to how much money was allocated to counties. The new plan is expected to distribute funds based on the amount counties received during the three peak years of public timber harvests between 1986 and 1999, which will also include cost of living adjustments. As a result of this legislation, Wheeler County is expected to receive about \$1.1 million from this plan for school and road projects historically linked to timber receipt money. This is an increase of over \$1 million from 1999.

Of the 1.1 million, 15 percent (about \$165,000) will be allocated to projects that affect federal lands. These types of projects include forest road construction, stream enhancement, forest thinning etc., which will be selected by a Resource Advisory Committee comprised of public and private interests. The remainder of the money will be split between the school district, which will receive 25 percent of the funding, and the County Road Fund that will receive the remainder to be used for road repair and improvements. Wheeler County can expect to see this additional revenue in November 2001.

For more information, contact the Oregon Association of Counties at (503) 585-8351.

Grants and Loans

There are a variety of grant and loan programs available, most with specific requirements related to economic development or specific transportation issues, rather than for the general construction of new streets. Many programs require a match from the local jurisdiction as a condition of approval. Because grant and loan programs are subject to change as well as statewide competition, they should not be considered a secure long-term funding source for Wheeler County. Most of the programs available for transportation projects are funded and administered through ODOT and/or the Oregon Economic and Community Development Department (OECD). Some programs that may be appropriate for Wheeler County are described below.

Bike-Pedestrian Grants

By law (ORS 366.514), all road street or highway construction or reconstruction projects must include facilities for pedestrians and bicyclists, with some exceptions. ODOT's Bike and Pedestrian Program administers two programs to assist in the development of walking and bicycling improvements: local grants, and Small-Scale Urban Projects. Cities and counties with projects on local streets are eligible for local grant funds. An 80 percent state/20 percent local match ratio is required. Eligible projects include curb extensions, pedestrian crossings and intersection improvements, shoulder widening and restriping existing roads for bike lanes. Projects on urban state highways with little or no right-of-way taking and few environmental impacts are eligible for Small-Scale Urban Project Funds. Both programs are limited to projects costing up to \$100,000. Projects that cost more than \$100,000, require ROW acquisition, or generate environmental impacts should be submitted to ODOT for inclusion in the STIP.

For more information, contact ODOT's Bicycle and Pedestrian Program at (503) 986-3555.

Transportation Enhancement Program

This federally-funded program earmarks \$8 million annually for projects in Oregon. Projects must demonstrate a link to the intermodal transportation system, compatibility with approved plans, and local financial support. A 10 percent local match is required for eligibility. Each proposed project is evaluated against all other proposed projects in its region. Within the five Oregon regions, the funds are distributed on a formula based on population, vehicle miles traveled, number of vehicles registered and other transportation-related criteria.

For more information, contact ODOT's TEA-21 Enhancement Program at (503) 986-3528.

Highway Bridge Rehabilitation or Replacement Program

The Highway Bridge Rehabilitation or Replacement Program (HBRR) provides federal funding for the replacement and rehabilitation of bridges of all functional classifications. A portion of the HBRR funding is allocated for the improvement of bridges under local jurisdiction. A quantitative ranking system is applied to the proposed projects based on their sufficiency rating, cost factor, and load capacity. They are ranked against other projects statewide, and require state and local matches of 10 percent each. The HBRR includes the Local Bridge Inspection Program and the Bridge Load Rating Program.

For more information, contact ODOT's Highway Bridge Rehabilitation or Replacement Program at (503) 986-3344.

Transportation Safety Grant Program

Managed by ODOT's Transportation Safety Section (TSS), this program's objective is to reduce the number of transportation-related accidents and fatalities by coordinating a number of statewide programs. These funds are intended to be used as seed money, funding a program for three years. Eligible programs include those relating to impaired driving, occupant protection, youth, pedestrians, speed, enforcement, and bicycle and motorcycle safety. Every year, TSS produces a Highway Safety Plan that identifies the major safety programs, suggests countermeasures, and lists successful projects selected for funding, rather than granting funds through an application process.

For more information, contact ODOT's Transportation Safety Grant Program at (503) 986-4192.

Special Transportation Fund

The Special Transportation Fund (STF) awards funds to maintain, develop, and improve transportation services for people with disabilities and people over 60 years of age. Financed by a two-cent tax on each pack of cigarettes sold in the state, the annual distribution of funds is approximately \$5 million. Three-quarters of these funds are distributed to mass transit districts, transportation districts, and, where no such districts exist, to counties, on a per-capita formula. The remaining funds are distributed on a discretionary basis.

For more information, contact ODOT's Special Transportation Fund at (503) 986-3885.

County Allotment Program

The County Allotment Program distributes funds to counties on an annual basis; the funds distributed in this program are in addition to the regular disbursement of State Highway Fund resources. The program determines the amount of total revenue available for roads in each county and the number of centerline road miles (not lane miles) of collectors and arterials under each county's jurisdiction. Using these two benchmarks, a "resource-per-equivalent" ratio is calculated for each county. Resources from the \$750,000 program are provided to the county with the lowest resource-per-equivalent road-mile ratio until they are funded to the level of the next-

lowest county. The next-lowest county is then provided resources until they are funded to the level of the third-lowest county, and so on, until the fund is exhausted.

For more information, contact ODOT's Special Small City Allotment Program at (503) 986-3893.

Immediate Opportunity Grant Program

The Oregon Economic and Community Development Department (OECDD) and ODOT collaborate to administer a grant program designed to assist local and regional economic development efforts. The program is funded to a level of approximately \$7 million per year through state gas tax revenues. The following are primary factors in determining eligible projects:

- Improvement of public roads;
- Inclusion of an economic development-related project of regional significance;
- Creation or retention of primary employment; and
- Ability to provide local funds (50/50) to match grant.

The maximum amount of any grant under the program is \$500,000. Local governments that have received grants under the program include Washington County, Multnomah County, Douglas County, the City of Hermiston, Port of St. Helens, and the City of Newport.

For more information, contact ODOT's Immediate Opportunity Grant Program at (503) 986-3463.

Oregon Special Public Works Fund

The Special Public Works Fund (SPWF) program was created by the 1995 State Legislature as one of several programs for the distribution of funds from the Oregon Lottery to economic development projects in communities throughout the State. The program provides grant and loan assistance to eligible municipalities primarily for the construction of public infrastructure that supports commercial and industrial development and results in permanent job creation or job retention. To be awarded funds, each infrastructure project must support businesses wishing to locate, expand, or remain in Oregon. The SPWF funds can be used for improvement, expansion, and new construction of public sewage treatment plants, water supply works, public roads, and transportation facilities.

While SPWF program assistance is provided in the form of both loans and grants, the program emphasizes loans in order to assure that funds will return to the State over time for reinvestment in local economic development infrastructure projects. Jurisdictions that have received SPWF funding for projects that include some type of transportation-related improvement include the Cities of Baker City, Bend, Cornelius, Forest Grove, Madras, Portland, Redmond, Reedsport, Toledo, Wilsonville, Woodburn, and Douglas County.

For more information, contact ODOT's Oregon Special Public Works Fund at (503) 986-0136.

Oregon Transportation Infrastructure Bank

The Oregon Transportation Infrastructure Bank (OTIB) program is a revolving loan fund administered by ODOT to provide loans to local jurisdictions, including cities, counties, special districts, transit districts, tribal governments, ports, and state agencies. Eligible projects include construction of federal-aid highways, bridges, roads, streets, bikeways, pedestrian accesses, and right-of-way costs. Capital outlays such as buses, light-rail cars and lines, maintenance yards, and passenger facilities are also eligible.

For more information, contact ODOT's Oregon Transportation Infrastructure Bank at (503) 986-3922.

ODOT Statewide Transportation Improvement Program Funding Options

The State of Oregon provides funding for all highway related transportation projects through the Statewide Transportation Improvement Program (STIP) administered by ODOT. The STIP outlines the schedule for ODOT projects throughout the state. The STIP, which identifies projects for a four-year funding cycle, is updated each biennium. In developing this funding program, ODOT must verify that the identified projects comply with the Oregon Transportation Plan (OTP), ODOT Modal Plans, Corridor Plans, local comprehensive plans, local Transportation System Plans (TSP), and TEA-21 Planning Requirements. The STIP must fulfill TEA-21 planning requirements for a staged, multi-year, statewide, intermodal program of transportation projects. Specific transportation projects are prioritized based on a review of the TEA-21 planning requirements and the different state plans. ODOT consults with local jurisdictions before highway related projects are added to the STIP.

The highway-related projects identified in Wheeler County's TSP will be considered for future inclusion on the STIP. The timing of including specific projects will be determined by ODOT based on an analysis of all the project needs within ODOT Region 5. Wheeler County, its incorporated cities and ODOT will need to communicate on a biennium basis to review the status of the STIP and the prioritization of individual projects within the project area. Ongoing communication will be important for the city, county, and ODOT to coordinate the construction of both local and state transportation projects.

ODOT also implements some highway improvements as part of its ongoing highway maintenance program. Types of road construction projects that can be included within the ODOT maintenance programs are intersection realignments, additional turn lanes, shoulder widening, and striping for bike lanes. Maintenance related construction projects are usually conducted by ODOT field crews using state equipment. The maintenance crews do not have the staff or specialized road equipment needed for large construction projects.

FINANCING TOOLS

In addition to funding options, the recommended improvements listed in this plan may be completed using a variety of financing options. Although often used interchangeably, the words financing and funding are not the same. Funding is the actual generation of revenue by which a jurisdiction pays for improvements. Some examples of funding include the sources discussed above (e.g. property taxes, SDCs, fuel taxes, vehicle registration fees, LIDs, and various grant programs). In contrast, financing refers to the collecting of funds through debt obligations.

There are a number of debt financing options available to Wheeler County. The use of debt to finance capital improvements must be balanced with the ability to make future debt service payments and to deal with the impact on its overall debt capacity and underlying credit rating. Again, debt financing should be viewed not as a source of funding, but as a time shifting of funds. The use of debt to finance these transportation-system improvements is appropriate since the benefits from the transportation improvements will extend over a period of years. If such improvements were to be tax financed immediately, a large short-term increase in the tax rate would be required. By utilizing debt financing, local governments spread the burden of the costs of these improvements to more of the people who are likely to benefit from the improvements and lower immediate payments.

General Obligation Bonds

General obligation (GO) bonds are voter-approved bond issues, which represent the least expensive borrowing mechanism available to municipalities. General obligation bonds are typically supported by a separate property tax levy specifically approved for the purposes of retiring debt. The levy does not terminate until all debt is paid

off. The property tax levy is distributed equally throughout the taxing jurisdiction according to assessed value of property. General obligation debts are typically used to make public improvement projects that will benefit the entire community.

State statutes require that the general obligation indebtedness of a jurisdiction not exceed three percent of the real market value of all taxable property in its boundary. Since general obligation bonds would be issued subsequent to voter approval, they would not be restricted to the limitations set forth in Ballot Measures 5, 47, and 50. Although each new bond must be voter approved, Ballot Measure 47 and 50 provisions are not applicable to outstanding bonds, unissued voter-approved bonds, or refunding bonds.

Limited Tax Bonds

Limited tax general obligation bonds (LTGOs) are similar to general obligation bonds in that they represent an obligation of the municipality. However, a municipality's obligation is limited to its current revenue sources and is not secured by the public entity's ability to raise taxes. As a result, LTGOs do not require voter approval. However, since the LTGOs are not secured by the full taxing power of the issuer, the limited tax bond represents a higher borrowing cost than general obligation bonds. The municipality must pledge to levy the maximum amount under constitutional and statutory limits, but not the unlimited taxing authority pledged with GO bonds. Because LTGOs are not voter approved, they are subject to the limitations of Ballot Measures 5, 47, and 50.

Bancroft Bonds

Under Oregon Statute, municipalities are allowed to issue Bancroft bonds, which pledge the city's full faith and credit to assessment bonds. The bonds become general obligations of the city but are paid with assessments. Historically, these bonds provided cities with the ability to pledge their full faith and credit in order to obtain a lower borrowing cost without requiring voter approval. However, since Bancroft bonds are not voter approved, taxes levied to pay debt service on them are subject to the limitations of Ballot Measures 5, 47, and 50. As a result, since 1991, Bancroft bonds have not been used by municipalities that are required to compress their tax rates.

FUNDING REQUIREMENTS

Wheeler County's TSP identifies capital improvements recommended during the next 20 years to address safety and access problems and to expand the transportation system to support a growing population and economy. This TSP identifies 23 projects in both urban and rural areas, classified into three implementation phases:

- High Priority: between 2000 to 2005;
- Medium Priority: between 2006 and 2010; and
- Low Priority: after 2010.

Estimated costs summarized by project and by implementation phase were presented previously in Chapter 7 in **Table 7-11**. The overall estimated project cost associated with Wheeler County's 20-year transportation project list is \$35,253,670.

Rural Projects

Of the 23 improvement projects identified in Wheeler County, 12 are located within rural areas of the County. The total estimated cost of rural projects is approximately \$33.9 million not including the potential cost of building a public use airstrip that is conceptual at this point. The breakout of cost by priority is as follows:

estimated high priority project cost is \$28.9 million, medium priority cost is \$3.0 million, and low priority cost is \$2.0 million excluding potential airport development costs.

It should be noted that \$6.4 million of the total \$33.9 million in identified projects is accounted for in the three STIP projects along US 26. These projects are fully funded and will be constructed this year. Excluding the three STIP projects along US 26 and the general upgrading of substandard shoulders project (Project W11 - \$19 million), the total estimated cost for the rural projects is \$8.5 million.

Urban Projects

The City of Fossil has identified three improvement projects to be completed within the 20-year planning horizon. The total estimated cost for the three City of Fossil improvement projects is approximately \$283,000. The breakout of cost by priority is as follows: estimated high priority cost is \$135,000, medium priority cost is \$126,500, and low priority cost is \$21,500.

The City of Mitchell has identified four improvement projects to be completed within the 20-year planning horizon. The total estimated cost for the four City of Mitchell improvement projects is approximately \$396,300. The breakout of cost by priority is as follows: estimated high priority cost is \$342,000, medium priority cost is \$16,800, and low priority cost is \$37,500.

The City of Spray has identified four improvement projects to be completed within the 20-year planning horizon. The total estimated cost for the four City of Spray improvement projects is approximately \$643,250. The breakout of cost by priority is as follows: estimated high priority cost is \$520,000, medium priority cost is \$70,250, and low priority cost is \$53,000.

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**TECHNICAL MEMORANDUM #1
REVIEW OF EXISTING PLANS AND POLICIES FOR WHEELER COUNTY**

APPENDIX A

TECHNICAL MEMORANDUM #1

REVIEW OF EXISTING PLANS AND POLICIES FOR WHEELER COUNTY

The purpose of this memorandum is to review the existing plans and policies in Wheeler County, in particular those that relate to transportation. Below are the plans that were reviewed.

WHEELER COUNTY COMPREHENSIVE PLAN

The Wheeler County Comprehensive Plan was adopted in 1980 and last revised in 1991.

The Plan's introduction provides an overview of County policy regarding the state's land use goals as they relate to Wheeler County. Most of the County lies in agriculture land uses. Spray, Fossil, and Mitchell represent the County's primary population centers, accounting for approximately 58% of its population at the time of the Plan's 1991 revision (Currently, about 57% live in the three cities). The plan encourages future growth in the county to occur inside or adjacent to these cities by requiring a 160-acre minimum lot size for areas zoned exclusive farm use. Such a growth pattern is encouraged by the Comprehensive Plan to preserve agricultural land and provide for adequate levels of public service in the cities.

The County has planning authority for unincorporated areas, and the document states that the City of Spray will have a special role in the County Comprehensive Plan. The Urban Growth Area Joint Management Agreement for the City of Spray is an agreement between the City and the County to facilitate the transition of currently rural land into urban land uses outside of Spray's city limits, but inside the existing urban growth boundary (UGB). This collaboration includes the preparation of a city comprehensive plan, the cooperative establishment of an urban growth area, coordinating with affected governmental units, and county review of the city comprehensive plan. The result is the adoption of a comprehensive ordinance that is included in this plan and its policies.

The Comprehensive Plan is divided into sections addressing the plan's goals and general planning policies, the County's zoning ordinance that includes descriptions of agricultural and timber land use, the City of Spray Urban Growth Area Joint Management Agreement, the subdivision/partition ordinance, and flood damage prevention ordinance. Sections that potentially affect transportation service provision within Wheeler County are described below.

Section 5(2) Land Use Planning

Policies:

- a. To identify lands suitable for farming, grazing, and forest production;
- c. To identify lands suitable for development and areas where development should be restricted;

- f. To determine the needs for public facilities and services required to accommodate existing unmet public needs and expected economic and population growth;

Section 5(3) Agricultural Lands

Policies

- f. To limit the creation of new lots or parcels of land to a minimum of 160 acres in size within the Exclusive Farm Use Zone, unless intended for a conditional use as allowed by the Wheeler County Zoning Ordinance and referenced to ORS 215.263.

Section 5(8) Recreational Needs

Policies

- a. To work with state and federal agencies to provide adequate park and outdoor recreational facilities to meet recreational needs of residents and visitors, including planning for the Pacific Crest Desert Trail.

Part 5(10) Housing

Policies

- b. To support residential development within the cities of Fossil, Mitchell and Spray.

Part 5(12) Transportation

Policies

- a. To work with the cities of Fossil, Mitchell and Spray to develop joint policies concerning county roads within city limits;
- b. To assist the Oregon Department of Transportation in setting project priorities in planning improvements to maintain all state highways within and serving the County;
- c. To maintain and improve County roads, based on available funds, location of school bus and mail routes, and agricultural and forest uses;
- d. To support current projects underway to assist the transportation disadvantaged.

Section 5(14) Urbanization

- a. To establish UGBs outside city limits as necessary to identify and separate urbanized land from rural land;
- b. To require that an UGB and comprehensive plan be jointly amended by a city and Wheeler County as necessary and appropriate prior to consideration of land for annexation;
- c. To co-adopt the Spray UGB and Urban Area Joint Management Agreement;
- d. To co-adopt the UGBs of Fossil and Mitchell as shown on the maps in their comprehensive plans.

WHEELER COUNTY ZONING ORDINANCE

The Wheeler County Zoning Ordinance was adopted in 1980 and amended in 1991. Land use zones include Exclusive Farm Use and Exclusive Timber Use. Sections with possible transportation planning relevance are described below.

In Article 1: Introductory Provisions. One of the purposes of this ordinance is to provide for and encourage a safe, convenient, and economically viable transportation system within the County (1.050 (6)).

In Article 2: Exclusive Farm Use Zone (EFU), the following are Permitted Uses:

- Climbing and passing lanes within the right of way existing as of July 1, 1997;
- Reconstruction or modification of public roads and highways, not including the addition of travel lanes, where no removal or displacement of buildings would occur, or no new land parcels result;
- Temporary public road and highway detours that will be abandoned and restored to original condition or use at such time as no longer needed;
- Minor betterment of existing public roads and highway-related facilities such as maintenance yards, weigh stations and rest areas, within right of way, existing as of July 1, 1987, and contiguous public-owned property utilized to support the operation and maintenance of public roads and highways.

In Article 2: Exclusive Farm Use Zone (EFU), the following are Conditional Uses:

- Construction of additional passing and travel lanes requiring acquisition of right-of-way but not resulting in the creation of new land parcels;
- Reconstruction or modification of public roads and highways involving the removal or displacement of buildings but not resulting in the creation of land parcels;
- Improvement of public roads and highway-related facilities, such as maintenance yards, weigh stations and rest areas, where additional property of right of way is required but not resulting in the creation of new land parcels;

In **Article 2: Exclusive Farm Use Zone (EFU)**, the following are Property Development Standards for fire protection for a timber zone or timber area:

- One, two, or three access roads should be established;
- All roads and bridges should be constructed to accommodate heavy fire fighting equipment in excess of 36,000 pounds.

In **Article 3: Exclusive Timber Use Zone (ETU)**, the following are Permitted Uses:

- Climbing and passing lanes within the right of way existing as of July 1, 1997;
- Reconstruction or modification of public roads and highways, not including the addition of travel lanes, where no removal or displacement of buildings would occur, or no new land parcels result;
- Temporary public road and highway detours that will be abandoned and restored to original condition or use at such times as no longer needed;
- Minor betterment of existing public roads and highway-related facilities such as maintenance yards, weigh stations and rest areas, within right of way, existing as of July 1, 1987, and contiguous public-owned property utilized to support the operation and maintenance of public roads and highways.

In **Article 3: Exclusive Timber Use Zone (ETU)**, the following are Conditional Uses:

- Construction of additional passing and travel lanes requiring acquisition of right-of-way but not resulting in the creation of new land parcels;
- Reconstruction or modification of public roads and highways involving the removal or displacement of buildings but not resulting in the creation of land parcels;
- Improvement of public roads and highway-related facilities, such as maintenance yards, weigh stations and rest areas, where additional property or right of way is required but not resulting in the creation of new land parcels.

In **Article 3: Exclusive Timber Use Zone (ETU)**, the following are Property Development Standards:

- Setbacks. No structure other than a fence or sign shall be located closer than 50 feet from the right-of-way of a public road and 25 feet from all other property lines. A reasonable safe distance will be maintained from quarry sites.

In **Article 3: Exclusive Timber Use Zone (ETU)**, the following are Property Development Standards for fire protection:

- One, two, or three access roads should be established;
- All roads and bridges should be constructed to accommodate heavy fire fighting equipment in excess of 36,000 pounds.

CITY OF SPRAY JOINT URBAN AREA JOINT MANAGEMENT AGREEMENT

The City of Spray Joint Urban Area Joint Management Agreement was adopted in 1980 and revised in 1991 as a part of the Wheeler County Comprehensive Plan. The City of Spray and Wheeler County have a joint agreement to establish an urban growth area, prepare a city comprehensive plan, coordinate with affected governmental units, and allow county review of the comprehensive plan. The following sections relate to transportation.

Section 7. Roads

The County and City shall cooperatively develop an implementation policy regarding streets and roads within the City urban growth area and corporate limits which is consistent with the City Comprehensive Plan. Such Policy shall include, but not be limited to, the following.

- a. The circumstances under which the City will assume ownership of the maintenance responsibility for County roads within the corporate limits;
- b. The condition under which new streets and roads will be developed in conjunction with subdivisions within the City urban growth area;
- c. The conditions under which new street and roads, other than subdivisions, will be developed within the City urban growth area;
- d. The conditions under which existing county roads and bridges within the urban growth area will be improved.

WHEELER COUNTY SUBDIVISION/PARTITION ORDINANCE

The Subdivision/Partition Ordinance provides for the establishment of subdivision and partition regulations for the unincorporated area of Wheeler County. It was approved as a part of the County Comprehensive Plan and was last revised in 1986. The following sections pertain to transportation:

In **Article 2 Standards section 2.4-2.5, *Street and Roadway Improvements and Access*** specify that:

- Any street or road intended for dedication to Wheeler County shall have a minimum of sixty feet (60ft.) of right-of-way and provide a minimum improved roadway of twenty-four feet (24ft.) constructed to standards approved by the County Court. No final subdivision plat or major partition map which includes a street or road to be dedicated to Wheeler County shall be approved by the Planning Commission until all street or road improvements are completed;
- No subdivision or partition shall be approved by the Planning Commission unless access from an existing all-weather public street or road to each lot or parcel to be created is provided for by either a public or private street, road, or easement, unless the lot or parcel is being created to allow for transfer of title to a contiguous property owner.

WHEELER COUNTY STRATEGIC INITIATIVES FOR COMMUNITY ECONOMIC DEVELOPMENT

Wheeler County is in a challenging position to find new types of business, retain the people who are moving in search of better opportunities, and attract new people to the area. A part of this process is a strategic vision for economic prosperity in the County. *The Wheeler County Strategic Initiatives for Community Economic Development Report* was prepared in December, 1996 by Peter F. Dolbert & Associates. The study was funded by the U.S. Forest Service Economic Recovery Program and Wheeler County. It is the culmination of economic and demographic research and interviews with Wheeler County residents. This document did not highlight any transportation-related issues or potential funding sources for transportation projects, however, it did give some examples of how other counties have begun to raise money and where some existing funding sources are. Relevant sections relating to funding include:

- Wheeler County is the only county in Eastern Oregon without someone designated as the responsible party for community and economic development (page 22);
- The county needs a grant writer, whether it is on contract or a dedicated county staff person. Examples of other Counties with grant writers have shown that the position can generate a significant amount of money for projects. For example, Sherman County secured 1.6 million in grants in two years time, while salaries were only \$46,000 (page 24-25);
- Wheeler County has on hand and will receive \$120,000 in funds (as of 1996) for economic development from the State Lottery and a Rural Investment Grant (page 26);
- Wheeler County receives approximately \$60,000 annually (as of 1996) from video poker and the Rural Investment Funds for Economic Development. These funds are committed to economic development (page 26);

APPENDIX B
MAJOR STREET INVENTORY

APPENDIX B
2000 City of Fossil Major Streets Inventory
Wheeler County Transportation System Plan

Street	Jurisdiction	Classification ³	Speed	ROW	Street	No. of	Direction	On-Street	Shoulders			Bikeway ¹	Bike Lanes	Truck Route	1999	sidewalks	Curbs	Curb cuts at intersections	Comments
			Limit (mph)	Width (feet)	Width (feet)	Travel Lanes			of Travel	Parking	Width (feet)				Side				
Landfill Road																			
UGB to D St.	City	Not classified	25		14	2	Two-way	No	5	Both sides	grass/gravel	Shared	No	No	Good	No	No	NA	
D Street																			
Landfill Road to Chase St.	City	Not classified	25		16	2	Two-way	No	2	Both sides	grass/gravel	Shared	No	No	Good	No	No	NA	
Chase St. to Ellsworth St.	City	Not classified	25		10	1	Two-way	No	No	NA	NA	No	No	No	Dirt	No	No	NA	Rutted Road
C Street																			
Chase St. to Marshall St.	City	Not classified	25		16	2	Two-way	Shoulder	6	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Marshall St. to Ellsworth St.	City	Not classified	25		16	2	Two-way	Shoulder	6	Both sides	grass/gravel	Shared	No	No	Fair to Poor	No	No	NA	
Ellsworth St. to Rutledge St.	City	Not classified	25		16	2	Two-way	Shoulder	6	Both sides	grass/gravel	Shared	No	No	Good	No	No	NA	
Rutledge St. to Jay St.	City	Not classified	25		19	2	Two-way	No	1-2	Both sides	gravel	Shared	No	No	Good	No	No	NA	
B Street																			
Main St. to Jay St.	City	Not classified	25		14	2	Two-way	No	1-2	Both sides	grass	Shared	No	No	Good	No	No	NA	
Jay St. to Taney St.	City	Not classified	25		18	2	Two-way	Shoulder	6-8	Both sides	grass	Shared	No	No	Good	No	No	NA	
Taney St. to Chase St.	City	Not classified	25		18	2	Two-way	No	2-4	Both sides	grass	Shared	No	No	Good	No	No	NA	
Chase St. to Dead End	City	Not classified	25		14	2	Two-way	No	No	NA	NA	Shared	No	No	Good	No	No	NA	
A Street (Broadway St.)																			
Dead End to Chase St.	City	Not classified	25	50	17	2	Two-way	No	1-2	Both sides	gravel	Shared	No	No	Fair	No	No	NA	
Chase St. to Rutledge St.	City	Not classified	25	50	18	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
Rutledge St. to Washington St.	City	Not classified	20	50	20	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	Begin School Zone
Washington St. to 300' West of Quimby St.	City	Not classified	25	50	16	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	Ditch on south side of road
300' West of Quimby St. to 1st Street	City	Not classified	25	50	15	2	Two-way	No	2-4, 4-6	South, North	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
1st Street																			
150' East of Broadway St.	City	Collector	25	42	20	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Good	No	No	NA	
1200' East of Broadway St. to 1200' East of Broadway St.	City	Collector	20	42	20	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	Children Playing Sign-near Park
1200' East of Broadway St. to Adams St.	City	Collector	20	42	20	2	Two-way	Shoulder	4-6	Both sides	grass/gravel	Shared	No	No	Fair to Good	South side only, 3' poor	No	NA	12' setback for sidewalk
Adams St. to Hoover St.	City	Collector	20	42	22	2	Two-way	Shoulder	4-6	Both sides	grass/gravel	Shared	No	No	Fair to Good	North side only, 6'	No	NA	10' setback for sidewalk
Hoover St. to Washington St.	City	Collector	20	42	23	2	Two-way	Shoulder	10-12	Both sides	grass/gravel	Shared	No	No	Fair to Good	North side 6', South side 5'	No	NA	10' setback for sidewalk
Washington St. to Main St.	City	Not classified	20	42	50	2	Two-way	Both	No	NA	NA	Shared	No	No	Fair to Good	North side 8', South side 8'	No	NA	
Main St. to Jay St.	City	Not classified	20	42	22	2	Two-way	Both	8-10	Both sides	gravel	Shared	No	No	Fair to Good	No	No	NA	
Jay St. to Rutledge St.	City	Not classified	20	42	18	2	Two-way	Both	8-10	Both sides	gravel	Shared	No	No	Fair to Good	No	No	NA	
Rutledge St. to Ellsworth St.	City	Not classified	20	42	14	2	Two-way	No	4-6	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
2nd Street																			
Dead End to Jay St.	City	Not classified	25		14	2	Two-way	No	2-4	Both sides	grass/gravel	No	No	No	Gravel	No	No	NA	Unimproved Road
Jay St. to Main St.	City	Not classified	25		22	2	Two-way	South-Head-in, N-Diagonal	11, 16	South, North	gravel	Shared	No	No	Fair to Good	South side only, 3' good	No	NA	
Main St. to 100' West of Main St.	City	Not classified	25		20	2	Two-way	Both Head-in	16	Both sides	gravel	Shared	No	No	Fair to Good	North side only, 6' fair	No	NA	
100' West of Main St. to Washington St.	City	Not classified	25		20	2	Two-way	Shoulder	6-8, 16	South, North	gravel	Shared	No	No	Fair to Good	No	No	NA	
Washington St. to Adams St.	City	Not classified	25		18	2	Two-way	Shoulder	6-8	Both sides	gravel	Shared	No	No	Fair to Good	No	No	NA	
3rd Street																			
Jefferson St. to Adams St.	City	Not classified	25	55	20	2	Two-way	No	4-6, 6-8	North, South	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
Adams St. to Main St.	City	Not classified	25	55	22	2	Two-way	Shoulder	12-14, 4-6	North, South	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
Main St. to 100' East of Main St.	City	Not classified	25	55	23	2	Two-way	South	20	North only	gravel	Shared	No	No	Fair	South side only, 4'	No	NA	7' on-street parking width
100' East of Main St. to Jay St.	City	Not classified	25	55	23	2	Two-way	Shoulder	20, 4-6	North, South	gravel	Shared	No	No	Fair	No	No	NA	
Jay St. to Dead End	City	Not classified	25	55	20	2	Two-way	No	6-8	North only	gravel	Shared	No	No	Fair	No	No	NA	Fairgrounds parking on South side
4th Street																			
Dead End to Jay St.	City	Not classified	25		12	1	Two-way	No	6-8	Both sides	grass	Shared	No	No	Gravel	No	No	NA	Unimproved Road
Jay St. to 150' West of Jay St.	City	Not classified	25		18	2	Two-way	Shoulder	20, 18	North, South	gravel	Shared	No	No	Fair	No	No	NA	
150' West of Jay St. to Main St.	City	Not classified	25		18	2	Two-way	Shoulder	20, 18	North, South	gravel	Shared	No	No	Fair	North side only, 4'	No	NA	
Washington St. to Adams St.	City	Not classified	25		16	2	Two-way	No	2-8	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Adams St. to Jefferson St.	City	Not classified	25		36	2	Two-way	North 20'	20, 4-6	North, South	N-gravel, S-grass	Shared	No	No	Fair	No	No	NA	Head in parking on north side only

APPENDIX B
2000 City of Fossil Major Streets Inventory
Wheeler County Transportation System Plan

Street	Jurisdiction	Classification ³	Speed	ROW	Street	No. of	Direction of Travel	On-Street Parking	Shoulders			Bikeway ¹	Bike Lanes	Truck Route	1999	sidewalks	Curbs	Curb cuts at intersections	Comments
			Limit (mph)	Width (feet)	Width (feet)	Travel Lanes			Width (feet)	Side	Paving				Pavement Condition ²				
5th Street																			
Dead End to Jay St.	City	Not classified	25	48	12	1	Two-way	Shoulder	8-10	Both sides	gravel	No	No	No	Gravel	No	No	NA	Unimproved Road
Jay St. to Main St.	City	Not classified	25	48	14	2	Two-way	Shoulder	10-12	Both sides	gravel	Shared	No	No	Fair	No	No	NA	
Washington St. to Adams St.	City	Not classified	25	48	18	2	Two-way	Shoulder	8-10	Both sides	grass	Shared	No	No	Good	No	No	NA	
Adams St. to Jefferson St.	City	Not classified	25	48	14	2	Two-way	Shoulder	6-8	Both sides	grass	Shared	No	No	Fair to Poor	No	No	NA	
6th Street																			
Hwy 19 to Jay St.	City	Not classified	25	50	16	2	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	Unimproved Road
Jay St. to 100' West of Jay St.	City	Not classified	25	50	16	2	Two-way	No	1-2	Both sides	grass	Shared	No	No	Fair	No	No	NA	
100' West of Jay St. to Main St.	City	Not classified	25	50	16	2	Two-way	Shoulder	8	Both sides	grass	Shared	No	No	Fair	North side only, 4'	No	NA	12' setback for sidewalk
Main St. to Adams St.	City	Not classified	25	50	20	2	Two-way	Shoulder	8-10	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
7th Street																			
Washington St. to Dead End	City	Not classified	25		23	2	Two-way	No	2-4	Both sides	grass	Shared	No	No	Good	No	No	NA	6% upgrade westbound
Reservoir Road																			
7th St. to Dead End	City	Not classified	15		12	1	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	Unimproved Road
Washington Street																			
Hwy 19 to 3rd St.	City	Collector	25	50	22	2	Two-way	Shoulder	8-10	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
3rd St. to 2nd St.	City	Collector	25	50	20	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Good	East side only, 6' good	No	NA	
2nd St. to 1st St.	City	Collector	25	50	32	2	Two-way	East 12'	10	West	gravel	Shared	No	No	Fair to Good	East side 6' good, West side 5' very poor	No	NA	
1st St. to 100' North of 1st St.	City	Not classified	25	50	20	2	Two-way	East side	15, 6	East, West	gravel	Shared	No	No	Fair to Good	East side 6', West side 4'	No	NA	
100' North of 1st St. to Broadway St.	City	Not classified	25	50	20	2	Two-way	East side	15, 6	East, West	gravel	Shared	No	No	Fair to Good	No	No	NA	
Broadway St. to Dead End	City	Not classified	25	50	20-12	2	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	Unimproved Road
Chase Street																			
St. to Broadway St.	City	Not classified	25	40	18	2	Two-way	Shoulder	4-6	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Lawney Street																			
Dead End to A St.	City	Not classified	25		12	1	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	Unimproved Road
A St. - C St.	City	Not classified	25		17	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
Marshall Street																			
D St. - C St.	City	Not classified	25		11	1	Two-way	Shoulder	8-10	Both sides	grass/gravel	No	No	No	Gravel	No	No	NA	Unimproved Road
C St. - A St.	City	Not classified	25		20	2	Two-way	Shoulder	8-10	Both sides	grass/gravel	Shared	No	No	Fair to Poor	No	No	NA	
Ellsworth Street																			
D St. - C St.	City	Not classified	25		12	1	Two-way	Shoulder	8-10	Both sides	grass/gravel	No	No	No	Gravel	No	No	NA	Unimproved Road
C St. - A St.	City	Not classified	25		19	2	Two-way	Shoulder	8-10	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
A St. - 1st St.	City	Not classified	25		16	2	Two-way	No	2-4	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Rutledge Street																			
1st St. - A St.	City	Not classified	25		21	2	Two-way	Shoulder	4-6, 6-8	East, West	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
A St. - B St.	City	Not classified	25		20	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Good	East side only, 6'	No	NA	16' setback for sidewalk
B St. - C St.	City	Not classified	25		20	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
C St. to Dead End	City	Not classified	25		12	1	Two-way	Shoulder	6-8	Both sides	grass/gravel	No	No	No	Gravel	No	No	NA	Unimproved Road
Jay Street																			
C St. - A St.	City	Not classified	25		21	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	4% downgrade SB between C St. and B St.
1st St. - 2nd St.	City	Not classified	25		20	2	Two-way	No	2-4, 1	West, East	W-gravel, E-grass	Shared	No	No	Fair to Good	No	No	NA	
2nd St. - 3rd St.	City	Not classified	25		20	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
3rd St. - 4th St.	City	Not classified	25		20	2	Two-way	East side Head-in, 20'	6-8	Both sides	grass/gravel	Shared	No	No	Fair	East side only, 5'	No	NA	20' setback for sidewalk
4th St. - 6th St.	City	Not classified	25		20	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Hwy 19 to Dead End	City	Not classified	25		19	2	Two-way	Shoulder	10, 6	West, East	W-gravel, E-grass	Shared	No	No	Fair	No	No	NA	
Street																			
Dead End to Hwy 19	City	Not classified	25		22	2	Two-way	Shoulder	16-20	Both sides	Gravel	No	No	No	Gravel	No	No	NA	Unimproved Road
Hwy 19 to 6th St.	City	Not classified	25		21	2	Two-way	Shoulder	6-8	Both sides	W-gravel, E-grass/gravel	Shared	No	No	Fair to Good	No	No	NA	

APPENDIX B
2000 City of Fossil Major Streets Inventory
Wheeler County Transportation System Plan

Street	Jurisdiction	Classification ³	Speed Limit (mph)	ROW Width (feet)	Street Width (feet)	No. of Travel Lanes	Direction of Travel	On-Street Parking	Shoulders				1999 Pavement Condition ²	sidewalks	Curbs	Curb cuts at intersections	Comments		
									Width (feet)	Side	Paving	Bikeway ¹							
100' North of 6th St. to 4th St.	City	Not classified	25		21	2	Two-way	Shoulder	16	Both sides	W-gravel, E-grass/gravel	Shared	No	No	Fair to Good	East side only, 4' fair to poor	No	NA	16' setback for sidewalk
4th St. to 3rd St.	City	Not classified	20		37	2	Two-way	Yes, Shoulder	16, 6	West, East	W-paved, E-grass/gravel	Shared	No	No	Fair to Good	East side only, 4' good	No	NA	
3rd St. to 2nd St.	City	Not classified	20		45	2	Two-way	Yes	7	Both sides	paved	Shared	No	No	Fair to Good	East side only, 6' good	No	NA	
2nd St. to 1st St.	City	Not classified	20		50	2	Two-way	Yes	8	Both sides	paved	Shared	No	No	Fair to Good	East side 7' good, West side 9' good	No	NA	
1st St. to Broadway St.	City	Not classified	20		53	2	Two-way	Yes	8	Both sides	paved	Shared	No	No	Fair to Good	East and West sides, 6' fair to good	No	NA	
Broadway St. to B St.	City	Not classified	20		20	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
Hoover Street																			
Broadway St. to 1st St.	City	Not classified	25		18	2	Two-way	Shoulder	6-8	Both sides	gravel	Shared	No	No	Fair	No	No	NA	
Quimby Street																			
Broadway St. to 1st St.	City	Not classified	25		16	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Adams Street																			
Hwy 19 to 4th St.	City	Not classified	25		19	2	Two-way	Shoulder	6-8	Both sides	gravel	Shared	No	No	Fair	No	No	NA	
4th St. to 3rd St.	City	Not classified	25		20	2	Two-way	Shoulder	6-8, 16	East, West	grass/gravel, paved	Shared	No	No	Fair	West side only, 6' good	No	NA	14' setback for sidewalk
3rd St. to 1st St.	City	Not classified	25		20	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Jefferson Street																			
3rd St. to 4th St.	City	Not classified	25		41	2	Two-way	East 20' head-in, West shoulder	6-8	West	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
4th St. to 5th St.	City	Not classified	25		14	2	Two-way	No	1-2	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Unknown Street (South-east of town)																			
Hwy 19 to UGB	City	Not classified	25		14	2	Two-way	No	1-2	Both sides	grass	No	No	No	Gravel	No	No	NA	Unimproved Road
Unknown Street (West of town)																			
St. to UGB	City	Not classified	25			2	Two-way	No	No	NA	NA	No	No	No	Poor	No	No	NA	
Unknown Street (West of town)																			
1st St. to UGB	City	Not classified	25			2	Two-way	No	No	NA	NA	No	No	No	Poor	No	No	NA	
Unknown Street (West of town)																			
1st St. to UGB	City	Not classified	25			2	Two-way	No	No	NA	NA	No	No	No	Poor	No	No	NA	
LEGEND/NOTES																			
Note 1: The three bikeway design treatments for bicycle facilities on roadways outlined in the 1995 Oregon Bicycle and Pedestrian Plan are: (1) shared roadway, (2) shoulder bikeway, and (3) bike lanes.																			
Note 2: Pavement condition information for arterials is from the 1999 ODOT Pavement Condition Report. Condition information for collectors is based on field survey conducted by DEA in October 2000.																			
Note 3: Based on ODOT Street Classification.																			

APPENDIX B
2000 City of Mitchell Major Streets Inventory
Wheeler County Transportation System Plan

Street	Jurisdiction	Classification ³	Speed Limit (mph)	ROW Width (feet)	Street Width (feet)	No. of Travel Lanes	Direction of Travel	On-Street Parking	Shoulders				1999			sidewalks	Curbs	Curb cuts at intersections	Comments
									Width (feet)	Side	Paving	Bikeway ¹	Bike Lanes	Truck Route	Pavement Condition ²				
SW Huddleston Heights Drive																			
Dead End to Deer Drive	City	Not classified	25	60	20	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	3% rolling grade
Deer Drive to Cole Rd.	City	Not classified	25	60	18-20	2	Two-way	No	2-4	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	Cliff on north-side
Cole Rd. to Reservoir Rd.	City	Not classified	25	60	18-20	2	Two-way	No	2-4	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	6-8% Downgrade, cliff on north-side
Reservoir Rd. to Nelson St.	City	Not classified	25	60	15	2	Two-way	No	1, 4-6	East, West	gravel	Shared	No	No	Fair to Good	No	No	NA	6-8% Downgrade, cliff on north-side
SW Deer Drive																			
Dead End to Huddleston Heights Drive	Private	Not classified	25		10	1	Two-way	No	1-2	Both sides	gravel	No	No	No	Fair	No	No	NA	
SW Cole Road																			
Huddleston Heights Drive to UGB	Private	Not classified	25		16	2	Two-way	No	No	NA	NA	No	No	No	Dirt/gravel	No	No	NA	Unimproved Road
SW Reservoir Road																			
Huddleston Heights Drive to Gate	Private	Not classified	15		10-12	1	Two-way	No	1-2	Both sides	gravel	No	No	No	Gravel	No	No	NA	Steep 10-12% upgrade, Unimproved Road
SW Juniper Drive																			
Nelson St. to Dead End	Private	Not classified	25		10-12	1	Two-way	No	1-2	Both sides	grass	No	No	No	Dirt/gravel	No	No	NA	8-10% upgrade, poor road
S Nelson Street																			
Dead End to Juniper Drive	Private	Not classified	25		10	1	Two-way	West shoulder	1-2, 6-8	East, West	grass/gravel	No	No	No	Very Poor	No	No	NA	6% downgrade
Juniper Drive to 250' South of Juniper Drive	City	Not classified	25	45	24	2	Two-way	No	4-6	Both sides	grass/gravel	Shared	No	No	Good	No	No	NA	
250' South of Juniper Drive to Main St.	City	Not classified	25	45	28	2	Two-way	East 8'	6-8	West	grass/gravel	Shared	No	No	Good	East side only, 6'	No	NA	Sidewalk leads to ped path (gravel) parallel to High S
SE High Street																			
Huddleston Heights Drive to 450' North	City	Not classified	25	50	22	2	Two-way	No	1-2, 2-4	East, West	grass/gravel	Shared	No	No	Good	No	Partial west side	NA	6-8% upgrade
450' North of Huddleston H Dr. to Rosenbaum St.	City	Not classified	20	50	22	2	Two-way	No	1-2, 2-4	East, West	grass/gravel	Shared	No	No	Good	No	No	NA	6-8% upgrade
Rosenbaum St. to Church	City	Not classified	20	50	24-26	2	Two-way	No	4-6	Both sides	grass/gravel	Shared	No	No	Good	No	No	NA	
Church to Rosenbaum St.	City	Not classified	20	50	33	2	Two-way	North 8', South Shoulder	6-8	South	grass/gravel	Shared	No	No	Good	North side only, 3.5' fair	No	NA	
Rosenbaum St. to 750' East of Rosenbaum St.	City	Not classified	20	50	26-28	2	Two-way	North 8', South Shoulder	6-8	South	grass/gravel	Shared	No	No	Good	North side only, 3.5' fair	No	NA	
750' East of Rosenbaum St. to High School Shop Bldg.	City	Not classified	20	50	24	2	Two-way	No	N	NA	NA	Shared	No	No	Good	No	No	NA	
High School Shop Bldg. to High School (Dead End)	City	Not classified	10	50	24	2	Two-way	No	N	NA	NA	Shared	No	No	Good	No	No	NA	
SE Sasser Drive																			
High St. to Dead End	Private	Not classified	25		10-12	1	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	Unimproved Road
SE Rosenbaum Street																			
High St. to High St.	City	Not classified	25	26	12	1	Two-way	North Shoulder	6, 1-2	North, South	grass/gravel	Shared	No	No	Poor	No	No	NA	Poor bikeway
SE Alley Street																			
High St. to Rosenbaum St.	City	Not classified	25	12	10	1	Two-way	No	1-2	Both sides	grass/gravel	Shared	No	No	Fair to Poor	No	No	NA	
Main Street																			
Hwy 26 to Bridge	City	Not classified	25	50	21	2	Two-way	No	6	Both sides	gravel	Shared	No	No	Fair	No	No	NA	
Bridge to 120' South-east of Bridge	City	Not classified	25	50	26	2	Two-way	No	No	NA	NA	Shared	No	No	Good	No	Both sides, 1.5'	NA	
120' South-east of Bridge to Grocery Store	City	Not classified	20	50	36	2	Two-way	South 10', North	8	North	gravel	Shared	No	No	Good	South side only, 5' fair to good.	South side only	NA	
Grocery Store to 200' East of Grocery Store	City	Not classified	20	50	46	2	Two-way	Yes	8-10	Both sides	Paved	Shared	No	No	Good	North side 3', South side 6'	No	NA	
200' East of Grocery Store to Nelson St.	City	Not classified	20	50	36-40	2	Two-way	Yes	8	Both sides	Paved	Shared	No	No	Good	North side 6', South side 6'	No	NA	
Nelson St. to 160' East of Nelson St.	City	Not classified	20	50	42	2	Two-way	Yes	8	Both sides	N-gravel, S-paved	Shared	No	No	Fair to Good	South side only, 5'	No	NA	
160' East of Nelson St. to West side of Bridge	City	Not classified	20	50	20	2	Two-way	Shoulder	2-6	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
West side of Bridge to East side of Bridge	City	Not classified	25	50	21	2	Two-way	No	1	Both sides	gravel	Shared	No	No	Fair to Good	No	Both sides, 1'	NA	
East side of Bridge to Hwy 26	City	Not classified	25	50	19	2	Two-way	No	10, 1-2	North, South	gravel	Shared	No	No	Fair to Good	No	No	NA	
Upper Bridge Creek Road																			
Hwy 26 to UGB	City	Collector	25		18	2	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	Unimproved Road

APPENDIX B
2000 City of Mitchell Major Streets Inventory
Wheeler County Transportation System Plan

Street	Jurisdiction	Classification ³	Speed Limit (mph)	ROW Width (feet)	Street Width (feet)	No. of Travel Lanes	Direction of Travel	On-Street Parking	Shoulders				1999 Pavement Condition ²	sidewalks	Curbs	Curb cuts at intersections	Comments	
									Width (feet)	Side	Paving	Bikeway ¹						
Old Highway																		
UGB to Hwy 207	City	Not classified	25		14	2	Two-way	Shoulder	6-10	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA
LEGEND/NOTES																		
Note 1: The three bikeway design treatments for bicycle facilities on roadways outlined in the 1995 Oregon Bicycle and Pedestrian Plan are: (1) shared roadway, (2) shoulder bikeway, and (3) bike lanes.																		
Note 2: Pavement condition information for arterials is from the 1999 ODOT Pavement Condition Report. Condition information for collectors is based on field survey conducted by DEA in October 2000.																		
Note 3: Based on ODOT Street Classification.																		

APPENDIX B
2000 State Highway Inventory
Wheeler County Transportation System Plan

Street	Jurisdiction	Classification ³	Speed Limit (mph)	Street Width (feet)	Lane Width (feet)	No. of Travel Lanes	Direction of Travel	On-Street Parking	Shoulders			Bikeway ¹	Bike Lanes	Truck Route	1999			Curb cuts at intersections	Comments
									Width (feet)	Side	Paving				Pavement Condition ²	sidewalks	Curbs		
US 26 (Ochoco Highway)																			
Rural Area-Crook County to Mitchell																			
MP 50.03 - MP 50.54	State	Interstate	55	24	12	2	Two-way	No	4-8	Both Sides	Gravel/Paved	Shoulder Bikeway	No	No	Very Good	No	No	NA	3-6' Paved shoulder
MP 50.54 - MP 51.85	State	Interstate	55	36	12	3	Two-way	No	4	Both Sides	Gravel/Paved	Shoulder Bikeway	No	No	Very Good	No	No	NA	3-6' Paved shoulder
MP 51.85 - MP 55.4	State	Interstate	55	24	12	2	Two-way	No	2-4	Both Sides	Gravel/Paved	Shoulder Bikeway	No	No	Very Good	No	No	NA	0-3' Paved shoulder
MP 55.4 - MP 55.8	State	Interstate	55	24	12	2	Two-way	No	3-4, 10-12	South, North	Gravel/Paved	Shoulder Bikeway	No	No	Very Good	No	No	NA	Westbound shoulder pullout
MP 55.8 - MP 60.3	State	Interstate	55	24	12	2	Two-way	No	4-8	Both Sides	Gravel/Paved	Shoulder Bikeway	No	No	Very Good	No	No	NA	3-4' Paved shoulder
MP 60.3 - MP 65.73 (Mitchell)	State	Interstate	55	24	12	2	Two-way	No	4-8	Both Sides	Gravel/Paved	Shoulder Bikeway	No	No	Fair	No	No	NA	3-4' Paved shoulder
Mitchell Urban Area																			
West City Limits (MP 65.73) - MP 65.88	State	Interstate	55	24	12	2	Two-way	No	2-4	Both Sides	Gravel/Paved	Shoulder Bikeway	No	No	Fair	No	No	NA	2' Paved shoulder
MP 65.88 - MP 66.5	State	Interstate	40	24	12	2	Two-way	No	4-6	Both Sides	Gravel/Paved	Shoulder Bikeway	No	No	Fair	No	No	NA	2-4' Paved shoulder
MP 66.5 - MP 66.61	State	Interstate	55	24	12	2	Two-way	No	4-8	Both Sides	Gravel/Paved	Shoulder Bikeway	No	No	Fair	No	No	NA	2-4' Paved shoulder
MP 66.61 - MP 66.88 (East City Limits)	State	Interstate	55	24	12	2	Two-way	No	4-8	Both Sides	Gravel/Paved	Shoulder Bikeway	No	No	Good	No	No	NA	2-4' Paved shoulder
Rural Area-Mitchell to Grant County																			
MP 66.88 - MP 81.6	State	Interstate	55	24	12	2	Two-way	No	4-8	Both Sides	Gravel/Paved	Shoulder Bikeway	No	No	Good	No	No	NA	2-4' Paved shoulder
MP 81.6 - MP 88.46	State	Interstate	55	20	10	2	Two-way	No	1-2	Both Sides	Gravel	Shared Roadway	No	No	Poor	No	No	NA	0-2' Paved Shoulder
MP 88.46 - MP 89.3	State	Interstate	55	20	10	2	Two-way	No	2-4	Both Sides	Gravel	Shared Roadway	No	No	Poor	No	No	NA	0-2' Paved Shoulder
MP 89.3 - MP 96.89	State	Interstate	55	24	12	2	Two-way	No	2-4	Both Sides	Paved	Shared Roadway	No	No	Poor	No	No	NA	0-2' Paved Shoulder
OR Highway 19 (John Day Highway)																			
Rural Area-Gilliam County to Fossil																			
MP 52.06 - MP 53.71	State	Principal Arterial	55	24	12	2	Two-way	No	4-6	Both Sides	Gravel/Paved	Shared Roadway	No	No	Good	No	No	NA	0-2' Paved shoulder
MP 53.71 - MP 57.58 (Fossil UGB)	State	Principal Arterial	55	24	12	2	Two-way	No	2-4	Both Sides	Gravel/Paved	Shared Roadway	No	No	Good	No	No	NA	0-2' Paved shoulder
Fossil Urban Area																			
West City Limits (MP 57.58) - MP 58.05	State	Principal Arterial	55	24	12	2	Two-way	No	6, 2-4	North, South	Paved, Combo	Shoulder Bikeway	No	No	Good	No	No	NA	6' Paved Ped/Bike Path on N side of Hwy
MP 58.05 - Adams Street	State	Principal Arterial	35	24	12	2	Two-way	No	6, 2-4	North, South	Paved, Combo	Shoulder Bikeway	No	No	Good	No	No	NA	6' Paved Ped/Bike Path on N side of Hwy
Street - Washington Street	State	Principal Arterial	35	24	12	2	Two-way	No	2-4	Both Sides	Gravel/Paved	Shared Roadway	No	No	Good	No	No	NA	
gton Street - Jay Street	State	Principal Arterial	35	24	12	2	Two-way	Shoulder	6-10	Both Sides	Grass/Gravel	Shared Roadway	No	No	Good	No	No	NA	
Jay Street - 6th Street	State	Principal Arterial	35	24	12	2	Two-way	No	1-2	Both Sides	Grass/Gravel	Shared Roadway	No	No	Good	No	No	NA	
6th Street - East City Limits (MP 59.63)	State	Principal Arterial	45	24	12	2	Two-way	No	2-4	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
Rural Area-Fossil to Spray																			
MP 59.63 - MP 69.69	State	Principal Arterial	55	24	12	2	Two-way	No	0-5	Both Sides	Gravel	Shared Roadway	No	No	Fair	No	No	NA	
MP 69.69 - MP 74.0	State	Principal Arterial	55	22	11	2	Two-way	No	0-5	Both Sides	Gravel	Shared Roadway	No	No	Fair	No	No	NA	
MP 74.0 - MP 74.15	State	Principal Arterial	55	22	11	2	Two-way	No	0-5	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
MP 74.15 - MP 78.7	State	Principal Arterial	55	20	10	2	Two-way	No	0-6	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
MP 78.7 - MP 79.5	State	Principal Arterial	55	20	10	2	Two-way	No	6-10	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	Parking on shoulders near river
MP 74.15 - MP 92.04	State	Principal Arterial	55	20	10	2	Two-way	No	0-6	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
Spray Urban Area																			
MP 92.04 (Spray UGB) - MP 92.17	State	Principal Arterial	55	20	10	2	Two-way	No	2-6	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
MP 92.17 - MP 92.27	State	Principal Arterial	35	20	10	2	Two-way	E Shoulder	2-6	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
MP 92.27 - MP 92.35	State	Principal Arterial	35	24	12	2	Two-way	Shoulder	10-20	Both Sides	Paved	Shared Roadway	No	No	Good	No	No	NA	Head-in and parallel parking
MP 92.35 - MP 92.41	State	Principal Arterial	35	44	22	2	Two-way	E, Shoulder	6-8	West	Gravel	Shared Roadway	No	No	Good	East Side (6')	No	NA	On-street parallel parking next to sidewalk
MP 92.41 - MP 92.56	State	Principal Arterial	35	44	22	2	Two-way	Shoulder	6-12	Both Sides	Grass/Gravel	Shared Roadway	No	No	Good	No	No	NA	
MP 92.56 - MP 92.78 (Spray UGB)	State	Principal Arterial	35	20	10	2	Two-way	No	1-2	Both Sides	Grass/Gravel	Shared Roadway	No	No	Good	No	No	NA	
Rural Area-Spray to Grant County																			
MP 92.78 - MP 93.2	State	Principal Arterial	55	20	10	2	Two-way	No	2-6	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
MP 93.2 - MP 95.56	State	Principal Arterial	55	24	12	2	Two-way	No	2-6	Both Sides	Paved	Shoulder Bikeway	No	No	Good	No	No	NA	2-4' Paved shoulder
MP 95.56 - MP 104.73	State	Principal Arterial	55	20	10	2	Two-way	No	1-6	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
OR Highway 207 (Heppner-Spray Highway)																			
Rural Area-Morrow County to OR 19																			
MP 24.65 - MP 25.81	State	Principal Arterial	55	24	12	2	Two-way	No	2-4	Both Sides	Gravel/Paved	Shared Roadway	No	No	Fair	No	No	NA	
MP 25.9 - MP 26.48	State	Principal Arterial	55	22	11	2	Two-way	No	2-6	Both Sides	Gravel	Shared Roadway	No	No	Poor	No	No	NA	
MP 26.48 - MP 28.34	State	Principal Arterial	55	22	11	2	Two-way	No	4-8	Both Sides	Gravel	Shared Roadway	No	No	Poor	No	No	NA	
MP 28.34 - MP 34.05	State	Principal Arterial	55	22	11	2	Two-way	No	1-4	Both Sides	Gravel	Shared Roadway	No	No	Poor	No	No	NA	
MP 34.05 - MP 35.0	State	Principal Arterial	55	22	11	2	Two-way	No	1-8	Both Sides	Gravel	Shared Roadway	No	No	Poor	No	No	NA	
MP 35.0 - MP 40.96	State	Principal Arterial	55	22	11	2	Two-way	No	1-8	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	

APPENDIX B
2000 State Highway Inventory
Wheeler County Transportation System Plan

Street	Jurisdiction	Classification ³	Speed	Street	Lane	No. of	Direction	On-Street	Shoulders			Bikeway ¹	Bike Lanes	Truck Route	1999			Curb cuts at intersections	Comments
			Limit	Width	Width	Travel			Width	Side	Paving				Pavement	sidewalks	Curbs		
			(mph)	(feet)	(feet)	Lanes	of Travel	Parking	(feet)										
OR Highway 207 (Service Creek-Mitchell Highway)																			
<i>Rural Area-OR 19 to Mitchell</i>																			
MP 0.00 - MP 1.56	State	Principal Arterial	55	20	10	2	Two-way	No	0-2	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
MP 1.56 - MP 5.55	State	Principal Arterial	55	20	10	2	Two-way	No	1-6	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
MP 5.55 - MP 5.87	State	Principal Arterial	55	18	9	2	Two-way	No	1-4	Both Sides	Gravel	Shared Roadway	No	No	Fair	No	No	NA	
MP 5.87 - MP 7.36	State	Principal Arterial	55	22	11	2	Two-way	No	2-4	Both Sides	Paved	Shared Roadway	No	No	Fair	No	No	NA	
MP 7.36 - MP 8.54	State	Principal Arterial	55	22	11	2	Two-way	No	4-6	Both Sides	Gravel/Paved	Shared Roadway	No	No	Fair	No	No	NA	
MP 8.54 - MP 8.85	State	Principal Arterial	55	22	11	2	Two-way	No	2-4	Both Sides	Gravel/Paved	Shared Roadway	No	No	Fair	No	No	NA	
MP 8.85 - MP 19.2	State	Principal Arterial	55	22	11	2	Two-way	No	2-4	Both Sides	Gravel/Paved	Shared Roadway	No	No	Poor	No	No	NA	
MP 19.2 - MP 23.3	State	Principal Arterial	55	22	11	2	Two-way	No	2-4	Both Sides	Gravel/Paved	Shared Roadway	No	No	Fair	No	No	NA	
MP 23.3 - MP 24.13 (Mitchell West City Limits)	State	Principal Arterial	55	22	11	2	Two-way	No	2-4	Both Sides	Gravel/Paved	Shared Roadway	No	No	Poor	No	No	NA	
<i>Mitchell Urban Area</i>																			
MP 24.13 (Mitchell West City Limits) - MP 24.32	State	Principal Arterial	55	22	11	2	Two-way	No	2-4	Both Sides	Gravel/Paved	Shared Roadway	No	No	Poor	No	No	NA	
OR Highway 218 (Shaniko-Fossil Highway)																			
<i>Rural Area-Wasco County to Fossil</i>																			
MP 23.07 - MP 25.39	State	Principal Arterial	55	24	12	2	Two-way	No	4-8	Both Sides	Gravel/Paved	Shared Roadway	No	No	Poor	No	No	NA	2-4' Paved Shoulders
MP 25.39 - MP 26.3	State	Principal Arterial	55	22	11	2	Two-way	No	2-6	Both Sides	Gravel	Shared Roadway	No	No	Poor	No	No	NA	
MP 26.3 - MP 29.0	State	Principal Arterial	55	22	11	2	Two-way	No	2-6	Both Sides	Gravel	Shared Roadway	No	No	Very Good	No	No	NA	
MP 29.0 - MP 34.3	State	Principal Arterial	55	22	11	2	Two-way	No	2-6	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
MP 34.3 - MP 37.58	State	Principal Arterial	55	22	11	2	Two-way	No	2-6	Both Sides	Gravel	Shared Roadway	No	No	Fair	No	No	NA	
MP 37.58 - MP 39.1	State	Principal Arterial	55	22	11	2	Two-way	No	2-6	Both Sides	Gravel	Shared Roadway	No	No	Very Good	No	No	NA	
MP 39.1 - MP 40.91	State	Principal Arterial	55	22	11	2	Two-way	No	2-6	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
MP 40.91 - MP 42.62 (Fossil South City limit)	State	Principal Arterial	55	20	10	2	Two-way	No	1-4	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
<i>Fossil Urban Area</i>																			
MP 42.62 (Fossil South City limit) - MP 42.75	State	Principal Arterial	55	20	10	2	Two-way	No	2-8	Both Sides	Gravel	Shared Roadway	No	No	Good	No	No	NA	
MP 42.75 - MP 42.98	State	Principal Arterial	25	20	10	2	Two-way	Shoulder	6-8	Both Sides	Grass/Gravel	Shared Roadway	No	No	Good	No	No	NA	
LEGEND/NOTES																			
Note 1: The three bikeway design treatments for bicycle facilities on roadways outlined in the 1995 Oregon Bicycle and Pedestrian Plan are: (1) shared roadway, (2) shoulder bikeway, and (3) bike lanes.																			
Note 2: Pavement condition information for arterials is from the 1999 ODOT Pavement Condition Report. Condition information for collectors is based on field survey conducted by DEA in October 2000.																			
Note 3: Based on ODOT Street Classification.																			

APPENDIX B
2000 City of Spray Major Streets Inventory
Wheeler County Transportation System Plan

Street	Jurisdiction	Classification ³	Speed Limit (mph)	ROW Width (feet)	Street Width (feet)	No. of Travel Lanes	Direction of Travel	On-Street Parking	Shoulders				1999 Pavement Condition ²	sidewalks	Curbs	Curb cuts at intersections	Comments		
									Width (feet)	Side	Paving	Bikeway ¹							
Juniper Avenue																			
Hwy 19 to Corner	City	Not classified	25		10-12	1	Two-way	No	No	NA	NA	No	No	No	Dirt	No	No	NA	Unimproved Road
Corner to 2nd St.	City	Not classified	25		12-14	1	Two-way	Shoulder	2-4	Both sides	grass/gravel	No	No	No	Dirt	No	No	NA	Unimproved Road
2nd St. to Main St.	City	Not classified	25		18	2	Two-way	No	2-4	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
2nd Street																			
Juniper Ave to John Day Ave	City	Not classified	25		19	2	Two-way	Shoulder	10-12	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
John Day Ave to Dead End	City	Not classified	25		10	1	Two-way	No	2-4	Both sides	grass/gravel	No	No	No	Gravel	No	No	NA	Unimproved Road
John Day Avenue																			
3rd St. to 2nd St.	City	Not classified	25		14	2	Two-way	Shoulder	2-4	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
2nd St. to Main St.	City	Not classified	25		20	2	Two-way	Shoulder	6-8	North	grass	Shared	No	No	Good	No	No	NA	
Main Street																			
UGB to end of Bridge (200')	City	Collector	25		24	2	Two-way	No	No	NA	NA	Shared	No	No	Good	No	Yes-Both	NA	
End of Bridge to ODOT Maintenance Bldg.	City	Collector	20		20-22	2	Two-way	No	6-8, 2-4	North, South	grass/gravel	Shared	No	No	Good	No	No	NA	
ODOT Maintenance Bldg. to Juniper Ave	City	Collector	20		22	2	Two-way	Shoulder	8-10	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Juniper Ave to Hwy 19	City	Collector	20		20	2	Two-way	No	1-2, 0-1	West, East	grass/gravel	Shared	No	No	Fair	No	No	NA	
Willow Street																			
Hwy 19 to Thorn St.	City	Not classified	25		9	1	Two-way	No	No	NA	NA	Shared	No	No	Fair	No	No	NA	
Thorn St. to Main St.	City	Not classified	25		18	2	Two-way	Intermittent	4-8	Both sides	grass	Shared	No	No	Fair	No	No	NA	
Highway 19 easterly access																			
Main St. to Hwy 19	City	Collector	20		20	2	Two-way	No	4-6	South	grass	Shared	No	No	Fair	No	No	NA	
Thorn Street																			
Willow St. to 500' North of Willow St.	City	Not classified	25		12-14	2	Two-way	No	1-2	Both sides	grass	Shared	No	No	Fair to Good	No	No	NA	
500' North of Willow St. to Cox St.	City	Not classified	25		19	2	Two-way	Shoulder	6-8, 8-12	East, West	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
Cox St. to Creek Bed (Dead End)	City	Not classified	25		12	1	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	Unimproved Road
Asher Drive																			
Dead End to Hwy 19	City	Not classified	25		12	1	Two-way	No	6-8	Both sides	grass/gravel	No	No	No	Gravel	No	No	NA	Unimproved Road
Cox Street																			
Hwy 19 to Thorn St.	City	Not classified	25		23	2	Two-way	No	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Good	No	No	NA	
Thorn St. to Dead End	City	Not classified	25		10	1	Two-way	Shoulder	6-8	Both sides	grass/gravel	No	No	No	Gravel	No	No	NA	Unimproved Road
Park Street																			
Hwy 19 to Thorn St.	City	Not classified	25		23	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Thorn St. to Dead End	City	Not classified	25		30	2	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	Unimproved Road
North Street																			
Hwy 19 to Thorn St.	City	Not classified	25		19	2	Two-way	Shoulder	6-8	Both sides	grass/gravel	Shared	No	No	Fair to Poor	No	No	NA	
Quail Drive																			
Hwy 19 to Dead End	City	Not classified	25		10-12	1	Two-way	No	4-6	Both sides	grass	No	No	No	Gravel	No	No	NA	Unimproved Road
Chucker Drive																			
Hwy 19 to Dead End	City	Not classified	25		10-12	1	Two-way	No	No	NA	NA	No	No	No	Gravel	No	No	NA	Unimproved Road
Pine Street																			
Hwy 19 to Winlock St.	City	Not classified	25		21	2	Two-way	Yes	10-16	Both sides	Gravel	Shared	No	No	Fair	No	No	NA	
Winlock St. to Harding St.	City	Not classified	25		21	2	Two-way	No	4-6	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Harding St. to Hwy 19	City	Not classified	25		22	2	Two-way	Yes	4-6	Both sides	grass/gravel	Shared	No	No	Fair	No	No	NA	
Broadway Street																			
Pine St. to Dead End	City	Not classified	25		18	2	Two-way	No	4-6	Both sides	grass	Shared	No	No	Fair	No	No	NA	

APPENDIX B
2000 City of Spray Major Streets Inventory
Wheeler County Transportation System Plan

Street	Jurisdiction	Classification ³	Speed	ROW	Street	No. of	Direction	On-Street	Shoulders			Bikeway ¹	Bike Lanes	Truck Route	1999	sidewalks	Curbs	Curb cuts at intersections	Comments
			Limit	Width	Width	Travel			Width	Side	Paving				Pavement				
			(mph)	(feet)	(feet)	Lanes	of Travel	Parking	(feet)										
Winlock Street																			
Pine St. to UGB	City	Not classified	25		18	2	Two-way	No	4-6	Both sides	gravel	Shared	No	No	Fair	No	No	NA	
LEGEND/NOTES																			
Note 1: The three bikeway design treatments for bicycle facilities on roadways outlined in the 1995 Oregon Bicycle and Pedestrian Plan are: (1) shared roadway, (2) shoulder bikeway, and (3) bike lanes.																			
Note 2: Pavement condition information for arterials is from the 1999 ODOT Pavement Condition Report. Condition information for collectors is based on field survey conducted by DEA in October 2000.																			
Note 3: Based on ODOT Street Classification.																			

APPENDIX C

EXISTING YEAR 2000 COUNTY ROAD INFORMATION

**APPENDIX C
EXISTING YEAR 2000 COUNTY ROAD INFORMATION**

FUNCTIONAL CLASSIFICATION AND ROAD TYPE							
Road Name	County Road No.	Functional Class	Road Type (miles)				Total Length (miles)
			Asphalt	Oil Mat ¹	Gravel	Dirt	
Winlock Ln	1	Local		6.00	11.00		17.00
Parrish Creek/Waterman Rd	2	Major Collector		5.50	20.00		25.50
Kahler Basin Rd	3	Local		10.41			10.41
Richmond Six Shooter Rd	4	Minor Collector		2.00	10.18		12.18
Alder Creek Rd	5	Local		9.16			9.16
Antone Ln	6	Local			8.82	9.94	18.76
N Twickenham Rd (a.k.a. Rowe Creek Rd)	7	Major Collector		15.63			15.63
Upper Bridge Creek Rd (a.k.a. Dollarhide Rd)	8	Minor Collector				8.55	8.55
Kinzua Ln	9	Major Collector		7.15			7.15
Gable Creek Rd	10	Local			6.04		6.04
Cottonwood Creek Rd	11	Local			5.35		5.35
West Branch Bridge Creek Rd	12	Local			5.15		5.15
Pine Creek Ln	13	Local			4.15		4.15
Bridge Creek Rd a.k.a. Burnt Ranch Rd	14	Major Collector Minor Collector	5.73		12.10		17.83
Stone Cabin Rd	15	Local			5.10		5.10
Bear Creek Rd (a.k.a. Painted Hills Rd)	16	Local		0.40	6.22		6.62
Butte Creek Ln	17	Local		3.76	4.40		8.16
S Twickenham Rd (a.k.a. Girds Creek Rd)	18	Major Collector		7.17			7.17
Black Butte Ln	19	Local			4.09		4.09
S Twickenham Rd (a.k.a. Sutton Mt Rd)	20	Local		3.00		9.00	12.00
Hoover Creek Ln (new alignment)	21	Local		1.29	8.63		9.92
(old alignment)		Local		1.21			1.21
Gage Rd	22	Local			0.90		0.90
Lost Valley Rd	23	Local			1.41	5.74	7.15
Lone Rock Rd	24	Local				12.84	12.84
Huddelston Rd	25	Minor Collector				2.76	2.76
Clarno Rd	29	Local			5.30		5.30
Henry Creek Rd	31	Local			1.75	3.63	5.38
Notch Rd	33	Local			1.93	2.63	4.56
Fire Ln	35	Local				2.37	2.37
Trail Fork Rd	37	Local				1.06	1.06
Williams Ln	39	Local			3.05		3.05
Total # of Miles in Category			5.73	72.68	125.57	58.52	262.50
% of Total in Category			2.2%	27.7%	47.8%	22.3%	100%

1. Chip seal and oil mat refer to the same type of roads in Wheeler County.

Source: Wheeler County Road Department

*See Figure 7-1 for future functional classifications of county roads.

APPENDIX D

LEVEL OF SERVICE CRITERIA DESCRIPTIONS

**APPENDIX D
LEVEL OF SERVICE CRITERIA DESCRIPTIONS**

This appendix describes the level-of-service (LOS) criteria for unsignalized intersections and two-lane rural highway sections.

Unsignalized Intersections

The operational characteristics of selected unsignalized intersections within Wheeler County were evaluated using procedures outlined in the 1997 Highway Capacity Manual for unsignalized intersections. The highest volume intersections, located along the state highways within the three urban areas were analyzed using design hour volumes for existing and future volume conditions. Unsignalized intersections include Two-Way Stop-Controlled (TWSC), All-Way Stop Controlled (AWSC), and Roundabouts. This program calculates delay and LOS for the critical movements of an intersection, based on the control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The LOS criteria for unsignalized intersections are presented in Table D-1.

It should be noted that the LOS criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, there are a number of driver behavior considerations that combine to make delays at signalized intersections less onerous than at unsignalized intersections.

For example, drivers at signalized intersections are able to relax during the red interval, while drivers on the minor street approaches to TWSC intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these reasons, it is considered that the total delay threshold for any given LOS is less for an unsignalized intersection than for a signalized intersection. While overall intersection LOS is calculated for AWSC intersections, LOS is only calculated for the minor approaches and the major street left turn movements at TWSC intersections. No delay is assumed for the major street through movements. For TWSC intersections, the overall intersection LOS is defined by the movement having the worst LOS (typically a minor street left turn).

**TABLE D-1
LEVEL-OF-SERVICE CRITERIA
FOR TWO-WAY UNSIGNALIZED INTERSECTIONS**

Level of Service	Delay Range
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Source: Transportation Research Board, Highway Capacity Manual, Special Report 209, page 10-25.

Two-lane Highways

The six LOS grades are described qualitatively for two-lane highways in Table D-2 below.

**TABLE D-2
LEVEL OF SERVICE CRITERIA FOR TWO-LANE HIGHWAYS**

Service Level	Typical Traffic Flow Conditions
A	Motorists are able to drive at their desired speed which, without strict enforcement, would result in average speeds approaching 60 mph. Passing demand is well below passing capacity, and almost no platoons of three or more vehicles are observed.
B	Speeds of 55 mph or slightly higher are expected on level terrain. Passing demand needed to maintain desired speeds becomes significant and approximately equals the passing capacity.
C	Further increases in flow result in noticeable increases in platoon formation, platoon size, and frequency of passing impediment. Average speed still exceeds 52 mph on level terrain, even though unrestricted passing demand exceeds passing capacity. While traffic flow is stable, it is becoming susceptible to congestion due to turning traffic and slow-moving vehicles.
D	Unstable traffic flow as passing demand is very high. Average platoon sizes of 5 to 10 vehicles are common, although speeds of 50 mph can still be maintained under ideal conditions. This is the highest flow rate that can be maintained for any length of time over an extended section of level terrain without a high probability of breakdown
E	Under ideal conditions, speeds will drop below 50 mph. Average travel speeds on highways with less than ideal conditions will be slower, as low as 25 mph on sustained upgrades. Passing is virtually impossible and platooning becomes intense when slower vehicles or other interruptions are encountered.
F	Heavily congested flow with traffic demand exceeding capacity.

Source: Transportation Research Board, Highway Capacity Manual, Special Report 209. National Research Council, 1994.

APPENDIX E

**TECHNICAL MEMORANDUM #2
POPULATION AND EMPLOYMENT FORECASTS FOR WHEELER COUNTY, FOSSIL,
MITCHELL, AND SPRAY**

APPENDIX E

TECHNICAL MEMORANDUM #2

POPULATION AND EMPLOYMENT FORECASTS FOR WHEELER COUNTY, FOSSIL, MITCHELL, AND SPRAY

This memorandum presents population and employment forecasts for Wheeler County and the incorporated cities of Fossil, Mitchell, and Spray. It briefly discusses historical population growth trends, the methodology for developing population forecasts, and the future population and employment trends estimated through the year 2020.

Methodology and Data Sources

Information used in this demographic analysis was gathered from a variety of sources. Historic population estimates (1960-1980) were developed from data reported by the U.S. Census Bureau. Current population estimates were provided by Portland State University's Center for Population Research and Census (PSU CPRC), which develops annual population estimates for cities and counties for the purpose of allocating certain state tax revenues. Population and employment projections (2000 through 2020) are based on the State of Oregon Office of Economic Analysis (OEA) projections. The OEA's projections were developed in January 1997 and include long-term (through year 2040) state population forecasts disaggregated by county. Employment information was developed from OEA's county-level employment forecasts (also completed in January 1997), which were based on covered employment payrolls reported by the Oregon Employment Department.

The OEA used business-cycle trends (as reflected by the Employment Department's employment forecasts) as the primary driver of population and employment for the short-term projections. Long-term forecasts shifted to a population-driven model, which emphasized demographics of the resident population, including age and gender of the population, with assumptions regarding life expectancy, fertility rate, and immigration.

David Evans and Associates, Inc. (DEA) used a similar methodology based on the OEA's county-distribution methodology to develop population and employment forecasts for each of the cities in Wheeler County. DEA calculated a weighted average growth rate for each jurisdiction (weighting recent growth more heavily than past growth) and combined that average growth rate with the projected countywide growth rate. This methodology assumes that growth rates will be similar over time. Often the physical constraints of any area limit its ability to sustain growth rates beyond the state or county average for long periods of time. Such constraints include availability of land and housing, congestion, and other infrastructure limitations.

The population and employment forecasts presented in this memorandum was developed to determine future transportation needs. The amount of growth, and where it occurs, will affect traffic and transportation facilities in the study area. This report is not intended to provide a complete economic forecast or housing analysis, and it should not be used for any purpose other than that for which it is designed.

Historic Growth

Population levels in most eastern Oregon counties generally declined in the latter part of the 20th century. Counties with lower current populations include Baker, Harney, Sherman, Union, Wallowa, Grant, Gilliam, and Wheeler Counties. Wheeler County's population declined during the 1960s, 1970s and 1980s, reflecting the

general slowdown in the state's economy, although this trend may be changing. Wheeler County's population has grown an average of 1.43 percent annually since 1990 to about 1,600 people in 1999, but is still less than its high of 2,722 people in 1960. Table 1 presents historic and current estimated population levels for Wheeler County, the cities of Fossil, Mitchell, Spray, and the State of Oregon.

Table 1
Population Growth, 1960 to 1999

	1960	1970	1980	1990	1999	Number (1960-1999)	AAGR*	
							1960-1999	1990-1999
Wheeler County	2,722	1,849	1,513	1,408	1,600	(1,122)	-1.35%	1.43%
Fossil	672	511	535	399	545	(127)	-0.54%	3.53%
Mitchell	236	196	183	163	200	(36)	-0.42%	2.30%
Spray	194	161	155	149	165	(29)	-0.41%	1.14%
State of Oregon	1,768,687	2,091,385	2,633,105	2,842,321	3,300,800	1,532,113	1.61%	1.68%

* *Average Annual Growth Rate*

Source: Portland State University Center for Population Research and Census (1990-1999 data); Oregon Blue book (City historic data); U.S. Census Bureau (County historic data)

The fastest population changes are taking place in the cities. Fossil and Mitchell are growing at almost twice the rate of the county, while Spray is also seeing modest growth at a rate just lower than the County's.

Population and Employment Forecasts

Wheeler County is facing many of the same challenges as other areas in Oregon and nationally. According to the Bureau of Economic Analysis, who compiled a list of the 250 poorest counties in the nation, Wheeler County is one of only two Oregon counties listed. Wheeler County's per Capita income is only 57.2 percent of the national average; Gilliam County's per capita income is 52.8 percent of the national average.¹ Nevertheless, Wheeler County is expected to experience small population gains for the next 20 years. Like much of eastern Oregon, the economy of Wheeler County remains largely seasonal, with over eighty percent of all employment being agriculture-based. Therefore, population and employment change increases are difficult to predict, and are not likely to be as stable as the forecasts imply. Population and employment as forecast by the OEA are shown in Table 2.

¹ *Regional Economic Information System, Bureau of Economic Analysis, June 2000*

Table 2
Population and Employment Forecast, 1999 to Year 2020
Wheeler County and State of Oregon

	1999	2000	2005	2010	2015	2020	2000-2020 Change		
							Number	Percent Change	AAGR
Wheeler County									
Population	1,600	1,697	1,833	1,966	2,100	2,230	533	31.41%	1.59%
Non-Agr. Empl.	N/A	315	343	367	384	399	84	26.67%	1.13%
State of Oregon									
Population	3,300,800	3,406,000	3,631,000	3,857,000	4,091,000	4,326,000	920,000	27.01%	1.30%
Non-Agr. Empl.	N/A	1,601,718	1,718,659	1,814,276	1,882,653	1,947,702	345,984	21.60%	0.94%

Source: Portland State University Center for Population Research and Census (1997 population estimates); State Of Oregon Office of Economic Analysis (forecasts).

The OEA expects population and employment in Wheeler County to grow, with population growing at the average rate of 1.59 percent over the 20-year planning horizon and non-agriculture based employment growing at an average rate of 1.13 percent. Based on the OEA projections, DEA prepared population forecasts for the jurisdictions of Fossil, Mitchell, and Spray, which are shown in five-year increments in Table 3.

Table 3
Population Forecast, 1997 to Year 2020
Wheeler County and Cities of Fossil, Mitchell, and Spray

	1999	2000	2005	2010	2015	2020	1999-2020 Change	
							Number	AAGR*
Wheeler County	1,600	1,697	1,833	1,966	2,100	2,230	630	1.59%
Fossil	545	579	669	759	834	909	364	2.47%
Mitchell	200	222	242	260	280	300	100	1.95%
Spray	165	176	191	206	215	229	64	1.57%

Source: Portland State University Center for Population Research and Census (1999 population estimates); and State Of Oregon Office of Economic Analysis (county forecasts); and David Evans and Associates, Inc. (disaggregation of county forecast to cities).

According to DEA's analysis, Fossil and Mitchell are expected to continue growing faster than the county as a whole, reaching a population of approximately 909 and 300, respectively, by the year 2020. The forecasted growth represents a net increase of about two-thirds for Fossil and one-half for Mitchell over 1999 population levels. Spray's population is expected to grow at a slightly lower rate than Wheeler County for the same time period. Spray is expected to grow about thirty-nine percent over the next twenty years, which is a gain of 64 people. Wheeler County as a whole expects to add 630 people over the next twenty years, which is a forty-percent increase.

APPENDIX F

WHEELER COUNTY TSP CONTACT LIST

**APPENDIX F
WHEELER COUNTY TSP CONTACT LIST**

Program	Agency	Contact Person	Phone Number
Accident-Crash Reporting Unit	ODOT	Sylvia Vogel	(503) 986-4240
Videotape Inventory	ODOT	Erick Cain	(503) 986-4182
Bridge Inventory	ODOT - Salem	Bert Hartman	(503) 986-3395
Bridge Inventory	ODOT - Bend	Mike Pulzone	(503) 388-6188
Needs Database Coordinator	ODOT	Rich Arnold	(503) 986-4218
Potential Development Impact Analysis (PDIA)	ODOT	Akin Owezokon	(503) 986-4220
Region 4 Traffic Engineer	ODOT	Steve Wilson	(541) 388-6189
Region 5 Traffic Engineer	ODOT	Tom Kuhlman	(541) 889-8558
Program Manager	Air Life of Oregon	Vern Bartley	(541) 385-6305
Superintendent	John Day Fossil Beds National Monument	Jim Hammett	(541) 987-2333
Region 4 STIP Coordinator & Construction Finance Plan Manager	ODOT	Kelly Hanslovan	(541) 388-6393
Region 5 STIP Coordinator	ODOT	Michelle Baker	(541) 963-1374
Preliminary Design	ODOT	Kent Belleque	(503) 986-3536
Construction Manager/ Construction Costs	ODOT	Pat Cimmiyotti	(541) 296-2800
Region Planner	ODOT - Region 5	Teresa Penninger	(541) 963-3177
Speed zone study coordinator	ODOT - Salem	Jan Gibson	(503) 986-3573
Transportation Planning and Analysis Unit (TPAU)	ODOT - Salem	Brian Dunn	(503) 986-4108
Transportation Planning and Analysis Unit (TPAU)	ODOT - Salem	V. Irene Toews	(503) 986-4107
Preliminary Design Unit	ODOT - Salem	Erik Havig	(503) 986-3558
Pavement Design	ODOT - Salem	Cole Mullis	(503) 986-3116

APPENDIX G

LIST OF ACRONYMS AND ABBREVIATIONS

APPENDIX G

LIST OF ACRONYMS AND ABBREVIATIONS

1.	TSP	Transportation System Plan
2.	TPR	Transportation Planning Rule
3.	DLCD	Department of Land Conversation and Development
4.	ODOT	Oregon Department of Transportation
5.	STIP	Statewide Transportation Improvement Program
6.	TAC	Technical Advisory Committee
7.	CIP	Capital Improvement Program
8.	LOS	Level of Service
9.	V/C Ratio	Volume-to-Capacity Ratio
10.	TGM	Transportation and Growth Management
11.	FHWA	Federal Highway Administration
12.	DEA	David Evans and Associates, Inc.
13.	OHP	Oregon Highway Plan
14.	NBIS	National Bridge Inspection Standards
15.	UGB	Urban Growth Boundary
16.	STF	Special Transportation Fund
17.	PSU	Portland State University
18.	OSFD	Oregon State Forest Department
19.	BLM	Bureau of Land Management
20.	ADT	Average Daily Traffic
21.	ATR	Automatic Traffic Recorder
22.	VPD	Vehicles per day
23.	DHV	Design Hour Volume
24.	VPH	Vehicles Per Hour
25.	HCM	Highway Capacity Manual
26.	TDM	Transportation Demand Management
27.	SPIS	Safety Priority Index System
28.	OEA	Oregon Office of Economic Analysis
29.	CPRC	Center for Population Research and Census
30.	AAGR	Average Annual Growth Rate
31.	TPAU	Transportation Planning and Analysis Unit
32.	AASHTO	American Association of State Highway and Transportation Officials
33.	FAA	Federal Aviation Administration
34.	MUTCD	Manual on Uniform Traffic Control Devices
35.	MP	Milepost
36.	ORS	Oregon Revised Statutes
37.	LID	Local Improvement Districts
38.	FAS	Federal Aid Secondary
39.	VMT	Vehicle Miles of Travel
40.	MPO	Metropolitan Planning Organizations
41.	LOC	League of Oregon Cities
42.	SDC	System Development Charges
43.	OECD	Oregon Economic and Community Development Department
44.	HBRR	Highway Bridge Rehabilitation or Replacement
45.	TSS	Transportation Safety Section
46.	SPWF	Special Public Works Fund
47.	OTIB	Oregon Transportation Infrastructure Bank
48.	OTP	Oregon Transportation Plan
49.	GO	General Obligation
50.	LTGO	Limited Tax General Obligation

APPENDIX H
LIST OF REFERENCES

APPENDIX H**LIST OF REFERENCES**

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APPENDIX I

TRUCK ROUTE INFORMATION ALONG STATE HIGHWAYS

Oregon Department of Transportation Group Map 1 Transportation Permit Unit

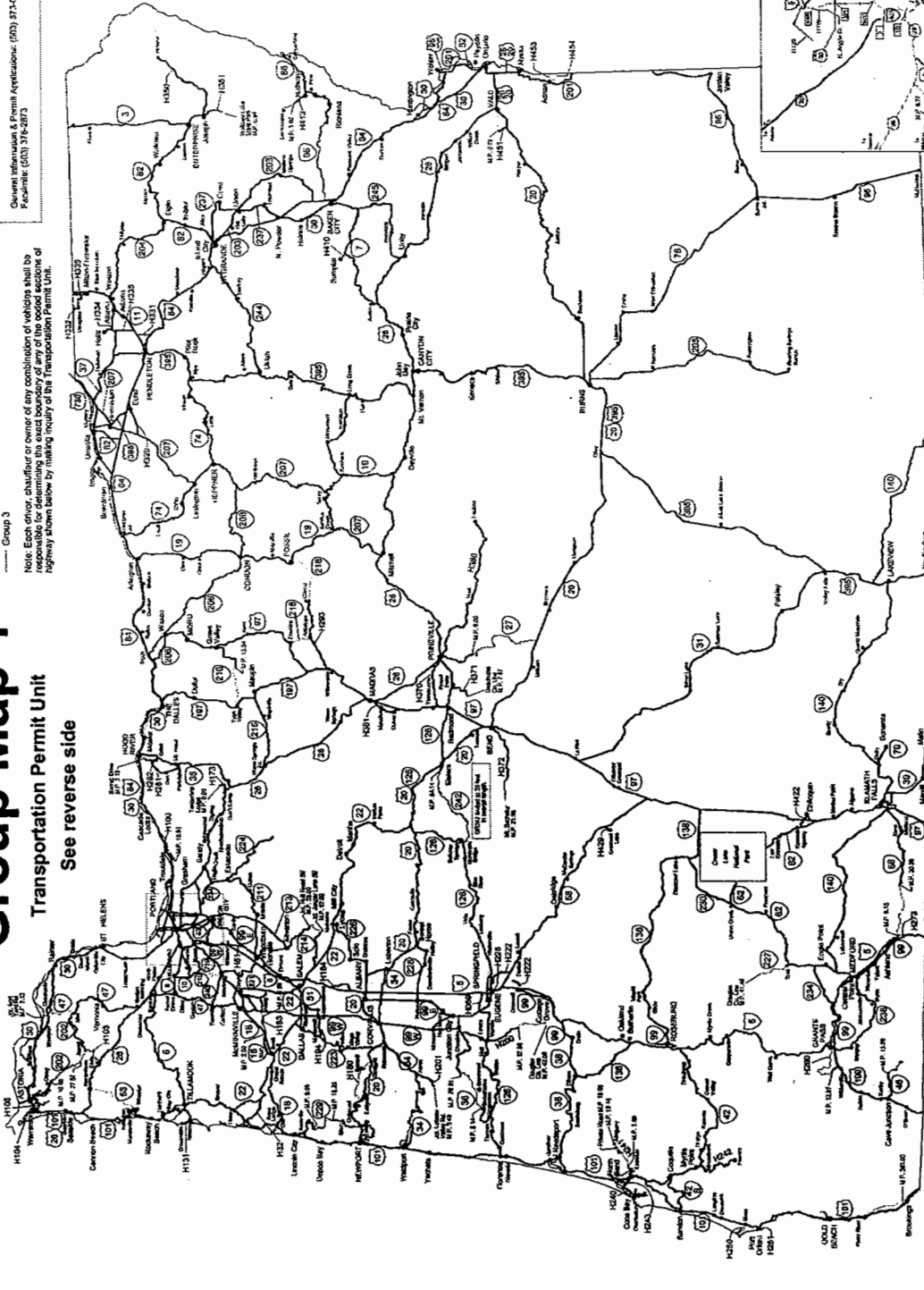
See reverse side

For additional information, contact or mail request to
Transportation Permit Unit
Motor Carrier Transportation Division
500 Capitol Mall, N.E.
Salem, OR 97331
General Information & Permit Applications: (503) 317-0000
Permitting: (503) 317-6275

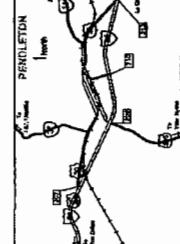
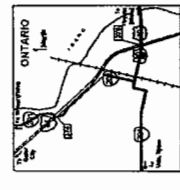
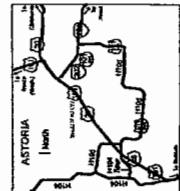
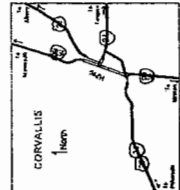
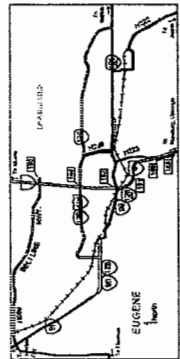
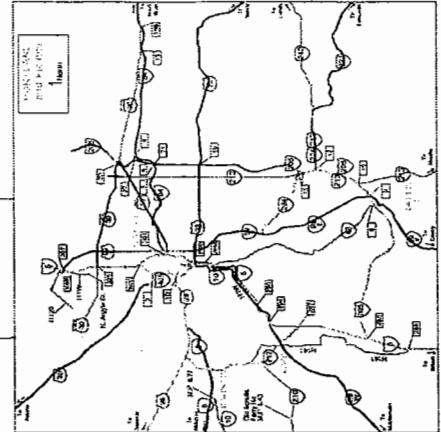
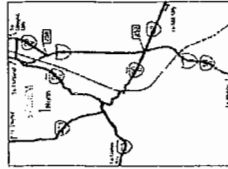
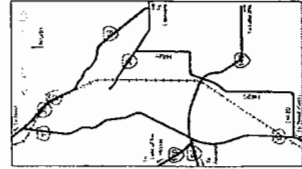
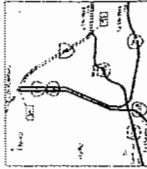
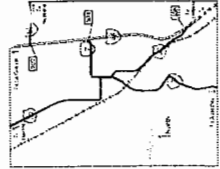
- Group 1
- Group 2
- Group 3

Note: Each driver, chauffeur or owner of any combination of vehicles shall be responsible for the weight and load capacity of the motor vehicle and highway shown below by making inquiry of the Transportation Permit Unit.

- Interstate Highways
- U. S. Highways
- State Highways



April 1989

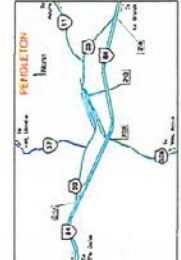
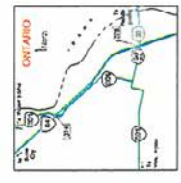
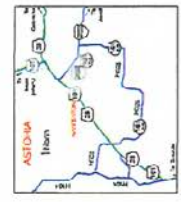
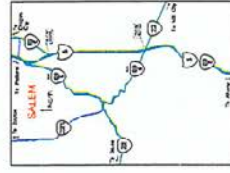
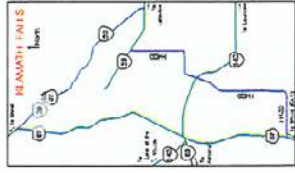
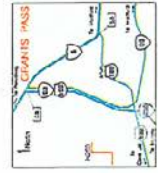
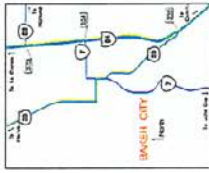
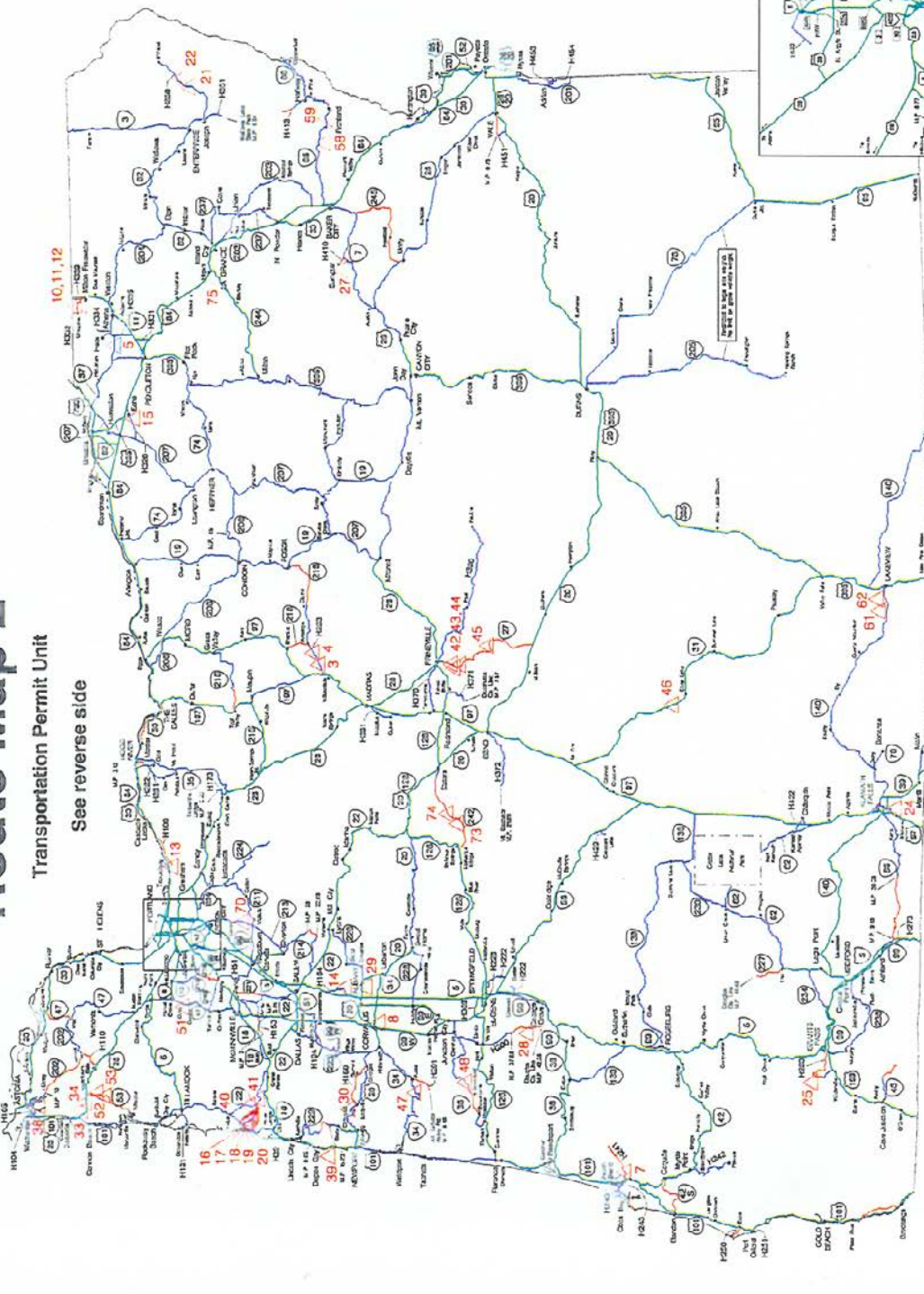


Note: Exam driver, chauffeur, or owner of any combination of vehicles shall be responsible for determining the correct turnpike toll for the vehicle and for the accuracy of the information appearing on this map. The Oregon Department of Transportation.

Oregon Department of Transportation Route Map 2

Transportation Permit Unit
See reverse side

— Routes not approved for continuous operation
 ▲ This triangle indicates the locality of weight restricted bridges.
 ▲ See reverse of Map for weights allowed on these structures.



Route Map 2

Only routes shown in solid green or purple are approved for operations.
A special single trip permit must be obtained for those highways or structures in red.

For additional information, contact or mail requests to:

Transportation Permit Unit
550 Capitol Street NE
Salem, Oregon 97310

Transportation Permit Telephone Numbers

Permit Applications (503) 373-0000

Permit Office Facsimile (503) 378-2873

*Salem office closed Wednesdays 12Noon-1.00PM

WEIGHT RESTRICTED BRIDGES									
No.	Route Number or Name	Structure Name	Approximate Location	Milepoint	Tandem Axle	Three-Axle Group Within 20 Feet, NOT Uniform in Weight.	Three-Axle Group Within 20 Feet, Uniform Weight	Four-Axle Group Within 20 Feet, NOT Uniform in Weight.	Four-Axle Group Within 20 Feet, Uniform Weight
3	Antelope Highway #293	Antelope Creek	12 miles SW of Antelope	0.99	43,000	64,500	75,000	79,000	79,000
4	Antelope Highway #293	Indian Creek	4 miles SW of Antelope	8.86	43,000	63,000	66,000	69,000	83,000
5	Alhena-Holdman Highway #334	West Fork Greasewood Creek	7.86 miles East of OR037	7.86	40,000	50,000	56,000	57,000	72,000
7	Coos River Highway #241	Ishmus Slough	0.51 miles East of US101	0.59	43,000	58,000	67,000	64,000	66,000
8	Corvallis-Lebanon Highway #210	Willamette River (Van Buren Street)	Corvallis	0.13	34,000	Restricted to legal axle weights - gross weight 80,000 pounds.			
10	Freewater Highway #339	West Crockett	2.76 miles South of OR/WA Border	2.76	43,000	64,500	64,500	86,000	86,000
11	Freewater Highway #339	East Fork, Little Walla Walla	3 miles South of OR/WA Border	3.20	43,000	64,500	64,500	86,000	86,000
12	Freewater Highway #339	West Fork, Little Walla Walla	3 miles South of OR/WA Border	3.31	43,000	64,500	64,500	86,000	86,000
13	Historic Columbia River Highway #100	Sandy River	Troutdale	0.03	34,000	60,000	60,000	60,000	60,000
14	Jefferson Highway #164	Sanilam River Overflow Trestle #1	0.5 mile South of Jefferson	6.73	41,000	48,000	49,000	54,000	64,000
15	Lexington-Echo Highway #320	Hunt Ditch Irrigation Canal	0.68 mile West of Echo	34.70	41,000	48,000	53,000	54,000	74,000
16	Little Nestucca Highway #130	Panther Creek (Kellow Creek)	3.23 miles East of US101	3.23	43,000	57,000	64,000	63,000	85,000
17	Little Nestucca Highway #130	Squaw Creek	3.60 miles East of US101	3.60	43,000	47,000	48,000	50,000	57,000
18	Little Nestucca Highway #130	Austin Creek	3.82 miles East of US101	3.82	43,000	52,000	54,000	57,000	68,000
19	Little Nestucca Highway #130	Little Nestucca River	4.15 miles East of US101	4.15	43,000	49,000	51,000	54,000	67,000
20	Little Nestucca Highway #130	Bear Creek	4.76 miles East of US101	4.76	43,000	56,000	64,000	64,000	88,000
21	Little Sheep Creek Highway #350	Little Sheep Creek (1st Crossing)	13.69 miles NE of Joseph	13.69	43,000	63,000	64,500	70,000	72,000
22	Little Sheep Creek Highway #350	Little Sheep Creek (2nd Crossing)	14.41 miles NE of Joseph	14.41	43,000	61,000	64,000	68,000	72,000
24	Midland Highway #420	Lost River Diversion Channel	5 miles South of Klamath Falls	3.64	43,000	64,000	64,500	69,000	72,000
25	Rogue River Loop Highway #260	Rogue River (Robertson Bridge)	12 miles West of Grants Pass	12.91	40,000	45,000	48,000	50,000	64,000
27	Sumpter Highway #410	Cracker Creek	Sumpter	0.30	43,000	60,000	60,000	66,000	66,000
28	Territorial Highway #200	Suslaw River Overflow	0.22 mile South of Lorane	38.08	41,000	48,000	53,000	54,000	72,000
29	US 20	Burkhart Creek	2.08 miles East of Albany on US 20	3.92	41,000	48,000	52,000	54,000	70,000
30	US 20	Hayes Creek	20.25 miles East of Newport	21.01	42,000	49,000	53,000	58,000	72,000
33	US 26	Volmer Creek	2 miles SE of Cannon Beach Jct.	2.24	43,000	53,000	55,000	59,000	72,000
34	US 26	Johnson Creek	3 miles SE of Cannon Beach Jct.	3.26	43,000	59,000	64,500	67,000	72,000
38	US 101 Business	Lewis & Clark River	2.5 miles SE of Astoria	4.78	38,000	45,000	49,000	50,000	67,000
39	US 101 (Otter Crest Loop Frontage Rd.)	Rocky Creek (Ben Jones Bridge)	1.46 miles South of Depoe Bay	F130.0	6,000	8,000	6,000	6,000	6,000
40	OR022	Louie Creek	10.48 miles South of Hebo	10.48	43,000	50,000	52,000	54,000	65,000
41	OR022	Louis Creek	10.66 miles South of Hebo at Dolph	10.66	43,000	47,000	49,000	52,000	63,000
42	OR027	Irrigation Canal	1.90 miles South of Prineville	1.90	43,000	64,500	64,500	71,000	71,000
43	OR027	Irrigation Canal	2.88 miles South of Prineville	2.88	43,000	61,000	63,000	68,000	78,000
44	OR027	Irrigation Canal	4.59 miles South of Prineville	4.59	43,000	64,500	64,500	72,000	86,000
45	OR027	Bear Creek	27 miles South of Prineville	27.23	43,000	52,000	52,000	56,000	56,000
46	OR031	Silver Creek	0.60 mile West of Silver Lake	46.75	43,000	60,000	64,500	68,000	86,000
47	OR034	Malby Creek	5 miles West of Alsea	35.61	43,000	57,000	60,000	66,000	72,000
48	OR038	Steinhauer Creek	1.48 miles East of Greenleaf	19.69	43,000	55,000	62,000	63,000	86,000
51	OR047	Naylor Creek	0.28 mile South of Forest Grove	91.19	43,000	59,000	64,000	67,000	72,000
52	OR053	North Fork Neacanicum River	0.11 miles South of US26	0.11	40,000	46,000	51,000	52,000	70,000
53	OR053	Jack Horner Creek	5.98 miles South of US26	5.98	40,000	46,000	50,000	52,000	70,000
58	OR086 (Hole in the Wall Frontage Rd.)	Maiden Gulch	10.56 miles West of Richland	F30.80	33,000	38,000	41,000	43,000	57,000
59	OR086	Cattlepass and Overflow	0.67 mile West of Richland	40.69	43,000	53,000	58,000	61,000	72,000
60	OR98E (Southbound Only)	Union Ave Viaduct	1.2 miles South of I-84 (From S.E. Harrison St. to Ivon St.)	1.05	34,000	Restricted to legal axle weights - gross weight 80,000 pounds.			
61	OR140	Right of Way Bridge on Left	2 miles West of Lakeview	93.92	31,000	34,000	37,000	39,000	52,000
62	OR140	Right of Way Bridge on Left	1.5 miles West of Lakeview	94.35	31,000	34,000	37,000	39,000	52,000
70	OR213	Wright Creek	1.75 miles South of Mulino	12.72	43,000	63,000	63,000	72,000	72,000
73	OR242	Creek	25 miles West of Sisters	66.70	40,000	43,000	44,000	47,000	55,000
74	OR242	Creek	21 miles West of Sisters	68.36	43,000	50,000	55,000	57,000	76,000
75	OR244	Bear Creek	4.84 miles SW of I-84	42.58	43,000	56,000	59,000	62,000	72,000

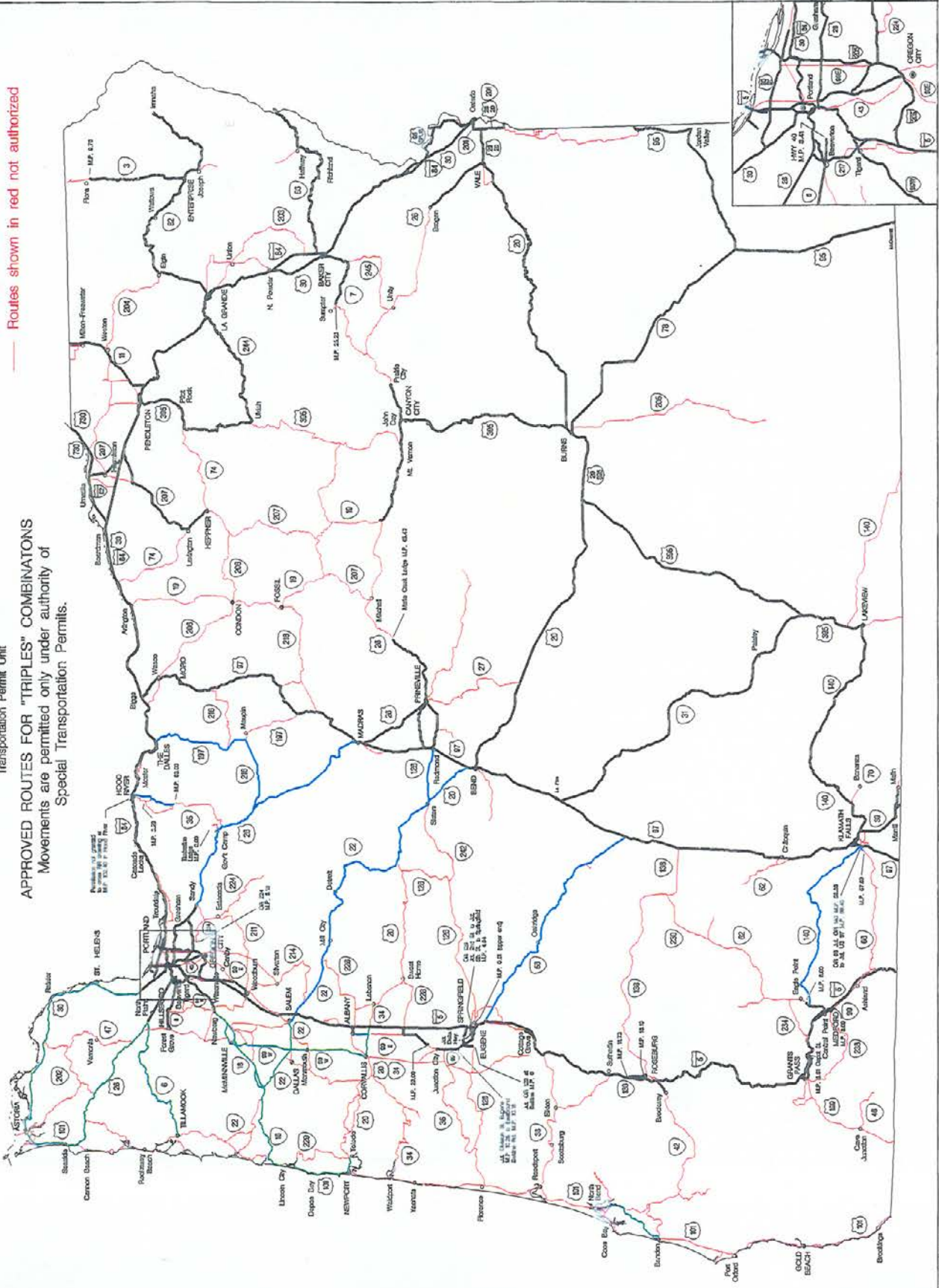
Note: Highway numbers are shown for informational purposes only; they are not posted on state highways. When a group of axles is within 20 feet, use the appropriate column to determine the maximum allowable weight for that group. If the axle group exceeds 20 feet, use the tandem axle column to determine the maximum weight allowed for any tandem axle. For questions, please call the Salem office.

Route Map 5

Oregon Department of Transportation
Transportation Permit Unit

APPROVED ROUTES FOR "TRIPLES" COMBINATIONS
Movements are permitted only under authority of
Special Transportation Permits.

- Approved routes for "triples" combinations
- Holiday restricted
- Holiday/weekend restricted
- Routes shown in red not authorized



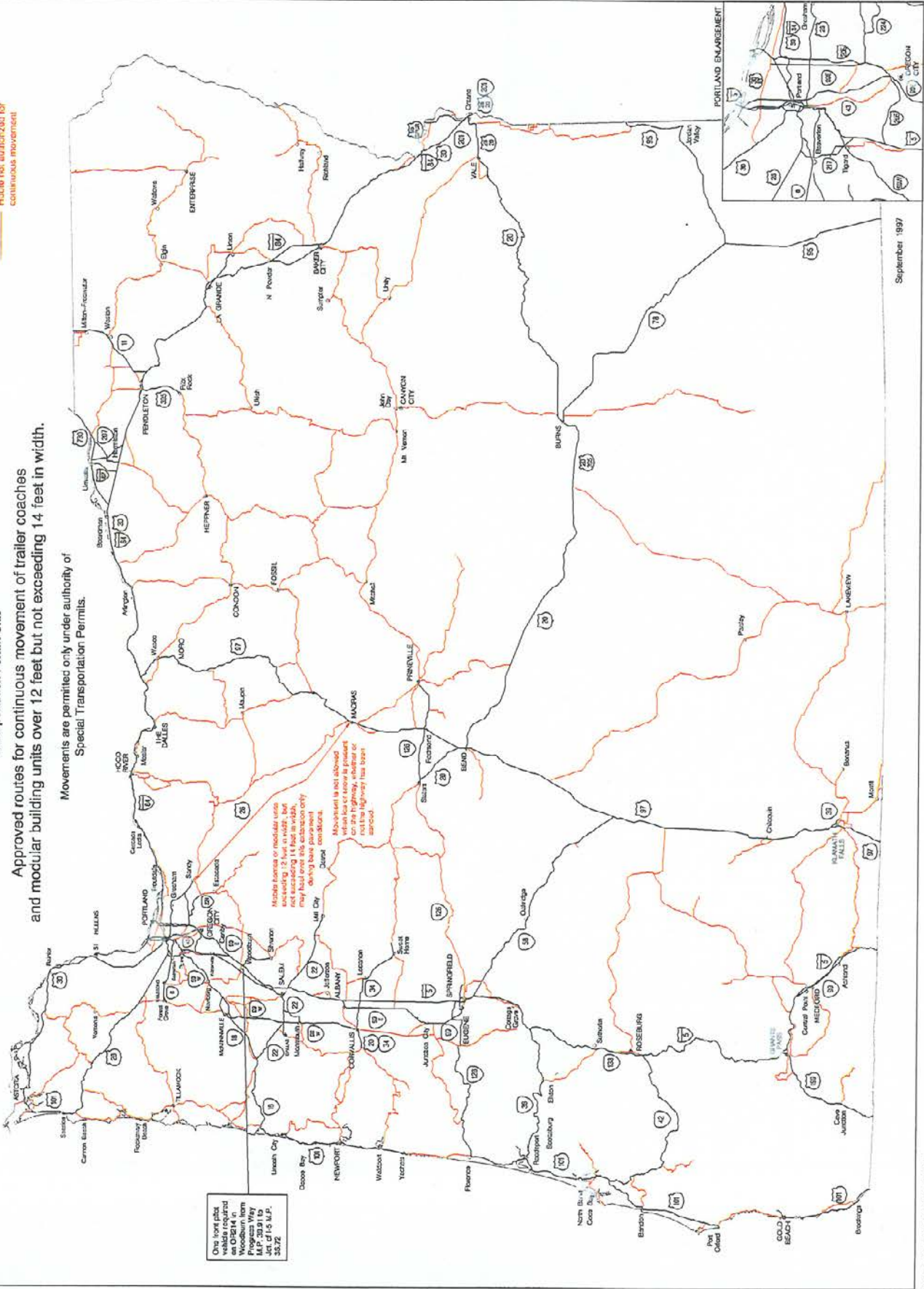
Route Map 6

Oregon Department of Transportation
Transportation Permit Unit

Approved routes for continuous movement of trailer coaches and modular building units over 12 feet but not exceeding 14 feet in width.

Movements are permitted only under authority of Special Transportation Permits.

Approved routes for continuous movement of 14' wide units
Routes not authorized for continuous movement



Transportation Permit Unit

Authorized list of routes to be considered as a supplement to the State Highway Division map of "Authorized Routes for Continuous Movement of Trailer Coaches and Modular Building Units Over 12' but not exceeding 14' in width."

Highway Number	Route Number	Highway Name & Section
1W	ORE 99W	Pacific Highway West - Beltline Road to Roosevelt Boulevard, M.P. 118.42 to M.P. 121.14
10	ORE 82	Wallowa Lake Highway - La Grande to Island City, M.P. 0.00 to M.P. 2.62
20	ORE 140	Klamath Falls-Lakeview Highway - Junction Midland Highway to Junction Klamath Falls-Malin Highway, M.P. 2.13 to M.P. 5.55
33	US 20	Junction US101 M.P. 0.00 to Toledo including Toledo Frontage Road. Move only between 9:00 A.M. and 4:00 P.M.
35	ORE 99	Coos Bay-Roseburg Highway - South Umpqua River Bridge near Winston to Junction I-5, M.P. 74.50 to M.P. 77.15
60	ORE 99	Rogue River Highway - Grants Pass to Hamilton Lane, M.P. 0.00 to M.P. 1.33
181	ORE 229	Junction US20 M.P. 31.24 to Siletz M.P. 23.48. Move only between 9:00 A.M. and 4:00 P.M.
231	ORE 138	Elkton-Sutherlin Highway within the city limits of Sutherlin
420	-	Midland Highway - Junction Klamath Falls-Lakeview Highway to Laverne Street, M.P. 0.00 to M.P. 1.33

Weather Restrictions (OAR 734-75-060)

(1) Movement is prohibited when road surfaces are hazardous due to ice, snow or frost. Further, movement is not permitted when wind speed exceeds 20 miles per hour or when wind conditions exist which could cause excessive swaying or weaving, or tip-over of the towed unit.

Movement is not allowed in Hazardous Conditions: (Special Transportation Permit Attachment 75-A)

Examples of hazardous weather conditions are snowing with chains required, fog, smoke, or other atmospheric conditions which limit visibility to less than 500 feet.

For additional information, contact or mail request to:

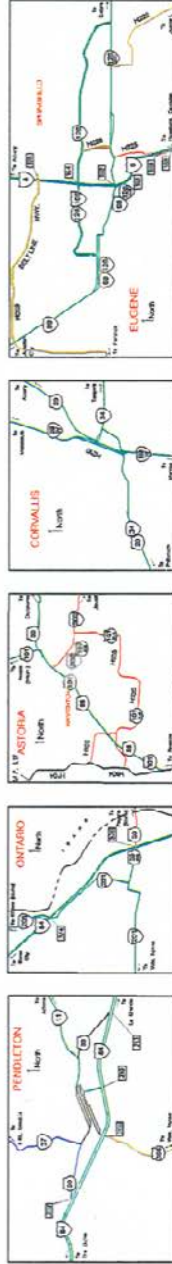
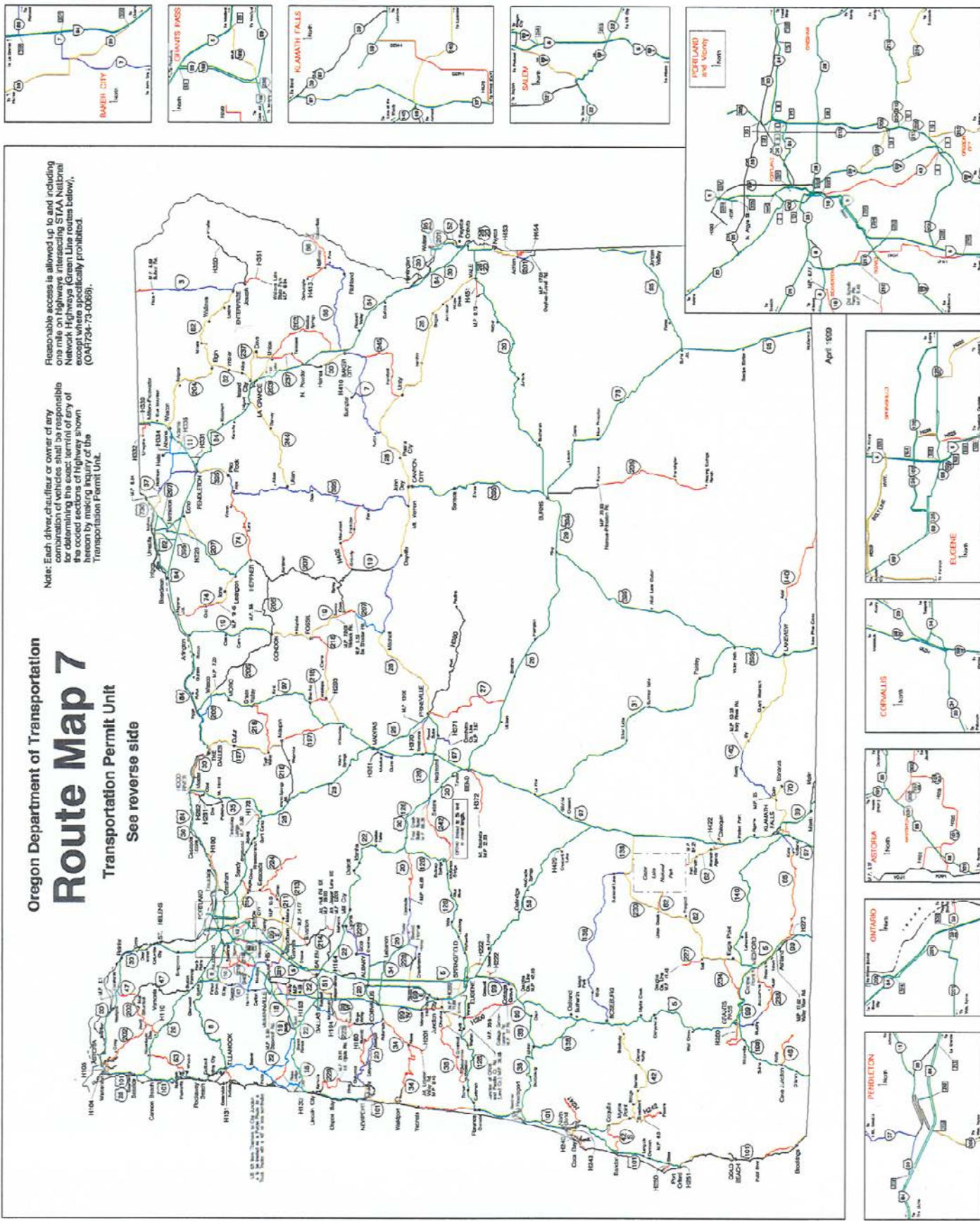
Transportation Permit Unit
 Motor Carrier Transportation Branch
 550 Capitol St. NE
 Salem OR 97310

Transportation Permit General Information: (503) 373-0000
 Transportation Permit Applications: (503) 373-0000
 Transportation Permit Office FAX: (503) 378-2873
 WATTS: 1-800-336-3602

Oregon Department of Transportation
Route Map 7
 Transportation Permit Unit
 See reverse side

Note: Each driver, chauffeur or owner of any combination of vehicles shall be responsible for determining the exact termini of any of the colored sections of highway shown herein by making inquiry of the Transportation Permit Unit.

Reasonable access is allowed up to and including one mile on highways intersecting STAA National Network Highways (Green Line routes below), except where specifically prohibited. (OAR 734-73-0069).



The following Exceptions . . . to the table of weights shown below:
 Exception 1: Two consecutive sets of tandem axles may weigh up to 34,000 pounds each if;
 Exception 2: A group of four axles consisting of a set of tandem axles and two axles spaced nine feet or more apart may have a loaded weight of more than 85,500 pounds and up to 70,000 pounds;

Exception 2: A group of four axles consisting of a set of tandem axles and two axles spaced nine feet or more apart may have a loaded weight of more than 85,500 pounds and up to 70,000 pounds;

Permit Weight Table 1

Wheelbase in feet*	2 Axles	3 Axles	4 Axles	5 Axles	6 Axles	7 or more
4	31,500	31,500	34,000	34,000	34,000	34,000
5	34,000	34,000	34,000	34,000	34,000	34,000
6	34,000	34,000	34,000	34,000	34,000	34,000
7	34,000	34,000	34,000	34,000	34,000	34,000
8 and less than 8	34,000	34,000	34,000	34,000	34,000	34,000
9	34,000	34,000	34,000	34,000	34,000	34,000
10	34,000	34,000	34,000	34,000	34,000	34,000
11	34,000	34,000	34,000	34,000	34,000	34,000
12	34,000	34,000	34,000	34,000	34,000	34,000
13	34,000	34,000	34,000	34,000	34,000	34,000
14	34,000	34,000	34,000	34,000	34,000	34,000
15	34,000	34,000	34,000	34,000	34,000	34,000
16	34,000	34,000	34,000	34,000	34,000	34,000
17	34,000	34,000	34,000	34,000	34,000	34,000
18	34,000	34,000	34,000	34,000	34,000	34,000
19	34,000	34,000	34,000	34,000	34,000	34,000
20	34,000	34,000	34,000	34,000	34,000	34,000
21	34,000	34,000	34,000	34,000	34,000	34,000
22	34,000	34,000	34,000	34,000	34,000	34,000
23	34,000	34,000	34,000	34,000	34,000	34,000
24	34,000	34,000	34,000	34,000	34,000	34,000
25	34,000	34,000	34,000	34,000	34,000	34,000
26	34,000	34,000	34,000	34,000	34,000	34,000
27	34,000	34,000	34,000	34,000	34,000	34,000
28	34,000	34,000	34,000	34,000	34,000	34,000
29	34,000	34,000	34,000	34,000	34,000	34,000
30	34,000	34,000	34,000	34,000	34,000	34,000
31	34,000	34,000	34,000	34,000	34,000	34,000
32	34,000	34,000	34,000	34,000	34,000	34,000
33	34,000	34,000	34,000	34,000	34,000	34,000
34	34,000	34,000	34,000	34,000	34,000	34,000
35	34,000	34,000	34,000	34,000	34,000	34,000
36	34,000	34,000	34,000	34,000	34,000	34,000
37	34,000	34,000	34,000	34,000	34,000	34,000
38	34,000	34,000	34,000	34,000	34,000	34,000
39	34,000	34,000	34,000	34,000	34,000	34,000
40	34,000	34,000	34,000	34,000	34,000	34,000
41	34,000	34,000	34,000	34,000	34,000	34,000
42	34,000	34,000	34,000	34,000	34,000	34,000
43	34,000	34,000	34,000	34,000	34,000	34,000
44	34,000	34,000	34,000	34,000	34,000	34,000
45	34,000	34,000	34,000	34,000	34,000	34,000
46	34,000	34,000	34,000	34,000	34,000	34,000
47	34,000	34,000	34,000	34,000	34,000	34,000
48	34,000	34,000	34,000	34,000	34,000	34,000
49	34,000	34,000	34,000	34,000	34,000	34,000
50	34,000	34,000	34,000	34,000	34,000	34,000
51	34,000	34,000	34,000	34,000	34,000	34,000
52	34,000	34,000	34,000	34,000	34,000	34,000
53	34,000	34,000	34,000	34,000	34,000	34,000
54	34,000	34,000	34,000	34,000	34,000	34,000
55	34,000	34,000	34,000	34,000	34,000	34,000
56	34,000	34,000	34,000	34,000	34,000	34,000
57 or more	34,000	34,000	34,000	34,000	34,000	34,000

The loaded weight of any group of axles, vehicle, or combination of vehicles shall not exceed that specified in the table of weights shown above of any of the following:
 - 500 pounds per inch of tire width.
 - 20,000 pounds on any one axle, including any one side of a group of axles.
 - 34,000 pounds on any tandem axle.
 - The sum of the permissible axle, tandem axle, or group of axle weights shown above, whichever is less.
 - Note exceptions 1 and 2 above.

* Distance measured to the nearest foot when axles are spaced 12 feet or more, round up to the next larger number

For additional information, contact or mail request to:

Transportation Permit Unit
 Motor Carrier Transportation Division
 550 Capitol St. NE
 Salem, OR 97310

Transportation Permit General Information: (503) 373-0000
 Transportation Permit Applications: (503) 373-0000
 Transportation Permit Office Facsimile: (503) 378-2873

MAXIMUM ALLOWABLE WEIGHTS 734-74-0020

- (1) The maximum allowable weights for single axles and tandem axles shall not exceed those specified under ORS 818.010(1) and 818.010(2).
- (2) The maximum allowable weight for groups of axles spaced at 46 feet or less shall not exceed those specified under ORS 818.010(3), Exhibit 1.
- (3) The maximum allowable weights for groups of axles spaced at 47 feet or more; and, the gross combined weight for any combination of vehicles shall not exceed those set forth in the following table (Exhibit 2, Permit Weight Table 2). In no case may gross weight exceed the sum of the permissible axle, tandem axle or group of axle weights, whichever is less.
- (4) In no case may any tire, rim or wheel carry more weight than that specified by the manufacturer of the tire, rim or wheel.
- (5) When operating under an extended weight permit, power unit must be equipped with a tandem drive axle, except:
 - power units of triples combinations may have a single drive axle and operate over 80,000 pounds.
 - power units of doubles placed into service prior to April 1, 1983, may have a single drive axle and operate over 80,000 pounds.
 - power units of any combination not exceeding 80,000 pounds when the permit is issued for length only.

Permit Weight Table 2 - Extended Weight

Wheelbase in feet*	5 Axles	6 Axles	7 Axles	8 or more
47	81,000	81,000	81,000	81,000
48	81,000	81,000	81,000	81,000
49	81,000	81,000	81,000	81,000
50	81,000	81,000	81,000	81,000
51	81,000	81,000	81,000	81,000
52	81,000	81,000	81,000	81,000
53	81,000	81,000	81,000	81,000
54	81,000	81,000	81,000	81,000
55	81,000	81,000	81,000	81,000
56	81,000	81,000	81,000	81,000
57	81,000	81,000	81,000	81,000
58	81,000	81,000	81,000	81,000
59	81,000	81,000	81,000	81,000
60	81,000	81,000	81,000	81,000
61	81,000	81,000	81,000	81,000
62	81,000	81,000	81,000	81,000
63	81,000	81,000	81,000	81,000
64	81,000	81,000	81,000	81,000
65	81,000	81,000	81,000	81,000
66	81,000	81,000	81,000	81,000
67	81,000	81,000	81,000	81,000
68	81,000	81,000	81,000	81,000
69	81,000	81,000	81,000	81,000
70	81,000	81,000	81,000	81,000
71	81,000	81,000	81,000	81,000
72	81,000	81,000	81,000	81,000
73	81,000	81,000	81,000	81,000
74	81,000	81,000	81,000	81,000
75	81,000	81,000	81,000	81,000
76	81,000	81,000	81,000	81,000
77	81,000	81,000	81,000	81,000
78	81,000	81,000	81,000	81,000
79	81,000	81,000	81,000	81,000
80	81,000	81,000	81,000	81,000

The loaded weight of any group of axles, vehicle, or combination of vehicles shall not exceed that specified in the table of weights shown above of any of the following:
 - 500 pounds per inch of tire width.
 - 20,000 pounds on any one axle, including any one side of a group of axles.
 - 34,000 pounds on any tandem axle.
 - The sum of the permissible axle, tandem axle, or group of axle weights shown above, whichever is less.
 - Note exceptions 1 and 2 above.

* Distance measured to the nearest foot when axles are spaced 12 feet or more, round up to the next larger number

LEGAL WIDTH OVERALL LENGTH LIMITATIONS	LEGAL WIDTH OVERALL LENGTH LIMITATIONS			
	Green	Brown	Purple	Black
NO LIMIT NO PERMIT	NO LIMIT NO PERMIT	NO LIMIT BY PERMIT	65' BY PERMIT	Red
NO LIMIT NO PERMIT	NO LIMIT NO PERMIT	65' BY PERMIT	65' BY PERMIT	Red
NO LIMIT NO PERMIT	NO LIMIT NO PERMIT	NO LIMIT BY PERMIT	NO LIMIT BY PERMIT	Red

OVER 8'6" WIDE OVERALL LENGTH LIMITATIONS	OVER 8'6" WIDE OVERALL LENGTH LIMITATIONS			
	Green	Brown	Purple	Black
75' BY PERMIT	75' BY PERMIT	75' BY PERMIT	65' BY PERMIT	Red
75' BY PERMIT	75' BY PERMIT	65' BY PERMIT	65' BY PERMIT	Red
75' BY PERMIT	75' BY PERMIT	75' BY PERMIT	75' BY PERMIT	Red

Route Map 9

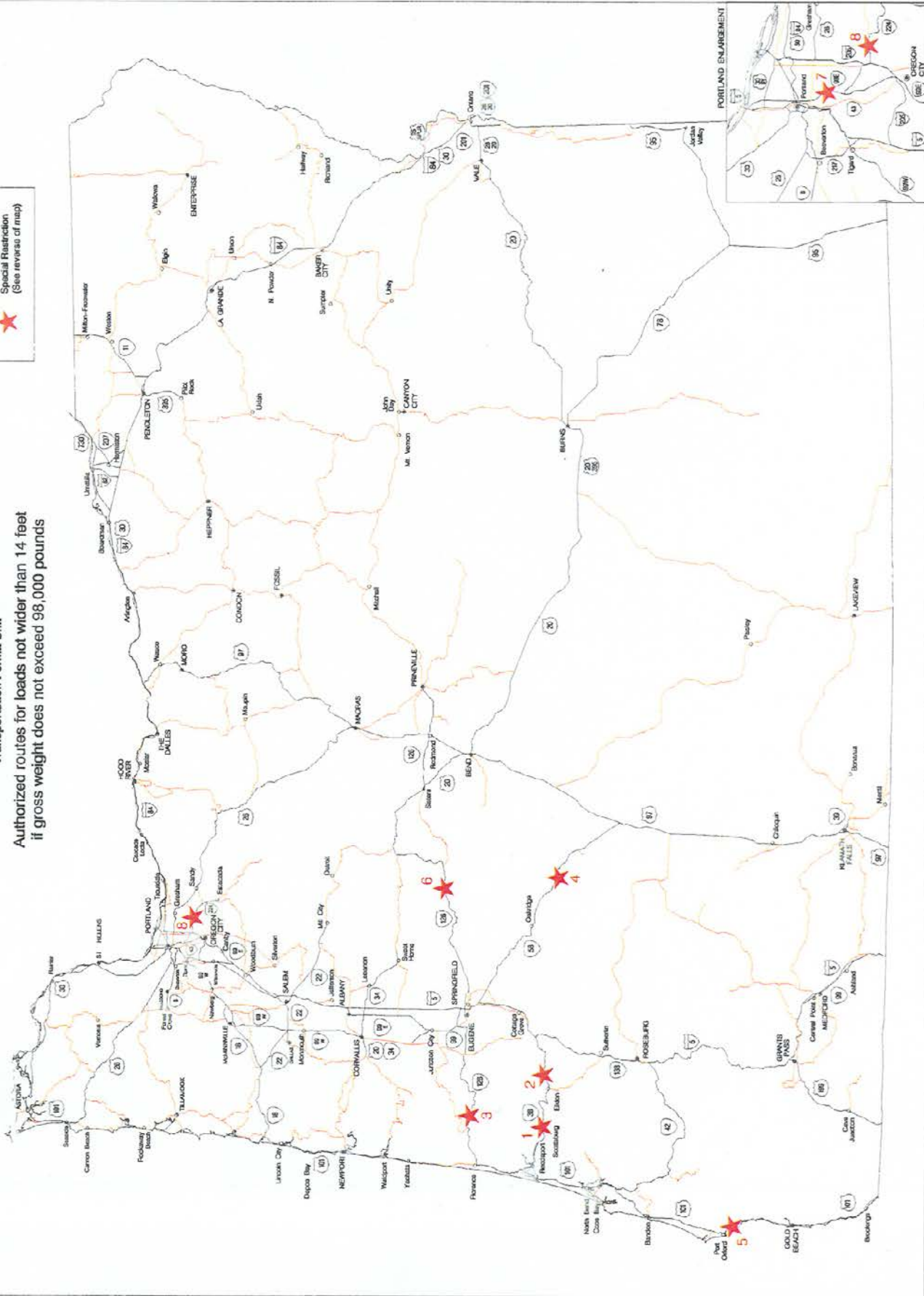
Oregon Department of Transportation
Transportation Permit Unit

Authorized routes for loads not wider than 14 feet
if gross weight does not exceed 98,000 pounds

Authorized route
Not authorized
Special Restriction
(See reverse of map)



See permit attachments and maps
for all other requirements.



Special Route Restrictions ★

If width exceeds 12 feet, pilot vehicles must stop all traffic while the oversize unit moves through the following locations:

1. Scottsburg Bridge on OR38 at milepost 16.43
2. Elkton Tunnel on OR38 between mileposts 39.36 and 39.9
3. Knowles Creek Tunnel on OR126 between mileposts 19.54 and 19
4. Salt Creek Tunnel on OR58 between mileposts 56.01 and 56.48
5. Humberg Mountain State Park on US101 from milepost 301.34 to 308.06
6. OR126 from the junction of 54th Street in Springfield to Sisters is authorized if two pilot vehicles are used when width exceeds 12 feet.
7. OR99E from the junction of Interstate 5 near Marine Drive in Portland to the junction of Interstate 205 at Oregon City is authorized when movement is made between 9:00 AM to 11:00 AM or from 1:00 PM to 3:00 PM
8. OR224 from the junction of Interstate 205 to Estacada is authorized if two pilot vehicles are used when width exceeds 12 feet.

Maximum Weight Limits

Weight may not exceed the sum of the permissible wheel, tire, axle, tandem or groups of axle weight, or the lesser of:

- Weight limit established by the manufacturer of the tire, wheel or rim;
- 600 pounds per inch of tire width;
- 21,500 pounds on any single axle;
- 43,000 pounds on any tandem axle;
- 98,000 pounds gross weight, subject to the table of weight shown at the right side of the sheet.

These provisions do not apply for loads that could have been loaded at legal axle or tandem axle weights.

For additional information, contact or mail request to:

Transportation Permit Unit
 Motor Carrier Transportation Branch
 550 Capitol St. NE
 Salem, OR 97310

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 Transportation Permit Office FAX: (503) 378-2873
 WATTS: 1-800-336-3602

Permit Weight Table 3

Wheelbase in feet*	Number of Axles																			
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
4	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000
5	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000
6	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000
7	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000
8	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000	43,000
over 8 (but less than 8'6")	43,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000
9	43,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000	49,000
10	43,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
11	43,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000
12	43,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000
13	43,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000
14	43,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000
15	43,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000	55,000
16	43,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000
17	43,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000	57,000
18	43,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000	58,000
19	43,000	64,500	70,800	70,800	70,800	70,800	70,800	70,800	70,800	70,800	70,800	70,800	70,800	70,800	70,800	70,800	70,800	70,800	70,800	70,800
20	43,000	64,500	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000	72,000
21	43,000	64,500	73,200	73,200	73,200	73,200	73,200	73,200	73,200	73,200	73,200	73,200	73,200	73,200	73,200	73,200	73,200	73,200	73,200	73,200
22	43,000	64,500	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400	74,400
23	43,000	64,500	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600
24	43,000	64,500	76,800	76,800	76,800	76,800	76,800	76,800	76,800	76,800	76,800	76,800	76,800	76,800	76,800	76,800	76,800	76,800	76,800	76,800
25	43,000	64,500	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000	78,000
26	43,000	64,500	79,200	79,200	79,200	79,200	79,200	79,200	79,200	79,200	79,200	79,200	79,200	79,200	79,200	79,200	79,200	79,200	79,200	79,200
27	43,000	64,500	80,400	80,400	80,400	80,400	80,400	80,400	80,400	80,400	80,400	80,400	80,400	80,400	80,400	80,400	80,400	80,400	80,400	80,400
28	43,000	64,500	81,600	81,600	81,600	81,600	81,600	81,600	81,600	81,600	81,600	81,600	81,600	81,600	81,600	81,600	81,600	81,600	81,600	81,600
29	43,000	64,500	82,800	82,800	82,800	82,800	82,800	82,800	82,800	82,800	82,800	82,800	82,800	82,800	82,800	82,800	82,800	82,800	82,800	82,800
30	43,000	64,500	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000	84,000
31	43,000	64,500	85,200	85,200	85,200	85,200	85,200	85,200	85,200	85,200	85,200	85,200	85,200	85,200	85,200	85,200	85,200	85,200	85,200	85,200
32	43,000	64,500	86,400	86,400	86,400	86,400	86,400	86,400	86,400	86,400	86,400	86,400	86,400	86,400	86,400	86,400	86,400	86,400	86,400	86,400
33	43,000	64,500	87,600	87,600	87,600	87,600	87,600	87,600	87,600	87,600	87,600	87,600	87,600	87,600	87,600	87,600	87,600	87,600	87,600	87,600
34	43,000	64,500	88,800	88,800	88,800	88,800	88,800	88,800	88,800	88,800	88,800	88,800	88,800	88,800	88,800	88,800	88,800	88,800	88,800	88,800
35	43,000	64,500	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
36	43,000	64,500	91,200	91,200	91,200	91,200	91,200	91,200	91,200	91,200	91,200	91,200	91,200	91,200	91,200	91,200	91,200	91,200	91,200	91,200
37	43,000	64,500	92,400	92,400	92,400	92,400	92,400	92,400	92,400	92,400	92,400	92,400	92,400	92,400	92,400	92,400	92,400	92,400	92,400	92,400
38	43,000	64,500	93,600	93,600	93,600	93,600	93,600	93,600	93,600	93,600	93,600	93,600	93,600	93,600	93,600	93,600	93,600	93,600	93,600	93,600
39	43,000	64,500	94,800	94,800	94,800	94,800	94,800	94,800	94,800	94,800	94,800	94,800	94,800	94,800	94,800	94,800	94,800	94,800	94,800	94,800
40	43,000	64,500	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000	96,000
41	43,000	64,500	97,200	97,200	97,200	97,200	97,200	97,200	97,200	97,200	97,200	97,200	97,200	97,200	97,200	97,200	97,200	97,200	97,200	97,200
42 or more	43,000	64,500	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000

* Distance measured to nearest foot; when exactly 59/64 foot or more, round up to the next larger number.

APPENDIX J

**TRUCK ROUTES ALONG COUNTY ROADS
AND WHEELER COUNTY WEIGHT RESTRICTED ROADS/BRIDGES**

APPENDIX J
TRUCK ROUTES ALONG COUNTY ROADS
AND WHEELER COUNTY WEIGHT RESTRICTED ROADS/BRIDGES

WHEELER COUNTY APPROVED ROUTE LIST

All Vehicle Combinations are limited to a maximum of 50 feet in overall length on all county roads except those listed below.

- The maximum length of a semitrailer in a truck tractor semitrailer combination is 53 feet.
- The maximum length of a semitrailer in a truck tractor semitrailer combination (doubles) is 40 feet. The distance measured from the front trailer to the rear trailer cannot exceed 68 feet.

TABLE J1

Truck-Tractor Semitrailer Combinations may operate at a maximum of 75 feet in overall length on the county highways listed below.
 Double Trailers Combinations may operate at a maximum of 95 feet in overall length on the county roads listed below.
 Truck & Trailer Combinations may operate at a maximum of 75 feet in overall length on the county roads listed below.
 Log Truck & Pole Trailer Combinations may operate at a maximum of 95 feet in overall length on the county roads listed below.
 Toter/Mobile or Modular Unit Combinations may operate at a maximum of 95 feet in overall length and 12 feet in width on the county roads listed below.

County Road	From	To
Bridge Creek Rd (a.k.a. Burnt Ranch Rd) #14	US 26	End of asphalt
Hoover Creek Ln #21	OR 19	Black Butte Ln
Kahler Basin Rd #3	OR 207/ OR 19	Winlock Ln
Parrish Creek/Waterman Flat Rd #2	US 26	OR 207/ OR 19
S Twickenham (a.k.a. Sutton Mt Rd) #20	N Twickenham	End of asphalt
West Branch Rd #12	US 26	Forest Service Boundary
Winlock Ln #1	Kahler Basin Rd	Alder Creek Rd
Notch Rd #33	Winlock Ln	End of road
Gage Rd #22	US 26	End of road

NOTE: Table has been updated per conversation with Wheeler County Roadmaster.
 Source: ODOT Motor Carrier Transportation Division, Truck Route Restrictions List by County

TABLE J2

Truck-Tractor Semitrailer Combinations may operate at a maximum of 65 feet in overall length on the county highways listed below.
Double Trailers Combinations may operate at a maximum of 85 feet in overall length on the county roads listed below.
Truck & Trailer Combinations may operate at a maximum of 75 feet in overall length on the county roads listed below.
Log Truck & Pole Trailer Combinations may operate at a maximum of 85 feet in overall length on the county roads listed below.

County Road	From	To
Alder Creek Rd #5	OR 207/ OR 19	Winlock Ln
Antone Rd #6	US 26	Antone
Bridge Creek Rd (a.k.a. Burnt Ranch Rd) #14	End of Asphalt	County line
Butte Creek Ln #17	OR 19	Private Property
Clarno Rd #29	OR 218	Private Property
Gable Creek Rd #10	US 26	Private Property
S Twickenham Rd (a.k.a. Girds Creek) #18	OR 207	N Twickenham
Hoover Creek Ln #21	Lost Valley Rd	Kinzua Ln
Kahler Basin Rd #3	Winlock Ln	OR 207
Kinzua Ln #9	OR 19	Kinzua
Richmond Six Shooter Rd #4	End of asphalt	Parrish Creek/Waterman Flat Rd
Rowe Creek Rd #7	S Twickenham	OR 19
Upper Bridge Creek Rd #8	US 26	Forest Service Boundary
Williams Ln #39	Winlock Ln	Forest Service Boundary
Winlock Ln #1	OR 19	Alder Creek

NOTE: Table has been updated per conversation with Wheeler County Roadmaster.

Source: ODOT Motor Carrier Transportation Division, Truck Route Restrictions List by County

WHEELER COUNTY WEIGHT RESTRICTED ROADS/BRIDGES

TABLE J3

Highway	Crossing	Approximate Location	Mile Point	Tandem Axle	3 axle group within 20 feet not uniform in weight	3 axle group within 20 feet uniform in weight	4 axle group within 20 feet not uniform in weight	4 axle group within 20 feet uniform in weight
Kimzua Ln #9	Entire road			Restricted to legal axle weight & 28,000 lbs. GVW				
Antone Rd #6	Rock Creek Bridge	7 miles SE of US 26		Restricted to legal axle weight & 58,000 lbs. GVW				
Bridge Creek Rd #14 (a.k.a. Burnt Ranch)	Bridge Creek	11.2 miles NW of US 26		Restricted to legal axle weight & 72,000 lbs. GVW				
Rowe Creek Rd #7 (a.k.a. N Twickenham)	John Day River Bridge	12 miles SW of OR 19		Restricted to legal axle weight & 66,000 lbs. GVW				

Source: ODOT Motor Carrier Transportation Division, Truck Route Restrictions List by County

PILOT VEHICLE REQUIREMENTS

TABLE J4

WIDTH	FRONT PILOTS REQUIRED	REAR PILOTS REQUIRED
WIDTH 08'07" TO 9'00"	NONE	NONE
WIDTH 09'01" TO 10'00"	ONE	NONE
WIDTH 10'01" TO 11'00"	ONE	NONE
WIDTH 11'01" TO 12'00"	ONE	ONE
WIDTH 12'01" TO 14'00"	ONE	ONE

Source: ODOT Motor Carrier Transportation Division, Truck Route Restrictions List by County

APPENDIX K

PUBLIC INVOLVEMENT

- **LIST OF TAC MEMBERS**
- **LIST OF STAKEHOLDERS**
- **LIST OF ISSUES ADDRESSED BY STAKEHOLDERS**
 - **TAC MEETING SUMMARIES**
 - **PUBLIC MEETING SUMMARIES**

**WHEELER COUNTY
TRANSPORTATION ADVISORY COMMITTEE**

Economic Development	Lyn Craig	PO Box 427, Fossil 97830	(541) 763-2355
Planning Department	Theresa Ward	PO Box 327, Fossil 97830	(541) 763-2126
Law Enforcement	David Rouse	PO Box 446, Fossil 97830	(541) 763-4101
Rancher	Tom Schott	PO Box 232, Fossil 97830	(541) 763-3575
Community Transportation/ City of Spray	Candy Humphreys	PO Box 152, Spray 97874	(541) 468-3391
City of Fossil -Public Works	Rick Shaffer	PO Box 247, Fossil 97830	(541) 763-2698
City of Mitchell -City Recorder	Annette Wornell Betty Baisch	PO Box 236, Mitchell 97750	(541) 462-3366 (541) 462-3045
Wheeler County Court	John Asher	PO Box 82, Spray 97874	(541) 468-2842
Planning Commission	John Misener	40388 S. Twickenham, Mitchell 97750	(541) 462-3892
City of Mitchell	Will Osborn	PO Box 333, Mitchell 97750	(541) 462-3516
Community Safety Program -Coordinator	Jerrilea Mayfield	PO Box 139, Moro 97039	(541) 565-3579
ODOT Region 5 - District 12 Assistant District Manager	George Ruby	1327 SE 3 rd Street, Pendelton 97801	(541) 276-1241
ODOT Region 5 - District 12 Area Maintenance Manager	Jim King	273 W Linden Way Heppner, 97836	(541) 676-5545
ODOT Region 4 - District 9 Transportation Maintenance Manager	Andy Anderson	68708 Hwy 97 Moro, 97039-3028	(541) 565-3466
ODOT Region 4 - District 10 Transportation Maintenance Manager	Jerry Baggett	PO Box 5309 Bend, 97708	(541) 447-4357
ODOT Region 4 Planner	Jim Bryant	63034 O.B. Riley Rd Bend, 97701	(541) 388-6437
Wheeler County Public Works Director	Larry Kennedy	Wheeler County Courthouse PO Box 447, Fossil 97830	(541) 763-2911

WHEELER COUNTY STAKEHOLDERS

Fossil No. 21J School	Jack Lorts	PO Box 206, Fossil 97830	(541) 763-4155
Spray No. 1 School	Judy May	PO Box 230, Spray 97874	(541) 468-2226
Mitchell No. 55 School	Mike Carroll	PO Box 247, Mitchell 97750	(541) 462-3311
Asher Clinic	Angela Livesay	712 Jay St., Fossil 97830	(541) 763-2725
Haven House	Tim Novak	714 First St., Fossil 97830	(541) 763-4651
Oregon State Forestry	Aaron Raines	45945 Hwy 19, Fossil 97830	(541) 763-2575
U.S. Forest Service/Ochoco	Kelsey DeJean	PO Box 490, Prineville 97754	(541) 416-6624
U.S. Forest Service/Umatilla	Lori Seitz	2517 SW Haley Ave, Pendelton 97801	(541) 676-2117
Bureau of Land Management	Dan Tippy	PO Box 550, Prineville 97754	(541) 416-6729
Pioneer Resources	John Aaron	PO Box 798, Heppner 97836	(541) 676-9033
Lower John Day Regional Partnership	Mike McArthur	PO Box 365, Moro 97039	(541) 565-3416
Confederated Tribes of Warm Springs	Terry Luther	PO Box C, Warm Springs 97761	(541) 553-2026
Oregon Dept. of Fish & Wildlife	Tim Unterwegner	PO Box 9, John Day 97845	(541) 575-1167
Wheeler County Soil & Water Conservation District	Jerry Ludlow	PO Box 128, Spray 97874	(541) 468-2027
John Day Fossil Beds National Monument	Jim Hammett	HCR 82, Box 126, Kimberly 97848	(541) 987-2333

WHEELER COUNTY STAKEHOLDER ISSUES

Name	Comments/Issues
Jack Lorts Fossil Schools	<ul style="list-style-type: none"> • Indicated some of the county roads are impassible (poor gravel or no turn around points) for busses and therefore cannot pick up some kids requiring them to be home schooled. No specific roads were identified. • Agreed with TAC recommendations for pedestrian facilities within Fossil. • Mentioned winter weather makes bus travel tough and would like to increase winter maintenance along major school bus routes.
Judy May Spray Schools	<ul style="list-style-type: none"> • No transportation issues to address.
Mike Carroll Mitchell Schools	<ul style="list-style-type: none"> • Only issue concerns school bus signs near curves. He mentioned that these concerns have been addressed.
Angela Livesay Asher Clinic	<ul style="list-style-type: none"> • No transportation issues to address.
Tim Novak Haven House	<ul style="list-style-type: none"> • Mentioned adding pedestrian signs and cross walks along OR 19 near intersections of Main Street and Washington Street. • Indicated adding more lights along OR 19 and OR 218 within Fossil city limits. • Brought up issues concerning handi-cap accessible vehicles. Identified the inaccessibility of current dial-a-ride transit vehicles for wheelchair passengers. We notified to him that in addition to Project W6, plans are under way to acquire one additional small bus equipped with a wheelchair lift by the end of 2001.
Aaron Raines OR State Forestry	<ul style="list-style-type: none"> • No transportation issues to address.
Kelsey DeJean US Forest Service/ Ochoco	<ul style="list-style-type: none"> • Specified fish passage problems through culverts along county roads. • Indicated dust issues along West Branch Bridge Creek Road. Stated that he helped with the write-up for trying to secure federal funds concerning dust issues near organic apple orchard near US 26. • Identified problems with ditch sediments draining directly into the river. Possible solution would be to pave affected county roads.
Lori Seitz US Forest Service/ Umatilla	<ul style="list-style-type: none"> • Mentioned fixing Road 21, which was identified in chapter 6 as project W8. • Identified the need to eliminate noxious weeds along county roads. • Indicated that Wheeler County should rehabilitate and extend Williams Ln (Rd No. 39) up to the Forest Service Rd. The Forest Service would then fix their road. Estimated need based on high volumes.
Dan Tippey Bureau of Land Management	
John Aaron Pioneer Resources	<ul style="list-style-type: none"> • Identified that he is currently working with Larry Kennedy concerning the ownership/use of the Haul Road (Road 21). No other transportation related issues to address.
Mike McArthur Lower JD Regional Partnership	<ul style="list-style-type: none"> • No transportation issues to address.
Mark Berry for Terry Luther Confederated Tribe of Warm Springs	<ul style="list-style-type: none"> • Concerned with widening OR 218 towards river. They will not allow any projects which would require widening or adding fill to the river side of OR 218. This would not be an issue with the proposed curve improvements along OR 218 near milepost 31.5. He mentioned that they might allow expansion to the west (onto their property) if the highway would be moved out of the riverbed (e.g. existing alignment).

Name	Comments/Issues
Tim Unterwegner (Oregon Dept. of Fish & Wildlife)	<ul style="list-style-type: none"> • Wheeler County has a list of culverts which need to be replaced. • The Oregon Department of Fish and Wildlife would like to be involved/informed in bridge rehabilitation/replacement projects. • Make sure Wheeler County is complying with applicable Federal/State laws concerning roadside herbicides. • Specified fish passage problems through culverts along county roads.
Jerry Ludlow Wheeler Co. Soil & Water Conservation District	<ul style="list-style-type: none"> • Stated there are guardrail and safety issues along state highways and county roads within Wheeler County. No specific locations were specified. • Would like to see Parrish Creek/Waterman Flat road paved the entire length of the road. • County roads do not have easements for crossing private property in some locations.
Jim Hammett John Day Fossil Beds National Monument	<ul style="list-style-type: none"> • Mentioned that currently each of three Fossil Bed sites receive about 35,000 visitors a year although with the new planned expansion at the Sheep Rock unit in Grant County he expects the yearly visitation to possible double by 2006 at the Sheep Rock unit. The staff estimates the other two locations will receive moderate growth over this same time period. Expansion of the other two sites is not estimated to occur within the next few years. • Indicated that OR 19 near the Sheep Rock unit in Grant County is designed poorly (e.g. poor roadway conditions, sharp curves, and minimal roadway widths). Also stated that they would like to see more scenic pullouts along OR 19 near Cathedral Rock (Grant County).

SUMMARY
Transportation Advisory Committee (TAC) Meeting #1
October 25, 2000

TAC Meeting #1 for the Wheeler County Transportation System Plan (TSP) project was held on October 25, 2000 at the Wheeler County Courthouse. In attendance were:

Barb Sitton, Wheeler County Planning
John Misener, Wheeler County Planning
Buck Leckie, Mayor, City of Spray
Rick Shaffer, City of Fossil Public Works
Annette Wornell, City of Mitchell Recorder
Lyn Craig, Wheeler County Economic Development
Larry Kennedy, Wheeler County Public Works Director
Jim R King, ODOT District 12
George Ruby, ODOT District 12
Jim Bryant, ODOT Region 4
Jerry Baggett, ODOT District 10
Mike Baker, DEA
Ryan LeProwse, DEA

The meeting agenda covered six primary items: 1) Review of Work Program and Schedule, 2) Transportation System Plan Components, 3) Review of Draft Chapters 1 & 2, 4) Identification/Discussion of existing Transportation Issues/Projects 5) City Inventories, and 6) Next Meeting.

Jim Bryant opened the meeting with an overview of the Transportation Growth Management grant program and transportation planning. He provided an overview of the TSP process and how it relates to other Transportation Planning efforts within ODOT. He was followed by TAC member introductions.

Other organizations identified that should be included as Stakeholders are:

- Confederated Tribes of Warm Springs-Terry Luther
- Bureau of Land Management (BLM)-Dan Tippy
- Oregon Department of Fish and Wildlife-Tim Uterwegner
- Wheeler County Soil and Water Conservation-Jerry Ludlow
- John Day Fossil Beds National Monument-Jim Hammett

Larry Kennedy identified the contact representatives for the new Stakeholder members.

1) Review of Work Program and Schedule

Mike Baker started off the meeting by highlighting DEA's history of preparing TSP's in rural Oregon and describing DEA's role in managing this project. He briefly outlined the detailed work program, which specifically delineates work tasks, products, and local agency participation.

TSP WHEELER COUNTY
CITY OF FOSSIL
CITY OF MITCHELL
CITY OF SPRAY

SUMMARY

Transportation Advisory Committee Meeting #1

Page 2

A work flow diagram, lists of TAC/Stakeholder members, and two schedules were also included. The work flow diagram shows a total of five TAC meetings, two public meetings, and two public officials presentations. Eight-month and nine-month schedules were presented. Jim Bryant suggested the project be completed by May 2001 as shown in the eight-month schedule to provide some flexibility in addressing issues that may develop as the project unfolds.

Jim Bryant asked city officials/representatives if their jurisdiction required a separate TSP. Representatives from each city appeared in agreement that one comprehensive TSP would be prepared for Wheeler County, which addressed specific city issues and projects.

2) Transportation System Plan Components

Mike Baker reviewed the components of a transportation system plan and how they would be addressed in the Wheeler County TSP.

3) Chapters 1 & 2 - Existing Plans and Policies/ Goals and Objectives

Mike Baker introduced chapters 1 and 2 of the TSP and technical memorandum 1. He did not go into detail since the TAC had not had the opportunity to review the chapters prior to the meeting. He asked the TAC to look over chapters 1 & 2 and either call or bring their comments with them to the next TAC meeting. In the future the TAC will receive specific chapters approximately one week in advance of the meeting so they can come prepared with comments/questions.

The first step in the planning process (chapter 1) is a review of existing information. Larry Kennedy had compiled some information for DEA and would continue to pursue other needed documents. It was noted that Brent Lake is currently revising the Wheeler County Comprehensive Plan. Annette Wornell provided DEA with the City of Mitchell's Comprehensive Plan as well as an updated city map.

DEA has acquired ODOT's maps of Wheeler County and the Cities of Fossil, Mitchell and Spray. These maps will be updated to reflect road closures, street name changes, changes in boundaries, and new development. DEA still needs to receive Comprehensive Plans and roadway right-of-way information from the cities of Fossil and Spray and will work with the two cities to compile this information.

DEA will work with ODOT to compile available data regarding State Highway needs and identified projects in Wheeler County. DEA will also contact ODOT to compile any available traffic counts along State Highways in Wheeler County.

The next step in the planning process (chapter 2) is to determine transportation goals and objectives. DEA prepared example goals/objectives based upon review of the Wheeler County Comprehensive Plan to be reviewed by the TAC.

4) Existing Transportation Issues/ Projects

TSP

WHEELER COUNTY
CITY OF FOSSIL
CITY OF MITCHELL
CITY OF SPRAY

SUMMARY

Transportation Advisory Committee Meeting #1

Page 3

The TAC discussed issues related to transportation in Wheeler County. It was generally recognized that capacity is not an issue but there are some safety, access spacing, and signing issues. Based upon information provided by Lyn Craig, DEA will work with ODOT to determine the potential impact of increased tourism-based traffic related to the Fossil Beds.

Some of the transportation issues/projects mentioned in this preliminary discussion included:

Wheeler County

- The potential for more passing lanes on Hwy 26 between Mitchell and Crook County – Specific locations to be determined
- Potential need for Bike/Pedestrian Path on Hwy 26 – Specific locations to be determined
- Potential need for Bike/Pedestrian Path to Fossil Beds monuments
- Potential need for an airstrip located in Wheeler County
- Verify bridge weight limits compared to Fire Truck weights
- Potential need to expand People Mover Service or a similar service for the cities of Fossil and Spray

City of Fossil

- Blind corner heading westbound on Hwy 19 just east of town
- The need to extend the speed zone on Hwy 218 to the Urban Growth Boundary
- Sharp corner on Hwy 218 (Rick Shaffer – What milepost or where is this located?)
- Direct access from Hwy 19 to Industrial Site near solid waste transfer station - Considered to be needed to attract industrial tenant

City of Mitchell

- Investigate the potential need for a left-turn refuge lane heading westbound from Hwy 26 to the Mitchell Business Loop east entrance
- Investigate the potential need for a left-turn refuge lane heading westbound from Hwy 26 to the Mitchell Business Loop west entrance
- Investigate changes to current geometry/lane striping for intersection of Hwy 26 @ Hwy 207/Old Hwy
- Investigate extension of speed zone boundaries on Hwy 26 near town

City of Spray

- Investigate changes to current geometry of intersection at Main St., Willow St. and access road to Hwy 19 near Grocery Store
- Investigate changes to current geometry of intersection/access to Hwy 19 at Willow St. and Main St.
- Explore directional/tourism signing to Spray near the city of Mitchell on Hwy 26



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Issues addressed but not typically included in a TSP

- Cell Phone Towers
- Telecommunications Corridor - Fiber optic cable
- Rest Stops on River

5) Inventory

Mike Baker and Ryan LeProwse completed the Transportation System inventories for the Cities of Fossil, Mitchell, and Spray. During the city inventories they took pictures and collected information relating to the majority of the existing transportation issues listed above.

6) Next Meeting

The next TAC meeting is scheduled for December 8, 2000 at 9:00 a.m. The location has been changed from the Wheeler County Courthouse to the Fossil United Methodist Church located at the intersection of Hwy 19 and Main Street.

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SUMMARY
Transportation Advisory Committee (TAC) Meeting #3
January 24, 2001

TAC Meeting #3 for the Wheeler County Transportation System Plan (TSP) project was held on January 24, 2001 at the Fossil United Methodist Church. In attendance were:

David Rouse, Wheeler County Sheriff
Rick Shaffer, City of Fossil Public Works
Tom Schott, Rancher
Will Osborn, ODOT Maintenance
Annette Wornell, City of Mitchell Recorder
Betty Baisch, New City of Mitchell Recorder
Larry Kennedy, Wheeler County Roadmaster
Jim Bryant, ODOT Region 4
Mike Baker, DEA
Ryan LeProwse, DEA

The meeting agenda covered six primary items: 1) Review of Project list, 2) Roadway Standards/Functional Classification, 3) Access Management, 4) Overview of Public Meeting 5) Project Schedule, and 6) Next TAC Meeting.

Larry Kennedy opened the meeting with an overview of the timber revenues given to Wheeler County for the last nine years. He then stated that Wheeler County should receive between \$800,000 and \$1,200,000 for year 2001 with 75 percent of that going to the road department. Next, he briefed the TAC about the traffic counts that were done along County Roads in January 2001 as well as the two locations counted by ODOT in June 2000.

1) Review of Project List

Mike Baker started off the meeting by reviewing Table 6-6 of the TSP summarizing recommendations of which potential projects to implement. He explained the management team's recommendation for each project. In addition to voicing their opinions on the management teams recommendations the TAC identified two additional projects. The potential projects to be reviewed by DEA include realignment/reconstruction of sections of OR.207 and shoulder widening for bicycle use along sections of US 26.

2) Roadway Standards/ Functional Classification

DEA distributed typical examples of rural roadway standards. Roadway standards institute design parameters necessary to provide a community with roadways that are safe, aesthetic, functional, and easy to administer when new roadways are planned or constructed. Mike Baker asked Larry Kennedy to edit the roadway standards for the roads in Wheeler County. Jim Bryant mentioned that the proposed

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roadway standards were only for county roads. Rick Shaffer noticed that these standards did not specify the base material or base thickness. Mike Baker mentioned due to various soil types and soil thickness that DEA provides roadway standards which detail the number of travel lanes, lane widths, shoulder widths, pavement width, and right-of-way width. DEA may provide some general construction parameters as part of the TSP but suggest that County staff contact other rural Oregon roadmasters for example design standards.

3) Access Management

DEA distributed access management material. Access management policies and strategies apply to driveways and other roadways and are designed to achieve a balance between the need to provide safe and efficient travel with the ability to access individual destinations. In general access management guidelines are not intended to eliminate existing intersections or driveways but rather the access management rules should be applied as new development occurs. Mike Baker then went through a table identifying the rural and urban access spacing standards for state highways. He mentioned that Wheeler County may want to start with the access spacing standards for a district highway, the least strict, and decrease the access spacing standards as they feel needed. Larry Kennedy stated that he also wanted some form of permitting process for accesses along Wheeler County roads.

4) Overview of Public Meeting

Mike Baker briefed the TAC on public meeting #1. He mentioned their attendance would be appreciated and hoped they would inform other community members of the findings to date.

5) Project Schedule

Mike Baker mentioned that the Wheeler County TSP is on schedule to be completed by the end of May. He stated that three TAC meetings have been completed and the next TAC meeting will cover draft Chapters 7 and 8 of the Wheeler County TSP. Chapter 7 is the actual Transportation System Plan, which includes separate modal plans for each transportation mode in the County as well as the recommended projects. Chapter 8 will identify how Wheeler County can find the funding needed for the recommended projects.

6) Next Meeting

The next TAC meeting is scheduled for February 22 or 23 at 1:00 p.m. The meeting will be held in Service Creek. Larry Kennedy will send out a meeting announcement once the final location and date are determined.

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SUMMARY
Transportation Advisory Committee (TAC) Meeting #4
February 22, 2001

TAC Meeting #4 for the Wheeler County Transportation System Plan (TSP) project was held on February 22, 2001 at the Service Creek Trading Post. In attendance were:

Rick Shaffer, City of Fossil Public Works
Tom Schott, Rancher
Buck Leckie, Mayor, City of Spray
Candy Humphries, City of Spray Recorder
Theresa Ward, Wheeler County Planning
Joan Field, Publisher, Wheeler County News
Larry Kennedy, Wheeler County Roadmaster
Jim Bryant, ODOT Region 4
Mike Baker, DEA
Ryan LeProwse, DEA

The meeting agenda covered six primary topics: 1) Review of four additional projects, 2) review of Chapter 7 - Modal Plans, 3) review of Chapter 8 - Funding Document, 4) TAC Discussion 5) project schedule, and 6) overview of TAC Meeting #5 and Public Meeting #2.

Larry Kennedy opened the meeting by asking Theresa Ward if she thought the planning commission should see the draft TSP before the first public official presentation to the planning commission. Theresa mentioned that they should. Jim Bryant (ODOT) and Larry Kennedy will present an overview of the draft Wheeler County TSP and an overview of the TSP adoption process at a planning commission meeting on March 6, 2001 at Big Sarvice.

1) Review of four Additional Projects

Ryan LeProwse and Mike Baker discussed the four additional projects identified at TAC meeting 3 and Public meeting #1. The four additional projects reviewed by DEA include:

- Project W11 - Upgrade Substandard Shoulders along State Highways
- Project W12 - Localized Shoulder Improvements along State Highways
- Project W13 - Roadway Improvements along OR 207
- Project W14 - Realign OR 218 between Cottonwood Creek Road and Pine Creek Road

Projects W13 was refined to include localized shoulder improvements, localized guardrail installation, and completion of scheduled routine maintenance (e.g. adding 4-foot gravel shoulders, completing chip sealing, and fixing sink holes near Mitchell) along OR 207. Project W14 was also refined to include localized curve improvements at three locations to be verified by Rick Shaffer.

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2) Review of Chapter 7 - Modal Plans

Mike Baker discussed the highlights of the Wheeler County TSP- Chapter 7. Areas highlighted in the summary include:

- Rural Roadway Standards;
- Access Management;
- Roadway System Plan;
- Pedestrian System Plan;
- Bicycle System Plan;
- Other Modes; and
- 20-Year Transportation Project List including Table 7-9.

3) Review of Chapter 8 - Funding Document

Mike Baker discussed the highlights of the funding chapter of the Wheeler County TSP- Chapter 8. Areas highlighted in the summary include:

- Historical Street Improvement Sources;
- Revenue Sources;
- Grant and Loan Programs; and
- Financing Options.

4) TAC Discussion

-Mayor of Spray-Buck Leckie thanked ODOT for installing a new sign near Mitchell indicating Spray as a destination along OR 207.

-TAC members identified edits/concerns with draft chapter 7 and 8. DEA will incorporate comments prior to mailing out the draft TSP (Chapters 1 - 8).

5) Project Schedule

Mike Baker mentioned that the Wheeler County TSP is on schedule to be completed by the end of May. He stated that four TAC meetings have been completed and the next (and final) TAC meeting will cover the entire draft report (Chapters 1-8).

6) TAC #5 and Public Meeting #2

The next (and final) TAC meeting is scheduled for March 21 at 11:00 a.m. at the Fossil City Hall. Following TAC meeting #5 will be public meeting #2, which is scheduled for 1:00 p.m. at the Wheeler County Courthouse. Larry Kennedy will send out a meeting announcements closer to the meetings.

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SUMMARY
Transportation Advisory Committee (TAC) Meeting #5
March 21, 2001

TAC Meeting #5 for the Wheeler County Transportation System Plan (TSP) project was held on March 21, 2001 at the Fossil City Hall. In attendance were:

Jerrilea Mayfield, Lower John Day Regional Safe Communities
Tom Schott, Rancher
Buck Leckie, Mayor, City of Spray
Candy Humphries, City of Spray Recorder
George Ruby, ODOT District 10 - Pendelton
Tom Anderson, ODOT District 10 - Prineville
Will Osborn, ODOT District 10 - Mitchell
Annette Wornell, City of Mitchell Recorder
Betty Baisch, New City of Mitchell Recorder
Larry Kennedy, Wheeler County Roadmaster
Jim Bryant, ODOT Region 4
Mike Baker, DEA
Ryan LeProwse, DEA

The meeting agenda covered six primary items: 1) Review of Revised Projects, 2) Review of Other TSP Revisions, 3) Review of Final Project List, 4) Overview of Public Meeting 5) Overview of Adoption Process, and 6) Project Schedule.

1) Review of Revised Projects

Ryan LeProwse and Mike Baker discussed the two revised safety projects identified at TAC meeting #4. The two revised projects include:

- Project W13 - Safety Improvements along OR 207
- Project W14 - Safety Improvements along OR 218

Project W13 was revised to include up to four localized curve improvements through Donnely Grade between mileposts 2.9 and 3.9. TAC members identified that all of the local concerns were addressed except for the need to fix the super elevation of two curves near the intersection of OR 207 and S. Twickenham Road. David Evans and Associates, Inc. will revise Project W13 to include a section concerning the super elevation of the two curves. Project W14 was revised to include three localized curve improvements along OR 218. The approximate locations for curve improvements are 39.15, 37.9, and 31.35.

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2) Review of Other TSP Revisions

Ryan LeProwse and Mike Baker discussed other TSP revisions added since TAC meeting #4 including:

- Truck Route Information
- Stakeholder Information (Appendix K)

Considering truck route information was a major topic at TAC meeting #4, DEA included truck route information and maps regarding state highways and county roads in Chapter 7, Appendix I, and Appendix J. Ryan LeProwse briefed the TAC on how to read the state truck route information provided in Appendix I. For additional truck route information please refer to the Motor Carrier Transportation Division section of ODOT's website.

Appendix K including lists of TAC members and Stakeholders as well as a list of Stakeholder issues was handed out to be included in the Draft TSP. Mike Baker commented on a few of the issues and indicated that none of the issues identified new improvement projects. He identified that the majority of the issues were maintenance concerns.

3) Review of Final Project List

Mike Baker reviewed the final recommended project list, Table 7-11. In addition to summarizing the total project costs for Wheeler County and each of the three cities Mike reminded the representatives that these costs were listed under the jurisdiction which is responsible for finding the funding not necessarily the jurisdiction responsible for paying the improvement project costs.

4) Overview of Public Meeting

Mike Baker briefed the TAC on public meeting #2. He mentioned their attendance would be appreciated and hoped they would inform other community members of the findings to date.

5) Overview of Adoption Process

Mike Baker informed the TAC of the remaining steps concerning the Wheeler County Transportation System Plan. He mentioned that there will be a planning commission meeting in April and a final adoption meeting with the Wheeler County Court in the beginning of June.

6) Project Schedule

Mike Baker stated that all five of the TAC meetings have been completed and that the Wheeler County TSP is on schedule to be completed by the end of June. He thanked the TAC members for their participation with the Wheeler County TSP and congratulated them on accomplishing the tasks required to complete the TSP on time and in good order.

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SUMMARY
Public Meeting #1
January 24, 2001

The first Wheeler County TSP public meeting began at 1:30 p.m. at the Wheeler County Courthouse. Approximately 20 people attended the meeting including the County Court.

Mike Baker opened the meeting with an overview of his presentation. His presentation addressed the elements of a transportation system plan, what other plans it must coordinate and comply with, public involvement through the TAC and public meetings, existing conditions, forecasting future volumes, and a summary of the potential improvement projects developed through the public involvement process.

The existing conditions analysis consisted of an inventory of the existing transportation system, traffic volumes, traffic operations, and accident history. The inventory covered the street system as well as the pedestrian, bikeway, public transportation, rail, water, and pipeline systems as they apply to Wheeler County. The forecasting methodology of using Wheeler County population forecasts as well historic traffic volumes along state highways to determine future traffic volumes throughout Wheeler County was explained in detail. In addition to summarizing the existing and future traffic conditions in Wheeler County, the potential improvement projects identified by the TAC to address specific deficiencies, safety issues, or access concerns were discussed.

After the formal presentation, the meeting was opened to questions or comments about transportation issues. The following list includes topics discussed:

- Bicycle facilities - increasing safety through shoulder widening of at least 4 feet
 - US 26 - Mitchell to Painted Hills Monument
 - OR 19 - Gilliam County line to Grant County line
- OR 207 (Service Creek - Mitchell Highway)
 - Roadway alignment issues, safety, pavement condition, shoulders
- Rest Stops - Needed along US 26 between Prineville and Dayville
- US 26 near Rock Creek Area
 - Current project is identified in 2000-2003 Statewide Transportation Improvement Program
- Public Use Airstrip in Wheeler County
 - Public identified there is a need
- Speed Zone Issues in Fossil, Mitchell, and Spray

DEA will investigate these topics and provide information to the project management team.

The meeting wrapped up at 3:00 p.m. The second and final public meeting will be scheduled in March 2001.

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SUMMARY
Public Meeting #2
March 21, 2001

The second Wheeler County TSP public meeting began at 1:30 p.m. at the Wheeler County Courthouse. Approximately 15 people attended the meeting including the County Court.

Mike Baker opened the meeting with an overview of his presentation. His presentation addressed the elements of a transportation system plan, what other plans it must coordinate and comply with, public involvement through the TAC and public meetings, existing conditions, forecast conditions, project needs, the Wheeler County Transportation System Plan, capital improvement costs, and funding options.

The Transportation System Plan consists of roadway design standards, access management guidelines, Wheeler County's 5-year working road/bridge maintenance plan, statewide transportation improvement program (STIP) projects, roadway and bridge improvement projects, and other system improvements. The TSP includes three to four projects for each of the three cities of Fossil, Mitchell, and Spray. The capital improvement costs summarize the high (0-5 year), medium (6-10 year), and low priority (11-20 year) project costs for Wheeler County, Fossil, Mitchell, and Spray. In addition to identifying improvement projects and associated costs the Wheeler County TSP identifies funding options including the state highway fund, federal timber replacement funds, grant/loans, property taxes, etc.

After the formal presentation, the meeting was opened to questions or comments about transportation issues. The following list includes topics discussed:

- Ownership of Main Street in Mitchell
- Ownership of the East Bridge along Main Street in Mitchell
- STIP Project locations and date of completion

The meeting wrapped up at 2:15 p.m.

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