

BEFORE THE MORROW COUNTY COURT
OF MORROW COUNTY

AN ORDINANCE ADOPTING A 2007 UPDATE
TO THE MORROW COUNTY
TRANSPORTATION SYSTEM PLAN.

COUNTY ORDINANCE
NO. MC-05-2007

WHEREAS, ORS 203.035 authorizes Morrow County to exercise authority within the county over matters of County concern; and

WHEREAS, Morrow County adopted a Comprehensive Land Use Plan which was acknowledged by the Land Conservation and Development Commission on January 15, 1986; and

WHEREAS, Morrow County adopted a Transportation System Plan in 1998 and a significant update in 2005; and

WHEREAS, the Morrow County Planning Commission held a hearing to review the request on September 25, 2007, at the Morrow County School District Building in Lexington, Oregon, and on October 30, 2007, at the North Morrow County Annex Building in Irrigon, Oregon; and

WHEREAS, the Morrow County Planning Commission unanimously recommended approval of the request and adopted Final Planning Commission Findings of Fact; and

WHEREAS, the Morrow County Court held a hearing to consider the recommendation of the Morrow County Planning Commission on November 28, 2007, at the Morrow County Courthouse in Heppner, Oregon; and

WHEREAS, the Morrow County Court did consider the testimony and evidence presented to them; and

WHEREAS, the Morrow County Court did consider the vote of the people of Morrow County to NOT fund new construction projects, but to focus on maintenance, safety, capacity and economic development of the county road network, in that order; and

WHEREAS, the Morrow County Court does strongly support the development of a secondary north/south route in the county and the current and pending Transportation System Plans reflect this need, current funding does NOT support development of the future north/south road commonly known as the Lone/Boardman Road;

NOW THEREFORE THE COUNTY COURT OF MORROW COUNTY ORDAINS AS
FOLLOWS:

Section 1 Title of Ordinance:

This Ordinance shall be known, and may be cited, as the "2007 Update of the Morrow County Transportation System Plan."

Section 2 Affected Documents

Attached as Exhibit 1 is the 2007 Update of the Morrow County Transportation System Plan. This adoption does repeal all previous Transportation System Plans and replace them with the attached document.

Section 3 Effective Date

This ordinance shall be effective on January 1, 2008.

Date of First Reading: December 5, 2007

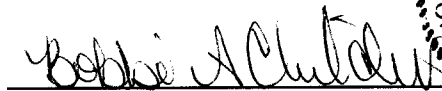
Date of Second Reading: December 12, 2007

DONE AND ADOPTED BY THE MORROW COUNTY COURT THIS 12th DAY OF DECEMBER, 2007.

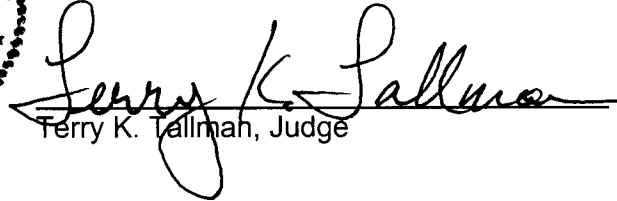
ATTEST:



MORROW COUNTY COURT:



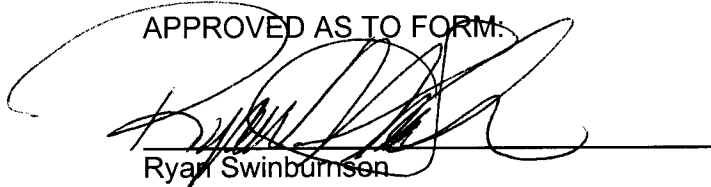
Bobbi Childers
County Clerk



Terry K. Tallman, Judge

ABSENT
John E. Wenholz, Commissioner

APPROVED AS TO FORM:



Ryan Swinburnsen
County Counsel



Ken Grieb, Commissioner



Morrow County

**2005 Transportation System Plan
Including 2006 and 2007 Updates**

December 12, 2007

MORROW COUNTY
2005 TRANSPORTATION SYSTEM PLAN
WITH 2006 AND 2007 UPDATES

Prepared for:
Morrow County Planning Department
P.O. Box 40
Irrigon, Oregon 97844

2006 and 2007 Update by;
Morrow County Planning Staff

2005 Update by:
CTS Engineers
20085 NW Tanasbourne Drive, Suite
Hillsboro, OR 97124
(503) 690-8080

and

The Mitchell Nelson Group
2116 NW Wilson Street
Portland, OR 97210

Original Morrow County 1997 TSP prepared by:

KCM, Inc.
7601 W Clearwater Avenue, Suite 303
Kennewick, WA 99336-1677

Morrow County 2005 Transportation System Plan

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ACKNOWLEDGMENT

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Transportation Equity Act for the 21st Century (TEA-21), local government, and the State of Oregon funds. The contents of this document do not necessarily reflect views or policies of the State of Oregon.

The 2006 and 2007 Updates were funded by Morrow County and completed internally using Planning and Public Works staff.

CHAPTER 1 INTRODUCTION

The County of Morrow prepared its original Transportation System Plan (TSP) in 1997 as part of their overall Comprehensive Plan as required by Oregon Revised Statute 197.712 and the Transportation Planning Rule (TPR) OAR 660 Division 12 developed by the Department of Land Conservation and Development (DLCD). The TPR and its provisions are designed to encourage the development of a planning process that allows development of future transportation facilities, protect the operation of existing and future transportation facilities, coordinate the review of land use decisions, and promote safe and convenient pedestrian and bicycle circulation. Oregon counties and cities over a certain size are required to develop TSPs and supporting implementation ordinances to carry out the TPR goals at the local level. Local jurisdictions are required to update their TSPs every 5-7 years. The 2005 TSP update was intended to guide transportation system development for the next 20 years. The plan will continue to be periodically updated to ensure it remains current and continues to meet the needs of the County.

A minor update was done in 2006 to amend Tables 5-5 and 6-10 adding a project to the long-term projects list known as the Brenner Canyon and Valby Road Project. That action also changed the status of Brenner Canyon Road to a Minor Collector from a Local Road. Another minor amendment in 2007 accomplished several tasks, as follows: updated the Long-Range System Projects Tables, removed the Short-Term Projects and added a new Five-Year Project Plan, added a table to support Figure 3-1 Functional Classification, and amend the Goals and Policies to reflect the adopted policies in support of the speedway project in 2002. The speedway policies were not incorporated by the consultant utilized for the 2005 Update.

This section of the TSP includes the following topics:

- Plan organization
- Regulatory setting
- Physical setting
- Public involvement summary

TRANSPORTATION SYSTEM PLAN ORGANIZATION

The County was assisted with the preparation of the 2005 plan by CTS Engineers, a transportation planning and engineering consulting firm, with assistance from the Mitchell Nelson Group, which led the land use planning and public involvement tasks. The original TSP was prepared by KCM, Incorporated. The organization of the TSP follows the process used to develop the study. *Chapter 2* is an introduction of the plan's goals and policies. These transportation-related goals and policies, developed with input by the Technical Advisory Committee (TAC), provide a guide to the process and give

direction to the development of future system improvements. The goals and policies not only ensure that the plan meets the intent of the TPR but that it strives to meet the interests of the County.

No consultants were utilized for either the 2006 or 2007 updates. The role of the Technical Advisory Committee was fulfilled by the County's Road Committee and the items included in both Updates were supported by them.

Chapter 3 is an assessment of existing conditions, which provides a better understanding of the characteristics of the existing transportation system and identifies the issues that currently face the County. Included in this chapter is the discussion of transportation issues and opportunities, current land use and population, and existing transportation facilities.

In Chapter 4, the future conditions are discussed, including the projected areas of future population growth and transportation demand, as well as the future needs for greater connectivity. These future conditions represent the setting under which transportation alternatives can be compared.

In Chapter 5, alternatives are developed that reflect the County's goals and policies, and addresses the identified existing and future transportation issues and needs.

Two alternatives were considered. The first, the "unconstrained" alternative, identifies the complete range of transportation system improvements needed to serve needs of all of the County's transportation system users. The second alternative, a "constrained" alternative, is a scaled-back alternative that addresses only portions of the anticipated future needs in consideration of potential resources expected to be available for the County's transportation network over the next 20 years. The constrained alternative generally follows the County's actual maintenance and improvement program of the past 10 years. The preferred alternative, based on input from the technical advisory committee, stakeholders and members of the public, is that which best meets the goals, objectives, and needs of the community.

In Chapter 6, the specific actions necessary to implement the plan's preferred alternative are presented. Recommended actions are also presented regarding future opportunities, land use requirements including development, right-of-way, and access management, and recommendations for transportation facilities and operations, including road standards and connectivity.

Chapter 7 is an evaluation of funding sources for transportation improvements. Funding options and a financial plan for meeting the recommended improvements identified in the TSP are presented.

In Chapters 8 and 9, the plan is discussed in relation to the Transportation Planning Rule in effect as of March, 2005. Chapter 8 focuses on ordinances that need to be adopted by the County to meet the rule, while Chapter 9 reflects how the TSP addresses each of the required elements of the TPR.

The assumptions made and utilized in the 2005 TSP have not been modified for the 2007 Update. Planning staff would assert that most of the conditions in place in 2005 have not changed in a significant manner for the majority of the County with two possible exceptions. The first is development at the Port of Morrow within the area now commonly known as the East Beach Industrial Area. The second is the speedway with land use approvals to be processed during late 2007 and early 2008, construction to begin late 2007 and phase one to be complete by early 2009. Racing is planned to begin in 2009. The approvals completed in 2002 will still govern the overall development of the initial phase of the speedway complex. Prior to further development on property adjacent to the original subject property additional land use approvals will be required and should approximately correspond in time with the next full update of the Morrow County TSP.

REGULATORY SETTING

The TSP is required by the State of Oregon Transportation Planning Rule, OAR 660 Division 12 developed by the DLCD and the Oregon Department of Transportation (ODOT). The TPR requires all jurisdictions to develop a transportation plan that includes the following elements:

- Roadways
- Transit
- Bicycle and pedestrian facilities
- Air, rail, water, and pipelines
- System alternatives
- Financing
- Policies and ordinances for implementation

In addition, the TPR requires local jurisdictions to adopt land use code amendments to protect transportation facilities, coordinate their plans with other jurisdictions, and encourage the development of bicycle and pedestrian facilities.

PHYSICAL SETTING

Morrow County is located in northern Oregon approximately 150 miles east of Portland and 30 miles west of the City of Pendleton. The County is bordered by the Columbia River to the north, the Umatilla National Forest to the south, and Gilliam and Umatilla Counties to the east and west, respectively. Grant and Wheeler Counties share the southern border of Morrow County.

The topography within this 2,065-square-mile area varies from lowlands along the Columbia River to the Peak of Black Mountain, nearly 6,000 feet above sea level. Most of the county is largely rural in nature. There are five incorporated cities: Boardman, Heppner, Irrigon, Ione and Lexington. There are also six unincorporated rural centers: Cecil, Morgan, McNab, Ruggs, Hardman, and Lena. None of the County's rural centers are designated as rural communities under Oregon State law. Boardman is the largest city in the County, followed by Irrigon and Heppner. This TSP focuses on the unincorporated areas of the County, up to the urban growth boundaries of the incorporated cities.

The northern part of the County, where Boardman and Irrigon are located, is moderately urban, especially along the I-84 corridor just south of the Columbia River. The southern part of the County is very rural. Industry in the County is primarily natural-resource based, with agriculture, lumber, hydroelectric power generation and food processing as the principal industries.

PUBLIC INVOLVEMENT

Public involvement is a key element to an effective planning process. The TSP process was guided by members of the TAC. This committee was instrumental in the development of goals and policies, population projections, and roadway design standards, as well as the prioritization of roadway projects. Participating members of the TAC are listed below:

- Barry Beyeler, City of Boardman Community Development Director
- Jerry Breazeale, City of Heppner City Manager
- Roger Britt, Heppner resident
- Cheryl Jarvis-Smith, TGM Grant Manager, ODOT
- Ron McKinnis, Port of Morrow
- Carla McLane, Morrow County Planning Director
- Bob Nairns, Morrow County Assistant Public Works Director
- Burke O'Brien, Morrow County Public Works Director
- Terry Tallman, Morrow County Judge

Meetings of the TAC were facilitated by Joyce Jackson of MNG.

Other key elements of public involvement process included a project steering committee composed of key stakeholders, and an open house conducted in September, 2004. Information provided by stakeholders and attendees at the open houses were instrumental in identifying planning issues and needs for the county. An additional open house was held to present the draft TSP on February 8, 2005.

The plan approval process, which takes place in 2005, will include meetings with the county planning commission and the county court, and will culminate in the adoption of the plan and associated modifications to the Zoning Ordinance and Subdivision Ordinance.

The 2006 and 2007 Updates were initiated by the Morrow County Road Committee and were reviewed by the Planning Commission and County Court prior to final adoption.

CHAPTER 2 GOALS AND POLICIES

INTRODUCTION

Morrow County recognizes the importance of its transportation system to the long-term health and vitality of the County. Well-designed roadways contribute to the ability of an area to accommodate additional growth and development. Deficiencies in the system affect user safety and perception of community character and livability. As part of this Transportation System Plan (TSP), a series of goals and policies were designed to guide the development of the transportation system over the next 20 years.

The goals and policies included in this plan were developed by the Technical Advisory Committee (TAC), working under the requirements of the 1991 Oregon Transportation Planning Rule (TPR). The goals and policies developed for this process reflect both the required elements of the TPR and the interests of the County.

Goals are general in nature. Each goal focuses on a particular aspect of the transportation system or the relationship between transportation and the viability of the County. The nine goals of this TSP are coordination/process, land use, economic development, quality of life, various transportation modes available in the County, and finance.

Due to the general nature of goals, they are difficult to implement and therefore make gauging plan success difficult. To assist in plan implementation, a series of policies have been developed for each goal. Policies are specific steps to be taken in plan implementation to ensure that the goals are met. Policies are directive in nature and often outline plan requirements.

The following section presents the goals and policies of the Morrow County TSP, which are consistent with the County's original TSP. These goals and policies will assist in prioritizing individual transportation projects to assure that limited transportation funding is expended efficiently so as to promote the development of a healthy transportation system.

GOALS AND POLICIES

Goal 1 Coordination/Process

Ensure that the Morrow County TSP is coordinated with other transportation providers, meets applicable regulations, and considers the needs of all transportation system users.

Policy 1.1. Coordinate the preparation of the TSP with transportation providers in Morrow County, including the cities of Boardman, Irrigon, Ione, Heppner, Lexington, and the Oregon Department of Transportation (ODOT).

Policy 1.2. Coordinate design standards with the cities within the County.

- Policy 1.3.** Coordinate transportation planning with the Port of Morrow.
- Policy 1.4.** Coordinate with ODOT for improvements on State facilities that could affect County facilities, through a ministerial or similar staff level review process to allow County Public Works the opportunity to review improvement plans prior to final design.
- Policy 1.5.** Coordinate transportation planning with adjacent counties.
- Policy 1.6.** Fulfill the transportation planning requirements of ODOT and the Department of Land Conservation and Development (DLCD).
- Policy 1.7.** Participate actively in the North East Area Commission on Transportation (NEACT) to promote inclusion of transportation improvement projects in Morrow County in the Statewide Transportation Improvement Program (STIP).
- Policy 1.8.** Use a 20-year time horizon for all transportation planning.
- Policy 1.9.** Review and update the capital improvement program annually and the plan elements periodically, in conjunction with the periodic update of the county Comprehensive Plan or every five years.
- Policy 1.10.** Evaluate the needs of all of the County's population groups, including transportation disadvantaged groups such as older adults, young, physically challenged, and low-income county residents.
- Policy 1.11.** Evaluate the needs of commercial users, including manufacturing, timber, agricultural, and recreational users.
- Policy 1.12.** Include consideration of urban issues and rural issues in the TSP.
- Policy 1.13.** Provide extensive opportunities for public input throughout the transportation planning process.

Goal 2 Land Use

Support land use planning with appropriate transportation improvements.

- Policy 2.1.** Design all new roadways to meet county and state adopted road design standards, as a minimum.
- Policy 2.2.** Identify and reserve future road corridors.

- Policy 2.3.** Require new development proposals, plan amendments, and zone changes to conform to the TSP, as required by Section 660-12-045 (2) (g) of the TPR.
- Policy 2.4.** Require new development to provide appropriate access to the transportation system.
- Policy 2.5.** Require new development to identify transportation impacts and provide appropriate mitigation.
- Policy 2.6.** Require new development to dedicate right-of-way for transportation system improvements where appropriate. Establish procedures for the dedication of right-of-way necessary for the transportation system.
- Policy 2.7.** Utilize current state statute and rule for the acquisition of right-of-way necessary for the transportation system.
- Policy 2.8.** Utilize current state statute and rule for the abandonment of right-of-way no longer needed for the transportation system.
- Policy 2.9.** Utilize adopted ODOT access management standards for State facilities and proposed access management standards in this TSP for County facilities.
- Policy 2.10.** For the construction of roads, highways, and other transportation facilities and improvements not otherwise allowed outright in resource lands (EFU and FU zones), request an exception to any statewide goal prior to construction.

Goal 3 Economic Development

Enhance economic development through transportation improvements.

- Policy 3.1.** Support transportation system improvements that contribute to economic development opportunities.
- Policy 3.2.** Pursue opportunities to improve access to business and employment centers for all modes of travel.
- Policy 3.3.** Pursue opportunities to improve access to tourist and recreation sites, such as the Columbia River Heritage Trail and the County OHV Park, for all modes of travel.

Goal 4 Quality of Life

Promote a high quality of life in Morrow County by providing a well-developed transportation system that is appropriate to its surroundings.

- Policy 4.1.** Consider community character when providing transportation system improvements in the urban growth areas.
- Policy 4.2.** Maintain the rural character of the County in the areas outside the designated urban areas.
- Policy 4.3.** Preserve and maintain the scenic byway corridor along Willow Creek.

Goal 5 Roadway System

Provide and maintain a safe, efficient roadway system to provide mobility throughout the County.

- Policy 5.1.** Design and construct all new roadways to the County's adopted road design standards, as a minimum.
- Policy 5.2.** Preserve the transportation system through regular maintenance.
- Policy 5.3.** Use the County's established procedure to set speed limits.
- Policy 5.4.** Provide roadway channelization (striping, turn lanes) where needed, using American Association of State Highway Officials standards.
- Policy 5.5.** Use the Manual on Uniform Traffic Control Devices for traffic signal and signing standards.
- Policy 5.6.** Establish criteria for the design of surface water detention for transportation facilities.
- Policy 5.7.** Improve connectivity within the County by identifying and working to improve additional road corridors.
- Policy 5.8.** Improve access for emergency vehicles to the transportation system.
- Policy 5.9.** Emphasize work zone safety for all workers.
- Policy 5.10.** Identify emergency routes for priority in snowplowing or other circumstances where access is restricted.
- Policy 5.11.** Use the County Road Committee to identify and prioritize modernization, preservation and construction projects.

Goal 6 Bicycle, Pedestrian, Equestrian, and Transit Modes

Support the use of other modes of transportation (bicycles, pedestrians, equestrians, and transit) through effective transportation improvements.

- Policy 6.1.** Include design features such as widened shoulder areas to accommodate bicycles, pedestrians, and equestrians in the county roadway design standards.
- Policy 6.2.** Include design features such as pullout areas and turnarounds to accommodate school bus use in the county roadway design standards, in coordination with school bus providers.
- Policy 6.3.** Continue the development of the Columbia River Heritage Trail, and other similar facilities, for recreational uses.
- Policy 6.4.** Support the efforts of private transit systems within the County, such as older adult transporters.
- Policy 6.5.** Encourage the development of additional transit opportunities for transportation-disadvantaged groups within the County.
- Policy 6.6.** Coordinate with ODOT and the cities to construct bicycle and pedestrian improvements in unincorporated areas within the urban growth boundary.
- Policy 6.7.** Encourage and support development of van pool opportunities to move workers from population centers both in and out of the County to job centers in the County.

Goal 7 Air Transportation

Support the local and regional air transportation needs of Morrow County.

- Policy 7.1.** Provide and maintain airport facilities to serve general aviation needs.
- Policy 7.2.** Expand airport facilities as necessary to support future service needs.
- Policy 7.3.** Coordinate with the Aeronautics Section of ODOT when preparing airport planning documents and reviewing proposed land use development in the vicinity of the airport.
- Policy 7.4.** Encourage the establishment of passenger and freight air service in the future.
- Policy 7.5.** Maintain minimum operating standards for the County's airports as required by the Federal Aviation Authority.

- Policy 7.6.** Establish appropriate land uses adjacent near airports that are compatible with airport noise levels and provide support to airport operations.

Goal 8 Freight and Goods Movement

Promote efficient movement of freight and goods throughout the County.

- Policy 8.1.** Develop a freight and goods mobility strategy in conjunction with the Port of Morrow and others interested in freight and goods movement.
- Policy 8.2.** Evaluate roads with weight restrictions and develop an improvement strategy for those that adversely affect freight and goods mobility.
- Policy 8.3.** Encourage improvements to rail freight facilities by encouraging improvement to intermodal connections.
- Policy 8.4.** Establish rail crossing standards for county roads.
- Policy 8.5.** Support the development of passenger rail service if it is proposed in the future.

Goal 9 Finance

Use a fiscally sound approach to financing transportation system improvements.

- Policy 9.1.** Develop a financial strategy for funding transportation system improvements.
- Policy 9.2.** Explore introducing innovative funding methods, such as system development charges, to finance transportation system improvements.
- Policy 9.3.** Coordinate with other transportation users and providers to seek joint funding opportunities for transportation system improvements.
- Policy 9.4.** Actively seek available funding sources for transportation system improvements.

Goal 10 Oregon Motor Speedway

The following policies are incorporated based on the adoption of Ordinance MC-C-2-02 on July 10, 2002, which amended the Morrow County Comprehensive Plan, the Morrow County Transportation System Plan, and the Morrow County Zoning Ordinance to allow for the siting of a speedway and related facilities at the Boardman Airport.

- Policy 10.1** As required by the National Environmental Policy Act, the Port of Morrow, in coordination with the Oregon Department of Transportation and the Federal Highways Administration, shall examine and analyze transportation network alternative that might reasonably accommodate traffic generated by the Speedway during peak events. The study shall determine whether reasonable transportation alternatives exist that are feasible to develop and meet the needs of the Department of Transportation better than the transportation improvements authorized by this plan. If such alternatives exist and are desired by the Department of Transportation, the Port shall apply to Morrow County for Transportation System Plan amendments, including goal exceptions if necessary, to substitute those transportation improvements for authorized improvements that would no longer be required.
- Policy 10.2** Required transportation improvements may be developed in stages as authorized by the Oregon Department of Transportation.
- Policy 10.3** As part of the site development review process for the Oregon Motor Speedway, the Speedway owner or operator shall prepare and submit to Morrow County detailed traffic management and event management plans identifying traffic management measures, including access, circulation and parking management measures, and event management measures to be employed during mid-sized and peak Speedway events. Those measures shall be designed to ensure reasonable roadway access, circulation and movement for non-Speedway generated traffic traveling within or through the Boardman area before and after Speedway events. The traffic management plan shall be prepared by a licensed traffic engineering firm in coordination with the Oregon Department of Transportation, the City of Boardman, Morrow County and the Port of Morrow.
- Policy 10.4** Unless otherwise agreed to by federal, state or local transportation providers, the Oregon Motor Speedway operator or any successors in interest shall be responsible for payment of all costs associated with implementing the traffic management plan for the Speedway.
- Policy 10.5** Unless otherwise agreed to by federal, state or local transportation providers, the Oregon Motor Speedway operator or any successors in interest shall be responsible for payment of all costs associated with implementing the specific transportation improvements required for compliance with the Transportation Planning Rule.

Policy 10.6 Implementation of the Speedway's traffic management plan shall be an ongoing condition of approval for the Speedway. Failure to substantially comply with the traffic management plan or to pay the costs associated with implementation of that Plan shall be a basis for enjoining operation of the Speedway.

Policy 10.7 The Oregon Motor Speedway operator or any successor in interest shall work cooperatively with emergency service providers and affected state and local governments and agencies on the development of one or more interagency agreements to prepare and implement a traffic management plan.

CHAPTER 3 EXISTING CONDITIONS AND INVENTORY

INTRODUCTION

This chapter provides an inventory of the existing transportation system, and other information relevant to the operation of the system:

The following topics are discussed in this chapter:

- Issues identification
 - Transportation issues brought forth from the Technical Advisory Committee (TAC), staff, stakeholders and the public.
- Existing land use and population
 - Current population of the County.
 - Overview of land uses within the County.
- Transportation facilities
 - Description of existing roadways within the County, including discussion of road standards, travel demand, and roadway connectivity.
 - Descriptions of existing pedestrian, bicycle, and equestrian facilities.
 - Description of existing facilities for transit, air, rail, and other modes.

Inventory Data

Data for this report were collected from several sources. Morrow County maintains a roadway database that includes information about each road's width, surface material, average daily traffic (ADT), and appurtenances such as culverts and approaches. Significant data regarding state highways were obtained from the Oregon Department of Transportation (ODOT) and are included in the inventory. Discussions with county and state officials and observations from multiple driving tours were also major sources of data. Adopted TSPs from the cities of Boardman, Heppner, Ione, Irrigon, and Lexington provided useful information.

Data was also obtained from private transportation operators in the County, including the Port of Morrow and the Boardman Airport.

The final source of data was county residents, including the TAC, others identified as having a significant interest in transportation, and those who attended the two open houses held in late 2004 and early 2005.

ISSUES IDENTIFICATION

A key role of public participation was to help identify the primary transportation issues that Morrow County faces today. Comments from two public meetings, an initial open house, responses to a community survey and input from advisory committee members and key stakeholders were used to identify key transportation issues facing the County. Issues raised at these sessions are listed below, ranging from general themes to specific suggestions. Detailed minutes and survey responses are included in the Appendix.

Open House and Community Stakeholder Survey Comments

- Truck traffic in the County is increasing and will continue to grow with future industrial development. An issue was raised concerning the adequacy of corner radii on the existing streets through Boardman to the Port of Morrow industrial areas (Main Street, I-84 Interchange #164 accesses in Boardman). A suggestion was made to direct Port traffic to I-84 Interchange #165 with better signage.
- A new connection is needed to provide access to several thousand acres of Port of Morrow industrial lands located north of the I-84/US 730 interchange and west of US 730.
- A number of existing roads were identified as needing functional classification changes, including McNab Lane, Sand Hollow Road, Baseline Lane/Myers Road, Paterson Ferry Road, Tower Road, Sunflower Road, Bombing Range Road, Dry Fork Road, Ridge Road.
- Additional measures to promote tourism and travel to the area were suggested, including providing blue information signs along the highway for attractions such as the Columbia River Heritage Trail (Heritage Trail), the Morrow County OHV Park, Oregon Trail, Willow Creek Lake, and other local parks and marinas.
- Provide a dock on the Columbia River for recreational and tourist opportunities, such as the Sternwheeler.
- Continued development of the Heritage Trail with additional local trail connections is also needed to promote tourism. Heritage Trail development should be combined with a joint State/County program to provide additional emergency vehicle connections to the trail, and install directional signage along I-84 and locally to guide visitors to the trail.
- A policy needs to be adopted for the strategic prioritization of resources by consolidating mobilization costs for roadway and utility improvements, rather than using a traditional “worst first” approach to prioritizing improvements and maintenance work. (The Public Works Department already employs this type of strategic prioritization in practice.)
- The County Public Works Department uses a number of policies and standards that need to be adopted into the County’s implementation ordinances. They address design requirements for “tee” intersections (promoting consolidation of split “tee” intersections into a standard three-legged configuration), paved/gravel road intersections (promoting

pavement extension at least a few feet into the gravel road to minimize the amount of gravel tracked onto the pavement and reduce shoulder wear), cattle guards and gates, gravel road depth and cross-section, local improvement district consent agreements, drainage structures, connectivity requirements, and standards for low-volume roads.

- Railroad crossing enhancements (i.e., rubberized crossings) are needed to better accommodate pedestrians and bicyclists, particularly on Old Columbia Highway NE.
- Additional equestrian facilities for horse riders were suggested.
- Olson Road overpass across I-84 is needed to serve existing and future industrial development and employee access at the Port of Morrow, provide additional circulation in the Boardman area, and reduce the use of the Main Street overpass.
- Safety and potential correction of the sharp curve on Highway 207 at Cutsforth Corner was identified.
- Activity at the County's new off-highway vehicle park (OHV Park) should be monitored to identify needs for access improvements.
- Major improvements to Rhea Creek Road are needed as a long-term project.
- County ownership of Bombing Range Road should be pursued, as it is the only north/south connection in the County.
- In addition to Bombing Range Road, the County roadway system needs an additional north/south connection between Boardman and Ione for general connectivity and emergency access needs. This second route has historically been referred to as Ione-Boardman Road. The existing impediments to transfer of Bombing Range Road to the County magnify the importance of Ione-Boardman Road as a second north/south connection. However, there are also impediments to constructing Ione-Boardman Road. The County has acquired a dedicated right-of-way that would allow construction of a road (Tower Road Extension) connecting the southern end of Tower Road to Highway 74 near Cecil. This indirect alignment, while beneficial for circulation and emergency access, would not fully meet the need for a second north/south connection.
- The Oregon National Guard is planning on locating a major training facility at the Boardman Bombing Range. Planning to accommodate additional vehicle and heavy truck traffic generated by the training facility will need to continue beyond this TSP update, as it is yet to be determined how military vehicles will be transported (i.e., by barge, rail or highway). Military assistance should be pursued for road improvements necessary to serve the facility. Once the National Guard's plans for the area become more detailed, the County may pursue a Transportation Refinement Plan (TRP) or other appropriate means, to identify potential impacts of the military training facility and facilitate transportation improvements needed to serve the facility.
- A high pressure gas line is planned to be extended from Ione to Heppner.

- Guidelines are needed for conversion of paved roads to gravel, and gravel road standards need to be adopted in the TSP.
- A secondary east-west connection between Boardman and Irrigon is needed in the event US 730 is blocked by an event at the Umatilla Army Depot.
- An all-season route is needed in southeast Morrow County to and from Umatilla County, i.e., Western Route.
- The speedway project near Boardman should remain a long-term economic development strategy.

For the 2007 Update the Road Committee did identify, based on the failure to pass a road levy, that the final year of the then current five-year project list needed to be revised and a new five-year plan adopted. The five-year plan to serve from 2007-2008 through to 2011-2012 was developed as two plans. The preferred plan and the one identified in this Transportation System Plan assume a \$600,000 per year oil budget. A backup plan was also prepared and assumes an oil budget of \$400,000. This backup plan would accomplish less. Both plans address the needs identified and included in the failed road levy.

EXISTING LAND USE AND POPULATION

Land use and population play a key role in determining the demand on the transportation system. Land use has an impact on what kinds of roads are needed as well as where roads can be located. Changes in population and employment are used together with historical trends in traffic volumes to predict changes in vehicle trips that will use the future system.

Existing Land Use

The topography of the County plays a large part in the types of existing land use. The Columbia River borders the northern edge of the County. South of the river, lowlands gently rise to the Umatilla forest, which occupies the southern part of the County. The road system generally follows drainage corridors in the lower County, and is straight and rolling in the upper County.

The major population center, commercial operations, and transportation facilities are in the northern part of the County, close to the river. Port facilities, including docks and loading facilities, are situated near the riverfront. I-84, the major east-west route across the County, also parallels the river, as does the Union Pacific rail line. The lowlands south of the river are well suited to agricultural use. This area is characterized by large tracts of land, including some used for farming as well as the bombing range and Army depot. Logging, recreation, and grazing are the major activities in the forested area.

Because land uses in the County are largely agricultural related, the population is sparse. Most of the County's population is concentrated in the Irrigon-Boardman area, which also provides most of the land available for development in urban areas. Smaller population centers are Heppner (the county seat), Lexington, and Ione. Of these, Heppner has the most area available

for future development. Heppner recently completed an industrial land study that evaluated the need to expand the City's Urban Growth Boundary (UGB).

Existing Population

Between the 1990 census and the 2000 census, the population of Morrow County increased by about 44 percent, or 3,370 residents (*Table 3-1*). Countywide growth from 2000 to 2003 averaged about 1.9 percent per year, compared to about 3.7 percent per year from 1990 to 2000. Almost all the recent growth has occurred in the northern part of the County; the southern part of the County has remained very stable. County population growth reflects the changes in employment that have been experienced, which have also been concentrated in the northern part of the County and in adjacent areas of Umatilla County. These employment changes include an expanded cheese factory, and other tenants on properties in the Port of Morrow's Boardman Industrial Park.

City/County Area	2004 PSU Estimate	2000 Census Count	1990 Census Count	1990-2000 Growth
Boardman	3,120	2,855	1,387	106%
Heppner	1,420	1,395	1,412	-1%
Ione	340	321	255	26%
Irrigon	1,790	1,702	737	130%
Lexington	260	263	286	-8%
Unincorporated Area	4,820	4,459	3,548	26%
Total	11,750	10,995	7,625	44%

Potential Growth/Traffic Impact

Growth

The Office of Economic Analysis (OEA) publishes population data prepared by Portland State University (PSU) for all counties in Oregon. The latest OEA estimates, based on the 2000 census, show an estimated population of 11,750 for the County in 2003, increasing by 54 percent to 18,100 by 2025, an average annual increase of about 2.5 percent. OEA publishes population estimates by County out to the year 2040. In percentage terms, Morrow County ranks in the top three counties in the state for projected population growth over five of the eight 5-year periods from 2000 to 2040, and no lower than the top five over the entire 40-year period.

In evaluating existing land uses and population as well as its distribution, the issue of potential growth and resulting traffic impact should be considered. Two types of growth are anticipated. One is the growth in residential housing development. This will likely take the form of new subdivisions on currently vacant land within the UGB. These vacant parcels are distributed largely south and west of Irrigon and south and west of Boardman. Additional residential development outside the UGBs will be limited, because in 2000 the County enacted a two-acre minimum for residential development in rural residential zones.

The other opportunity for growth is through economic development led by expansion of Port of Morrow industrial facilities throughout the County. The Port, through its 30-year history, has developed a significant inventory of developable land at its three industrial park sites: the Boardman Industrial Park, located east of Boardman and north of US 730; the Airport Industrial Park, located west of Tower Road; and the South Morrow Industrial Park, located at the Kinzua sawmill complex just outside the City of Heppner. The City of Heppner is currently evaluating the need for an expansion of its urban growth boundary to accommodate more industrial lands along the Highway 74 corridor.

Traffic Impact

The traffic impacts of these growth opportunities differ. The impact of residential development will require transportation planning and smart growth techniques to ensure adequate connectivity between new development and existing highway and road corridors. Creating block length and cross-circulation standards for new residential and commercial development will be an important element of the County's access management strategy.

Development of Port facilities will generate the need to upgrade transportation facilities including highway, rail, and barge facilities. In addition to the continued orderly movement of goods through the Port of Morrow, it will be important that the work force have adequate access to the Port's industrial facilities. A portion of this work force may use bike or pedestrian facilities to gain access, but major emphasis will continue to be focused on an interconnected system of roadways.

Another of the impacts to be expected by the growth within the Port of Morrow is the need for improved access to its east industrial site. This site is a portion of the Boardman Industrial Park. It is located north of I-84 and west of US 730. A new access to this industrial area should be developed near the I-84/US 730 interchange, as discussed in the roadway element of the plan.

Depending on the needs of the Port of Morrow, an access from US 730 south of the Union Pacific main line may be appropriate. If this is developed, an additional access north of the Union Pacific main line should also be created. This access may be constructed west from Paterson Ferry Road, connecting to the old Columbia River Highway.

Roadway Existing Needs

Morrow County maintains jurisdiction for design, construction, and maintenance of county roadways within its boundaries. The County also maintains jurisdiction for non-state facilities located outside of city limits but inside the urban growth boundary area. Towns and cities located within the County are responsible for their facilities. ODOT is responsible for design and construction of state facilities.

Ordinances and design standards for county roadways are described in the County's subdivision ordinance and requirements. Design standards for bicycle and pedestrian facilities in the County are limited and are included in county roadway design standards developed in subsequent sections of this TSP. Existing functional classifications for County roads are shown in *Figure 3-1* and are shown below with their appropriate mileages.

Major Collectors	Miles	Minor Collectors	Miles
Columbia Lane	2.68	Tower Rd	8.55
Paterson Ferry Rd (part.)	5.0	Homestead Ln (part.)	3.0
Frontage Ln	5.95	Ella Rd	9.34
Poleline Rd	4.94	Baker Ln	9.72
Homestead Ln (part.)	4.0	Juniper Rd	7.77
Wilson Ln (part.)	3.0	Baseline Ln (part.)	6.5
Main St – Boardman	0.25	Jordan Grade Rd	1.63
Kunze Ln (part.)	4.6	Big Butter Creek	14.4
Bombing Range Rd.	19.5	N Sandhollow Rd	4.08
Little Butter Creek (part.)	17.73	S Sandhollow Rd	11.56
Willow Creek Rd	18.65	Sandhollow connector	0.6
Colemine Hill Rd	2.37	Clarks Cyn Rd (part.)	6.65
Sunflower Flat Rd	10.3	Fuller Cyn Ln	8.35
Rhea Creek Rd	18.37	Balm Fork Rd	8.99
Gooseberry Rd	19.42	Sanford Cyn Ln	4.92
McNab Ln	5.67	Basey Cyn Rd	2.89
Fairview Ln	2.69	Upper Rhea Creek	24.5
	145.12	Morter Ln	4.0
		Valby Rd	10
		Dry Fork Rd (part.)	3.0
		Ridge Rd	5.59
		Redding Rd	1.81
		Buttermilk Cyn Rd	5.84
		Tupper Ln	3.7
		East Morphine Ln	11.5
		Ione-Boardman Rd	0.5
			179.39
		Grand Total	324.51

Overlying the County's roadway jurisdiction and that of the City of Boardman are the Port of Morrow facilities. The Port is a participating agency along with Boardman and Morrow County in developing improvements needed to meet the requirements of industrial development. The Port of Morrow's facilities include the Boardman Industrial Park, the Airport Industrial Park, and the south Morrow Industrial Park. Standards necessary to meet the load rating requirements of port industrial users should be coordinated between Morrow County, the City of Boardman, the Port of Morrow, and ODOT.

While the 2005 Morrow County TSP was being prepared, the Oregon National Guard announced plans to create a major military training facility at the Boardman Bombing Range in north County. At the time this plan was prepared, the Oregon National Guard was evaluating several options for delivering heavy vehicles such as tanks to the bombing range, including rail, barge and truck. Any of these options could require improvements to the roadways serving the Bombing Range to meet necessary load requirements. Analysis of roadway improvements to serve movement of both tanks and personnel for a tank training facility on the Bombing Range has not yet begun, as plans for the training facility are in the very early stages. Planning for improvements needed to accommodate this facility will need to continue beyond this TSP, and may require future TSP amendments, preparation of a Transportation Refinement Plan (TRP) for the area, or other appropriate means.

County Roadways

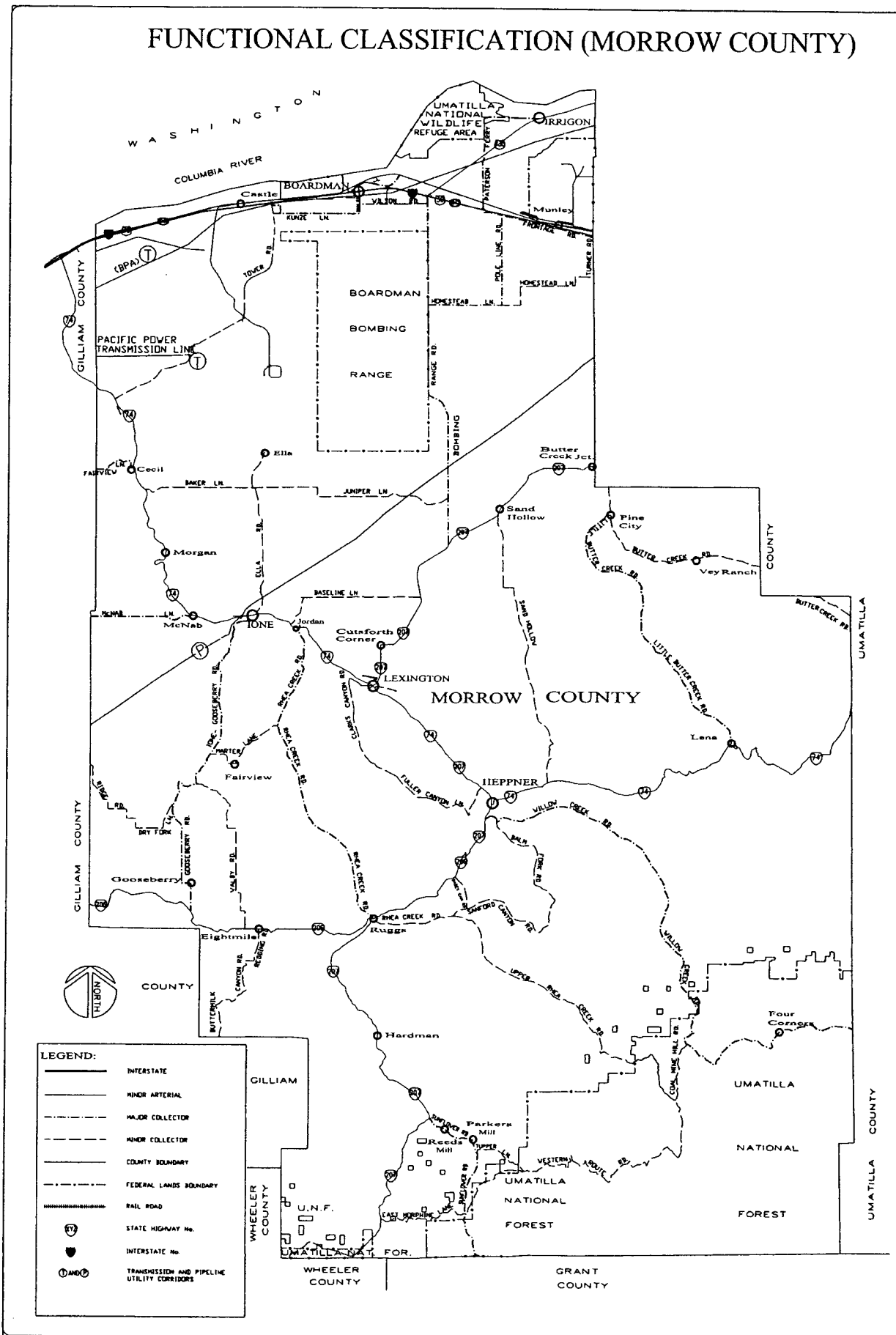
Evaluation of need relating to the County's roadway network falls in the following categories:

- Maintenance of existing roadways
- Safety
- Capacity
- Economic development

Maintenance

By far the most overwhelming need of the Morrow County road system is for maintenance. The County currently has 340 miles of pavement or hard surface roads and 600 miles of gravel roadways. The County annually budgets approximately \$2.8 million for the maintenance of this roadway network to maintain the existing level of service and, where possible, to provide an improved level. In Chapter 5, road improvement projects for screening are presented in a series of tables. Also listed in the proposed projects are modifications to the County's adopted road standards, including addition of gravel road standards. Including gravel road standards in the adopted TSP increases the potential funding sources for their construction and maintenance.

FUNCTIONAL CLASSIFICATION (MORROW COUNTY)



LEGEND:

	INTERSTATE
	MINOR ARTERIAL
	MAJOR COLLECTOR
	MINOR COLLECTOR
	COUNTY BOUNDARY
	FEDERAL LANDS BOUNDARY
	RAIL ROAD
	STATE HIGHWAY No.
	INTERSTATE No.
	TRANSMISSION AND PIPELINE UTILITY CORRIDORS

<p>CTS Engineers</p>	<p>CIVIL TRANSPORTATION STRUCTURAL LAND SURVEYING</p> <p>1000 N.E. Independence St. Hillsboro, Oregon 97124 Phone: (503) 646-0000 Fax: (503) 646-0000 www.cts-engineers.com</p>	<p>DATE: _____</p> <p>NO. DATE: _____</p>	<p>DATE: _____</p> <p>NO. DATE: _____</p>	<p>DATE: _____</p> <p>NO. DATE: _____</p>	<p>DATE: _____</p> <p>NO. DATE: _____</p>	<p>DATE: _____</p> <p>NO. DATE: _____</p>	<p>DATE: _____</p> <p>NO. DATE: _____</p>
		<p>Figure No. 3-1 FUNCTIONAL CLASSIFICATION</p>		<p>PROJECT MORROW COUNTY TSP UPDATE</p>		<p>PREPARED FOR OOOT/ MORROW COUNTY</p>	

Safety

From available information about the safety record of county roadways, it is known that improvements should be scheduled to address existing needs. Safety improvements identified by County staff and other stakeholders are included in the recommendations in Chapter 6. Safety is also known to be an issue with respect to farm-to-market roadways in the County. During the harvest season, the intermixing of slow-moving truck traffic and other forms of transportation can be an issue.

US 730 in Morrow County and Umatilla County has been posted as a safety corridor, due to high rates of crashes involving truck traffic and turning movements. Designation as a safety corridor provides eligibility for additional law enforcement and data collection aid. In addition, to increase law enforcement, ODOT recently began a multi-year, \$2.325 million corridor safety improvement project for US 730. The two-lane corridor not only serves as an important freight connection to Washington State, it also has many school bus stops, and bicycle and pedestrian traffic use the shoulders. There are many driveways and turning movements, resulting in frequent rear-end collisions. The project is divided into multiple phases. Work will include access management improvements, construction of turn lanes, and ultimately construction of frontage roads to serve local traffic and non-motorized travel needs.

The Morrow County portion of the corridor will be the last segment completed, as it involves complex access negotiations with multiple property owners. Recommendations for the Morrow County segment of US 730 are unlikely to be funded prior to the 2008-2011 Statewide Transportation Improvement Program (STIP). Planning for the 2008-2011 STIP will begin in about two years. Potential improvements for US 730 resulting from the safety study include access management/consolidation, construction of frontage roads, intersection traffic control changes, geometric improvements, etc.

Two other safety issues were also identified. The first was the need for an alternative to US 730 for circulation between Irrigon and Boardman in the event of an emergency at the Umatilla Army Depot or the Port of Morrow. The second was the need for an additional north/south connection between Boardman and Ione in addition to Bombing Range Road. A second north/south route addresses overall County circulation and safety and emergency vehicle access needs. It would provide both an alternate route for emergency vehicles and a fire break in an area of the County with extensive grasslands and predominately westerly winds. Finally, a north/south connection would ensure that the County would have one north/south roadway under its authority. The northern section of Bombing Range Road is presently controlled by the US Navy. With the possibility of a military training facility being constructed on the Boardman Bombing Range, as was revealed to the County while the 2005 TSP was being prepared, concerns were raised over the potential for Bombing Range Road to be closed. While the military has expressed no desire to close Bombing Range Road, it remains a possibility.

The second north/south route has historically been referred to as Ione-Boardman Road. The County has acquired a dedicated right-of-way that would allow construction of a road (Tower

Road Extension) connecting the southern end of Tower Road to Highway 74 near Cecil, which would be useful for the western mid-County area. However, this indirect alignment would not fully meet the need for a second north/south connection.

The existing impediments to transfer of Bombing Range Road to the County magnify the importance of Ione-Boardman Road as a second north/south connection. However, there are also impediments to constructing Ione-Boardman Road. Throughout the 1980's and 1990's the County participated in negotiations with the State of Oregon and major property owners, including the Boeing Agri-Industrial Company and Threemile Canyon Farms, to secure right-of-way for an Ione-Boardman Road by extending Ella Road north to Boardman. This effort was hampered by a 2001 Multi-Species Candidate Conservation Agreement with Assurances (MSCCAA) for the Washington ground squirrel, ferruginous hawk, loggerhead shrike, and sage sparrow, in the event any or all of the these species are listed in the future as endangered or threatened.

The 2001 MSCCAA was researched in the May 11, 2005 Federal Register as part of the 2005 TSP. The Federal Register states in part (emphasis added):

"The majority of existing colonies (in Oregon and throughout the species' current range) [i.e., colonies of the Washington ground squirrel] are located on the Boardman Bombing Range and the Boeing tract, which contain the largest contiguous suitable Washington ground squirrel habitat. Although Boardman Bombing Range activities are not certain, they are not expected to change significantly in the foreseeable future."

The major military training facility now in the initial stages of planning by the Oregon National Guard would be certain to significantly change activities on the Boardman Bombing Range in the foreseeable future. This information is not addressed by the May 2005 Federal Register or the 2001 MSCCAA. The Oregon National Guard's plans for a military training facility on the Boardman Bombing Range create both an opportunity and an obligation to revisit the 2001 MSCCAA and revisit the ability to construct an Ione-Boardman connection. Action steps to assist the County in pursuing this issue further are included in the 2005 TSP implementation program.

Capacity

An evaluation of the capacity of the Morrow County roadway system is included later in this chapter. Indications are that capacity-related issues on the County's roadway system are very low in number. The one exception to capacity issues are roadways developed within the Port of Morrow's industrial parks, which will be required to serve increasing industrial development.

Economic Development

The most significant transportation system needs beyond maintenance are economic development requirements created in the Port of Morrow industrial parks. As continued

industrial development occurs in the Port, existing roadways require expansion to accommodate increased vehicle capacity, turning movements, and increased weight load requirements. A list of projects created by anticipated economic development requirements is generated in Chapter 4 and screened in Chapter 5.

Buildable Lands

Significant tracts of buildable lands exist in Morrow County both within and just beyond the UGBs of Boardman and Irrigon. The areas outside the UGBs are zoned RR1, a zoning designation intended to recognize the existence of smaller lots outside of UGBs and allow continuation of single family dwellings in areas where this development has been established. However, when the County increased the minimum lot area for residential development outside the UGB from one acre to two acres in 2000 to reflect official state policy discouraging development of smaller lots in rural areas, the potential development on these parcels was substantially reduced.

Other buildable lands are located south of Irrigon in the Division Street/4th Road area and west of Irrigon/north of US 730. These lands are also designated RR1 with the revised minimum lot size of two acres.

Buildable lands exist south of Boardman city limits, between Tower Road and Bombing Range Road. A portion of these lands are zoned Farm Residential, allowing two-acre minimum lots to be developed. The balance is zoned Small Farm 40.

Each of these areas is representative of the need to develop minimum requirements for the creation of new county roads as this property develops. These new roadways should be provided at a spacing that meets Morrow County standards for block length. Requirements of this TSP suggest not more than 600 feet of roadway be developed in this area without interconnecting roadways. With two-acre minimum parcel size for residential development, density will be very low. Local road standards are expected to be adequate for new internal roadways in these buildable lands. Actual roadway locations will be refined through the site development process.

In addition, issues of access management are critical, especially along US 730, where standards are established for minimum spacing and new connections. The US 730 safety corridor study will update access management standards and identify improvements for the Morrow County segment of the highway. Standards presented in Chapter 6 recommend minimum distance between connections for roads and highways elsewhere in the County.

TRANSPORTATION FACILITIES

This section describes the components of the transportation system within the County. These include roadways, pedestrian, bicycle, equestrian, transit, rail, air, and other transportation facilities.

Roadway System

As an agricultural area, Morrow County is especially dependent on its roadway system. The system is in good condition overall and currently functions generally well. As discussed later in this chapter, existing traffic volumes are relatively low, and existing delay is typically low. Outside of urban areas, the system is geared toward moving small numbers of vehicles over long distances. Five state highways serve the County, including I-84. Hundreds of miles of county roads provide access between the state highways ranging from paved two-lane roads to narrow gravel roads. This report describes and evaluates only roads currently classified or recommended to be classified as arterials or collectors.

Roadways in the County fall under the jurisdiction of Morrow County, ODOT, and the cities of Morrow County. There are also numerous private roads, with significant facilities falling under the administration of the Port of Morrow and the U.S. Navy.

State Highways

State highways provide the backbone of the roadway system in Morrow County. They are used for virtually all of the through traffic in the County, and connect each of the cities and other population centers. State highway facilities in and near Morrow County are summarized in *Table 3-2*.

Morrow County is connected to the federal interstate highway system via I-84, which parallels the Columbia River in the north end of the County. I-84 links the County to I-5 to the west through Portland, and to I-80 and I-15 to the south and east through the Boise and Salt Lake City areas. Using the ODOT name and number classification, I-84 west of the junction with US 730 is called Columbia River Highway No. 2, and east of the US 730 junction, Old Oregon Trail No. 6. Nearby I-82 links Morrow County to the Tri-Cities across the Columbia River via the Umatilla Bridge.

Other state highways within the County, from highest to lowest traffic volumes, include US 730 (Columbia River Highway No. 2), which serves Irrigon and the Port of Morrow, and provides a link between I-84 and I-82 at Umatilla; OR 74 (Heppner Highway No. 52), which crosses the middle of the County from east to west, serving Ione, Lexington, and Heppner; OR 207, which crosses the County from north to south and is called the Lexington-Echo Highway No. 320 north of Lexington and the Heppner Spray Highway No. 300 south of Ruggs; and OR 206 (Wasco-Heppner Highway No. 300), an east-west route terminating in Heppner.

TABLE 3-2 STATE HIGHWAYS SERVING MORROW COUNTY		
State Highway Designation	Location Served	Highway Category
I-84 (Columbia River Highway State Highway No. 2)	West of US 730 through Boardman to Gilliam County, to I-5 and Portland.	Interstate Highway
I-84 (Old Oregon Trail State Highway No. 6)	East of US 730 to Umatilla County, to I-80 and I-15, Boise and Salt Lake City.	Interstate Highway
US 730 (Columbia River Highway State Highway No. 2)	From I-84, east through Irrigon to Umatilla County.	Regional Highway
OR 74 (Heppner Highway State Highway No. 52)	From I-84, southeast through Cecil, Morgan, Ione, Lexington, Heppner, and Lena and Umatilla County.	District Highway
OR 207 (Lexington-Echo Highway State Highway No. 320)	From Lexington northeast to Umatilla County.	Regional Highway
OR 207 (Heppner-Spray Highway State Highway No. 321)	From Ruggs, south through Hardman to Wheeler County.	Regional Highway
OR 206 (Wasco-Heppner Highway State Highway No. 300)	East from Gilliam County through Ruggs to Heppner.	District Highway
REFERENCE: ODOT (2004)		

As of December, 2003, ODOT designated pavement conditions on the majority of state highways within the County as good or very good. The only segments with poor pavement condition are the eastern 10 miles of OR 207 and about five miles of OR 206 west of OR 207. Fair pavement conditions were assigned to US 730 between I-84 and Irrigon, and to OR 74 north of Ione and from Lexington to Heppner.

ODOT has assigned the following total length restrictions (truck plus trailer) on OR 74, due to the constrained geometry through horseshoe curve:

- Truck-tractor and semitrailer with maximum trailer length of 48 feet: No Limit on total length.
- Truck-tractor and semitrailer with maximum trailer length of 53 feet: 65 feet total length.
- Pickup truck and trailer with maximum trailer length of 53 feet: 65 feet total length.
- Doubles with no single trailer to exceed 40-foot maximum, trailer combo not to exceed maximum length of 68 feet): No Limit on total length.

The maximum length allowed without District approval is 105 feet. The District may allow a longer load under special circumstances with specified traffic control.

A portion of OR 74 (northwest of Heppner) is also designated as the Blue Mountain Scenic Byway. The route provides recreational, historic, and scenic opportunities within Morrow and the adjacent Gilliam and Umatilla counties. Within Morrow County, the byway starts at I-84 and travels south along OR 74 to Heppner, continuing on Willow Creek Road through Cutsforth Park and into the Umatilla National Forest. Three scenic stops have been developed to promote the byway, with a pull-off area, an informational kiosk, and rest room facilities. Stops are located on I-84 near the intersection with OR 74, on OR 74 near Ione, and on OR 74 near Lexington.

County Roads

Morrow County has 1,063 miles of roads under its jurisdiction, including about 120 miles of unimproved (unpaved) roads. They connect the state highways and provide access to individual properties. The County has assigned a name, a road number, and a functional classification (see discussion below) to each road.

The County's 1997 TSP summarized information from a database of road information using a state-provided format called the Intrastate Road Information System (IRIS). The database provides a variety of detailed information about each roadway within the County, including:

- Roadway jurisdiction
- Identifying roadway number
- Road name
- Mileposts, starting and ending
- Federal classification
- Roadway surface
- Roadway condition (no data)
- Actual width (no data)
- Right of way width
- Average daily traffic (ADT)
- Parking (no data)
- Sidewalk (no data)
- Bicycle facilities (no data)

Although the IRIS database lacked data on roadway conditions, the County maintains detailed records of roadway conditions by surface type. A majority of the paved County roads are classified as "good" or better, compared to half of the unpaved roads. For gravel roads, "very good" roads are passable under all weather conditions, "good" and "fair" roads are open year around, and "poor" roads are seasonal roads that are inoperable during the winter months.

Table 3-3 summarizes surface quality by type for County paved roads of all types and gravel farm-to-market roads.

TABLE 3-3 SURFACE CONDITION OF MORROW COUNTY PAVED AND GRAVEL ROADWAYS			
SURFACE TYPE	CLASSIFICATION	# MILES	PERCENT OF TOTAL SURFACE TYPE
Paved	Excellent	46.72	14%
	Very Good	22.01	6%
	Good	119.61	35%
	Fair	151.55	45%
	Paved Roads Total:	339.89	100%
Gravel (farm to market roads)	Very Good	29.36	5%
	Good	270.76	45%
	Fair	196.81	33%
	Poor	103.58	17%
	Gravel Roads Total:	600.51	100%

REFERENCE: Morrow County Public Works

Construction projects in the latest STIP are shown in *Table 3-4*. These projects represent the County's major roadway and bridge construction projects over the next three years, and together represent an investment of about \$30 million to be provided by a combination of public and private funding sources. *Table 3-4* includes projects listed in the 2004-2007 approved STIP, the 2006-2009 proposed STIP, and the OTIA III bridge delivery program. The Olson Road overpass is also listed, which appears in the approved City of Boardman TSP. The overpass would provide access between the Port of Morrow and the City of Boardman.

Functional Classifications

The County's roadways are classified according to the function of each within the system. Functional classifications are shown in *Figure 3-1*. The County uses the following classifications based on the amount of traffic using a road or street and the origin and destination of the traffic:

- Rural Arterial I
- Rural Arterial II
- Rural Collector I
- Rural Collector II
- Rural Collector III
- Rural Access I
- Rural Access II
- Rural Gravel (proposed classification for gravel surface with a range of aggregate base requirements based on roadbed soil quality and existing traffic level)

Project Key	Program Year	Program	Project Description	Action	Amount (x1,000)
13610	2008	2006-2009 Draft STIP (OTIA III)	Kunze Road (Boardman)	Reconstruct roadway from Main to Tower	\$2,700
14104	2007	2006-2009 Draft STIP	Cutsforth Park	Add restroom facilities	\$35
n/a	n/a	OTIA III	I-84 Irrigon Junction	Repair eastbound, westbound bridges	\$9,800
n/a	n/a	City of Boardman TSP	Olson Road overpass	Construct overpass over I-84	\$8-10,000

REFERENCE: ODOT Approved 2004-2007 Statewide Transportation Improvement Program (STIP); ODOT 2006-2009 STIP; ODOT Draft 2008-2011 STIP; City of Boardman Transportation System Plan; ODOT OTIA III Bridge Delivery Program.

Arterials carry the highest volumes of traffic within the roadway system, provide facilities for through traffic, provide connections within the system for traffic using other classifications of roadways, and link high-volume destinations and land uses such as major employers or larger commercial centers. Arterials are divided into categories based on ADT values.

Collectors connect traffic from access roads to arterials. They can be used for through trips, or they may serve as the origin or destination of trips. Collectors are divided into three categories, also based on ADT volumes.

Rural access roads are low volume, usually less than 200 vehicles per day. They are typically not used for through trips, and usually serve as the origin or destination of vehicle trips. They can also be used as access within residential developments. The Rural Access III classification in the original TSP is proposed to be eliminated with the 2005 TSP for areas within urban growth boundaries, as with Morrow County's co-adoption of the cities' TSPs, the street standards in the city TSP would be applicable to areas within urban growth boundaries.

A Rural Gravel classification is proposed to include a more versatile functional classification in the TSP for gravel roads in the County. The original TSP included a Rural Access II gravel surface standard for local roads. However, in rural areas gravel roads can and do serve as local, collector or arterial facilities.

ODOT also classifies highways based upon their function and use. Interstates provide a corridor between major cities for both auto and truck travel. I-84 is classified as an interstate highway. It originates in Portland, Oregon and traverses the state east into Idaho. US 730 and OR 207 are

classified by ODOT as regional highways, acting as a link between adjacent counties and higher classification facilities. OR 74 and OR 206 are district facilities, primarily providing circulation within Morrow County.

Road Standards

Road standards provide design guidelines for the physical characteristics of roads, including size and materials used. Each road classification has a specific standard associated with it. Some of the items included in standards are listed below.

- Roadway width, including lane width, shoulder width, and parking accommodations.
- Pedestrian, bicycle, and equestrian accommodations.
- Drainage features such as ditches or curbs and gutters.
- Surface and base materials, including both material type and thickness.
- Right-of-way requirements.

There are many variables that must be taken into account when determining appropriate road standards. Some of these variables reflect engineering considerations necessary to ensure adequate strength and longevity, and others reflect function and use. Some of the information that is used to determine standards includes the following items.

- Types of users, including passenger vehicles, trucks, non-motorized users, farm vehicles, and parked vehicles.
- Amount of traffic for each type of user.
- Site issues, including soil conditions, topography, and average annual rainfall.
- Community values regarding issues such as desire for sidewalks and parking, costs of improvements versus affordability, and aesthetics.

Morrow County's road standards for the 2005 TSP are based on the 1997 TSP road standards, which were developed with assistance of the TAC and adopted as interim standards by the county court. Again with the assistance of the TAC through the 2005 TSP process, the interim road standards were reviewed, and proposed gravel road standards were added. These standards are discussed in Chapter 6. Roadway cross-sections are contained in Appendix C.

Because most County roads were constructed prior to adoption of the 1997 TSP, most roads do not meet the County road standards. Many are deficient in lane width and shoulder width. The pavement thickness and base material are also inadequate in many cases when compared to the new standards. The County employs a roadway inventory and maintenance program designed to maximize the effective use of available resources and move gradually toward adopted roadway standards.

Bridges

Bridges in Morrow County are inventoried biennially. The last inventory was completed in 2004. The inventory rates bridges on a sufficiency rating scale that ranges from 0 to 100, with lower scores meaning worse conditions and higher scores indicating adequate conditions. Sufficiency scores for bridges in the National Bridge Inventory database (NBI) are translated to a qualitative ranking of Not Deficient, Structurally Deficient or Functionally Obsolete. There are 116 bridges in the County, including 44 County bridges, 11 city bridges, 60 ODOT bridges and 1 railroad bridge. *Table 3-5* lists the four bridges in the County rated as structurally deficient or functionally obsolete, including one state facility and three County bridges.

The Brenner Canyon Bridge in Morrow County was replaced with a project funded by OTIA I. Morrow County will benefit from OTIA III, the state's multi-billion dollar transportation improvement program focusing on bridge replacement and repair along the state's primary and secondary freight routes. Repair of the I-84 Irrigon Junction interchange bridge is included in the tentative OTIA III project list as part of a multi-year, multi-million dollar "bundled" bridge improvement package along I-84 from the Irrigon Junction in Morrow County to Union County.

Bridge Number	Owner	Description	Sufficiency Rating	Status Code
08885	ODOT	US 730/USRS Canal	17.7	Structurally Deficient
49C05	County	Spring Hollow Rd/Rhea Creek	49.8	Functionally Obsolete
49C12	County	Road Canyon Rd/Rhea Creek	26.3	Structurally Deficient
49C21	County	Clarks Canyon Rd/Padberg	40.2	Structurally Deficient

REFERENCE: ODOT (2004) and a 2006 Update

Access Management

Access management is a set of strategies used to minimize the impact of turning movements caused by vehicles entering and exiting driveways and side streets. Control of these movements increases the speed and capacity of the major roadway and lowers the number of potential conflict points where accidents can occur.

ODOT has an extensive access management program, which is regulated by Oregon Administrative Rules Section 734-051. Through the adopted standards in OAR 734-051, ODOT controls access based on the type of facility, level of importance (state, regional, or district), and whether the facility is in an urban or rural area. This program, directed toward the management of state facilities, has been used to protect access along state facilities and at interchanges.

The state access management standards apply to the development of all ODOT highway construction, reconstruction or modernization projects, approach road and private road

crossing permits, as well as all planning processes involving state highways, including corridor studies, refinement plans, state and local transportation system plans and local comprehensive plans.

The standards do not retroactively apply to legal approach roads or private road crossings in effect prior to adoption of this Oregon Highway Plan, except or until any redevelopment, change of use, or highway construction, reconstruction or modernization project affecting these legal approach roads or private road crossings occurs. At that time the goal is to meet the appropriate spacing standards, if possible, but at the very least to improve current conditions by moving in the direction of the spacing standards.

When in-fill development occurs, the goal is to meet the appropriate spacing standards. In some cases this may not be possible, and at the very least the goal is to improve the current conditions by moving in the direction of the spacing standards. Thus, in-fill development should not worsen current approach road spacing. This may involve such options as joint access.

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. If possible, other options should be considered such as joint access.

If a property becomes landlocked (no reasonable access exists) because an approach road cannot be safely constructed and operated, and all other alternatives have been explored and rejected, ODOT might be required to purchase the property. (Note: If a hardship is self-inflicted, such as by partitioning or subdividing a property, ODOT does not have responsibility for purchasing the property.)

Access within the influence area of existing or proposed interchanges is also regulated by the State of Oregon (OAR 734-051). *Appendix F* includes current guidelines and illustrative figures for freeway and non-freeway interchanges with two-lane or multi-lane crossroads.

Morrow County relies on ODOT's adopted access management policies to control access on state highways. Access onto County facilities is controlled using access management standards applied through the development review process and proposed access spacing standards described in this plan (see Chapter 6).

Crash History

Crash data was collected for state facilities within Morrow County from ODOT's published Highway Crash Tables. *Table 3-6* summarizes crash data both by location and crash rates calculated using existing volumes and known travel distances. *Figure 3-2* illustrates the state highway crash data shown in *Table 3-6*.

Crash rates were highest on US 730 and OR 74, where average rates approached or exceeded 1.0 crash per million vehicle miles traveled for at least one of the three years on both highways. On

US 730 there are many intersections and driveways, which increase the number of potential conflicts. As mentioned earlier, ODOT is initiating a major safety study for US 730, which will result in a number of safety improvements that should reduce crash rates. OR 74 is a low-volume highway, and as a result the crash rate is very sensitive to the number of crashes. The data shows no clear trends in crash rates on any of the state facilities. I-84 recorded very low accident rates over the three year period.

In addition to the published crash rates for state highways, crash data was collected for all non-state highway facilities in the County for the 2001-2003 period. *Table 3-7* summarizes the crashes reported by type and severity. There were a total of 46 crashes reported over the three-year on County roads, including 3 fatalities and 18 accidents resulting in injuries to vehicle occupants. As seen in the table, the most common types of accidents are non-collision and collision with fixed objects. These two categories make up more than 1/2 of the total accidents during the three-year period, and account for all the fatal crashes and 15 of 18 injury crashes. In general, these types of crashes are related to driver behavior more than roadway conditions.

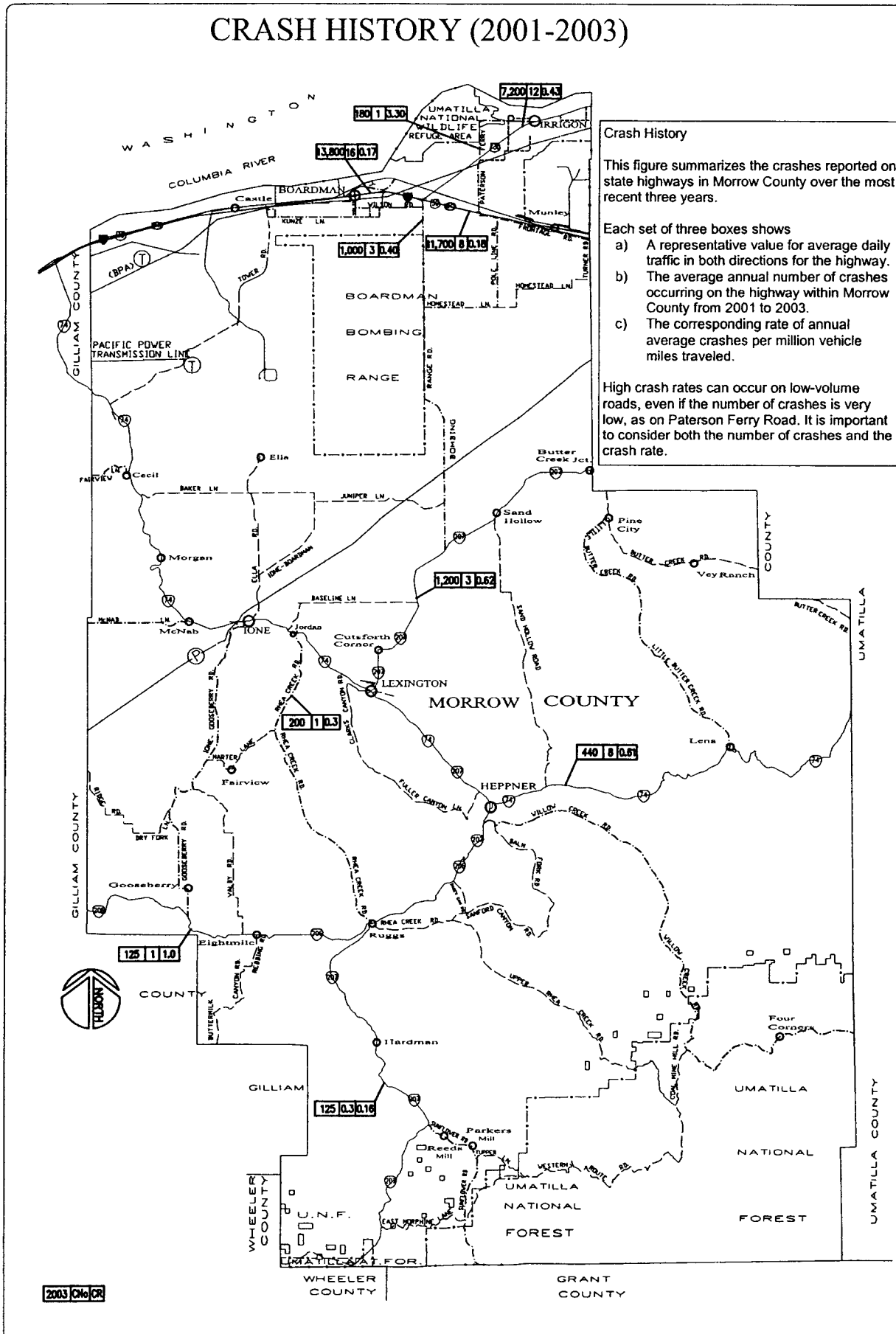
TABLE 3-6 HISTORIC CRASH RATES BY ROADWAY SEGMENT (CRASHES PER MILLION VEHICLE MILES TRAVELED)			
Segment	2000	2001	2002
I-84 west of US 730 (Mile Post 150.00 to 167.58)	0.20	0.15	0.14
I-84 east of US 730 (Mile Post 167.58 to 177.00)	0.16	0.11	0.14
US 730 north of I-84 (Mile Post 167.58 to 178.70)	1.05	0.50	0.66
OR 74 (Mile Post 9.00 to 67.20)	0.59	0.90	0.96
Highway 207 north of Lexington (Mile Post 1.00 to 19.38)	0.75	0.52	0.13
Highway 207 south of Ruggs (Mile Post 9.00 to 21.00)	0.00	0.76	0.76
OR 206 (Mile Post 57.99 to 83.30)	0.36	0.18	0.56
REFERENCE: ODOT (2004)			

Other data not reported in *Table 3-6* and *Table 3-7* includes:

- Bombing Range Road experienced eight crashes, the most of any County road. All eight were property damage only. Paterson Ferry Road (two crashes) and Court Street in Heppner (four crashes) were the only other roadways experiencing more than two crashes over three years.
- Two of the three fatalities occurred on Forest Service roadways. The third occurred in Heppner (Court Street). Two of the fatalities were motorcycle crashes.
- Trucks were involved in four of the 46 crashes.

None of the reported crashes involved pedestrians, bicyclists or equestrians.

CRASH HISTORY (2001-2003)



2003 04/01 CR



CIVIL
TRANSPORTATION
STRUCTURAL
LAND SURVEYING

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PORTLAND, OREGON 97232
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DATE	BY	REVISION

DRIVING FILE:
Figure No. 3-2
TRAFFIC CRASH HISTORY
(2001-2003)

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TABLE 3-7 CRASH SUMMARY FOR ALL NON-STATE ROADWAYS IN MORROW COUNTY (JANUARY 1, 2001 TO DECEMBER 31, 2003)				
	Fatality	Injury	Property Damage Only	Total
Head-on	0	3	1	4
Rear-end	0	0	2	2
Turning	0	0	7	7
Non-collision	1	10	4	15
Fixed Object	2	5	6	13
Other	0	0	5	5
Total	<u>3</u>	<u>18</u>	<u>25</u>	<u>46</u>
REFERENCE: ODOT (2004)				

Existing Traffic Conditions

Morrow County's low population and large size result in low travel demand on most roadways. The 2003 ADTs for the state highways within the County are shown in *Figure 3-3* and *Figure 3-4*, which is just the Boardman-Irrigon area of north County. Morrow County provided daily traffic counts on selected County roadways, which are also shown in *Figure 3-3* and *Figure 3-4*. Existing daily volumes on the state facilities range from 13,800 ADT on I-84 west of US 730, to less than 1,500 ADT on the rest of the highways within the County, most of which carry less than 500 ADT. The highest daily volumes on County facilities were counted on Tower Road (2,600 vehicles south of Kunze Lane, and 3,280 vehicles between Kunze and I-84); Paterson Ferry road (1,350 vehicles); Bombing Range Road (1,250 vehicles); and Wilson Road (1,060 vehicles). Existing volume-to-capacity ratios (V/C ratios) estimated for these roadways are low, with a maximum of 0.24 on Kunze Lane. Although limited traffic counts are available for county roads, it is reasonable to assume that with such low V/C ratios on the County roads known to carry the highest traffic volumes, existing capacity deficiencies on any County roadways are unlikely.

The performance of the transportation infrastructure (roadway and highway segments, intersections, freeways, freeway ramps, etc.) is typically analyzed for conditions representing the peak demand on the particular component of the transportation network. Generally, the weekday peak hour is analyzed. However, for state facilities, the peak period to be analyzed is required to be the peak 15 minutes of the 30th highest hour of the year (referred to as the 30th design hour volumes, or 30th DHV). Generally, if capacity (the maximum number of vehicles that can use a roadway in a given period) exceeds demand (the number of users actually using the roadway during that period), then the road is said to be operating adequately. When demand approaches capacity, traffic congestion is experienced.

Traffic volumes are measured in several ways, but the most common for a rural area is *average daily traffic (ADT)*. This is a measure of the average number of vehicles using a roadway in a 24-

hour period. ADTs are usually measured by taking traffic counts over one or more weekdays, then averaging the totals. For the 2005 TSP, Morrow County Public Works provided 24-hour counts conducted on the primary roadways throughout the County. For state facilities, ODOT publishes an annual summary of average daily traffic volumes on every state highway, called the *Traffic Volume Tables*. Data from the 2004 *Traffic Volume Tables* was used to estimate 30th DHV for analysis.

To estimate the 30th DHV for analysis of state facilities, hourly volumes are first adjusted to account for variations in flow over the hour, truck traffic, roadway conditions, and other factors. The resulting peak 15-minute passenger-car equivalent flow rate is compared to the facility capacity to determine the volume-to-capacity ratio, or v/c ratio, which can be compared to the state's v/c ratio thresholds, which are shown in *Table 3-8*.

TABLE 3-8 VOLUME-TO-CAPACITY (V/C) STANDARDS FOR STATE HIGHWAYS IN UNINCORPORATED MORROW COUNTY			
Highway	Category	Maximum Peak Hour V/C Ratio	
		Inside UGB	Outside UGB
Interstate 84	Interstate	0.70	0.70
US 730	Regional Highway	0.75	0.70
OR 207	Regional Highway	0.75	0.70
OR 74	District Highway	0.80	0.75
OR 206	District Highway	0.80	0.75

REFERENCE: 1999 Oregon Highway Plan

ODOT operates one automatic traffic recorder (ATR) in Morrow County on OR 74 near Lexington, which is representative of traffic conditions across most of the county and one on I-84 at Arlington just west of the county border. Published data from the Lexington ATR indicates that the ADT grew from 1994 to 1998, but has decreased since then such that ADT for 2003 remains about the same as it was in 1994. Seasonal variation at the Lexington ATR is minimal, with all but January ADT volumes within 10 percent of the annual average. In addition to historical and seasonal traffic data, ATRs provided factors used to analyze v/c ratios, including 30th DHV, directional split and percent truck traffic.

For I-84 and US 730, values from the Arlington ATR were used for truck traffic (40%) and the 30th DHV factor (15%). For the other highways, data from the Lexington ATR was used for truck traffic (12%) and 30th DHV factor (11%). Conservative values were assumed for the other primary analysis variable, the peak hour factor (PHF), which reflects the variation in flow rates over the course of the hour. For analysis of existing conditions the PHF was assumed to be 0.80. For future conditions, when future travel demand growth is expected to smooth out the variation in demand over the course of the peak hour, a PHF of 0.85 was assumed for two-lane highways, and a PHF of 0.95 assumed for I-84. *Table 3-9* summarizes existing v/c ratios on state highways in Morrow County, based on the values described here. Based on estimated existing 30th DHV, the highways in Morrow County are operating well below maximum v/c thresholds.

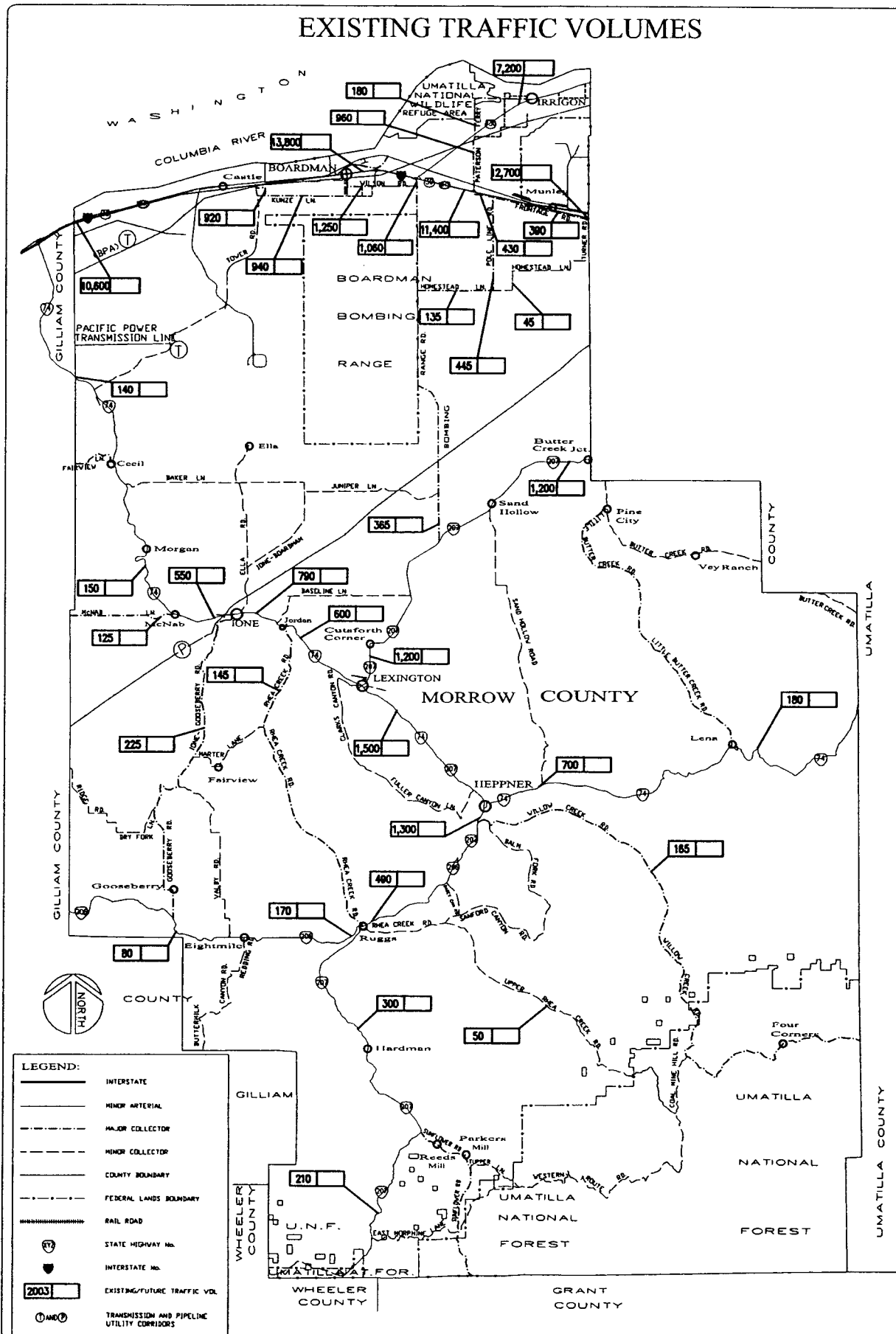
TABLE 3-9
EXISTING 30TH HIGHEST HOUR VOLUME-TO-CAPACITY (V/C) RATIOS
FOR STATE HIGHWAYS IN UNINCORPORATED MORROW COUNTY

Highway/Location	2003 ADT	2005 30 th DHV	2005 30 th DHV V/C Ratio
I-84 Morrow-Gilliam County line	10,600	1,650	0.30
I-84 west of Tower Rd.	10,900	1,700	0.31
I-84 west of Port of Morrow interchange	13,800	2,150	0.40
I-84 east of US 730	11,700	1,850	0.34
I-84 east of Paterson Ferry Rd.	12,400	2,060	0.38
US 730 west of Division Street	6,500	990	0.40
OR 74 north of Morgan Rd.	150	20	0.01
OR 74 Ione west city limits	240	30	0.02
OR 74 east of Ione	740	90	0.02
OR 74 east of Rhea Creek Rd.	600	80	0.02
OR 207/74 at Lexington ATR	1,500	180	0.05
OR 207/74 east of Little Butter Creek Rd	180	20	0.01
OR 206 at Morrow-Gilliam County Line	70	10	0.01
OR 206 at south Heppner city limits	1,300	120	0.05
OR 207 north of Tall Rock Rd.	310	30	0.02
OR 207 south of Blue Mtn. Ranch Rd.	210	30	0.02

Another way that traffic is measured is called *level of service (LOS)*. LOS is a measure of the operational performance of a roadway or intersection that is expressed as a report-card style letter grade that ranges from LOS A (free flowing, minimal delay), to LOS F (long queues and delays and, for signalized or all-way stop-controlled intersections, extreme congestion). The methodology for measuring LOS is documented in the Highway Capacity Manual (Transportation Research Board, 3rd edition, 2000). The HCM is the industry standard for analyzing the operations of most types of transportation facilities. The HCM uses different methods for determining LOS based on the type of facility such as intersections, two-lane roadways, and limited access freeways. For urban areas, the minimum acceptable LOS is usually set at LOS E. For rural areas such as Morrow County where less congestion is expected, minimum acceptable performance of LOS D is more appropriate. Roadway segments or intersections operating at LOS E or LOS F would be considered candidates for capacity and/or operational improvements. At three-legged or four-legged unsignalized intersections, the LOS applies only to traffic turning from the major street, or to traffic entering the major street from the side street. At these intersections the through movement on the major street operates without delay any delay, so a poor LOS is not always indicative of a need for improvement.

Current intersection LOS reported in the adopted TSPs of Boardman and Heppner are all in the acceptable LOS A or B range. As it is expected that existing intersection volumes are higher in the cities of Morrow County than the rural areas, it is reasonable to assume that intersection operations in the rural areas are also acceptable.

EXISTING TRAFFIC VOLUMES



LEGEND:

- INTERSTATE
- MINOR ARTERIAL
- MAJOR COLLECTOR
- MINOR COLLECTOR
- COUNTY BOUNDARY
- FEDERAL LANDS BOUNDARY
- RAIL ROAD
- ① STATE HIGHWAY No.
- ② INTERSTATE No.
- 2003 EXISTING/FUTURE TRAFFIC VOL.
- ① and ② TRANSMISSION AND PIPELINE UTILITY CORRIDORS

CTS
 CIVIL TRANSPORTATION STRUCTURAL LAND SURVEYING
 ENGINEERS

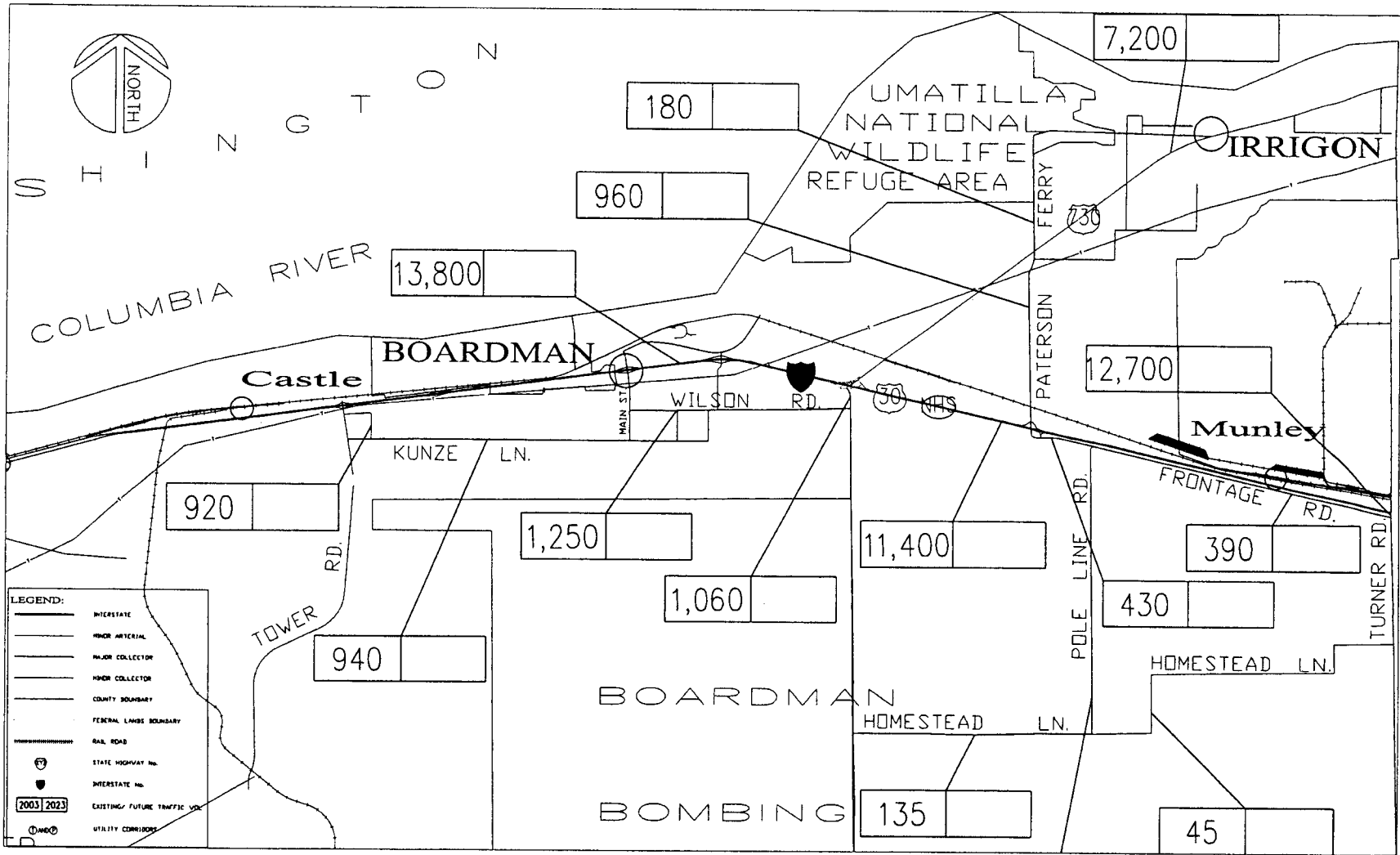
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Figure No. 3-3
 EXISTING TRAFFIC VOLUMES
 (2004)

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 MORROW COUNTY TSP
 UPDATE

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BOARDMAN-PORT OF MORROW (EXISTING TRAFFIC VOLUMES)



- LEGEND:**
- INTERSTATE
 - HIGH ARTERIAL
 - MAJOR COLLECTOR
 - MINOR COLLECTOR
 - COUNTY BOUNDARY
 - FEDERAL LANDS BOUNDARY
 - RAIL ROAD
 - STATE HIGHWAY NO.
 - INTERSTATE NO.
 - EXISTING/FUTURE TRAFFIC VOLUME
 - UTILITY CORRIDOR

PROJECT: MORROW COUNTY TSP UPDATE

FIGURE NO. 3-4
BOARDMAN-PORT OF MORROW
EXISTING TRAFFIC VOLUMES(2003)

DATE BY TIME CHECKED BY TIME DESCRIPTION

CIVIL TRANSPORTATION LAND SURVEYING ENGINEERS

DATE: JUN 23, 2005 4:28PM

Connectivity

Connectivity is defined as the extent by which cars, bicyclists, or pedestrians can travel in a direct path towards their destination. Connectivity can be looked at both regionally or locally. Regionally, connectivity refers to the ability to travel between adjacent population centers. Morrow County generally has good connectivity of its major population centers, with one major exception. The basic roadway system connects the population centers and provides adequate access to all parts of the County. Much of the land area of the County is divided into large tracts because it is farmed, forested, or in two defense facilities. This decreases the need for extensive cross-circulation or connectivity beyond the basic system. The exception to this is a lack of a direct, County-controlled connection between Boardman and Ione, which is also discussed earlier in this chapter in the section addressing County Roadway safety.

Prior to World War II, a County-controlled connection existed. When the bombing range was established during the war, the road was appropriated as part of the range. Although activity at the bombing range has significantly decreased, it has not been cleared of potentially live munitions and thus it has not been possible to re-establish the road along the former alignment as a County facility, although the County does maintain Bombing Range Road. As noted above, the Oregon National Guard is planning a major training facility for the Boardman Bombing Range, which could require improvements to the access roads including Bombing Range Road. However, the US Navy controls and could also decide to close Bombing Range Road as a public facility, which would eliminate the only north-south connection between Boardman and Ione within the County. While the Navy has expressed no desire to close Bombing Range Road, it is a possibility. The County will continue to work with the Navy toward improving the terms of the easement for use of Bombing Range Road, with the ultimate goal of establishing public right-of-way.

A potential second north/south route has historically been referred to as Ione-Boardman Road. The existing impediments to transfer of Bombing Range Road to the County magnify the importance of Ione-Boardman Road as a second north/south connection. However, there are also impediments to constructing Ione-Boardman Road. The County has acquired a dedicated right-of-way that would allow construction of a road (Tower Road Extension) through property owned by Threemile Canyon Farms that would connect the southern end of Tower Road to Highway 74 near Cecil, which would be useful for the western mid-County area. However, this indirect alignment would not fully meet the need for a second north/south connection.

Street spacing requirements can help to develop connectivity on a local level in denser areas near urban centers. Ideally, streets in developed urban areas should not be spaced more than 1/4-mile apart, allowing for easy movement between origins and destinations. For example, areas with short blocks and through roads have high connectivity, and areas with many cul-de-sacs and few connections between roadways have poor connectivity. Safety is also a key benefit of good connectivity, allowing multiple routes of access for emergency service providers.

Connectivity within the unincorporated portions of the urban growth boundaries generally follows a 1/4-mile block length. In most cases, county roadways exist along these block boundaries, providing good system connectivity. Some areas, such as the unincorporated land south of Irrigon, lack roads along the land division boundaries, suggesting the need for additional connections within this area.

Connectivity in the open area of developable land is problematic. Large parcels exist south of US 730, with only limited service from this major ODOT corridor. This service is provided by 15th, 18th, 19th, 21st, and 23rd Streets. Each of these roadway rights-of-way moves north-south, connecting with US 730. Currently, 15th and 23rd are the only improved rights-of-ways. Access management improvements for US 730 such as creation of a frontage type road and closure of selected existing intersections with US 730 will be evaluated in ODOT's US 730 safety study beginning this year.

A large tract of land also exists with limited development potential west of Division Street and south of Irrigon. This block of property is bounded by Division Street on the east, Depot Lane on the south, and West 8th Road on the west. A small subdivision has previously been undertaken, which is serviced by Wagon Loop Road. Intervening land in this tract could be serviced by extension of 4th, 3rd, 2nd, and 1st Streets, which are parallel to Division Street. Connectivity through extension of these streets is complicated due to the northeast-southeast right-of-way of the Bonneville Power Administration for power lines. This right-of-way is 400-foot wide north-south, creating a non-buildable area within this block of property. In addition, an irrigation canal crosses this tract from the northeast to the southwest near the intersection of Nevada Avenue and 1st Street. The County TSP makes recommendations for connectivity in this area.

Another parcel of land that is developable into two-acre tracts is located north of US 730, east of 8th Street West and south of Idaho Avenue extended. Connectivity within this large parcel of land is at issue, as is an interconnection with South Main Avenue and US 730.

Developable land exists in the FR2 zone west of Boardman. Issues of connectivity exist in accessing these parcels from Kunze and Wilson Roads, which run in an east-west direction through the area. The ultimate connection of this area to Tower Road is also at issue. Access from these parcels and throughout this unincorporated area west of Boardman can be addressed as improvements continue to occur at the Port of Morrow's airport (west of Tower Road) and through potential extension of Tower Road to Ione.

Block Lengths

The Transportation Planning Rule (TPR) requires establishment of a block length in this TSP. The concept of block length is to limit the distance a roadway can extend without creation of interconnecting roadways. The purpose for a reasonable block length is to provide needed access as currently vacant land develops.

Where vacant land exists in large tracts and where surface features or other infrastructure also occur such as irrigation canals, freeways or railroads, it is difficult to establish a block length and interconnecting of streets. The other primary reason for establishing block length is to allow pedestrian and bicycle access in blocks that have a reasonable perimeter, approximately 1,500 feet, and for safety purposes (e.g., emergency vehicle access).

For the County TSP, block lengths are relevant generally only for areas within the UGBs. Block length standards are not appropriate for rural unincorporated areas. Undeveloped lands in the Irrigon and Boardman area in particular will benefit as development occurs if a block length standard is instituted as residential densities increase.

Port of Morrow System

The Port of Morrow is one of a number of Oregon ports established under Oregon Administrative Rules (OAR). It owns, operates, finances, and develops facilities primarily of an industrial nature within the City of Boardman and areas of Morrow County. To provide the proper climate and resources for its numerous industrial customers, the Port is necessarily active in the development of the following:

- Industrial sites
- Transportation systems
- Utilities
- Financial services
- Community support

Industrial Sites

The Port of Morrow offers industrial building sites varying in size. These sites are an economical alternative and strategic to metropolitan area locations. These three industrial parks owned and operated by the Port are major generators of transportation activity with respect to access to I-84, rail access to Union Pacific's east-west Columbia Gorge route, and barge transportation via the Columbia River. Because of their existing impact and potential growth, they will be discussed briefly in the following paragraphs.

Boardman Industrial Park

The Boardman Industrial Park is home to Lamb-Weston's french fry plant, Oregon Potato's potato flake plant, and Boardman Foods' onion processing facility, and Columbia River Processing's cheese plant. A number of additional plant sites up to several hundred acres in size are ready for additional facilities. In addition to these processing facilities, tens of thousands of tons of potato and onion storage facilities are also in place.

A fiber and seed processing cluster is also located at the Boardman site. Facilities include Oregon Hay Company, which processes alfalfa and other forage crops for export, and Cargill's grain terminal ships transporting Inland Empire wheat and Barenbrug U.S.A. grass seed worldwide. Other East Beach sites are particularly suited to future transportation-dependent industries serviced by barge from the Columbia River.

Transportation facilities such as Longview Fibre's chip reload facility and Tidewater Terminal's public container and chip reload docks are evident along the Columbia River in the Port's Boardman Industrial Park. An additional 2,500 acres of industrially zoned land are available and ready for occupancy.

Airport Industrial Park

The Port owns a 2,700-acre Airport Industrial Park, which centers on a 100-foot wide, 4,200-foot long, Category 5 general aviation landing strip located near the intersection of I-84 and Tower Road. This general aviation strip is currently used by Portland General Electric and Lamb-Weston, among others. The Port is actively marketing the movement of goods and services via air from this airport facility. The Port resurfaced the asphalt runway in 2004.

As work was being done in 2007 to complete a minor update to the 2005 TSP the Speedway developer was completing final land use approvals and beginning construction for a Road Course on the subject property.

South Morrow Industrial Park

In the southern region of Morrow County is the south Morrow Industrial Park, site of the now closed Kinzua sawmill facility. The site, now home to a power facility and Miller Manufacturing on the west side of the highway and offices on the east side, is zoned for industrial development. Highway 74/207, which bisects this facility, was improved to include turning lanes and is posted with a 45 mile per hour speed limit, both actions designed to preserve this portion of the highway transportation system.

Port Transportation Systems

The Port of Morrow is in the heart of the Pacific Northwest inland empire. It maintains critical transportation connections with the Columbia River barge lines, Union Pacific's main line, I-84 with east-west access, and US 730 with access north into Washington and beyond. With the accesses indicated, the Port of Morrow offers crucial transportation links to the Pacific Ocean and the continental United States. Beyond the current use of the Port's barge, rail, and highway system is the development of the port-owned general aviation facility for use in transportation of goods and services.

Columbia River Barges

Transportation via Columbia River barge is the most economical form provided by the Port. Cargo picked up by the Port of Morrow can be on oceangoing freighters at the Port of Portland within 24 hours. Tidewater Terminal at the Boardman Industrial Park within the Port of Morrow is the largest container terminal upriver from the Port of Portland. Additional dockage facilities handle wood chips, aggregate, solid waste transferred from Clark County, and grain for transportation by Columbia River barge.

The Port of Morrow maintains about four miles of frontage on the Columbia River. Facilities include six docks, two berths 12 to 17 feet deep, and two overhead cranes with an approximate 200-ton capacity. Tidewater Barge Lines serves the Port of Morrow, with approximately 2,130 containers handled at the container dock each month. Approximately 50 percent of the goods shipped are for foreign markets, which are first shipped to Portland before leaving the country.

Rail Service

Union Pacific's transcontinental rail line passes through the Port of Morrow's Boardman Industrial Park. In addition, the Port is only 20 miles west from the Hinkle Classification Yard, which is the largest hump yard west of St. Louis, connecting lines north to Canada and south to California. Through the Hinkle facility, Port of Morrow goods and services can be shipped by rail in all directions.

The Port of Morrow received grant funding for final design and construction of a spur track connecting to the Union Pacific mainline. Construction of the spur track began during the 2005 TSP process, and is expected to be completed within the year. In addition to providing additional capacity for railcars on Port property, by providing a complete circular turnaround, the spur track will substantially increase the efficiency of the Port's intermodal transfer facilities. At the time of the 2007 Update the rail loop has been completed and an additional rail spur is being considered for development.

Interstate Highway Systems

All of the Port of Morrow industrial park facilities enjoy easy access to I-84. This is the main east-west interstate serving both Oregon and Washington along the Columbia River. National common carriers and local contract truck lines serve industrial park industries via I-84. In addition, east of the Port of Morrow approximately 12 miles is I-84's connection with I-82, which provides northbound service to Spokane, Seattle, and Canada.

Access to the Port's facilities after leaving I-84 is from Columbia Avenue, a two-lane road that provides adequate service to current customers. At the time this Plan was prepared, the Port had secured funding to improve existing overpasses in the East Beach area to accommodate and facilitate the Port's continued growth. One or more new connections are needed to provide access to Port of Morrow industrial lands to the east.

At the time the 2007 Update was being prepared two new businesses had completed construction in the East Beach area – Pacific Ethanol and RDO/Calbee Foods. Oregon Hay, Cargill and a mining operation have been in business in this area for several years. And a number of additional businesses have secured options and many are in the process of obtaining permits. To date no individual business development has triggered the requirement for a Traffic Impact Analysis.

Port Aviation

A central feature of the Port of Morrow is the Airport Industrial Park. It offers the services of a 4,200-foot long runway that was repaved with a new 100-foot wide asphalt runway in 2004. Corporate jets and light general aviation aircraft use the airport's facility on a regular basis. As industrial clientele express increasing interest in the Airport Industrial Park, the Port will move to upgrade these facilities, extending both the types of aircraft that can be served by this airport and the facilities that can locate within its boundaries.

Utilities

A significant attraction of the Port of Morrow's industrial park facilities are the types of utilities provided. These utilities have an indirect impact on transportation facilities serving the Port due to the potential for siting of clients with transportation impacts who will take advantage of these utilities. Two of these utilities that are clearly attractive to significant industrial clients include Process Steam and Electricity.

Process Steam

Siting of a natural gas fired co-generation plant in the middle of the food processing park at the Port of Morrow allows for provision and early delivery of process steam at a cost far below that developed by in-house process facilities. Availability of steam alone can attract significant future facilities that will impact port transportation systems.

Electricity

The Boardman and Airport Industrial Parks are served by Umatilla Electric Cooperative Association. The south Morrow County industrial park is served by the Columbia Basin Electric Cooperative. These two entities provide the most economical form of electric power in the Pacific Northwest. Supply of inexpensive electric power for industry is another predictor of growth at the Port and suggests maximum flexibility in the maintenance of transportation systems.

Financial Services

The Port of Morrow supports developments within its boundaries with a variety of financing services. The development of industrial facilities necessarily requires the maintenance and continuing upgrade of barge, rail, and highway transportation systems. The Port offers financing of these and other improvements through the following sources:

- Industrial development revenue bonds.
- Port revolving loan fund.
- Partnership and participation program.

Community Support

The Port's position on community support is to offer a proactive response to industrial development. Through its more than 30 years of active development, the Port has created a comprehensive land use planning base. This base has established more than 5,700 acres of available land in three industrial parks that are planned and zoned for most current industrial uses. The Port maintains well-established, long-term comprehensive plans supporting industrial use within its boundaries. It is the Port's commitment to land use planning as well as the provision of a strong labor force, favorable political climate, and an open arms approach that ensures continued steady growth within its facilities.

It is important within this TSP to maintain flexibility for rapid expansion of transportation systems serving the Port's three industrial sites.

US Forest Service Roads

In the southern portion of Morrow County, where the rural nature of the County is especially exemplified, a significant amount of US Forest Service (USFS) property exists. In this area of the County there are three designated federal forest highways:

- Forest Highway #32: Heppner-Spray Highway (a State Highway) from the intersection with OR 207 east of Spray to the intersection with Sunflower Flat Road about six miles southeast of Hardman. It is maintained by ODOT.
- Forest Highway #109: Willow Creek Road (County Road #678) from the intersection with Highway 206/207 southeast of Heppner to the north boundary of the Umatilla National Forest and from there southeasterly 18 miles to the intersection with County Road #603 Cole Mine Hill/Ditch Creek Road. This forest highway is part of the Blue Mountain Scenic Byway.
- Forest Highway #110: Starting from one mile west of Monument, it runs to the northwest for 20 miles along Top Road to Sunflower Flat Road at the Morrow-Grant County line, then northwest for 10 miles along Sunflower Flat Road to the intersection

with OR 207 southeast of Hardman. Forest Highway 110 is entirely County-owned and maintained from the junction with OR 207 to the Morrow-Grant County line.

These facilities are important to the movement of goods and services in the area of south Morrow County.

Pedestrian, Bicycle, Equestrian Facilities

In addition to the motor vehicles that use the transportation system, there are also non-motorized users, namely pedestrians, bicyclists, and equestrians. These users have different needs than motor vehicles due to differences in the speed and distances that they travel and the amount of protection they have and need. In rural areas like Morrow County, non-motorized users are sometimes provided with facilities designed specifically for their use, but are most often required to share the roadway with all users.

Non-motorized travelers use the transportation system for two main reasons: transportation, or getting from place to place, and recreation, which can include sight-seeing and exercise. Transportation users usually use non-motorized transportation, such as walking, biking, or riding, *instead of driving*. These trips tend to be shorter and are usually geared to a particular destination, such as a school, park, or commercial center, and tend to be in more densely populated areas. Recreation users usually choose to walk, bike, or ride *for the experience*. These trips can be short or long, ranging from a child riding a horse for exercise to a days-long bike trek. They may or may not involve a particular destination. They are often concentrated near other recreation sites, such as parks, or scenic vistas.

The Columbia River Heritage Trail (the Heritage Trail), extending from Umatilla County through Irrigon into Boardman and on to the Gilliam County line when complete, serves as both a transportation and a recreation facility. It links two of the major cities in the County and its major employer, as well as providing access to the Columbia River shoreline and Umatilla Wildlife Refuge. The Heritage Trail alignment includes Columbia Lane in Irrigon and Columbia Boulevard in Boardman, and also old Highway 2, which is owned and operated by the County and limited to bicyclists and pedestrians. The Heritage Trail design standards call for 2-foot shoulders on each side of the road for the segments of the trail on paved roadways; 8-foot dedicated trails (subject to right-of-way availability) in "urban" areas (City of Boardman/Tower Road to City of Irrigon/Twelfth Street), and 8-foot dedicated off-street trails in the rural segments (west Morrow County line to Tower Road; USFW Umatilla Wildlife Refuge where not already paved; and through the ODFW Wildlife Area). The Heritage Trail is a unique asset for Morrow County's non-motorized transportation system, and this Plan promotes its continued development and additional local connections to the existing trail.

Other bicycle and pedestrian facilities in the County include a recently completed off-street bikeway in Heppner, connecting to the city's swim center, and paved shoulders beyond the fog lane on OR 74 and Second Road East south of US Highway 730 in Irrigon.

Pedestrian Facilities

Designated pedestrian facilities can be provided in several ways. In urban areas, these are usually sidewalks, but they can also be separated paths. Widened shoulders are often used by both pedestrians and bicyclists in rural areas. Morrow County's new road standards include a provision for widened shoulders to be used by pedestrians and bicycles. The width of shoulder varies, with higher volume roads of higher classifications providing wider shoulders to offer more protection.

The bike/pedestrian facility is incorporated into the road standards and is based on density and cost effectiveness. A commonly accepted criterion is that pedestrian facilities should be provided throughout urban areas. If this criterion is used, sidewalks would be required within the urban growth boundaries surrounding Boardman and Irrigon, when consistent with the TSPs for the two cities.

Bicycle Facilities

Designated bicycle facilities can be provided in a variety of ways as well and are often available for use by other non-motorized users in addition to bicyclists. The most common types in urban areas are striped lanes on roadways, signed roadways (with the bicycles sharing the lane with motor vehicles), and separated paths. Rural facilities are usually paved shoulders, which are sometimes signed or marked. Morrow County's new road standards include a provision for widened shoulders to be used by bicycles and pedestrians. The width of shoulder varies, with higher volume roads of higher classifications providing wider shoulders to offer more protection.

Many of the relatively low-volume state highways and roadways in south Morrow County attract recreational bicyclists who share the roadway with motorists. Morrow County has an annual bicycle race every May, and will host the kickoff of Cycle Oregon 2005. A bike path was recently constructed in Heppner along OR 74 to connect to the new community swimming pool.

Equestrian Facilities

Designated equestrian facilities are usually provided as unpaved, separated paths, although they can also be provided as multi-use paths that are shared by bicyclists and/or pedestrians. These are not usually located in very dense urban areas, as horses are not stabled there. Equestrians may also share roadways with motor vehicles in some circumstances. Equestrian facilities are available at Cutsforth Park, the Morrow County Fairgrounds, and part of the Heritage Trail.

Transit and Para-Transit

There are three types of transit to consider in the TSP: public transit, which is supported by public funds for use by the general public; private transit, which is not funded by public funds;

and para-transit, which provides services for the transportation-disadvantaged population, including older adults, the physically challenged and low-income users.

Public Transit

There is no public transit service in Morrow County. The population and density of the County are currently too low to support a transit system. Given the lack of impacted travel corridors within the County, there is little demand for a public transit system at this time. There is a desire to investigate van-pool options that could support moving workers from population centers, preferably within the county, to job centers within the county.

Private Transit

Greyhound operates private transit bus lines throughout the United States. Greyhound has a daily route that travels through Morrow County, but does not have a scheduled stop in the County. For the bus to stop in Boardman, current operations require the passenger to flag the approaching bus and to pay the driver for the fare. The nearest scheduled Greyhound stop is in Stanfield, 12 miles south of Hermiston on US 395, in Umatilla County. Until fairly recently, Greyhound had scheduled stops east of Morrow County in Hermiston and Pendleton. The Stanfield stop replaced these two stops. Service is provided to various cities along routes to Portland, Seattle, and Boise, where connections can be made to other destinations.

A second private transit line is operated by Linea Express, serving primarily agricultural workers that are moving up and down the west coast.

Morrow County residents feel strongly that Greyhound should schedule additional stops in Boardman and a new stop in Irrigon to provide service to this portion of the County.

Para-Transit

Transportation services to older adults and physically challenged residents of Morrow County are provided by Morrow County Special Transportation, a para-transit provider. Services provided include dial-a-ride services, client transportation, and medical transportation, all provided by volunteer drivers. The operation includes two buses in Heppner serving mid-county, and one bus in Boardman and Irrigon. Three cars are also available in the communities of Heppner, Irrigon and Boardman for the eligible population to make longer trips. In mid-county, one of the buses is reserved for transportation to and from medical appointments, with the other bus is used mostly for entertainment and shopping. As available, the STF buses also serve populations outside the target groups. Operations are funded through a grant from the Public Transit Division of ODOT. Volunteer drivers are trained and administrative records maintained by the CAPECO in Pendleton. Local services are coordinated by local volunteers in the communities of Heppner, Boardman and Irrigon.

Rail Facilities

Rail services within Morrow County include both freight and passenger services. Rail transportation has historically been, and continues to be, an important avenue for moving goods within the region.

Rail Freight Facilities

Rail freight services are provided to businesses in Morrow County by the Union Pacific Railroad. Their main line parallels I-84. Two spurs extend from this line: one serving the coal-fired gas plant and the other serving the Umatilla Ordinance Depot. A third spur serving the Port of Morrow facilities has been funded for construction. Most of the rail freight service supports the agricultural activities in the north County.

In fact, the Union Pacific main line running east-west through the Columbia River Gorge runs through the Boardman Industrial Park, owned by the Port of Morrow. Through this connection, the Port is able to transport its goods either to the Port of Portland or east into the continental United States. In addition, the Hinkle Classification Yard, located 20 miles east of the Port of Morrow (near Hermiston, Oregon), is the largest hump yard west of St. Louis. Through use of this facility, the Port is able to access rail lines leading north into Canada and south into California. The Port is effectively able to use rail service because of the Hinkle hump yard to send its products in many different directions. The Port is currently developing a loop track connecting from the Union Pacific main line to the Port of Morrow industrial area, which will enhance freight mobility to and from the Port. At the time of the 2007 Update the rail loop is complete and a future rail spur is being considered.

Passenger Rail Facilities

There has been no passenger rail service in Morrow County since the mid-1990s, when the Amtrak Pioneer line between Salt Lake City, Utah and Portland, Oregon stopped operating. Loss of this line not only removed service from Morrow County, but also from a regional perspective, deleted service east to Salt Lake City. Amtrak does provide service between Portland and Spokane on its Empire Builder line. Morrow County residents must go to the Tri-Cities, the closest stop, to use this service.

Airport Facilities

General

Two public airports exist in Morrow County. They include the Lexington-Morrow County airport and the Port of Morrow airport west of Boardman. At the date of this report, airport facilities in Morrow County are limited to private aircraft. The closest public air service is located in Pendleton, Oregon. Depending on the growth of Morrow County, opportunities exist to expand the Port of Morrow's airport facility to provide public air transportation service.

Lexington-Morrow County Airport

Morrow County owns and operates the Lexington-Morrow County airport facility. This airport is located one mile northwest of Lexington and is currently the largest airstrip in the County. It serves as the base for approximately 14 aircraft. Combined local and transient activity is about 85 operations weekly. The airport offers a single paved runway which was recently upgraded to 4,150 feet in length, with a parallel taxiway. Fueling capability is available on site at the airport. An Automated Weather Observation System (AWOS) was recently installed.

Based on the state's most recent pavement maintenance report for the Lexington-Morrow County airport (2003), about 2/3 of the airport runway pavement is rated as good or very good, with 1/3 rated as poor, very poor, or failed. This same report outlines a five-year maintenance plan for the 2004-2009 period with about \$617,000 of inspection and maintenance work that is needed to avoid more costly repair work.

The Airport Layout Plan for the Lexington-Morrow County Airport, acknowledged by DLCD in 2002, defines how the airport is planned to be used over the next two decades. The Air Industrial Zone identified in the Airport Layout Plan has been applied as an overlay zone in the Morrow County Zoning Ordinance. Copies of the Airport Layout Plan are available at the County Public Works Department.

Port of Morrow Airport Facility

The Port of Morrow has purchased what was previously known as the Boardman airport. This facility offers a 4,200-foot long paved runway. This runway was designed to offer takeoff and landing capability for heavy bombers and commercial passenger/cargo jets.

At the date of this TSP, corporate jets and light general aviation aircraft use the airport on a regular basis.

After acquiring the airport, the Port of Morrow developed an Airport Industrial Park centering on the 100-foot wide, 4,200-foot long landing strip. Industrial sites are available for facilities that would benefit from the capabilities of this airport as well as the general services provided by the Port of Morrow. Sufficient land exists at the Port's Airport Industrial Park to extend the runway and to offer a full range of aviation services depending on the need of future industrial, commercial, or public clientele.

In Chapters 5 and 6, Port of Morrow improvements to the Airport Industrial Park are indicated, focusing on improved access for ground transportation services. Also to be considered are the 2002 actions approving a major motor speedway and related uses at the Boardman Airport.

The Airport Layout Plan for the Port of Morrow Airport, has as of October 2007 been submitted to the County for adoption with acknowledgement anticipated in early 2008. The Airport is currently zoned Air/Industrial for land use purposes. Copies of the Airport Layout Plan are available from the Port of Morrow.

Utilities

Morrow County has several utility corridors, including the Old Columbia River Highway, which runs through the Umatilla Wildlife Refuge; various natural gas pipelines; a BPA power line that runs through the County generally parallel and south of I-84 and US 730; a Pacific Power transmission line extending from the northwest corner of the County into Gilliam County; and a fiber optic line is located along several County roads and State highways, serving all five communities in Morrow County. A pipeline transporting natural gas runs across Morrow County. The PGT Pipeline enters Morrow County near the southeast corner of the County, travels near Ione, and continues to the northeast to the Morrow-Umatilla county line. Along Highway 74 from I-84 to Heppner, there is an abandoned railroad line. When the railroad abandoned the rail line they retained a perpetual easement for utilities. Installation of a pipeline connection to Heppner has been discussed. No other future expansion or major modifications are expected within Morrow County.

The US Navy's control of Bombing Range Road creates a deficiency for utility placement due to a lack of County control over the right-of-way.

Other Transportation

Other transportation facilities are available in the County, mostly for quasi-public or private use, including trucking lines and school bus service.

Trucking Lines

There are numerous independent trucking lines serving the County's main industries: agriculture, logging, and various light industries. Several trucking firms also operate in Morrow County to haul refuse from the Port to area landfills. The County's Draft Solid Waste Management Plan proposes truck routes for carriers of solid waste. The growing dairy industry in Morrow County has generated additional truck activity for the transport of raw milk and cheese. Much of the grain collected throughout the County is transported by trucks to the Morrow County Grain Growers' Association facility in Irrigon (via Paterson Ferry Road) and to the Port of Morrow.

Many of the access roads to these facilities warrant upgrading. The 2005 TSP includes a recommended policy to incorporate the County Department of Public Works' standard for a paved apron where an unpaved access road intersects a paved roadway. Under this standard, the first 20 feet of the access road would be paved, which would reduce degradation of the paved roadway shoulder and reduce the potential for gravel to be spread onto the roadway.

School Bus Service

The Mid-Columbia Bus Service provides school bus service to all county public schools on a contract basis. There are over 25 buses serving the schools. These buses are in operation from 6:30 to 8:30 AM and from 2:00 to 5:00 PM, with some mid-day service. There are two major

sources of potential problems for the bus service and these are split by geographic area: the condition of rural roads in the southern part of the County and the increasing volumes of traffic in the northern end of the County. The current condition of the roads in the County is good and does not inhibit bus operations. Stopping sight distance, bus pull-outs, and turnarounds are all adequate. The bus service reports a good working relationship with both the county and state road departments. When problems are detected, the County and state are quick to remedy the problem, and the County has helped in the widening of bus turnarounds and improved signage.

In the north end of the County, a grade school and high school are located on opposite sides of US 730 in Irrigon. The heavy traffic on this highway hinders the provision of bus service in several ways, and has required development of a supplemental plan for bus service within the area near the schools normally not served by buses. Because there is not a safe location for school children to cross the highway, more children must use the buses instead of walking or riding bikes to school, which increases heavy vehicle traffic in the area. Also, the efficiency of routes is affected since buses typically are routed so that children are not required to cross the highway. Buses are also required to cross the highway several times during their normal routes and often incur long delays waiting for sufficient gaps in traffic, as there are no stoplights along the highway. Kunze Road outside of Boardman also was identified as a facility in need of shoulder improvements to accommodate students walking to school.

CHAPTER 4 FUTURE CONDITIONS

INTRODUCTION

This chapter forecasts the changes that are expected to occur to the transportation system in the future over the 20-year planning horizon. Future conditions expressed in this section represent the expected growth in population and travel demand based on the planned roadway system, and identify where the opportunities exist to improve that system.

The following topics are discussed in this chapter:

- Future opportunities
- Future land use and population
- Future transportation demand
- Future transportation needs

FUTURE OPPORTUNITIES

Future growth and development in Morrow County and in nearby areas will present opportunities for the County's transportation system. Projected growth in north Morrow County and north Umatilla County areas will increase employment activities significantly over the next five years. Increased employment will in turn increase the demand for housing in the region and the demand for transportation facilities. The mitigation of these impacts to the transportation system will create an opportunity for the County to upgrade the existing system. The following is a list of some of the expected opportunities.

Port of Morrow

The Port of Morrow has been developing industrial facilities in Morrow County for over 30 years and continues to be the most significant entity bringing jobs to Morrow County. Today, the Port has three established industrial parks with over 5,200 acres of available land: the Boardman Industrial Park, the Airport Industrial Park, and the south Morrow Industrial Park.

The Port of Morrow is also interested in or owns other sites in Morrow County and is actively seeking opportunities to increase industrial development. Many hundreds of jobs will likely be developed within the County over the 20-year time frame this study covers. Morrow County and the Port of Morrow have worked closely to identify opportunities to mitigate the impact of this development on the transportation system. To this end, the Port of Morrow has actively participated in the preparation of the original transportation system plan (TSP) and the 2005 TSP, and is an active partner with the County toward development of a freight and goods mobility strategy. This strategy is the key to identifying future system needs based on increased industrial development.

A review of existing Port of Morrow development provides insight into future opportunities for growth in the region. For example, the Boardman Industrial Park has a thriving food processing park that features Lamb-Weston's french fry plant, Oregon Potato's potato flake plant, and Boardman Foods' onion processing facility. Many additional plant sites up to several hundred acres are able to accommodate future developments. In addition, the Boardman Industrial Park includes the largest barge terminal on the Columbia River east of Portland. This facility currently ships alfalfa, grain, grass seed, aggregate, and wood chips. Through the Port's continuing efforts to upgrade this facility, it should be anticipated that other goods would add to the list transported from this shipping terminal.

It should also be noted that the Port of Morrow airport has a jet-class runway that was recently extended to 4,200 feet. Together with industrial land surrounding the airfield, the potential for development at this site is also excellent. At the time of the 2007 Update the Speedway development has been initiated utilizing the 2002 approvals by Morrow County as amended in 2003 and by Senate Bills 1094 (2005) and 665 (2007).

Most importantly, from the standpoint of future opportunities, the Port has developed a "can-do" attitude reinforced by facilities that are quickly able to be developed to meet a wide variety of demands. Within Morrow County, port facilities offer the greatest opportunity for sustained growth and job creation.

Morrow County

Within Morrow County, but outside of Port of Morrow lands, is the 20,000-acre Umatilla Army Depot. This depot spans the border between Morrow County and Umatilla County in the north County area between I-84 and US 730. For nearly 40 years the US Army stored nerve gas at this site, but in 1999 the EPA initiated cleanup activities using innovative technologies to speed up the project. The Depot represents a substantial development opportunity once cleanup activities are completed.

Another sizable opportunity exists at the Boardman Bombing Range. The Oregon National Guard initiated planning for a potential major tank training site at the Bombing Range during the time this TSP was being updated. Should the concept go forward, it would involve concentrated activity on weekends and summer weekdays, with National Guard troops traveling to the Range from Hermiston and Pendleton. Substantial planning and engineering work will be necessary to remove unexploded munitions that remain on the site, and provide an adequate roadway system to accommodate heavy vehicle and personnel movement. Planning and engineering effort for the reuse of the Bombing Range will continue well beyond the completion of the 2005 TSP, and may require future TSP amendments, preparation of a Transportation Refinement Plan (TRP), or other means appropriate to identify needed improvements and an implementation strategy.

FUTURE LAND USE AND POPULATION

Future Population

County population forecasts prepared by the Office of Economic Analysis (OEA) were reviewed to evaluate future population for Morrow County. For the 1997 TSP, OEA forecasts were found to underestimate long-term growth in Morrow County and were adjusted upward to be more realistic. For this 2005 update to the original Morrow County TSP, OEA forecasts show that the County is expected to increase by an average annual rate of 2.5 percent between 2000 and 2025. OEA also certifies interim population estimates for Oregon's counties and incorporated cities for non-census years.

Table 4-1 shows the County's future population projections for the entire study period. Year 2024 population projections shown in *Table 4-1* were estimated by applying the 2.5% annual growth rate determined by OEA for the 2000-2025 period to the 2004 OEA certified population estimates for the County and its cities. OEA projected population growth based on detailed models that began with 2000 census information and considered recent and historical trends as well as future growth potential. Based on these growth rates, Morrow County population will increase by almost 5,900 residents during the next 20 years. Most of the growth is forecast to occur in the northern cities and in the unincorporated areas of the County. This will result in 4 out of every 10 people in the County living in either Boardman or Irrigon. Projected increases correspond to an additional 1,560 residents in Boardman, and 895 in Irrigon, which compare favorably with the population increases assumed in the TSPs for the two cities.

TABLE 4-1 FUTURE POPULATION DATA SUMMARY				
Area of County	2000 Census Count	2004 OEA Estimate	2024 Total	Change 2004-2024
Boardman	2,855	3,120	4,680	1,560
Irrigon	1,702	1,790	2,685	895
Heppner	1,395	1,420	2,130	735
Ione	321	340	510	170
Lexington	263	260	390	130
Unincorporated Area	<u>4,459</u>	<u>4,820</u>	<u>7,230</u>	<u>2,410</u>
Total	10,995	11,750	17,625	6,630

FUTURE TRAVEL DEMAND

Future travel demand will increase as population grows and development occurs. Therefore, the future transportation demand is closely related to the forecasted increase in population in each region of the County. Adjustments to the population-based rates of growth in transportation demand were made to reflect the greater proportion of employment, medical and commercial services available in north County. In all, three different annual growth rates were developed in consultation with the TAC to estimate 2024 daily traffic volumes. A 3.0 percent/year rate was assigned to the north County, 2.0 percent in mid-County from approximately Baker Lane to Willow Creek Road, and 1.0 percent per year in south County. These growth rates are similar but slightly higher than those used for the 1997 TSP, reflecting the State of Oregon's recent efforts to promote employment growth in rural counties. They are generally consistent with the adopted TSPs in the cities. ODOT prepares 20-year forecasts of average daily traffic (ADT) on all state highways, which are also used for projecting future travel demand. The projected 20-year growth rates were compared to the rates applied in this TSP:

- * On I-84, projected average annual growth rates ranged from 1.9% near Boardman to 2.5% near the Port of Morrow interchange. These are generally consistent with the annual rate of 3.0% used in this TSP.
- * On US 730, projected annual growth rates ranged from 0.7% northeast of I-84 to 0.5% at the County line. These rates are much lower than the 3% annual rate used in this TSP, and underestimate potential growth in this area stemming from industrial development over the next two decades on Port of Morrow lands.
- * On OR 207 from Lexington toward Umatilla County, projected growth rates ranged from 1.7% per year near Lexington to 3.8% at the County line. These are generally consistent with the 2% annual rate used in the TSP. With projected 2023 daily volumes less than 2,000 vehicles, a slight difference in the growth rate would have little effect on future traffic operations.
- * On OR 206 south of Heppner, the projected growth rate of 0.9% per year is consistent with the 1% per year rate used in the TSP.

Figure 4-1 compares existing 2004 and projected 2024 daily traffic volumes throughout the County. As seen in the figure, the highest traffic growth is along the I-84 corridor near Boardman and at the Umatilla County border, where traffic volumes are expected to exceed 20,000 average daily trips (ADTs). Not surprisingly, the rural areas of the County are expected to see only modest growth over the next 20 years. Growth in travel demand is also expected to increase on county roads near urban areas such as 4th Street, Division Road, Columbia Avenue, and Bombing Range Road.

FUTURE TRANSPORTATION NEEDS

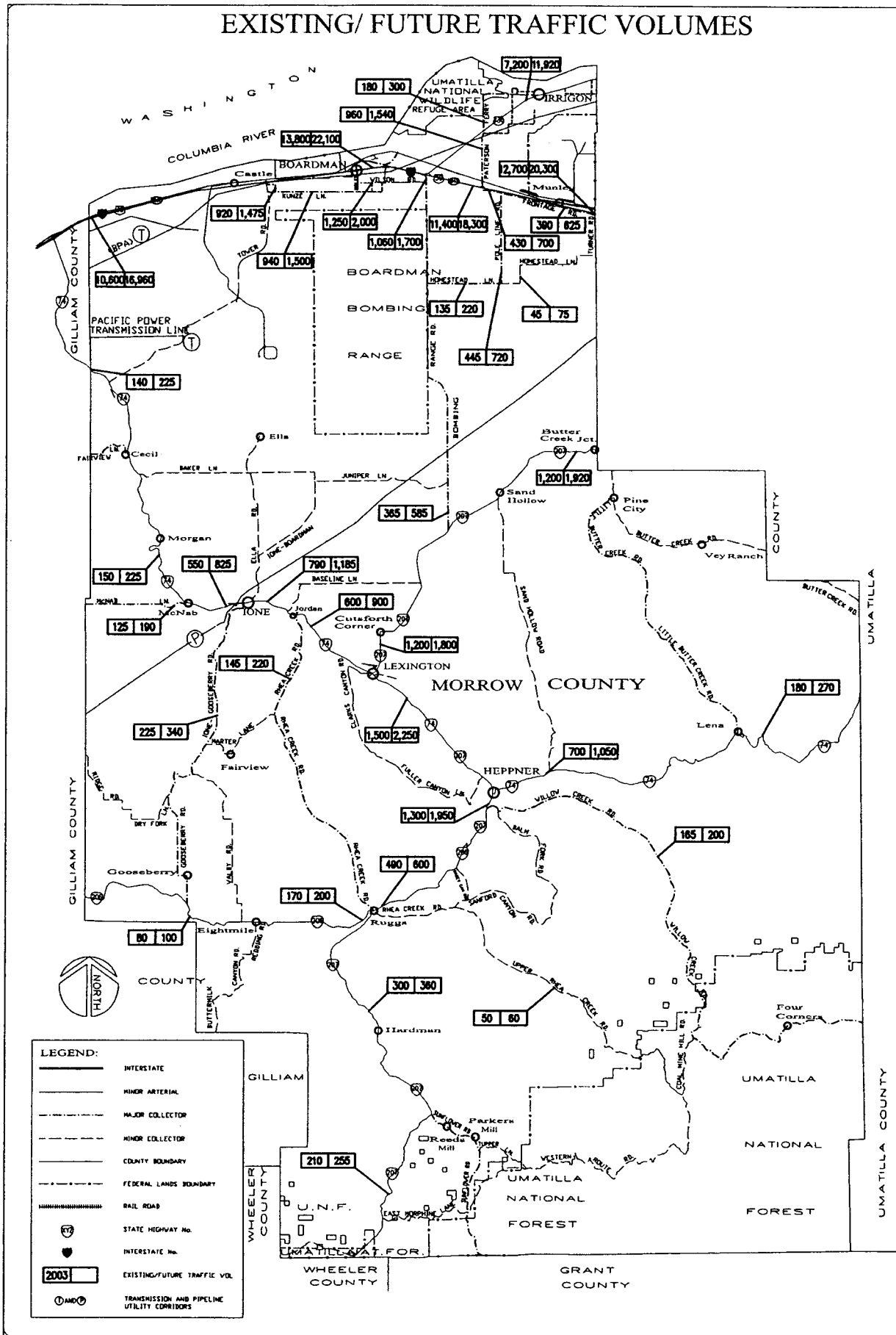
Volume-to-Capacity Ratio Performance

Roadway performance was evaluated using the volume to capacity (V/C) criteria described earlier. Future V/C ratios were calculated for existing and projected 2024 traffic volumes. Selected existing and projected future V/C ratios and daily volumes for the higher volume roadway segments in the County are shown in *Table 4-2*.

As seen in the table, most state highways are expected to operate with V/C ratios less than 0.50 through 2024. South County roadways are projected to gain only moderate traffic levels and will have minimal increases in their V/C ratios, projected to remain under 0.20 on state facilities. The highest volume corridors, which are along I-84, operate at acceptable conditions under both existing and future conditions. The only segment that approaches its v/c threshold is I-84 east of the Paterson Ferry interchange, where the estimated existing V/C ratio of 0.48 is projected to increase to 0.66.

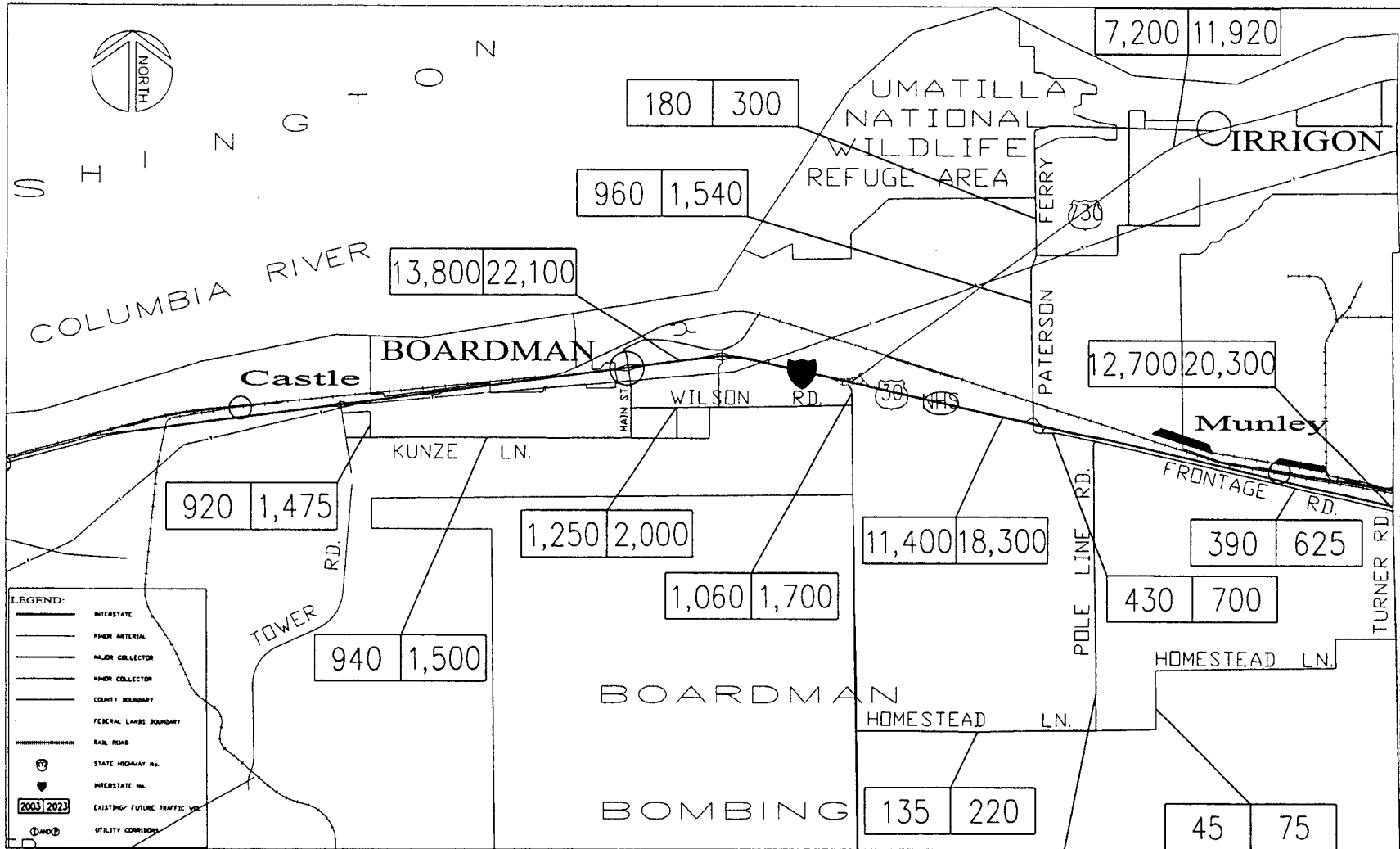
Highway/Location	2004 30 th DHV	2004 30 th DHV V/C Ratio	2024 30 th DHV	2024 30 th DHV V/C Ratio
I-84 Morrow-Gilliam County line	1,650	0.30	2,300	0.36
I-84 west of Tower Rd.	1,700	0.31	2,370	0.37
I-84 west of Port of Morrow interchange	2,150	0.40	3,010	0.47
I-84 east of US 730	1,850	0.34	2,860	0.44
I-84 east of Paterson Ferry Rd.	2,060	0.38	4,280	0.66
US 730 west of Division Street	990	0.40	1,160	0.47
OR 74 north of Morgan Rd.	20	0.01	30	0.02
OR 74 Ione west city limits	30	0.02	30	0.02
OR 74 east of Ione	90	0.02	120	0.03
OR 74 east of Rhea Creek Rd.	80	0.02	120	0.03
OR 207/74 at Lexington ATR	180	0.05	230	0.07
OR 207/74 east of Little Butter Creek Rd	20	0.01	20	0.01
OR 206 Morrow-Gilliam County line	10	0.01	10	0.01
OR 206 south of Heppner city limits	160	0.05	180	0.06
OR 207 north of Tall Rock Rd.	40	0.01	50	0.02
OR 207 south of Blue Mtn. Rd.	30	0.01	30	0.01

EXISTING/ FUTURE TRAFFIC VOLUMES



CTS CIVIL TRANSPORTATION STRUCTURAL LAND SURVEYING <small>ENGINEERS</small>	<table border="1" style="font-size: 8px;"> <thead> <tr> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	DATE	BY	DESCRIPTION													DRAWING TITLE: Figure No. 4-1 EXISTING/ FUTURE TRAFFIC VOLUMES (2004/2024)	PROJECT: MORROW COUNTY TSP UPDATE
DATE	BY	DESCRIPTION																
PREPARED FOR: ODOT/ MORROW COUNTY																		

BOARDMAN-PORT OF MORROW (FUTURE TRAFFIC VOLUMES)



PROJECT: MORROW COUNTY TSP UPDATE

FIGURE NO. 4-2
BOARDMAN-PORT OF MORROW
FUTURE TRAFFIC VOLUMES(2024)

DATE: 06/20/24

DESIGNED BY: [Name]

CHECKED BY: [Name]

APPROVED BY: [Name]

PROJECT: MORROW COUNTY TSP UPDATE

FIGURE NO. 4-2
BOARDMAN-PORT OF MORROW
FUTURE TRAFFIC VOLUMES(2024)

DATE: 06/20/24

DESIGNED BY: [Name]

CHECKED BY: [Name]

APPROVED BY: [Name]

PROJECT: MORROW COUNTY TSP UPDATE

FIGURE NO. 4-2
BOARDMAN-PORT OF MORROW
FUTURE TRAFFIC VOLUMES(2024)

DATE: 06/20/24

DESIGNED BY: [Name]

CHECKED BY: [Name]

APPROVED BY: [Name]

Morrow County's modest population and large size result in low travel demand on most County roadways. Estimated 2024 V/C ratios are at or above 0.10 include the following:

- Tower Road (2024 V/C of 0.38 between Kunze Lane and I-84);
- Paterson Ferry Road (2024 V/C of 0.16 north of I-84);
- Kunze Lane (2024 V/C of 0.10 at the west end);
- Bombing Range Road (2024 V/C of 0.11 near I-84); and
- Paterson Ferry Road (2024 V/C of 0.10 south of I-84).

All other measured ADTs indicate very low V/C ratios (LOS A), ranging between 0.01 and 0.09. The LOS standard for Morrow County is LOS D or better. LOS, which is based on peak hour volume, was not measured directly, but with estimated v/c ratios on County roads of 0.38 or less it is unlikely that levels of service exceed LOS D at any of the locations evaluated.

Future Connectivity

As growth and development continue in the northern part of the County, the lack of connectivity between north County and south County will limit opportunities for growth in population and employment in the southern part of the County. The development of an additional north/south connection between Boardman and Ione would open up opportunities for employment and population growth by decreasing travel time between north County and south County. Improved travel time will help to attract future population growth by offering an advantage to people employed in the north and residing in the south. It will also help to attract employment growth by reducing costs associated with hauling products.

This second route has historically been referred to as Ione-Boardman Road. The existing impediments to transfer of Bombing Range Road to the County magnify the importance of Ione-Boardman Road as a second north/south connection. However, there are also impediments to constructing Ione-Boardman Road. The County has acquired a dedicated right-of-way that would allow construction of a road (Tower Road Extension) connecting the southern end of Tower Road to Highway 74 near Cecil. This indirect alignment, while beneficial for circulation and emergency access, would not fully meet the need for a second north/south connection.

Implementation of a second route is unlikely to take place until after the Oregon National Guard's plans for future operations on the Bombing Range have been further developed. More intense use of the Bombing Range could result in greater traffic and population in the mid-County than assumed in this TSP for 2024. As discussed elsewhere in this plan, further analysis such as a Transportation Refinement Plan (TRP) or similar effort may be necessary to identify the improvements and implementation strategy needed to serve a military training facility on the Bombing Range. The new off-highway vehicle (OHV) park in south County could also increase traffic volumes more than expected. However, OHV park activity is expected to be

concentrated on weekends. With existing traffic daily traffic volumes on the roads serving the park area a few hundred vehicles or less, capacity is not expected to be an issue.

In 2001 ODOT completed a safety improvement at the Bombing Range Road/OR 207 intersection to add guardrail, but in doing so reduced the turn radius. As a result, truck traffic turning right onto the highway must swing wide into opposing traffic. The County is working with ODOT to realign the Bombing Range Road/Highway 207 intersection to a point slightly to the east and in doing so eliminate the existing turning radius and sight distance constraints. Eastbound and southbound left turn lanes are planned as part of the improvement.

Local Street Network

Under the requirements of the Transportation Planning Rule (TPR), Morrow County must develop its own standards for creation of streets that meet TPR objectives. Standards are used to control the spacing of streets and to limit excessive out-of-direction travel. This TSP provides recommended ordinance language that will assist the County in refining local street standards and in identifying local roadway networks.

Under the TPR, streets need not be required under one of the following conditions:

- Where physical or topographic conditions make a street impractical.
- Where redevelopment to accommodate a street or access way now or in the future is precluded by existing buildings or other development.
- Where the street or access way violates the provisions of an easement, lease, covenant, restriction, or other agreement existing as of May 1, 1995 that preclude the street's or access way's connection.
- Where conditions of development approval require off-site improvements. (The improvements shall include facilities that accommodate pedestrian and bicycle travel.)

In Morrow County, the local street network plan needs to address infill development, especially in north County buildable residential areas. Revisions to the County's zoning and subdivision ordinances are recommended to establish minimum block lengths of 600 to 800 feet within urban growth boundaries. A suggested goal for areas outside of urban growth boundaries is 1,200 feet. With the adoption of this local street network policy, existing opportunities for street extensions are preserved and developed over time.

A first step in developing a local street network plan is to identify opportunities for new local streets. Factors such as existing development patterns, vacant land, existing utility easements, and connectivity with surrounding streets must be considered in planning new street alignments. To assist in developing these local street networks, a series of figures is presented in this TSP. These figures present a conceptual street network plan for buildable lands in north Morrow County in areas adjacent to Irrigon and Boardman, and have been developed with

consideration of the street elements of the adopted Transportation System Plans for the two cities. The following figures identify buildable lands and a proposed conceptual street network:

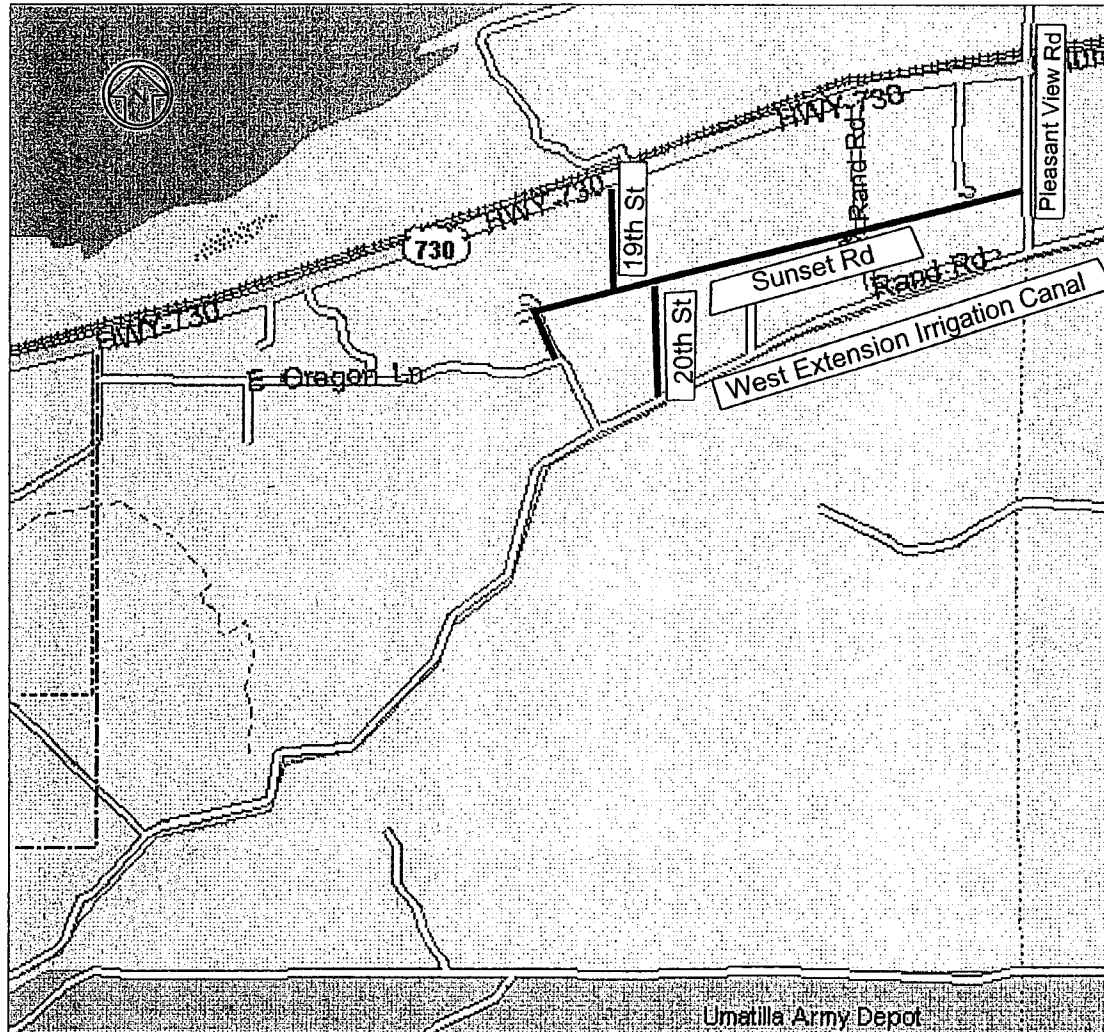
- Figure 4-3, East Irrigon Area Rural Residential Development
- Figure 4-4, West Irrigon Area Rural Residential Development
- Figure 4-5, South Irrigon Area Rural Residential Development
- Figure 4-6, East Boardman Farm Residential Development
- Figure 4-7, West Boardman Farm Residential Development

These local street network plans would be implemented through adoption of the TSP and supporting plan and ordinance language as the transportation chapter in the County's Comprehensive Plan. Zoning and subdivision ordinance amendments are needed to ensure that local street rights-of-way are acquired and that streets are improved over time as land is developed and new homes are constructed. While the implementation of the network plan is provided through zoning and subdivision ordinance modification, an allowance for flexibility in local street alignments to meet network plan objectives and phased development is crucial.



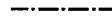
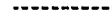
As work begins on the 2007 Update of this TSP the Project Planning Management Team is completing work preparing to move a Highway 730 Refinement Plan required by the designation of the portion of Highway 730 between the cities of Irrigon and Umatilla as a Safety Corridor. The refinement plan may effect how Morrow County develops its planned local street network and future connections to Highway 730 east of Irrigon. For more detailed information refer to the Highway 730 Refinement Plan that is to be incorporated as an addendum to this TSP.

Recommended standards in the TSP are based on a 60-foot right-of-way for local, collector and arterial roads. This right-of-way width allows a reserve strip on each side of the street drainage and planting strips, sidewalks or paths, and other utilities.

Figure 4-3
East Irrigon Local Street Plan



Legend

-  General location for required local road connections, subject to refinement
-  Existing platted but unimproved road
-  City Limits
-  Urban Growth Boundary (UGB)

Not to scale
April 2005


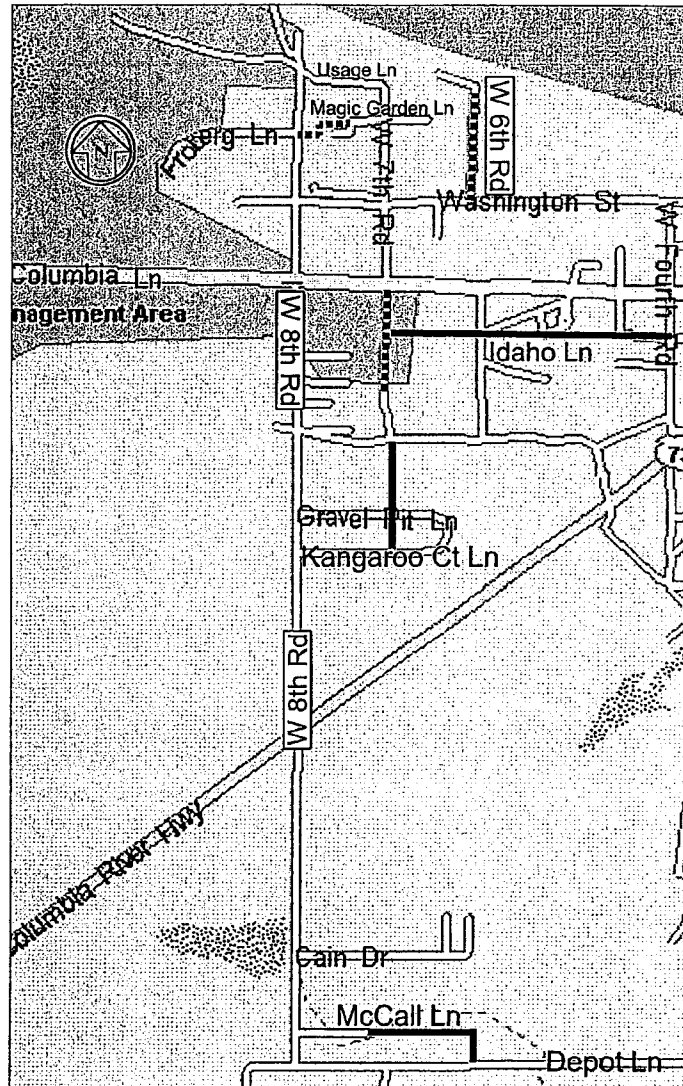


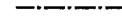

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	PREPARED BY DATE	CHECKED BY DATE	DRAWN BY DATE	PROJECT MORROW COUNTY TSP UPDATE 0R04.055.T01	PREPARED FOR ODOT/ MORROW COUNTY

Figure 4-4
West Irrigon Local Street Plan



Legend

-  General location for required local road connections, subject to refinement
-  Existing platted but unimproved road
-  City Limits
-  Urban Growth Boundary (UGB)

Not to scale
April 2005


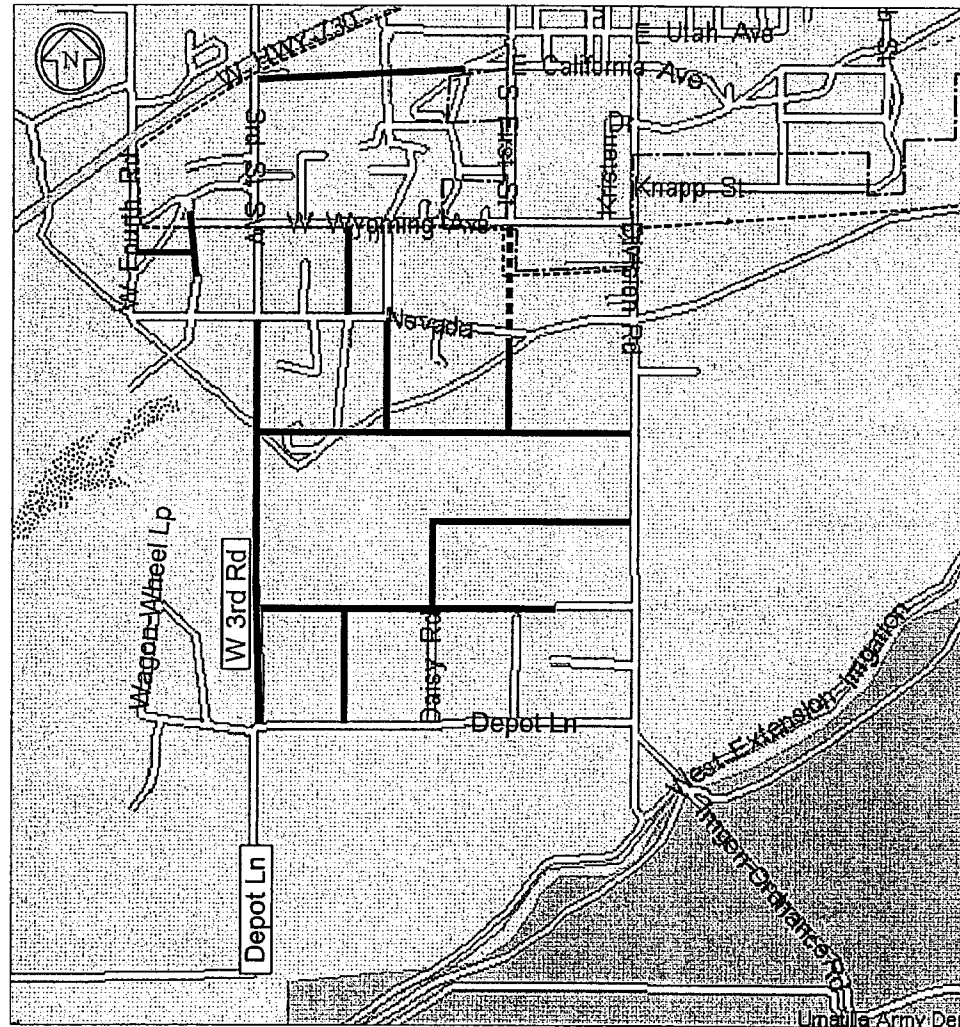




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NO. DATE	REVISIONS															
<small> 11111 S.W. 10th Street Portland, Oregon 97219 Phone: 503.281.1111 Fax: 503.281.1112 www.cts-engineers.com </small>																

Figure 4-5
South Irrigon Local Street Plan



Legend

-  General location for required local road connections, subject to refinement
-  Existing platted but unimproved road
-  City Limits
-  Urban Growth Boundary (UGB)

Not to scale
April 2005


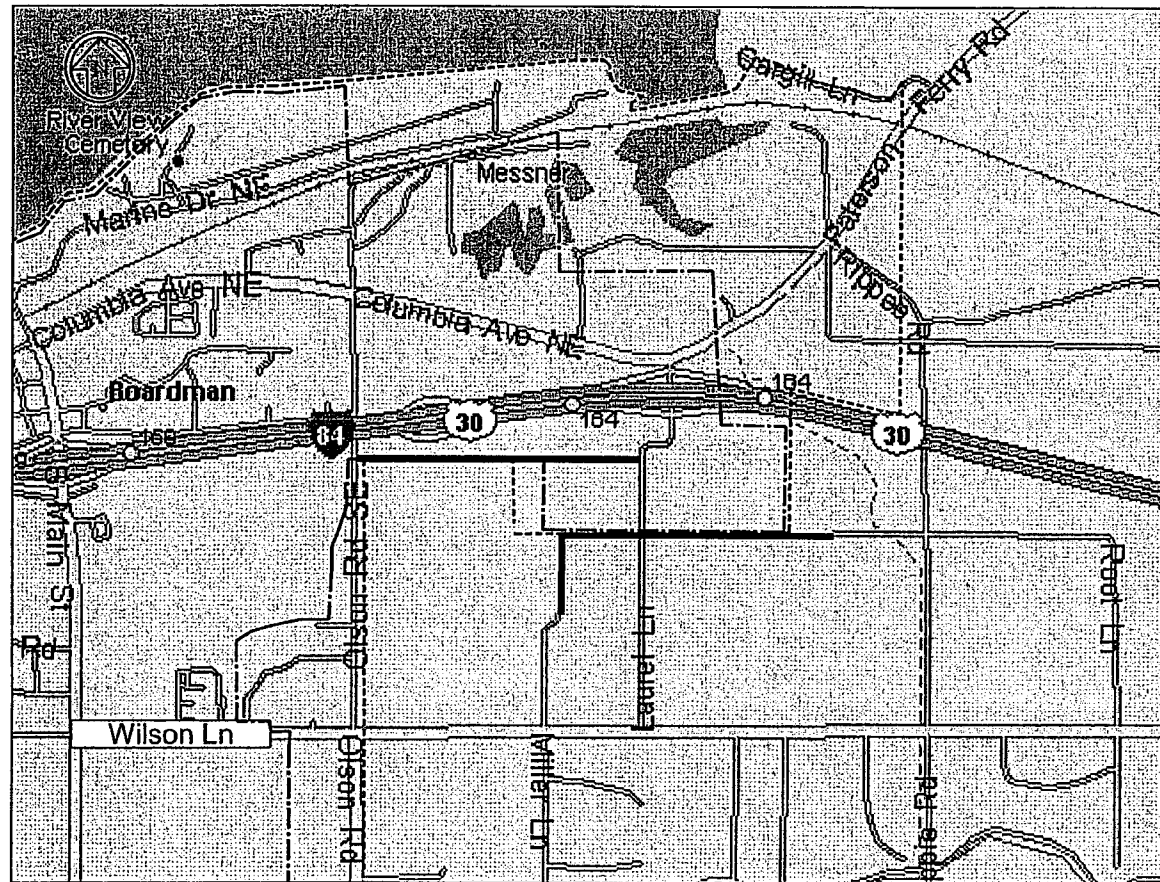
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Figure 4-6
East Boardman Local Street Plan



Legend

- General location for required local road connections, subject to refinement
- Existing platted but unimproved road
- City Limits
- Urban Growth Boundary (UGB)

Not to scale
April 2005


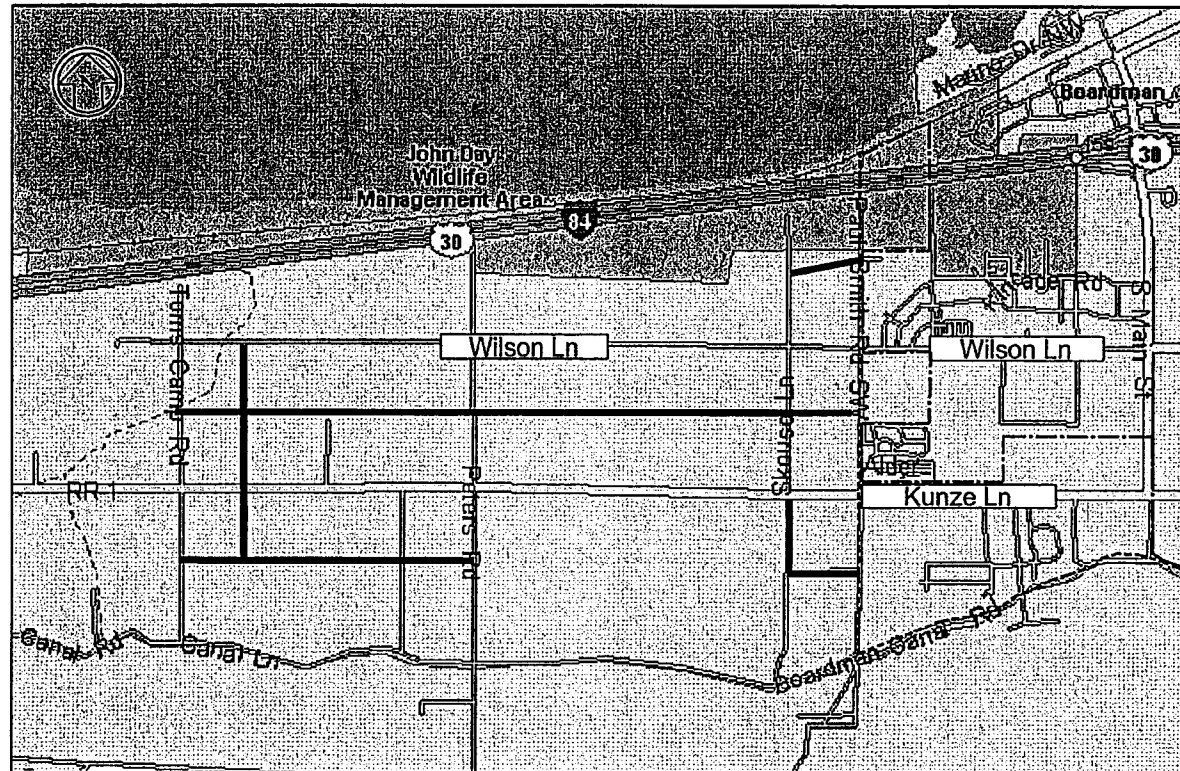




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	DATE:	DATE:	DATE:	DATE:	DATE:


Figure 4-7
West Boardman Local Street Plan



Legend

-  General location for required local road connections, subject to refinement
-  Existing platted but unimproved road
-  City Limits
-  Urban Growth Boundary (UGB)

Not to scale
April 2005

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Access Management

Access management is a tool used for controlling existing and future points of connection to major transportation facilities. It is intended to maintain or enhance safety and operational performance at less cost than adding capacity to the facility. Adding access points to an arterial can reduce its functional capability, causing delays and increased safety concerns created by turning movements.

In addition to reducing capital expenditures, implementing access management has positive impacts on maintaining the livability along arterials and improving safety. A direct correlation exists between the number of access points and collision rates. As an example, closing or consolidating existing driveways along arterials decreases the number of conflicts between vehicles entering and exiting from adjacent properties and those traveling along the arterial. The result is less vehicle delay with improved travel time along the arterial. Access management measures also decrease safety issues for motorists, pedestrians and bicyclists.

Where access management is not implemented, the livability of a community can suffer. This change in livability is usually created by increased numbers of access points, which lead to wider arterial construction and a resulting increase in traffic volume. Management techniques implemented at the outset will limit the number of connections and produce minimum spacing standards, reduce the need for costly improvements such as lane additions, and prevent the loss of livability to a community created by increased traffic volumes after arterial lane additions. For these reasons, it is prudent that all levels of government maintain the efficiency of existing arterial roadways by implementing an access management strategy.

Techniques

Access points are restricted by use of the following techniques:

- Restrict spacing between access points (driveways) based on the type of development and arterial.
- Consolidate looping driveways serving individual parcels into a single access point.
- Encourage adjoining properties to share a single access point.
- Provide driveway access to collector or local roadways where possible.
- Construct frontage roads for separation of local and through traffic.
- Provide service drives to reduce increased vehicle queues onto adjoining roadways.
- Provide acceleration, deceleration, and right turn lanes.
- Use T-intersections to create driveway offsets, which reduce the number of conflict points with through traffic.

- Place median barriers to control conflicts with left turn movements.
- Create side barriers along property adjacent to the roadway.

Also recommended is restricting the use of “split” accesses, where the driveway serving a single parcel splits into two connections just before reaching the public roadway. These split driveways or access points, which are fairly common on County roads, create safety concerns due to the driver’s angle of approach. This is in contrast to a “tee” intersection, where the side street intersects the major street at or near a right angle, providing the driver with a clear view to the left and right.

Recommended Standards

Access management techniques range from complete access control on freeways to restrictions on parking and loading on local and minor streets. Recommended access management guidelines by roadway functional classification are described in *Table 4-3*. The table lists the recommended *minimum* spacing between adjacent access points for each functional classification. A modification or variance process is also needed, as less restrictive spacing standards can be appropriate in areas with more intense development and lower travel speeds.

TABLE 4-3 RECOMMENDED ACCESS MANAGEMENT STANDARDS FOR COUNTY ROADS*				
Functional Classification	Type of Intersecting Facility			
	Public Road	Private Drive		
Type	Minimum Spacing	Type	Minimum Spacing	
Rural Arterial	at-grade	600 ft	Left/right turns	600 ft
Rural Collector	at-grade	300 ft	Left/right turns	300 ft
Rural Local	at-grade	200 feet	Left/right turns	Access to each lot

* For most roadways, at-grade crossings are appropriate. Also, allowed moves and spacing requirements may be more restrictive than those shown to optimize capacity and safety. Any access to a state highway requires a permit from the district office of ODOT and is subject to the access spacing standards in Table 4-4 below.

Application

Recommended access management standards should be applied to county roads in Morrow County. Morrow County is not required to meet these standards immediately. However, existing permitted connections that are not conforming will be upgraded as circumstances permit. Generally, access management standards do not eliminate existing intersections or driveways but apply to the creation of new access points as development occurs, and modification of existing accesses as redevelopment occurs. As the ongoing development process

continues, access to roadways should meet these guidelines. Where safety has been compromised, as evidenced by an unusually high number of collisions or other difficulties, these access management standards and techniques can be applied using a "staged implementation" approach to improve an existing roadway. A "staged" approach might involve providing shared or consolidated driveway connections, eliminating left turns from selected driveways onto the street, installing a center median to limit access to right-in/right-out only (RIRO), and ultimately closing the access when it becomes possible to provide an alternate access point.

Summary

In summary, access management strategies control the number of access points and provide for roadway facility improvements. If used effectively, this comprehensive program provides reasonable access without compromising the safety and effectiveness of traffic movement.

State Highways

Access management is important to promoting safe and efficient travel for local and long distance travel along OR 74, OR 206, and OR 207 and US 730 in Morrow County. The Oregon Highway Plan (Oregon Department of Transportation 1999) includes an access management classification system for state facilities with access spacing standards based on the highway classification and posted speed. These access spacing standards are included in section 734-051 of the Oregon Administrative Rules. Although Morrow County may designate state highways as arterial roadways within their transportation systems, access management categories for these facilities would need to generally follow the guidelines of the Oregon Highway Plan. This section of the TSP describes the state highway access categories and specific roadway segments where special access applies.

US 730 is an Oregon state highway that previously had a statewide level of importance. Since the interconnection of I-82 to I-84, US 730 is judged to have regional importance within Morrow County, outside the urban growth boundary for Irrigon. OR 74 is also designated as a regional highway. Access spacing standards for regional highways range from 450 feet (at 25 mph posted speeds) to 990 feet (at 55 mph posted speeds).

OR 206 and OR 207 through Morrow County are classified as district highways, with access spacing standards ranging from 400 feet (at 25 mph posted speeds), to 700 feet (at 55 mph posted speeds). Traffic signals are permitted at a minimum of 1/2-mile spacing.

Adopted Standards - State Highways

Access management standards for all state facilities are included in section 731-054 of the Oregon Administrative Rules (OAR). Applicable standards for the highways in Morrow County are shown in *Table 4-4*. These standards apply only to unsignalized access points. Where a right of access exists, the Oregon Highway Plan requirements allow a property to have access onto a state highway only if that property does not have reasonable access and there are no other options possible.

TABLE 4-4 ACCESS MANAGEMENT STANDARDS FOR MORROW COUNTY NON-INTERSTATE HIGHWAYS						
Highway	Classification	Access Spacing Standards for Public or Private Unsignalized Access (ft) for Posted Speed Indicated (mph)				
		>55	50	40 & 45	30 & 35	<25
US 730, OR 74	Regional	990	830	750	600	450
OR 206, OR 207	District	700	550	500	400	400

REFERENCE: Oregon Administrative Rules Section 734-051 (2004)

Access within the influence area of existing or proposed interchanges is also regulated by the State of Oregon (OAR 734-051). A minimum of 1,320 feet is required between an off-ramp and the nearest major intersection. No left turns and no four-legged intersections are allowed in the first 1,320 feet. On two-lane crossroads in developed urban areas, right turns are allowed a minimum of 750 feet from an interchange on two-lane crossroads. On four-lane crossroad in developed urban areas, a minimum of 990 feet is required between the last right-in/right-out access and the start of an on-ramp taper. Exceptions to these interchange management standards must meet specific criteria described in OAR 734-051-0135 in order to be approved by the Region Access Management Engineer.

Other Transportation

Concerns have been raised that demand for transit services and other alternative travel modes will increase in Morrow County. Some indications demonstrate that there may be a greater demand for public transportation services as the existing population ages. Other system improvements that may follow modifications to county roadway standards will increase the ability for alternative methods of travel, such as bicycles and pedestrians.

Since the original TSP was prepared in 1997, the County has succeeded in receiving grants to partially fund signage for the Columbia River Heritage Trail (Heritage Trail), a bicycle/pedestrian facility along the north border of the County adjacent to the Columbia River. The Heritage Trail connects the cities of Irrigon and Boardman, creating an attractive intercity commute route for work, school, and recreation. The Heritage Trail also has historic and

cultural significance relating to the Lewis and Clark trail route, the Oregon Trail, and native Americans' historical use of the area. The 2005 TSP promotes adding more local connections to the Heritage Trail to increase its accessibility.

Bicycle travel is also popular in south County along the Blue Mountain Scenic Byway and other roads. Most of the roadways have narrow shoulders not suitable for riding, but have traffic volumes low enough that shared use is comfortable for most bicyclists.

CHAPTER 5 FUTURE TRANSPORTATION SYSTEM OPTIONS ANALYSIS

INTRODUCTION

The Oregon Transportation Planning Rule (TPR) requires the analysis of transportation system alternatives that respond to safety and mobility needs. For the Morrow County Transportation System Plan (TSP), potential roadway improvement projects were identified using available county and state sources together with input from stakeholders and the public that address the specific goals and objectives of this plan. Options included in the analysis address both county and state facilities. The following areas are discussed in the chapter:

- Evaluation criteria
- Statewide Transportation Improvement Program (STIP)
- Morrow County roadway projects
- Port of Morrow roadway and intermodal system projects
- Other modes and transportation needs

The options included in this chapter are based on recommendations made by the state, County, local jurisdictions, and members of the general public. These recommendations reflect needs for safety, traffic mobility, and community development.

EVALUATION CRITERIA

To evaluate the appropriateness of transportation improvements requires that each project be compared to a set of criteria. The evaluation criteria selected for the Morrow County TSP are based on the goals and objectives identified in Chapter 2. This analysis qualitatively assesses each project based on whether a proposed project increases or decreases each of the following criterion areas:

- Safety
- Environmental
- Socio-economic
- Land use impacts
- Cost effectiveness

The safety criterion addresses the proposed project's ability to increase the safety of automobiles, trucks, bicyclists, pedestrians, and equestrians. The environmental criterion considers factors such as air quality, wetlands protection, water quality, noise, and quality of life. The socio-economic criterion includes the factors such as roadway capacity and maintenance needs, community livability, and economic development. Land use factors include the zoning adjacent to proposed projects, impacts to residential areas, and right-of-way requirements. Finally, cost effectiveness involves the availability of funding sources to address the proposed project and the expected benefit to the community.

TRANSPORTATION SYSTEM OPTIONS ANALYSIS

This section involves the evaluation of recommended projects by the state and County for inclusion into the Morrow County TSP. In addition, projects are considered that were identified in the public involvement process. These projects include changes to state highways, county roads, bridges, intersections, and bicycle and pedestrian facilities.

State Transportation Improvement Program Projects

The Oregon Department of Transportation (ODOT) establishes a four-year plan for improvements to the state highway system. The STIP lists the specific projects, describes the project's purpose, sets a project schedule and estimates the completion cost. Most STIP projects correct existing or projected roadway preservation needs, improve safety, or increase facility capacity. The original TSP listed a number of bridge and resurfacing projects from the 1998-2001 STIP, which have all been completed. An additional \$6.856 million in improvements listed in the 2002-2005 STIP that were not in the 1997 TSP have also been completed. Except for the 2004 Main Street enhancement in the City of Boardman, these projects were all funded under the first round of the Oregon Transportation Investment Act (OTIA I), which is described in more detail below. The primary 2004-2007 STIP project identified in the 2005 Transportation System Plan was the Port of Morrow Rail Access Loop, a project with an estimated cost of \$6.35 million, completed in 2006.

The 2006-2009 STIP and draft 2008-2011 STIP projects are described below and listed in **Tables 5-1 and 5-2**.

- *OR207 Corridor Intersection Improvements*: This modernization project will improve six identified intersections at a cost of \$1,102,000 scheduled to begin construction in 2010.
- *East Beach Multi-Modal Freight Transload Facility*: This non-construction project, funded for \$5.1 million, allows the construction of a Transload facility for freight transfer at within the East Beach Industrial Park. At the time of the 2007 Update this project was considered substantially complete.
- *Clarks Canyon-Padberg Bridge*: This bridge project, at a cost of \$536,000 and scheduled to begin in 2008, will replace the current bridge.
- *Columbia Avenue RR Overpass*: This project, funded for \$411,000 with Immediate Opportunity Funds, supported the new bridge and approaches
- *East Beach Rail Loop Access*: This modernization project, funded for \$5.35 million and completed in late 2007, widened Columbia Avenue and provided funds for additional rail access roads.

- *Kunze Road*: This modernization project, funded for \$2.7 million, will reconstruct Kunze Lane from Boardman's Main Street to Tower Road. Construction is beginning in late 2007 and is anticipated to be complete by June 2008.
- *Cutsforth Park Restroom Facilities*: This project, funded for \$35,000, will install bathrooms and, in essence, create a rest area along the Blue Mountain Scenic Byway. Construction is scheduled for 2008.

Program Year	Program	Project Description	Action	Estimated Cost (\$1,000s)
2010	2006-2009 STIP Draft 2008-2011 STIP	OR207 Corridor Intersection Improvements	Improve six identified intersections	\$1,102
2008	2006-2009 STIP Draft 2008-2011 STIP	Cutsforth Park	Add restroom facilities	\$35

REFERENCE: 2006-2009 STIP and draft 2008-2011 STIP

In 2001 the Oregon State Legislature initiated a \$400 million-dollar bonding program, the *Oregon Transportation Investment Act (OTIA)*, to finance major bridge and highway maintenance projects throughout the state. The act has been renewed twice and now represents over \$1 billion in bonded improvements. OTIA III, the largest installment of OTIA funding to date, includes two major projects in Morrow County representing an investment of nearly \$13 million for repair of the bridges on I-84 at the Irrigon Junction and reconstruction of Kunze Road in Boardman from Main Street to Tower Road. Additional State Highway improvements planned beyond the current STIP include an overpass of I-84 at Olson Road, which is listed in the Boardman TSP and proposed in this TSP, and restroom facilities for Cutsforth Park, which are in the 2006-2009 STIP. *Table 5-2* lists these projects, which represent over \$21 million in improvements for the County.

Program Year	Program	Project Description	Action	Estimated Cost (\$1,000's)
n/a	OTIA III	I-84 Irrigon Junction	Repair eastbound, westbound bridges	\$9,800

2008	2006-2009 STIP (OTIA III)	Kunze Road (Boardman)	Repair roadway from Main to Tower	\$2,700
n/a	City of Boardman TSP	Olson Road overpass	Construct overpass over I-84	\$8-10,000
2008	OTIA I	Clarks Canyon Padberg Bridge	Replace existing structure	\$536

REFERENCE: ODOT 2006-2009 STIP; ODOT Draft 2008-2011 STIP; ODOT OTIA III Bridge Delivery Program, City of Boardman Transportation System Plan; n/a = listed as proposed project in local TSP, not a funded project.

Evaluation of Recommended Transportation Improvements

Additional transportation strategies and improvement projects were identified by the County, Port of Morrow, and members of the community. These measures address safety, capacity, and maintenance issues that need to be attended to within the next 20 years. While none of these projects are shown in the 2004-2007 STIP, they have been identified as needs in the County Comprehensive Plan or by stakeholders in the Morrow County TSP. The following sections describe transportation options for the Morrow County TSP.

State Facilities Recommendations

Several capital improvements have been suggested for state highway facilities in Morrow County. The list of potential projects includes corridor safety studies, roadway realignments, turnouts, and roadway maintenance. The projects on this list were compiled from suggestions of the Morrow County Planning Department and from citizen and stakeholder comments made during the public involvement process. While no schedule has been established for the completion of these projects, these projects would likely be completed after 2007.

- *US 730 from I-84 to Umatilla county line.* In the 1997 TSP a project was identified that would widen US 730 to provide increased capacity along this corridor. Since that time an access management project on US 730 covering Morrow and Umatilla counties has been authorized and will begin in 2005 under ODOT administration. The estimated cost is \$2.325 million, including the portion in Umatilla County. This project is underway and the Refinement Plan should be completed in late 2007 or early 2008 with initial engineering projects to be started in 2008.
- *OR 207 from Hardman to Spray.* This stretch of highway requires a new overlay to take care of maintenance needs. The approximate cost would be \$1,420,000.
- *OR 207 at Bombing Range Road.* Intersection improvements are needed to provide safe turning radii for trucks and other oversize vehicles, and to provide sight distance for turns onto the highway. The estimated cost is \$400,000. This project was completed in 2006.

- *OR 74 horseshoe curve near Morgan.* Roadway improvements are needed at this location to improve safety on this route. The estimated cost for the improvements would be \$1,200,000.

The cost estimates for the improvements in 2004 dollars are shown in *Table 5-3*. The cost of these state facility improvements totals \$5.345 million. These improvements will improve the safety and preserve the integrity of the state highway system within Morrow County. Freight movement will also benefit from these measures, which address traffic safety and circulation issues on OR 207 and US 730 that affect freight mobility.

Project Description	Action	Estimated Cost
US 730 Corridor Safety Study (Began in 2005 and substantially completed in late 2007)	Access management and safety improvements	\$2,325,000
OR 207 from Hardman to Spray	Overlay	\$1,420,000
Bombing Range Road at OR 207	Relocate Intersection	\$400,000
OR 74 at curve near Morgan	Safety improvements and reconstruction	\$1,000,000

The County Road Program

In recent years the Morrow County Public Works Department has taken on a more strategic approach to prioritizing maintenance and repair needs that applies resources to more than one project within the same general area. This reduces set-up and transportation costs, allowing the County to stretch roadway improvement resources further compared to a traditional “worst-first” maintenance and repair process.

At the time of the 2005 TSP Update the Public Works Department’s roadway improvement plan covered the period from 2002 to 2008. It was reduced to a three-year improvement plan (2005-2008) for the 2005 TSP. Ten of the twelve projects programmed for 2002-2004 had been completed, including chip seals, pavement overlays, and shoulder and drainage work. This 2007 TSP Update will replace the fifth year of the previous five-year plan. An unsuccessful Road Levy in 2006 prompted the Public Works Department and the Road Committee to reevaluate the remaining items on the 2005 TSP work plan. The decision was to incorporate the Road Levy projects and initiate a new five-year project list replacing the final year of the project list in the 2005 TSP. Those projects are reflected in **Table 5-4**. As discussed earlier this five-year project list assumes an oil budget of \$600,000. If the reality is a smaller oil budget the Road

Committee did prioritize which projects would be completed and which ones would be delayed or removed.

TABLE 5-4
MORROW COUNTY
RECOMMENDED 2007/2008-2011/2012 ROADWAY SYSTEM PROJECTS

Roadway	Project Description	Estimated Cost
Sand Hollow Road – 6.7 miles (Hwy 74 to end of good pavement)	Pave patch rough spots with 1 ½" of hot mix @ \$44.50 per ton = \$145,000	\$300,000
Kunze Road – 1.3 miles (South Main to Miller Road)	Overlay with 2" of hot mix @ \$48.00 per ton = \$140,000	\$280,000
Miller Road – 0.5 miles (Kunze Lane to Wilson Lane)		
Depot Lane – 3.0 miles (Division Road to Eighth Road)	Overlay with 2" of hot mix @ \$48.00 per ton = \$200,000	\$420,000
Willow Creek Road – 20.5 miles (Hwy 207 to Cutsforth Park)	Crack seal of it @ \$3,500 per mile = \$71,750	\$130,000
Depot Lane – 1.9 miles (Eighth Road to Paterson Ferry Road)	Overlay with 2" of hot mix @ \$52.00 per ton = \$130,000	\$272,000
Juniper Lane – 3.8 miles (end of new pavement to Ione-Boardman Rd.)	Overlay with 2" of hot mix @ \$52.00 per ton = \$285,000	\$530,000
Ione-Boardman Road – 1.8 miles (end of new pavement south 1.8 m)	Overlay with 2" of hot mix @ 52.00 per ton = \$150,000	\$300,000
Ione-Boardman Road – 4.2 miles (end of previous year to Ella Road)	Overlay with 2" of hot mix @ \$60.00 per ton = \$360,000	\$690,000
Ella Road – 2.5 miles (Hwy 74 to Ione-Boardman Road junction)	Overlay with 1 ½" of hot mix @ 60.00 per ton = 200,000	\$385,000
Willow Creek Road – 20.5 miles (Hwy 207 to Cutsforth Park)	Chip seal all of it. Oil cost = \$385,000	\$700,000
Rippee Road – 0.5 miles (south of I-84 to Wilson Road)	Work on shoulders and pave with hot mix @ 68.00 per ton = \$45,000	\$90,000

TABLE 5-4
MORROW COUNTY
RECOMMENDED 2007/2008-2011/2012 ROADWAY SYSTEM PROJECTS

Roadway	Project Description	Estimated Cost
Root Lane – 1.1 miles (Wilson Road to Rippee Road)	Work on shoulders and pave with hot mix @ \$68.00 per ton = \$98,000	\$200,000
Eastregaard Road – 0.5 miles (Wilson Road to Canal)	Work on shoulders and pave with hot mix @ \$68.00 per ton = \$54,000	\$100,000
Big Butter Creek Road – 11.5 miles (Pine City to County line)	Repair cattle guards and bridge approaches, add some culverts and chip seal. Oil cost = \$185,000	\$280,000
Big Butter Creek Road – 3.0 miles (Hwy 207 to Pine City)	Crack seal and chip seal. Oil cost = \$55,000	\$95,000
Tower Road – 1.6 miles (Taggares Lane south)	Crack seal and chip seal. Oil cost = \$35,000	\$60,000
Ione-Gooseberry Road – 8.3 miles (McElligott Road to Hwy 206)	Reconstruct roadway and pave. Oil cost \$940,000 1 st phase – 2.9 miles = \$325,000 2 nd phase – 5.4 miles = \$615,000	\$3,200,000
2007/2008-2011/2012 ESTIMATED TOTAL COST		\$8,032,000

Morrow County also identified in the 2005 TSP 18 projects that were needed over a 5 to 20 year timeframe (*Table 5-5*). This table was updated in 2006 and further amended in 2007. In 2006 the Brenner Canyon/Valby Road project was added. For the 2007 Update three projects need to move to the long-term list as they had not been completed while on the current project list previously and will not be completed over the next five-year current project list. Those projects are on the Ione-Boardman Road, Ella Road and Juniper Lane. The projects identified by the County on the long-term list are neither funded nor scheduled at this time. They are listed by decreasing planning level cost estimate. Implementation priorities will be established in the future as part of capital improvement plan updates, based on a combination of need and potential resources.

Projects in *Table 5-5* have a total estimated cost of \$22.7 million, with individual project costs ranging from \$250,000 for reconstruction of Miller Lane, to \$9 million for the Olson Road overpass across I-84. *Table 5-5* includes also five intersection realignment improvements, which may be possible to complete earlier as they are relatively low-cost improvements ranging from \$5,000 to \$15,000. Estimated costs shown in *Table 5-5* are based on current oil costs, which are a

substantial share of chip seal project costs. Unexpected future changes in oil costs could affect the number or extent of projects the County is able to complete.

Roadway.	Project Description	Estimated Cost
CR #689 (Olson Road)	Construct new overpass over I-84	\$9,000,000
CR #581 (Brenner Canyon) and CR #589 (Valby Road)	Brenner Canyon Road from end of new pavement to Valby Road (5.2 miles) Valby Road from Brenner Canyon to Highway 206 (8.0 miles) [See 2006 TSP Update for more information]	\$4,046,140
CR #589 (Kunze Road)	Main Street to Tower Road (5.5 miles) – reconstruct and pave	\$2,700,000
CR #670 (Sunflower Flat Road)	Pave over gravel road (9.0 miles, a Federal Forest Highway Project	\$2,500,000
CR #681 (Ione-Gooseberry Road)	McElligott Road to Hwy 206 (8.3 miles) – reconstruct roadway	\$2,300,000
CR #761 (Depot Lane)	Paterson Ferry Road to Division Road 4.9 miles) – reconstruct and pave	\$2,000,000
CR #638 (Ione-Boardman Road)	Ella Road to Juniper Canyon Road (6.0 miles) – reconstruct and pave	\$1,875,000
CR #630 (Juniper Lane)	Ione-Boardman to new section (3.8 miles) – reconstruct and pave	\$1,100,000
CR #598 (Kunze Lane) and CR #689 (Olson Road)	On Kunze, South Main to Olson Road (0.7 miles). On Olson, Kunze Lane to I-84 – reconstruct and pave (2.0 miles total)	\$900,000
CR #733 (Sand Hollow Road)	Hwy 74 to new pavement (6.7 miles) – reconstruct and pave	\$900,000
CR #809 (Ella Road)	Highway 74 to Ione-Boardman “Y” (2.5 miles) – reconstruct and pave	\$730,000
CR #793 (Little Butter Creek Road)	Curran Ranch north (5.2 miles) – reconstruct and pave	\$600,000
CR #608 (Upper Rhea Creek Road)	Ruggs to Basey Canyon Road (4.5 miles) – improve drainage and pave	\$500,000
CR #759 (Bombing Range Road)	At Hwy 207 - acquire right-of-way to realign intersection, construct new section and pave	\$400,000
CR #906 (3 rd Street)	Nevada Avenue to Depot Lane (0.8 miles) – reconstruct and pave	\$350,000
CR #747 (Miller Road)	Kunze Lane to Wilson Lane (0.5 miles) – reconstruct and pave	\$250,000
CR #598 (Kunze Lane)	Olson Road to Miller Road (0.5 miles) – reconstruct and pave	\$250,000
CR #681 (Ione-Gooseberry Road)	Realign at junction with Hwy 206	\$15,000

TABLE 5-5 MORROW COUNTY 5 to 20 YEAR RECOMMENDED ROADWAY SYSTEM PROJECTS		
Roadway.	Project Description	Estimated Cost
CR #713 (Shobe Canyon Road)	Realign at junction with Hwy 206/207	\$15,000
CR #612 (Clarks Canyon Road)	Realign at junction with Hwy 206/207	\$10,000
CR #693 (Rhea Creek Road)	Realign at junction with Hwy 206/207	\$8,000
CR #533 (Porcupine Lane)	Realign at junction with Hwy 206/207	\$5,000
5 to 20-YEAR PROJECTS ESTIMATED TOTAL COST		\$30,454,140

All of these roadway improvements are recommended, and can be found to support the evaluation criteria, particularly safety and socio-economic benefits. Priority of these projects will be determined by the Public Works Department based on the urgency of the need, total cost, and the availability of funding sources.

Port of Morrow Recommended Projects

In general, roadway improvements on Port lands are market-driven and timed to serve new industrial tenants. The Port, which is presently developing a local rail loop connecting to the Union Pacific mainline, identified the additional major projects listed in *Table 5-6* to be included in the 2005 TSP. These are projects that the Port has identified as necessary to increase capacity, allow for economic development, increase safety, and improve intermodal access. Projects that would be a joint effort of the Port and the City of Boardman are also listed. Access to the Port's east industrial area north of the I-84/US 730 interchange is recommended via one or more at-grade or grade-separated connections to US 730 between I-84 and Paterson Ferry Road. Over the longer term as this industrial area becomes more fully developed, additional access may be needed, potentially including modification to the existing I-84/US 730 interchange to provide direct freeway access. The initial step toward interchange modification, an interchange area access management plan, is recommended in this TSP.

Overlooked in 2005 were the projects identified during the course of the 2002 land use process to plan and zone for a major motor speedway development at the Port of Morrow Airport located at the Tower Road Interchange. Those projects are listed as part of the 2007 Update to this TSP. Estimated costs have not been calculated. The responsible party for these costs is the speedway developer, or other developers identified during future land use actions if necessary. For further clarification concerning these projects please see Goal 10 Oregon Motor Speedway and the seven associated Policy Statements. Another reference would be the adoption documents from June 2002 and October 2003 as well as legislation passed during the 2005 and 2007 legislative sessions.

**TABLE 5-6
MORROW COUNTY
PORT OF MORROW FUTURE ROADWAY PROJECTS**

Roadway	Project Description	Estimated Cost (\$1,000's)
East Industrial Area Access	New access is proposed to serve the Port of Morrow East Industrial Area located north of the existing I-84/US 730 interchange and west of US 730, which includes several thousand acres zoned for industrial use. Access is initially proposed to be provided onto US 730 via an at-grade or elevated intersection or intersections. As the east industrial area develops, the need for direct interchange access will require further analysis.	\$1,000 – 6,000
East Industrial Area Interchange Area Management Plan	An Interchange Area Management Plan is recommended to develop a long-term plan for additional Port of Morrow freeway interchange access.	\$500
Kunze Road (Boardman)	Reconstruct from Main to Tower	\$2,700
Olson Road (Boardman)	Construct overpass over I-84	\$9,000
Tower Road overcrossing	Construct overcross over UP railroad line	\$1,000
I-84/Tower Road Interchange	Modifications to the I-84/Tower Road Interchange, including dual lane ramps, a four-lane bridge, and improved turning radiuses at the on/off ramps	
I-84/Tower Road Interchange	Stacking or merge lanes (acceleration/deceleration lanes) extending approximately 1.5 miles in each direction from the I-84/Tower Road Interchange.	
Tower Road	Widen Tower Road to five lanes between I-84 and the southern most entrance to the speedway on Tower Road	
New I-84/Speedway Interchange	A new I-84/Speedway Interchange east of PGE's north/south rail spur crossing of I-84 and including two-lane on and off ramps and a four land bridge over I-84.	
I-84 at New Speedway Interchange	Stacking or merge lanes (acceleration or deceleration lanes) extending approximately 1.5 miles in each direction from the I-84/Speedway interchange	
Interstate 84	An additional (third) eastbound and westbound travel lane on I-84 between Highway 730 and the Speedway Interchange and from 1200 meters west of the Army Depot Interchange to the I-82/I-84 Interchange	
Interstate 84	Bridge widening or modification as necessary along I-84	
Interstate 84	Extended ramps and taper lanes on I-84 westbound between I-82 and a point west of the I-84/Army Depot	

**TABLE 5-6
MORROW COUNTY
PORT OF MORROW FUTURE ROADWAY PROJECTS**

Roadway	Project Description	Estimated Cost (\$1,000's)
Interstate 84	Interchange Merge/diverge lanes eastbound on I-84 between a point west of the I-84/Army Depot Interchange and the I-84/I-82 Interchange	
Interstate 84	Modifications to the connector ramps at the I-84/I-82 Interchange to provide two-lane on or off ramps	
New Speedway Perimeter Road	A four-lane surface road system within and encircling the perimeter of the Speedway	
Kunze Road	Realignment of the Kunze Road/Tower Road interconnection southward to meet Division 51 spacing standards	Completed
Interstate 84	Improvements to the I-84/Army Depot Interchange to facilitate I-82/I-84 merge/diverge lanes.	

These projects reflect the importance of the Port of Morrow to the County and the region. The Port of Morrow recommends that these projects be included in the Morrow County TSP.

Structurally Deficient and Functionally Obsolete Bridges

Bridges in Morrow County are inventoried biennially. The last inventory was completed in 2004. The inventory rates bridges on a sufficiency rating scale that ranges from 0 to 100, with lower scores meaning worse conditions and higher scores indicating adequate conditions. Sufficiency scores for bridges in the National Bridge Inventory database (NBI) are translated to a qualitative ranking of Not Deficient, Structurally Deficient or Functionally Obsolete. There are 116 bridges in the County, including 44 County bridges, 11 city bridges, 60 ODOT bridges and 1 railroad bridge. *Table 5-7* lists the four bridges in the County rated as structurally deficient or functionally obsolete, including one state facility and three County bridges. The US 730 bridge is listed for repair in the state's OTIA III bridge program. Replacement of the County's Brenner Canyon Bridge was completed under the OTIA I program.

**TABLE 5-7
EXISTING BRIDGE DEFICIENCIES**

Bridge Number	Owner	Description	Sufficiency Rating	Status Code
08885	ODOT	US 730/USRS Canal	17.7	Structurally Deficient
49C05	County	Spring Hollow Rd/Rhea Creek	49.8	Functionally Obsolete

49C12	County	Road Canyon Rd/Rhea Creek	54.1-26.3	Structurally Deficient
49C21	County	Clarks Canyon Rd/Padberg	50.8 40.2	Structurally Deficient
REFERENCE: ODOT (2004)				

All of these bridges are recommended for upgrades over the next 20 years to increase safety and mobility along these key roadways. Priority for improvement should be based on the traffic volume, level of deficiency, safety, and available funding.

Bicycle and Pedestrian Facilities

Adequate bicycle and pedestrian facilities become more important in and surrounding population centers. As population increases, so does the total number of bicyclists and pedestrians. Goals and policies identified in Chapter 2 include the development of multi-use paths and trail systems and roadway design features to accommodate bicycles and pedestrians. The County has developed a bicycle and pedestrian plan to promote bicycle, pedestrian, and other non-motorized forms of travel.

Two bicycle and pedestrian facilities recommended in the original TSP have been or are currently being built. A multi-use pathway extending from the City of Heppner to the swimming pool has been constructed. The Columbia River Heritage Trail, a multi-use pathway along the Columbia River, continues to be developed. The Heritage Trail in Boardman runs along Tom's Camp Road, Wilson Lane, Main Street and Marine Drive. East of Boardman the trail turns south along Ullman Boulevard to Columbia Avenue, continuing along Columbia through the wildlife refuge. From Irrigon it continues to the Umatilla County line, connecting with Umatilla County's Lewis & Clark Trail. Additional connections to the existing portions of the Heritage Trail are needed to enhance its accessibility. Future extension of the trail west of Boardman is planned.

The option to modify roadway design standards to include facilities for bicycles and pedestrians was also considered. Bicycle and pedestrian facilities can be developed at a variety of levels, from grade-separated pathways to shared roadway facilities. Because county roads serve mainly rural areas, the proposed modification to the roadway standards will include a widened roadway shoulder for pedestrian and bicycle travel.

All of these actions should be included in the TSP in order to increase safety and mobility for non-motorized travel. In addition, the County will work with the cities in the creation of their respective TSPs to develop bicycle and pedestrian projects within the urban growth boundaries.

Airport Facilities

Air access will be increasingly important as the County continues to grow. The state's most recent pavement maintenance report for the Lexington-Morrow County airport (2003) calls for a five-year maintenance plan for the 2004-2009 period with about \$617,000 of inspection and

maintenance work that is needed to avoid more costly repair work. The Airport Layout Plan for the Lexington-Morrow County Airport, acknowledged by DLCD in 2002, is a 20-year plan for use of the airport and adjacent lands.

Transportation Demand Management

Transportation demand management (TDM) is a collection of strategies directed to reduce the number of trips by automobiles. Programs are normally directed towards major employers whose size increases the chances for employees to carpool (share a ride with another employee), telecommute (work at home), or participate in shift work schedules (4-day, 10-hour shifts, for example). These strategies not only benefit the roadway system through reduced traffic levels, but also contribute to reduction in air pollutants.

TDM strategies are usually most effective in highly urbanized areas; however, these programs can be applied to rural areas. The County and cities can work towards providing more bicycle lanes, pedestrian paths, and carpool programs--all of which are still appropriate to rural areas. In addition, major employers within the County (those with more than 100 employees) could be required to develop TDM programs that promote the increased use of commute alternatives and reduce the dependence on the single occupant vehicle.

A TDM program is recommended for inclusion in the County's TSP. Construction of the Heritage Trail offers a TDM resource for employees to utilize non-vehicular commute alternatives. Further measures should include the County's adoption of employer-based TDM regulations to implement TDM strategies to its major employers. The County needs to also encourage cities within the County to evaluate TDM measures as part of their TSP.

SUMMARY OF RECOMMENDATIONS

The recommendations of the alternatives analysis are summarized in *Table 5-8*. As shown in the table, it is recommended that all projects listed for county transportation facilities be implemented and included in the 2005 Morrow County TSP. These recommendations reflect input by the state, County, jurisdictions, and residents. All projects are supported by the evaluation criteria and will assist in meeting the County's goals of improving safety and mobility, improving the quality of life for its residents, increasing opportunities for non-motorized forms of transportation, and providing for economic growth. Chapter 6 discusses the implementation of these actions for Morrow County.

**TABLE 5-8
TRANSPORTATION IMPROVEMENT OPTIONS RECOMMENDATIONS**

Option	Recommended Action
1. Construct projects identified in the STIP	Implement

TABLE 5-8
TRANSPORTATION IMPROVEMENT OPTIONS RECOMMENDATIONS

Option	Recommended Action
2. Construct county-identified projects	Implement
3. Complete Port of Morrow recommended projects	Implement
4. Upgrade structurally deficient and functionally obsolete bridges	Implement
5. Develop bicycle, pedestrian and equestrian facilities, including the Heritage Trail	Implement
6. Perform recommended maintenance measures at the Lexington-Morrow County Airport to avoid more costly repair work.	Implement
7. Implement TDM Strategies	Implement

CHAPTER 6 TRANSPORTATION SYSTEM PLAN

INTRODUCTION

This chapter provides the detailed operational plan for each of the transportation systems within the County. The Transportation System Plan (TSP) identifies improvements necessary to address the needs of County residents over the next 20 years, including the development of new facilities, reconstruction and maintenance of existing facilities, and the development of bicycle and pedestrian facilities, as well as improvements to airport and freight operations. Components of the TSP include roadway classification standards, access management recommendations, transportation demand management (TDM) measures, improvements to the mobility of goods and freight, and a TSP implementation program.

This chapter describes the implementation strategy for each of the following areas:

- Roadway standards modifications
- Management of access on arterials and highways
- System plans for each transportation mode
- Implementation of the TSP

MODIFICATIONS TO ROADWAY STANDARDS

Roadway standards provide the minimum design characteristics for each class of road (called a functional classification). In other words, for each functional classification, the roadway standards specify the minimum lane width, shoulder width, pavement depth, etc. As discussed in Chapter 3, the County adopted roadway standards for eight classifications of roadways developed during the process of preparing the original TSP. Roadway standards were revised in the 2005 TSP, and are summarized in *Table 6-1*. Illustrations of the proposed standards as roadway cross-sections are included in Appendix C, including standard dimensions for roadway base, pavement elements, and drainage for each class of road. These standards maintain the increased shoulder width for bicycles and pedestrians proposed in the original TSP. In addition, all the standards in the 2005 TSP maintain the 60-foot right-of-way to ensure adequate room for utilities and drainage. The recommended implementation ordinance modifications for this TSP include County staff review of proposed engineering plans to construct or modify roads constructed by private developers. If the initial review of the engineered street design plans indicate additional right-of-way is necessary beyond the standard width of 60 feet (e.g., areas where slopes, sensitive areas or other factors require additional right-of-way to accommodate the roadway), the additional right-of-way width will be required to be dedicated as part of final plat approval.

Roadways constructed by private development must comply with the basic cross sections for the appropriate functional classification in the TSP and applicable sections of the County's implementing ordinances, as well as applicable sections of the most current AASHTO and/or ODOT standards for other design elements, including horizontal and vertical geometry. Additionally, developers will be required to have a registered professional engineer sign and stamp final road design plans, and certify the conformity of roadway construction with final plans.

Finally, this TSP proposes to add a broader gravel road standard to the County's adopted roadway standards. Many rural counties face the need to channel limited roadway maintenance funds toward delayed upgrades for low-volume paved facilities at various levels of disrepair. Maintaining these paved roadways requires a commitment of resources that is disproportionate to their use, and limits resources available for maintaining County facilities that accommodate more travel. Typically, these are low-volume roadways where patching shoulders and filling potholes are no longer adequate, and there is a need to reconstruct the base and repave the entire road, but they may also be low-volume collectors or arterials. Adopting a gravel road standard applying to all types of County roads will give the County greater flexibility for the cost-effectively use of limited maintenance funds.

Road Classification	Right of Way (ft)	Lane Width (ft)	Paved Shoulder Width (ft)	Pavement Width (ft)	Average Daily Traffic (ADT)
Rural Access I*	60	9	1	20	100-200
Rural Access II*	60	9	1	20	50-100
Rural Gravel**	60	11	n/a	n/a	varies
Rural Collector I	60	12	3-4	30-32	300-500
Rural Collector II	60	12	2	28	200-300
Rural Collector III	60	12	1	26	100-200
Rural Arterial I	60	12	4-8	32-40	> 700
Rural Arterial II	60	12	3-6	32-40	300-700

* Rural Access 1 and Rural Access II differ in the surface material (Rural Access II is gravel).
 ** Applies to collector and arterial functional classifications, not just rural access.

Modifications to the roadway standards discussed in this TSP are consistent with Policies 5.1, 5.2, 9.1, 9.2, and 9.4 of the TSP.

Rural Gravel Roadways

Appropriate gravel road cross-sections are a function of several factors including the amount and type of precipitation, temperature variation, traffic volume, heavy truck traffic, and condition of the subgrade (roadbed soil). Minimum aggregate base thickness typically ranges from 4-5 inches for low volume roads with high quality roadbed soils, to 13-15 inches for medium volume roads with poor quality roadbed soils. *Table 6-2*, based on material published by the Washington State Department of Transportation, is proposed as general guidance for gravel road sections in Morrow County.

TABLE 6-2 GUIDANCE FOR GRAVEL ROAD THICKNESS		
Relative Quality of Roadbed Soil	Traffic Level*	Aggregate Base (Inches)
Very Good	High	9
	Medium	7
	Low	4
Good	High	11
	Medium	9
	Low	5
Fair	High	13
	Medium	10
	Low	5
Poor	High	**
	Medium	15
	Low	8
Very Poor	High	**
	Medium	**
	Low	8
* Typical traffic volume ranges are High = 100 or more daily trips; medium = 50 - 100 daily trips; low = fewer than 50 daily trips.		
** Gravel surface not recommended.		
SOURCE: Washington State Department of Transportation		

A broader Rural Gravel standard (compared to the current Rural Access II) is proposed and also illustrated in Appendix C. The intent of this standard is to provide the County with more options for maintaining low-volume roads and provide a general guideline for gravel road sub-base sections needed with various conditions of underlying material and existing/expected traffic volumes.

Rural Access Roadways

The recommended minimum standard for paved rural access roadways is a 20-foot roadway within a 60-foot right-of-way. This class of roadway is designed for low

average daily traffic (ADT) volumes without substantial amounts of heavy vehicle traffic. Paved shoulders outside of the travel lanes provide room for pedestrians.

Rural Collector Roadways

A collector roadway is intended to primarily serve the local access needs of adjacent land uses and between access roadways and arterials. Three subclassifications of collectors are found in the recommended standards, varying from 26 to 32 feet of paved roadway. Travel lanes are 12-foot wide, with 1- to 4-foot wide shoulders, depending on the expected ADT. On Collector I roadways, the 4-foot shoulders are generally wide enough to encourage bicycle as well as pedestrian travel.

Rural Arterial Roadways

Arterials make up the majority of the County's roadway system. An arterial's purpose is to handle higher traffic volumes at higher speeds, with minimal roadway access.

ACCESS MANAGEMENT

Access management is the practice of controlling the number and spacing of access points along roadways in order to improve main line roadway capacity and reduce the potential for accidents. By controlling the access onto a road, the number of turning movements is reduced, allowing the main line road to operate closer to its designed capacity. Access management benefits the County by efficiently using its existing roadway resources, reducing the need for expensive capacity improvements.

In addition to preserving roadway capacity, roadways with too many or poorly located driveways are a safety issue. Too many driveways or closely spaced accesses result in a high number of points where conflicts can occur. Research has shown that the number of conflict points is related to the number of collisions that occur.

Access management strategies include the following:

- Combining driveways and roadway approaches along a road in order to reduce the number of conflicting movements between vehicles.
- Developing frontage roads to minimize the need for major facility access.
- Developing of internal circulation between parcels.
- Requiring access onto collectors or local streets for corner parcels with arterial frontage.
- Realigning existing accesses to allow adequate spacing between access points, or to line up offset accesses.
- Developing access standards for new developments that require joint access with future subdivisions.

Table 6-3 lists recommended access management guidelines by roadway functional classification for County roadways. These are recommended *minimum access management standards* applicable to public roads and private driveways. Along with access management standards, a process needs to be set up to allow modifications to the standards based on an evaluation of safety and other factors. Access management is generally not necessary for driveways onto local streets, although access spacing standards are appropriate for the intersections of public local roads.

TABLE 6-3 RECOMMENDED ACCESS MANAGEMENT STANDARDS FOR COUNTY ROADS*				
Functional Classification	<u>Public or Private Road</u>		<u>Intersection</u>	
	Type	Minimum Spacing	Type	Minimum Spacing
Rural Arterial	at-grade	600 ft	Left/right turns	300 ft
Rural Collector	at-grade	300 ft	Left/right turns	100 ft
Rural Local	at-grade	200 ft	Left/right turns	Access to each lot

* For most roadways, at-grade crossings are appropriate. Also, allowed moves and spacing requirements may be more restrictive than those shown to optimize capacity and safety. Any access to a state highway requires a permit from the district office of ODOT and is subject to the access spacing standards in Tables 6-4 and 6-5 in this section.

For state facilities, the County has decided to adopt the Oregon Department of Transportation (ODOT) access management standards shown in *Table 6-4*. There is an immediate need to evaluate and propose access control to US 730 between Umatilla and Irrigon because of the projected traffic volume expected on that roadway as well as the large number of existing access points along this part of the highway. During the time this TSP was being prepared, ODOT began a corridor safety study for US 730 in Morrow and Umatilla County. It is recommended that Morrow County maintain an active role in the study as it progresses. Access management changes in the Morrow County portion of US 730 will be addressed in the later stages of the US 730 corridor safety study.

These access management measures are consistent with TSP Policies 2.4, 2.5, 2.9, 3.2 and 3.3. They are included in the revisions to the zoning regulations as identified in Appendix E.

TABLE 6-4
ACCESS MANAGEMENT STANDARDS FOR MORROW COUNTY NON-INTERSTATE
HIGHWAYS

Highway	Classification	Minimum Access Spacing Standards for Public or Private Unsignalized Access (ft) for Posted Speed Indicated (mph)				
		>55	50	40 & 45	30 & 35	<25
US 730, OR 74	Regional	990	830	750	600	450
OR 206, OR 207	District	700	550	500	400	400

REFERENCE: Oregon Administrative Rules Section 734-051 (2004)

Access Management for State Facilities in Morrow County

ODOT has an extensive access management program, which is regulated by Oregon Administrative Rules Section 734-051. Through the adopted standards in OAR 734-051, ODOT controls access based on the type of facility, level of importance (state, regional, or district), and whether the facility is in an urban or rural area. This program, directed toward the management of state facilities, has been used to protect access along state facilities and at interchanges.

The state access management standards apply to the development of all ODOT highway construction, reconstruction or modernization projects, approach road and private road crossing permits, as well as all planning processes involving state highways, including corridor studies, refinement plans, state and local transportation system plans and local comprehensive plans.

The standards do not retroactively apply to legal approach roads or private road crossings in effect prior to adoption of this Oregon Highway Plan, except or until any redevelopment, change of use, or highway construction, reconstruction or modernization project affecting these legal approach roads or private road crossings occurs. At that time the goal is to meet the appropriate spacing standards, if possible, but at the very least to improve current conditions by moving in the direction of the spacing standards.

When in-fill development occurs, the goal is to meet the appropriate spacing standards. In some cases this may not be possible, and at the very least the goal is to improve the current conditions by moving in the direction of the spacing standards. Thus, in-fill development should not worsen current approach road spacing. This may involve such options as joint access.

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. If possible, other options should be considered such as joint access.

If a property becomes landlocked (no reasonable access exists) because an approach road cannot be safely constructed and operated, and all other alternatives have been explored and rejected, ODOT might be required to purchase the property. (Note: If a hardship is self-inflicted, such as by partitioning or subdividing a property, ODOT does not have responsibility for purchasing the property.)

Access within the influence area of existing or proposed interchanges is also regulated by the State of Oregon (OAR 734-051). *Appendix F* includes current guidelines and illustrative figures for freeway and non-freeway interchanges with two-lane or multi-lane crossroads.

Morrow County relies on the adopted state access management policies to control access on state highways.

DEVELOPMENT REQUIREMENTS

This section describes the regulatory actions required for implementing the TSP. These actions include modification or adoption of land use development requirements, impact assessment, and right-of-way requirements.

Land Use Development Requirements

Development during the next 20 years will occur in many different ways: large and small, commercial and residential, urban and rural. Different types and sizes of development require different levels of assessment and mitigation. The full range of requirements for most types of development permits, including the transportation improvements required under the TSP, is shown in *Table 6-5*. The transportation requirements fall into the basic categories of access and system improvements. There are five basic types of permits issued for development in Morrow County. These are zoning permits, land partitions, subdivisions, conditional use, and variance permits. For land that is already platted into lots and is appropriately zoned, a *zoning permit* is required for development. *Land partition* is required when one lot is to be divided into two or three smaller lots. A *subdivision* is required when more than four or more lots are created. A conditional use permit is required for projects with the potential to create a larger impact than land uses that are permitted outright or with a zoning permit. If the proposed development is not fully consistent with the existing zoning requirements, a *variance permit* is required.

**TABLE 6-5
LAND USE DEVELOPMENT PERMIT REQUIREMENTS**

Permit Type	Plot Plan Requirements		Conditions	Review/Approval Type				
	Footprint (setbacks)	Access*	Transportation Improvements	DEQ Site Suitability	Parking	Sign	Review	Action
Zoning Permit								
Residential	Yes	Designated access.	Frontage improvements.	Yes	N/A	N/A	Staff	Bldg. permits Road approach permit
Commercial	Yes	Legal access via r/w or easement.	Under 400 trips: Frontage improvements. Over 400 trips: TIA.		Yes	Yes	Staff	Bldg. permits Road approach permit
Industrial	Yes	Legal access via r/w or easement.	Under 400 trips: Frontage improvements. Over 400 trips: TIA.		Yes	Yes	Staff	Bldg. permits Road approach permit
Farm Exempt	Yes	Yes	N/A	N/A	N/A	N/A	Staff	County issues a Farm Agriculture Bldg Exemption Certificate
Land Partition								
1 to 3 Lots		Legal access via r/w or easement.	Frontage improvements.				Planning Comm.	Approval Road Approach permit
Subdivision								
4 to 39 lots		Legal access via r/w.	Frontage improvements.				Planning Comm.	Approval Road Approach Permit
40 or more lots		Legal access via r/w.	Frontage improvements, TIA.				Planning Comm.	Approval Road Approach Permit
Conditional Use Permit								
	Yes	Legal access via r/w or easement.	Under 400 trips: frontage improvements. Over 400 trips: TIA.		Review	Review	Planning Comm.	Approval, Bldg. permit Road Approach
*1000' or less, 20' easement; 1000' or more 40' easement; 3 or more lots (current or potential), 60' easement.								
r/w = Right-of-way.								
TIA = Traffic Impact Analysis. Number of trips refers to passenger-car equivalents; one truck trip is generally equivalent to two passenger car trips.								
N/A = not applicable.								

Traffic Impact Assessment

New development provides many benefits to the County, including property tax revenues, more jobs, and economic stimulation. However, growth can also stress transportation facilities. Increased congestion, demands for new roads, and higher expectations for more services can often accompany development. It is appropriate for the County to require applicants to formally assess the potential traffic impacts of their development proposals on the County transportation system by conducting a traffic impact analysis (TIA).

TIAs are based on the number of trips generated by the development. A TIA would be required when a development generates more than 400 daily passenger car equivalent trips. Traffic engineering research shows that one single-family residence generates an average of 10 trips per day. (More trip generation information is available from the ITE Trip Generation Report and in Appendix D.) Based on this rate, up to 40 homes could be constructed in a residential development without preparing a TIA. Any commercial or industrial use that generates more than 400 daily passenger car equivalent trips would also be required to have a TIA.

The TIA would assess the traffic impacts of the project and identify the appropriate mitigation of those impacts. The TIA would need to be prepared by an engineer and would contain information about the traffic generated by the project including the following items:

- Trip generation of the development.
- Distribution pattern of project-generated traffic.
- Identification and of service (LOS).analysis of the access point onto the public road system and any intersections at which the project adds 30 or more peak-hour trips.
- Measurement of impacts caused by the project.
- Mitigation of the project's impacts in proportion to the relative impact of the project, e.g., construction of improvements, implementation of management measures, or payment of system development charges.

The actions listed above are consistent with Policies 2.5 and 9.2 of the TSP. The guidelines for the completion of the TIA are shown in Appendix D.

Access Requirements

Appropriate access would also be required for development. For a single-family residence, a driveway or easement could provide access if the lot does not front on a county road. Improvements to the frontage of the lot could also be required as determined by the county engineer or public works director. This could include minor

widening to adopted standards, or improvements to ditches or culverts at driveway locations. For a small development that generates up to 30 trips per day, legal access would be required via a county road or a recorded easement (a 20-foot wide easement if 1,000 feet or less; a 40-foot wide easement if more than 1,000 feet). If it is possible to further partition the land into more than three lots, a 60-foot wide access to a county road must be provided. This could either be dedicated right-of-way or a legal guarantee that right-of-way would be provided at the time of further development.

The TSP actions listed above are consistent with Policies 2.4 and 2.6 of the TSP. These modifications to the zoning code and subdivision regulations are found in Appendix E of this document.

Right-of-Way

Right-of-way is the publicly owned corridor in which a road is constructed. Generally, the right-of-way includes the travel lanes, road shoulder, drainage ditch or gutter, and easements for utilities or a reserved area for future roadway expansion.

The TSP establishes a 60-foot right-of-way for all classifications of county roadways. The 60-foot width provides adequate right-of-way width to allow the roadway as well as the shoulders, ditches and/or sidewalks, and utility corridors to be located within the right-of-way, eliminating the need for additional easements. This ensures protection of the public infrastructure, and minimizes disruption to the adjacent property owner caused by maintenance and repair activities. This 60-foot width is reflected in the county road standards discussed later in this section.

In some cases, the County may need to acquire right-of-way for new transportation improvements, or abandon right-of-way that is no longer needed for transportation purposes. It is also likely that right-of-way needs to be dedicated to the County for transportation purposes by other parties. To clarify the requirements for this task, the TSP establishes policy statements that refer to following current State statute and rule for the acquisition, abandonment, and dedication of right-of-way. These rules include the circumstances under which right-of-way would be identified to be acquired or abandoned, and the legal process for approval and recording of the transactions.

The procedures for abandonment, acquisition, and dedication listed above are consistent with Policies 2.6, 2.7, 2.8, and 5.11 of the TSP. They are included in the revisions to the zoning and subdivision regulations found in Appendix E.

MODAL PLANS

Modal plans are the sections of the TSP for each transportation mode required by the Transportation Planning Rule. Morrow County's modal plans were developed using information collected and analyzed through a review of state and county goals and objectives, input from area residents, and available roadway system data. These plans consider the transportation system needs for the County during the next 20 years for capacity improvements as well as roadway maintenance and safety needs. The timing of specific improvement will depend on the rate of development and the changes in land use patterns throughout the County.

Roadway System Plan

Within Morrow County, the roadway system will continue to be the primary method of transportation in the region throughout the 20-year planning period. This section highlights improvements to the roadway system to accommodate growth and address safety and operational needs.

Performance Standards

Traffic engineers use a measurement called level of service (LOS) to assess the performance of a roadway system. It is measured on a scale that ranges from LOS A, which represents free flowing traffic with minimal delay, to LOS F, which represents severe congestion and long delays. The LOS is often used as a threshold to determine when improvements should be considered, such as additional lanes or new traffic control devices.

Because Morrow County currently does not have what would be considered significant traffic congestion, determining LOS for every roadway was not included as part of this study. However, the growth and development projected for the next 20 years could cause enough congestion to affect the operation of the roadway system in the more developed areas of the County.

To maintain an acceptable operating standard, the TSP sets LOS C as the minimum acceptable level for the unincorporated areas of the County and LOS D for the areas surrounding the cities within urban growth boundaries.

ODOT uses V/C ratio thresholds to set performance standards for state facilities. The State V/C standards are listed earlier in *Table 6-4*.

Estimated Cost of Roadway Improvements

Using recent construction costs as a basis, estimated costs per mile to improve rural system deficiencies were developed. Cost-per-mile estimates for reconstructing an existing rural two-lane roadway to county standards are shown in *Table 6-6*. The standard conditions estimate is for relatively flat, straight roadway; the moderate conditions estimate is for roads with moderate grades; and the difficult conditions estimate is for roads with severe grade, roadway realignment, accessibility problems, or other difficult construction conditions. For roads that do not require complete reconstruction, the seal cost and overlay estimates are used; for example, collectors are assumed to be overlaid and minor collectors are assumed to be seal coated.

The costs include engineering, inspection, and construction management. Estimated costs are averages to be used for planning purposes only; they may not represent the actual cost of proposed improvements. All costs are given in 2004 dollars and do not represent the time-value of money. Costs do not include widening the roadway to provide more lanes, but shoulder widening is included. Purchase costs for additional right-of-way are not included.

Road Classification	Standard Conditions	Moderate Conditions	Difficult Conditions	Overlay	Seal Coat
Collector	\$425,000	\$850,000	\$1,275,000	\$200,000	--
Minor Collector	360,000	\$720,000	\$1,080,000	--	\$40,000

Connectivity

Connectivity refers to the ability to travel between commonly used origins and destinations in a reasonably direct fashion. A major connectivity deficiency within the County is the lack of a second north-south connection specifically between Ione and Boardman, which has historically been referred to as Ione-Boardman Road. This deficiency is heightened by the fact that the portion of Bombing Range Road adjacent to the Naval Weapons System Training Facility is not dedicated public right-of-way, but is instead managed and controlled by the Navy. Lack of public right-of-way for the entire north-south route poses difficulty for installation of utilities along the road, and for improvements to the road itself.

The existing impediments to transfer of Bombing Range Road to the County magnify the importance of Ione-Boardman Road as a second north/south connection. However, there are also impediments to constructing Ione-Boardman Road. Throughout the 1980's and

1990's the County participated in negotiations with the State of Oregon and major property owners, including the Boeing Agri-Industrial Company and Threemile Canyon Farms, to secure right-of-way for an Ione-Boardman Road by extending Ella Road north to Boardman. This effort was hampered by a 2001 Multi-species Candidate Conservation Agreement with Assurances (MSCCAA) for the Washington ground squirrel, ferruginous hawk, loggerhead shrike, and sage sparrow, in the event any or all of these species are listed in the future as endangered or threatened.

The 2001 MSCCAA was researched in the May 11, 2005 Federal Register as part of the 2005 TSP preparation. The Federal Register states in part (emphasis added):

*"The majority of existing colonies (in Oregon and throughout the species' current range) [i.e., colonies of the Washington ground squirrel] are located on the Boardman Bombing Range and the Boeing tract, which contain the largest contiguous suitable Washington ground squirrel habitat. Although Boardman Bombing Range activities **are not certain, they are not expected to change significantly in the foreseeable future.**"*

However, a major military training facility now in the initial stages of planning by the Oregon National Guard would be certain to significantly change activities on the Boardman Bombing Range in the foreseeable future. This information is not addressed by the May 2005 Federal Register or the 2001 MSCCAA. The Oregon National Guard's plans for a military training facility on the Boardman Bombing Range create both an opportunity and an obligation to revisit the 2001 MSCCAA and revisit the ability to construct an Ione-Boardman connection. Action steps to assist the County in pursuing this issue further are included in the 2005 TSP implementation program.

The County has acquired a dedicated right-of-way that would allow construction of a road (Tower Road Extension) connecting the southern end of Tower Road to Highway 74 near Cecil, which would be useful for the western mid-County area as a transportation facility and as a fire break. As the next step the County must initiate a design effort, which is recommended in the 2005 TSP. However, this indirect alignment does not fully meet the need for a second Ione-Boardman connection, since it would serve the western area of mid-County.

Within urban areas of the County, connectivity allows better access for auto as well as bicycle and pedestrian travel. In order to improve connectivity, the TSP includes a block length standard of a maximum of 1,200 feet per block face. This standard gives non-motorized travelers the ability to travel more directly between their origins and their destinations.

These actions are supported by results of the public open house, the stockholder interviews and Goals 3, 5 and 8 of the goals and policies developed by the Technical Advisory Committee (TAC).

Intersection Controls

Most intersections in Morrow County will probably operate without signals for the next 20 years. The most likely intersections to require signalization are along I-84 in Boardman and along US 730. Any traffic signal proposed on US 730 should be coordinated with the school's pedestrian crossing plans. The placement of intersection controls should only be done when the control can improve the efficiency and safety of an intersection. Usual practice is to follow the intersection control warrants outlined by the Manual of Uniform Traffic Control Devices (MUTCD). These warrants consider a variety of factors including safety, sight distance, pedestrian presence, and traffic volumes in determining the type of appropriate traffic control. No signals on US 730 should be installed prior to the completion of the US 730 corridor safety study now beginning.

Proposed changes in intersection traffic control should be studied to ensure the changes are warranted based on thresholds in the MUTCD. This is consistent with Policies 5.4 and 5.5 of the TSP.

Pedestrian System Plan

In rural areas, pedestrians are typically accommodated on roadway shoulders. As roadways are paved, widened, reconstructed, or repaved on county and state facilities, shoulders should be widened to meet the recommended roadway standards discussed previously in this chapter and illustrated in Appendix C.

The TSP calls for improved pedestrian and bicycle facilities on county roads by improving roadway standards to include widened shoulder areas and by promoting better connectivity through a block length standard. Reduced block lengths allow pedestrians and bicyclists to shorten their travel distance by creating more direct routes through an area.

The original TSP recommended the development of two bicycle/pedestrian pathways, one a short off-road pathway extending from the City of Heppner to the swimming pool, which has been constructed, and the second a path along the Columbia River over the 12 miles between Boardman and Irrigon (the Columbia River Heritage Trail). For the Heritage Trail, additional local connections are recommended in Boardman, Irrigon and the Port of Morrow Industrial Area, as well as extension of the trail west of Boardman. Ultimately the Heritage Trail is planned to extend 25 miles from Umatilla County to Gilliam County, subject to the availability of funding. Extensions of and connections to the Heritage Trail should conform to the trail guidelines, which include the following facility width recommendations:

- Two-foot rural road shoulders on both sides of the road, in compliance with Oregon Rural Road standards.

- Eight-foot dedicated trails in “urban” areas (City of Boardman/Tower Road to City of Irrigon/Twelfth Street), subject to right-of-way availability.
- Eight-foot dedicated trails in rural segments in rural segments (west Morrow County line to Tower Road; USFW Umatilla Wildlife Refuge where not already paved; through the ODFW Wildlife Area).

Bicycle System Plan

On most County facilities, bicyclists share the roadway with motorists. On roadways with high ADT volumes, shoulders need to be widened to accommodate bicyclists. As roadways are paved, widened, reconstructed, or repaved on county and state facilities, shoulders should be widened to meet the recommended roadway standards.

Designated bicycle facilities can be provided in a variety of ways and are often available for use by pedestrians and other non-motorized users. Bicycles would share the road with motorists on roadways with shoulders narrower than 4 feet. In areas with high bicycle use, a separate pathway or striped bicycle lane should be considered along both sides of the roadway. This TSP recommends that the County prepare a county-wide bicycle, pedestrian, and equestrian strategy to identify opportunities for facilities. As outlined above in the Pedestrian System Plan, the County should continue to plan and construct additional connections to the Heritage Trail, which also serves bicycle travel.

This is consistent with Policies 6.1, 6.2, and 6.3 of the TSP.

Transportation Demand Management Plan

TDM is a collection of strategies directed to reduce the number of trips by automobiles. Programs are normally directed towards commute trips, when traffic levels are usually highest. These strategies not only benefit the roadway system through reduced traffic levels but also contribute to reduction in air pollutants. While TDM is usually applied only in highly urbanized areas, the following measures are part of the TSP:

1. Require companies with more than 100 employees to provide TDM measures for their employees, that could include some or all of the following options:
 - *Cash-out parking program*: Gives an employee the choice between a parking space and a monthly cash incentive.
 - *Employer-sponsored shuttle or vanpools*: Usually works best for groups of employees who live more than 30 minutes from the work site.
 - *Carpool or vanpool incentives or subsidies*: Encourages employees to share rides to work.
 - *Ride matching services*: Helps employees find others who live along their commute route.

- *Preferential carpool and vanpool parking:* Rewards those who share ride a more convenient parking location.
 - *Commute alternatives information:* Provides a variety of information on alternative methods to get to work.
 - *Provision of showers and locker facilities:* Encourages employees to bicycle or walk to work.
 - *Travel allowance:* Gives each employee a specific amount of money to use to “purchase” a parking space, or “save” by using commute alternative.
 - *Flexible work hours:* Allows employees to participate in carpools or other commute options.
 - *Compressed work week:* Reduces the number of weekly trips made by establishing 4-day 10-hour shifts or other compressed schedules.
 - *Assignment of a transportation coordinator:* Gives employees a contact person to assist in choosing a commute alternative.
 - *Telecommuting program:* Allows employees to work from home through the use of a “home-office”.
2. Establish a population threshold of 15,000, after which the County will initiate TDM programs such as the following:
- Employer information program on TDM measures.
 - Formation of TDM committee made up of major employers and governmental representatives. Such a committee should include the Oregon National Guard, if the Boardman Bombing Range becomes a major military training facility.
 - Development of park-and-ride facilities near freeway interchanges
 - Development of pedestrian and bicycle facilities between key destinations

This TDM program is included as part of the Morrow County TSP.

Public Transportation Plan

Public transportation in Morrow County is currently limited to dial-a-ride service for older adult and physically challenged residents, and Greyhound bus service.

Greyhound operates private transit bus lines throughout the United States. Greyhound has a daily route that travels through Morrow County, but does not have a scheduled stop in the County. For the bus to stop in Boardman, current operations require the passenger to flag the approaching bus and to pay the driver for the fare. Greater service

options are available in Hermiston and Pendleton in Umatilla County. Service is provided to various cities along routes to Portland, Seattle, and Boise, where connections can be made to other destinations. Existing and expected population in Morrow County suggest that Greyhound should schedule additional stops in Boardman and a new stop in Irrigon.

A second private transit line is operated by Linea Express, serving primarily agricultural workers that are moving up and down the west coast.

Transportation services to older adults and physically challenged residents of Morrow County are provided by Morrow County Special Transportation, a para-transit provider. Services provided include dial-a-ride services, client transportation, and medical transportation, all provided by volunteer drivers. The operation includes two buses in Heppner serving mid-county, and one bus in both Boardman and Irrigon. Operations are funded through a grant from the Public Transit Division of ODOT. Morrow County Special Transportation recently received a grant for \$50,000 to construct a bus shed in Boardman at the Boardman Senior Center to house Special Transportation buses. This project, which is a coordinated effort through Special Transportation and the City of Boardman, is scheduled to be completed by fall of 2005.

The TPR exempts communities with a population of less than 25,000 from including mass transit facilities in their development regulations. The para-transit services provided by Morrow County Special Transportation are adequate to meet existing and projected transit needs, and fixed-route public transit is unlikely to be needed within the 20-year planning horizon of the TSP under currently projected conditions. However, Morrow County strongly supports transit use. The County will continue to promote private transit service to provide connections to major employment sites and regional airports, both within Morrow County and for linkages to Umatilla County, and periodically will re-evaluate the need for public transit in the County. Should the Oregon National Guard proceed with major military training facility, as is being discussed, additional transit service may be justified to and from Umatilla County.

At the time of the 2007 TSP Update there was discussion, based on the development happening at the East Beach Industrial Park, that van-pool type transit be considered for evaluation to move workers from residential centers to employment centers.

Rail Service Plan

Rail services within Morrow County include freight services. Rail transportation has historically been, and continues to be, an important avenue for moving goods within the region.

Union Pacific Railroad's main line parallels I-84. Two spurs extend from this line to serve a coal-fired gas plant and the Umatilla Army Depot. Most of the rail freight service supports agricultural activities in the county and the Port of Morrow freight activities.

There has been no passenger rail service in Morrow County since rail service between Salt Lake City, Utah and Portland, Oregon was suspended in the mid-1990s. Amtrak does provide service between Portland and Spokane on its Empire Builder line. The Tri-Cities is the closest stop for this service.

No plans are expected for the expansion of existing or development of new rail service along the I-84 corridor; however, the expansion plans by the Port may result in the increased demand for future rail freight services. The Port is currently in the process of constructing a loop track to connect the Port of Morrow Industrial Area to the main Union Pacific line. In addition, as population in Morrow County and nearby counties increases, efforts should be made by the County to investigate the development of passenger rail service into the region.

Truck Service Plan

Currently, all highways, arterials, and collectors are designated as truck routes within the County. This approach is limited in that it does not focus available resources in the development of specific truck routes. An exception to this approach is the County's Draft Solid Waste Management Plan, which *does* recommend specific truck routes for movement of solid waste. A freight and goods transportation strategy should be developed for Morrow County by the County and the Port of Morrow that involves interested stakeholders and emphasizes the development of private/public partnerships. The study should identify specific corridors for development into truck routes and develop the specific truck route design specifications to improve the operations and safety of these routes.

An additional concern for truck traffic is the impact on rural access roads from heavy truck traffic, most frequently in connection with trucks traveling to and from gravel quarry sites. Frequently these trucks are non-local contractors working on State facility projects, or trucks serving new development sites. The County needs to use ordinances and a permitting process to ensure local access roads damaged from truck traffic are repaired and restored by the parties causing the damage.

Airport Service Plan

Air access will be increasingly important as the County continues to grow. The state's most recent pavement maintenance report for the Lexington-Morrow County airport (2003) calls for a five-year maintenance plan for the 2004-2009 period with about \$617,000 of inspection and maintenance work that is needed to avoid more costly repair work. The Airport Layout Plan for the Lexington-Morrow County Airport, acknowledged by DLCD in 2002, is a 20-year plan defining how the airport and the adjacent lands are planned to be used over the planning period. The County should coordinate pursuit of grants or other funding mechanisms to ensure that the recommended maintenance work is performed, and to begin implementing the measures identified in the 2002 Airport Layout Plan.

Pipeline Service Plan

A pipeline transporting natural gas runs across Morrow County. The PGT Pipeline enters Morrow County near the southeast corner of the County, travels near Ione, and continues to the northeast to the Morrow-Umatilla county line. Installation of a pipeline connection to Heppner is planned, but has not yet been constructed. No other future expansion or major modifications are expected within Morrow County.

Water Transportation Plan

The Port of Morrow operates barge facilities on the Columbia River. The port serves as a key multimodal transportation facility for the County, providing an interface between ground, rail, air, and water transportation. As discussed in Chapter 3, the port activities extend beyond its role as a freight terminal. The Port offers a number of industrial sites, provides industrial utilities, and plays a supportive role in the development of the adjacent communities.

The Port is expanding its market from a historical emphasis on agriculture and logging to include more food processing and light manufacturing. The Port of Morrow has three to four miles of frontage on the Columbia River including six docks, two berths that are 12 to 16 feet deep, and two overhead cranes that have an approximate 200-ton capacity. There are four barge companies that service the Port of Morrow with approximately 2,000 containers being handled at their container docks each month. Over 50 percent of the goods shipped are from foreign markets, and the destination port for most shipments is Portland.

In addition to freight traffic, the Port's facilities could provide docking for recreational and tourist opportunities, e.g., the Columbia Sternwheeler. The County and Port need to work cooperatively to provide needed docking facilities and promote their use.

Current access to the Port's facilities in Boardman is from a two-lane roadway with no turning lanes. This facility serves current traffic adequately, but may not be sufficient as the Port's business increases. The width and weight restrictions of several overpasses on roads in the immediate vicinity of the port may also restrict the port's growth. Alternate access to the east side of the Port from US 730 is a priority to port officials. Two Port accesses to US 730 are included in the roadway element of this TSP, with a longer-term recommendation that they be connected by an overcrossing over the Union Pacific railroad. As a long-term improvement to serve industrial development in this area, modifications to the existing I-84/US 730 interchange may be necessary. However, for the 20-year timeframe analyzed in this TSP it is assumed that at-grade intersections on US 730 will be adequate.

TRANSPORTATION SYSTEM PLAN IMPLEMENTATION PROGRAM

Implementation of the Morrow County TSP requires increased coordination between jurisdictions, changes to the existing zoning code and subdivision ordinance, and the preparation of a 20-year capital improvement plan (CIP). These actions enable the County to address both existing and future transportation issues in a timely and cost effective manner.

Interjurisdictional Planning

The co-adoption of the Cities' TSPs allows for coordination of standards and planning efforts within the urban growth areas, such as the coordination of road standards and the provision of bicycle and pedestrian facilities. In addition, interjurisdictional planning allows the development of county-wide funding resources and the mechanisms to distribute these funds. The County's change to two-acre minimum parcel size for rural residential development allows a greater focus on areas within the Urban Growth Boundaries of the cities.

Interjurisdictional coordination with ODOT is a structured process involving Area Commissions on Transportation (ACTs), which establish the public process by which projects are included in the area project selection priorities for the Statewide Transportation Improvement Program (STIP). (ACTs) are advisory bodies chartered by the Oregon Transportation Commission (OTC) to address all aspects of transportation (surface, marine, air, and transportation safety) with primary focus on the state transportation system. ACTs consider regional and local transportation issues if they affect the state system. They work with other local organizations dealing with transportation-related issues. There are 11 ACTs across the state. Morrow County is a member of the Northeast Area Commission on Transportation (NEACT), which includes representatives from Morrow, Baker, Union, Umatilla and Wallowa counties; five members representing the cities in each county; one at-large representative from each County; two representatives of the Confederated Tribes of the Umatilla Indian Reservation; and the ODOT Region 5 Area manager. NEACT prioritizes transportation problems and solutions, and recommends projects to be included in the STIP. Morrow County is committed to working through the NEACT to pursue implementation of improvements recommended in this TSP.

Another aspect of interjurisdictional planning is the need to address ownership of and planning for the section of Bombing Range Road owned by the US Navy and maintained by Morrow County.

Recommended Changes to Code and Ordinances

Changes to planning documents, the zoning code, and subdivision ordinances are recommended to ensure that policy and ordinance language conforms to the requirements of the TPR. Proposed modifications to the zoning and subdivision ordinances are found in Appendix E.

20-Year Capital Improvement Program

A 20-year CIP that schedules and prioritizes each of the projects of the TSP is provided in *Table 6-7* (State projects), *Table 6-8* (Port and city projects), *Table 6-9* (High Priority County projects), and *Table 6-10* (Medium Priority County Projects). State, Port and city projects are listed for purposes of establishing consistency and funding eligibility. *Figure 6-1* shows the locations of the County projects listed in *Table 6-9* and *Table 6-10*. (*Figure 6-1a* highlights the Boardman-Irrigon area of north Morrow County). Two levels of priority are established in each table, based upon the anticipated need for the project's implementation:

- High priority (0 to 5 years)
- Medium priority (5 to 20 years)

These priorities were set based upon the projects' qualitative evaluation as compared to the criteria established in Chapter 5. Scheduled projects that would produce the most safety, environmental, socioeconomic, land use, or cost benefits were ranked with the highest priority. Remaining projects were ranked medium priority. *Tables 6-9* and *6-10* include a number (high priority projects) or letter (medium priority projects) that correlate to project locations in *Figures 6-1* and *6-1a*.

Morrow County identified 54 projects in its 20-year roadway plan with at total cost of \$60.8 million. These include 32 projects ranked highest priority at a cost of \$14.4 million, including \$3.7 million for 28 projects on County facilities and \$10.7 million for 4 projects on state/local/Port facilities. Twenty-two medium-priority projects were identified with a total cost of approximately \$46.4 million, including \$22.7 million for 16 projects on County facilities and \$23.7 million for 6 projects on state/local/Port facilities.

TABLE 6-7 STATE FACILITIES RECOMMENDED IMPROVEMENTS		
Project Description	Action	Estimated Cost (\$1,000's)
High Priority		
US 730 Corridor Safety Study (Length of US 730 in Morrow and Umatilla counties)	Access management and safety improvements	\$2,325
Bombing Range Road at OR 207	Relocate Intersection, add Left turn pocket	\$400
Medium Priority		
I-84 Irrigon Junction	Repair eastbound, westbound bridges	\$9,800
OR 207 from Hardman to Spray	Overlay	\$1,420
Cutsforth Park	Restroom facilities	\$35
OR 74 at horseshoe curve near Morgan	Safety improvements and reconstruction	\$1,200

TABLE 6-8 PORT/CITY FACILITIES RECOMMENDED IMPROVEMENTS		
Project	Description/Action	Estimated Cost (\$1,000's)
Medium Priority		
East Industrial Area Access	New access to serve the Port of Morrow East Industrial Area located north of the existing I-84/US 730 interchange and west of US 730, initially onto US 730 via an at-grade or elevated intersection or intersections. As the east industrial area develops, the need for direct interchange access will require additional analysis.	\$1,000-6,000
East Industrial Area Interchange Area Management Plan	An Interchange Area Management Plan is recommended to develop a long-term plan for additional Port of Morrow freeway interchange access.	\$500
Kunze Road (Boardman)	Reconstruct from Main to Tower	\$2,700
Olson Road (Boardman)	Construct overpass over I-84	\$9,000

TABLE 6-8 PORT/CITY FACILITIES RECOMMENDED IMPROVEMENTS		
Project	Description/Action	Estimated Cost (\$1,000's)
Tower Road overcrossing (Boardman)	Construct overcross over UP railroad line	\$1,000
I-84/Tower Road Interchange	Modifications to the I-84/Tower Road Interchange, including dual lane ramps, a four-lane bridge, and improved turning radiuses at the on/off ramps	
I-84/Tower Road Interchange	Stacking or merge lanes (acceleration/deceleration lanes) extending approximately 1.5 miles in each direction from the I-84/Tower Road Interchange.	
Tower Road	Widen Tower Road to five lanes between I-84 and the southern most entrance to the speedway on Tower Road	
New I-84/Speedway Interchange	A new I-84/Speedway Interchange east of PGE's north/south rail spur crossing of I-84 and including two-lane on and off ramps and a four land bridge over I-84.	
I-84 at New Speedway Interchange	Stacking or merge lanes (acceleration or deceleration lanes) extending approximately 1.5 miles in each direction from the I-84/Speedway interchange	
Interstate 84	An additional (third) eastbound and westbound travel lane on I-84 between Highway 730 and the Speedway Interchange and from 1200 meters west of the Army Depot Interchange to the I-82/I-84 Interchange	
Interstate 84	Bridge widening or modification as necessary along I-84	
Interstate 84	Extended ramps and taper lanes on I-84 westbound between I-82 and a point west of the I-84/Army Depot Interchange	
Interstate 84	Merge/diverge lanes eastbound on I-84 between a point west of the I-84/Army Depot Interchange and the I-84/I-82 Interchange	

TABLE 6-8 PORT/CITY FACILITIES RECOMMENDED IMPROVEMENTS		
Project	Description/Action	Estimated Cost (\$1,000's)
Interstate 84	Modifications to the connector ramps at the I-84/I-82 Interchange to provide two-lane on or off ramps	
New Speedway Perimeter Road	A four-lane surface road system within and encircling the perimeter of the Speedway	
Kunze Road	Realignment of the Kunze Road/Tower Road interconnection southward to meet Division 51 spacing standards	Completed
Interstate 84	Improvements to the I-84/Army Depot Interchange to facilitate I-82/I-84 merge/diverge lanes.	

TABLE 6-9 MORROW COUNTY 0-5 YEAR (HIGH PRIORITY) RECOMMENDED ROADWAY SYSTEM PROJECTS 2007/2008-2011/2012 ROADWAY SYSTEM PROJECTS		
Roadway.	Project Description	Estimated Cost
Sand Hollow Road – 6.7 miles (Hwy 74 to end of good pavement)	Pave patch rough spots with 1 ½" of hot mix @ \$44.50 per ton = \$300,000 \$145,000	
Kunze Road – 1.3 miles (South Main to Miller Road)	Overlay with 2" of hot mix @ \$48.00 per ton = \$140,000	\$280,000
Miller Road – 0.5 miles (Kunze Lane to Wilson Lane)		
Depot Lane – 3.0 miles (Division Road to Eighth Road)	Overlay with 2" of hot mix @ \$48.00 per ton = \$200,000	\$420,000
Willow Creek Road – 20.5 miles (Hwy 207 to Cutsforth Park)	Crack seal of it @ \$3,500 per mile = \$71,750	\$130,000

<p style="text-align: center;">TABLE 6-9 MORROW COUNTY 0-5 YEAR (HIGH PRIORITY) RECOMMENDED ROADWAY SYSTEM PROJECTS 2007/2008-2011/2012 ROADWAY SYSTEM PROJECTS</p>		
Roadway.	Project Description	Estimated Cost
Depot Lane – 1.9 miles (Eighth Road to Paterson Ferry Road)	Overlay with 2" of hot mix @ \$52.00 per ton = \$130,000	\$272,000
Juniper Lane – 3.8 miles (end of new pavement to Ione-Boardman Rd.)	Overlay with 2" of hot mix @ \$52.00 per ton = \$285,000	\$530,000
Ione-Boardman Road – 1.8 miles (end of new pavement south 1.8 m)	Overlay with 2" of hot mix @ 52.00 per ton = \$150,000	\$300,000
Ione-Boardman Road – 4.2 miles (end of previous year to Ella Road)	Overlay with 2" of hot mix @ \$60.00 per ton = \$360,000	\$690,000
Ella Road – 2.5 miles (Hwy 74 to Ione-Boardman Road junction)	Overlay with 1 ½" of hot mix @ 60.00 per ton = 200,000	\$385,000
Willow Creek Road – 20.5 miles (Hwy 207 to Cutsforth Park)	Chip seal all of it. Oil cost = \$385,000	\$700,000
Rippee Road – 0.5 miles (south of I-84 to Wilson Road)	Work on shoulders and pave with hot mix @ 68.00 per ton = \$45,000	\$90,000
Root Lane – 1.1 miles (Wilson Road to Rippee Road)	Work on shoulders and pave with hot mix @ \$68.00 per ton = \$98,000	\$200,000
Eastregaard Road – 0.5 miles (Wilson Road to Canal)	Work on shoulders and pave with hot mix @ \$68.00 per ton = \$54,000	\$100,000
Big Butter Creek Road – 11.5 miles (Pine City to County line)	Repair cattle guards and bridge approaches, add some culverts and chip seal. Oil cost = \$185,000	\$280,000
Big Butter Creek Road – 3.0 miles (Hwy 207 to Pine City)	Crack seal and chip seal. Oil cost = \$55,000	\$95,000
Tower Road – 1.6 miles (Taggares Lane south)	Crack seal and chip seal. Oil cost = \$35,000	\$60,000
Ione-Gooseberry Road – 8.3 miles (McElligott Road to Hwy 206)	Reconstruct roadway and pave. Oil cost \$940,000 1 st phase – 2.9 miles = \$325,000	\$3,200,000

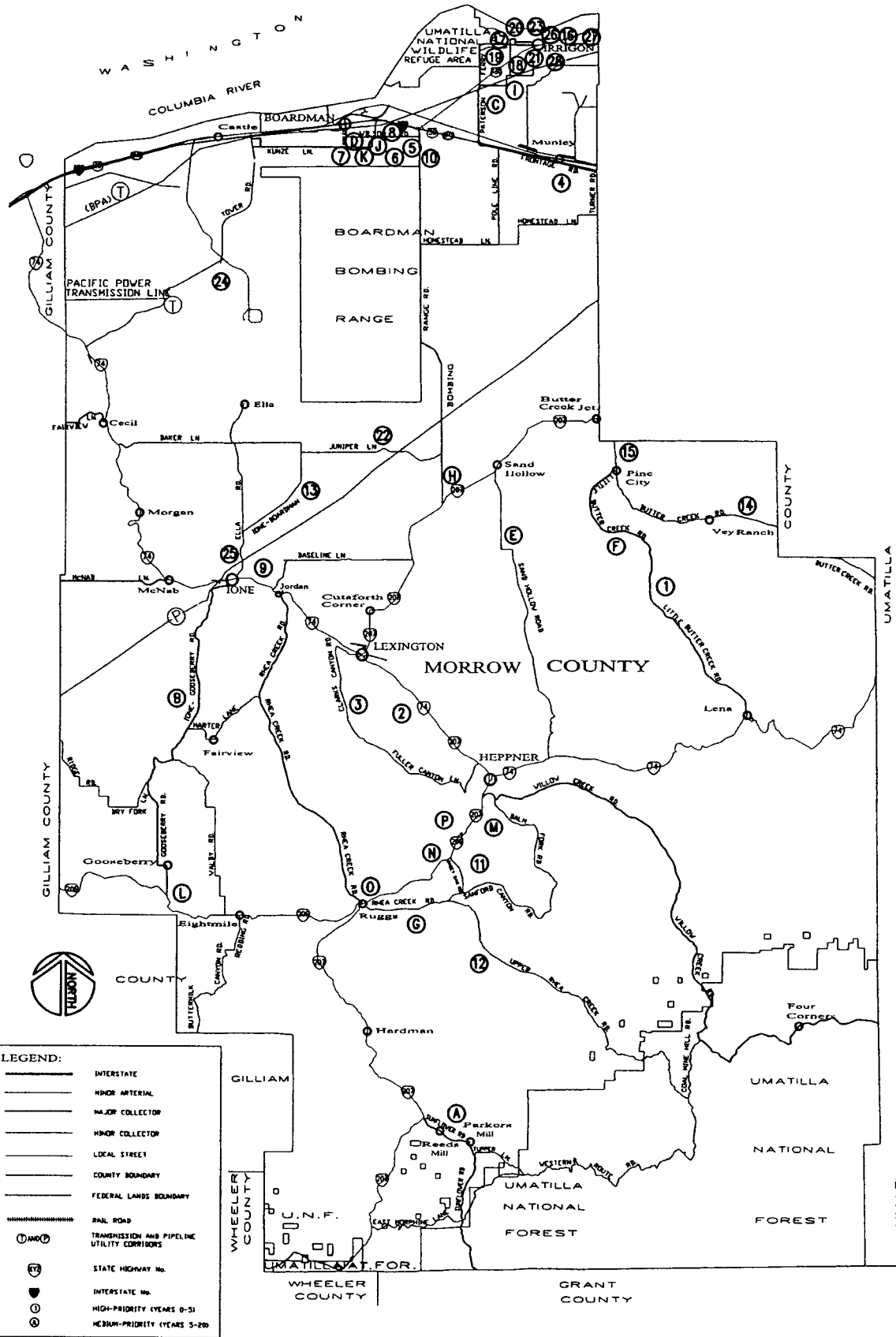
TABLE 6-9 MORROW COUNTY 0-5 YEAR (HIGH PRIORITY) RECOMMENDED ROADWAY SYSTEM PROJECTS 2007/2008-2011/2012 ROADWAY SYSTEM PROJECTS		
Roadway.	Project Description	Estimated Cost
	2 nd phase – 5.4 miles = \$615,000	
2007/2008-2011/2012 ESTIMATED TOTAL COST		\$8,032,000

TABLE 6-10 MORROW COUNTY 5-20-YEAR (MEDIUM PRIORITY) RECOMMENDED ROADWAY SYSTEM PROJECTS		
Map Key / Roadway.	Project Description	Estimated Cost (\$1,000's)
A / CR #670 (Sunflower Flat Road)	Pave over gravel road (9.0 miles, a Federal Forest Highway Project	\$2,500
B / CR #681 (Ione-Gooseberry Road)	McElligott Road to Hwy 206 (8.3 miles) – reconstruct roadway	\$3,200
C / CR #761 (Depot Lane)	Paterson Ferry Road to Division Road 4.9 miles) – reconstruct and pave	\$2,000
D / CR #689 (Olson Road)	Kunze Lane to I-84 – reconstruct and pave (2.0 miles total)	\$750
E / CR #733 (Sand Hollow Road)	Hwy 74 to new pavement (6.7 miles) – reconstruct and pave	\$2,215
F / CR #793 (Little Butter Creek Road)	Currin Ranch north (5.2 miles) – reconstruct and pave	\$1,820
G / CR #608 (Upper Rhea Creek Road)	Ruggs to Basey Canyon Road (4.5 miles) – improve drainage and pave	\$750
H / CR #759 (Bombing Range Road)	At Hwy 207 - acquire right-of-way to realign intersection, construct new section and pave	\$500
I / CR #906 (3 rd Street)	Nevada Avenue to Depot Lane (0.8 miles) – construct and pave	\$350
J / CR #747 (Miller Road)	Kunze Lane to Wilson Lane (0.5 miles) – reconstruct and pave	\$180
K / CR #598 (Kunze Lane)	South Main to Miller Road (1.3 miles) – reconstruct and pave	\$450

TABLE 6-10 MORROW COUNTY 5-20-YEAR (MEDIUM PRIORITY) RECOMMENDED ROADWAY SYSTEM PROJECTS		
Map Key / Roadway.	Project Description	Estimated Cost (\$1,000's)
L / CR #681 (Ione-Gooseberry Road)	Realign at junction with Hwy 206	\$181
M / CR #713 (Shobe Canyon Road)	Realign at junction with Hwy 206/207	\$80
N / CR #612 (Clarks Canyon Road)	Realign at junction with Hwy 206/207	\$82
O / CR #693 (Rhea Creek Road)	Realign at junction with Hwy 206/207	\$145
P / CR #533 (Porcupine Lane)	Realign at junction with Hwy 206/207	\$80
5-20-YEAR PROJECTS ESTIMATED TOTAL COST		\$15,283

TABLE 6-11 MORROW COUNTY RECOMMENDED PROJECTS FOR NON-VEHICULAR MODAL SYSTEMS		
Plan Element - Facility.	Project Description	Estimated Cost (\$1,000's)
Pedestrian/Bike – Heritage Trail	Phase 1 of the Heritage Trail between Irrigon and Boardman.	\$350
Pedestrian/Bike – Heritage Trail	Completion of Phase 2 of the Heritage Trail, including an Ullman Boulevard bicycle/pedestrian overcrossing over the Union Pacific railroad, and additional pavement width along Ullman Boulevard north of railroad to accommodate bicyclists and pedestrians.	\$215
Transit – Bus facility in Boardman	Parking/maintenance facility for Special Transportation buses serving North County	\$50
Air – Lexington-Morrow County Airport	Complete the 5-year maintenance program for the 2004-2009 period as recommended in the state's 2003 pavement maintenance report, to avoid more costly repair work.	\$600

HIGH AND MEDIUM PRIORITY PROJECT LOCATIONS



CIVIL
TRANSPORTATION
STRUCTURAL
LAND SURVEYING

ENGINEERS

CADD BY NAME	CHECKED BY NAME	DRAWING TITLE
REVISIONS <td>DESCRIPTION <td></td> </td>	DESCRIPTION <td></td>	

FIGURE NO 6-1
HIGH & MEDIUM PRIORITY
PROJECT LOCATIONS

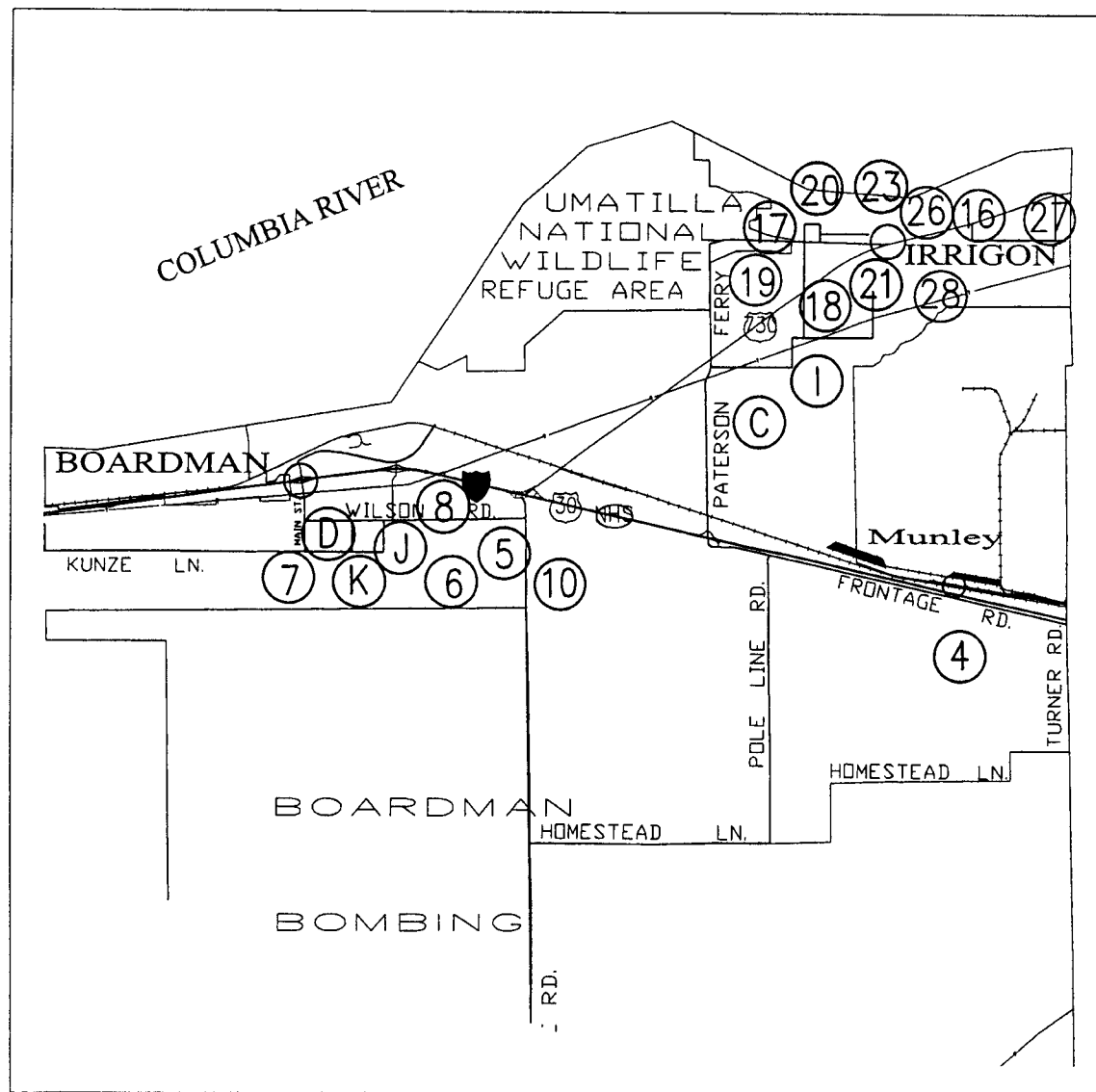
PROJECT
MORROW COUNTY TSP
UPDATE
OR04.055.T01

PREPARED FOR
ODOT/MORROW COUNTY

HIGH AND MEDIUM PRIORITY PROJECT LOCATIONS BOARDMAN - IRRIGON AREA



LEGEND:	
	INTERSTATE
	MINOR ARTERIAL
	MAJOR COLLECTOR
	MINOR COLLECTOR
	LOCAL STREET
	COUNTY BOUNDARY
	FEDERAL LANDS BOUNDARY
	RAIL ROAD
	TRANSMISSION AND PIPELINE UTILITY CORRIDORS
	STATE HIGHWAY No.
	INTERSTATE No.
	HIGH-PRIORITY (YEARS 0-5)
	MEDIUM-PRIORITY (YEARS 5-20)
	PROPOSED ROADWAYS



<p style="text-align: center; font-size: small;">CIVIL TRANSPORTATION SURVEILLANCE AND SURVEYING</p>	<p style="font-size: small;">PROJECT</p> <p style="font-size: small;">MORROW COUNTY TSP UPDATE OR04.055.T01</p>	<p style="font-size: small;">PREPARED FOR</p> <p style="font-size: small;">ODOT/MORROW COUNTY</p>
<p style="font-size: x-small;">CADD BY NAME</p> <p style="font-size: x-small;">CHECKED BY NAME</p> <p style="font-size: x-small;">DATE</p>	<p style="font-size: small;">DRAWING TITLE</p> <p style="font-size: small;">FIGURE NO. 6-1A BOARDMAN - PORT OF MORROW - IRRIGON AREA PROJECTS</p>	<p style="font-size: x-small;">DATE</p> <p style="font-size: x-small;">BY</p> <p style="font-size: x-small;">DATE</p> <p style="font-size: x-small;">BY</p>
<p style="text-align: center; font-size: small;">CIVIL TRANSPORTATION SURVEILLANCE AND SURVEYING</p>		

CHAPTER 7 FUNDING OPTIONS AND FINANCIAL PLAN

INTRODUCTION

The Transportation Planning Rule (TPR) requires the Morrow County Transportation System Plan (TSP) to evaluate possible sources of funding for improvements. Increased competition for available funding sources has created an environment where creative and innovative techniques are needed to fund both existing and future transportation needs. This chapter presents the funding options and financial plan for meeting the recommended improvements identified in the TSP. The chapter is organized as follows:

- Transportation needs over the next 20 years.
- Historical sources of funding.
- Transportation revenue sources.
- Financing options.

TRANSPORTATION NEEDS

An estimated total of \$60.8 million in current dollars is required to implement the transportation improvement projects recommended in the TSP. Project scheduling will be determined partially by the population and employment growth the County experiences over the next 20 years, which will influence the timing and magnitude of improvement needs. For many projects, joint funding will need to be pursued, as appropriate, with the Port of Morrow, ODOT, and individual cities. Should the Boardman Bombing Range become an active tank training facility as is being considered by the Oregon National Guard, a partnership with the federal government and/or the Oregon National Guard should also be pursued for needed improvements to the roadways serving the Bombing Range. Finally, the County should pursue opportunities to apply joint public/private financing for economic development projects such as development of major new industrial facilities, or a major new entertainment facility such as a speedway.

HISTORICAL SOURCES OF FUNDING

Morrow County currently funds transportation system improvements through federal, state, and local sources. Property taxes make up the largest single source of revenue (53% of the \$3.417 million in total revenue for 2002). Although annual increases in property tax assessments on individual properties are limited as a result of Measures 5 and 50, property tax revenue as a whole has more than doubled since 1997, when property tax revenue totaled \$721,000. Property tax revenue has increased as a result of new development throughout the County. Other major funding sources include gas tax/vehicle licensing revenues and, beginning in 2002, funds from the Oregon

Transportation Investment Act (OTIA). OTIA funds are devoted to specific improvements, primarily bridge repair and/or replacement. Other existing funding sources include a portion of waste disposal fees collected at the Finley Buttes Landfill, (collected for Bombing Range Road), and forest receipts (collected for national forest lands). Until 2002 the County general fund was a major revenue source for the transportation system. Miscellaneous funds are typically reimbursements, interest payments, or other one-time sources. Funds received are not only used for system improvements, but also for maintenance, equipment, staff salaries, and materials costs.

The historic transportation budget for Morrow County between 1998 and 2002 is shown in *Table 7-1*. During that time the County’s overall transportation budget increased by about eight percent. The two largest revenue sources, property taxes and gas taxes, are the most stable but are unlikely to be able to meet increasing future demands.

TABLE 7-1 1998-2002 TRANSPORTATION FUNDING IN MORROW COUNTY						
Funding Source	ANNUAL AMOUNT					1998-2002 % Change Constant \$
	1998	1999	2000	2001	2002	
Property Tax	\$1,358,400	\$1,397,300	\$1,606,700	\$1,589,300	\$1,871,700	38%
Forest Receipts	\$51,200	\$73,800	\$32,200	\$227,200	\$229,000	349%
Gas Tax/ Vehicle License	\$531,700	\$572,000	\$572,300	\$561,600	\$565,500	6%
Finley Buttes Road Fund	\$118,200	\$143,300	\$119,100	\$113,700	\$162,500	37%
OTIA	\$0	\$0	\$0	\$0	\$524,700	n/a
STP/HBR	\$100,000	\$78,400	\$39,900	\$0	\$0	n/a
Misc. Revenue	\$67,800	\$76,200	\$108,500	\$83,000	\$53,700	(21%)
Other Funding Sources	<u>\$411,500</u>	<u>\$415,500</u>	<u>\$830,500</u>	<u>\$378,700</u>	<u>\$4,200</u>	(99%)
Total	\$2,944,100	\$2,762,200	\$3,315,100	\$2,959,300	\$3,417,300	16%

In 2002, the Oregon legislature created a task force to explore options to replace the gas tax, due to concerns over the gas tax revenue stream flattening or decreasing due to better fuel economy, more hybrid vehicles and the volatility of gas prices, which affects fuel consumption.

REVENUE SOURCES CURRENTLY USED IN MORROW COUNTY

In order to finance the transportation system improvements recommended for Morrow County over the next 20 years, the County will need to consider and implement a variety of funding sources. Recent property tax limitations (Measures 5 and 50) have substantially reduced the ability to raise needed funds through increases in property tax rates or through higher property assessments. The revenue sources described in this section may not all be appropriate in Morrow County, but they represent the range of financial sources currently available to fund transportation improvements in Oregon. The County already uses many of these funding sources. Grant funding for bicycle and pedestrian improvements has been used in the City of Heppner, but not directly by the County.

ODOT Funds

ODOT provides funding for highway-related or highway-benefiting improvements through the Statewide Transportation Improvement Program (STIP). The STIP sets out a four-year funding cycle for transportation plans, and is updated every two years. The STIP is funded through federal transportation funding. Following the first two rounds (ISTEA and TEA-21), passage of the third iteration (TEA-3) of the federal government's 1991 surface transportation act is expected sometime in 2005. ODOT's allocations of federal transportation revenues increasingly target those improvements that benefit highways indirectly, such as bicycle and pedestrian facilities, and those that provide economic benefit to a jurisdiction or region. Morrow County should continue to pursue funding for its high-priority projects through the STIP process, particularly those that provide economic benefits. Projects identified through this TSP or other planning processes may be eligible for STIP funds. The County's highway-related projects would be combined with all other projects within ODOT Region 5 submitted for STIP consideration, and then funded based upon the relative priority to other projects within the region.

ODOT's OTIA bonding program has contributed the greatest influx of new transportation funds over the past few years. OTIA is presently in its third and largest round (OTIA III), which focuses on repairing and replacing aging state and local bridges across the state. ODOT funds will remain to be an important source of funding to maintain and improve projects within Morrow County highway corridors. With the passage of ISTEA, its successor, TEA-21, and the imminent passage of TEA-3, federal funding administered by ODOT will continue to be one of the primary resources for funding capital improvements.

Property Taxes

Property taxes are often considered as a primary revenue source for raising general fund revenues. Revenue from property taxes can be used to fund transportation improvements through general fund transfers. Property taxes may be permanent (tax base levies), directed to specific projects (bond levies), or for a limited amount of time (serial levies). Tax base levies are the most common type used. Over the last two decades, the use of property taxes for raising general fund revenues has been restricted through a series of ballot initiatives. The first, Measure 5, restricted the non-school tax districts to \$10 per \$1,000 of assessed value and the total tax to \$15 per \$1,000 of assessed value. In May 1997, Measure 50 passed, which rolled back property taxes to 1994-95 levels and limited future increases to three percent annually, while requiring that jurisdictions prioritize funding for public education and safety. These restrictions typically decrease the amount of funds available to cities and counties for application to the transportation system. Given that property tax revenues will likely continue to be limited for all governmental uses, transportation projects will have to compete with other government services. Morrow County has substantial amounts of undeveloped industrial property under the control of the Port of Morrow. As this property is developed, the increased assessed values will increase property tax revenues. The County should not consider property taxes to be a major source of new roadway improvement funds in the future.

Gasoline Taxes

The state of Oregon currently provides funds from the sale of gasoline, vehicle registration, and weight/mile taxes to provide jurisdiction's funds to maintain and improve street facilities. Gasoline taxes are collected for every gallon purchased by the consumer. An allocation formula based partially on population divides available funds among the state's counties and incorporated cities. State law also allows voters within a jurisdiction to approve additional gasoline taxes for use in funding street maintenance and improvements. A vote of the County's residents would be needed to enact a county-wide increase to the gasoline tax. As noted earlier, the legislation has a task force exploring potential options to replace or supplement the gasoline tax.

Vehicle Registration Fees

Like gasoline taxes, vehicle registration fees are collected by the state and then distributed to cities and counties. Under state law, counties are allowed to impose an additional vehicle registration surcharge on all vehicles residing within the county. Funds collected are required to be used to either maintain or improve roads within the County. To implement an additional vehicle registration fee within Morrow County would require voter approval, and the County would need to develop mechanisms to distribute the funds for county and city roadway projects.

Special Public Works Funds

The state of Oregon through the OEDD supports economic development and job creation by providing grants and loans to construct, upgrade, or repair public infrastructure. Special public works funds (SPWF) have been used to construct capital facilities such as water, sewer, and street improvements. Funding is limited to projects that are associated with economic development of a community and the creation of family-wage jobs. The Port of Morrow was awarded a \$1.2 million SPWF loan in 2003. The County may be able to apply for SPWF funds for roadway improvements as population increases in the area.

Project Mitigation

The County should pursue project mitigation to offset the transportation impacts from large projects. Under the preferred alternative, the project will be subject to TIA requirements included in this plan, which will analyze and identify impacts created on the transportation system. Expected mitigation for the project impacts would be provided either as mitigation payments or by the proponent completing improvements to affected facilities.

Public Transportation Funds

Funds and loans for public transportation are available to encourage the development and operation of service for the general public, older adults, and those with special needs. Most programs require local government contribution to receive funds. Four of the major sources available include the following:

- Special transportation fund (STF)
- Section 5311 funds
- Community transportation program
- Special transportation district

Bicycle and Pedestrian Program Funds

The state of Oregon has grants available through the state Bicycle and Pedestrian Program for promotion of bicycle facilities for non-recreational improvements. A local match is required to obtain funds. Funding sources such as TEA-3 enhancement funds should be pursued by the County to further develop their bicycle and pedestrian systems. The City of Heppner recently constructed a shared pedestrian/bikeway funded through ODOT-administered grant funds.

OTHER REVENUE SOURCES NOT CURRENTLY USED IN MORROW COUNTY

Transportation System Development Charges

A transportation system development charge (SDC), also referred to as a transportation impact fee (TIF), is a fee charged to new development to offset a portion of the costs for necessary transportation improvements to the entire system. SDCs are also applicable to water and sewer. The fee is usually based on the number of new trips generated by a development, either during a peak hour or on a daily basis. ORS 223.297 to 223.314 describe the requirements that a SDC must meet and the method of determining the amount of the fee, which is based on the total cost of eligible improvements over the planning timeframe, typically 20 years. Generally, SDCs can only be applied to transportation projects identified in a jurisdiction's capital facilities plans. Developments that are conditioned to improve specific facilities to mitigate the development's impact can receive a credit against their SDC, subject to rules governing which facilities are eligible for SDC credits, and the specific components of improvements for which the developer can receive a credit. For example, a proposed shopping center development might be conditioned to widen an adjacent roadway or install a traffic signal at a nearby intersection, and could receive a credit for the cost of that work up to the amount of that development's SDC assessment. Should the County elect to enact a transportation SDC, the TSP recommends that traffic impact analyses (TIAs) be required of new development over a certain minimum threshold, to assess the impact to county-controlled facilities. Morrow County can then collect SDC fees based on the number of trips generated by new development and use the funds to construct or maintain the County's roadway system. Creating an SDC program first requires a countywide analysis of future transportation system needs, improvement costs, potential development, and the extent to which future development should be responsible for those costs.

Local Improvement Districts

State law allows jurisdictions to fund public improvements through the development of Local Improvement Districts (LIDs). This source allows either property owners or local jurisdictions to approve an LID as a method of funding street, sidewalk, or other improvements. An LID allows the cost of improvements to be shared among those most to benefit from the improvement. Costs are normally assessed either by property frontage, building square footage, or other method. Property owners usually have the option of paying for the improvement up front or apportioning the costs out over a specified term through financing through the jurisdiction. The county or city must adopt an LID Ordinance to identify the LID boundary and the repayment provisions. A difficulty of LIDs is that sufficient support among affected property owners must first be obtained to approve its implementation.

Street Utility Fees

A street utility fee is an assessment on all businesses and household to fund improvements to the transportation system. The fee differs from an LID in that the assessment is usually based on the type of land use and is based on the expected number of trips to be generated by that type of use. Differing fee schedules are normally developed for commercial and residential properties. The City of Medford, Oregon implemented such a fee to operate and maintain its city street system.

FINANCING OPTIONS

Morrow County may require financing in order to accumulate the funds required to improve its transportation system. Financing allows the County to accrue debt in order to fund roadway improvements, which it then can pay back as revenue sources become available. This allows the County to initiate roadway improvements sooner or provide a local match to additional funding sources so that the improved roadway network can be used to attract new businesses and residents that should increase its tax base. There are two main types of financing available: general obligation bonds and revenue bonds.

General Obligation Bonds

General obligation bonds are bond issues that are repaid by a voter-approved property tax levy. Whether voters approve a property tax levy to fund repayment of the bond depends on the whether the project or projects are perceived as being a benefit to a majority of the county residents.

Revenue Bonds

On the other hand, revenue bonds are sold by a jurisdiction and repaid with “revenue” from an enterprise fund. The most common examples are for sewer or water facilities where service rates are used to repay the bond. The bond's rating and interest rate is generally based on the reliability of the revenue source. In Morrow County's case, revenue bonds could be sold to fund improvements with a portion of vehicle fuel tax revenues used as the method of repayment.

CHAPTER 8 REGULATIONS AND ORDINANCE MODIFICATIONS

INTRODUCTION

The Transportation Planning Rule (TPR), OAR Section 660-012, requires that each jurisdiction in the state of Oregon adopt a transportation system plan (TSP) and make amendments to its land use regulations that support the implementation of the plan. *Appendix E* contains changes to the Morrow County Subdivision Code and Zoning Ordinance that are recommended to implement the TSP and conform to the TPR. This chapter provides a brief summary of the sections with recommended changes.

RECOMMENDED MODIFICATIONS TO THE MORROW COUNTY SUBDIVISION CODE SECTION 8.020 (STREETS)

- Section 8.020.B Design and Construction Approval requires that plans for roadways to be constructed as part of a development, and subsequently dedicated as public right-of-way, to be signed by a registered professional engineer. The County Public Works Department is responsible for inspection of new roads proposed to be dedicated as public right-of-way.
- Section 8.020.C Minimum Right-of-Way and Roadway Width summarizes the minimum roadway dimensions. This section also notes that additional right-of-way may be required to conform to applicable design standards (e.g., where slopes, soil types or other issues require additional right-of-way to meet design standards).
- Section 8.020.R Access Management incorporates current State of Oregon standards for access onto state facilities. It addresses minimum distances required between new public or private accesses onto state highways. Interchange area access management standards are incorporated by reference. Proposed County road access management standards for minimum distance between access points on County arterials, collectors and local roads are summarized.
- Section 8.020.T Driveway Standards recommends minimum and maximum driveway widths. Section 8.020.T also calls out driveway design standards, including a requirement for a paved apron at any new connection from an unpaved facility onto a paved County roadway.
- Section 8.020.AB Private Roadways Outside Urban Growth Boundaries lists requirements applying to new private roads constructed outside existing urban growth boundaries.

RECOMMENDED MODIFICATIONS TO THE MORROW COUNTY ZONING ORDINANCE, ARTICLE 4 (SUPPLEMENTARY PROVISIONS)

- Section 4.010 Access includes County access permit requirements; minimum access spacing requirements on state highways, in interchange influence areas, and on County roads; and the mechanism for interim access when minimum access spacing standards cannot be met.
- Section 4.020 Sight Distance replaces sections 4.020 and 4.030 in the existing County zoning code.
- Section 4.035 Permit Requirements adds consent to participate agreement to the permit requirements for development that access local roads that are not improved to County standards.
- Section 4.040 Off-Street Vehicle Parking Requirements includes minor modifications to off-street parking requirements, based on updated off-street parking data published by the Institute of Transportation Engineers.
- Section 4.045 Bicycle Parking Requirements (new) applies to development applications within Urban Growth Boundaries, to comply with the Transportation Planning Rule.
- Section 4.050 Off-Street Parking and Loading includes two new provisions. The first addresses parking designated for people with disabilities, and the second allows a reduction for required parking for specific residential land uses.
- Section 4.060 Design and Improvement Standards – Parking Lots exempts single-family and duplex dwellings from existing requirements for durable parking surfaces and visibility screens adjacent to parking areas. A revised table of off-street parking design standards is recommended to constrain the options for off-street parking angles.
- Section 4.070 Sign Limitations and Regulations is amended to require sign placement at any access point to meet sight distance standards, and sign placement along Scenic Byways or other similarly designated roadways to meet applicable sign placement criteria.
- Section 4.160 Standards for Transportation Improvements is amended to address no-spray zones, cattle guard placement, and pavement apron requirements at the intersection of gravel roads or driveways with paved County roads. Section 4.160 also includes recommended changes applying to construction of private streets outside Urban Growth Boundaries.
- Section 4.165 Site Plan Review (new) specifies clear and objective standards for ministerial review of development applications conducted without a public hearing.

CHAPTER 9 TRANSPORTATION PLANNING RULE COMPLIANCE

INTRODUCTION

In 1991, the Oregon Transportation Planning Rule (TPR), OAR 660-12-045, was adopted by the Oregon Department of Land Conservation and Development (DLCD) with concurrence of the Oregon Department of Transportation (ODOT). The TPR requires that all jurisdictions adopt an approved transportation system plan (TSP). This section states each of the required TSP elements and shows how the Morrow County TSP meets each applicable requirement of the TPR as of March 15, 2005.

COMPLIANCE ANALYSIS

The TPR requires that jurisdictions take four basic actions to implement their TSP. These include the following:

- Amend land use regulations to reflect and implement the TSP.
- Clearly identify which transportation facilities, services, and improvements are allowed outright, and which will be conditionally permitted or permitted through other procedures.
- Adopt land use or subdivision ordinance measures consistent with applicable federal and state requirements to protect transportation facilities, corridors, and sites for their identified functions, including access management and control, protection of public use airports, coordinated review of land use that could affect transportation facilities, conditional approval of development to minimize transportation impacts, regulations regarding notice, regulations to ensure consistency with the TSP.
- Adopt land use or subdivision regulations to provide safe and convenient pedestrian and bicycle circulation and bicycle parking, and ensure that new development provides on-street streets and accessways that provide reasonably direct routes for pedestrian/bicycle travel.
- Establish street standards that minimize pavement width and total right-of-way.

Morrow County has made changes to several areas to accomplish these requirements. The County has adopted a set of policies that were created as part of the development of the original TSP, which have been reviewed and modified as appropriate for the 2005 TSP (Chapter 2). Procedures to implement these policies have also been developed (Chapter 6). These procedures include new road standards, a traffic impact analysis (TIA) procedure, and a clarification of the approval process for development.

Table 9-1 shows an analysis of the requirements and how they have been met.

TABLE 9-1 TPR COMPLIANCE ANALYSIS	
TPR Required Elements	Morrow County 2005 TSP
<p>1. Amend land use regulations to reflect and implement the TSP.</p>	<ul style="list-style-type: none"> • Land use goals and policies are included in Chapter 2 of the TSP that support and protect future transportation corridors. • Recommended changes to the county zoning regulations and land use ordinance are contained in Appendix E of the TSP including modified land use regulations and development approval processes. • A TSP recommendation for guidelines for traffic impact studies is included in Appendix E.
<p>2. Clearly identify which transportation facilities, services and improvements are allowed outright and which will be conditionally permitted or permitted through other procedures.</p>	<ul style="list-style-type: none"> • Coordination/Process Policies 1.5-1.8 identify measures to plan, schedule, and fund projects through the capital improvement program. • Changes to the county zoning regulations and land use ordinance have been recommended as contained in Appendix E of the TSP.
<p>3. Adopt land use or subdivision ordinance measures consistent with applicable federal and state requirements to protect transportation facilities, corridors, and sites for their identified functions, to include the following topics:</p> <ul style="list-style-type: none"> • Access and management control. • Protection of public use airports. 	<ul style="list-style-type: none"> • Land Use Policy 2.4 requires new developments provide appropriate access to county roadways. • Land Use Policy 2.9 requires the preparation of an access management plan and use of ODOT standards in the interim. • Modifications to county access control standards are included in Appendix E. • The County has adopted Goal 7 and Air Transportation Policies 7.3, 7.5, and 7.6 to protect public use airports.

TABLE 9-1 TPR COMPLIANCE ANALYSIS	
TPR Required Elements	Morrow County 2005 TSP
<ul style="list-style-type: none"> • Coordinated review of land use decisions potentially affecting transportation facilities. 	<ul style="list-style-type: none"> • Coordination Policies 1.1, 1.2, 1.3 and 1.4 call for the coordination of planning activities with the cities, Port of Morrow, adjacent counties, ODOT, and DLCD.
<ul style="list-style-type: none"> • Conditions to minimize development impacts to transportation facilities. • Regulations to provide notice to public agencies providing transportation facilities and services of land use applications that potentially affect transportation facilities. 	<ul style="list-style-type: none"> • Land Use Policy 2.2 requires the identification and reservation of future transportation corridors. • Land Use Policy 2.5 requires new development to identify impacts and provide mitigation. • Land Use Policy 2.6 calls for the dedication of right-of-way were appropriate. • Traffic impact analyses are required for all developments creating more than 400 average daily trips. • Coordination Policies 1.1, 1.2, 1.3 and 1.4 call for the coordination of planning activities with the cities, Port of Morrow, adjacent counties, ODOT, and DLCD.
<p>4. Adopt land use or subdivision regulations to provide safe and convenient pedestrian and bicycle circulation and bicycle parking, and ensure that new development provides on-street streets and accessways that provide reasonably direct routes for pedestrian/bicycle travel.</p>	<ul style="list-style-type: none"> • Roadway System Policy 5.2 requires the development of new roadways to meet the revised standards that provide improved bicycle and pedestrian facilities. • Bicycle, Pedestrian, Equestrian, and Transit Policy 6.1 calls for the development of new roadway design standards to accommodate bicycle, pedestrian and equestrian travel • Bicycle, Pedestrian, Equestrian, and Transit Policy 6.3 encourages the development of multi-use paths and trails. • Roadway design standards are included in the TSP in Chapter 6, and in the implementation ordinances in Appendix E.
<p>5. Establish street standards that minimize pavement width and total right-of-way.</p>	<ul style="list-style-type: none"> • County road standards are included in the TSP in Chapter 6 and Appendix E that represent minimum design standards

Appendix A
Open House Comment Summaries



Morrow County Transportation System Plan Update

Public Meeting 1 – Meeting Minutes

Meeting Date November 30, 2004 6:00 Stokes Landing, Irrigon

Issues Discussed-

After lighting the Hanukah Menorah, the meeting commenced.

Comments raised include:

- 1 Several traffic volumes on map appear to be wrong, particularly along Hwy 74
The future and existing volumes are the same. The consultants will review and correct any errors.
- 2 People asked how improvement priorities are set.
Burke O'Brien and Karla answered that they are set via a Road Committee and Public Works. Projects are also recommended to get on ODOT STIP List
- 2 Other transportation modes were discussed.
One person brought up equestrian needs- many residents are riding their horses to the fairground and urban locations. One of the rest stops along I-84 has an exercise area for horses. There are also trails along highways for horses.
- 3 Several people said that the Olson Road overpass should be a top priority project.
Burke said that the estimate for this project was \$9 million. It will be placed on the County TSP and is listed in the City of Boardman TSP.
- 4 Related to the Olson Rd overpass, one woman said that she and others were in favor of having some art on the overpass similar to the Dalles to help define the community. ODOT said that they are working with many communities on this issue and that if this project proceeds, there will be several public meetings to gather input about this.
- 5 Tillamook Cheese is going ahead with an expansion that will have an additional traffic impact.
6. **Kunze Road Realignment-**
One realignment project was just completed this past fall- to correct the alignment with Main Street.
Burke O'Brien then discussed that he has funding from ODOT (\$2.7 Mil) in 2006 STIP and Fed transportation bill to reconstruct Kunze from Tower to South Main. He said that since this project is now over funded some of the funds would be diverted over to Depot Lane improvements
- 7 People were concerned about safety at Cutsforth Corner and were surprised at the low

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MANAGEMENT

DEVELOPMENT
STRATEGIES

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number of crashes.

Howard Stein commented that CTS had visited the site They will make safety recommendations here and at other locations. Crash analysis is based on reported crashes. Individuals running off the road are not included in the crash data.

- 8 OTIA/Regional Transportation Committee-
There was discussion that Morrow county did very well with the new round of this program, but the funds were grants that had to be paid back, even by local jurisdictions.
- 9 Trucks- There was discussions that truck traffic in eastern OR is increasing and that the loads are heavier compared to other portions of the state justifying better funding.
- 10 Equity Funding-Burke said that he recently got hold of an objective study that reviewed how ODOT allocated funding to the counties/local agencies. This study concluded after examining several ways to measure it, was that counties in eastern OR were not funded adequately to meet their basic maintenance needs (and in relation to their contribution/roads) compared to counties in the Willamette Valley. The valley counties receive more funds than they need for maintenance and therefore have money for capital improvement projects.
Burke said he would forward a copy of this study to CTS.

A survey was distributed. The attendees were asked to fill it out and return it to Joyce Jackson.

All attempts were made to accurately reflex the context of the meeting. Please make note of any errors or omissions for inclusion in this record.

Ideas often come to mind after the meeting. Please mail, email, or telephone your additional comments to Joyce Jackson at – Mitchell Nelson Group- 2116 NW Wilson Street – Portland, OR 97210 - 503 225-0822 x 5 - jlj@mngi.com

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Morrow County Transportation System Plan Update

Public Meeting 2 – Meeting Minutes

Meeting Date February 7, 2005 6:00 Stokes Landing, Irrigon

Issues Discussed-

A survey was distributed. The attendees were asked to fill it out and return it to Joyce Jackson.

LAND USE &
COMMUNITY
PLANNING

The public was welcomed to the meeting. They were asked to look at the plans and note any concerns about the county transportation system that they might have.

Howard Roll then reviewed the project list and opened up the meeting for questions.

LANDSCAPE
ARCHITECTURE

Community member reiterated their desire to have artwork that represents the region incorporated into the design of a new overpass.

PROJECT
MANAGEMENT

Cheryl Jarvis-Smith explained that when the overpass project begins there will be several public involvement sessions.

DEVELOPMENT
STRATEGIES

Citizens identified the intersection of Bombing Range Road and Highway 207 as being a dangerous intersection. The intersection has several problems. The roads meet at an acute angle and that, combined with the topography, greatly limits the site distance from Bombing Range Road to the north on Highway 207. There is a bridge immediately to the right of Bombing Range Road on Hwy 207, which provides a very small turning radius for a right turn onto Hwy 207. This forces vehicles into opposing lanes to make the right (southerly) turn.

2116 NW WILSON
STREET

Emergency access points along Heritage trail should be provided to insure adequate access for emergency vehicles and staff

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OREGON 97210

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Citizens pointed out the dwindling pedestrian path along the new railroad over pass road. The overpass is in the City of Boardman. Barry Beyerle, Boardman Community Development Director, responded that he is aware of the problem and is hoping to improve the pedestrian situation by re-stripping the drive aisle to provide a wider pedestrian area.

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Appendix B
Road Information Database

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES										
Jurisdiction	Road Num	Road Name:	Milepost S	Milepost E	Federal Cl	Surface and Mileage	Right of Way	ADT	Remarks	County Cla
County	712	ALPINE, North of	0	0.48	RL	DIRT				RL
	641	BENGE SOUTH	0	1.97	RL	DIRT				RL
	548	DALZELL	0	0.89	RL	DIRT				RL
	580	EAST OF BOARDMAN-IONE RD	0	1.07	RL	DIRT				RL
	555	EIGHTMILE	0	2.41	RL	DIRT				RL
	539	LINDSTROM	0	2.03	RL	DIRT				RL
	513	NO NAME	0	0.96	RL	DIRT				RL
	549	NO NAME	0	0.88	RL	DIRT				RL
	610	NO NAME	0	1.83	RL	DIRT				RL
	634	NO NAME	0	1.3	RL	DIRT				RL
	650	NO NAME	0	1.06	RL	DIRT				RL
	664	NO NAME	0	2.24	RL	DIRT				RL
	744	NO NAME	0	2.01	RL	DIRT				RL
	768	NO NAME	0	1.75	RL	DIRT				RL
	674	TOLL ROCK	0	4.55	RL	DIRT				RL
	769	WARREN ST	0	0.08	RL	DIRT				RL
	573	WEST OF KECK CANYON	0	0.88	RL	DIRT				RL
	552		0	4.6	RL	DIRT				RL
	825		0	4.55	RL	DIRT				RL
	586	NO NAME	0	0.14	RL	DIRT				RL
	706	NO NAME	0	2.2	RL	DIRT 2.29				RL
	774	(HARMAN)	0	0.12	RL	GRAVEL				RL
	683	(Lundsford Canyon)Upper Willow	0	3.23	RL	GRAVEL				RL
	543	(MORGAN)	0	0.09	RL	GRAVEL				RL
	752	23RD ST	0	0.24	RL	GRAVEL				RL
	726	2ND WEST ST	0	0.32	RL	GRAVEL				RL
	835	3RD WEST ST	0	0.15	RL	GRAVEL				RL
	837	7TH WEST ST	0	0.44	RL	GRAVEL				RL
	538	ALBERT LINDSTROM	0	3.14	RL	GRAVEL				RL
	843	ARCHIE BALL	0	2.79	RL	GRAVEL				RL
	518	B/T MCNABB W & ZINTER	0	0.69	RL	GRAVEL				RL
	710	BECKET-PORCUPINE	0	2.27	RL	GRAVEL				RL
	641	BENGE NORTH	0	3.63	RL	GRAVEL				RL
	576	BERGEVIN	0	4.07	RL	GRAVEL				RL
	616	BERT PECK	0	2.21	RL	GRAVEL				RL
	703	BOARD CREEK	0	3.36	RL	GRAVEL				RL
	629	BOARDMAN CANAL	0	2.64	RL	GRAVEL				RL
	556	BUTTERFLY FLAT RNCH	0	0.33	RL	GRAVEL				RL
	795	CAMPBELL	0	4.02	RL	GRAVEL				RL
	697	CANYON	0	8.99	RL	GRAVEL				RL
	780	CHURCH ST	0	0.16	RL	GRAVEL				RL
	686	CLARK-RICE-BEACH	0	2.51	RL	GRAVEL				RL
	652	COYOTEATION RD	0	0.56	RL	GRAVEL				RL
	737	CUTSFORTH-BASE LINE	0	2.36	RL	GRAVEL				RL
	572	DALE BROWN	0	2.75	RL	GRAVEL				RL
	731	DOLVEN	0	1.35	RL	GRAVEL				RL
	687	ELY	0	0.98	RL	GRAVEL				RL

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES										
Jurisdiction	Road Num	Road Name:	Milepost S	Milepost E	Federal Cl	Surface and Mileage	Right of Way	ADT	Remarks	County Cla
County	671	EUBANKS	0	2.8	RL	GRAVEL				RL
	553	EWING	0	0.87	RL	GRAVEL				RL
	771	FK WILLOW CR	0	4	RL	GRAVEL				RL
	535	FOURMILE CANYON	0	1.9	RL	GRAVEL				RL
	811	FREEZEOUT RIDGE	0	4.12	RL	GRAVEL				RL
	626	FROM STATE 207 TO MILLER'S	0	1.68	RL	GRAVEL				RL
	523	GABBERT-EIGHTMILE	0	4.29	RL	GRAVEL				RL
	708	HARDMAN RIDGE	0	2.45	RL	GRAVEL				RL
	803	HISLER to JOHNSON GRADE	0	4.21	RL	GRAVEL				RL
	558	HUGHES-HIRL	0	1.94	RL	GRAVEL				RL
	550	IMMIGRANT	0	12.21	RL	GRAVEL				RL
	526	JOHNSON GRADE	0	4.83	RL	GRAVEL				RL
	688	KEMP	0	2.5	RL	GRAVEL				RL
	813	KENNY	0	9.95	RL	GRAVEL				RL
	602	KENNY RANCH (SANDHOLLOW)	0	2.51	RL	GRAVEL				RL
	511	KINCAID-HOLTZ	0	4.92	RL	GRAVEL				RL
	607	KINCAID-HOLTZ	0	1	RL	GRAVEL				RL
	692	KLINGER-DOHERTY	0	3.59	RL	GRAVEL				RL
	762	LAWRENCE-JONES	0	1.29	RL	GRAVEL				RL
	524	LIBERTY SCHOOL	0	1	RL	GRAVEL				RL
	509	LOVGREN	0	1.51	RL	GRAVEL				RL
	755	LOWER SAND HOLLOW	0	0.9	RL	GRAVEL				RL
	764	MCELLIGOTT	0	2.18	RL	GRAVEL				RL
	557	MCLAUGHLIN	0	2.41	RL	GRAVEL				RL
	520	MCNABB WEST	0	7.39	RL	GRAVEL				RL
	696	MELVILLE	0	4.04	RL	GRAVEL				RL
	639	MORGAN CEMETERY	0	0.28	RL	GRAVEL				RL
	653	NELSON	0	1.56	RL	GRAVEL				RL
	525	NO NAME	0	2.03	RL	GRAVEL				RL
	560	NO NAME	0	2	RL	GRAVEL				RL
	590	NO NAME	0	2.19	RL	GRAVEL				RL
	617	NO NAME	0	0.78	RL	GRAVEL				RL
	677	NO NAME	0	1.48	RL	GRAVEL				RL
	720	NO NAME	0	0.14	RL	GRAVEL				RL
	738	NO NAME	0	3.23	RL	GRAVEL				RL
	740	NO NAME	0	0.75	RL	GRAVEL				RL
	743	NO NAME	0	0.65	RL	GRAVEL				RL
	595	NOLAN	0	5.99	RL	GRAVEL				RL
	544	NR HOLTZ-KINCAID	0	0.5	RL	GRAVEL				RL
	734	PATTERSON FERRY ELEV	0	0.12	RL	GRAVEL				RL
	583	PETERSON	0	0.65	RL	GRAVEL				RL
	647	PIEPER CANYON	0	4.37	RL	GRAVEL				RL
	672	RHEA	0	0.83	RL	GRAVEL				RL
	642	SAM BOARDMAN AVE	0	0.63	RL	GRAVEL				RL
	713	SHOBE CANYON	0	4.92	RL	GRAVEL				RL
	736	Stock Dr to Hwy 207	0	0.38	RL	GRAVEL				RL
	614	STOCK DRIVE	0	4.4	RL	GRAVEL				RL

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES										
Jurisdiction	Road Num	Road Name:	Milepost S	Milepost E	Federal Cl	Surface and Mileage	Right of Way	ADT	Remarks	County Cla
County	676	STOCK DRIVE	0	5.04	RL	GRAVEL				RL
	567	SUMNER	0	2.12	RL	GRAVEL				RL
	515	SWANSON	0	2.51	RL	GRAVEL				RL
	802	TEWS RD	0	0.65	RL	GRAVEL				RL
	827	TONY VEY	0	4.37	RL	GRAVEL				RL
	760	V DALZELL	0	2.2	RL	GRAVEL				RL
	663	WELLS SPRING	0	4.39	RL	GRAVEL				RL
	582	WEST OF 809 (ELLA)	0	0.62	RL	GRAVEL				RL
	770	WILLOW ST	0	0.24	RL	GRAVEL				RL
	571	WYLAND	0	9.92	RL	GRAVEL				RL
	512	ZINTER	0	2.87	RL	GRAVEL				RL
	534		0	1.84	RL	GRAVEL				RL
			0	3.23	RL	GRAVEL				RL
	635	DEADMAN HILL	0	7.48	RL	GRAVEL				RL
	792	DON KENNY	0	0.64	RL	GRAVEL				RL
	533	PORCUPINE	0	2.24	RL	GRAVEL				RL
	541	STEFANI	0	2.37	RL	GRAVEL				RL
	806	(MORGAN)	0	0.21	RL	GRAVEL .01				RL
	684	FK WILLOW CR	0	4	RL	GRAVEL .10				RL
	845	HISLER	0	9.75	RL	GRAVEL .22 DIRT 9.53				RL
	636	LINDSAY WEST	0	0.73	RL	GRAVEL .26 DIRT .47				RL
	565	MCCABE	0	2.04	RL	GRAVEL .55 DIRT 2.39				RL
	754	15TH ST	0	0.7	RL	GRAVEL .62				RL
	722	OREGON AVE	0	1.31	RL	GRAVEL .67				RL
	606	BLUE MTN RANCH	0	1.34	RL	GRAVEL .82 DIRT .52				RL
	516	IONE RADIO TOWER	0	1.47	RL	GRAVEL .86				RL
	844	ARBUCKLE MTN	0	5.34	RL	GRAVEL .86 DIRT 4.48				RL
	551	TEWS	0	2.53	RL	GRAVEL .92 DIRT 1.61				RL
	510	BAKER-PAUL TEWS	0	2.5	RL	GRAVEL 1.01 DIRT 2.50				RL
	517	M.BAKER SOUTH	0	1.5	RL	GRAVEL 1.05				RL
	633	CAMAS PRAIRIE	0	3.93	RL	GRAVEL 1.75 DIRT 2.18				RL
	761	IRRIGON	0	4.21	RL	GRAVEL 2.20				RL
	638	IONE-BOARDMAN	0	2.29	RL	GRAVEL 2.29				RL
	507	LUNDELL	0	2.44	RL	GRAVEL 2.44				RL
	819	HUGHES-HIRL	0	5.4	RL	GRAVEL 2.51 DIRT 2.89				RL
	804	MORPHINE SPRING	0	5.64	RL	GRAVEL 2.58 DIRT 3.06				RL
			3.4	10.04	RL	GRAVEL 2.94 DIRT 3.70				RL
	705	SPRING HOLLOW	0	10.44	RL	GRAVEL 3.09 DIRT 7.35				RL
	601	CAMAS PRAIRIE	0	5.31	RL	GRAVEL 3.30 DIRT 2.01				RL
	605	DAVE RIETMANN	0	6.04	RL	GRAVEL 4.06 DIRT 1.98				RL
	637	EMMA WHITE (BECHDOLT)	0	8.5	RL	GRAVEL 4.44 DIRT 4.06				RL
	799	RITTER	0	11.6	RL	GRAVEL 4.64 DIRT 6.36				RL
	569	DALE BROWN	0	5.41	RL	GRAVEL 4.73 DIRT .68				RL
	528	BELL CANYON	0	5.85	RL	GRAVEL 4.81				RL
	585	BARLOW CANYON	0	4.88	RL	GRAVEL 4.88				RL
	721	WILSON CREEK	0	4.98	RL	GRAVEL .67				RL
	514	AIRPORT	0	0.4	RL	PAVED				RL

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES										
Jurisdiction	Road Num	Road Name:	Milepost S	Milepost E	Federal Cl	Surface and Mileage	Right of Way	ADT	Remarks	County Cla
County	655	BASE LINE	0	9.36	RL	PAVED				RL
	716	COUNTY LINE TO UMATILLA	0	0.41	RL	PAVED				RL
	651	CUTSFORTH-BASE LINE	0	2.59	RL	PAVED				RL
	599	JORDAN GRADE	0	1.63	RL	PAVED				RL
	739	KILKENNY	0	2.93	RL	PAVED				RL
	817	KNIGHTON	0	0.47	RL	PAVED				RL
	767	M BAKER	0	2.62	RL	PAVED				RL
	680	MILLER-CUTSFORTH	0	1.62	RL	PAVED				RL
	578	MYERS	0	11.15	RL	PAVED				RL
	689	OLSON	0	0.75	RL	PAVED				RL
	818	ORDNANCE	0	0.69	RL	PAVED				RL
	594	PAUL BROWN (BUNKER HILL)	0	3.59	RL	PAVED				RL
	657	PETERS	0	1.52	RL	PAVED				RL
	561	RIPPEE	0	0.74	RL	PAVED				RL
	733	SAND HOLLOW	0	9.45	RL	PAVED				RL
	741	SAND HOLLOW	0	4.08	RL	PAVED				RL
	527	SOCIAL RIDGE	0	4.78	RL	PAVED				RL
	562	TOM CAMP	0	1.26	RL	PAVED				RL
	504	TURNER	0	2.17	RL	Paved				RL
	718	IDAHO AVE	0	0.52	RL	PAVED				RL
	542	FOURMILE TO CECIL	0	3.18	RL	PAVED .10 GRAVEL 3.08				RL
	531	HEPPNER HIGH SCH	0	0.24	RL	PAVED .14				RL
	789	HANNA-ARBUCKLE	0	15.57	RL	PAVED .20 GRAVEL 15.37				RL
	588	STRAWBERRY EAST	0	7.87	RL	PAVED .20 GRAVEL 3.49				RL
	530	ELY CANYON	0	2.96	RL	PAVED .27 GRAVEL 2.69				RL
	766	OLD ALIGNMENT	0	1.54	RL	PAVED .31 GRAVEL 1.23				RL
	505	Morrow -Gilliam Co Line	0	2.56	RL	PAVED .35 GRAVEL 2.21				RL
	500	MCELLIGOTT	0	1.93	RL	Paved .40, Gravel 1.53				RL
	579	JOHN BERGSTROM	0	3.33	RL	PAVED .48 GRAVEL 2.85				RL
	620	AIRPORT	0	7.6	RL	PAVED .50 GRAVEL 7.10				RL
	537	MORGAN	0	4.61	RL	PAVED .50 GRAVEL 4.11				RL
	506	BILL BERGSTROM	0	4.02	RL	PAVED .51 GRAVEL 2.92				RL
	747	MILLER LN	0	1.34	RL	PAVED .52 GRAVEL .82				RL
	529	M BAKER NORTH TO SOUTH	0	2.66	RL	PAVED .52 GRAVEL 2.14				RL
	502	WARREN	0	2.28	RL	Paved .59, Gravel 1.69				RL
	816	SLAUGHTER	0	0.71	RL	PAVED .63 GRAVEL .08				RL
	645	CEMETERY HILL (LEXINGTON)	0	2.62	RL	PAVED .75 GRAVEL 1.65				RL
	723	DEE COX	0	4.98	RL	PAVED .77 GRAVEL 4.21				RL
	508	ART DALZELL- RANSOM	0	5.23	RL	PAVED 1. DIRT 4.23				RL
	698	BARCLAY	0	4.39	RL	PAVED 1.06 GRAVEL 3.33				RL
	777	4TH WEST ST	0	2.26	RL	PAVED 1.08 GRAVEL .79				RL
	622	POINTER	0	4.63	RL	PAVED 1.48 GRAVEL 3.15				RL
	656	PAUL SMITH	0	1.58	RL	PAVED 1.58				RL
	724	WASHINGTON AVE	0	2.37	RL	PAVED 1.58				RL
			0	2.37	RL	PAVED 1.58				RL
	532	ELY CANYON	0	4.89	RL	PAVED 1.66 GRAVEL 3.23				RL
	702	ALPINE-NELSON	0	4.57	RL	PAVED 2. GRAVEL 2.57				RL

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES										
Jurisdiction	Road Num	Road Name:	Milepost S	Milepost E	Federal Cl	Surface and Mileage	Right of Way	ADT	Remarks	County Cla
County	643	MEADOWBROOK FARM	0	3.45	RL	PAVED 2.02 GRAVEL 1.43				RL
	735	JERRY DOUGHERTY	0	10.13	RL	PAVED 2.13 GRAVEL 8.				RL
	536	MORGAN EAST	0	6.17	RL	PAVED 2.65 GRAVEL 3.52				RL
	707	HALE RIDGE	0	8.77	RL	PAVED 3.04 GRAVEL 5.73				RL
	778	LITTLE BUTTER CR	0	9.91	RL	PAVED 4.18 GRAVEL 5.73				RL
	577	EIGHTMILE	0	10.38	RL	PAVED 4.91 GRAVEL 5.47				RL
	719	STINGEL CANYON	0	13.05	RL	PAVED 9.49 GRAVEL 3.21				RL
	783	2ND ST	0	0.24	RL					RL
	784	3RD ST (HARDMAN)	0	0.1	RL					RL
	909	7TH WEST ST	0	0.81	RL					RL
	908	8TH WEST ST	0	2.18	RL					RL
	927	ALPINE	0	3.94	RL					RL
	931	ALPINE-NELSON	0	0.29	RL					RL
	921	BARAK-MARTIN	0	4.53	RL					RL
	922	BASE LINE-LINDSAY	0	3.02	RL					RL
	873	BERGSTROM	0	0.57	RL					RL
	849	BROWN PRAIRIE	0	11.13	RL					RL
	874	CARLSON	0	2.75	RL					RL
	932	D O NELSON	0	1.42	RL					RL
	890	FALER	0	0.58	RL					RL
	3017	FREEZEOUT RIDGE	0	8.5	RL					RL
	960	FREEZEOUTWAY DR	0	0.37	RL					RL
	848	FRENCH	0	4.91	RL					RL
	852	GURDANE	0	8.88	RL					RL
	850	HALE RIDGE	0	1.8	RL					RL
	591	HARDMAN CEMETERY	0	0.95	RL					RL
	3005	HIGHVIEW CEM	0	0.36	RL					RL
	923	JUNIPER CANYON	0	5.91	RL					RL
	857	KINCAID-HOLTZ	0	4.68	RL					RL
	936	LAUREL	0	0.36	RL					RL
	924	LLOYD MORGAN	0	3.8	RL					RL
	906	NEVADA, 3RD AVE	0	1.28	RL					RL
	929	North of Alpine	0	1.02	RL					RL
	821	NORTH off BIG BUTTER CREEK	0	3.38	RL					RL
	894	OLSON	0	0.59	RL					RL
	911	PATERSON FERRY	0	1.6	RL					RL
	972	RIPPEE	0	0.57	RL					RL
	902	ROOT LN	0	1.01	RL					RL
	904	SLAUGHTER	0	1	RL					RL
	901	TATON	0	2.65	RL					RL
	3003	TOM ST	0	0.15	RL					RL
	3002	W. MAIN ST, lone	0	0.96	RL					RL
	910	WASHINGTON AVE	0	1.19	RL					RL
	781	WATER ST	0	0.13	RL					RL
	782	WATER ST	0	0.15	RL					RL
			0.8	1.5	RL					RL
			6.19	6.22	RL					RL

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES										
Jurisdiction	Road Num	Road Name:	Milepost S	Milepost E	Federal Cl	Surface and Mileage	Right of Way	ADT	Remarks	County Cle
			2.8	8.45	RL					RL
			0.06	0.7	RL					RL
			2.33	5.01	RL					RL
	714		0	0.11	RL					RL
	775		0	2.73	RL					RL
	786		0	0.07	RL					RL
	856		0	4.9	RL					RL
	900		0	0.93	RL					RL
	913		0	0.21	RL					RL
	925		0	1.44	RL					RL
			0.85	11.38	RL					RL
			1.02	1.98	RL					RL
	3013		0	0.6	RL					RL
	3015		0	1.6	RL					RL
	673	TUPPER	0	3	RMiC	GRAVEL		40-60		
	717	VAN SCHOIACK	0	2.77	RMiC	GRAVEL		40		
	570	BUTTERMILK CANYON	0	5.94	RMiC	GRAVEL		40		
	685	KINZUA	0	2.33	RMiC	GRAVEL 2.03 DIRT .30		40-66 (EASE.)		
			4.02	10.55	RMiC	GRAVEL 6.53				
	630	JUNIPER	0	7.47	RMiC	PAVED		40		
	793	LITTLE BUTTER CR	0	17.73	RMiC	PAVED		40		
	729	TURNER	0	1.19	RMiC	PAVED		40 (EASE.)		
	587	MORGAN	0	1.85	RMiC	PAVED .12 GRAVEL 1.73		40		
	704	RIVERSIDE AVE	0	0.06	RMiC	PAVED .20		50		
	711	REDDING	0	2.33	RMiC	PAVED 1.10 GRAVEL 3.91		40		
	612	FULLER CANYON	0	8.35	RMiC	PAVED 2.29 GRAVEL 6.06		40		
			4.88	7.24	RMiC	PAVED 2.36				
	581	BRENNER CANYON	0	3.4	RMiC	PAVED 3.40		40		
	540	BAKER EAST-WEST	0	0.8	RMiC	PAVED 3.82 GRAVEL 5.88		40		
	589	VALBY	0	7.81	RMiC	PAVED 4.85 GRAVEL 2.95		40		
	608	UPPER RHEA CR (PORCUPIN	0	19.78	RMiC	PAVED 4.90 GRAVEL 7.14 DIRT 7.74		40	145 North of Marter Ln.	
			2.29	2.8	RMiC	PAVED 6.16				
	785	COURT ST (Balm Fork)	0	7.3	RMiC	PAVED 6.89		40		
	809	H STREET, IONE (ELLA ROAD)	0	9.43	RMiC	PAVED 7.11 GRAVEL 2.23		40-60		
	966	CLARKS CANYON (LEXINGTON MAP	0	16.26	RMiC			40-60		
	847	WESTERN ROUTE	0	3.03	RMiC			40		
			1.5	6.19	RMiC					
			6.22	9.72	RMiC					
			2.37	6.37	RMiC					
			3.23	5.57	RMiC					
			4.92	7.1	RMiC					
	3004		0	1.02	RMiC			40 (EASE.)		
	670	SUNFLOWER FLAT	0	10.1	RMaC	GRAVEL		40-60		
	798	WILLOW CREEK (SHAW GRADE)	0	1.25	RMaC	GRAVEL		100-110		
	668	BIG BUTTER CR	0	3.25	RMaC	PAVED				
	746	BIG BUTTER CR.	0	9.95	RMaC	PAVED		40		
	759	BOMBING RANGE	0	7.32	RMaC	PAVED		60-155		

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES										
Jurisdiction	Road Num	Road Name:	Milepost S	Milepost E	Federal Cl	Surface and Mileage	Right of Way	ADT	Remarks	County Cla
County	810	BOMBING RANGE	0	12.36	RMaC	PAVED	100-150	1060	South of I-84	
	546	CECIL	0	2.69	RMaC	PAVED	40			
	603	COAL MINE HILL/DITCH CREEK (WE	0	2.37	RMaC	PAVED	40			
	728	FRONTAGE	0	5.26	RMaC	PAVED	60 (EASE.)			
	681	GOOSEBERRY-IONE (MARKET)	0	19.42	RMaC	PAVED	40-80	225	North of Marter Ln.	
	598	KUNZE	0	9.75	RMaC	PAVED	40	940		
	522	MCNAB WEST (OLEX)	0	5.67	RMaC	PAVED	40	125		
	693	RHEA CREEK (MARKET)	0	18.6	RMaC	PAVED	60			
	678	WILLOW CR	0	18.65	RMaC	PAVED	40-130	165		
	662	WILSON	0	4.17	RMaC	PAVED		1250	East of Main St.	
	584	SOUTH MAIN-KINCAID	0	1.53	RMaC	PAVED .50	80			
	669	ART DALZELL (RIDGE ROAD)	0	8.43	RMaC	PAVED 1.30 GRAVEL 7.13	40			
	559	HOMESTEAD	0	4.02	RMaC	PAVED 4.02	40	135	West of Pole Line Rd.	
	715	(UPPER) RHEA CREEK (BASEY CAN	0	7.56	RMaC	PAVED 4.19 GRAVEL 3.37	40	50		
	971	BOARDMAN-IRRIGON	0	0.85	RMaC		50-110			
	930	PATERSON FERRY	0	4.99	RMaC		60-100	180	North of US 730	
	930	PATERSON FERRY	0	4.99	RMaC		60-100	960	South of US 730	
	905	POLE LINE	0	6.05	RMaC		40	445		
			17.73	20.75	RMaC					
Federal	I-84	Columbia River Highway No. 2	149.5	167.6				13800	East of Main St.	
State	730	Columbia River Highway No. 2	167.6	178.7				7200	South of Irrigon	
	74	Heppner Highway No. 52	0	8.44				140	Morrow/Gilliam Co. line	
	74/207	Heppner Highway No. 52	36.4	45.9				1500	South of Lexington	
	74	Heppner Highway No. 52	45.9	72.7				180	Morrow/Umatilla Co. Line	
	207	Heppner-Spray Highway No. 321	0	24.7				170-330		
	207	Lexington-Echo Highway No. 320	0	19.9				760-1200		
Federal	I-84	Old Oregon Trail No. 6	167.6	177.1				11400	West of Paterson Ferry	
State	206	Wasco-Heppner Highway No. 300	54.9	73.3				80-170		
	206/207	Wasco-Heppner Highway No. 300	73.3	84.1				490-1300		
Compiled from Morrow Co. IRIS Database 2/4/97, updated for 2005 TSP.										
No information available for SW, parking, bicycle facilities, condition or actual width										

Appendix C
Roadway Standards

ROADWAY STANDARDS

INTRODUCTION

The following roadway standards were developed in conjunction with the Morrow County Public Works Department and follow the design standards set by the American Association of State Highway and Transportation Officials (AASHTO) and the Oregon Department of Transportation (ODOT). Enclosed are eight road standards that reflect the differing design and capacity needs within the County. Generally, roadways of a lower number represent a higher design standard.

- Rural Arterial I
- Rural Arterial II
- Rural Collector I
- Rural Collector II
- Rural Collector III
- Rural Access I
- Rural Access II
- Rural Gravel

RURAL ARTERIAL

Rural arterials are design for roadways where higher traffic volumes are common or along major truck corridors. This standard of road is characterized by long-wearing asphalt concrete pavement over a base of 10 to 18 inches of aggregate. Travel lanes for this standards are 12-feet wide and a minimum of 3 feet of shoulder is provided on each side of the roadway.

RURAL COLLECTOR

Rural collectors represent a second-level standard for road construction. Like rural arterials, rural collectors are paved using two to three inches of asphalt concrete, but provide only eight to nine inches of base aggregate. Travel lanes are still 12-feet wide, but shoulders can be narrow as one foot.

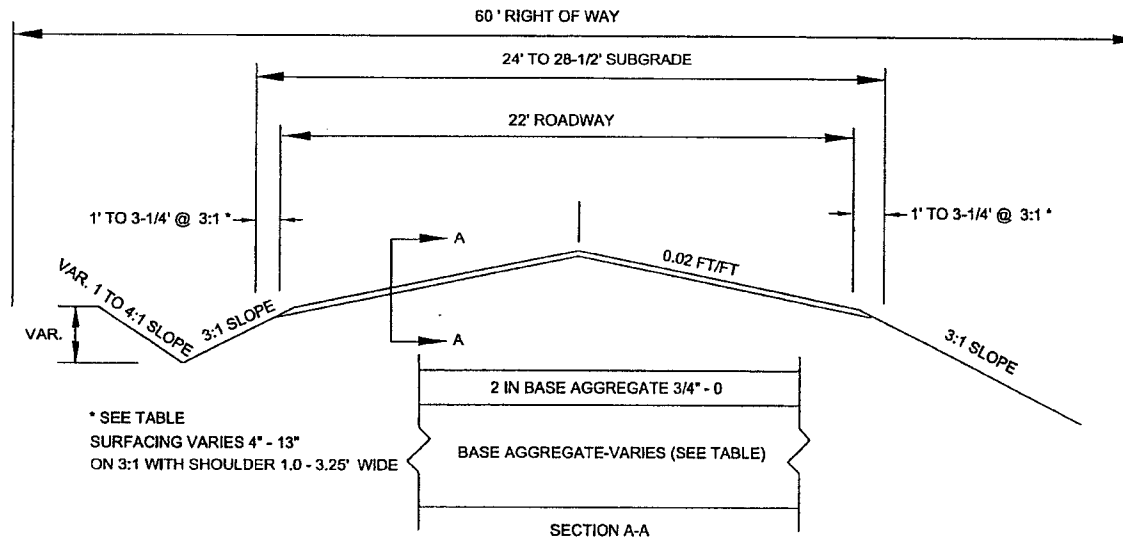
RURAL ACCESS

Rural access roads are lighter duty roads designed mainly for lower travel volumes and fewer truck trips. Rural Access I roads still use asphalt concrete paving, whereas Rural Access II

roads are designed to be unpaved gravel roadways. Base aggregate is only eight inches for this road standard. Travel lanes are specified at nine feet with one-foot shoulders on each side.

RURAL GRAVEL

Gravel roads serve a wide range of needs in Morrow County, and there are gravel roads that serve as higher-classification facilities. The Rural Gravel classification provides a range of cross-sections to accommodate varying needs.



RURAL GRAVEL

(GRAVEL ROAD FOR MULTIPLE FUNCTIONAL CLASSIFICATIONS)

ROADBED SOIL	TRAFFIC LEVEL	AGGREGATE BASE
VERY GOOD	HIGH (ADT > 100)	9 IN
	MEDIUM (ADT 50 - 100)	7 IN
	LOW (ADT < 50)	4 IN
GOOD	HIGH (ADT > 100)	11 IN
	MEDIUM (ADT 50 - 100)	9 IN
	LOW (ADT < 50)	5 IN
FAIR	HIGH (ADT > 100)	13 IN
	MEDIUM (ADT 50 - 100)	10 IN
	LOW (ADT < 50)	5 IN
POOR	HIGH (ADT > 100)	NOT RECOMMENDED
	MEDIUM (ADT 50 - 100)	15 IN
	LOW (ADT < 50)	9 IN
VERY POOR	HIGH (ADT > 100)	NOT RECOMMENDED
	MEDIUM (ADT 50 - 100)	NOT RECOMMENDED
	LOW (ADT < 50)	8 IN

1. ASPHALT CONCRETE (AC) PAVEMENT SHALL BE STANDARD DUTY, CLASS B PER ODOT STANDARD SPECIFICATIONS 00745.
2. BASE AGGREGATE SHALL MEET THE REQUIREMENTS OF ODOT STANDARD SPECIFICATIONS 02630
3. ALTERNATIVE PAVEMENT SECTIONS MAY BE PROPOSED BASED ON A SOILS INVESTIGATION AND PAVEMENT DESIGN BY A LICENSED ENGINEER. ALL CHANGES SHALL BE APPROVED BY THE COUNTY ROAD ENGINEER.
4. DITCH SECTIONS SHALL BE APPROPRIATE TO ACCOMMODATE MAXIMUM STORMWATER FLOW PER ODOT STANDARD SPECIFICATIONS 00745.
5. RIGHT-OF-WAY (RW) SHOWN IS MINIMUM. ADD'L RW OR EASEMENT MAY BE REQUIRED FOR CONSTRUCTION IN SLOPED AREAS.

NOT TO SCALE
JUNE 2005

SHEET 5 OF 5

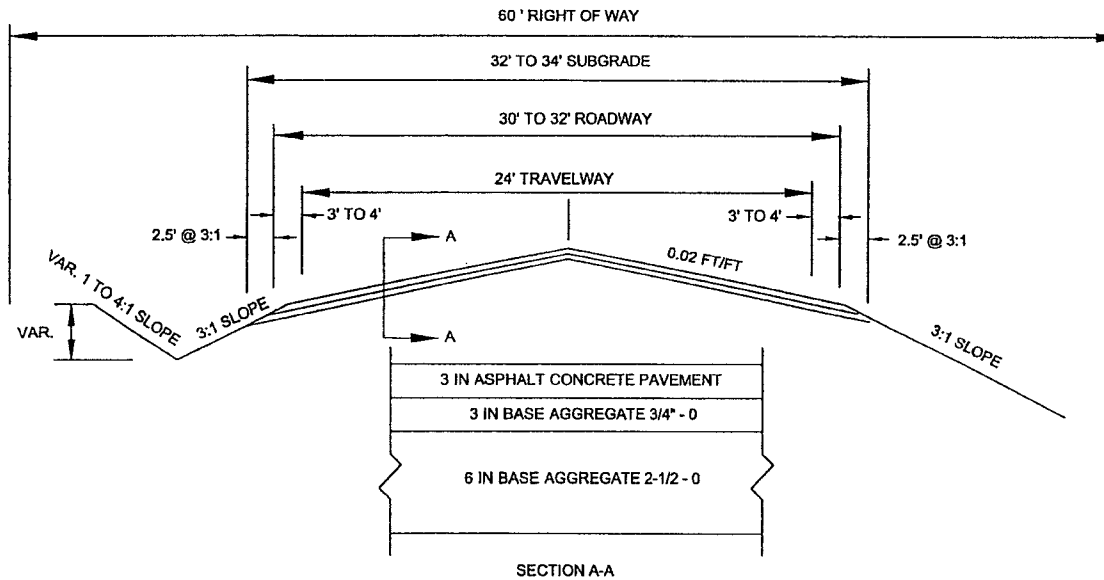


DATE	BY	DESCRIPTION

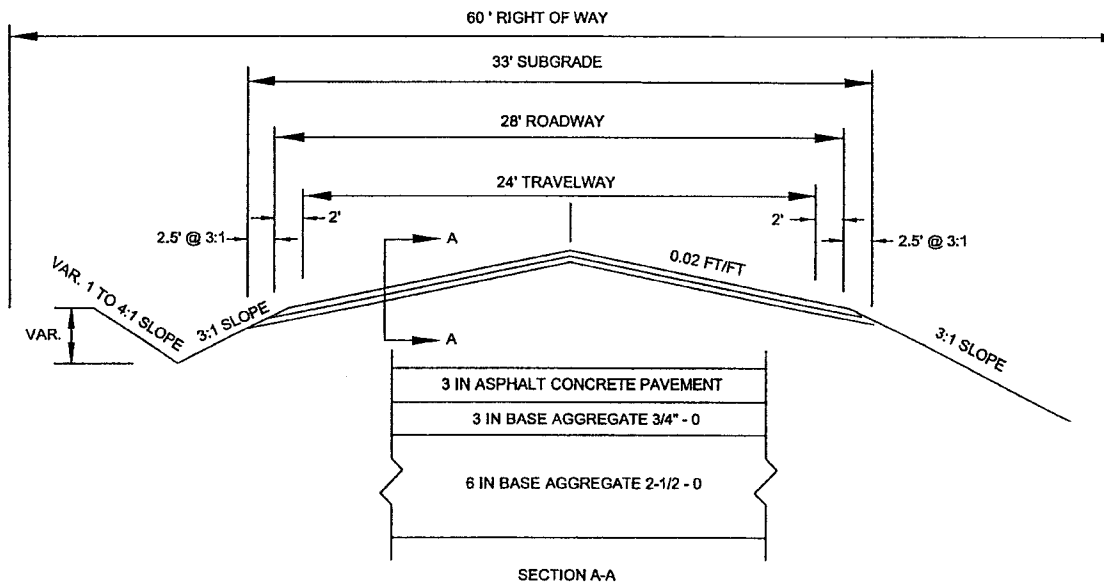
DRAWING TITLE
MORROW COUNTY
ROAD STANDARDS
TYPICAL SECTIONS

PROJECT
MORROW COUNTY TSP
UPDATE
OR04.055.T01

PREPARED FOR
ODOT/MORROW COUNTY



RURAL COLLECTOR I



RURAL COLLECTOR II

1. ASPHALT CONCRETE (AC) PAVEMENT SHALL BE STANDARD DUTY, CLASS B PER ODOT STANDARD SPECIFICATIONS 00745.
2. BASE AGGREGATE SHALL MEET THE REQUIREMENTS OF ODOT STANDARD SPECIFICATIONS 02630
3. ALTERNATIVE PAVEMENT SECTIONS MAY BE PROPOSED BASED ON A SOILS INVESTIGATION AND PAVEMENT DESIGN BY A LICENSED ENGINEER. ALL CHANGES SHALL BE APPROVED BY THE COUNTY ROAD ENGINEER.
4. DITCH SECTIONS SHALL BE APPROPRIATE TO ACCOMMODATE MAXIMUM STORMWATER FLOW PER ODOT STANDARD SPECIFICATIONS 00745.
5. RIGHT-OF-WAY (R/W) SHOWN IS MINIMUM. ADD'L R/W OR EASEMENT MAY BE REQUIRED FOR CONSTRUCTION IN SLOPED AREAS.

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JUNE 2005

SHEET 2 OF 5



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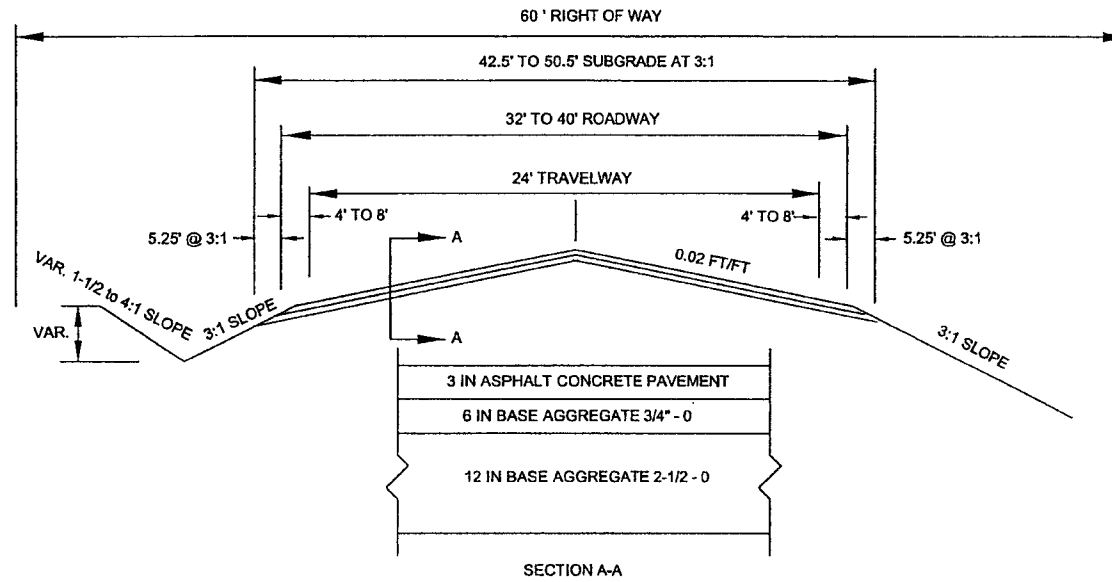
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REVISIONS	DESCRIPTION
NO. DATE	

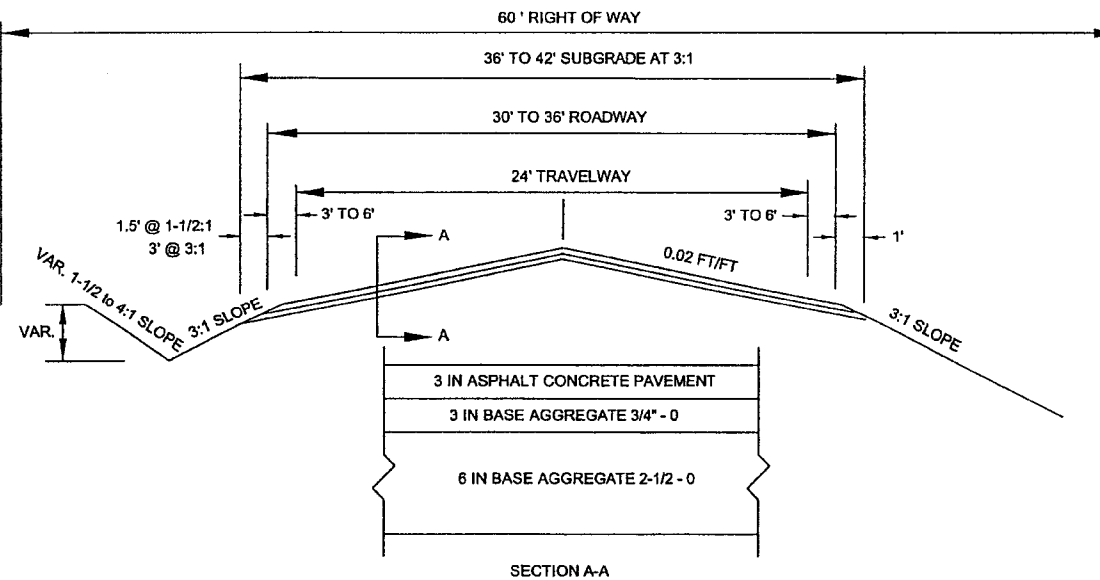
DRAWING TITLE:
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ROAD STANDARDS
TYPICAL SECTIONS

PROJECT:
MORROW COUNTY TSP
UPDATE
OR04.055.T01

PREPARED FOR:
ODOT/ MORROW COUNTY



RURAL ARTERIAL I



RURAL ARTERIAL II

1. ASPHALT CONCRETE (AC) PAVEMENT SHALL BE STANDARD DUTY, CLASS B PER ODOT STANDARD SPECIFICATIONS 00745.
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5. RIGHT-OF-WAY (RW) SHOWN IS MINIMUM. ADD'L RW OR EASEMENT MAY BE REQUIRED FOR CONSTRUCTION IN SLOPED AREAS.

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JUNE 2005

SHEET 1 OF 5

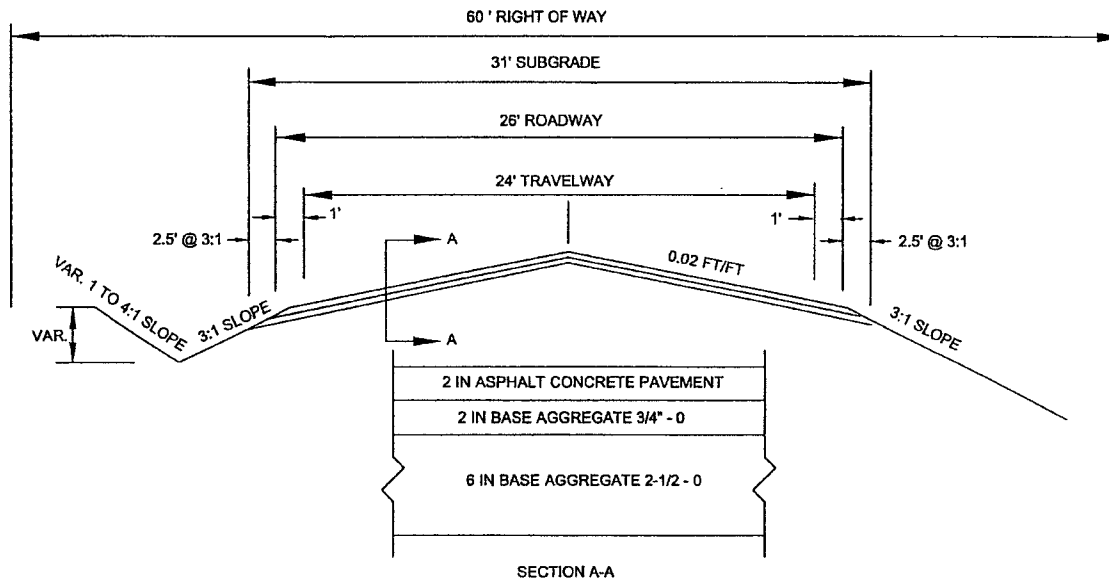


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TYPICAL SECTIONS

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RURAL COLLECTOR III

1. ASPHALT CONCRETE (AC) PAVEMENT SHALL BE STANDARD DUTY, CLASS B PER ODOT STANDARD SPECIFICATIONS 00745.
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NOT TO SCALE

JUNE 2005

SHEET 3 OF 5



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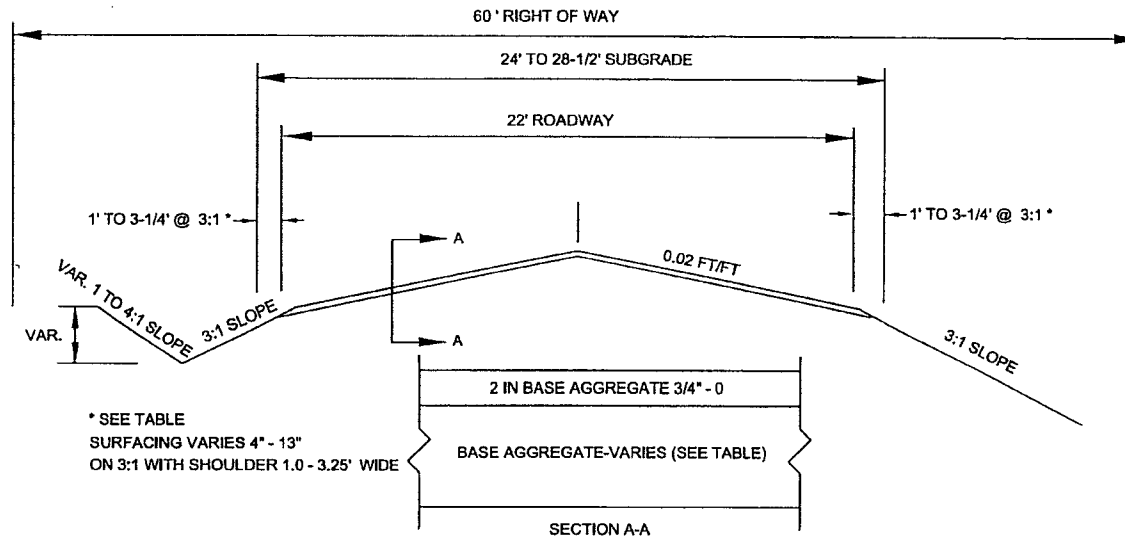
JOHN M. TINKERMAN, DR.
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RURAL GRAVEL

(GRAVEL ROAD FOR MULTIPLE FUNCTIONAL CLASSIFICATIONS)

ROADBED SOIL	TRAFFIC LEVEL	AGGREGATE BASE
VERY GOOD	HIGH (ADT > 100)	9 IN
	MEDIUM (ADT 50 - 100)	7 IN
	LOW (ADT < 50)	4 IN
GOOD	HIGH (ADT > 100)	11 IN
	MEDIUM (ADT 50 - 100)	9 IN
	LOW (ADT < 50)	5 IN
FAIR	HIGH (ADT > 100)	13 IN
	MEDIUM (ADT 50 - 100)	10 IN
	LOW (ADT < 50)	5 IN
POOR	HIGH (ADT > 100)	NOT RECOMMENDED
	MEDIUM (ADT 50 - 100)	15 IN
	LOW (ADT < 50)	9 IN
VERY POOR	HIGH (ADT > 100)	NOT RECOMMENDED
	MEDIUM (ADT 50 - 100)	NOT RECOMMENDED
	LOW (ADT < 50)	8 IN

- ASPHALT CONCRETE (AC) PAVEMENT SHALL BE STANDARD DUTY, CLASS B PER ODOT STANDARD SPECIFICATIONS 00745.
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SHEET 5 OF 5



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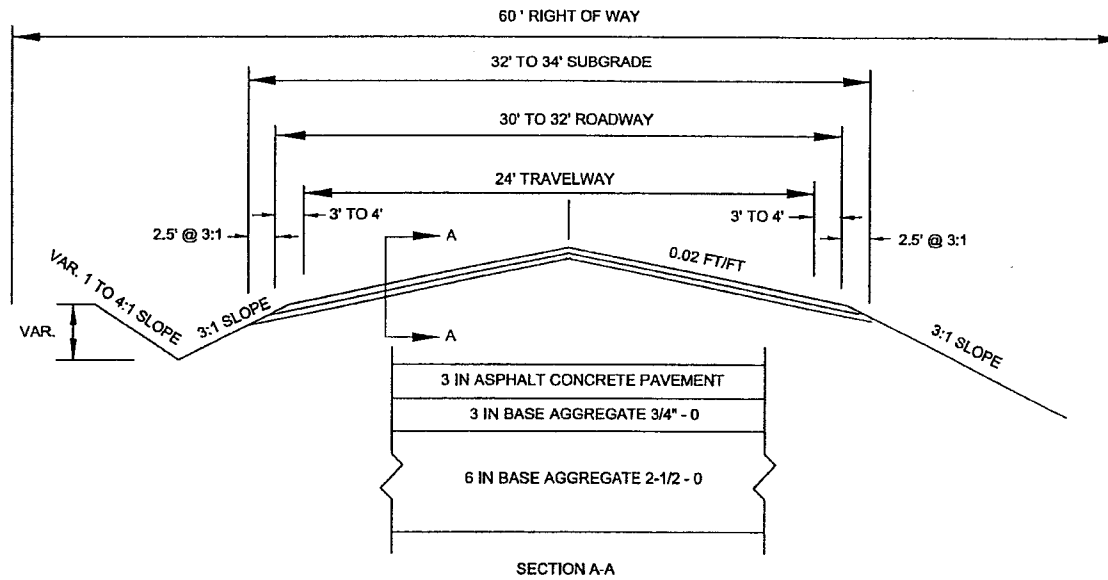
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NO.	DATE	REVISIONS	DESCRIPTION

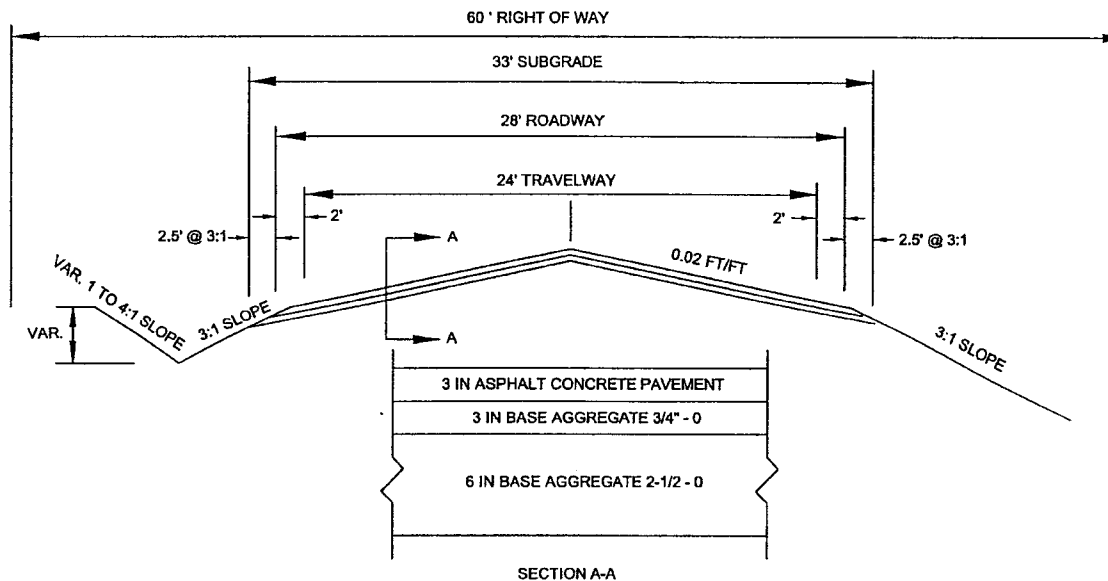
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PROJECT:
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SECTION A-A RURAL COLLECTOR I



SECTION A-A RURAL COLLECTOR II

1. ASPHALT CONCRETE (AC) PAVEMENT SHALL BE STANDARD DUTY, CLASS B PER ODOT STANDARD SPECIFICATIONS 00745.
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SHEET 2 OF 5



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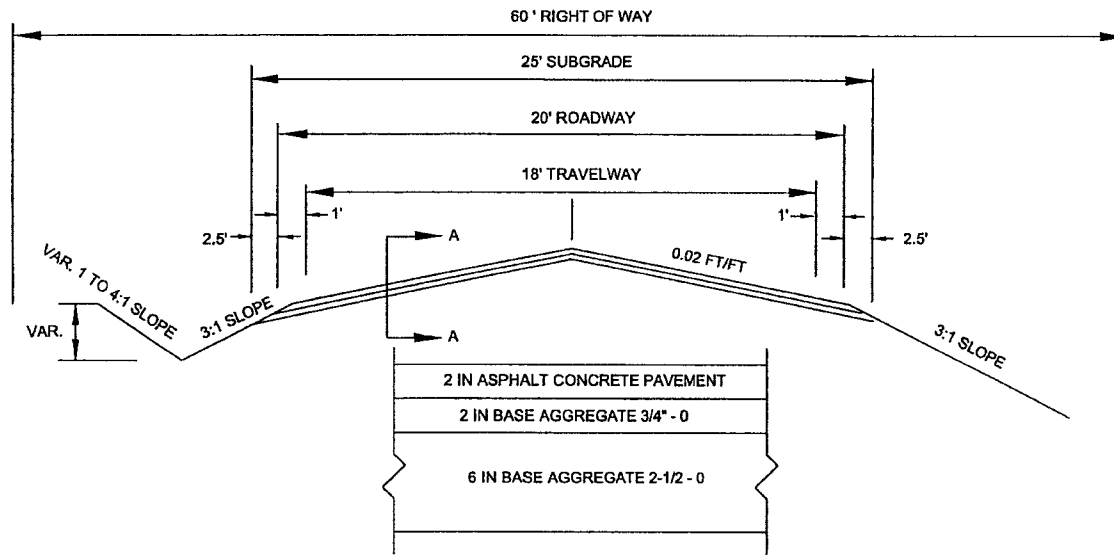
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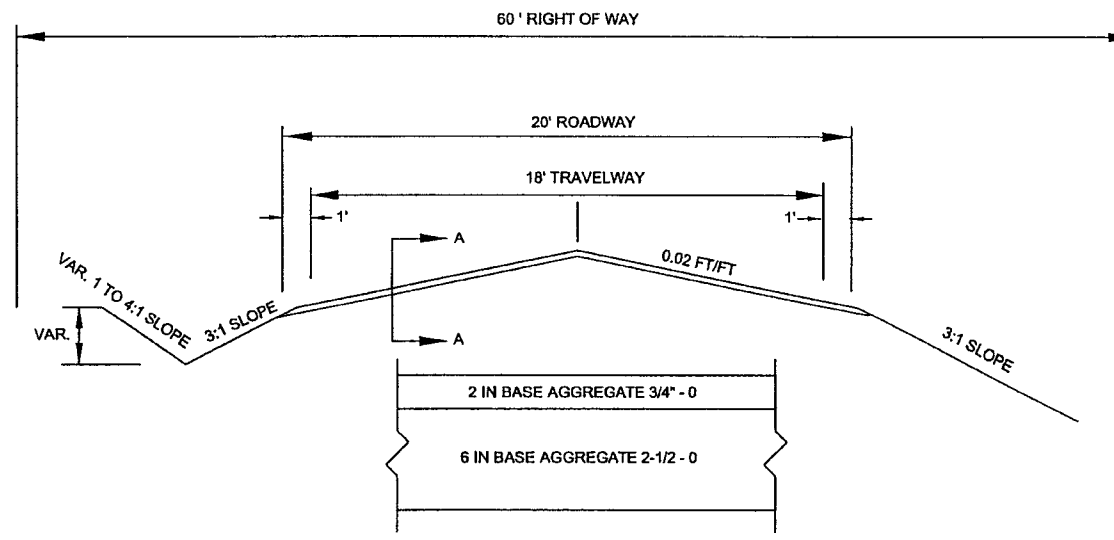
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TYPICAL SECTIONS

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ODOT/ MORROW COUNTY



SECTION A-A
RURAL ACCESS I



SECTION A-A
RURAL ACCESS II (Gravel Surface)

1. ASPHALT CONCRETE (AC) PAVEMENT SHALL BE STANDARD DUTY, CLASS B PER ODOT STANDARD SPECIFICATIONS 00745.
2. BASE AGGREGATE SHALL MEET THE REQUIREMENTS OF ODOT STANDARD SPECIFICATIONS 02630
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4. DITCH SECTIONS SHALL BE APPROPRIATE TO ACCOMMODATE MAXIMUM STORMWATER FLOW PER ODOT STANDARD SPECIFICATIONS 00746.
5. RIGHT-OF-WAY (RW) SHOWN IS MINIMUM. ADD'L RW OR EASEMENT MAY BE REQUIRED FOR CONSTRUCTION IN SLOPED AREAS.

NOT TO SCALE

JUNE 2005

SHEET 4 OF 5



DATE	BY NAME	DESCRIPTION

DRAWING TITLE:
 MORROW COUNTY
 ROAD STANDARDS
 TYPICAL SECTIONS

PROJECT:
 MORROW COUNTY TSP
 UPDATE
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PREPARED FOR:
 ODOT/ MORROW COUNTY

Appendix D
Traffic Impact Analysis Guidelines

TRAFFIC IMPACT ANALYSIS GUIDELINES

INTRODUCTION

Morrow County requires all permit applications generating more than 400 new daily trips to prepare a traffic impact analysis (TIA). The TIA will determine the impacts of the project on the existing and future transportation system and will serve as a vehicle for determining appropriate mitigation. The following guidelines contain the elements that should be included in the analysis. Where appropriate, additional study may be required to assess the full impact of the proposed project.

While the determination of whether a TIA is required is based on the number of daily trips, traffic impacts are typically analyzed only during the PM peak-hour of area-wide traffic, which is the one-hour period of highest traffic during the two-hour peak period, typically 4:30-5:30 PM on weekdays. Land uses that generate peak traffic on weekends or evenings (e.g. theaters or recreation facilities) may require additional periods to be counted.

DETERMINATION OF TIA REQUIREMENT

An initial step is necessary to determine whether the proposed project must complete a TIA. This step can often be performed by the applicant using information found in this document.

Calculate the number of daily trips generated using the attached table or using the rate found in the ITE Trip Generation Manual. Where a project is replacing an existing use, the net trip generation is used (trips generated by project less the former use). Projects that produce in excess of 400 new daily trips must complete a TIA.

COST OF A TIA

The cost of a TIA varies by the size of the development and the relative location to roadway facilities that are near or at capacity. Typical costs range from a minimum of \$2,500 (small subdivision) to over \$15,000 (new retail area).

QUALIFICATIONS OF PREPARER

A registered professional engineer is required for all TIA studies, unless approval is obtained by the planning director.

PROJECT DESCRIPTION AND STUDY AREA

The TIA should introduce the project and describe the approximate study area. A location map showing the site and the study area intersections should be included.

- I. Project identification and description - The following information is included:
 - Project location.
 - Project name or name of developer or company.
 - Project description. Building area, types of uses, number of units, on-site parking stalls.
 - Project buildout year. The year the proposed project is assumed to be completed and occupied.
- II. Definition of the study area - The study area is defined by the number and location of the study intersections. The study intersections are determined as follows:
 - The study intersections are defined as those within 1,000 feet in either direction of each edge of the parcel for arterial access points, and within 600 feet in either direction of each edge of the parcel for collector or local access points that are likely to be impacted by more than 10 PM-peak-hour trips or are directly associated with the project (e.g. driveways). A trip generation, distribution and assignment process (see Project Conditions) can be used to identify the study area.

EXISTING CONDITIONS

The existing conditions section describes the existing roadway and traffic characteristics within the study area. The following topics are included:

- I. Peak period traffic counts – Counts should be completed at each study intersection. Counts must be conducted as follows:
 - Counts are completed on Tuesdays, Wednesdays or Thursdays during a two-hour peak period which includes the system PM peak-hour (typically 3:00 PM to 5:00 PM, or 4:00 PM to 6:00 PM). Counts must be collected by individual turning movement at each intersection. Land uses that generate substantial traffic during evenings or weekends (e.g. recreational uses or entertainment facilities) may require traffic counts to be conducted during additional time periods.
 - Features such as the number of pedestrians, bicyclists and length of vehicle queuing should be noted.
 - Seasonal adjustments should be made to represent peak conditions.
 - Counts from other sources may be used if they are less than three years old and are factored to the current year using the background growth rate (see Background Conditions).

- II. LOS Calculation – Using the latest published Highway Capacity Manual methodology (currently the 2000 manual), the level of service (LOS) is calculated for existing conditions for each study intersection. LOS at either signalized or all-way stop controlled intersections is defined by the overall intersection LOS. At an intersection with stop controls only on the minor (side street) movements, the LOS is defined by the worst approach to the intersection, typically left turns from the minor street. For intersections within the study area that are on State facilities, the volume-to-capacity ratio (V/C ratio) must also be calculated and reported.
- III. Accident data - Five years of accident data is used to describe the number, type and severity of accidents that occurred at each study intersection. Accident data can be obtained from ODOT. High accident locations (where five or more recorded accidents occur annually) should be identified.
- IV. Pedestrian, Bicycle and Equestrian Facilities – Include a description of all pedestrian, bicycle and equestrian facilities within the study area.
- V. Transit – Describe any transit routes in the area. Include a description of school bus service and stop locations, if applicable.

BACKGROUND CONDITIONS

This section refers to the future year traffic operations before project trips are added. The background volumes need to account for the following elements:

- I. Planned changes to roadway facilities and intersections scheduled to occur prior to the project buildout year.
- II. Planned changes in land use within the study area resulting from approved development yet to be built and/or fully occupied. This step requires the collection of other TIAs and the inclusion of new trips that may occur as a result of these analyses.
- III. Background growth rate at which overall traffic has grown in the area. This rate will be determined by the County.
- IV. The calculation of background traffic volumes involve factoring existing traffic to the future year using the background growth rate, then adding all project trips in other TIAs that affect the study intersections.
- V. LOS analysis based on background traffic volumes for each study intersection. All study intersections that exceed the LOS standard (or the V/C standard for state facilities) should be noted.
- VI. Any planned changes to bicycle, pedestrian and equestrian facilities occurring through the project year should be noted.

PROJECT CONDITIONS

This section shows the calculated trip generation, assumed distribution and assignment of trips:

- I. Trip generation – The number of trips generated as calculated from the attached table or from the latest version of the ITE Trip Generation Manual. Where a project is replacing an existing use, the net trip generation is required. A list of typical trip generation rates follows this document.
- II. Trip distribution – The percentage of trips traveling by direction, based on existing traffic patterns, unless preferable information is available (customer survey, market analysis, etc.).
- III. Trip assignment – The project trips are assigned to the roadway based on the trip distribution and the proportion of trips entering, and exiting volumes from the trip generation.
- IV. Future year LOS analysis – The LOS and V/C information for the study intersections based on the sum of the project trip assignment and the background trips.
- V. Identify project impacts – All potential impacts to the transportation system should be identified, including vehicle sight distance, truck traffic, roadway geometrics and traffic control, site access, vehicle queuing and turn lane needs, bicycle and pedestrian access, and safety.
- VI. Mitigation – Mitigation reflects the need for new development to pay for its fair share of traffic impacts. The following types of mitigation are required under county regulations:
 - When the addition of project trips cause an individual intersection to exceed the applicable LOS or V/C standard, the mitigation measures necessary to bring the intersection back into compliance need to be identified, as well as the cost, the project's contribution to the overall cost of the improvement (proportionate share), and how the proportionate share will be paid. Typical mitigation includes the following:
 - Adjustments to signal timing.
 - Addition of turning lanes through restriping or widening.
 - Lengthening storage length of existing turn lanes.
 - Installation of traffic signals or other traffic control devices.
 - Improvements needed to provide adequate sight distance from the development's access onto the public road network.
 - Note: developers are not required to mitigate individual intersections that exceed the LOS or V/C standard in existing or background conditions as determined by HCM methodology. They may, however, be required to

contribute a roughly proportionate share to improve the facility as needed to meet LOS or V/C standards.

- Other mitigation should be considered as appropriate to alleviate the impacts to the transportation system, such as reduction of vehicle queuing, reduction in peak hour travel of employment uses through transportation demand management, and increases in pedestrian, bicycle or equestrian travel and safety.

TRIP GENERATION TABLE

Below are some of the most common trip generation values. The first column defines the land use; the second, the average weekday rate; the third, the PM peak-hour rate; and the fourth, the percent of traffic entering and exiting during the peak-hour. More specific rates are found in the 7th edition of the ITE Trip Generation Manual. An example calculation is as follows:

Project: Construct 4 homes on a subdivided lot

Daily Trip Generation: 9.57×4 dwelling units = 38 trips

PM Peak-Hour: $1.01 \times 4 = 4$ trips (3 entering, 1 exiting)

Therefore, there are 38 daily trips and an impact of 4 trips during the PM peak-hour.

Land Use (ITE Code)	Weekday Daily Rate	PM Peak-Hour Rate	Percent Entering/ Exiting in Peak-Hour
Single Family Detached (210)	9.57 / D.U.	1.01 / D.U.	63% / 37%
Apartment (220-Post 1973)	6.72 / D.U.	0.62 D.U.	67% / 33%
Mobile Home Park (240)	4.99 / D.U.	0.59 / D.U.	62% / 38%
Church (560)	9.11 / 1000 GFA	0.66 / 1000 GFA	52% / 48%
Office-General (710)	refer to ITE Trip Generation Equations	refer to ITE Trip Generation Equations	17% / 83%
• <10,000 GFA	18.4 / 1000 GFA	4.28 / 1000 GFA	
• 25,000 GFA	15.64 / 1000 GFA	2.70 / 1000 GFA	
• 50,000 GFA	13.34 / 1000 GFA	1.91 / 1000 GFA	
• 100,000 GFA	127.15 / 1000 GFA	10.92 / 1000 GFA	61% / 33%
Restaurant-High Turnover (932)	496.12 / 1000 GFA	34.64 / 1000 GFA	52% / 48%
Fast Food Restaurant (934) (with drive-through)	102.24 / 1000 GFA	10.45 / 1000 GFA	51% / 49%
Supermarket (850)	6.97 / 1000 GFA	0.98 / 1000 GFA	12% / 88%
General Light Industrial (110)	3.82 / 1000 GFA	0.74 / 1000 GFA	36% / 64%
Manufacturing (140)			

D.U.-Dwelling Units

GFA – Gross Floor Area

GLA – Gross Leasable Area

Appendix E
Modifications to Zoning Code (Article 4)
and Subdivision Ordinance (Article 8)

ARTICLE 4. SUPPLEMENTARY PROVISIONS

SECTION 4.010. Access. Intent and Purpose: The intent of this ordinance is to manage access to land development while preserving the flow of traffic in terms of safety, capacity, functional classification, and level of service.

Major roadways, including highways, arterials, and collectors serve as the primary network for moving people and goods. These transportation corridors also provide access to businesses and homes and have served as the focus for commercial and residential development. If access points are not properly designed, these roadways will be unable to accommodate the needs of development and retain their primary transportation function. This ordinance balances the right of reasonable access to private property with the right of the citizens of Morrow County and the State of Oregon to safe and efficient travel.

This ordinance shall apply to all public roadways under the jurisdiction of Morrow County and to application for development for any property that abuts these roadways.

This ordinance is adopted to implement the land access and access management policies of Morrow County as set forth in the Transportation System Plan. Access shall be provided based upon the requirements below:

A. Minimum Lot Frontage Requirement. Every lot shall abut a street, other than an alley, for at least 50 feet, except on cul-de-sacs where the frontage may be reduced to 30 feet.

B. Access Permit Requirement. Where access to or construction on a county road is needed, an access permit or right-of-way permit from Morrow County Public Works department is required subject to the requirements in this Ordinance. Where access to a state highway is needed, an access permit from ODOT is required as part of the land use application. Where access is needed to a road managed by the Forest Service or other entity, an access permit or other authorization from the appropriate entity shall be required as part of the land use application.

C. Emergency Vehicle Access. It is the responsibility of the landowner to provide appropriate access for emergency vehicles at the time of development. A dead-end private street exceeding one hundred-fifty (150) feet in length shall have an adequate turn around facility approved by the appropriate Fire Marshal or, if the Fire Marshal fails to review the private street, approval by the Building Official or his designee.

D. Easements and Legal Access: All lots must have access onto a public right of way. This may be provided via direct frontage onto an existing public road, a private roadway, or an easement. Minimum easement requirements to provide legal access shall be as follows:

1. 1000' or less, a minimum easement width of 20'
2. More than 1000', a minimum easement width of 40'
3. Parcels where 3 or more lots share an access (current or potential), a minimum easement of 60'.

E. Access Spacing Requirements for Development Accessing State Highways. Applications for development with access onto state highways shall be provided to ODOT for review, to

ensure consistency with adopted ODOT Access Management Standards shown in Table 4.010-1. These standards apply only to unsignalized access points. Where a right of access exists, a property shall be allowed to have access onto a state highway at less than adopted access spacing requirements only if all the following conditions are met:

1. The property does not have reasonable access via an alternative to the state highway;
2. There are no other possible access options along the parcel's highway frontage; and
3. The access spacing standards cannot be accomplished.

When a proposed access onto a state highway does not meet the access spacing standards in Table 4.010-1, a deviation from standard will be considered by the ODOT Region Manager, subject to requirements in OAR 734-051-0135.

TABLE 4.010-1
ACCESS MANAGEMENT STANDARDS FOR MORROW COUNTY
NON-INTERSTATE HIGHWAYS

Highway	Classification	Access Spacing Standards for Public or Private Unsignalized Access (ft) for Posted Speed Indicated (mph)				
		>55	50	40 & 45	30 & 35	<25
US 730, OR 74	Regional	990	830	750	600	450
OR 206, OR 207	District	700	550	500	400	400

REFERENCE: OREGON ADMINISTRATIVE RULES SECTION 734-051 (2004)

F. Access within the Influence Area of an Interchange Access within the influence area of existing or proposed state highway interchanges is regulated by standards in OAR 734-051, which are included as Appendix F of the 2005 Morrow County Transportation System Plan Update. These standards do not retroactively apply to interchanges existing prior to adoption of the 1999 Oregon Highway Plan, except or until any redevelopment, change of use, or highway construction, reconstruction or modernization project affecting these existing interchanges occurs. It is the goal at that time to meet the appropriate spacing standards, if possible, but, at the very least, to improve the current conditions by moving in the direction of the spacing standard.

G. Signalized Intersection Spacing on State Facilities. New traffic signals proposed for state facilities, whether the intersecting facility is a public or private road, shall meet the requirements for installation of a traffic signal on a state highway in OAR 734-020-0400. New traffic signals on state facilities must be approved by the State Traffic Engineer. For approval of a new traffic signal on a County facility as part of a condition of development approval, the applicant shall be required to show, through analysis prepared by a qualified professional engineer registered in the State of Oregon, that the signal is warranted to improve traffic operations, address safety deficiencies, or a combination, based upon traffic signal warrants in the current version of the *Manual on Uniform Traffic Control Devices*.

H. Access Spacing Requirements for Development Accessing County Facilities. All developments shall have legal access to a County or public road. Except for interim access as provided in Section 4.010 H [Interim Access], access onto any County road in the unincorporated or incorporated urban area shall be permitted only upon issuance of an access permit upon demonstration of compliance with the provisions of the County road standards and the standards of Section 4.010.

For County roadways designated as major collector or arterial in the Transportation System Plan, the standards in Table 4.010-2 apply for intersections created by a new public roadway, new private roadway or new private driveway. For County roadways designated as minor collectors or local access roads, intersections created by a new public roadway, new private roadway or new private driveway shall meet minimum County traffic safety and operational requirements, including sight distance, as determined by the County Engineer.

TABLE 4.010-2
ACCESS MANAGEMENT STANDARDS FOR MORROW COUNTY ROADWAYS

Classification	Access Spacing Standards for Public or Private Access (ft)		
	Public Roadway	Private Roadway	Private Driveway ^a
Arterial	600	600	300
Collector	300	300	100
Local	200	200	Access to each lot

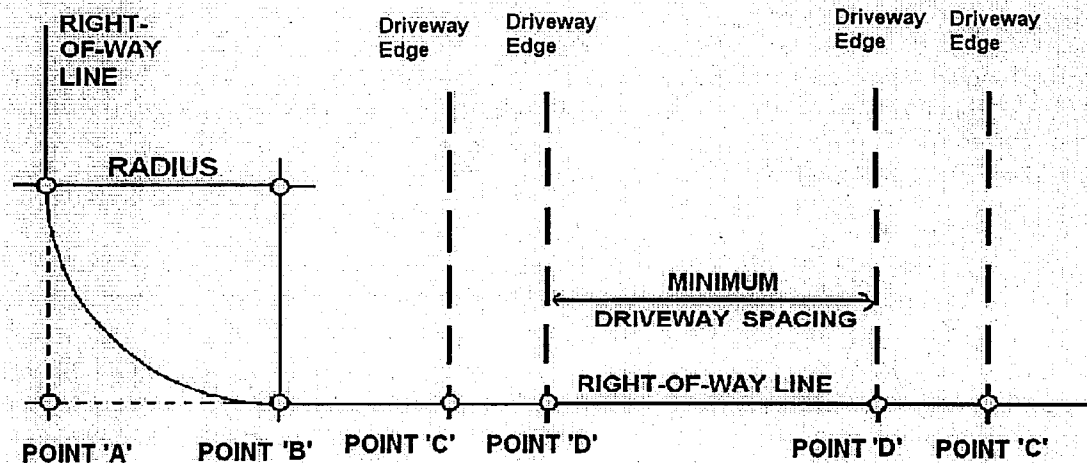
a. For most roadways, at-grade crossings are appropriate. Also, allowed moves and spacing requirements may be more restrictive than those shown to optimize capacity and safety. Any access to a state highway requires a permit from the district office of ODOT and is subject to the access spacing standards in Table 4.010-1 in this section.

No use will be permitted to have direct access to a street or road except as specified below, or as provided in Section 4.010.H (Interim Access). Access spacing shall be measured from existing or approved accesses on either side of a street or road. Measurements shall be made from easement or right-of-way line to easement or right-of-way line. (See following access diagram where R/W = Right-of-Way; P.I. = Point-of-Intersection where P.I. shall be located based upon a 90 degree angle of intersection between ultimate right-of-way lines, and 'C' and 'D' = each side of adjacent accesses to private property.

1. All minimum distances stated in the following sections shall be governed by sight distance requirements according to this Ordinance and applicable County Road Standards.
2. All minimum distances stated in the following sections shall be measured to the nearest easement line of the access or edge of travel lane of the access on both sides of the road.
3. The minimum curb radius shown in the diagram below (i.e., distance from Point "A" to Point "B") shall be 15 feet. In areas zoned for industrial uses, the minimum curb radius shall be 30 feet. At intersections between facilities classified as major collector, arterial or highway, any new or modified intersection shall be designed to accommodate a WB-50 Semitrailer Design Vehicle. If either route is designated by the County as a truck route, the intersection shall be designed to accommodate a WB-65 Interstate Semitrailer Design Vehicle. The curb alignment shall be designed

so that the design vehicle can complete a right turn without entering a lane used by opposing traffic.

4. All minimum distances between accesses shall be measured from existing or approved accesses on both sides of the road.
5. Minimum spacing between driveways shall be measured from Point "D" to Point "D" as shown below (i.e., the edges of adjacent driveways closest to each other).
6. In all instances, access points near an intersection with a Collector or Arterial shall be located beyond the influence of standing queues of the intersection in accordance with AASHTO standards. Additionally, access shall be located beyond the back of any left turn refuge either existing on the affected road or required to accommodate the proposed development. This requirement may result in an access spacing greater than one hundred (100) feet in the case of a collector, or 300 feet in the case of an arterial.
7. Access onto local roads will not be permitted within ten (10) feet of Point "B" as shown below. If no radius exists, access will not be permitted within twenty-five (25) feet of Point "A".
8. Access onto collector roads will not be permitted within fifty (50) feet of Point "B" as shown below. If no radius exists, access will not be permitted within sixty-five (65) feet of Point "A". Where a common or shared access is available it shall be used, provided that such use will not result in operational or safety problems. Minimum spacing between driveways shall be one-hundred (100) feet.
9. Direct access to an arterial will be permitted provided that Point 'C' of such access is more than three hundred (300) feet from any intersection Point 'A' or other access to that minor arterial.



I. Interim Access onto County Facilities. No development with sole access onto a County arterial or major collector shall be denied based only on an inability to provide an access that meets applicable access spacing standards. In such an event, the use may be issued an interim access permit which shall expire when access as required under this Ordinance becomes available. An interim access permit may be granted based upon the following:

1. The site is situated such that adequate access cannot otherwise be provided in accord with the access spacing requirements of this Code.
2. The interim access shall meet minimum County traffic safety and operational requirements, including sight distance.
3. Alternate access shall *not* be deemed adequate and connections to alternate access shall *not* be required if the resulting route of access would require a trip in excess of one (1) block or five-hundred (500) feet out of direction (whichever is less).
4. The property owner signs a consent to participate agreement for the formation of a Local Improvement District or similar financing mechanism for the primary purpose of constructing a public road or right-of-way providing access to the arterial or collector road; such access shall meet the minimum applicable County standard.
5. The property owner records an agreement to participate in any project that would consolidate access points where such project would not result in new or more severe traffic operation or safety problems.
6. The property owner records an agreement to abandon use of the existing private access way when an adequate alternative access becomes available.

SECTION 4.020. SIGHT DISTANCE. In all zones, adequate sight distance shall be maintained at the intersection of two roads (public or private), a road intersecting a private driveway, or a road crossing a railroad.

A. Sight Distance Requirements for New Accesses. It is the intent of this section to ensure that each new access point or each new lot or parcel created or development in the County will have a safe access to a public road, with the exception of development actions listed in Section 4.020.B. but are subject to improvements to maximize sight distance to the extent practicable by the County Operations Division through an Access Permit or Right-of-way Permit:

1. Existing access points that do not satisfy the sight distance standards and are on property included with a development action which will not add any additional vehicle trips to that access, are exempt from this Section. Improvements at these existing access points may be required of the applicant to maximize sight distance to the extent practicable through an Access Permit application.
2. The minimum intersectional sight distance shall be based on the vehicular speeds of the road. The vehicular speeds for the purpose of determining intersectional sight distance shall be the greater of the following, to be selected by the County Engineer or designee.
 - a. Design Speed - A speed selected by a registered engineer (Oregon) for purposes of design and correlation of those features of a road, such as curvature, superelevation, and sight distance, upon which the safe operation of vehicles is dependent.

- b. Posted Speed - That speed which has been established by the Oregon State Speed Control Board and is posted by the County.
 - c. Eighty-fifth Percentile Speed - That speed as certified by a registered engineer (Oregon) below which 85 percent of all traffic units travel, and above which 15 percent travel. The eighty-fifth percentile speed shall be measured at the point where the sight restriction occurs.
3. The intersectional sight distance shall:
- a. Be based on an eye height of 3.5 feet and an object height of 4.25 feet above the road; and
 - b. Be assumed to be 10 feet from the near edge of pavement or the extended curb line or the near edge of the graveled surface of a gravel road to the front of a stopped vehicle.
4. Minimum intersectional sight distance shall be equal to ten (10) times the vehicular speed of the road such as in the table below.

INTERSECTIONAL SIGHT DISTANCE	
MPH	DISTANCE ALONG CROSSROAD (FT)
25	250
30	300
35	350
40	400
45	450
50	500
55	550

5. Intersectional sight distance values shall conform to (3) above. For significant road improvement projects, the above intersectional standards shall be met in addition to the applicable AASHTO roadway sight distance standards.
6. In those instances where there are no access locations available to the site that meet or can meet the sight distance requirements, a written request for modification may be submitted to the County Engineer or designee. The request for modification of the sight distance requirements shall be subject to the following requirements:
- a. Submitted and certified by a registered engineer (Oregon);
 - b. Nationally accepted specifications or standards are documented and referenced;
 - c. Certification that the modification will not compromise safety or the intent of the County's transportation standards;

- d. Agreement that the cost of any modifications agreed to must be borne by the applicant; and
- e. Statement that there is no location available to provide an alternative access location which currently meets the sight distance requirements, or which can be altered to meet the sight distance requirements. Alterations needed to provide adequate sight distance include but are not limited to grading and the removal of vegetation. For the purpose of this subsection alternative access location means:
 - i. Any location on the proposed development site which meets or can meet the sight distance requirements; or
 - ii. Any location off the proposed development site which can provide access to the site by an existing access easement or through an access easement which will be provided to the site as part of the development application. Such an off-site access must be shown to meet or be able to meet sight distance requirements.

B. Accesses Exempt from Sight Distance Requirements. Accesses for the following development actions are exempt from the Sight Distance standards (Section 4.020.A), but are subject to improvements to maximize sight distance to the extent practicable by the County Operations Division through an Access Permit or Right-of-way Permit:

1. Replacement dwellings;
2. Nonbuildable parcels;
3. Applications for one dwelling on an existing vacant parcel;
4. Home Occupation applications in the EFU, FU, SF-40, FR-2 and RR-1 zones; or
5. Applications which will not add additional vehicle trips to an existing access which does not meet the sight distance standards.

SECTION 4.035 PERMIT REQUIREMENTS FOR LAND USE DEVELOPMENT. Except where otherwise noted, all proposed projects should meet the following Plot Plan Requirements as described in Table 4.035-1 below. A common threshold for a TIA (traffic impact analysis) applying to all types of development is 400 daily trips (e.g., 40 houses). Trip generation should be estimated using the current edition of *Trip Generation* by the Institute of Transportation Engineers, other similar published resources, or actual driveway counts of similar land uses. The County Planning Commission, County Planning Director or County Public Works Director or designee may require a TIA for any level of development. TIA requirements are described in the Appendix.

TABLE 4.035-1
PERMIT REQUIREMENTS BY TYPE OF LAND USE DEVELOPMENT

Permit Type	Plot Plan Requirements		Conditions	Review/Approval Type				
	Footprint (setbacks)	Access*		Transportation Improvements	DEQ Site Suitability	Parking	Sign	Review
Zoning Permit								
Residential	Yes	Designated access.	Frontage improvements.	Yes	N/A	N/A	Staff	Bldg. permits Road approach permit
Commercial	Yes	Legal access via r/w or easement.	Under 400 trips: Frontage improvements. Over 400 trips: TIA.		Yes	Yes	Staff	Bldg. permits Road approach permit
Industrial	Yes	Legal access via r/w or easement.	Under 400 trips: Frontage improvements. Over 400 trips: TIA.		Yes	Yes	Staff	Bldg. permits Road approach permit
Farm Exempt	Yes	Yes	N/A	N/A	N/A	N/A	Staff	County issues a Farm Agriculture Bldg Exemption Certificate
Land Partition								
1 to 3 Lots		Legal access via r/w or easement.	Frontage improvements.				Planning Comm.	Approval Road Approach permit
Subdivision								
4 to 39 lots		Legal access via r/w.	Frontage improvements.				Planning Comm.	Approval Road Approach Permit
40 or more lots		Legal access via r/w.	Frontage improvements, TIA.				Planning Comm.	Approval Road Approach Permit
Conditional Use Permit								
	Yes	Legal access via r/w or easement.	Under 400 trips: frontage improvements. Over 400 trips: TIA.		Review	Review	Planning Comm.	Approval, Bldg. permit Road Approach

*1000' or less, 20' easement; 1000' or more 40' easement; 3 or more lots (current or potential), 60' easement.

r/w = Right-of-way.

TIA = Traffic Impact Analysis.

N/A = not applicable.

A. Consent to Participate Agreement Required. For those Local roads which are not improved in accordance with Morrow County Road Standards or maintained by the County, and which abut the property owner's proposed development or which do not abut the development but provide direct access to the development, the property owner shall sign a

consent to participate agreement for the potential formation of a local improvement district or other mechanism to improve and maintain these roads to County standards, per the Morrow County standard Consent to Participate Agreement. Applications for property line adjustments, nonbuildable parcels, temporary housing permits, land partitions in resource zones, and one dwelling on an existing vacant parcel, are not subject to this requirement.

For those Arterial and Collector roads which are not improved in accordance with Morrow County Road Standards and which abut the development site or those roads which do not abut the development site but provide access to the site, the property owner shall sign a consent to participate agreement for the potential formation of a local improvement district or other mechanism to improve the base facility of this road(s) to County standards, per the Morrow County standard Consent to Participate Agreement. Applications for property line adjustments, nonbuildable parcels, temporary housing permits, land partitions in resource zones, and one dwelling on an existing vacant parcel, are not subject to this requirement.

SECTION 4.040. OFF-STREET VEHICLE PARKING REQUIREMENTS. Because vehicle parking facilities can occupy large amounts of land, they must be planned and designed carefully to use the land efficiently while maintaining the visual character of the community. At the time of construction, reconstruction, or enlargement of a structure, or at the time a use is changed in any zone, off-street parking space shall be provided as follows unless greater requirements are otherwise established. When the requirements are based on the number of employees, the number counted shall be those working on the premises during the largest shift at peak season. Fractional space requirements shall be counted as a whole space. Off-street parking spaces may include spaces in garages, carports, parking lots, and/or driveways if vehicles are not parked in a vehicle travel lane (including emergency or fire access lanes), public right-of-way, pathway or landscape area. The County may allow credit for "on-street parking", as provided in Section 4.050. For uses not specified in Table 4.040-1, parking requirements shall be determined by the use in Table 4.040-1 found to be most similar in terms of parking needs.

TABLE 4.040-1
MINIMUM PARKING REQUIREMENTS

USE	MINIMUM VEHICLE PARKING REQUIREMENTS
A. Residential 1. One, two, and three family dwelling 2. Residential use containing four or more dwelling units 3. Rooming or boarding house	Two spaces per dwelling unit One and one-half spaces per dwelling unit One space per guest room
B. Commercial Residential 1. Hotel or Motel	One space per guest room, plus one space for the manager
C. Public and Institutional Uses 1. Welfare or correctional institution 2. Convalescent hospital, nursing home, sanitarium, rest home, home for the aged 3. Hospital 4. Church 5. Library, reading room 6. Daycare, pre-school or kindergarten 7. Elementary or junior high school 8. High school, college, commercial school for adults 9. Other auditorium or meeting room	One space per six beds One space per four beds Two spaces per bed One space per four seats at maximum occupancy One space per 400 gross square feet Two spaces per FTE staff One and one-half spaces per classroom or one space per four seats or eight feet of bench length in the auditorium or assembly room whichever is greater. One and one-half spaces per classroom plus one space for each 10 students the school is designed to accommodate, or one space for four seats or eight feet of bench length in the main auditorium or assembly room, whichever is greater. One space per six seats or 12 feet of bench length, whichever is greater, or one space for each 75 gross square feet of assembly room not containing fixed seats.

TABLE 4.040-1 (cont'd.)
MINIMUM PARKING REQUIREMENTS

USE	MINIMUM VEHICLE PARKING REQUIREMENTS
D. Commercial Amusement 1. Stadium, arena, theater 2. Bowling Alley 3. Dance hall, skating rink	One space per four seats or eight feet of bench length, whichever is greater. Five spaces per alley One space per 100 gross square feet
E. Commercial 1. Retail store except as provided in subsection (f)(2) of this section 2. Service or repair shop, retail store handling exclusively bulky merchandise, such as automobiles and furniture 3. Bank, office (except medical and dental) 4. Medical and dental clinic 5. Eating or drinking establishment 6. Mortuaries	One space per 350 gross square feet One space per 750 gross square feet One space per 350 gross square feet One space per 300 gross square feet One space per 100 gross square feet or one space per four seats, whichever is less. One space per six seats or eight feet of bench length in chapels
F. Industrial 1. Storage warehouse, manufacturing establishment, rail or trucking freight terminal 2. Wholesale establishment	One space per employee on the largest shift. One space per employee on the largest shift plus one space per 700 square feet of patron-serving area.

SECTION 4.045. BICYCLE PARKING REQUIREMENT.

This chapter also provides standards for bicycle parking, because children as well as adults need safe and adequate spaces to park their bicycles throughout the community. All uses subject to Design Review that are located within an Urban Growth Boundary shall provide bicycle parking in conformance with the following guidelines. Uses outside an Urban Growth Boundary are encouraged to provide bicycle parking based on these guidelines.

A. Number of Parking Spaces. A minimum of two bicycle parking spaces is recommended for each use with greater than 10 vehicle parking spaces. The following additional standards apply to uses within an Urban Growth Boundary, and are recommended for other areas of the County:

1. Multi-family residences: At least one sheltered bicycle space per four dwelling units, for uses of four or more units. Bicycle spaces may be located within a garage, storage shed, basement, utility room, or other similar area. If a residential development use has no such protected areas, bicycle parking spaces can be located under an eave, overhang or similar cover to be protected from rain and sun.

2. **Parking Lots:** At least one bicycle parking space for every ten vehicle spaces at commercial and public parking lots.
 3. **Schools:** One bicycle parking space for every 10 vehicle spaces, at public or private elementary and middle schools. High schools should provide one bicycle space for every five students.
 4. **Colleges and trade schools:** One bicycle space for every 10 motor vehicle spaces. At least half of the spaces should be sheltered under an eave, overhang or similar cover.
 5. **Multiple Uses:** For buildings with multiple uses, such as a commercial building or mixed use development, one bicycle space for every 10 motor vehicle spaces is recommended.
- B. **Exemptions.** This Section does not apply to single family, two-family, and three-family housing (attached, detached or manufactured housing), home occupations, agriculture and livestock uses, or other developments with fewer than 10 vehicle parking spaces.
 - C. **Location and Design.** Bicycle parking should be conveniently located no farther away than the closest parking space.
 - D. **Visibility and Security.** Bicycle parking should be visible to cyclists from street sidewalks or building entrances, so that it provides sufficient security from theft and damage.
 - E. **Options for Storage.** Bicycle parking requirements for long-term and employee parking can be met by providing a bicycle storage room, bicycle lockers, racks, or other secure storage space inside or outside of the building.
 - F. **Lighting.** Bicycle parking should be least as well lit as vehicle parking for security.
 - G. **Hazards.** Bicycle parking shall not impede or create a hazard to pedestrians. Parking areas shall be located so as to not conflict with vision clearance standards in Section 4.020.

SECTION 4.050. OFF-STREET PARKING AND LOADING. Buildings or structures to be built or substantially altered which receive and distribute materials and merchandise by trucks shall provide and maintain off-street loading berths in sufficient number and size to handle adequately the needs of the particular use. Off-street parking areas used to fulfill the requirements of this Ordinance shall not be used for loading and unloading operations except during periods of the day when not required to care for parking needs. General provisions are as follows:

- A. The provisions and maintenance of off-street parking and loading space is a continuing obligation of the property owner. Should the owner or occupant of any lot or building change the use to which the lot or building is put, thereby increasing off-street parking and loading requirements, it shall be a violation of this Ordinance to begin or maintain such altered use until such time as the increased off-street parking or loading requirements are complied with.
- B. Requirements for types of buildings and uses not specifically listed in this Ordinance shall be determined by the Planning Commission based upon the requirements for comparable use listed.

C. In the event multiple uses occupy a single structure or parcel of land, the total requirements for off-street parking shall be the sum of the requirements of each use computed separately.

D. Owners of two or more uses, or parcels of land may agree to utilize jointly the same parking and loading spaces when the hours of operation do not overlap, provided that satisfactory legal evidence is presented to the County in the form of deeds, leases, or contracts to establish the joint use.

E. Off-street parking spaces for dwellings shall be located on the same parcel with the dwelling. Other required parking spaces for residential uses shall be located not farther than 500 feet from the building or use they are required to serve, measured in a straight line from the building.

F. Required parking spaces shall be available for the parking of passenger automobiles of residents, customers, patrons, and employees only, and shall not be used for storage of vehicles or materials or for the parking of trucks used in conducting the business or use.

G. Parking designated exclusively for people with disabilities shall be provided in conformance with the Americans with Disabilities Act.

H. The Director may, upon request, allow a reduction in the number of required off-street parking spaces in housing developments for elderly or disabled persons if such reduction is deemed appropriate after analysis of the size and location of the development, resident auto ownership, number of employees, possible future conversion to other residential uses and other similar relevant factors.

SECTION 4.060. DESIGN AND IMPROVEMENT STANDARDS - Parking Lots

A. Except for single-family and duplex dwellings, areas used for parking for more than two vehicles shall have durable and dustless surfaces adequately maintained.

B. Except for parking in connection with single-family and duplex dwellings, parking and loading areas adjacent to or within a residential zone or adjacent to a dwelling shall be designed to minimize disturbance to residents by the erection between the uses of a sight-obscuring fence or planted screen of not less than six (6) feet in height except where vision clearance is required.

C. Parking spaces along the outer boundaries of a parking lot shall maintain a minimum setback from the property line of five feet, unless a greater setback is specified for a structure in the zoning district, and shall be contained by a bumper rail or by a curb which is at least four inches high.

D. Artificial lighting which may be provided shall not shine or create glare in any residential zone or on any adjacent dwelling.

E. Access aisles shall be a minimum of 24 feet wide for two-way traffic. The minimum aisle width for emergency vehicle access (with one-way traffic) is 20 feet.

F. Except for single-family and duplex dwellings, groups of more than two parking spaces shall be so located and served by a driveway that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley.

G. Service drives to off-street parking areas shall be a minimum of 24 feet wide for two-way traffic flow, and 20 feet wide for one-way traffic flow. The number of service drives shall be limited to the minimum that will accommodate anticipated traffic.

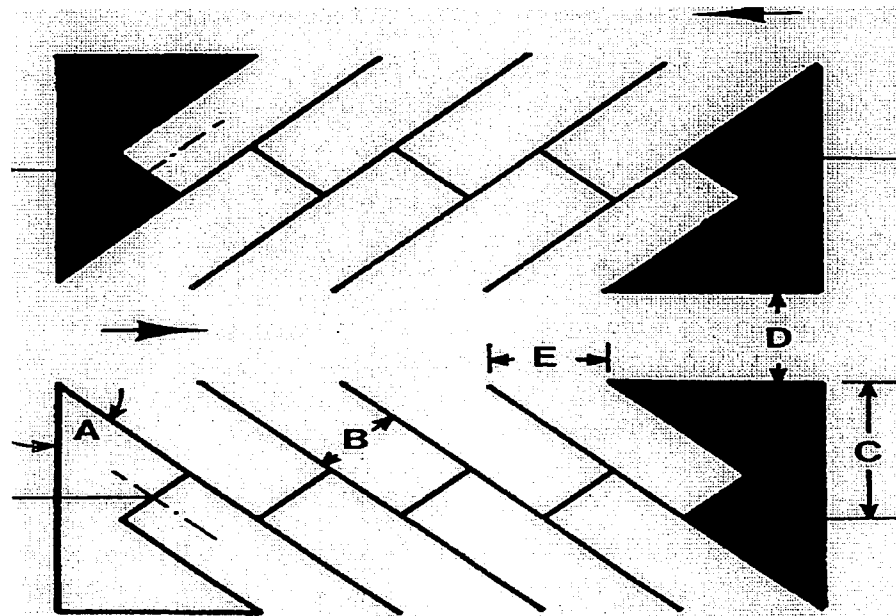
H. Driveways shall maintain minimum sight distance per the standards of Section 4.020 of this Ordinance.

I. The standards set forth in the table below shall be the minimum for parking lots approved under this Ordinance (all figures are in feet except as noted). The letters in the first row of the table correspond to the letters in the following diagram.

TABLE 4.060-1
OFF-STREET PARKING DESIGN STANDARDS

A	B	C	D	E
parking angle degree	stall width	stall to curb (19' long stall)	aisle width	curb length per car
0	8.5	8.5	12.0	23.0
45	8.5	19.4	12.0	12.0
60	8.5	20.0	15.0	9.8
75	8.5	19.6	24.0*	8.8
90	8.5	19.0	24.0*	8.5

*Two-way circulation



SECTION 4.070. SIGN LIMITATIONS AND REGULATIONS. In addition to sign limitations and regulations set forth in a specific zone, the following limitations and regulations shall apply to any sign hereafter erected, moved or structurally altered within the jurisdiction of the County. In addition to the standards and limitations set forth in this Ordinance, signs shall be installed in accordance with applicable regulations of state and federal agencies. No sign will hereafter be erected, moved or structurally altered without being in conformity with the provisions of this Ordinance. Official traffic control signs and instruments of the state, county or municipality are exempt from all provisions of this Ordinance.

A. All outdoor advertising signs shall be in compliance with the provisions of this Ordinance and the provisions of ORS Chapter 377 when applicable.

B. No outdoor advertising sign permitted by ORS Chapter 377 shall be erected within 300 feet of a residential dwelling without written consent of the owner and/or occupant of said dwelling.

C. No sign shall be placed so as to interfere with visibility or effectiveness of any permanent traffic control device.

D. No sign shall be placed so as to impede the sight distance triangle at any access point or intersection as specified in Section 4.020 of this Ordinance.

E. No sign shall cause glare, distraction or other driving hazards within a street or road right-of-way.

F. No sign shall shine directly upon a residential dwelling or otherwise create a nuisance.

G. In addition to the limitations on signs as provided by (1) through (5) above, additional sign restrictions may be required as determined by the Planning Commission in approving conditional uses, as provided by Article 6.

H. Signs erected along Scenic Byways or other roads with similar designations must meet applicable criteria for sign placement.

I. Residents may request specific cautionary signage for individual resident(s) to be installed within County right-of-way. All costs including materials, installation, maintenance, and removal, shall be borne by the requestor, and shall otherwise conform with Morrow County Policy M-43674.

J. Installation of Regulatory Signs in Public Right-of-Way. Developers are to install street name, posted speed, and other traffic control signage required for private developments, per applicable standards from Morrow County and the Manual on Uniform Traffic Control Devices (MUTCD). 4

SECTION 4.080. AUTHORIZATION OF SIMILAR USES. A use that is similar to a use provided for in a zone may be allowed in that zone with Planning Commission Approval unless:

- A. It is specifically provided for in another zone, or
- B. It is more similar to uses provided for in another zone.

SECTION 4.090. GENERAL PROVISIONS REGARDING ACCESSORY USES. An accessory use shall comply with all requirements for a principal use, except as this ordinance specifically allows to the contrary, and shall comply with the following limitations:

- A. A side yard or rear yard may be reduced to three feet for an accessory structure erected more than 65 feet from a front lot line, provided the structure is detached from other buildings by five feet or more and does not exceed a height of one story nor an area of 450 square feet.
- B. Boats and trailers, travel trailers, pick-up campers or coaches, motorized dwellings, and similar recreational equipment may be stored on a lot but not used as an accessory use in any zone provided that:
 - 1. In a residential zone, parking or storage in a front yard or in a side yard abutting a street other than an alley shall be permitted only on a driveway.
 - 2. Parking or storage shall be at least three feet from an interior side lot line.

SECTION 4.100. PROJECTIONS FROM BUILDINGS. Architectural features such as cornices, eaves, canopies, sunshades, gutters, chimneys and flues shall not project more than three (3) feet into a required yard, provided that the projection is not closer than three (3) feet to a property line.

SECTION 4.110. MINIMUM STANDARDS FOR A MANUFACTURED HOME ON INDIVIDUAL LOTS AS A SINGLE-FAMILY DWELLING. A manufactured home permitted as a single-family dwelling on an individual lot shall be in compliance with the following standards and regulations as a minimum. In such cases when the standards set forth in a specific zone are more restrictive, the more restrictive standards shall govern.

- A. The manufactured home shall be a 14-foot wide or double wide unit and shall contain at least 660 square feet of space as determined by measurement of the exterior dimensions of the unit exclusive of any trailer hitch device.
- B. The manufactured home unit shall be manufactured after June 15, 1976, and bear the Oregon Department of Commerce 'Insignia of Compliance' or a manufactured home manufactured prior to said date if certified to comply with such standards. All pre-owned and pre-occupied units (i.e. used) shall be inspected by a certified Building Official prior to installation and occupancy to insure compliance with applicable standards required for the 'Insignia of Compliance' and to insure that such units are in such a condition as to not be detrimental to the public health, safety and general welfare or to adjoining properties.

C. The manufactured home shall be placed upon and securely anchored to a foundation having permanence and strength equal to that provided by a concrete or masonry block foundation, and such foundation shall be installed according to manufacturer's instructions approved by the State Department of Commerce.

D. The manufactured home shall have a continuous perimeter of skirting that shall be composed of the same material and finish as the exterior of the manufactured home or of brick, concrete or masonry block. Such skirting shall be secure against the entrance of animals, but there shall be provisions for ventilation and access to the space under the unit.

E. All plumbing, electric and gas service connections shall be made according to instructions approved by the State Department of Commerce.

F. All manufactured home accessory buildings and structures shall comply with state and local construction and installation standards. Manufactured home accessory structures include porches and steps, awnings, cabanas, carports, or any other structure or addition that depends in part on the mobile home for its structural support, or in any manner is immediately adjacent to or attached to the manufactured home. Such structures or additions shall not total more than 30% of the total living space of the manufactured home and such structures or additions combined. Roofing and siding materials shall be of similar material and color and complementary to the existing manufactured home unit. Ramadas shall not be permitted.

G. The owner of the property shall remove the foundation and all accessory structures and additions to the manufactured home and permanently disconnect sewer, water and other utilities if the manufactured home is removed from its foundation unless otherwise authorized by the County. In the event the owner fails to accomplish said work within 30-days from the day on which the manufactured home is moved from its foundation, the County may perform such work and place a lien against the property for the cost of such work. This condition shall not apply in the event that the manufactured home is replaced on the original foundation, or on the original foundation as modified, or by another approved manufactured home within 30-days of the original unit's removal. Said lien may be initiated by the County Court.

SECTION 4.120. MANUFACTURED OR MOBILE HOME AUTHORIZED AS A TEMPORARY RESIDENCE ON AN INDIVIDUAL LOT. A manufactured or mobile home may be authorized as a temporary residence on an individual lot and shall comply with the following additional provisions:

A. The home shall be occupied by the owner of the lot on which the home is located.

B. The home shall be placed upon a lot for which a building permit for a housing unit has been obtained.

C. The home shall be occupied only during a period in which satisfactory progress is being made toward the completion of the housing unit on the same site.

D. Electric, water and sewer utility connections shall be made to the mobile home.

E. The owner of the lot agrees to remove the home from the lot not later than eighteen months from the date on which the building permit for the housing unit is issued or not later than two months following the completion of the housing unit, whichever occurs first.

F. The owner of the lot agrees to remove all evidence that the manufactured or mobile home has been on the lot within thirty (30) days after the removal of the home.

G. The County Planning Director or designee may review permits issued under this section at any time and may revoke the permits when they are found to be not in compliance.

H. Any accessory manufactured or mobile home dwelling placed under a permit authorized by this section must be located as close as possible to the primary dwelling under construction. Unless there are physical limitations of the land, this should be within 100 feet of said dwelling.

SECTION 4.130. MANUFACTURED OR MOBILE HOME AUTHORIZED AS TEMPORARY RESIDENCE FOR CARE OF A RELATIVE IN CONJUNCTION WITH EXISTING RESIDENTIAL USE.

A. Purpose and intent. It is the intent of the temporary use permit section to provide a set of procedures and standards for temporary use of structures which, because of personal hardship needs require social consideration for temporary usage after demonstration of temporary need and a finding of no adverse impact to the welfare of adjacent properties and the community as a whole.

The provisions of this section are to apply when the proposed use does not qualify as a continuation of a nonconforming use, not permitted by right, nor permitted through the operations of other more pertinent procedures and provisions of this zoning ordinance. Provided however, temporary use permits are not to be construed, permitted nor utilized as a means to abrogate the intent, purpose or procedures of the County's Comprehensive Plan or Zoning Ordinance regulations.

No temporary permit shall be granted which would have the effect of creating a permanent zoning or result in a hardship when the use is not permitted to continue at the expiration of the permit periods. Further, no temporary permit may be granted which has the effect of conferring a special privilege for which other property within the same zone may not be equally eligible.

B. As a temporary use in every zone, the Commission may allow one accessory manufactured or mobile home dwelling complying with the standards of 4.140 except (a) and (c), and providing that no additions to the mobile home shall be permitted in conjunction with a primary dwelling with the following findings:

1. That an accessory dwelling is necessary to care for or provide custody of an elderly, mentally handicapped, or infirm relative who a medical doctor certifies is in need of this kind of care or custody.
2. Residential utilities and facilities can be provided. Septic feasibility is required prior to approval.

C. A temporary use permit granted under this section is void when the elderly, mentally handicapped, or infirm relative who is the subject of the permit moves to another residence or is absent from the residence for more than 120 days or leaves the residence with no likelihood of returning for continued residency of at least 30 days. Exception to the 120-day limit can be provided for because of extraordinary circumstances such as extended hospitalization.

D. Within 30 days of the permit becoming void or revoked, the accessory dwelling shall be removed by the owner of the real property unless otherwise approved by the Commission.

E. The County Planning Director or designee may review permits issued under this section at any time and may revoke permits when they are found to be not in compliance.

F. Any accessory dwelling placed under a permit authorized by this section must be located as close as possible to the primary dwelling. Unless there are physical limitations of the land this should be within 100 feet of the primary dwelling.

SECTION 4.140. MANUFACTURED OR MOBILE HOME AS A SECONDARY ACCESSORY FARM DWELLING. A manufactured or mobile home permitted as a secondary accessory farm dwelling or other farm use structure shall only be permitted in accordance with the following requirements:

A. The unit may only be occupied as a secondary farm accessory dwelling; i.e., there must exist on the subject property an owner-occupied primary conventional dwelling or a manufactured or mobile home complying with the conditions set forth in Section 4.110 of this ordinance, and there shall not be more than one such unit permitted for each 160 acres in the farm unit, and in the case of 4 or more units the mobile home park standards shall apply, except as approved by the Commission.

B. The occupant of the manufactured or mobile home shall be an employee of the owner or an immediate family member engaged in the farm operation.

C. The unit shall bear the Oregon Department of Commerce 'Insignia of Compliance' or be inspected for compliance with the standards required thereof.

D. The unit shall be considered a temporary installation; therefore permits of such units shall be renewable on an annual basis unless otherwise approved by the Commission.

E. The manufactured or mobile home shall contain at least 500 square feet of space as determined by measurement of the exterior's dimensions of the unit, exclusive of any trailer hitch device.

F. The manufactured or mobile home shall be placed on and securely anchored to a foundation having permanence and strength equal to that provided by a concrete or masonry block foundation, and such foundation shall be installed according to manufacturer's instruction approved by the State Department of Commerce.

G. All plumbing, electric and gas service connections shall be made according to instructions approved by the State Department of Commerce.

H. Additions or alterations to the manufactured or mobile home unit shall not exceed 15% of the square footage.

I. The manufactured or mobile home shall be provided with a water closet, lavatory, and bathtub or shower which are connected to running water and to an approved subsurface sewage disposal system, and which are located in a room or rooms which afford privacy to the occupant, and shall be provided with a kitchen area containing a sink with hot and cold running water.

J. The owner of the property shall remove the foundation and all accessory structures and permanently disconnect sewer, water and other utilities if the manufactured or mobile home is authorized by the County. In the event the owner fails to accomplish said work within 30-days from the date on which the manufactured or mobile home is moved from its foundation, the County may perform such work and place a lien against the property for the cost of such work. This condition shall not apply in the event that the manufactured or mobile home is replaced on the original foundation, or on the original foundation as modified, or by another approved mobile home within 30-days of the original unit's removal, unless otherwise approved by the County. Such lien may be initiated by the County Court.

4.150 TEMPORARY USE OF A TRAVEL TRAILER. The temporary use of a travel trailer and/or motor home as a residence may be permitted only as a temporary residence during construction of a permanent residence. The use requires authorization on the Zoning Permit for the permanent residence. The duration or occupancy of the temporary residence may not exceed six (6) months. (One extension may be permitted if due diligence and progress is demonstrated, for a period not to exceed six (6) months.) The use of the travel trailer as a temporary residence shall cease within two weeks of issuance of an occupancy permit for the permanent dwelling. MC-C-1-99

SECTION 4.160 STANDARDS FOR TRANSPORTATION IMPROVEMENTS. The intent of these provisions is to provide clear directions and guidelines when considering installation of transportation facilities in Morrow County. Although some zone designations may address certain uses listed below, these provisions generally apply to all zones in the County. Thus, except where otherwise specifically regulated by this ordinance, the following improvements are permitted outright:

1. Normal operation, maintenance, repair, and preservation of existing transportation facilities (roadways, bridges, etc.).
2. Installation of culverts, pathways, medians, fencing, guardrails, lighting, and similar types of improvements within the existing right-of-way.
3. Projects specifically identified in the Transportation System Plan as not requiring further land use regulation.
4. Landscaping as part of a transportation facility.
5. Emergency measures necessary for the safety and protection of property.

6. Acquisition of the right-of-way for public roads, highways, and other transportation improvements designated in the Transportation System Plan except those that are located in exclusive farm use or forest zones.
7. Construction of a street or road as part of an approved subdivision or land partition approved consistent with the applicable land division ordinance.
8. Establishment or continuation of no spray zones on private property.
9. Cattle guards to be installed per Morrow County Court Policy M-43673.
10. Pavement aprons to be installed at intersections of gravel roads or driveways with paved roads per Morrow County Court Resolution R-29-2000.
11. Any excavation within Morrow County right-of-way shall conform to Morrow County Ordinance MC-PW-1-81, the Road and Street Excavation Ordinance.

B. Uses Permitted by Conditional Use Permit.

1. Construction, major reconstruction, or widening of highways, roads, bridges, or other transportation projects that are not designed and constructed as part of a subdivision or planned development shall comply with the Transportation System Plan and applicable standards, and shall address the following criteria. For State projects that require an Environmental Impact Statement (EIS) or Environmental Assessment (EA), the draft EIS or EA shall be reviewed and used as the basis for findings to comply with the following criteria:
 - a. The project is designed to be compatible with existing land use patterns, noise generation, safety, and zoning.
 - b. The project is designed to minimize avoidable environmental impacts to identified wetlands, wildlife habitat, air and water quality, cultural resources, and scenic qualities.
 - c. The project preserves or improves the safety and function of the facility through access management, traffic calming, or other design features.
 - d. The project includes provision for bicycle and pedestrian circulation as consistent with the Transportation Element of the Comprehensive Plan and other requirements of this Ordinance.
2. Construction of rest areas, weigh stations, temporary aggregate storage, and aggregate processing sites.
3. If review under this Section indicates that the use or activity is inconsistent with the Transportation Element of the Comprehensive Plan, the procedure for a plan amendment shall be undertaken prior to or in conjunction with the conditional use permit review.

C. Time Limitation on Transportation-Related Conditional Use Permits. Authorization of a conditional use permit shall be void after a period specified by the applicant as reasonable and necessary based on season, right-of-way acquisition, and other pertinent factors. This period shall not exceed three years. (MC-C-8-98)

D. Private Streets Outside an Urban Growth Boundary. All private streets providing access from a public roadway to a proposed land division shall meet the following standards:

1. Have a minimum sight distance in compliance with adopted County Standards at any intersection with a public road. Additional sight distance or advance warning signage or other devices may be required where known safety hazards exist.
2. For each private street, there shall be a legal recorded document which includes:
 - a. A legal description of the proposed easement;
 - b. Ownership of the street;
 - c. Use rights; and
 - d. A maintenance and construction agreement which includes Fire Marshal approved street specifications and turn around area (if required) and the allocation and/or method of determining liability for maintenance.
3. Where drainage conditions require it, a private street shall be ditched in conformance with the County Road Standards.
4. Private streets which access public or County roads shall be located, designed and constructed (within the public right-of-way) in accordance with adopted standards for County roads.
5. Prior to establishing a private driveway or a private street, the owner shall obtain an access permit for access to the intersecting public road. As a condition of granting access to a public road, the County may require the applicant to clean the ditch serving the parcel and remove sight obstructing vegetation in the vicinity of the access.

SECTION 4.165 SITE PLAN REVIEW

Site Plan Review is a non-discretionary or "ministerial" review conducted without a public hearing by the County Planning Director or designee. Site Plan Review is for less complex developments and land uses that do not require site development or conditional use review and approval through a public hearing.

A. Purpose. The purpose of Site Plan Review (ministerial review) is based on clear and objective standards and ensures compliance with the basic development standards of the land use district, such as building setbacks, lot coverage, maximum building height, and similar provisions. Site Plan review also addresses conformity to floodplain regulations, consistency with the Transportation System Plan, and other standards identified below.

B. Pre-application review. Prior to filing its application for site plan review, the applicant shall confer with the County Planning Director or designee, who shall identify and explain the relevant review procedures and standards.

C. Applicability. Site Plan Review shall be required for all land use actions requiring a Zoning Permit as defined in Section 1.050 of this Ordinance. The approval shall lapse, and a new application shall be required, if a building permit has not been issued within one year of Site Review approval, or if development of the site is in violation of the approved plan or other applicable codes.

D. Review Criteria.

1. The lot area shall be adequate to meet the needs of the establishment.
2. The proposed land use is permitted by the underlying land use district.
3. The land use, building/yard setback, lot area, lot dimension, density, lot coverage, building height and other applicable standards of the underlying land use district and any sub-district(s) are met.
4. Development in flood plains shall comply with Section 3.100 Flood Hazard Overlay Zone of the Ordinance.
5. Development in hazard areas identified in the Morrow County Comprehensive Plan shall safely accommodate and not exacerbate the hazard and shall not create new hazards.
6. Off-street parking and loading-unloading facilities shall be provided as required in Section 4.040 and 4.050 of the Morrow County Zoning Ordinance. Safe and convenient pedestrian access to off-street parking areas also shall be provided as applicable.
7. County transportation facilities shall be located, designed and constructed in accordance with the design and access standards in the Morrow County Transportation System Plan.
8. Site planning, including the siting of structures, roadways and utility easements, shall provide, wherever practicable, for the protection of trees eight inch caliper or greater measured four feet from ground level, with the exception of noxious or invasive species, such as Russian olive trees.
9. Development shall comply with Section 3.200 Significant Resources Overlay Zone or 3.300 Historic Buildings and Sites protecting inventoried significant natural and historic resources.
10. The applicant shall determine if compliance is required with Oregon Water Resources Department water quantity and/or Oregon Department of Environmental Quality water quality designations.
11. The applicant shall determine if previous Code Enforcement violations have been cleared as applicable.
12. The applicant shall determine the method of disposal for solid waste, with staff providing information to the applicant about recycling opportunities.
13. The applicant shall obtain the necessary access permit through the Public Works Department as required by Morrow County Resolution R-29-2000.

E. Submittal Requirements. A site plan shall be submitted including all of the following information except for specific items determined at the pre-application review not to be applicable. All site plans shall have dimensions clearly indicated. An applicant may provide the information on separate sheets, if necessary or desirable for clarity.

1. North arrow and scale.
2. Location of property boundaries, including adjacent public or private streets and rights of way.
3. Location of existing structures and natural features.
4. Areas affected by the proposed development with slopes in excess of 10 percent.
5. Location of utilities and facilities, or proposed locations (sewer, water, fire hydrants, septic system, storm water facilities, etc.).
6. Proposed landscaping.
7. Exterior lighting.
8. Circulation plan for vehicles, pedestrians, and bicyclists, including existing and proposed points of access and sidewalks.
9. Parking lot layout, with circulation plan and striping details.
10. Sign location and details.

F. Application Completeness/Request for Additional Information. The County Planning Director or designee shall determine the application to be complete based on the above standard criteria within 14 days of the application submittal. If the application is found to be incomplete or additional information is needed it may be requested from the applicant. A request for additional information beyond the standard review criteria cannot be used to rule an application incomplete.

G. Minimum Standards for Roadway Design Plans Submitted for County Review. Any transportation facility or transportation improvement to be constructed as part of a private development and subsequently dedicated to the County must first receive design approval by the Morrow County Public Works Department, based on applicable design criteria and the rationale for establishing the criteria to be provided by the County. Design approval shall also include all other pertinent issues related to roadway construction and operations, including but not limited to drainage, maintenance, serviceability, and pavement design. Street design plans submitted for County approval shall be stamped by a registered professional engineer with appropriate experience.

H. Conditions Requiring Variance Application. In the case of transportation improvement plans that do not meet the above minimum standards, the Morrow County Public Works Department

may work with the applicant to determine whether an alternate design standard is appropriate (design modification). Design modifications are reviewed and approved by Morrow County Public Works Department staff. If upon mutual agreement it is determined that an alternate design standard cannot be met, an application for a design variance will be required, subject to review and approval by the Morrow County Planning Commission.

SECTION 4.170 SITE DEVELOPMENT REVIEW (MC-C-1-02)

A. Purpose. The purposes of site development review are to encourage site planning in advance of development that is permitted under Morrow County's Comprehensive Plan and land use regulations; assure that development is supported with appropriate types and levels of transportation improvements and public facilities and services; and implement the Morrow County Comprehensive Plan and land use regulations with respect to development standards and policies.

B. Preapplication review. Prior to filing its application for site development review, the applicant shall confer with the Planning Director, who shall identify and explain the relevant review procedures and standards.

C. When required.

1. Site development review shall be required for all major developments in industrial and commercial zones. As used in this Section, a "major development" is an industrial development utilizing 100 or more acres of real property. When development is proposed in phases, site development review shall apply to each phase of the development, whether or not the phase meets the site development review threshold.

2. Site development review also shall apply when required by the Planning Commission as a condition of approval of a land use decision not otherwise subject to site development review; provided that, in a condition imposing such a requirement, the Planning Commission may waive one or more site development review information requirements and/or approval standards that the Planning Commission finds the application already has fulfilled or are not relevant or otherwise are not warranted.

3. No building permit shall be issued prior to site development review approval whenever site development review is required by this section. Site development review shall not alter the type and category of uses permitted in affected zoning districts.

4. As used in this Section, "development" means any man-made change to improved or unimproved real property in the County, including but not limited to construction or installation of a building or other structure; major site alterations such as those due to grading; paving; and improvements for use as parking. However, site development review shall not apply to any interior remodeling of any existing building or structure or any modification to an existing building or structure that does not substantially change its exterior appearance.

D. Plans required. A complete application for site development review shall be submitted. The application shall include the following plans and information:

1. A site plan or plans, drawn to scale, containing the following information:
 - a. A vicinity map covering an area 250 feet from the boundary of the development site and showing general information about the location, dimensions and names of all existing and proposed streets, County roadways and state highways, access points on both sides of the road when applicable, sidewalks, bicycle routes, and easements and utility locations. The map also shall indicate distances to neighboring constructed access points, median openings (where applicable), traffic signals (where applicable), intersections, and other transportation features on all sides of the property.
 - b. The site size, dimensions, and zoning, including dimensions and gross area of the lot(s) or parcel(s) and tax map and tax lot number(s) for the development site.
 - c. Contour lines at two foot contour intervals for grades 0 to 10 percent, and five-foot intervals for grades over 10 percent.
 - d. The location of the following hazard areas on and within 100 feet of the boundaries of the site:
 - i. Areas indicated on National Flood Insurance Rate maps as being within the 100-year floodplain;
 - ii. Areas subject to erosion as identified in the Morrow County Comprehensive Plan.
 - iii. Other hazard areas identified in the Morrow County Comprehensive Plan.
 - e. The location of inventoried significant natural resource areas on and within 100 feet of the boundaries of the site, including big game habitat areas, fish and riparian habitat areas, mineral and aggregate resource areas, significant natural areas, wetlands, water resources, and historic resources. As used in this Section, "significant inventoried" means a resource area identified as significant in Morrow County's acknowledged inventory of Goal 5 resource sites.
 - f. The location, dimensions, and setback distances of all existing permanent structures, improvements and utilities on or within 25 feet of the site, and the current and proposed uses of the structures.
 - g. The location, dimensions, square footage and setback distances of proposed structures, improvements, and utilities, and the proposed uses of the structures by square footage.
 - h. The location, dimension and names, as appropriate, of all existing and proposed streets, other public ways, sidewalks and easements on and within the development site.
 - i. All motor vehicle parking, circulation, loading and servicing areas.
 - j. Site access points for automobiles and pedestrians.
 - k. On-site pedestrian circulation.

- I. Outdoor areas proposed as open space.
2. A landscaping plan, drawn to scale, showing the location and types of existing trees (eight inches or greater in caliper measured four feet above ground level) and vegetation proposed to be removed and to be retained on the site, the location and design of landscaped areas, the varieties, sizes and spacing of trees and plant materials to be planted on the site, the proposed types and locations of irrigation systems to maintain plant materials, and other pertinent landscape features.
3. Architectural elevations and floor plans for all proposed structures, drawn to scale, with elevations accurately reflected to grade.
4. A description of materials, referenced to UBC class codes, to be used on proposed structures.
5. An erosion control and grading plan.
6. A drainage plan, developed in accordance with County standards or with Oregon Department of Environmental Quality standards if no County standards have been adopted. The drainage plan shall identify the location of drainage patterns and drainage courses on and within 100 feet of the boundaries of the site.
7. An exterior lighting plan, drawn to scale, showing type, height, and lighting levels on and at the edge of the site.
8. A written statement identifying:
 - a. The nature of the proposed use(s).
 - b. Plans for the treatment and disposal of sewage and industrial wastes and any on-site disposal of wastes.
 - c. Plans for handling traffic, noise, glare, air pollution, fire, or safety hazard.
9. The following technical reports:
 - a. For developments expected to generate 400 or more vehicle trips on a single day, a traffic report, prepared by a licensed traffic engineer, demonstrating the ability of affected transportation facilities including highways, roads and intersections to accommodate the anticipated amount of traffic that would be generated by the proposed development over 20 years. The report shall identify existing traffic conditions and the safety and capacity improvements that are needed to accommodate the anticipated traffic, including facility reconstructions, modifications or widenings, additional travel or passing lanes, intersection or interchange improvements, realignments, channelization improvements, or other needed facility improvements, including possible new transportation facilities. The analysis shall demonstrate consistency with the applicable performance standards of the affected facilities. The Morrow County Transportation System Plan provides the applicable standards for

county transportation facilities. The Oregon Highway Plan provides the applicable standards for state transportation facilities.

When a traffic management plan is required by the Morrow County Transportation System Plan, the application shall not be deemed complete until the applicant has filed with the Planning Director a traffic management plan (TMP) including transportation system management (TSM) and transportation demand management (TDM) measures that have been coordinated with and address the reasonable concerns of affected transportation providers (e.g., Morrow County, affected cities, Oregon Department of Transportation, Federal Highway Administration) and traffic safety and emergency service providers (e.g. County sheriff, State Police, fire district, ambulance). The TMP shall be prepared by a licensed traffic engineer with established experience in the type of event for which the TMP is being developed. Unless otherwise agreed to by affected local governments or agencies, the costs of paying for necessary transportation improvements and implementation of the TMP shall be borne by the developer or its successors.

The TMP shall include, but not be limited to: ingress and egress from parking areas; deployment of personnel at ramps, intersections and highway locations; plans for rerouting of traffic in the event of accident or other cause of traffic delay; coordination with state police, County sheriff and emergency service providers; use of temporary signage, reader boards and similar visual aids; estimates of numbers and types of personnel to be employed; and other appropriate information.

b. If located within 5000 feet of a runway or approach surface of a public use airport, a technical report explaining how the development is compatible with customary aviation-related activities, including airport takeoffs and landings. The report shall explain how the proposed uses, including measures to minimize conflicts, do not: cause emissions of smoke, dust or steam that would obscure visibility within airport approach surfaces; project light directly onto existing airport runways or taxiways; or interfere with airport radio, radiotelephone, television and electrical transmissions.

10. Within 14 working days following receipt of a site development review application, the Planning Director may waive the submission of information for specific provisions of this Section or may require information in addition to that required by a specific provision of this Section, as follows:

a. The Planning Director may waive the submission of information for a specific requirement upon determination either that specific information is not necessary to evaluate the application properly, or that a specific approval standard is not applicable to the application. If submission of information is waived, the Planning Director shall, in the staff recommendation, identify the waived requirement and briefly explain the reasons for the waiver.

b. The Planning Director may require information in addition to that required by a specific provision of this Section upon determination that the information is needed to evaluate the application properly and that the need can be justified on the basis of a special or unforeseen circumstance. If additional information is required, the Planning Director shall, in the decision, briefly explain the reasons for requiring the additional information.

E. Standards.

1. All development shall comply with the following standards:

- a. Retaining walls shall be provided and designed consistent with Uniform Building Code requirements. Grading and contouring shall take place with particular attention to minimizing the possible adverse effects of grading and contouring on the natural vegetation and physical appearance of the site.
- b. Development in flood plains shall not increase the flood plain elevation unless the area in which the rise will occur contains no structures and the owner of such property signs a written acceptance of any increase in the flood plain elevation. Development in hazard areas identified in the Morrow County Comprehensive Plan shall safely accommodate and not exacerbate the hazard and shall not create new hazards.
- c. Drainage shall be provided in accordance with Oregon Department of Environmental Quality standards. The Planning Commission may impose conditions to ensure that waters are drained from the development so as to limit degradation of water quality.
- d. Off-street parking and loading-unloading facilities shall be provided as required in Article IV of the Morrow County Zoning Ordinance. Safe and convenient pedestrian access to off-street parking areas also shall be provided.
- e. County transportation facilities shall be located, designed and constructed in accordance with the design and access standards in the Morrow County Transportation System Plan.
- f. Circulation provided by public streets and by private streets, accessways and maneuvering areas within the boundary of the site shall facilitate safe and convenient motor vehicle and pedestrian access. Access for emergency services (fire, ambulance and police) shall be provided consistent with the requirements of the Fire Marshal and emergency service providers.
- g. Illumination resulting from outdoor lighting shall not exceed one foot-candle at the property line.
- h. Site planning, including the siting of structures, roadways and utility easements, shall provide, wherever practicable, for the protection of trees eight inch caliper or greater measured four feet from ground level.
- i. Development shall comply with applicable County regulations protecting inventoried significant natural and historic resources.
- j. Development shall maintain continuous compliance with applicable federal, state and County air and water quality standards. Prior to issuance of a building permit, the Building Official may require submission of evidence of compliance with such standards from the applicable federal or state agencies or the receipt of the necessary permits for the development from these agencies.

k. Development shall be designed to comply with applicable Oregon Department of Environmental Quality noise standards.

l. Sewer, water and storm drainage facilities shall be adequate to serve the proposed or permitted level of development. For uses like a speedway that engage in activities that on occasion attract unusually large numbers of people to the site, the development may rely on temporary sewer (e.g., portapotties, lagoon storage) and water facilities to accommodate the excess demand. The applicant shall demonstrate that adequate facilities and services are presently available or can be made available concurrent with development. All facilities shall be designed to comply with applicable state and local standards.

m. Law enforcement, public safety and security measures shall be adequate to serve the proposed or permitted level of development. For land uses involving activities that may attract many thousands of visitors to a site at one time on an occasional or episodic basis, adequate safety, law enforcement and security measures may include, but are not limited to, the use of on-site security service personnel and availability of police, fire and emergency medical services. For such uses, the Planning Commission may require the applicant to develop a public safety and security plan, which shall be coordinated with appropriate local and state public safety providers.

n. The transportation system shall be adequate to accommodate the proposed or permitted level of development.

i. Rights-of-way and roadway and sidewalk improvements shall be provided consistent with applicable County or State design, access management and highway performance standards, including applicable Oregon Highway Plan standards. Access points to County roadways and state highways shall be properly placed in relation to sight distance, driveway spacing and other related considerations including opportunities for joint and cross access. Any application that involves access to or significantly impacts the state highway system shall be reviewed by the Oregon Department of Transportation. Such applications shall demonstrate compliance with the Oregon Highway Plan and shall be conditioned on state issuance of access permits where required.

ii. In determining the adequacy of the transportation system to accommodate the proposed development, consideration shall be given to the need for roadway reconstructions, modifications or widenings, additional travel or passing lanes, intersection or interchange improvements, road realignments, channelization improvements, or other needed roadway improvements, including possible new roads. Consideration also shall be given to the need for right-of-way improvements such as installation of lighting, signalization, turn lanes, median and parking strips, traffic islands, paving, curbs and gutters, sidewalks, bikeways, street drainage facilities and other facilities needed because of anticipated vehicular and pedestrian traffic generation. For uses necessitating preparation of a transportation management plan, a decision approving a site development review application shall include a condition requiring implementation of the transportation system management measures and transportation demand management measures that are determined to be needed to accommodate the traffic generated by the development and to comply with the Oregon Highway

Plan. Unless otherwise agreed to by affected local governments or agencies or limited by constitutional constraints, the costs of paying for necessary transportation improvements and implementation of the traffic management plan shall be borne by the developer or its successors.

iii. Nothing in this or any other provision of this Chapter shall be construed to replace, alter or otherwise affect the applicability of the Transportation Planning Rule, OAR 660, Division 12, to any development or action that would otherwise be subject to that Rule.

o. Access and facilities for physically handicapped people shall be incorporated into the site and building design, consistent with applicable federal and state requirements.

p. Development located within 5000 feet of a runway or approach surface of a public use airport shall not cause emissions of smoke, dust or steam that would obscure visibility within airport approach surfaces; project light directly onto existing airport runways or taxiways; or interfere with airport radio, radiotelephone, television or electrical transmissions.

q. Uses and improvements, including all land uses and improvements, including but not limited to traffic management plans, proposed on exception lands shall be consistent with the acknowledged goal exceptions taken for those lands.

2. The Planning Commission may impose such conditions as deemed necessary to ensure compliance with these standards.

a. When a transportation management plan is required, the Planning Commission may impose conditions providing for monitoring and reporting on the effectiveness of the traffic management measures and providing opportunity for a hearing to consider modifications to the TMP if deemed appropriate by the Planning Commission following its implementation. Any hearing that is held to consider TMP modifications shall be noticed and processed in the manner set out in Section VI.A of this Chapter and shall include notice to the Oregon Department of Transportation and Federal Highway Administration.

b. Required road dedications and other exactions shall comply with constitutional limitations.

c. To ensure compliance with this Section, the Planning Commission may require an applicant to sign or accept a legal and enforceable covenant, contract, dedication, easement, performance guarantee, or other document, which shall be approved in form by the County's legal counsel.

F. Review and Enforcement.

1. Applications for site development review shall be reviewed by the Planning Commission in the manner provided by ORS Chapter 197 for land use decisions following review and recommendation by the Planning Director. Public notice and an opportunity for hearing shall be provided in the manner provided by ORS Chapter 197 for land use decisions.

a. In addition to the public notice described above, timely notice of public hearing also shall be mailed to ODOT and the Federal Highway Administration if the Planning Director determines that the use may impact state or federal transportation facilities, and to the Oregon Department of Aviation and Federal Aviation Administration if the use is located within 5000 feet of a runway or approach surface of a public use airport.

b. The decision of the Planning Commission may be appealed to the County Court in the manner provided in Article 9, Section 9.030 of the Morrow County Zoning Ordinance.

2. The County building official may issue a certificate of occupancy only after the Planning Director has determined that the improvements required by site development review approval have been completed, or a schedule for completion and a bond or other financial guarantee have been accepted by the County and by ODOT for required improvements to the state highway system.

a. Implementation of traffic management, public safety and/or security plans, when required, shall be made ongoing conditions of approval of the use, and failure to substantially comply with those plans may be a basis for the Planning Director or Building Official to suspend or revoke the occupancy permit and for the County, DLCD or ODOT (when a state Transportation Facility is affected) to petition a court of competent jurisdiction to issue a temporary restraining order and permanent injunction against further use of the property for the purposes approved in the site development review.

b. Prior to or concurrent with the suspension of any site development review permit, the County shall provide the permittee with notice and an opportunity to be heard in accordance with the process set out in Morrow County Ordinance No. MC-C-7-92.

G. Expiration and Extension of Permit.

1. A site development review permit shall expire automatically two (2) years from the date of issuance unless one of the following occurs first:

a. The development has commenced; or

b. An application for an extension is filed as provided in this section; or

c. The permit is appealed to a body of competent jurisdiction following final approval by the County, in which case the two-year period shall be tolled until a final, unappealed or unappealable decision is made by a court or other body of competent jurisdiction.

2. As used in subsection 1 of this Section, a development has "commenced" when:

a. The permit holder has physically altered the land or structure or changed the use thereof through actions such as preliminary grading for roads, driveways or building sites, installation of utilities, construction of required off-site improvements or construction of buildings, and

- b. The alteration or change is directed toward completion of the development; and
 - c. The permit holder has spent at least \$50,000 in expenditures related to completion of the development. Expenditures that could apply to various other uses of the land or structure shall be excluded including the cost of purchasing land.
 - d. The provisions of subsection 1 of this Section shall apply independently to each discrete phase of a phased development. The commencement requirement for a subsequent phase cannot be satisfied by commencement activities conducted under an approval for an earlier phase of the development.
3. If an extension is desired, the holder of the site development review permit must file an application for an extension prior to the expiration of the permit. The application shall be filed in writing with the Planning Director. A maximum of two extensions are permitted. Unless approved, the extension does not extend the expiration date. The Planning Director shall grant an initial two year extension upon the timely filing of the extension application. Following notice and hearing, the Planning Commission shall grant a second two-year extension only upon demonstration by the permit holder that:
- a. In terms of time, labor or money the permit holder has been making a good faith effort to commence the development or has been precluded from doing so for reasons beyond the permit holder's reasonable control;
 - b. Commencement of the development is likely during the second two year extension; and
 - c. There has been no change in circumstance or the law likely to necessitate significant modification of the development approval or conditions of approval. (MC-C-1-02)

ARTICLE 8. DESIGN STANDARDS

SECTION 8.010. COMPLIANCE REQUIRED. Any land division, whether by Subdivision, creation of a street or other right-of-way, partitioning or planned unit development, shall be in compliance with the design standards set forth by this ordinance.

SECTION 8.020. STREETS.

A. General. The location, width and grade shall be considered in their relation to existing and planned streets, to topographical conditions, to public convenience and safety, and to the proposed use of land to be served by the street. The street system shall assure an adequate traffic circulation system with intersection angles, grades, tangents and curves appropriate for the traffic to be carried considering the terrain. Streets shall be designed and constructed in conformance with the basic cross-sections in the County TSP Update, with horizontal and vertical alignment geometry conforming to the latest version of applicable ODOT and/or AASHTO standards.

B. Design and Construction Approval. Any facility or improvement conditioned to be constructed as part of private development activity and subsequently dedicated to the County must first receive design approval by the Morrow County Public Works Department. Design approval shall include all other pertinent issues related to roadway construction and operations, including but not limited to drainage, maintenance, serviceability, and pavement design. Upon request of an applicant, the County shall provide applicable design criteria and the rationale for establishing the criteria. Street design plans submitted for County approval shall be stamped by a registered professional engineer with appropriate experience. The Public Works Department is responsible for providing regular inspections throughout construction, and performing final inspection upon completion and prior to acceptance of the improvement as public right-of-way. An equitable Plan Review and Construction Inspection fee shall be determined at the initiation of plan review and charged to the developer.

C. Minimum Right-of-Way and Roadway Width. Unless otherwise approved in the tentative plan, the street right-of-way and roadway surfacing widths shall not be less than the minimum width in feet set forth in the following table. Additional right-of-way may be necessary to conform to standards and specifications set forth in current AASHTO and/or ODOT design standards, and other applicable affected City standards and specifications.

Where conditions, particularly topography or the size and shape of land parcels, make it impractical to provide buildable lots, narrower right-of-way may be accepted ordinarily not less than 40 feet. Slope easements, while generally undesirable, may be required in extreme cases.

The Roadway Standards set forth in the following table shall be observed unless a variance has been obtained.

ROADWAY STANDARDS					
Road Classification	Right of Way (ft)	Lane Width (ft)	Paved Shoulder Width (ft)	Pavement Width (ft)	Average Daily Traffic (ADT)
Rural Access I*	60	9	1	20	100-200
Rural Access II*	60	9	1	20	50-100
Rural Collector I	60	12	3-4	30-32	300-500
Rural Collector II	60	12	2	28	200-300
Rural Collector III	60	12	1	26	100-200
Rural Arterial I	60	12	4-8	32-40	> 700
Rural Arterial II	60	12	3-6	32-40	300-700
Rural Gravel	60	11	n/a	n/a	n/a

* Rural Access I and Rural Access II differ in the surface type – Rural Access II is gravel.

D. Reserve Strips. Reserve strips or street plugs controlling the access to streets will not be approved unless necessary for the protection of the public welfare or of substantial property rights and in these cases they may be required.

E. Alignment. All streets other than minor streets, as far as is practical, shall be in alignment with existing streets by continuations of the center lines thereof. Staggered street alignment resulting in "T" intersections shall, wherever practical, leave a minimum distance of 200 feet between the center lines of streets having approximately the same direction and, in no case, shall be less than 100 feet. The streets and roads shall be laid out so as to conform to the plat of subdivisions and maps of partitions already approved for adjoining property as to width, improvements, general direction, and in all other respects, unless the Planning Commission determines it is in the public interest to modify the street or road pattern. Streets and roads shall be laid out in such a way so as to connect to existing roads at the time of development or through extension at a future date by creating dead-end streets without turn-arounds.

F. Future Extension of Streets. Where necessary to give access to or permit a satisfactory future subdivision on adjoining land, streets shall be extended to the boundary of the subdivision and the resulting dead-end streets may be approved without a turn-around. Reserve strips and street plugs may be required to preserve the objectives of street extensions. Streets and accessways are always required unless one or more of the following conditions exists:

1. Physical or topographic conditions make a street or accessway connection impracticable. Such conditions include but are not limited to freeways, railroads, steep slopes, wetlands, or other bodies of water where a connection could not reasonably be provided;
2. Buildings or other existing development on adjacent lands physically precludes a connection now or in the future considering the potential for redevelopment; or

3. Where streets or accessways would violate provisions of leases, easements, covenants, restrictions, or other agreements existing as of May 1, 1995, which preclude a required street or accessway connection.

G. Intersection Angles. Streets shall be laid out to intersect at angles as near to right angles as practical, except where topography requires a lesser angle. In no case shall the acute angle be less than 80 degrees unless there is a special intersection design. An arterial or collector street intersecting with another street shall have at least 100 feet of tangent adjacent to the intersection unless topography requires a lesser distance. Other streets, except alleys, shall have at least 50 feet of tangent adjacent to the intersection unless topography requires a lesser distance. The intersection of more than two streets at any one point will not be approved. Right-of-way lines at street intersections shall have a minimum corner radius of 15 feet.

H. Existing Streets. Whenever existing streets, adjacent to or within a tract, are of inadequate width, additional right-of-way shall be provided at the time of land division by the developer. During consideration of the tentative plan for a subdivision, the Planning Commission shall determine whether improvements are required to existing streets, either adjacent to or within the tract. They may require such improvements as a condition of approval of the tentative plan.

I. Half Streets. Half streets, while generally not acceptable, may be approved where essential to the reasonable development of the subdivision or partition when in conformity with the other requirements of these regulations and when the Planning Commission finds it will be practical to require the dedication of the other half when the adjoining property is divided. Whenever a half street is adjacent to a tract to be divided, the other half of the street shall be provided within such tract. Reserve strips and street plugs may be required to preserve the objectives of half streets.

J. Cul-de-Sac. A cul-de-sac, while not encouraged, may be used as part of a development plan, consistent with other provisions of this section (refer to Section 8.020.E). A cul-de-sac shall be as short as possible and shall have a maximum length of 400 feet and serve building sites for not more than 9 dwelling units unless approved otherwise by the Commission. A cul-de-sac shall terminate with a circular turn-around.

K. Street Names. Except for extensions of existing streets, no street name shall be used which will duplicate or be confused with the name of an existing street in the city or county. Street names and numbers shall conform to the established pattern in the affected city urban area, and shall be subject to the approval of the Planning Commission.

L. Installation of Regulatory Signs in County Road Right-of-Way. Developers are to install street name, posted speed, and other traffic control and/or regulatory signage required for private developments, per applicable standards of Morrow County and the Manual on Uniform Traffic Control Devices (MUTCD).

M. Private Signage within County Road Right-of-Way. Residents may request specific cautionary signage for individual resident(s) to be installed within County right-of-way. All costs including materials, installation, maintenance, and removal, shall be borne by the requestor.

N. Grades and Curves. Grades shall not exceed eight (8) percent on arterials, ten percent on collector streets or 12 percent on other streets except as otherwise provided for. Center line radii of curves shall not be less than 500 feet on arterials, 250 feet on collectors, or 100 feet on other streets and shall be on an even 10 feet. Where existing conditions, particularly topography, make it otherwise impractical to provide buildable sites, the Planning Commission may accept steeper grades and sharper curves as specifically provided for in current County Design Standards. In flat area, allowance shall be made for finished street grades having a minimum slope, preferably of at least 0.5 percent.

O. Streets Adjacent to Railroad Right-of-Way. Wherever the proposed land division contains or is adjacent to a railroad right-of-way, provision may be required for a street approximately parallel to and on each side of such right-of-way at a distance suitable for the appropriate use of land between the streets and railroad. The distance shall be determined with due consideration at cross streets of the minimum distance required for approach grades to a future grade separation and to provide sufficient depth to allow screen planting along the railroad right-of-way.

P. Marginal Access Streets. Where a land division abuts or contains an existing or proposed arterial street, the Planning Commission may require marginal access streets, reserve frontage lots with suitable depth, screen planting contained in a non-access reservation along the rear or side property line, or other treatment necessary for adequate protection of residential properties and to afford separation of through and local traffic.

Q. Alleys. Alleys shall be provided in commercial and industrial districts, unless other permanent provisions for access to off-street parking and loading facilities are approved by the Planning Commission.

R. Curbs. Curbs shall be required on all urban area streets unless otherwise approved by the County and affected City, and shall be installed by the developer in accordance with the standards set forth in current County Design and Construction Standards or other standards set forth by the affected City and County.

S. Proposed Corridors. For land adjacent to or containing a proposed corridor (see corridor map in the TSP), the Planning Commission may require the dedication of a suitable right-of-way that shall be provided at the time of land division.

T. Access Management. Applications for development with access onto state highways shall be provided to ODOT for review, to ensure consistency with adopted ODOT Access Management Standards shown below. These standards apply only to unsignalized access points. New traffic signals on state facilities shall meet signal

spacing standards in OAR 734-020 (desired minimum spacing for new traffic signals on state highways is at least 0.5 miles from the nearest existing or planned signal). For approval of a new traffic signal on a County facility as part of a condition of development approval, the applicant shall be required to show, through an analysis prepared by a qualified professional engineer registered in the State of Oregon, that the signal is warranted to improve traffic operations, address safety deficiencies, or a combination.

Access Management Standards for Morrow County non-Interstate Highways						
Highway	Classification	Access Spacing Standards for Public or Private Unsignalized Access (ft) for Posted Speed Indicated (mph)				
		>55	50	40 & 45	30 & 35	<25
US 730, OR 74	Regional	990	830	750	600	450
OR 206, OR 207	District	700	550	500	400	400

Source: Oregon Administrative Rules Section 734-051 (2004)

Access within the influence area of existing or proposed state highway interchanges is regulated by standards in OAR 734-051, which are included as Appendix F of the 2005 Morrow County Transportation System Plan Update. These standards do not retroactively apply to interchanges existing prior to adoption of the 1999 Oregon Highway Plan, except or until any redevelopment, change of use, or highway construction, reconstruction or modernization project affecting these existing interchanges occurs. It is the goal at that time to meet the appropriate spacing standards, if possible, but, at the very least, to improve the current conditions by moving in the direction of the spacing standard.

Morrow County also requires an access permit for land use development proposing access onto a County road. Access permit requirements for land use development are outlined in Section 4.010 of the Morrow County Zoning Code, and development proposing access onto a County road is subject to access spacing standards specified in the table below.

RECOMMENDED ACCESS MANAGEMENT STANDARDS FOR COUNTY ROADS*				
Functional Classification	Intersection			
	Public Road		Private Drive	
	Type	Minimum Spacing	Type	Minimum Spacing
Rural Arterial	at-grade	600 ft	Left/right turns	300 ft
Rural Collector	at-grade	300 ft	Left/right turns	100 ft
Rural Local	at-grade	200 ft	Left/right turns	Access to each lot

a. For most roadways, at-grade crossings are appropriate. Also, allowed moves and spacing requirements may be more restrictive than those shown to optimize capacity and safety. Any access to a state highway requires a permit from the district office of ODOT and is subject to the access spacing standards in the previous table in this section.

Approval of a variance from the County access spacing standards is subject to the following requirements:

1. The granting of a variance for access management standards shall be in harmony with the purpose and intent of these regulations and shall not be considered until every feasible option for meeting access standards is employed.
2. Applicants for a variance from these standards must provide proof of unique or special conditions that make strict application of the provisions impractical. Applicants shall include proof that:
 - a. Indirect or restrict access cannot be obtained;
 - b. No engineering or construction solutions can be applied to mitigate the condition; and,
 - c. No alternative access is available from a street with a lower functional classification than the primary roadway.
3. No variance shall be granted where such hardship is self-created.

U. Corner Clearance. Corner clearance at intersections shall meet or exceed the minimum connection spacing requirements for that roadway. New connections shall not be permitted within the functional area of an intersection or exchange as defined by the connection spacing standards of this ordinance, unless no other reasonable access to the property is available. Where no other alternatives exist, the Morrow County Planning Department may allow construction of an access connection along the property line farthest from the intersection. In such cases, directional connections such as right-in/right-out, right-in only, or right-out only may be required.

V. Driveways. Driveways onto State highways shall be consistent with ODOT Access Management Standards. Driveways onto County facilities, which require an access permit from the Morrow County Department of Public Works, shall be consistent with County access management standards and meet the following standards.

All private access driveways shall meet the following standards. Those that do not meet these standards shall require an access variance.

Land Use	Minimum (feet)	Maximum (feet)
Single Family Residential	10	24
Multi-Family Residential	24	30
Commercial	24	40
Industrial	30	40

Driveway approaches must be designed and located to provide an exiting vehicle with an unobstructed view meeting County sight distance requirements. Construction of driveways along acceleration or deceleration lanes and tapers shall be avoided due to the potential for vehicular weaving conflicts.

The length of driveways shall be designed in accordance with the anticipated storage length for entering and exiting vehicles to prevent vehicles from backing into the flow of traffic on the public street or causing unsafe conflicts with on-site circulation.

For unpaved driveways connecting to paved roadways, a paved driveway apron must be provided per Morrow County Department of Public Works standards.

W. Easements and Legal Access. All lots must have access onto a public right-of-way. This may be provided via direct frontage onto an existing public road, a private roadway, or an easement. Minimum easement requirements to provide legal access shall be as follows:

1. 1000 feet or less, an easement width of 20 feet.
2. More than 1000 feet, an easement width of 40 feet.
3. Parcels where 3 or more lots share an access (current or potential), an easement of 60 feet.

X. Joint and Cross Access. Adjacent commercial or office properties classified as major traffic generators shall provide a cross access drive and pedestrian access to allow circulation between sites. These shall be established as a system wherever feasible including:

1. A continuous service drive consistent with access management standards.
2. Stub-outs or other design features to allow tie-ins to adjacent properties.

Pursuant to this section, property owners shall record an easement allowing joint or cross access between parcels, record an easement on the deed to dedicate access rights to the main roadway, and to close non-conforming existing driveways, and to record a joint maintenance agreement with the deed defining maintenance responsibilities of property owners.

Y. Requirements for Phased Development Plans. In the interest of promoting unified access and circulation systems, development sites under the same ownership or consolidated for the purposes of development and comprised of more than one building site shall be reviewed as a single property in relation to the access standards of this ordinance. This shall also apply to phased development plans.

Z. Nonconforming Access Features. Legal access in place as of the date of adoption that do not meet spacing and design standards shall be brought into compliance with applicable standards when new access permits are requested or when a change in land use or improvements occurs.

AA. Reverse Frontage. Lots that front on more than one street shall be required to locate motor vehicle access on the street with the lower functional classification.

AB. Shared Access. Subdivisions with frontage on the state highway system shall be designed into shared access points to and from the highway. If access to a lower classification street becomes available, then conversion to that access is encouraged, along with closing the state highway access.

AC. Connectivity. The street system of a proposed subdivision shall be designed to coordinate with existing, proposed, and planned streets outside of the subdivision as provided in this Section and in the local street plans of the TSP. Whenever a proposed development abuts unplatted land or a future development phase of the same development, street stubs shall be provided to provide access to abutting properties or to locally extend the street system into the surrounding area. All street stubs shall be provided with a temporary turn-around unless specifically exempted by the Public Works Director, and the restoration and extension of the street shall be the responsibility of any future developer of the abutting land. Minor collector and local residential access streets shall connect with surrounding streets to permit the convenient movement of traffic between residential neighborhoods or facilitate emergency access and evacuation. Connections shall be designed to avoid or minimize through traffic on local streets. Appropriate traffic controls, such as traffic calming measures, are preferred means of discouraging through traffic.

AD. Private Streets Outside an Urban Growth Boundary. All private streets providing access from a public roadway to a proposed land division shall meet the following standards:

1. Have a minimum sight distance in compliance with adopted County Standards at any intersection with a public road. Additional sight distance or advance

warning signage or other devices may be required where known safety hazards exist.

2. For each private street, there shall be a legal recorded document which includes:
 - a. A legal description of the proposed easement;
 - b. Ownership of the street;
 - c. Use rights; and
 - d. A maintenance and construction agreement which includes Fire Marshal approved street specifications and turn around area (if required) and the allocation and/or method of determining liability for maintenance.
3. Where drainage conditions require it, a private street shall be ditched in conformance with the County Road Standards.
4. Private streets which access public or County roads shall be located, designed and constructed (within the public right-of-way) in accordance with adopted standards for County roads.
5. Prior to establishing a private driveway or a private street, the owner shall obtain an access permit for access to the intersecting public road. As a condition of granting access to a public road, the County may require the applicant to clean the ditch serving the parcel and remove sight obstructing vegetation in the vicinity of the access.

Appendix F
Interchange Influence Area Access
Spacing Guidelines (Oregon
Administrative Rules 734-015-0125)

Appendix F: Access Management Spacing Standards for Approaches in an Interchange Area

This appendix includes tables and illustrative graphics summarizing the State's adopted minimum spacing standards for accesses in the vicinity of freeway and expressway interchanges, which can be found in section 734-015-0125 of the Oregon Administrative Rules, or OAR. As shown below, the standards for two-lane and four-lane crossroads are similar. OAR sections 734-051-0115 through 0155 provide additional detail, including:

- How the standards are integrated with the development process.
- Conditions under which a deviation to spacing standards can be approved.
- The type of mitigation measures that may be required of applicants, in proportion to the impact of a proposed access that does not meet applicable spacing standards.
- The purpose and role of Access Management Plans, Access Management Plans for Interchanges, and Interchange Area Management Plans. The County could select to prepare one or more of these plans for the Tower Road and I-84/US 730 interchanges.

Table F-1
Minimum Spacing Standards Applicable to Freeway Interchanges
with Two-Lane Crossroads
(OAR 734-051-0125)

Category of Mainline	Type of Area	Spacing Dimension			
		A	X	Y	Z
FREEWAY	Fully Developed Urban*	1 mile (1.6 km)	750 feet (230 m)	1320 feet (400 m)	750 feet (230 m)
	Urban	1 mile (1.6 km)	1320 feet (400 m)	1320 feet (400 m)	990 feet (300 m)
	Rural	2 miles (3.2 km)	1320 feet (400 m)	1320 feet (400 m)	1320 feet (400 m)

- Notes: 1) If the crossroad is a state highway, these distances may be superseded by the Access Management Spacing Standards, providing the distances are greater than the distances listed in the above table.
- 2) No four-legged intersections may be placed between ramp terminals and the first major intersection.
- 3) No application shall be accepted where an approach would be aligned opposite a freeway or expressway ramp terminal (OAR 734-051-0070(4)(a)).
- 4) Use four-lane crossroad standards for urban and suburban locations that are documented to be widened in a Transportation System Plan or corridor plan.

A = Distance between the start and end of tapers of adjacent interchanges

X = Distance to the first approach on the right; right in/right out only

Y = Distance to first intersections where left turns are allowed

Z = Distance between the last right in/right out approach road and the start of the taper for the on-ramp

* Fully Developed Urban Interchange Management Area: Occurs when 85% or more of the parcels along the developable frontage area are developed at urban densities and many have driveways connecting to the crossroad. See definition in the 1999 Oregon Highway Plan at page 181.

Figure F-1: Measurement of Spacing Standards for Table F-1

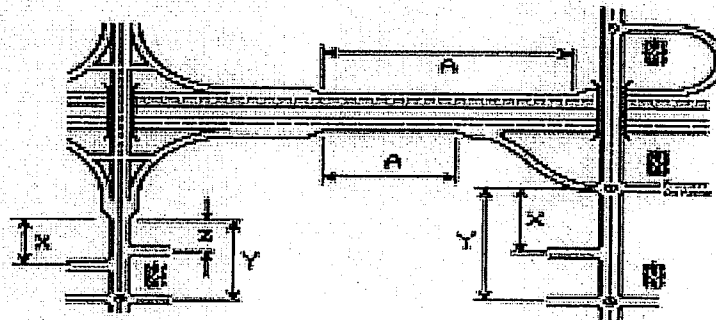


Table F-2
Minimum Spacing Standards Applicable to Freeway Interchanges
with Multi-Lane Crossroads
(OAR 734-051-0125)

Category of Mainline	Type of Area	Spacing Dimension			
		A	X	Y	Z
FREEWAY	Fully Developed Urban*	1 mile (1.6 km)	750 feet (230 m)	1320 feet (400 m)	990 feet (300 m)
	Urban	1 mile (1.6 km)	1320 feet (400 m)	1320 feet (400 m)	1320 feet (400 m)
	Rural	2 miles (3.2 km)	1320 feet (400 m)	1320 feet (400 m)	1320 feet (400 m)

- Notes: 1) If the crossroad is a state highway, these distances may be superseded by the Access Management Spacing Standards, providing the distances are greater than the distances listed in the above table.
- 2) No four-legged intersections may be placed between ramp terminals and the first major intersection.
- 3) No application shall be accepted where an approach would be aligned opposite a freeway or expressway ramp terminal (OAR 734-051-0070(4)(a)).

A = Distance between the start and end of tapers of adjacent interchanges

X = Distance to the first approach on the right; right in/right out only

Y = Distance to first intersections where left turns are allowed

Z = Distance between the last right in/right out approach road and the start of the taper for the on-ramp

* Fully Developed Urban Interchange Management Area: Occurs when 85% or more of the parcels along the developable frontage area are developed at urban densities and many have driveways connecting to the crossroad. See definition in the 1999 Oregon Highway Plan at page 181.

Figure F-2: Measurement of Spacing Standards for Table F-2

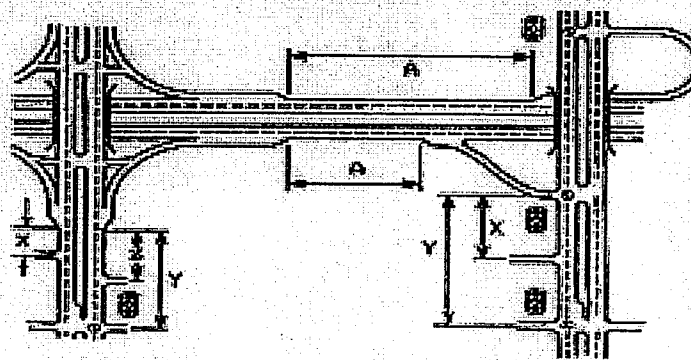


Table F-3
Minimum Spacing Standards Applicable to Non-Freeway Interchanges
with Two-Lane Crossroads
(OAR 734-051-0125)

Category of Mainline	Type of Area	Speed of Mainline	Spacing Dimension				
			B	C	X	Y	Z
Expressways, Statewide, Regional and District Highways	Fully Developed Urban*	45 mph (70 kph)	2640 ft (800 m)	1 mile (1.6 km)	750 feet (230 m)	1320 feet (400 m)	750 feet (230 m)
	Urban	45 mph (70 kph)	2640 ft (800 m)	1 mile (1.6 km)	1320 feet (400 m)	1320 feet (400 m)	990 feet (300 m)
	Rural	55 mph (90 kph)	1 mile (1.6 km)	2 miles (3.2 km)	1320 feet (400 m)	1320 feet (400 m)	1320 feet (400 m)

- Notes: 1) If the crossroad is a state highway, these distances may be superseded by the Access Management Spacing Standards, providing the distances are greater than the distances listed in the above table.
- 2) No four-legged intersections may be placed between ramp terminals and the first major intersection.
- 3) No application shall be accepted where an approach would be aligned opposite a freeway or expressway ramp terminal (OAR 734-051-0070(4)(a)).
- 4) Use four-lane crossroad standards for urban and suburban locations that are documented to be widened in a Transportation System Plan or corridor plan.
- 5) No at-grade intersections are allowed between interchanges less than 5 miles apart.

B = Distance between the start and end of tapers

C = Distance between nearest at-grade and ramp terminal intersections or the end/start of the taper section

X = Distance to the first approach on the right; right in/right out only

Y = Distance to first intersections where left turns are allowed

Z = Distance between the last right in/right out approach road and the start of the taper for the on-ramp

* Fully Developed Urban Interchange Management Area: Occurs when 85% or more of the parcels along the developable frontage area are developed at urban densities and many have driveways connecting to the crossroad. See definition in the 1999 Oregon Highway Plan at page 181.

Figure F-3: Measurement of Spacing Standards for Table F-3

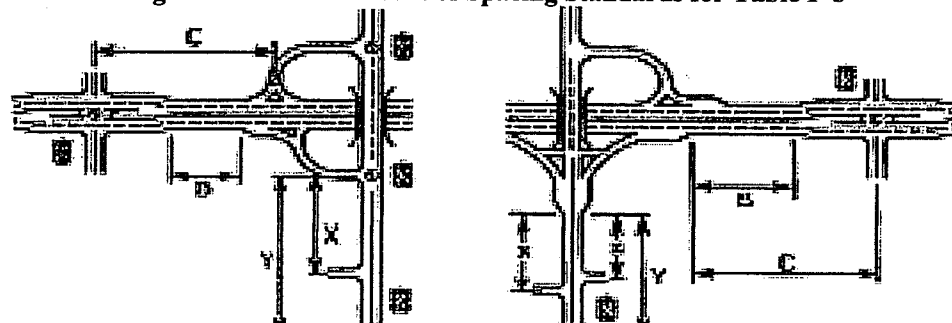


Table F-4
Minimum Spacing Standards Applicable to Non-Freeway Interchanges
with Multi-Lane Crossroads
(OAR 734-051-0125)

Category of Mainline	Type of Area	Speed of Mainline	Spacing Dimension				
			B	C	X	Y	Z
Expressways, Statewide, Regional and District Highways	Fully Developed Urban*	45 mph (70 kph)	2640 ft (800 m)	1 mile (1.6 km)	750 feet (230 m)	1320 feet (400 m)	990 feet (300 m)
	Urban	45 mph (70 kph)	2640 ft (800 m)	1 mile (1.6 km)	1320 feet (400 m)	1320 feet (400 m)	1320 feet (400 m)
	Rural	55 mph (90 kph)	1 mile (1.6 km)	2 miles (3.2 km)	1320 feet (400 m)	1320 feet (400 m)	1320 feet (400 m)

- Notes: 1) If the crossroad is a state highway, these distances may be superseded by the Access Management Spacing Standards, providing the distances are greater than the distances listed in the above table.
- 2) No four-legged intersections may be placed between ramp terminals and the first major intersection.
- 3) No application shall be accepted where an approach would be aligned opposite a freeway or expressway ramp terminal (OAR 734-051-0070(4)(a)).
- 4) Use four-lane crossroad standards for urban and suburban locations that are documented to be widened in a Transportation System Plan or corridor plan.
- 5) No at-grade intersections are allowed between interchanges less than 5 miles apart.

B = Distance between the start and end of tapers

C = Distance between nearest at-grade and ramp terminal intersections or the end/start of the taper section

X = Distance to the first approach on the right; right in/right out only

Y = Distance to first intersections where left turns are allowed

Z = Distance between the last right in/right out approach road and the start of the taper for the on-ramp

* Fully Developed Urban Interchange Management Area: Occurs when 85% or more of the parcels along the developable frontage area are developed at urban densities and many have driveways connecting to the crossroad. See definition in the 1999 Oregon Highway Plan at page 181.

Figure F-4: Measurement of Spacing Standards for Table F-4

