MORROW COUNTY
TRANSPORTATION SYSTEM PLAN

FINAL

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Prepared for:
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CHAPTER 1
INTRODUCTION

The County of Morrow has prepared this Transportation System Plan (TSP) 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. This plan is intended to guide transportation system development for the next 20 years. The plan will be periodically updated to ensure it remains current and continues to meet the needs of the County.

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 plan by KCM, Incorporated, a planning and engineering consulting firm. 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.

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. The preferred alternative 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 in relation to the TPR is discussed. 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.

REGULATORY SETTING

The TSP is required under the TPR 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, as shown in Figure 1-1, approximately 150 miles east of Portland and 30 miles west of the City of Pendleton. The Columbia River to the north, the Umatilla National Forest to the south, and Gilliam and Umatilla Counties to the east and west define the County. Grant and Wheeler Counties share the southern border of Morrow County.

The topography within this 2,065-square-mile area is varied from lowlands along the Columbia River to the peak of Black Mountain at nearly 6,000 feet above sea level. While 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. Boardman is the largest city in the County, followed by Heppner and Irrigon. 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, and hydroelectric power generation as the principal industries.

PUBLIC INVOLVEMENT

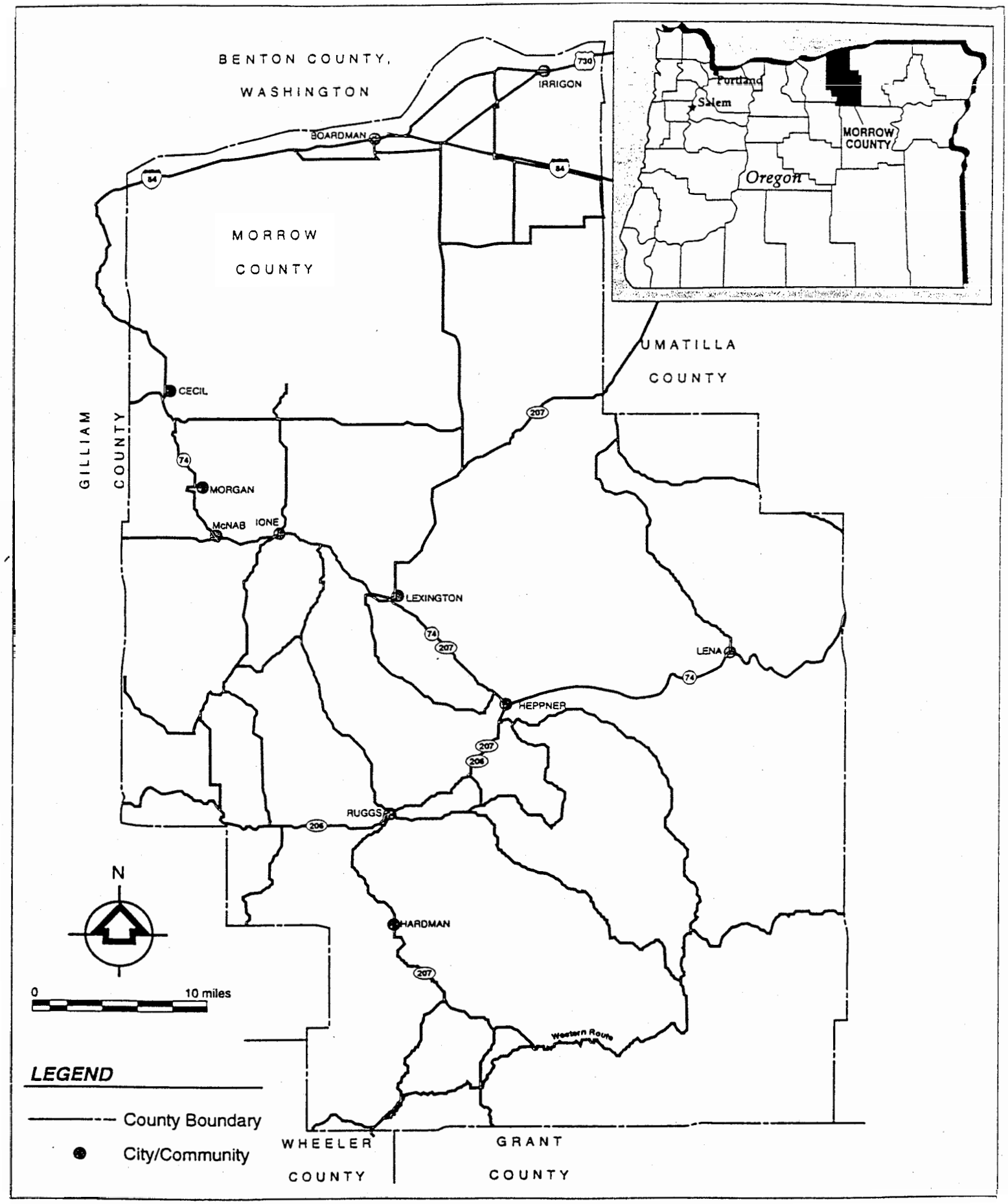
Public involvement is a key element to an effective planning process. The TSP process was guided by members of the TAC. This committee was instrumental in the development of goals and policies, population projections, and roadway design standards, as well as the prioritization of roadway projects. Members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

- Guy Van Arsdale, Morrow County Public Works Director
- Don McElligott, County Commissioner (through December 1996)
- John Wenholz, County Commissioner (after January 1997)
- Kalvin Keys, County Planning Commission, Irrigon resident
- Greg Smith, Port of Morrow
- Ron McKinnis, Port of Morrow
- Cheryl Jarvis-Smith, TGM Grant Manager, ODOT
- Terry Tallman, Boardman Mayor
- Tamra Mabbott, Morrow County Planning Director
- David Green, Heppner Sanitary Disposal

Meetings of the TAC were facilitated by Molly Johnson and Allen Shewey of KCM.

Other key elements of public involvement process included interviews with key stakeholders within the County and two open houses conducted on September 24 and 25, 1996. Survey and interview data from these events were instrumental in the identification of planning issues and needs for the county. An additional open house was held to present the draft TSP on June 16, 1997.

The plan approval process, which takes place in 1997, 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.



KCM 1917 First Avenue Seattle, Washington 98101	Morrow County TRANSPORTATION SYSTEM PLAN	Figure 1-1. PROJECT VICINITY

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. 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 transportation planning with adjacent counties.

Policy 1.5. Fulfill the transportation planning requirements of ODOT and the Department of Land Conservation and Development (DLCD).

Policy 1.6. Encourage ODOT to consider Morrow County's TSP in the preparation of their Statewide Transportation Improvement Program (STIP).

Policy 1.7. Use a 20-year time horizon for all transportation planning.

Policy 1.8. 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 1.9. 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 1.10. Evaluate the needs of commercial users, including manufacturing, timber, agricultural, and recreational users.

Policy 1.11. Include consideration of urban issues and rural issues in the TSP.

Policy 1.12. 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. Establish procedures for the acquisition of right-of-way necessary for the transportation system.

Policy 2.8. Establish procedures for the abandonment of right-of-way no longer needed for the transportation system.

Policy 2.9. Prepare an access management plan for the County's transportation system. Adopt ODOT access management standards as interim standards.

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 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.

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. Pursue the development of a multi-use path and trail system 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.

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.

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, and the public.
- Existing land use and population
  - Current population of the County.
  - Overview of land use within the County.
- Transportation facilities
  - Description of existing roadways within the County, including discussion of road standards, demand, and connectivity.
  - Descriptions of existing pedestrian, bicycle, and equestrian facilities.
  - Description of existing transit, air, rail, and other facilities.

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. On-site observations and discussions with county and state officials were also major sources of data.

Data were also obtained from private transportation operators in the County, including the Port of Morrow, Greyhound Bus Lines, and Mid-Columbia Bus Service.

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 September 1996.

ISSUES IDENTIFICATION

A key role of public participation was to help identify the primary transportation issues that Morrow County faces today. Comments from two open houses and interviews with key stakeholders were used to focus on the key transportation issues facing the County.

Open House Comments

Surveys were submitted to the attendees of the two open houses conducted on September 24 and 25, 1996. The following section summarizes the responses for each survey question. The responses are based on the 15 total surveys received. While these results are not necessarily representative of the opinions of all Morrow County residents, they do provide some indication of the opinions that exist within the County.

Following is a summary of the responses given to the specific questions included in the open house questionnaire. Where applicable, additional comments from issues raised at the open house or written on a county base map were added to the responses. The detailed comments from each of these events are in Appendix A.

1. Within Morrow County, what one general transportation need or issue do you think is most important of this plan to address?

   Open house participants mostly identified roadway maintenance issues, sub-standard roadway facilities, and the need for new connections between jurisdictions (Heppner-Boardman corridor and Ione-Boardman/I-84 connection). Other comments from the open house indicate interest in a new bridge across the Columbia River and improvements to the Blue Mountain Scenic Byway, which brings tourists into the south County area.

2. Are there particular traffic circulation and congestion problems in areas of the County that the plan should address?

   Although a majority of the survey respondents did not feel that circulation and congestion problems existed, the other respondents identified the intersections by the Green Feed store and the grade school (Quaid and Elder) in Heppner needed to be addressed. Other comments from open house attendees identified the Heppner grade as being too steep.

3. Are there problems caused by special events such as the fall wheat/potato harvest that could be better handled with improvements to the road system or traffic flow?

   Most respondents felt that the Ione-Boardman connection would reduce travel times to between the south County agriculture and the barge facilities in Boardman.

4. Given the fact that the Union Pacific Railroad Line has been abandoned, do you feel this has impacted our roads?

   Most respondents felt that the closure of the Union-Pacific line has resulted in increased truck traffic; however, many felt that this impact was relatively minor.

5. Do you feel there are adequate facilities for bicycles and pedestrians within the towns or county communities or along the scenic route?

   Most survey respondents felt that there are currently adequate facilities for bicyclists. Those who felt that more facilities are necessary cited the need for

bicycle lanes in populated areas and more shoulder room along roadways. To a follow-up question related to specific locations for bicycle and pedestrian improvements, respondents indicated the need for facility improvements within cities and the need for separate bicycle trails and pedestrian paths, such as the abandoned railroad right-of-way. Other comments from the open house indicated interest in recreational trails along the Columbia River.

6. Are public transit services, facilities, or equipment improvement needed?

   While most open house survey respondents indicated that public transit was not a priority, some supported enhancement of older adult or physically challenged services, while others called for public transportation to Pasco or Pendleton to connect with bus, rail, and air services.

7. Are there parking problems in towns or communities or other locations within the County?

   Most considered parking a minor issue, except in downtown Heppner, where it is an issue during certain times of day or during special events such as high school football nights.

8. As Morrow County and the cities within the County and region grow, what forms of transportation do you feel would be most appropriate to serve new growth and the region in general? (Choices: auto, transit, bicycles, pedestrians, rail, intercity bus, air, other.)

   Most respondents indicated that automobiles would be the most appropriate to serve future growth in Morrow County. However, intercity bus, bicycle, and pedestrian facilities received substantial support as methods of future transportation. Few felt that local transit service would play a major role in the future, other than for older adult transit services.

   8a. If the nerve gas incineration project at the Umatilla Army Depot materializes, are alternative forms of transportation needed to serve the areas?

   All but one of the survey respondents indicated that the incineration project would necessitate the creation of transportation alternatives, especially for those who do not have their own transportation.

9. If this plan recommends new improvements to the transportation system, what methods should be used to pay for improvements? (Choices: charges for new development, user fees, general obligation bonds, revenue boss, ad valorem tax, other.)

   No strong opinions were indicated under this question, although there was equal support for new development fees and general obligation bonds. The same number of survey respondents opposed any new taxes.

10. Are Morrow County roads generally adequate to meet your needs?

    Most (12 out of the 15 respondents) felt that county roads were adequate. Some expressed concerns that new roads would be necessary to accommodate and attract future growth.

11. Any other comments or suggestions?

    Most final comments received called for more money for maintenance of existing roads and safety improvements to specific roads.

Stakeholder Interview Comments

As part of the public participation process for the TSP, twelve stakeholders were interviewed during the latter half of 1996. These interviews, conducted by Pacific Rim Resources, represent the major interests within the County. Whereas the open house surveys centered on specific issues, stakeholder comments were directed towards the needs of each community.

- *Irrigon:* The interview responses concerning Irrigon focused on the identification of unsafe intersections and high travel speed issues. Uncontrolled intersections, poor traffic and parking enforcement, and the lack of safe pedestrian crossings were all identified as specific issues. Access to the Umatilla Army Depot and the proposed opening of the north gate were also concerns of the stakeholders, who see the Army base creating circulation and congestion problems within the community.
- *Heppner:* Stakeholders felt that Heppner needs are directed to greater traffic controls at intersections, more pedestrian facilities, and reductions in truck travel speeds through town.
- *Lexington:* Stakeholders identified a single issue in Lexington--a dangerous turn on OR 74.
- *Boardman:* Truck controls, sight distance, and I-84 access ramp issues were the main concerns identified by stakeholders. Stakeholders identified congestion problems at Wilson Road and Bombing Range Road and seasonal problems on Columbia Boulevard during harvest time. Again, the need for pedestrian facilities near schools or other locations where children are present was identified as a key issue.
- *Ione:* Comments about Ione focused primarily on the need for a new roadway connection to Boardman. This need for improved access is necessary to allow future growth in the southern part of the County.
- *Other comments:* Stakeholders felt that freight transportation facilities were inadequate to meet the growing demand. Lack of adequate rail facilities, the substandard road conditions, and the impact of the decreases in barge transport (due to drawdowns on the Columbia) were identified as issues.

Summary of Comments

The open house attendees and the stakeholders provided meaningful information about the needs and issues facing Morrow County. The major points are summarized below:

- South County access needs to be increased through the improvements of Bombing Range Road and the construction of a Boardman-Ione connection.
- Pedestrian and bicycle facilities are important to county residents, especially in areas near schools and within cities.
- Existing roadways are substandard in light of the demands placed by area truck traffic.
- Sight distance and intersection controls are issues at a number of key intersections.

  Vehicle and truck travel speeds need better enforcement within the populated areas, and safe crossings need to be developed for pedestrians.
- A new bridge across the Columbia River is a suggestion supported by the public.
- An intercity transit system providing service between county communities and Pasco or Pendleton on a weekly or bi-weekly basis should be considered.

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 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. 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 use in the County is largely agricultural, the population is sparse, particularly in south County. Most of the County's population is concentrated in the Irrigon-Boardman area.

Smaller population centers are Heppner (the county seat), Lexington, and Ione.

Areas with land available for development in urban areas within the County's jurisdiction are shown in Figures 3-1 and 3-2. Available land is found mainly around existing urban centers such as Irrigon and Boardman. Urban county lands are those outside of the existing cities' limits but within the urban growth boundary.

Existing Population

In the last five years, Morrow County has experienced a surge in population growth. This is mainly due to high levels of growth in the northern part of the County. The population in the southern part of the County has remained very stable. The population growth reflects the changes in employment that have been experienced. These have been fairly significant in the northern part of the County and in adjacent areas of Umatilla County, and steady in the south.

The Office of Economic Analysis (OEA) prepares population data for all counties in Oregon. These estimates were based on the 1990 census and predicted a population of 8,700 for the County in 1995, and growth rates averaging about two percent for the next 20 years. The accuracy of this figure was called into question for several reasons. First, the growth rates for the last five years had already exceeded those that were predicted. Second, the city of Boardman, which felt its population had been undercounted in the census, conducted a more thorough count in 1994, resulting in an increase in its population by 530 individuals. These persons were added to the population assigned to Boardman; however, the total county population remained unchanged. This effectively reduced the population count for the unincorporated part of the County by 530.

The TAC, staff, and project consultants conducted a workshop to determine the current county population and forecast future population to use in place of the OEA projections. This also allowed the data to be brought up to the more current date of January 1997. Current population information was gathered from each jurisdiction. This information included building permit data, school enrollment, utility accounts, and actual head counts. (Although they usually recognize only OEA data for use in TSPs, both ODOT and the Oregon Department of Land Conservation and Development (DLCD) recognized the population totals that were developed at this workshop as official for use in this plan.)

The existing population totals for the cities and unincorporated area of the County as determined at the workshop are shown in Table 3-1.

TABLE 3-1
1997 POPULATION ESTIMATES

City/County Area	1995 PSU Estimate	1997 City/County Estimate	Remarks
Boardman	2,550	2,700	Increase based on new housing starts since 1995.
Heppner	1,480	1,480	No change in population noted.
Ione	265	310	Based on recent city head count.

TABLE 3-1
1997 POPULATION ESTIMATES

City/County Area	1995 PSU Estimate	1997 City/County Estimate	Remarks
Irrigon	1,080	1,200	Estimate based on new home starts averaging 36 homes per year with a rate of 2.1 people per home, school enrollment increase of 310 students, 500 current sewer accounts.
Lexington	290	290	No change in population noted.
Unincorporated Area	3,035	3,915	Correction of transfer of 530 people from the unincorporated area within the County to the city of Boardman. Additional population increase based on approximately 50 housing starts per year for 3 years using 2.3 people per home.
Total	8,700	9,895	Increase of 1,195 residents over PSU estimate.

Potential Growth/Traffic Impact

Growth

In evaluating existing land use 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 subdivision creation on vacant lands with one- and two-acre minimum lot sizes. These vacant lands are distributed east and south of Irrigon and south and west of Boardman.

The other opportunity for growth is through economic development created 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, which include 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 facility, located near the Kinzua sawmill complex.

Traffic Impact

The traffic impacts of these growth opportunities differ. The impact of residential development will require creation and use of access management techniques to ensure adequate connectivity between new development and existing highway and road corridors. Creation of a block length standard, which is instituted as residential development on large parcels, will be an important element of the County's strategy.

Impact of port facilities development will be realized through the need to continually upgrade transportation facilities that include 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 access 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 intersection of I-84 and US 730.

Depending on the needs of the Port of Morrow, an access south of the Union Pacific main line from US 730 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 Patterson 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.

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 and airport industrial park in the northern portion of the County and the south Morrow industrial park adjacent to the Kinzua sawmill in the south. Standards necessary to meet the load rating requirements of port industrial users should be coordinated between Morrow County, the city of Boardman, and the Port of Morrow.

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 385 miles of pavement or hard surface roads and 500 miles of gravel roadways. The County annually budgets approximately $1,000,000 for the maintenance of this roadway network to maintain the existing level of service and, where possible, to provide an improved level. In Chapter 6, road improvement projects for screening are presented in a

series of tables.

Safety

From available information about the safety of county roadways, it is known that improvements should be scheduled to address existing needs. These needs include site distance and geometrics problems, width of existing bridges, load ratings of bridges and overpasses, and non-standard intersections between county roads and state highways.

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 truck traffic and other forms of transportation can be an issue.

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. Two of these tracts are indicated in Figure 4-2, East Irrigon Area Rural Residential Development. The lands are referred to as RR1. One tract of land in this designation is located between the city of Irrigon and the eastern Morrow County line. The property is adjacent to US 730 on the south side. Throughout this area, large property tracks exist that are zoned to develop in one-acre minimum parcels.

Other buildable lands are located south of Irrigon in the Division Street/4th Road area and west of Irrigon/north of US 730. These buildable lands are also designated RR1 and allow minimum lot sizes of one acre.

In the Boardman area, as indicated on Figure 4-5, East Boardman Farm Residential Development, buildable lands exist south of Boardman city limits, between Tower Road and Bombing Range Road. These lands are zoned FR2, allowing two-acre minimum lots to be developed.

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.

In addition, issues of access management are critical, especially along US 730, where standards are established for minimum spacing and new connections. Standards are developed in Chapter 6 that recommend minimum distance between connections for roads and highways.

In Chapter 4, buildable lands in Morrow County are identified graphically and suggested locations for new roadways are presented.

TRANSPORTATION FACILITIES

This section describes the components of the transportation system within the County. These include the roadway system, 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. Outside of the 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, providing access between the state highways, range from paved two-lane roads to narrow gravel lanes. This report describes only roads classified as arterials or collectors.

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

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.

TABLE 3-2
STATE HIGHWAYS SERVING MORROW COUNTY

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

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.

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 into the Umatilla National Forest. Three scenic stops are being developed to promote the byway. Each stop will include a pull-off area, an informational kiosk, and rest room facilities. Stops are planned along I-84 near the intersection with OR 74, OR 74 near Ione, and OR 74 near Lexington.

County Roads

Morrow County has 1,073 miles of roads under its jurisdiction. 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 (Figure 3).

The County maintains a database of road information using a state-provided format called the Intrastate Road Information System (IRIS). A summary of the information currently contained in IRIS is included in Appendix B. The database provides a variety of detailed information about each roadway within the County, including the following:

- 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)

The County's construction projects as indicated in its latest STIP are shown in Table 3-3. These projects represent the County's major roadway and bridge construction projects over the next three years.

TABLE 3-3
1998-2001 CONSTRUCTION PROGRAM FOR MORROW COUNTY

Project Key	Program Year	Project Description	Action	Amount (x1,000)
09664	1998	Morgan Creek bridge	Replace bridge	$300
07407	1998	Willow Creek Road	Reconstruction of 2.4 miles	$1,710
08517	1998	Clarks Canyon bridge	Replace bridge	$110
09490	2000	Heppner Highway	Preservation and safety improvements	$5,127
09508	2001	Wasco-Heppner Highway	Preservation and safety improvements	$690
08891	2001	Willow Creek bridge	Replace bridge	$216

REFERENCE: ODOT, Statewide Transportation Improvement Program 1998-2001

Functional Classifications

The County's roadways are classified according to the function of each within the system, as shown in Figure 3-3. 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 Arterial III
- Rural Collector I
- Rural Collector II
- Rural Collector III
- Rural Access I
- Rural Access II

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 two 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. Rural Access III roads include bicycle lanes and sidewalks for use in developments located within urban growth boundaries.

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 are design guidelines for the size and materials used in building roads. In other words, they describe what the physical characteristics of roads should be. 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 were developed with the assistance of the TAC as a part of the TSP process and adopted as interim standards by the county court. These standards are discussed in Chapter 6. Roadway cross-sections are contained in Appendix C.

Because these standards were not in place when previously developed county roads were constructed, most do not meet them. 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 is in the process of developing a roadway inventory to better identify existing deficiencies.

Bridges

Bridges in Morrow County are inventoried biennially. The last inventory was completed in 1996. 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. To determine future bridge needs from the ratings, 80 points is used as a threshold level. Bridges with scores below 80 are identified and programmed for improvement. In Table 3-4 the list of county bridges with sufficiency ratings at or below 80 points is shown, and the current status identified. No state facilities were below 80 points. Four other bridges owned by cities were also identified.

TABLE 3-4
RESULTS OF BRIDGE INVENTORY
COUNTY FACILITIES WITH SUFFICIENCY RATINGS BELOW 80

Bridge Number	Description	Sufficiency Rating	Status Code
10910	Bus Stop - Hinton Creek	25.0	Structurally Deficient
10993	Road 693 - Jordan/Willow Creek	51.7	Functionally Obsolete
49001	Road 594 - Willow Creek	24.3	Structurally Deficient
49002	Road 594 - Fuller Canyon	44.6	Functionally Obsolete
49005	Spring Hollow Road - Rhea Creek	24.4	Structurally Deficient
49021	Road 966 - Clarks Canyon/Padberg	30.0	Structurally Deficient

REFERENCE: ODOT (1996)

The 1996 inspection indicated that most bridges in Morrow County were in adequate condition; however, four bridges were identified as requiring major maintenance:

- Bridge No. 10910 Hinton Creek - missing false bent. Bridge recommended for closure until repairs made.
- Bridge No. 10993 Willow Creek (Jordan Road) - missing shims. Weight restriction recommended until repairs are completed.

  Bridge No. 49021 Clarks Canyon (Road 966) - repairs to scour and removal of vegetation.

  Bridge No. 49005 Reah Creek (Spring Hollow Road) - repairs to decayed deck, stringers, and running planks.

The Hinton Creek bridge and Clarks Canyon bridge are currently being repaired. The Jordan Road overcrossing of Willow Creek received interim repairs by the County, averting the need for a weight restriction.

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.

Morrow County does not have policies or procedures related to controlling access on state or county roadways. While some attempts have been made to direct the placement of new access points on these facilities, the lack of policy guidelines has resulted in limited application of access management.

ODOT has an extensive access management program . ODOT controls access based on the type of facility, level of importance (state, regional, or district), and urban or rural location.

This program, directed toward the management of state facilities, has been used to protect access along state facilities.

Accident History

Accident data was collected from ODOT System Accident Listing for state facilities within Morrow County. Data summarized both by location and accident rates calculated using existing volumes and known travel distances are shown in Table 3-5.

TABLE 3-5
HISTORIC ACCIDENTS RATES BY ROADWAY SEGMENT
(ACCIDENTS PER MILLION VEHICLE MILES TRAVELED)

	1994	1995	1996
I-84 west of US 730 (Mile Post 150.00 to 178.61)	0.26	0.29	0.35
I-84 east of US 730 (Mile Post 168.00 to 177.00)	0.16	0.20	0.10
OR 74 (Mile Post 9.00 to 67.20)	0.62	0.93	1.16
Highway 207 north of Lexington (Mile Post 1.00 to 19.38)	0.84	0.67	1.68
Highway 207 south of Ruggs (Mile Post 9.00 to 21.00)	0.87	1.30	1.30
OR 206 (Mile Post 57.99 to 83.30)	6.09	6.09	0.00

Accident rates were historically highest on OR 206, where in 1994 and 1995 more than six accidents per million miles traveled occurred along this roadway segment. However, no accidents were recorded along this road segment during 1996. Both OR 74 and OR 207 show some indications of an increasing trend in the rate of accidents. I-84 recorded very low accident rates during the 1994 through 1996 period.

The number of reported accidents by type and result for all county and state facilities in Morrow County are shown in Table 3-6.

TABLE 3-6
ACCIDENT SUMMARY FOR ACCIDENTS ON COUNTY OR STATE FACILITIES
(JANUARY 1, 1994 TO DECEMBER 31, 1996)

	Fatality	Injury	PDO	Total
Angle	1	2	0	3
Head-on	2	3	0	5
Rear-end	0	9	9	18

TABLE 3-6
ACCIDENT SUMMARY FOR ACCIDENTS ON COUNTY OR STATE FACILITIES
(JANUARY 1, 1994 TO DECEMBER 31, 1996)

	Fatality	Injury	PDO	Total
Sideswipe	0	7	10	17
Turning	0	6	7	13
Non-collision	3	39	34	76
Fixed object	1	21	32	54
Other	2	0	36	38
Total	9	87	128	224

There was a total of 224 accidents over the three-year period, with 9 fatalities and 87 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 1994-1996 period.

Other data not reported in the tables above include:

- A total of 147 people were injured in 96 injury events (including fatalities) over the three-year period.
- Trucks were involved in 32 accidents, or approximately 14 percent of the reported accidents.
- Only a single accident involved a pedestrian during the 1994 through 1996 period. No reported accidents involved bicyclists or equestrians.
- A total of 54 reported accidents occurred on all other county-owned roads during the period for an average of 18 accidents per year.

Demand

Traffic demand is a representation of the amount and type of users of the road system. Generally, if road capacity, or the number of vehicles that can use a roadway, exceeds traffic demand or the number of users, then the road system is said to be operating adequately. When demand exceeds capacity, traffic congestion is experienced.

Demand is measured by traffic engineers in several ways. One of the most common is a ratio of *volume to capacity (V/C)*. In densely populated, urban areas (such as metropolitan Portland), a high V/C ratio is acceptable to roadway users, whereas in sparsely populated, rural areas (such as Morrow County), a much lower V/C is expected. Urban users are conditioned to expect a relatively high level of congestion, while rural users are conditioned to expect very low levels.

Another way that traffic demand is measured is called *level of service (LOS)*. LOS is a measure

of the operational performance of a roadway that is expressed as a letter designation that ranges from LOS A (free flowing, minimal delay), to LOS F (extreme congestion, long delays). The methodology for measuring LOS is documented in the Highway Capacity Manual (Transportation Research Board, 3rd edition, 1994). Different methods for determining LOS are used for types of facilities such as intersections, rural highways, and limited access freeways. The standards used for rural highways determine LOS based on V/C criteria and are shown in Table 3-7. 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, a minimum LOS of D is more appropriate. Roadway segments with a LOS of E or F would be deficient and in need of improvement to increase capacity.

TABLE 3-7
RURAL HIGHWAY LEVEL OF SERVICE STANDARDS

Level of Service Category	Volume to Capacity Ratio
LOS A	0.00-0.15
LOS B	0.16-0.27
LOS C	0.28-0.43
LOS D	0.44-0.64
LOS E	0.65-1.00
LOS F	>1.00

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 a two- or three-day midweek period, then averaging the totals.

The capacity of roadways has been the subject of much study. It can vary depending on the type of roadway, travel speed, lane width, and other variables. For a two-lane rural highway, capacity can range from 5,000 to 10,000 vehicles per day per lane. As an estimate of the capacity for the County's arterials, 7,500 vehicles per day in each direction will be used, for a total of 15,000 ADT. This number is consistent with the average capacity of a two-lane, two-way roadway with a twelve-foot lane width and a travel speed of 60 miles per hour or less. The capacity of I-84, a divided, two-lane facility, is estimated at 80,000 total vehicles per day.

Morrow County's low population and large size result in low travel demand on most roadways. The ADTs for the state highways within the County are shown in Figure 3-4. Of all of these, only US 730 exceeds a V/C of 0.27, or LOS B. US 730 was measured at 5,600 vehicles per day along part of its length for a V/C of 0.37 and LOS C. The highest measured ADT for I-84 is 12,900 vehicles per day for a V/C of 0.16 and LOS B. The next highest ADTs are the portion of OR 74/207 between Lexington and Heppner with a V/C of 0.20 and LOS B, and OR 207 just east of Lexington with a V/C of 0.11 and LOS A. All other measured ADTs indicate very low V/C ratios (LOS A) ranging between 0.01 and 0.09.

While no measurements are available for county roads, observation indicates that the state

highways have higher traffic volumes than county roads. It is reasonable to assume that no county facilities would exceed the V/C ratios listed above. Therefore, there are no existing capacity deficiencies.

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 a lot of cross connectivity beyond the basic system. The exception is a lack of a direct connection between Boardman and Ione.

Prior to World War II, a connection existed between Boardman and Ione. 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 it has not been possible to re-establish the road along the former alignment.

Other possible alignments to connect the two cities have been explored and there is a partially established right-of-way corridor available through property owned by the State of Oregon and leased by the Boeing Agri-Industrial Company.

On a local level, connectivity is the ability to travel between an origin and a destination. Street spacing requirements can help to develop connectivity on a local level in denser areas near urban centers. Ideally, streets 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.

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. Creation of a frontage type road to limit the number of new connections and promote connectivity within this area will be evaluated in this TSP.

A large tract of land also exists with limited development 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-feet 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. This TSP makes recommendations for connectivity in this area.

Another parcel of land that is developable into one-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.

West of Boardman, developable land exists in the FR2 zone. Issues of connectivity exist in accessing these parcels from Kunze and Wilson Road, running in an east-west direction through the area. The ultimate connection of this area to Tower Road is also at issue. 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, access from these parcels and throughout this unincorporated area west of Boardman will be at issue. Suggested access improvements necessary to serve these parcels as they develop are indicated.

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 connection of 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 such as irrigation canals also occur, 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.

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. Three industrial parks that are served by transportation systems include highway access to I-84, rail access to Union Pacific's east-west Columbia Gorge route, and barge transportation via the Columbia River.

These three industrial parks owned and operated by the Port are major generators of transportation activity in the highway, rail, and barge areas. 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. 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 150-foot wide, 4,200-feet long, 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.

South Morrow Industrial Park

In the southern region of Morrow County is the south Morrow industrial park. It is advantageously located for the secondary wood processor. Its siting takes advantage of the Kinzua sawmill immediately across the street. Focusing primarily on wood projects generated within the County and from the Kinzua sawmill facility, it is particularly sensitive to the maintenance and growth of highway transportation systems. This is especially true since the

decommissioning of rail service into southern Morrow County.

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 I-82 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, and grain for transportation by Columbia River barge.

The Port of Morrow maintains three to four miles of frontage on the Columbia River. Facilities include six docks, two berths that are 12 to 17 feet deep, and two overhead cranes with an approximate 200-ton capacity. There are four large companies that serve the Port of Morrow, with approximately 2,000 containers being handled at the container dock each month. Approximately 50 percent of the goods shipped are for foreign markets, and the port destination for most shipments is Portland.

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.

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. I-82 provides northbound service to Spokane, Seattle, and Canada.

Access to the Port's facilities after leaving I-84 is from a two-lane highway without the benefit of turning lanes. Although this highway provides adequate service to current customers, the Port may likely improve this access road as client requirements dictate. There are also width and weight restrictions on existing overpasses in the port vicinity that will require upgrade as the Port continues to grow.

A new access to the east port industrial facilities near the intersection of US 730 and I-84 is also a transportation system project of merit to be considered by the Port.

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 designed for heavy bombers and 727 commercial jet service. The airport was recently purchased by the Port and is in the initial phases of development. Even at this early stage in the Port's ownership, 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 Economical 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.

Economical 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

Morrow County is rural in nature. In the southern portion of the County, this rural nature is especially exemplified. In addition to the agricultural lands in use in south County, a significant amount of US Forest Service property exists.

In this area of Morrow County, a few US Forest Service roads are used as interconnections between Morrow County roads. Figures 3-5 and 3-6 indicate the location of two primary US Forest Service roads in south Morrow County. They are important to the movement of goods and services in the area beyond that traditionally provided by US Forest Service roadways.

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.

Because of its low population density, there is not a high concentration of non-motorized users in rural areas of the County. The County does not currently have any formal adopted plans for non-motorized facilities. The County is, however, working with the National Park Service to develop a concept plan for a trail system along the Columbia River. The trail could stretch

from border to border of the County and will likely incorporate existing trails within the Umatilla Wildlife Refuge. The proposed plan will include analysis of opportunities to promote Lewis and Clark historical sites and natural resources. The trail could potentially serve as a feasible pedestrian/equestrian transportation link between the two urban centers of Irrigon and Boardman.

Bicycle and pedestrian facilities on the Oregon state highway system are limited to paved shoulders beyond the fog lane on principal state routes throughout Morrow County. These routes include OR 74 and US 730. A new bike path facility has been proposed for development along OR 74 from Heppner to the new community swimming pool.

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 ranging from one to eight feet 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. Morrow County is planning to work with the cities to address the urban pedestrian needs during the preparation of their TSPs, scheduled for 1998.

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 ranging from one to eight feet in width 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.. There are currently no designated bicycle facilities in the County. A commonly accepted criterion for locating bicycle facilities is to provide them on roadways with over 3,000 ADT. Using this criterion, only US 730 would be required to have a bicycle facility.

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. There are currently no designated equestrian facilities in the County.

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.

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. Greater service options are available in Hermiston and Pendleton, Oregon, in Umatilla County. Service is provided to various cities along routes to Portland, Seattle, and Boise, where connections can be made to other destinations.

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

There are five small para-transit operators within Morrow County who provide transportation services mainly to older adults and physically challenged residents. Services provided include dial-a-ride services, client transportation, medical transportation, and volunteer driver programs. These transit operations are displayed in Table 3-8.

TABLE 3-8
PARA-TRANSIT PROVIDERS

Provider Name	Service Area	Services Provided	Funding Sources
Dollar Ride (Heppner)	South County	Volunteer driver program	STF
Morrow County Special Transportation Program	Senior communities	Various	State
Irrigon Transportation Committee	North County	Dial-a-Ride Volunteer driver program Medical transportation	STF (16)(b)(2)
RSVP Cape Co. (Pendleton, Oregon)	Morrow and Umatilla Counties	Dial-a-Ride Volunteer driver program Medical transportation Client transportation	STF
St. Patrick's Senior Center (Heppner)	Ione, Lexington, and Heppner	Dial-a-Ride Volunteer driver program	STF (16)(b)(2)

Typical of para-transit services available in Morrow County are those provided by the senior center in Irrigon. Small buses (21 seats) are available to take older adults to the senior center in Irrigon on Mondays for meals. Fifteen to twenty people routinely attend from the Boardman area and five to eight from the Irrigon area. The Irrigon bus is also used on Friday for shopping excursions to Hermiston.

In Heppner, seniors can use the service by signing up at the senior center in Heppner or directly contacting the bus driver. The buses are also available for special events as long as they are planned in advance.

In Morrow County, most buses are driven by volunteers and are funded by a state grant to the County. The service is primarily designed to serve seniors and the disabled. When the needs of these transit dependent groups are met, any available seats can be filled by any county resident who requests service. Outreach is currently underway to promote the use of the buses to other transportation disadvantaged users.

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. 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.

Passenger Rail Facilities

There is no passenger rail service in Morrow County. Rail service was suspended within the past year in Morrow County. This service was known as the Pioneer line and extended between Salt Lake City, Utah and Portland, Oregon. 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

Three airports are known to exist in Morrow County. They include the Lexington-Morrow County airport, the Port of Morrow airport west of Boardman, and the Taggares Farms airport south and west of Boardman. At the date of this report, facilities in Morrow County serve 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. The airport offers a single paved runway with a parallel taxiway. Fueling capability is available on site at the airport.

Table 3-9 lists the improvements proposed for upgrading the Lexington airport facility. These projects are coordinated through the Aeronautics Section of ODOT. This section assists local jurisdictions in obtaining Federal Aviation Administration funding.

As indicated in Table 3-9, approximately $663,000 of improvements are currently recommended to meet existing and future airport needs at the Lexington-Morrow County facility.

In an August 5, 1997 letter from the Aeronautics Section of ODOT, Morrow County was invited to participate in an airport master plan update for the Lexington-Morrow County facility. This facility is one of three airports targeted by the Aeronautics Section for evaluation during federal fiscal year 1998. The airport master plan update is expected to cost $30,000 to $37,000, with 10 percent of the funding provided by Morrow County. The remaining funds are provided by the

Federal Aviation Administration through the Aeronautics Section of ODOT

The Morrow County Public Works Department is currently selecting a consultant to accomplish this airport master plan update. It is estimated that approximately six months will be required to complete this study. When this study is concluded, this TSP should be updated to include the findings of the master plan update. **This would include the capital** improvements projects listed in Table 3-9.

Port of Morrow Airport Facility

The Port of Morrow has recently 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 727 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 150-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. These generally include an extension of the runway and improved access for ground transportation services.

TABLE 3-9
AIRPORT IMPROVEMENT PROJECTS
LEXINGTON AIRPORT

Item	Project Type	Estimated Cost x1000
Construct AG operations area	New construction	$50
Revise ALP as-built	Reconstruction	$10
Construct taxiway	New construction	$153
Construct new apron	New construction	$54
Reconstruct part par taxiway	Reconstruction	$50
Taxiway reflectors	New construction	$4
Perimeter fencing	New construction	$100
Internal service road	New construction	$98
Repave 100,000 square feet of operations ramp	**Maintenance**	$59
Update master plan	Planning	$35

TABLE 3-9
AIRPORT IMPROVEMENT PROJECTS
LEXINGTON AIRPORT

Item	Project Type	Estimated Cost x1000
Global positioning satellite system	Safety	Unknown
Water system	New construction	$50
Total Identified Costs		$663

Other Transportation

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

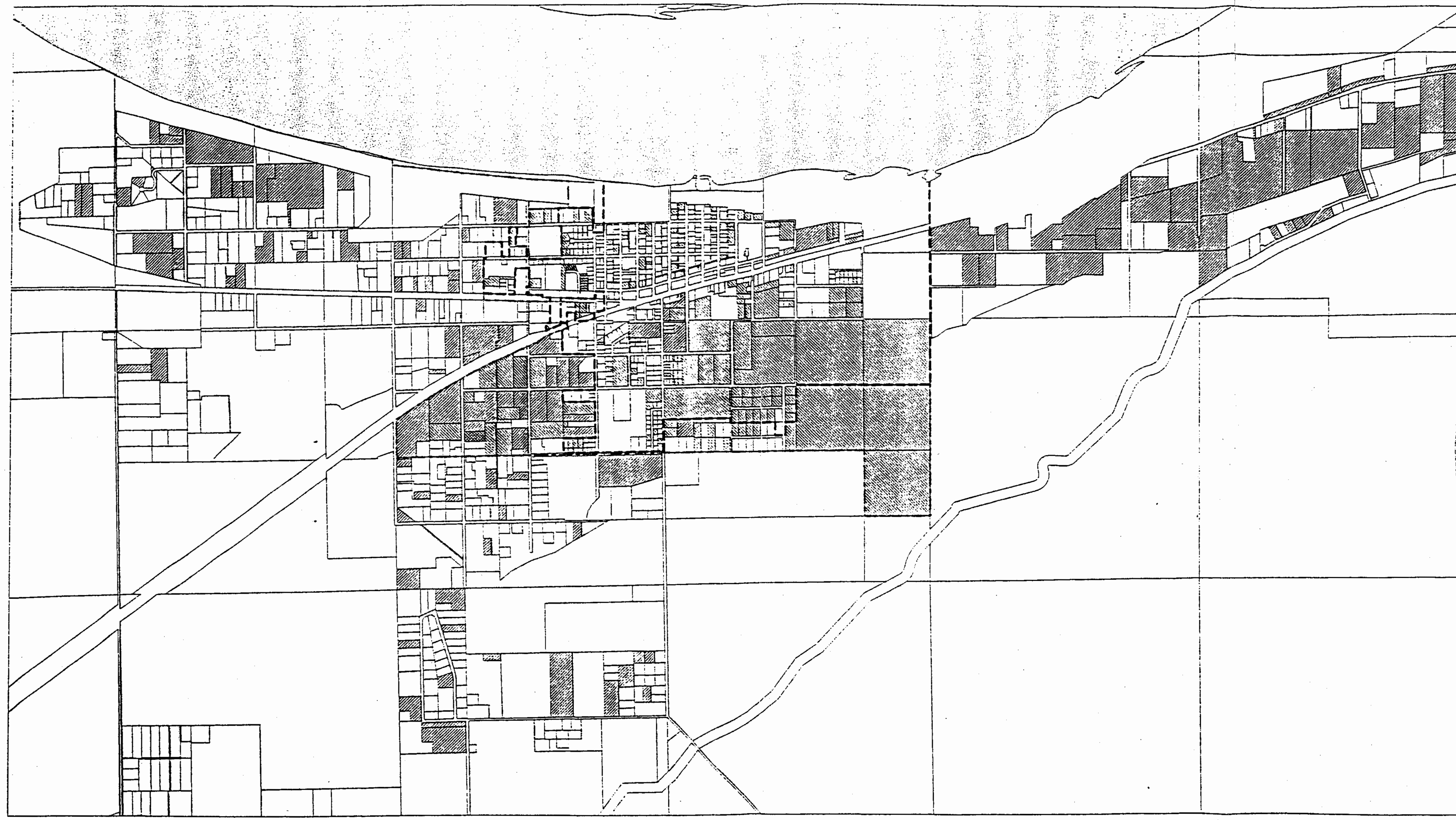
Trucking Lines

There are numerous independent trucking lines serving the County's main industries: agriculture, logging, and light industrial. Finley-Buttes, Puget Sound Trucking, and Yates Trucking also operate in Morrow County to haul refuse from barges to landfill areas. Much of the grain collected throughout the County is transported by trucks to the Morrow County Grain Growers' Association facility in Irrigon (via Patterson Ferry Road) and to the Port of Morrow. Access roads to these facilities warrant upgrading.

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. 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. Most recently, the County has helped in the widening of bus turnarounds and improved signage.

In the north end of the County, a grade school is located on one side of OR 315 and a high school on the other side. The heavy traffic on this highway hinders the provision of bus service in several ways. 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. 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.



IRRIGON AREA
Buildable Lands

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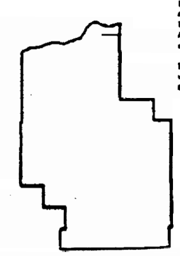


THE MAP IS PROVIDED WITHOUT WARRANTY OF ANY KIND.

SCALE

MILE

R-1
R-2
R-3
SR1
SC
RR1
FR2
CG
MG
AI
City Limits
PI
IND
SF40
EFU
SAI
Urban Growth Boundary
C-1
C-2
C-3
PUB
VACANT

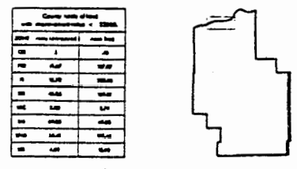
MORROW COUNTY

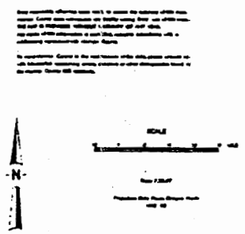
Geographic Information System

Columbia River

BOARDMAN
BOMBING RANGE

BOARDMAN AREA
Buildable Lands

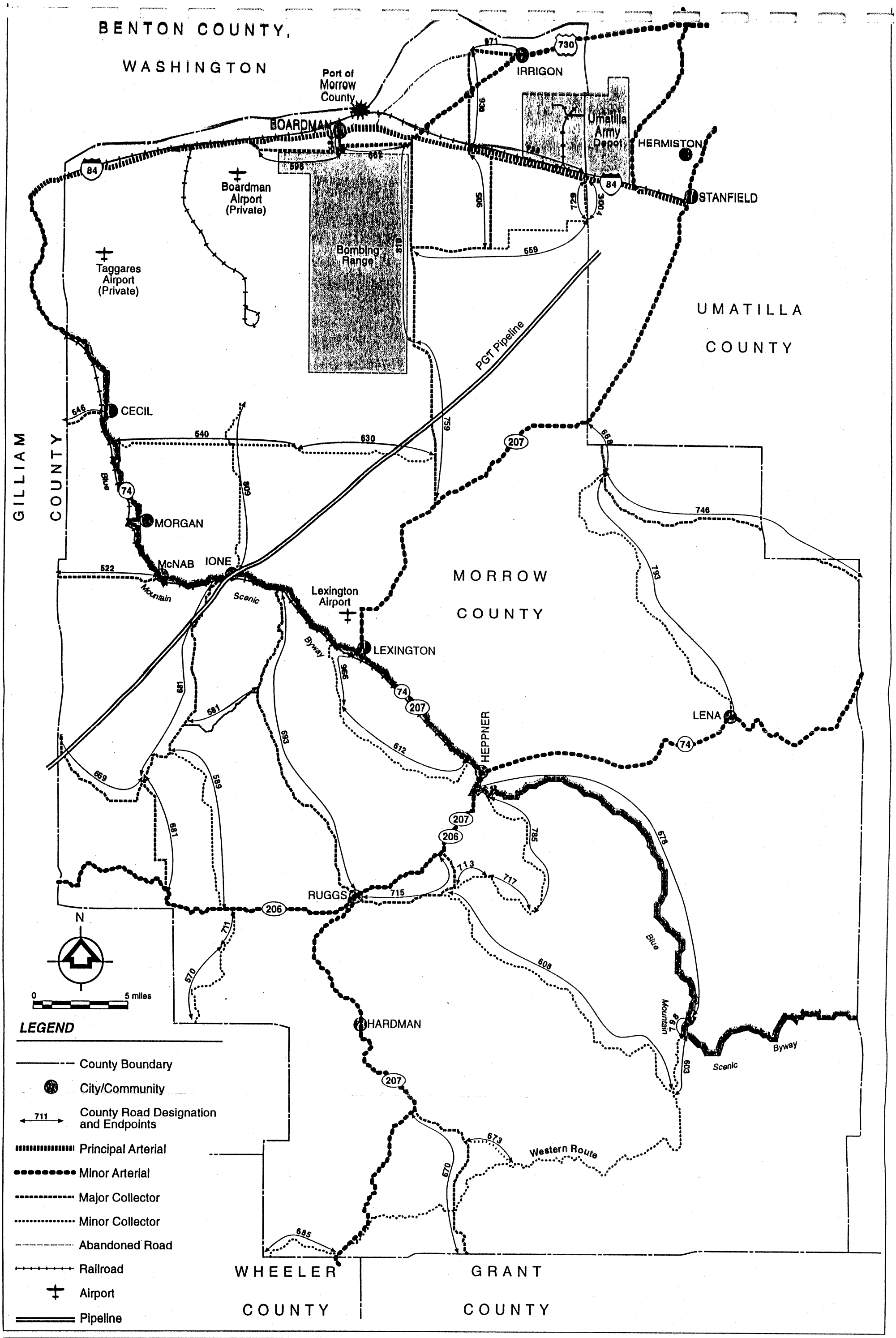




R-1	RR1	PI	C-1
R-2	FR2	IND	C-2
R-3	CG	SF40	C-3
SR1	MG	EFU	PUB
SC	AI	SAI	VACANT
	City Limits	Urban Growth Boundary	

MORROW COUNTY

Geographic Information System



KCM *1917 First Avenue* *Seattle, Washington 98101*	Morrow County TRANSPORTATION SYSTEM PLAN	Figure 3-3. EXISTING FACILITIES

BENTON COUNTY, WASHINGTON

MORROW COUNTY

UMATILLA COUNTY

GILLIAM COUNTY

WHEELER COUNTY

GRANT COUNTY

IRRIGON

BOARDMAN

CECIL

MORGAN

McNAB

IONE

LEXINGTON

HEPPNER

LENA

RUGGS

HARDMAN

Western Route

N

0 5 miles

5,600	730	5,600	
3,900	3,900		
12,900	10,000		
84	9,100	9,300	10,100	9,600	84
170			
860	1,100		
760	207		
140	74		
240			
530	600		
260			
950	1,000		
1,500			
74	207	2,000	
2,500	340		
800			
540			
207	206		
110	90	90	500	
206			
230	330		
207			
250			
150			
80	100		
74	130		

LEGEND

- County Boundary
- City/Community
- 150 Traffic Volume (average vehicles/day)

KCM
1917 First Avenue
Seattle, Washington 98101

Morrow County
TRANSPORTATION SYSTEM PLAN

Figure 3-4.
EXISTING TRAFFIC VOLUMES

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. The future conditions expressed in this section represent the expected growth in population and transportation based on the 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

Growth and development in Morrow County and in nearby areas will present opportunities for transportation in the future. 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 the 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. Today, the Port has three established industrial sites: the Boardman industrial park, the airport industrial park, and the south Morrow industrial park. Over 5,200 acres of industrial area exist in the Boardman and airport parks alone.

The Port of Morrow is also interested in or owns other sites in Morrow County and is actively seeking opportunities to increase industrial development. If history is a predictor of future growth, then the Port of Morrow is the most significant entity bringing jobs to Morrow County. 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 this transportation system plan (TSP) and will work with the County in development of a freight and goods mobility strategy. This strategy is the key to identifying future system needs based on increased industrial development.

A scan 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 are available with sizes to several hundred acres ready for groundbreaking activities for future facilities. 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 is proposed to be extended. Together with industrial land surrounding the airfield, the potential for development at this site is also excellent.

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 the holdings of the Port of Morrow is the 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. The US Army has stored nerve gas at this site since the early 1900s. In recent years, the Army has developed a program to begin incineration operations to eliminate chemical agents at this facility. Construction cost of the project is estimated at $576 million, with a planned duration of nine years. Construction of the incineration facilities began in 1997.

The incineration activities will employ approximately 1,000 people by 1999, with employment tapering off after that time to 640 people by the year 2002. Further decreases until the project ends at around 2007 are expected. Increased activity in the area associated with this project will impact the transportation system due to the increase in generated traffic. This will be especially evident at Depot Road/Division Road in Irrigon. This road is the main outlet from the north gate, which the Army indicates will be opened as a portion of this project.

In addition, expanded employment will increase the demand for housing in the County. This expected growth in housing will also increase demand on the transportation system. The impacts from the construction and operation of this facility will be especially significant to Irrigon and the north County area.

Region

Wal-Mart Distribution Center

Wal-Mart, a major retailer, is constructing a regional distribution center in north Umatilla County. This development will not create significant direct impacts to the county roadway system, but will increase demand for the state highways that traverse the County, particularly

I-84. The increase in employment opportunities will also contribute to increased demand for housing in northern Morrow County, which will in turn increase demand on the transportation system.

Correctional Facility

Oregon state will be constructing a correctional facility within Umatilla. As with the Wal-Mart project, this development will not create significant direct impacts to the county roadway system, but may increase demands on I-84 and other state facilities. However, the increased employment opportunities will contribute to further demand for housing in north Morrow County, which will then increase demand on the transportation system.

Hinkle Classification Yard

The Hinkle Classification Yard, between Stanfield

and Hermiston in north Umatilla County, will be expanded to allow the development of a large diesel repair and maintenance facility for the Union Pacific Railroad. This project is expected to employ an additional 250 people. This employment opportunity will also contribute to increased housing demand in north Morrow County, which will increase transportation demand mainly on roadways.

FUTURE LAND USE AND POPULATION

Future Land Use

In a 1995 report entitled Potential Development Impact Analysis (PDIA), an analysis of the development potential for Morrow County was completed for the Oregon Department of Transportation (ODOT) based on available census data. The report estimates the amount of residential, commercial, and industrial development potential area within the County. The buildable areas within the County are shown in Figures 4-2 to 4-6. Approximately 2,900 residential units could be built, given existing land use.

Future Population

As discussed in Chapter 3, a review of the Office of Economic Analysis (OEA) forecasts found that the underlying growth rates failed to reflect recent population growth patterns experienced in both the incorporated and unincorporated areas of the County. With the assistance of the Technical Assistance Committee (TAC), population projections for the TSP were also revised for the next five years, 1997 to 2002. The increase in growth rates was based on the recent growth trends, identified employment opportunities, and potential future growth. These growth rates were predicted individually for each of the cities in the County and for the unincorporated area. (As with the current population estimates in Chapter 3, ODOT and the Oregon Department of Land Conservation and Development (DLCD) recognized the growth rates developed specifically for this project as acceptable.)

The County's future population projections for the entire study period are shown in Table 4-1. Using these assumptions, population is expected to increase by over 2,100 residents in the next

five years. As seen in the table, much of this growth will continue to be in the northern portions of the County and in unincorporated areas. During the 1997 to 2002 period, Irrigon is expected to grow by around 480 new residents, or approximately a 40 percent increase. Boardman is forecasted to see nearly a 28 percent increase. Cities such as Ione and Lexington are expected to have only minor increases in population during this period.

For the second part of the future study period, 2003 to 2017, the OEA county-average projections were applied. The trends for future population are based on forecasted growth rates from the OEA. OEA projected population growth based on detailed models that began with 1990 census information and considered past trends and future growth potential. Based on these growth rates, Morrow County population will increase by over 5,200 residents during the next 20 years. Overall, 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.

TABLE 4-1
FUTURE POPULATION DATA SUMMARY

Area of County	1997 Total	2002 Total	2017 Total	Change 1997-2017
Boardman	2,700	3,446	4,326	60.2%
Irrigon	1,200	1,683	2,113	76.1%
Heppner	1,480	1,517	1,905	28.7%
Ione	310	326	409	32.0%
Lexington	290	297	373	28.7%
Unincorporated Area	3,915	4,763	5,980	52.8%
Total	9,895	12,033	15,107	52.7%

Potential Development Impact Analysis

An additional source of forecasting for growth within Morrow County is provided by ODOT's PDIA. This evaluation provides estimates for a maximum development scenario in Morrow County in areas outside of the urban growth boundaries that are zoned for residential, commercial, and/or industrial use. PDIA was developed to assist ODOT in projecting the number of vehicle trips that would be created if all vacant land in the zoning area indicated developed fully. The complete PDIA analysis for Morrow County is located in Appendix F.

Potential growth areas of a residential, commercial, or industrial nature are identified throughout the County and are termed "polygons". There are seven residential polygons in Morrow County. These polygons were developed by using Morrow County zoning designations. These designations include: rural service center (RSC), rural residential (RR), farm residential (FR), and suburban residential (SR). General commercial (C), general industrial, air/industrial park, space age industrial, and port industrial (I) are also normally included in a PDIA effort.

TABLE 4-2
POTENTIAL DEVELOPMENT IMPACT ANALYSIS SUMMARY

Polygon				Acreage			Units		
No.	Tract	Block	Zoning	Total	Built	Vacant	Existing	Potential	Maximum
R4	9701	101	RR1	56.1	5.0	51	5	51	56
R4	9701	202	RR1	382.0	28.0	354	28	354	382
R4	9701	203	RR1	25.6	2.0	24	2	24	26
R4	9701	204B	RR1	71.2	10.0	61	10	61	71
R3, R2	9701	212	RR1	578.2	97.0	481	97	481	578
R1	9701	214	RR1	73.3	8.0	65	8	65	73
R1	9701	215	RR1	100.5	26.0	75	26	75	101
R1	9701	217	RR1	163.9	35.0	129	35	129	164
R1	9701	219	RR1	53.1	18.0	35	18	35	53
R1	9701	220	RR1	87.0	56.0	31	56	31	87
R1	9701	224	RR1	9.9	6.0	4	6	4	10
R1	9701	225	RR1	12.2	8.0	4	8	4	12
R1	9701	226	RR1	12.1	0.0	12	0	12	12
R1	9701	227	RR1	19.0	7.0	12	7	12	19
R2	9701	234	RR1	132.6	26.0	107	26	107	133
R2	9701	235	RR1	59.3	49.0	10	49	10	59
R2	9701	244	RR1	41.9	18.0	24	18	24	42
R2	9701	244	RR1	41.9	18.0	24	18	24	42
R5	9701	503	FR2	47.9	16.0	32	8	16	24
R5	9701	504	RSC	101.7	0.3	101	2	588	590
R5	9701	505	FR2	38.7	16.0	23	8	11	19
R5	9701	506	FR2	161.9	20.0	142	10	71	81
R5	9701	507	FR2	157.2	16.0	141	8	71	79
R5	9701	508	FR2	98.9	8.0	91	4	45	49
R5	9701	509	FR2	4.6	4.0	1	2	0	2
R5	9701	511	FR2	42.6	6.0	37	3	18	21
R5	9701	512	FR2	26.6	16.0	11	8	5	13
R5	9701	513	FR2	148.6	14.0	135	7	67	74
R5	9701	514	FR2	35.1	12.0	23	6	12	18
R5	9701	515	FR2	94.9	22.0	73	11	36	47
R5	9701	516	FR2	29.1	16.0	13	8	7	15

TABLE 4-2
POTENTIAL DEVELOPMENT IMPACT ANALYSIS SUMMARY

Polygon				Acreage			Units		
No.	Tract	Block	Zoning	Total	Built	Vacant	Existing	Potential	Maximum
R5	9701	517B	FR2	28.6	2.0	27	1	13	14
R5	9701	518	FR2	24.5	6.0	19	3	9	12
R	9701	519	FR2	215	28	187	14	93	107
R6	9701	605	FR2	198.1	42.0	156	21	78	99
R6	9701	615	FR2	154.3	12.0	142	6	71	77
R6	9701	616	FR2	80.2	14.0	66	7	33	40
R7	9702	529	RSC	18.6	2.8	16	16	92	108
R7	9702	534	RSC	21.1	1.2	20	7	115	122
R7	9702	537	RSC	5.6	0.5	5	3	29	32
R7	9702	538	RSC	2.2	0.7	2	4	9	13
R7	9702	539	RSC	2.2	0.3	2	2	11	13
R7	9702	540	RSC	3.5	0.0	4	0	20	20
Total Residential				3662	693	2972	586	3023	3609

REFERENCE: ODOT, Potential Development Impact Analysis Draft (December 1995)

There are approximately 3,447 acres of residential land in Morrow County. Of this, about 2,782 acres, or 81 percent of this total, is vacant land. This leaves 665 acres of developed land.

There are seven residential polygons. Polygon numbers R1 through R4 are zoned RR1, which is Morrow County's designation for rural residential. The minimum lot size in this zone is one acre.

The R5 polygon is comprised of a mixture of FR2 (farm residential) and RSC (rural service center). Polygon R6 is comprised of FR2. Polygon R7 is comprised of RSC.

The R1 polygon is located west of Irrigon and north of US 730. Two distinct areas comprise this polygon. The area to the north is west of 8th Street West and north of Main Avenue. The southern area is south of Idaho Avenue and east of 8th Street West (Figure 4-3). Each of these areas consists of large lots that can be divided into one-acre parcels. The total acreage represented in Zone R1 is 531 acres. Of this total, 164 acres have been developed, representing 31 percent of available land.

Polygon R2 is located south of Irrigon. This polygon is bordered by Oregon Street on the north, Division Road on the east, and 4th Street extended on the west (Figure 4-4). This residential polygon is comprised of large tracts of land that can also be subdivided into one-acre parcels. Division Road provides the main access to the area, south from US 730 and

Irrigon. Division Road extends south to the north gate of the Umatilla Army Depot. This gate will be opened to improve access during the nerve gas incineration project currently underway.

Adjacent to Polygon R2 and 1/2-mile west is Polygon R3. This polygon is located south of US 730 and east of 8th Street West (Figure 4-4). This polygon is also characterized by large lots that can be further subdivided into one-acre minimum parcels.

ODOT's PDIA has grouped Polygons R3 and R2 together. The combined acreage represented in Polygons R2 and R3 is 854 acres. Of this total, 208 acres, or approximately 24 percent of the available land, have been developed.

Polygon R4 is located east of Irrigon and south of US 730. This polygon has access to US 730 along its entire length. Connecting rights-of-way include 18th, 19th, 21st, and 23rd Streets. Access is also available south of US 730 at the county line. A total acreage of 535 acres is encompassed in Polygon R4. Of this total, 45 acres, or 8 percent of the available land area, is currently developed, based on ODOT's PDIA.

Polygon R5 is located in the Boardman area. Three distinct locations comprising this polygon are identified in Figure 4-5. All three areas are south of I-84 and west of Bombing Range Road. Included within these three blocks of land are 1,041 acres. Of this total, 174 acres, or 17 percent, are currently developed. Access to the parcels is provided from Kunze Lane and Wilson Lane , which run east-west and from Laurel, Rippee, Olson, and Root Roads, which run north-south. These three tracts of land comprising Polygon R5 exhibit large parcel sizes. Their zoning designation is FR2. Under the farm residential zone, these large tracts can be further divided into a two-acre minimum parcel size.

Polygon R6 is located west of Boardman and south of I-84. Two distinct tracts are indicated in Figure 4-6. These tracts include a parcel lying north of Kunze Lane and east of Tom's Camp Road. The second parcel is also located east of Tom's Camp Road and is bordered on the south by the main Umatilla irrigation canal. These tracts of land comprising this polygon include large parcels. Each is zoned "farm residential", allowing a minimum lot size of two acres. A total of 433 acres is included in these two tracts of land. Of this total, 68 acres, or 16 percent, is developed. Access to this polygon is provided by Tower Road, Kunze Road, and Wilson Road.

The last residential polygon is R7. This polygon is located near Hardman along OR 207. Six parcels are indicated within this polygon, totaling 53 acres. A total of 5.5 acres of land, or 10 percent of the available land, is currently developed.

An FR2 Zone not included in the PDIA information is shown in Figure 4-6 as an R polygon. This polygon is bounded on the west by Skoubo Lane and on the east by Paul Smith Road. The property extends north from the Umatilla irrigation project main canal to the I-8 right-of-way. The described parcel includes an area of 214 acres. Fourteen existing units have been identified on this property. From a perspective of ultimate development, if a minimum two-acre lot size is allocated to each of these existing developments, a total of 28 acres is currently developed. The next available acreage for development is 187 acres. Using a minimum two-acre lot size yields 93 available buildable lots.

FUTURE TRANSPORTATION DEMAND

Future transportation demand will increase proportionately to the increase in roadway users. Therefore, the future transportation demand is directly based on the forecasted increase in population in each region of the County.

Figure 4-1 compares the 1997, 2002, and 2017 roadway volumes throughout the County. As seen in the figure, the highest traffic growth is along the I-84 corridor near Boardman, 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

Level of Service

Using the level of service (LOS) and volume to capacity (V/C) ratio relationships described in Table 3-3, future LOS was calculated for the study years 2002 and 2017 using the projected future traffic volumes. Selected projected future V/C ratios and LOS for the higher volume roadway segments in the County are shown in Table 4-3.

TABLE 4-3
PROJECTED FUTURE V/C AND LOS

	2002			2017		
Roadway Segment	ADT	V/C	LOS	ADT	V/C	LOS
I-84 west of Boardman	11,610	0.15	A	16,020	0.20	B
I-84 between Boardman and US 730	16,640	0.21	B	20,670	0.26	B
I-84 east of US 730	12,080	0.15	A	15,160	0.19	B
US 730 between I-84 and Irrigon	5,470	0.36	C	6,870	0.46	D
US 730 east of Irrigon	7,850	0.52	D	9,860	0.66	E
OR 207 north of Lexington	1,130	0.08	A	1,420	0.09	A
OR 207 south of Lexington	1,540	0.10	A	1,930	0.13	A
OR 207 at Heppner	2,560	0.17	B	3,220	0.21	B

As seen in the table, most roadways are expected to operate at LOS D or better in both 2002 and in 2017. South County roadways are projected to gain only moderate traffic levels and will have minimal increases in their V/C ratios. The highest volume corridors, which are along I-84, operate at very desirable LOS levels under both existing and future conditions. The only segment that approaches its capacity is US 730 east of Irrigon, which will operate in 2002 at LOS D with a V/C ratio of 0.52, and in 2017 at LOS E with a V/C ratio of 0.66. Before the V/C

ratio reaches the lower end of the LOS E range in 2017 (0.65 to 1.00), the County should coordinate with ODOT for the planning of future improvements for this facility. Possible improvements for this facility include the construction of left turn and right turn channelization to facilitate turning movements while increasing the roadway capacity for through movements.

Morrow County's modest population and large size result in low travel demand on most roadways. No current traffic counts were available within the County at the date of this TSP. However, the ADTs for state highways within the County are shown in Table 4-2. Of all these highways, only US 730 exceeds a V/C of 0.27, or LOS B. US 730 was measured at 5,600 vehicles per day along a portion of its length, for a V/C of 0.37 and LOS C. The next highest ADTs are for a portion of OR 74/207, between Lexington and Heppner, with a V/C of 0.20 and LOS B. OR 207 east of Lexington exhibits a V/C of 0.11 and LOS A. All other measured ADTs indicate very low V/C ratios (LOS A), ranging between 0.01 and 0.09.

While no measurements are available for county roads, observations in the above evaluation indicate that the state highways have higher traffic volumes than county roads and that county roads will exceed the V/C ratios listed above. For this reason, obtaining traffic counts is of limited value because of the low volumes and has not been included in Table 4-2.

The LOS standard for Morrow County is D. In other words, the target for Morrow County shall not exceed a LOS of D.

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 Ione-Boardman route and/or improvements to other north-south roadways such as Bombing Range Road 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 help to attract employment growth by reducing costs associated with hauling products.

The development of these connections, which will likely not be complete until after 2002, could result in greater traffic and population in the south County than assumed in the projection for 2003 to 2017.

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.

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.)

The recommended roadway standards identify measures that minimize street pavement widths and total rights-of-way.

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 that establish minimum block lengths of 600 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 vacant land, existing utility easements, and connectivity with surrounding streets must be considered in planning new street alignments. To assist in developing this local street network, 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. Figures presented in this chapter identifying buildable lands and a proposed conceptual street network are as follows:

- Figure 4-2, East Irrigon Area Rural Residential Development

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

The local street network plan developed in this TSP is implemented through adoption of the TSP as the transportation chapter in the County's Comprehensive Plan. Zoning and subdivision ordinance amendments must also be developed 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. The future street network plan provides a mechanism for developing local streets incrementally as homes are proposed and permitted. 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.

Improvements to local street systems will be within a 60-foot right-of-way. The street section

includes the street cross-section required based on street improvement standards presented in Chapter 6. Within the right-of-way, a reserve should be allowed in each side of the street improvement for inclusion of future drainage and planting strips, sidewalks or paths, and other utilities.

Access Management

Access management is a tool used for controlling future points of connection to an existing transportation system. It is intended to maintain or enhance the LOS. Adding access points to an arterial can reduce its functional capability, causing delays and increased safety concerns created by turning movements. Where lack of planning has allowed too many access points to an arterial, the correction is typically an expensive addition of lanes to the roadway section. While improving turning movements, added lanes can increase traffic on an arterial, leading to more expensive future improvements.

In addition to reducing capital expenditures, implementing access management has positive impacts on maintaining the livability along arterials and improving safety. As an example, adding additional driveways along arterials leads to an increased number of potential conflicts between vehicles entering and exiting from the property and those traveling along the arterial. The result is increased vehicle delay, a deterioration of the LOS along the arterial, and increased concerns for safety. A direct correlation exists between the number of access points and collision rates.

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 (Table 4-4).
- 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.

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 4-4.

TABLE 4-4
RECOMMENDED ACCESS MANAGEMENT STANDARDS FOR COUNTY ROADS[a]

	Intersection			
	Public Road		Private Drive	
Functional Classification	Type	Spacing	Type	Spacing
Rural Arterial	at-grade	1 mile	Left/right turns	1,200 ft
Rural Collector	at-grade	1/4 mile	Left/right turns	300 ft
Rural Local	at-grade	200-400 feet	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. Access will generally not be granted where there is a reasonable alternative access.

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. 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.

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 users of OR 74, OR 206, and OR 207 and US 730 in Morrow County. The Oregon Highway Plan (Oregon Department of Transportation 1991) includes an access management classification system for state facilities. Although Morrow County may designate state highways as arterial roadways within their transportation systems, access management categories for these facilities should 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 statewide/regional importance within Morrow County, outside the urban growth boundary for Irrigon. It meets the requirements of Oregon state highway access management Classification 4 (limited control). This classification allows at-grade intersections and interchanges at a minimum spacing of one-mile and private driveways with a minimum spacing of 1,200 feet from each other or intersections in a rural environment. This access management classification is similar to the general access management guidelines specified for major arterial roadways.

OR 74, OR 206, and OR 207 through Morrow County are regional highways. Within the Morrow County limits and outside urban growth boundaries of incorporated cities, Oregon Highway Plan Classification 6 (partial control) applies. This classification allows at-grade intersections and interchanges at a minimum spacing of 1/4 mile and private driveways with a minimum spacing of 300 feet from each other or from intersections in a rural environment. Traffic signals are permitted at a minimum of 1/2-mile spacing.

Each of these highways and the appropriate access management classification standard are summarized in Table 4-5.

TABLE 4-5
STATE HIGHWAY ACCESS MANAGEMENT STANDARDS

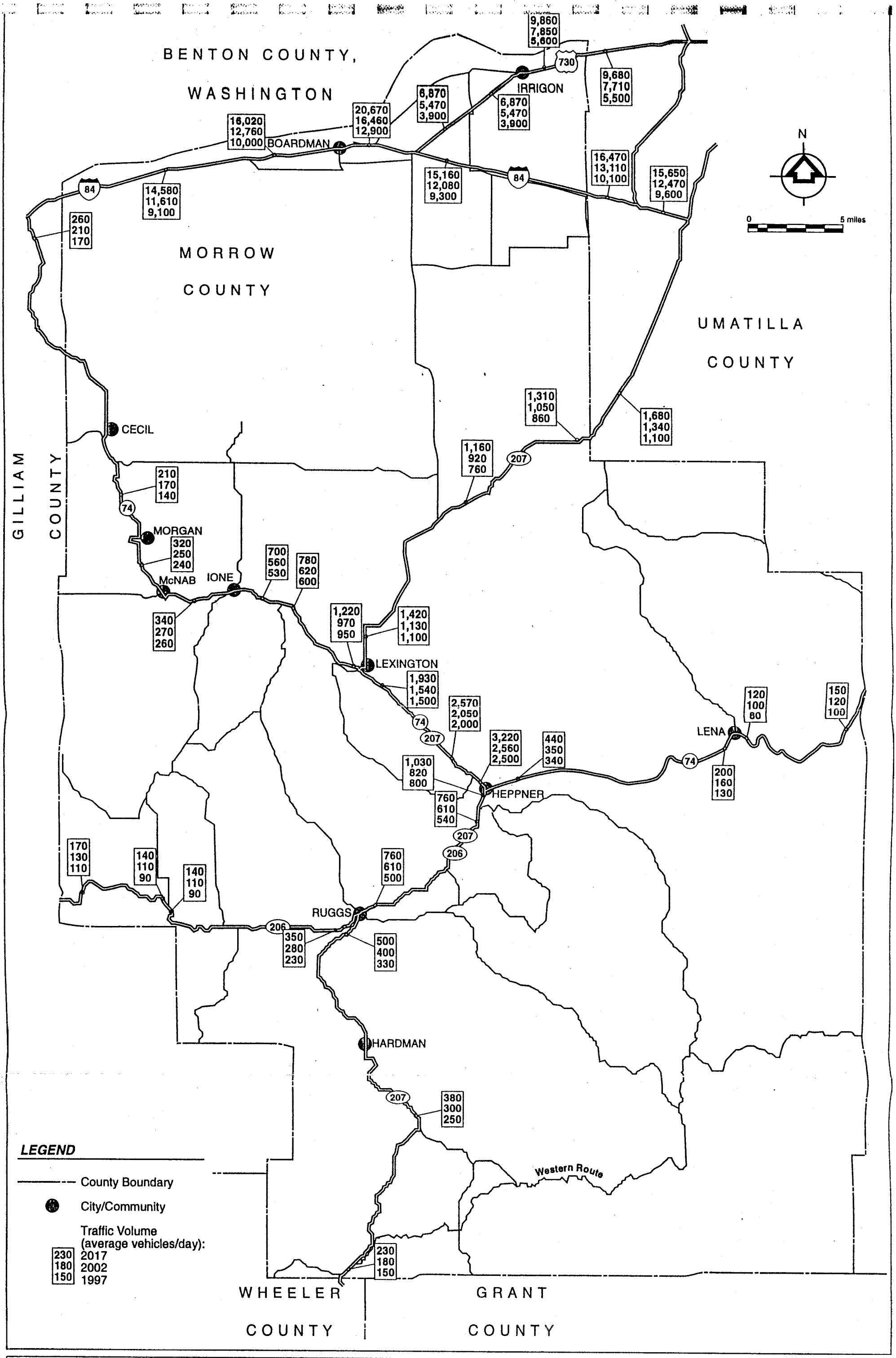
			Intersection					
			Public Road		Private Drive			
Hwy	Cat	Urban/Rural	Type	Spacing	Type	Spacing	Signal Spacing	Median Control
I-84	1	Urban	Intch	2-3 mi	None	N/A	None	Full
		Rural	Intch	3-8 mi	None	N/A	None	Full
US 730, OR 207	4	Urban	At-grade/intch	1/4 mi	Left/right turns	500 ft	1/2 mi	Partial/None
		Rural	At-grade/intch	1 mi	Left/right turns	1,200 ft	None	Partial/None
OR 74 Overpass at OR 207	5	Urban	At-grade	1/4 mi	Left/right turns	300 ft	1/4 mi	None
		Rural	At-grade	1/2 mi	Left/right turns	500 ft	1/2 mi	None
OR 74, OR 206	6	Urban	At-grade	500 ft	Left/right turns	150 ft	1/4 mi	None
		Rural	At-grade	1/4 mi	Left/right turns	300 ft	1/2 mi	None

REFERENCE: Robert D. Layton (1996)

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.

In addition, the County should continue to pursue the development of a bike/pedestrian or "greenway transit" route along the north border of the County adjacent to the Columbia River. The route would connect the cities of Irrigon and Boardman, enhancing intercity commuting for work, school, and recreation. The greenway would also have historic (Lewis and Clark trail route) and cultural significance.

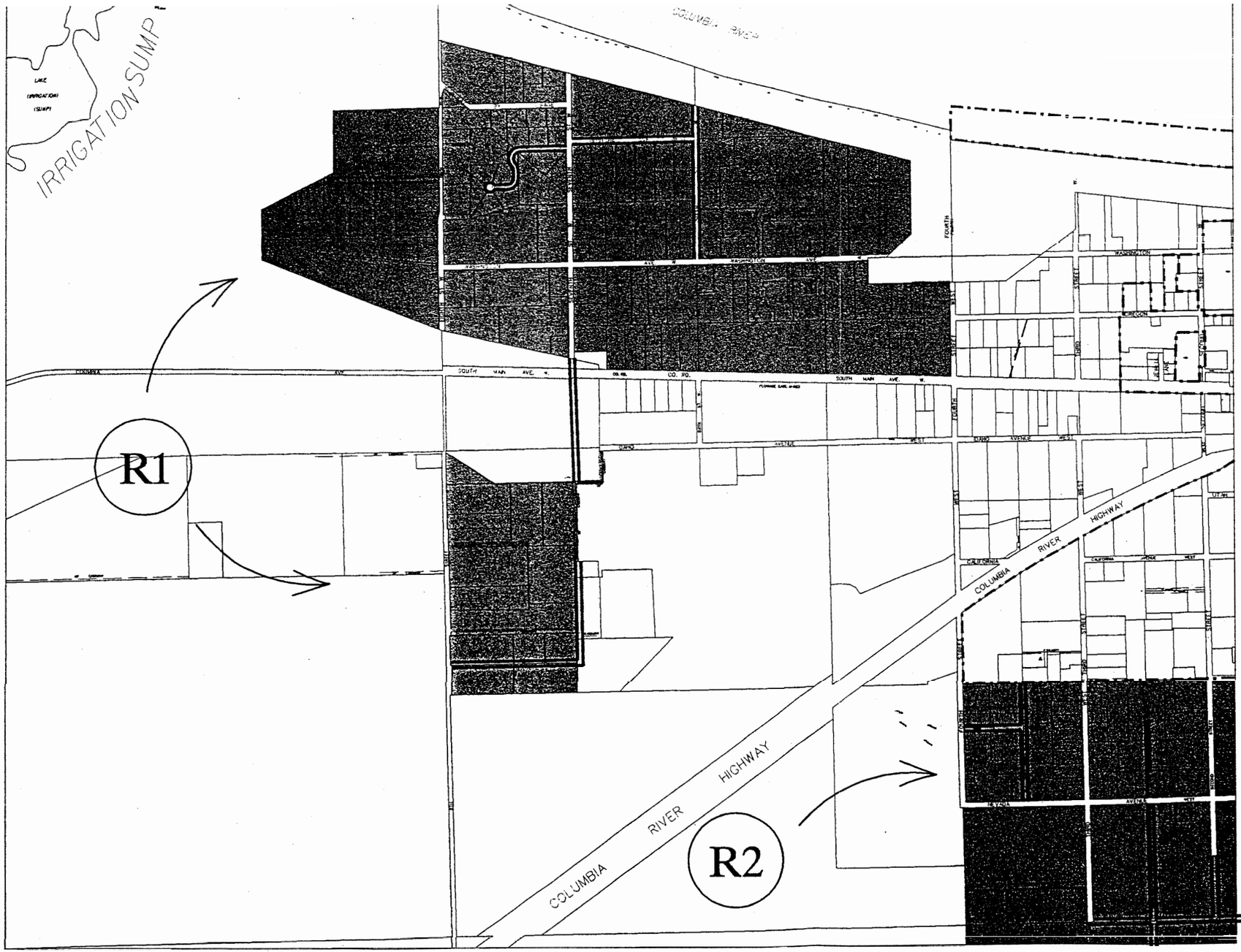


KCM *1917 First Avenue* *Seattle, Washington 98101*	Morrow County TRANSPORTATION SYSTEM PLAN	Figure 4-1. FUTURE TRAFFIC VOLUMES

Transportation System Plan
Future Conditions

Figure 4–3

* Future street locations are approximate and subject to refinement



Urban Growth Boundary

City Limits

R1 Polygon No. See Chapter 4

RR1

Future Roads

Public Easement

Platted Unimprov.

Scale: 1"=1200' Date: 12.21.97

Every reasonable effort has been made to assure the accuracy of this map. Morrow County does not assume any liability arising from use of this map. THE MAP IS PROVIDED WITHOUT WARRANTY OF ANY KIND. Any resale or distribution of this information is prohibited, except in accordance with a sublicensing agreement with Morrow County.

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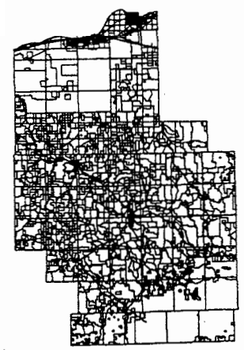
MORROW COUNTY

Geographic Information System



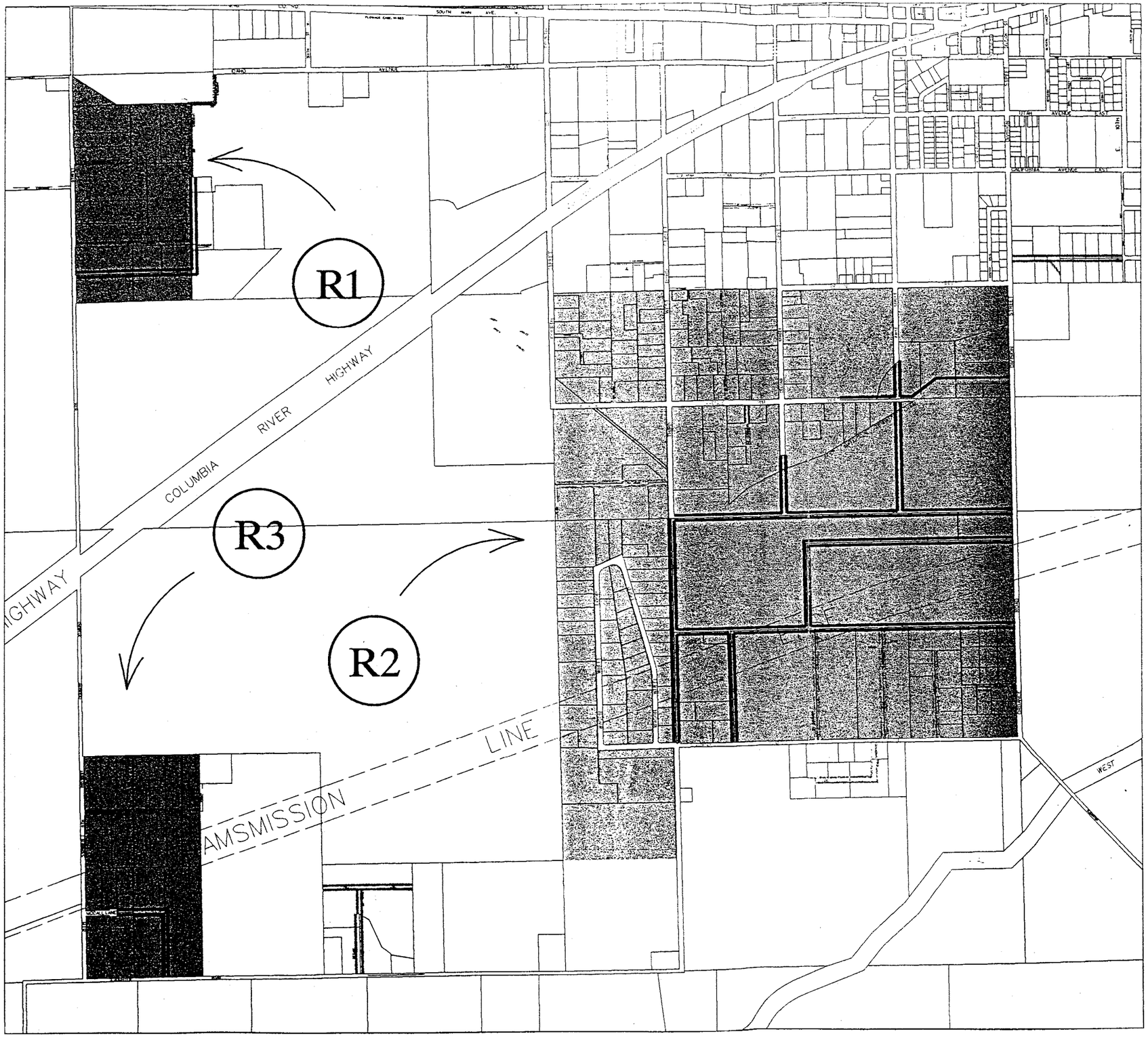
South Irrigon Area

Rural Residential

Transportation System Plan
Future Conditions

Figure 4-4

* Future street locations are approximate and subject to refinement



	Urban Growth Boundary		RR1
	City Limits		Future Roads
R1	Polygon No. See Chapter 4		Public Easement

Scale: 1"=1200' Date: 12.21.97

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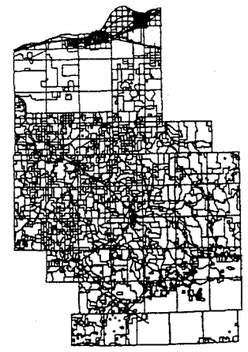
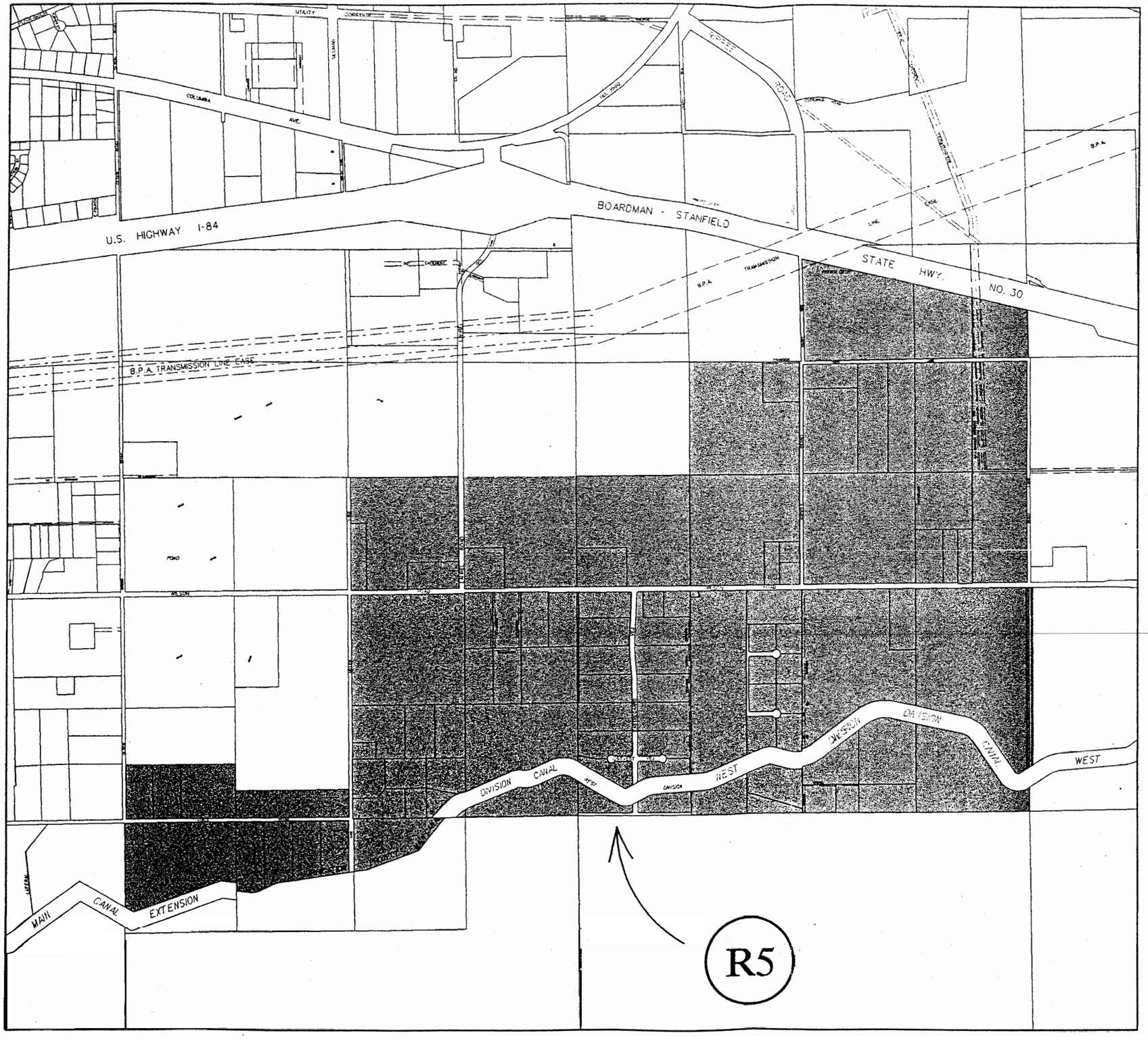




East Boardman Area

Farm Residential

Transportation System Plan Future Conditions

Figure 4–5

* Future street locations are approximate and subject to refinement

Urban Growth Boundary

City Limits

R1 Polygon No. See Chapter 4

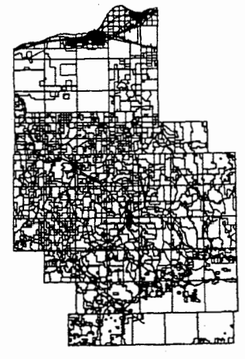
FR2

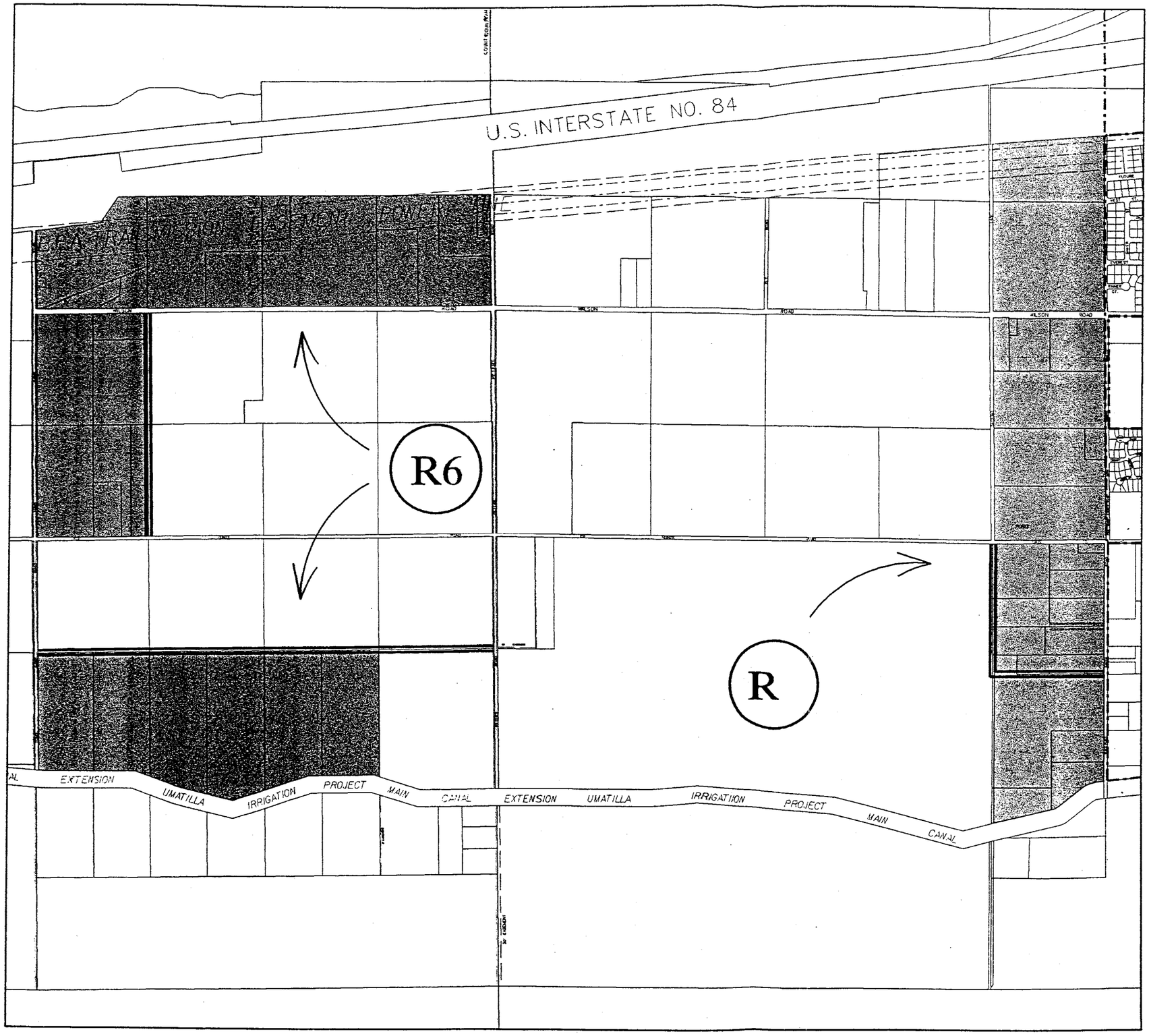
Public Easememnt

Scale: 1"=1200' Date: 2.35.98

MORROW COUNTY

Geographic Information System





West Boardman Area

Farm Residential

Transportation System Plan Future Conditions

Figure 4-6

* Future street locations are approximate and subject to refinement

Urban Growth Boundary

City Limits

R1 Polygon No. See Chapter 4

FR2

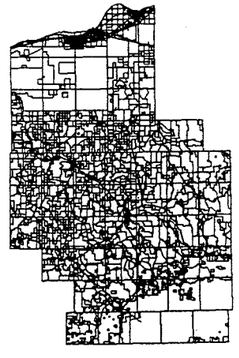
Future Roads

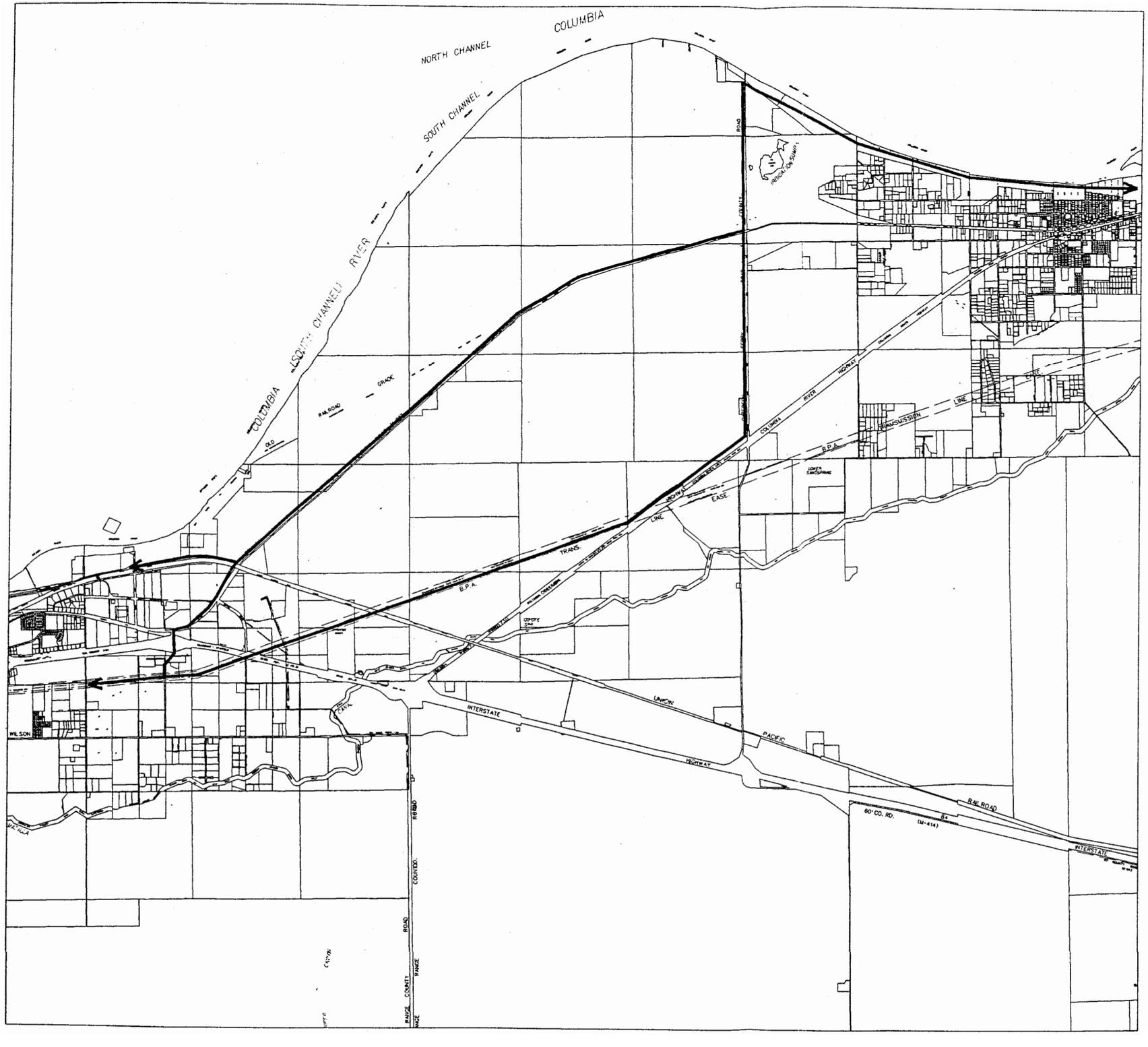
Public Easement

Scale: 1"=1200' Date: 12.21.97

MORROW COUNTY

Geographic Information System





North Morrow Co. Bike–Pedestrian

Transportation System Plan Future Conditions

Figure 4–7

* Future locations are approximate and subject to refinement

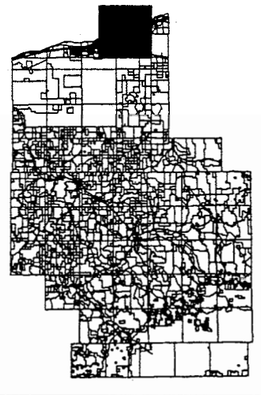
Urban Growth Boundary

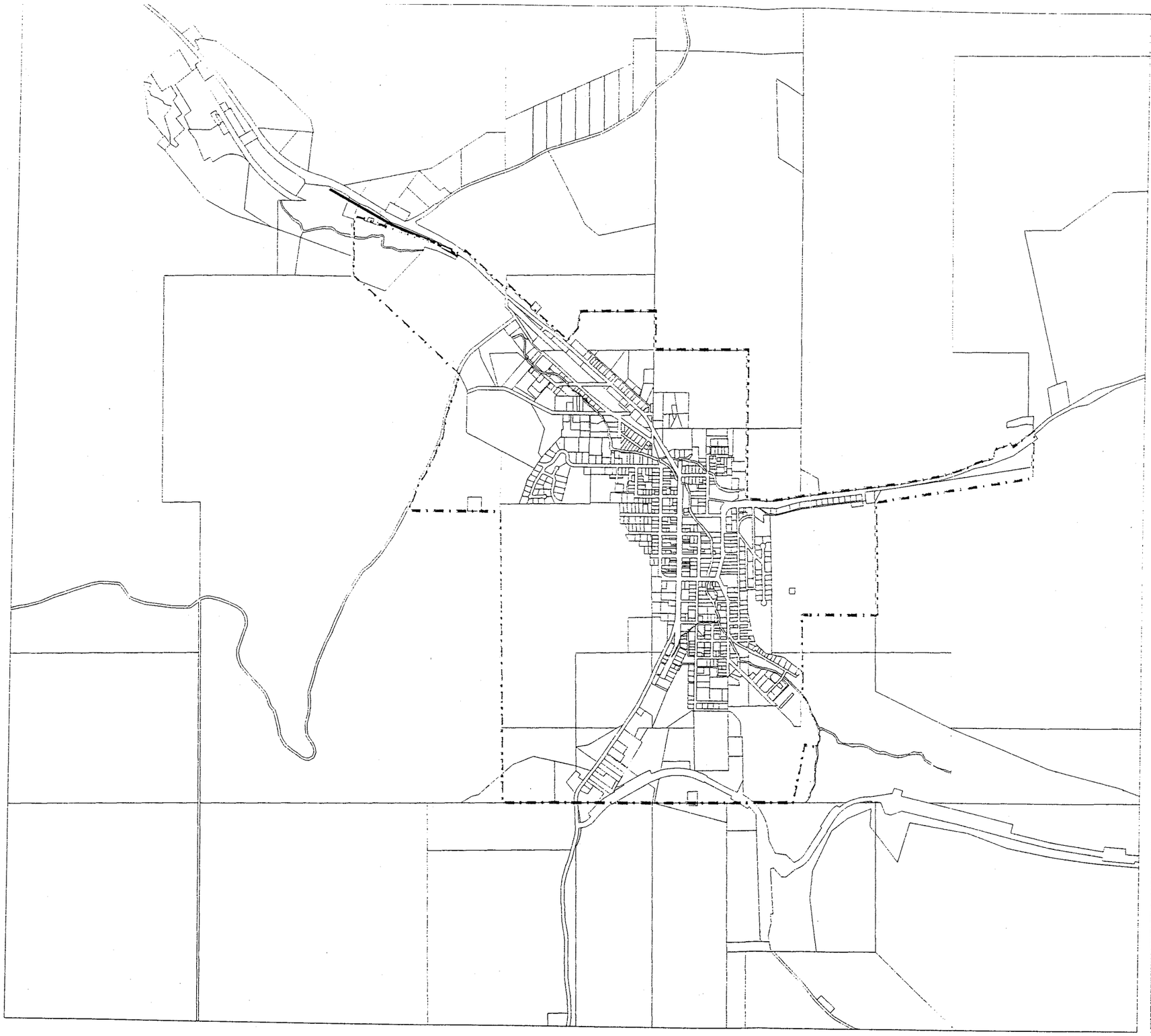
Bike /Ped Route Alternatives (exact route not yet determined)

Scale: 1"=5000' Date: 12.21.97

MORROW COUNTY

Geographic Information System





South Morrow Co. Bike–Pedestrian

Transportation System Plan Future Conditions

Figure 4–8

* Future locations are approximate and subject to refinement

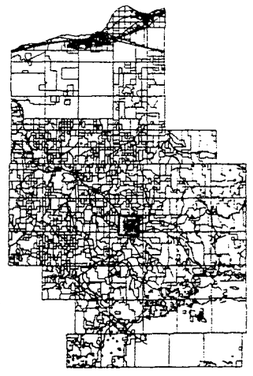
Urban Growth Boundary

Bike /Ped Route

Scale: 1"=1800' Date: 2.25.98

MORROW COUNTY

Geographic Information System



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 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. The 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 projects correct existing or projected roadway preservation needs, improve safety, or increase facility capacity.

The 1998 through 2001 STIP projects are described below:

- *Morgan Creek Bridge:* This bridge will be replaced in order to improve its capacity and safety. The project will begin in 1998 and is estimated to cost $596,000.
- *Willow Creek Road:* This project will reconstruct Willow Creek Road to improve roadway geometrics (safety). The project is scheduled for fiscal year 1998 and is estimated to cost $1,710,000.
- *Clarks Canyon Bridge:* The Clarks Canyon bridge is scheduled for replacement by ODOT in 1998. The expected cost for the replacement is $175,000.
- *Willow Creek/B Street Bridge:* The B Street bridge is scheduled for replacement due to structural deficiencies. The program year for this project is 2001 with an expected cost of $246,000.
- *Columbia River Highway (US 730):* This project will resurface US 730 between I-84 to the Umatilla River bridge. This project is scheduled for 2001 with a cost estimated at $3,422,000.
- *Heppner Highway (OR 74):* Improvements will be made to the Fairview Way-Lounsberry Creek section of Heppner Highway. Projects will include safety and preservation aspects. The project is scheduled for 1998 with an estimated cost of $1,200,000.
- *Heppner-Spray Highway (OR 207):* Preservation and safety improvements will be made to the Rock Creek Mile Post 25 section of OR 207. The project is estimated to cost $1,731,000 and is scheduled for 2001.
- *Willow Creek Bridge:* This project calls for the replacement of the bridge located near Rhea Creek Road. An estimated $310,000 has been set aside in 2001 to replace the structure.

The projects found in the current ODOT STIP are shown in Table 5-1.

TABLE 5-1
1998-2001 STATE TRANSPORTATION IMPLEMENTATION PROGRAM

Project Key	Program Year	Project Description	Action	Amount (x1,000)
09664	1998	Morgan Creek bridge (OR 74)	Replace bridge	$596
07407	1998	Willow Creek Road	Reconstruction of 2.4 miles	$1,710
08517	1998	Clarks Canyon bridge (Padberg Road)	Replace bridge	$175
08871	2001	Willow Creek (B Street bridge)	Replace bridge	$246
09486	2001	Columbia Highway (US 730) I-84 - Umatilla River section	Resurfacing and guard rail installation	$3,422
09490	2000	Heppner Highway (OR 74) -- Fairview Way-Lounsberry Creek section	Resurfacing and guard rail installation	$1,200
09492	2001	Heppner-Spray Highway (OR 207) -- Rock Creek Mile Post 25 section	Preservation and safety improvements	$1,731
10080	2001	Willow Creek bridge	Replace bridge	$310

REFERENCE: ODOT, Statewide Transportation Improvement Program 1998-2001

Evaluation of Options

Projects in addition to those found in the 1998-2001 STIP have been identified by the County, Port of Morrow, and members of the community as desired roadway improvements. These improvements 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 1998-2001 STIP, they are identified as needs in the County Comprehensive Plan.

Each of the following sections describes transportation options for the Morrow County TSP. The potential projects within each option will be compared to the evaluation criteria to determine the recommended actions for the TSP.

Option 1. State Facilities Recommendations

Several capital improvements have been suggested for state highway facilities in Morrow County. The list of potential projects includes roadway widening, scenic turnouts, and roadway maintenance and safety improvements. The projects on this list were compiled from suggestions of the Morrow County Planning Department and from citizen comments made during the public involvement process. While no schedule has been established for the completion of these projects, these projects (except the scenic vista pullouts) would likely be completed after 2001.

- *Scenic vista pullouts on OR 74:* A number of pullouts have been identified and funded by the state to meet growing recreation needs. This project is currently

funded for $50,000.

- *US 730 from I-84 to Umatilla county line.* This project would widen US 730 to provide increased capacity along this corridor. The approximate cost would be $3,950,000.
- *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 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 $540,000.

The cost estimates for the improvements in 1997 dollars are shown in Table 5-2. The cost of these state facility improvements totals $5.69 million. These improvements will improve the safety and preserve the integrity of the state highway system within Morrow County.

TABLE 5-2
STATE FACILITIES RECOMMENDED IMPROVEMENTS

Project Description	Action	Amount
OR 74 from I-84 to Lexington	Scenic pullouts	$50,000
US 730 from I-84 to Umatilla county line	Widening	$3,950,000
OR 207 from Hardman to Spray	Overlay	$1,420,000
OR 74 at horseshoe curve near Morgan	Safety improvements and reconstruction	$540,000

Option 2. The County Road Program

The Morrow County Public Works Department has developed an annual plan for recommended projects over each of the years from 1998 to 2003. In addition, the County has also identified a separate list for projects needed within the next 20 years. The cost for projects on the County's list is approximately $1 million per year with a high of $1,662,500 scheduled for 1998. Overall project costs for the 1998 to 2003 period amount to $6,754,600. No costs are listed for unscheduled projects within the 20-year horizon.

The projects currently on the County's five-year improvement list are shown in Tables 5-3A through Table 5-3F. Most projects shown relate to roadway maintenance except for roadway widening on Division Street. All costs would be paid by the County except for contributions from the Port of Morrow for the reconstruction of Columbia Avenue (CR #730).

TABLE 5-3A
MORROW COUNTY
RECOMMENDED ROADWAY SYSTEM PROJECTS

No.	1998 Project Listing	Estimated Cost
1	CR #578 (Myers Lane) to OR 207 - chip seal 3.0 miles	$184,000
2	CR #755 (Lower Sandhollow) from Myers Lane to OR 207 - fog seal 4.5 miles	$6,750
3	CR #759 (Bombing Range Road) - chip seal 10.0 miles	$120,000
4	CR #711 (Redding) - reconstruct .1.8 miles	$132,000
5	CR #723 (Dee Cox Road) - reconstruct 1.0 mile	$78,000
6	CR #968 (2nd Street) - reconstruct 0.5 miles	$75,000
7	CR #678 (Willow Creek Road) - chip seal 9.075 miles	$90,750
8	CR #818 (Division Street) - widen 1.0 miles to 28 feet, and 0.65 miles to 24 feet	$65,000
9	CR #930 (Patterson Ferry Road) - double chip seal 3.3 miles	$76,000
11	CR #730 (Columbia Avenue) - reconstruct street with Port assistance	$835,000
	Total Projects Cost - 1998	$1,662,500

TABLE 5-3B
MORROW COUNTY
RECOMMENDED ROADWAY SYSTEM PROJECTS

No.	1999 Project Listing	Estimated Cost
1	CR #589 (Valby Road) - reconstruct 2.4 miles	$258,250
2	CR #693 (Rhea Creek Road) - Ruggs to Brenner Canyon - chip seal 12.35 miles	$120,350
3	CR #638 (Ione Boardman) - 6 miles of shoulder repair and chip seal	$81,000
4	CR #761 (Depot Road) - shoulder repair and chip seal 6 miles	$140,000
5	CR #971 (Columbia Lane) - old US 730 - double chip seal	$50,000
6	CR #968 (2nd Street) - reconstruct 0.4 miles	$80,000
7	California Street - construct 0.26 miles with double chip seal	$15,000
8	CR #598 (Kunze Road) - shoulder repair and chip seal 6 miles	$66,000
9	CR #662 (Wilson Road) - east - double chip seal 3.3 miles	$76,000
	Total Projects Cost - 1999	$886,600

TABLE 5-3C
MORROW COUNTY
RECOMMENDED ROADWAY SYSTEM PROJECTS

No.	2000 Project Listing	Estimated Cost
1	CR #594 (Bunker Hill Road) - chip seal 3.65 miles	$123,500
2	CR #966 (Clark's Canyon Road) - chip seal 6.1 miles and replace Padberg bridge	$191,000
3	CR #589 (Valby Road) - reconstruct 2.45 miles	$263,250
4	CR #608 (Upper Rhea Creek Road) - Ruggs to Road Canyon - chip seal 8.75 miles	$173,750
5	CR #527 (Social Ridge Road) - chip seal 10.95 miles	$101,000
6	CR #905 (Poleline Road) - repair shoulders and chip seal 3.8 miles	$44,000
7	CR #728 (Frontage Road) - repair shoulders and chip seal 6.05 miles	$72,000
8	CR #837 (7th Street) - acquire right-of-way and construct gravel surface	$20,000
9	CR #561 (Rippee Road) - south of I-84 - chip seal 0.3 miles	$6,000
10	CR #936 (Laurel Street) - rebuild shoulders 1.2 miles	$17,000
11	CR #747 (Miller Road) - rebuild shoulder and chip seal 0.5 miles	$10,000
12	CR #689 (Olson Road) - reconstruct 0.5 miles	$20,000
	Total Projects Cost - 2000	$1,041,500

TABLE 5-3D
MORROW COUNTY
RECOMMENDED ROADWAY SYSTEM PROJECTS

No.	2001 Project Listing	Estimated Cost
1	CR #746 (Butter Creek Road) - chip seal 1.0 miles	$18,700
2	CR #793 (Little Butter Creek Road) - reconstruct 6.2 miles	$255,000
3	CR #577 (Liberty School Road) - chip seal 5.9 miles	$99,000
4	CR #681 (Ione-Gooseberry Road) - chip seal 19.42 miles	$194,200
5	CR #715 (Basey Canyon Road) - chip seal 1.98 miles	$25,800
6	CR #719 (Blackhorse Road) - chip seal 12.0 miles	$150,000
7	CR #906 (3rd Street West) - Nevada to US 730 - double chip seal 0.6 miles	$12,000
8	CR #722 (Oregon Street) - double chip seal 0.2 miles	$2,000
9	Nevada Street - between 2nd and 4th - reconstruct 0.6 miles	$70,000
10	CR #532 (Palmeteer) - fog seal existing surface	$3,000
11	CR #522 (McNab Road) - place cold mix surfacing over 2.25 miles	$137,500
	Total Projects Cost - 2001	$967,200

TABLE 5-3E
MORROW COUNTY
RECOMMENDED ROADWAY SYSTEM PROJECTS

No.	2002 Project Listing	Estimated Cost
1	CR #733 (Sandhollow Road) - chip seal 3.4 miles, relocate fence, reconstruct 6.7 miles	$617,400
2	CR #643 (Meadowbrook Road) - chip seal 1.5 miles	$24,600
3	CR #612 (Fuller Canyon Road) - chip seal 2.0 miles	$42,800
4	CR #906 (3rd Street) - reconstruct and widen 0.5 miles	$68,000
5	CR #777 (4th street) - reconstruct and widen 0.4 miles	$27,000
6	CR #716 (Pleasant View) - at the county line, chip seal 0.41 miles	$5,000
7	CR #902 (Root Lane) - chip seal 1.1 miles	$12,000
	Total Projects Cost - 2002	$796,800

TABLE 5-3F
MORROW COUNTY
RECOMMENDED ROADWAY SYSTEM PROJECTS

No.	2003 Project Listing	Estimated Cost
1	CR #793 (Little Butter Creek Road) - repave 12.4 miles	$620,000
2	CR #759 (Bombing Range Road) - 6.0 miles of hot mix overlay	$780,000
	Total Projects Cost - 2003	$1,400,000

The 20-year recommended roadway projects as identified by the County are described in Table 5-4. These projects were identified by the County as needs that are currently not funded and unscheduled for the next 20 years. A key project recognized from the public involvement process is the construction of the Tower/Boeing Road extension that would provide a new connection between the cities of Ione and Boardman.

TABLE 5-4
MORROW COUNTY
20-YEAR RECOMMENDED ROADWAY SYSTEM PROJECTS

No.	Project Listing	Description
1	Tower/Boeing Road	Extend Tower Road to Ione (anticipated cost $5.0 to $9.0 million)
2	#670 - Sunflower Flat	Reconstruct and pave approximately 8.0 miles to connect OR 207 to Grant County (Monument)

TABLE 5-4
MORROW COUNTY
20-YEAR RECOMMENDED ROADWAY SYSTEM PROJECTS

No.	Project Listing	Description
3	#504 - Dry Fork #548 - Dalzel	Reconstruct 4.0 miles Reconstruct 3.0 miles to connect Gooseberry to OR 206 (Gooseberry and Dry Fork are gravel roads)
4	#504 - Baker Road	Reconstruct 17.0 miles (from OR 74 to Ione-Boardman Road)
5	#923 - Juniper Canyon Road	Reconstruct (from Ione-Boardman to Bombing Range), acquire right-of-way

All of these roadway improvements are recommended. The County has indicated that it possesses adequate funding to carry out these projects. 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.

Option 3. Port of Morrow Recommended Projects

The Port of Morrow has provided a listing of roadway projects needed between 1998 and 2003, as shown in Tables 5-5A to 5-5D. No projects were identified for the years 2001 or 2002. These are the projects that the Port has identified as necessary to increase capacity, allow for economic development, increase safety, and improve intermodal access. Projects vary from improvements to existing roadways to the construction of a new facility access. A total of $2,095,000 is required to fund all identified projects over the 1998 to 2003 five-year period.

TABLE 5-5A
PORT OF MORROW
RECOMMENDED ROADWAY AND INTERMODAL SYSTEM PROJECTS

No.	1998 Project Listing	Project Description	Estimated Cost
1	Columbia Avenue (Olson Road to Ullman) - west 2,000 feet	Widen to 56 feet with 3 lanes and curb, gutter, and shoulder, landscape in 100-foot right-of-way	$200,000
2	Columbia Avenue (Laurel Lane Road) - east 6,000 feet	Widen to 56 feet with 3 lanes and curb, gutter, and shoulder, landscape in 100-foot right-of-way	$600,000
3	Lindsay Lane intertie - Columbia Avenue to Industrial Way	Increase paving width to 29 feet and realign for a distance of 0.25 miles	$20,000
4	Rippee Road - Columbia Avenue east	Widen and realign 0.25 miles	$25,000
		Total Projects Cost - 1998	$845,800

TABLE 5-5B
PORT OF MORROW
RECOMMENDED ROADWAY AND INTERMODAL SYSTEM PROJECTS

No.	1999 Project Listing	Project Description	Estimated Cost
1	Columbia Avenue - bridge over Union Pacific main line	Widen and reconstruct bridge deck for increased width and load carrying capacity	$350,000
2	Columbia Avenue - railroad crossing east	Widen pavement to 56 feet for 0.50 miles	$200,000
		Total Projects Cost - 1999	$550,000

TABLE 5-5C
PORT OF MORROW
RECOMMENDED ROADWAY AND INTERMODAL SYSTEM PROJECTS

No.	2000 Project Listing	Project Description	Estimated Cost
1	Marine Drive - west of Longview Fibre wood chip terminal	Widen and realign 0.5 miles to a width of 30 feet	$75,000
2	Port airport - new access roadway (on Port Road right-of-way)	Construct new pavement roadway to a width of 30 feet and a length of 3,000 feet	$100,000
		Total Projects Cost - 2000	$175,000

TABLE 5-5D
PORT OF MORROW
RECOMMENDED ROADWAY AND INTERMODAL SYSTEM PROJECTS

No.	2003 Project Listing	Project Description	Estimated Cost
1	I-95 - access road to Card Lock fuel station on Laurel Lane	Widen and realign pavement for 500 feet	$25,000
2	Intermodal road access improvements to port property	Improve access to port intermodal facilities (truck, rail, and barge) by widening the existing access road to 36 feet of pavement and extending a bridge over the Union Pacific main line	$500,000
		Total Projects Cost - 2003	$525,000

The future roadway and intermodal projects for the Port of Morrow are shown in Table 5-6. These projects will occur between 2003 and 2008. These projects focus on improving intermodal access to the Port. A total estimated cost of $1,035,000 will be needed to complete these improvements.

TABLE 5-6
PORT OF MORROW
RECOMMENDED ROADWAY SYSTEM PROJECTS

No.	2003-2008 Project Listing	Project Description	Estimated Cost
1	Cargil intermodal access improvement - Columbia Avenue to the grain elevator	Construct new gravel bed and AC pavement for 0.25 miles	$60,000
2	Frontage Road - Patterson Ferry Road to Umatilla Army Depot	Construct new paved roadway section to 30 feet and a length of 1.5 miles	$350,000
3	Designate an interchange overlay area for further study	Evaluate the construction of a new off ramp, bridge over Union Pacific main line, and access road to east port property	$100,000
4	Port airport Phase II - access road extension	Extend existing access road west for 2,000 feet and to a width of 30 feet	$75,000
5	Port airport Phase II - runway extension	Extend existing runway by a length of 2,000 feet and to a width of 80 feet	$250,000
6	Columbia Avenue -- 0.5 miles east of Union Pacific over crossing to end of port property	Widen existing roadway to 46 feet and overlay with pavement for a distance of 1.5 miles	$200,000
		Total Projects Cost - 2003-2008	$1,035,000

A total of $3,130,800 has been proposed related to port improvements. Of these projects, more than a third are scheduled during the 2003 to 2008 period. These projects reflect on the importance that the Port of Morrow provides within the County and the region.

The Port of Morrow recommends that these projects be included in the Morrow County TSP.

Option 4. Structurally Deficient and Functionally Obsolete Bridges

Bridges in Morrow County are inventoried biennially. The last inventory was completed in 1996. Bridges are rated on an index that ranges from 0 to 100 points, reflecting the structural integrity and functionality of each bridge. Bridges with low "sufficiency ratings" are prioritized for replacement based on structural soundness and functional integrity of the facility.

Bridges identified as structurally deficient must be replaced or repaired in order to continue to safely serve the needs of the County. Inventories are conducted to determine the structural soundness of these bridges. Structurally deficient bridges are often of the highest priority for repairs or replacement.

A second category is functionally obsolete bridges. Normally, a functionally obsolete bridge can no longer handle the traffic volumes or traffic types that it currently experiences. In most cases, functionally obsolete bridges fail to meet existing standards for lane width or for vertical or horizontal clearances.

Structurally deficient and functionally obsolete county bridges identified by ODOT are listed in Table 5-7. Six bridges under the County's jurisdiction have a sufficiency ranking below 80.

TABLE 5-7
RESULTS OF BRIDGE INVENTORY
COUNTY FACILITIES WITH SUFFICIENCY RATINGS BELOW 80

Bridge Number	Description	Sufficiency Rating	Status Code
10993	Road 693 - Jordan/Willow Creek	51.7	Functionally Obsolete
49001	Road 594 - Willow Creek	24.3	Structurally Deficient
49002	Road 594 - Fuller Canyon	44.6	Functionally Obsolete
49005	Spring Hollow Road - Rhea Creek	24.4	Structurally Deficient
49021	Road 966 - Clarks Canyon/Padberg	30.0	Structurally Deficient

REFERENCE: ODOT (1996)

All of these bridges are recommended for upgrades over the next 20 years and will increase the safety and mobility along these key roadways. Priority for improvement should be based on the traffic volume, level of deficiency, safety, and available funding. Bridge No. 49021, or the Clarks Canyon (Padberg Road) bridge, is scheduled for construction by ODOT in 1998.

Option 5. 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 projects have been promoted. The first is a multi-use pathway extending from the City of Heppner to the swimming pool. This path would be constructed along side the street, providing a safe and aesthetic facility.

The second pathway would be developed along the Columbia River between Boardman and Irrigon. One of the two possible routes for this path would include a loop beginning in Boardman, traveling east along the Columbia River to Irrigon; southwest along the Bonneville Power Association right-of-way from Irrigon to Tower Road; and north on Tower Road back to Boardman. No costs have been associated with these actions. Another route would be closer to the Columbia River, approximately following the Lewis and Clark historic route.

TABLE 5-8
RECOMMENDED BICYCLE AND PEDESTRIAN SYSTEM PROJECTS

No.	2003-2008 Project Listing	Project Description	Estimated Cost
1	Heppner swimming pool multi-use pathway	Develop a path along roadway	$60,000
2	Columbia River multi-use bicycle and pedestrian loop	Create a loop route between Boardman, Irrigon, and Tower Road	$3,500,000
		Total Projects Cost - 2003-2008	$3,560,000

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 that will include three to eight feet for pedestrian and bicycle travel.

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

Option 6. 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. 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.

Additionally, the County, in cooperation with industries, should pursue funding sources to develop a bicycle/pedestrian trail between Boardman and Irrigon along the Columbia River.

SUMMARY OF RECOMMENDATIONS

The recommendations of the alternatives analysis are summarized in Table 5-9. As shown in the table, it is recommended that all projects listed for county transportation facilities be implemented and included in the 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 alternative actions for Morrow County.

TABLE 5-9
TRANSPORTATION IMPROVEMENT OPTIONS RECOMMENDATIONS

Option	Recommended Action
1? Construct projects identified in the STIP	Implement
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 and pedestrian facilities	Implement
6? 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 a level of 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 steps necessary to meet future transportation needs. The actions described in this chapter emphasize the changes in land use and transportation systems necessary to provide a sound basis for future growth. 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 roadway design characteristics for each classification or use of the road. In other words, roadway standards identify the specific dimensions to which a certain class of roadway must be constructed. As discussed in Chapter 3, the County has recently adopted new roadway standards developed during the process of preparing the TSP for the eight classifications of roadways.

The roadway standards for the TSP are summarized in Table 6-1. These are also shown in Figure 6-1 as roadway cross-sections, which include standards for roadway base and drainage for each class of road. These standards provide increased shoulder width for bicycles and pedestrians. In addition, within urban growth areas, a Rural Access III standard would be allowed that follows Rural Access I standards but includes sidewalks and bicycle lanes, consistent with the Oregon Bicycle and Pedestrian Plan.

Modification to the roadway standards is consistent with Policies 5.1, 5.6, 6.1, and 8.2 of the TSP.

TABLE 6-1
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 Access III (within UGA only)	60	9	2-foot bicycle lane with sidewalks	22	100-200
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	700-1000
Rural Arterial II	60	12	3-6	32-40	300-700

Rural Access Roadways

The recommended standard for 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. Narrow travel lanes would generally discourage speeding and improve the roadway aesthetics. Paved shoulders along the outside of the travel lanes would provide a degree of walking space for pedestrians.

The roadway cross-section for Rural Access I and Rural Access II roadways is shown in Figure 6-1. In addition, within urban growth areas, a Rural Access III standard would be allowed that follows Rural Access I standards but includes sidewalks and bicycle lanes, consistent with the Oregon Bicycle and Pedestrian Plan.

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-feet wide, with 1- to 4-foot wide shoulders, depending on the expected ADT. On Collector I roadways, shoulders are designed sufficiently wide enough to encourage bicycle as well as pedestrian travel.

The roadway cross-sections for Rural Collector I, Rural Collector II, and Rural Collector III roadways are shown in Figure 6-1.

Rural Arterial Roadways

Arterials make up the majority of the County's roadway system. An arterial's purpose is to expedite the movement of traffic between different neighborhoods and districts. Arterial

roadways carry high traffic volumes with minimal roadway access.

The Rural Arterial I and II roadways are shown in the upper portion of Figure 6-1.

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 on a road, the number of turning movements is reduced, allowing the main line road to operate at near its designed capacity. Access management benefits the County by efficiently using its existing roadway resources, reducing the need for increasingly expensive capital investments associated with roadway expansion.

In addition to preserving roadway capacity, roadways with too many or poorly located driveways are a safety issue. Too many driveways or other accesses results in a high number of points where conflict 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:

- Combination driveways and roadway approaches along a road in order to reduce the number of conflicting movements between vehicles.
- Development of frontage roads to minimize the need for major facility access.
- Development of internal circulation between parcels.
- Requiring access on collectors or local streets for corner parcels.

  Realignment of existing accesses to allow adequate spacing between access points.
- Development of access standards for new developments to allow joint access for future subdividing of parcels.

The County has decided to adopt Oregon Department of Transportation (ODOT) access management standards as shown in Table 6-2. The access management plan to be prepared for the County includes planning for future access along all arterials within the County. There is an immediate need to evaluate and propose access control to US 730 between Umatilla and I-84 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. It is recommended that Morrow County, Umatilla County, and ODOT pursue funding to prepare an access management plan for this corridor.

The TSP actions listed above are consistent with Policy 2.9 of the TSP. They are included in the revisions to the zoning regulations as identified in Appendix E.

TABLE 6-2
MORROW COUNTY ACCESS MANAGEMENT STANDARDS

				Intersection					
				Public Road		Private Drive			
Cat	Access Treatment	Level of Importance	Urban /Rural	Type	Spacing (mi)	Type	Spacing (ft)	Signal Spacing (mi)	Median Control
1	Full control (Freeway)	Interstate/ Statewide	Urban	Interchange	2-3	None	NA	None	Full
			Rural	Interchange	3-8	None	NA	None	Full
2	Full control (Expressway)	Statewide	Urban	At grade/intch	1/2-1	None	NA	1/2-1	Full
			Rural	At grade/intch	1-5	None	NA	None	Full
3	Limited control (Expressway)	Statewide	Urban	At grade/intch	1/2-1	Right Turns	800	1/2-1	Partial
			Rural	At grade/intch	1-3	Right Turns	1200	None	Partial
4	Limited control	Statewide/ Regional	Urban	At grade/intch	1/4	Left/right turns	500	1/2	Partial/None
			Rural	At grade/intch	1	Left/right turns	1200	None	Partial/None
5	Partial control	Regional/ District	Urban	At grade	1/4	Left/right turns	300	1/4	None
			Rural	At grade	1/2	Left/right turns	500	1/2	None
6	Partial control	District	Urban	At grade	500 ft	Left/right turns	150	1/4	None
			Rural	At grade	1/4	Left/right turns	300	1/2	None

REFERENCE: ODOT, Oregon Highway Plan (1991)

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 in the next 20 years will occur in many different ways, large and small, commercial and residential, urban and rural. Different levels 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 6-3. 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 three lots are created. A conditional use permit is required for projects that create a larger impact than land uses that are permitted outright or with a zoning permit. If the proposed development is slightly inconsistent with the existing zoning, a *variance permit* is required.

TABLE 6-3
PERMIT REQUIREMENTS FOR LAND USE DEVELOPMENT

Permit Type	Plot Plan Requirements		Conditions					Review/Approval Type	
	Footprint (Setbacks)	Access[a]	Transportation Improvements	DEQ Site Suitability	Parking	Sign	Other	Review	Action
Zoning permit									
Residential	Yes	Designated access	Frontage improvements	Yes	N/A	N/A	No	Staff	Building permits Road approach permit
Commercial	Yes	Legal access via right-of-way or easement	Under 400 trips: frontage improvements, over 400trips: TIA		Yes	Yes	No	Staff	Building permits Road approach permit
Industrial	Yes	Legal access via right-of-way or easement	Under 400 trips: front-age improvements, over 400 trips: TIA		Y	Y	No	Staff	Building permits Road approach permit
Farm exempt	Yes	Yes	N/A	N/A	N/A	N/A	No	Staff	Copy BOA
Land Partition									
1 to 3 lots			Frontage improvements, legal access via right-of-way or easement				Yes	Planning Commission	Approval Road approach permit
Subdivision									
More than 3 lots		Legal access via right-of-way	Under 400 trips: frontage improvements, over 400 trips: TIA				Yes	Planning Commission	Approval Road approach permit
Conditional use permit	Yes	Legal access via right-of-way or easement	Under 400 trips: frontage improvements, over 400trips: TIA		Review	Review	Yes	Planning Commission	Approval Building permit Road approach permit

a. 1000 feet or less, 20-foot easement; 1000 feet or more, 40-foot easement; three or more lots (current or potential), 60-foot easement.

Traffic Impact Assessment

Traffic assessments are based on the number of trips generated by the development. A traffic impact analysis (TIA) would be required when a development generates more than 400 daily trips (measured as trip ends in passenger car equivalents). 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 Manual 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 trips would be required to have a TIA.

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.

To have new development pay its share of the impact it creates, the TSP includes the requirement to conduct a TIA for all developments generating more than 400 ADTs. 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:

- Trips generated by the project.
- Trip distribution for the project.
- Identification of intersections for which the project adds 30 or more peak-hour trips, and level of service (LOS) assessment.
- Impacts caused by the project.
- Mitigation of the project's impacts, including construction or payment system 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 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 the protection of the public infrastructure, as well as minimizes the disruption to the adjacent property owner by maintenance and repair activities. This 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 procedures for the acquisition, abandonment, and dedication of right-of-way. These 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 include the circumstances under which right-of-way can be dedicated by others to the County for either developed and undeveloped parcels.

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

The Morrow County modal plans have been formulated 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 and assume growth projections and roadway maintenance and safety needs. Adjustment to the specific projects and the timing for each scheduled improvement depends on the rate of development and the changes in land use patterns throughout the County.

Roadway System Plan

Within Morrow County, the roadway system continues to be the primary method of transportation in the region throughout the 20-year planning period. Improvements to the roadway system to accommodate growth and development ensure the safety and operation of the roadway

Level of Service

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, or a volume-to-capacity ratio (V/C) of 0.20 or less, to LOS F, which represents severe congestion, or a V/C of 1.00 or more. The LOS indicator is often used to assess when improvements to a roadway, such as new lanes that should be considered.

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 will cause enough congestion to affect the operation of the roadway system and create a need for traffic monitoring.

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 urban areas surrounding the cities.

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 6-4. 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 1997 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.

TABLE 6-4
ESTIMATED CONSTRUCTION COSTS PER MILE FOR RURAL IMPROVEMENTS

Road Classification	Standard Conditions	Moderate Conditions	Difficult Conditions	Overlay	Seal Coat
Collector	$360,000	$720,000	$1,080,000	$150,000	--
Minor Collector	$300,000	$600,000	$900,000	--	$30,000

Connectivity

Connectivity refers to the ability to travel between commonly used origins and destinations in a reasonably direct fashion. As discussed in previous sections of this plan, the major connectivity deficiency within the County is the lack of a direct roadway connection between Ione and Boardman. The TSP includes the development of the Ione-Boardman Road to improve the connectivity between the north and south portions of the County. The County must initiate a location/design report on the corridor in order to select the best route for the Ione-Boardman Road.

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 600 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 intersection of US 730/Division Road that connects to the north gate of the Umatilla Army base is the most likely future candidate for signal installation because of traffic growth associated with the incinerator plant. 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.

Intersections within Morrow County are suggested to be studied to ascertain if intersection controls are warranted using the MUTCD methodology. This is consistent with Policies 5.4 and 5.5 of the TSP.

Pedestrian System Plan

In rural areas, it is usual to accommodate pedestrians 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 previously shown in Figure 6-1.

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.

In addition, the TSP includes the development of two bicycle/pedestrian pathways. The first pathway would be a short off-road pathway extending from the city of Heppner to the

swimming pool. The second path would be developed along the Columbia River between Boardman and Irrigon, and possibly along the entire northern border of the county. The path would begin in Boardman and travel east along the Columbia River to the Port of Morrow. East of the Port, the path would continue east to Irrigon. From Irrigon, the path would travel southwest along the Bonneville Power Association right-of-way, crossing I-84 and connecting with Tower Road. The loop would be completed by traveling north on Tower Road back to Boardman.

Bicycle System Plan

At present, bicyclists are required to share the roadways with motorists on state and county facilities within Morrow County. 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. Morrow County's recommended roadway standards provide a 1- to 8-foot shoulder for use by bicycles. In areas with high bicycle use, a separate pathway or striped bicycle lane should be considered along both sides of the roadway. The recommendation for the TSP calls for the County to prepare a county-wide bicycle, pedestrian, and equestrian strategy to identify opportunities for facilities. In addition, the County should pursue projects such as the development of a recreational trail system that provides residents greater opportunities for non-motorized travel.

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

As described in the section above, two bicycle/pedestrian paths are planned to be developed by the County. The first is the pathway from the city of Heppner to the swimming pool. The second path is a loop trail developed along the Columbia River between Boardman and Irrigon.

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 the following options:
    - — *Cash-out parking program:* Gives an employee the choice between a parking space or 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.
   - — 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.

There is no public transit service currently operating within 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.

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.

There are five small para-transit operators within Morrow County who provide transportation services to mainly older adult and physically challenged residents. Services provided include dial-a-ride services, client transportation, medical transportation, and volunteer driver programs.

The TPR exempts communities with a population of less than 25,000 from including mass transit facilities in their development regulations. However, Morrow County should include provisions that support future transit within the County.

Periodically the County will re-evaluate the need for public transit in Morrow County. The County should continue to promote the development of private transit options within Morrow County to provide connections to major employment sites and regional airports.

In addition, Morrow County should ensure that the county regulations and those of its jurisdictions include provisions that support future public transit, such as transit-oriented development, adequate housing densities, and roadway block standards.

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 with two spurs extending from this line to serve a coal-fired gas plant and the Umatilla Army Depot. Most of the rail freight service supports the agricultural activities in the county and the Port of Morrow freight activities.

There is currently no passenger rail service in Morrow County. Rail service between Salt Lake City, Utah and Portland, Oregon was suspended within the past year in Morrow County. 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.

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. 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. 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.

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. No 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 would like to expand its market from mainly 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.

Current access to the Port's facilities in Boardman is from a two-lane highway with no turning lanes. Although this serves current traffic adequately, it 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.

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

Upcoming preparation of TSPs by the cities in Morrow County affords the County an opportunity to further define its transportation policies and procedures, as well as continue to meet the TPR requirement that jurisdictions develop a process of coordinated review, necessitating that planning occur between jurisdictions. The cities within Morrow County have

received funding to prepare TSPs to not only address issues on a local level, but to allow greater coordination between governmental bodies. The preparation of the 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.

Required Changes to Code and Ordinances

Changes to planning documents, the zoning code, and subdivision ordinances are necessary to ensure that model policy and ordinance language conforms with the requirements of the TPR. 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 6-5. Three levels of priority are established, based upon priority of the project's implementation:

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

These priorities were set based upon the projects' qualitative evaluation as compared to the criteria established in Chapter 5. Projects that would produce the most safety, environmental, socioeconomic, land use, or cost benefits were ranked with the highest priority. Those with the least of these benefits were ranked lowest priority.

Morrow County has identified a total of 84 projects in its 20-year CIP with at total cost of $40,304,600. Of these, 69 are ranked highest priority with a cost of $18,239,600; 10 medium-priority projects have been identified with a cost of approximately $6,565,000; and 5 low-priority projects with a total cost of $15,500,000 were identified.

TABLE 6-5
PRIORITIZED CAPITAL IMPROVEMENT PROGRAM

Project Description	Estimated Total Cost
High Priority	
State Projects	
Morgan Creek bridge (OR 74)	$596,000
Willow Creek Road	$1,710,000
Clarks Canyon bridge (Padberg Road)	$175,000
Willow Creek (B Street bridge)	$246,000
Columbia Highway (US 730) I-84 - Umatilla River section	$3,422,000
Heppner Highway (OR 74) -- Fairview Way-Lounsberry Creek section	$1,200,000
Heppner-Spray Highway (OR 207) -- Rock Creek Mile Post 25 section	$1,731,000
Willow Creek bridge	$310,000
County Projects	
CR #578 (Myers Lane) to OR 207 - chip seal 3.0 miles	$184,000
CR #755 (lower Sandhollow) from Myers Lane to OR 207 - fog seal 4.5 miles	$6,750
CR #759 (Bombing Range Road) - chip seal 10.0 miles	$120,000
CR #711 (Redding) - reconstruct .1.8 miles	$132,000
CR #723 (Dee Cox Road) - reconstruct 1.0 mile	$78,000
CR #968 (2nd Street) - reconstruct 0.5 mile	$75,000
CR #678 (Willow Creek Road) - chip seal 9.075 miles	$90,750
CR #818 (Division Street) - widen 1.0 mile to 28 feet, and 0.65 mile to 24 feet	$65,000
CR #930 (Patterson Ferry Road) - double chip seal 3.3 miles	$76,000
CR #730 (Columbia Avenue) - reconstruct street with Port assistance	$835,000
CR #589 (Valby Road) - reconstruct 2.4 miles	$258,250
CR #693 (Rhea Creek Road) - Ruggs to Brenner Canyon - chip seal 12.35 miles	$120,350
CR #638 (Ione Boardman) - 6.0 miles of shoulder repair & chip seal	$81,000
CR #761 (Depot Road) - shoulder repair & chip seal 6.0 miles	$140,000
CR #971 (Columbia Lane) - old US 730 - double chip seal	$50,000
CR #968 (2nd Street) - reconstruct 0.4 mile	$80,000
California Street - construct 0.26 mile with double chip seal	$15,000
CR #598 (Kunze Road) - repair shoulders & chip seal 6.0 miles	$66,000
CR #662 (Wilson Road) - east - double chip seal 3.3 miles	$76,000

TABLE 6-5
PRIORITIZED CAPITAL IMPROVEMENT PROGRAM

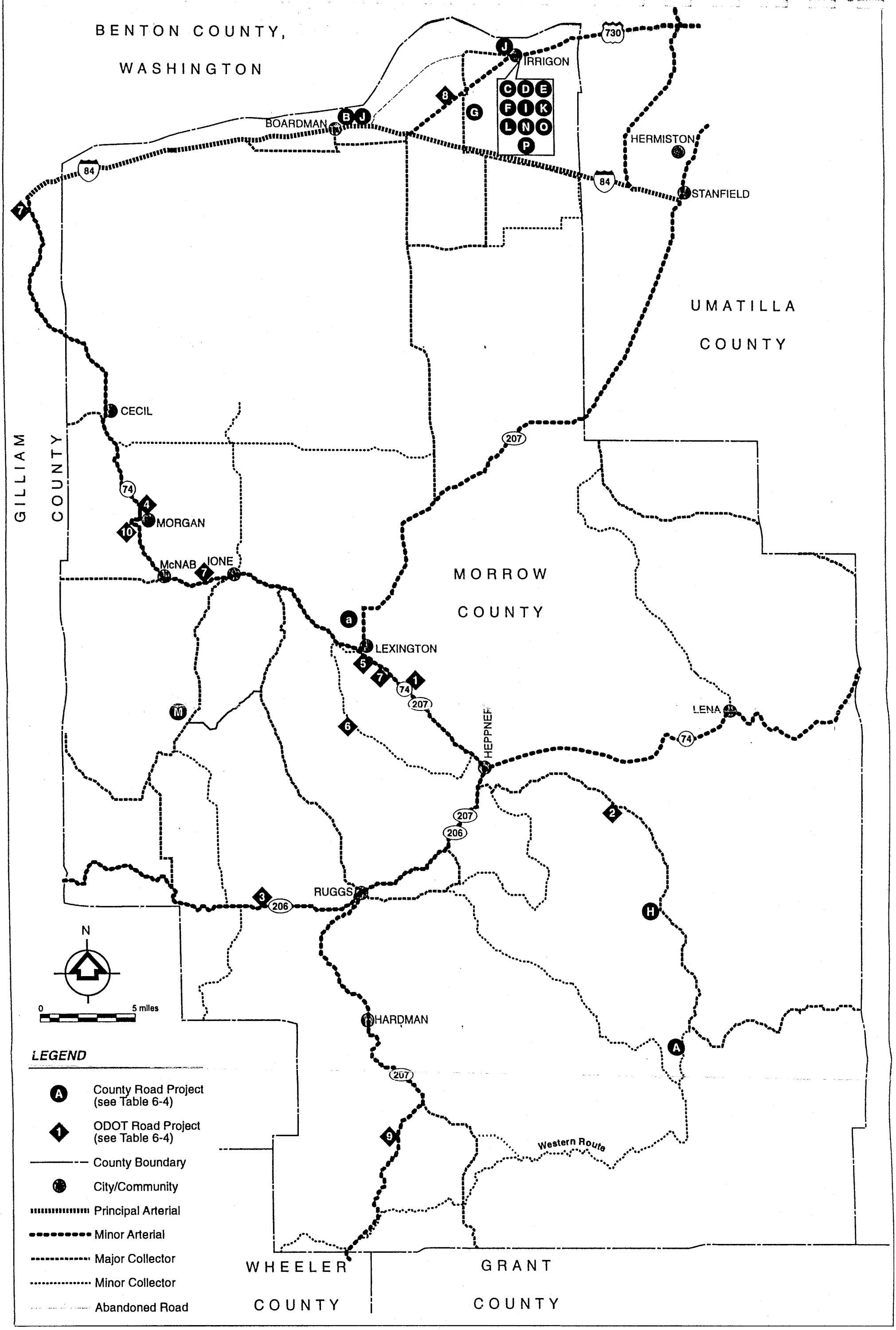
Project Description	Estimated Total Cost
CR #594 (Bunker Hill Road) - chip seal 3.65 miles	$123,500
CR #966 (Clark's Canyon Road) - chip seal 6.1 miles & replace Padberg bridge	$191,000
CR #589 (Valby Road) - reconstruct 2.45 miles	$263,250
CR #608 (Upper Rhea Creek Road) - Ruggs to Road Canyon - chip seal 8.75 miles	$173,750
CR #527 (Social Ridge Road) - chip seal 10.95 miles	$101,000
CR #905 (Poleline Road) - repair shoulders & chip seal 3.8 miles	$44,000
CR #728 (Frontage Road) - repair shoulders & chip seal 6.05 miles	$72,000
CR #837 (7th Street) - acquire right-of-way & construct gravel surface	$20,000
CR #561 (Rippee) - south of I 84 - chip seal 0.3 mile	$6,000
CR #936 (Laurel Street) - rebuild shoulders 1.2 miles	$17,000
CR #747 (Miller Road) - rebuild shoulder & chip seal 0.5 mile	$10,000
CR #689 (Olson Road) - reconstruct 0.5 mile	$20,000
CR #746 (Butter Creek Road) - chip seal 1.0 mile	$18,700
CR #793 (Little Butter Creek Road) - reconstruct 6.2 miles	$255,000
CR #577 (Liberty School Road) - chip seal 5.9 miles	$99,000
CR #681 (Ione-Gooseberry Road) - chip seal 19.42 miles	$194,200
CR #715 (Basey Canyon Road) - chip seal 1.98 miles	$25,800
CR #719 (Blackhorse Road) - chip seal 12.0 miles	$150,000
CR #906 (3rd Street West) - Nevada to US 730 - double chip seal 0.6 mile	$12,000
CR #722 (Oregon Street) - double chip seal 0.2 mile	$2,000
Nevada Street - between 2nd & 4th - reconstruct 0.6 mile	$70,000
CR #532 (Palmeteer) - fog seal existing surface	$3,000
CR #522 (McNab Road) - place cold mix surfacing over 2.25 miles	$137,500
CR #733 (Sandhollow Road) - chip seal 3.4 miles, relocate fence, reconstruct 6.7 miles	$617,400
CR #643 (Meadowbrook Road) - chip seal 1.5 miles	$24,600
CR #612 (Fuller Canyon Road) - chip seal 2.0 miles	$42,800
CR #906 (3rd Street) - reconstruct & widen 0.5 mile	$68,000
CR #777 (4th street)-reconstruct & widen 0.4 mile	$27,000
CR #716 (Pleasant View) - at the county line, chip seal 0.41 mile	$5,000
CR #902 (Root Lane) - chip seal 1.1 miles	$12,000
CR #793 (Little Butter Creek Road) - repave 12.4 miles	$620,000

TABLE 6-5
PRIORITIZED CAPITAL IMPROVEMENT PROGRAM

Project Description	Estimated Total Cost
CR #759 (Bombing Range Road) - 6.0 miles of hot mix overlay	$780,000
Port of Morrow Projects	
Columbia Avenue, (Olson Road to Ullman) - west 2,000 feet	$200,000
Columbia Avenue (Laurel Lane Rd.) - east 6,000 feet	$600,000
Lindsay Lane Intertie - Columbia Avenue to Industrial Way	$20,000
Rippee Road - Columbia Avenue east	$25,000
Columbia Avenue - bridge over Union Pacific main line	$350,000
Columbia Avenue - railroad crossing east	$200,000
Marine Drive - west of Longview Fibre wood chip terminal	$75,000
Port airport - New Access Roadway (on Port Road R.O.W.)	$100,000
I-95 - access road to Card Lock fuel station on Laurel Lane	$25,000
Intermodal road access improvements to port property	$500,000
Medium Priority	
State Projects	
Highway 74 from I-84 to Lexington (scenic pull-outs)	$50,000
US 730 from I-84 to Umatilla County line	$3,950,000
OR 207 from Hardman to Spray	$1,420,000
OR 74 at horseshoe curve near Morgan	$110,000
Port of Morrow Projects	
Cargil intermodal access improvement - Columbia Avenue to the grain elevator	$60,000
Frontage Road - Patterson Ferry to Umatilla Army Depot	$350,000
Designate an interstate overlay area for further study	$100,000
Port airport Phase II - access road extension	$75,000
Port airport Phase II - runway extension	$250,000
Columbia Avenue -- 0.5 miles east of Union Pacific over crossing to end of port property	$200,000
Low Priority	
County Projects	
Tower/Boeing Road	up to $9,000,000
#670-Sunflower Flat (8.0 miles)	$1,200,000

TABLE 6-5
PRIORITIZED CAPITAL IMPROVEMENT PROGRAM

Project Description	Estimated Total Cost
#504-Dry Fork	$1,050,000
#548-Dalzel	
#504-Baker Road	$2,550,000
#923-Juniper Canyon Road (not including right-of-way)	$1,700,000
Subtotal High Priority Projects	$18,239,600
Subtotal Medium Priority Projects	$6,565,000
Subtotal Low Priority Projects	$15,500,000
Total Projects	$40,304,600



KCM *1917 First Avenue* *Seattle, Washington 98101*	Morrow County TRANSPORTATION SYSTEM PLAN	Figure 6-1. ROADWAY IMPROVEMENT PROJECTS—PREFERRED ALTERNATIVE

CHAPTER 7
FUNDING OPTIONS AND FINANCIAL PLAN

INTRODUCTION

The Transportation Planning Rule (TPR) requires the Morrow County Transportation System Plan (TSP) to evaluate possible available sources of funding for improvements. Increased competition for available sources of funds and legislative changes as to how funds can be procured have created an environment where creative and innovative techniques will be needed to fund future and existing transportation needs. This chapter presents the funding options and financial plan for meeting the recommended improvements identified in the TSP, which are as follows:

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

TRANSPORTATION NEEDS

A total of $41.7 million is required to implement the transportation improvement projects recommended in the TSP. The actual scheduling of these projects will be determined partially by the actual population and employment growth rate experienced in the County and the availability of funds. Joint funding mechanisms will need to be pursued to support future development of transportation projects. Ideally, a partnership between the state of Oregon, the County, individual cities, and the Port of Morrow would fund future road improvements.

HISTORICAL SOURCES OF FUNDING

Morrow County currently funds transportation system improvements through federal, state, and local sources. The largest sources of income are the county general revenue fund and gas tax/vehicle licensing revenues. Other existing funding sources include tippage fees (collected for Bombing Range Road), surface transportation program (STP) funds allocated from the federal Intermodal Surface Transportation Efficiency Act (ISTEA) program, highway bridge replacement (HBR) funds, and forest receipts (collected for national forest lands). Miscellaneous funds are typically reimbursements, interest payments, or other one-time sources. Not all of the funds received are used directly for system improvements. These funds are also used for maintenance, equipment, staff salaries, and materials costs. The historic transportation budget for Morrow County between 1993 and 1997 is shown in Table 7-1. In addition, the last column shows the percent change in funding levels between 1993 and 1997.

TABLE 7-1
HISTORIC REVENUE SOURCES IN MORROW COUNTY

Funding Source	1993	1994	1995	1996	1997	Change 1993, 1997 Constant $
Property Tax	$1,824,269	$1,730,887	$1,715,402	$1,247,442	$721,000	-65%
Forest Receipts	$300,000	$300,000	$275,000	$255,000	$45,000	-87%
Gas Tax/Vehicle License	$250,000	$400,000	$400,000	$496,400	$500,000	80%
Tippage Fees					$155,000	N/A.
STP/HBR	$9,000	$37,000	$220,000	$128,650	$190,000	1796%
Misc. Revenue	$191,200	$86,400	$86,500	$101,852	$258,000	21%
Other Funding Sources			$375,000	$250,000		N/A.
Total	$2,574,469	$2,554,287	$3,071,902	$2,479,344	$1,869,000	-35%

As seen in the table, property tax funding has steadily become a smaller source of transportation funding since restrictions were placed on the amount and use of property taxes through Measures 5 and 50. These measures restricted the amounts of 1997-98 taxes that jurisdictions could collect by rolling back the tax to 1995-96 levels less 10 percent or 1994-95 levels, whichever is less. In addition, future property tax increases now are limited to three percent per year and funds must be prioritized for public education and safety, prior to other uses. As shown in the table, property taxes, the largest source of revenue, have dropped 87 percent (in constant 1993 dollars) since 1993.

State funding in Morrow County has increased over the five-year period (increase of 1,796 percent), but has decreased by 20 percent (constant 1995 dollars) since the peak in 1995. The table shows that growth in "Other Funding Sources" has been the primary source of revenue growth over the last 3 years.

Other sources such as increased gas tax/vehicle licensing fees and tippage fees are providing additional funding. State funding programs such as the STP and HBR funds are increasingly becoming important sources of transportation funding. The Oregon Department of Transportation (ODOT) has projected state revenues through the year 2018 for construction and maintenance of state highways. The budget is expected to grow to more than $1.3 billion annually by 2015. Adjusting for inflation, state funding for highways is expected to increase through the year 2004. After this point, in constant (1995) dollars, the state highway fund is expected to experience a slight decline.

REVENUE SOURCES

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.

ODOT Funds

ODOT provides funding for highway-related or highway-benefiting improvements through the Statewide Transportation Improvement Program (STIP). The STIP is funded through the ISTEA-class of federal transportation funds. Projects identified through this TSP or other planning processes may be eligible for STIP funds. Updated annually to reflect changing priorities, the STIP sets out a four-year funding cycle for transportation plans. The County's highway-related projects are then combined with all other submitted projects within ODOT Region 5 and then funded based upon the relative priority to other projects within the region.

ODOT funds will be an important source of funding to maintain and improve projects within Morrow County highway corridors. With the passage of ISTEA, projects that benefit highways indirectly, such as the construction of bicycle and pedestrian facilities, will increasingly receive benefits through ODOT funding. Morrow County should continue to pursue ISTEA funds.

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 few years, 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 at least 1994-95 levels, while requiring that jurisdictions prioritize funding for public education and safety. These restrictions will likely result in a decrease in the amount of funds that will be available to cities and counties. Further, provisions in these measures greatly decrease a jurisdiction's ability to pass increases property tax rates. Given that property tax revenues will likely be limited for all governmental uses, transportation projects will have to compete with other government services. Morrow County should not consider property taxes to be a major source of new roadway improvement funds in the future.

Transportation System Development Charges

A transportation system development charge (SDC), also referred to by some as a transportation impact fee (TIF), is a fee charged to new development to offset the costs for necessary transportation improvements. For example, a proposed shopping center development might pay an SDC to mitigate that development's share of the cost of widening a roadway or installing a traffic signal. 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 describes the requirements that a SDC must meet and the method of determining the amount of the fee. Generally, SDCs can only be

applied to transportation projects identified in a jurisdiction's capital facilities plans. The TSP recommends that TIAs be implemented to assess the impact to county-controlled jurisdictions. 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.

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.

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. The collected funds are required to be used to either maintain or improve roads within the County. To implement an additional vehicle registration fee within Morrow County, the fee would require voter approval and the County would need to develop mechanisms to distribute the funds for county and city roadway projects.

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 likely 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 must be obtained to approve its implementation.

Street Utility Fees

A street utility fee is an assessment on all businesses and household by the County to provide 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.

Project Mitigation

The County must 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 (through SDCs) or by the proponent completing improvements to affected facilities. For example, the Umatilla Army Depot incinerator project near Irrigon is expected to have significant impacts to the county transportation system that must be appropriately mitigated. Impacts from this project will be concentrated mainly on roads and highways in the vicinity of the north gate. Possible mitigation could include reconstruction of Ordinance Road/Division Road between the north gate and US 730, and the construction of a traffic signal at US 730.

Immediate Opportunity Grant Program

The Oregon Economic Development Department (OEDD) and ODOT administer a grant program to assist local and regional economic development. A share of the state gas tax revenues is used to fund projects that will promote economic development. Projects are selected based on criteria that focuses on the following: public roadway improvements, economic development for the regional economy, provision of primary employment, and local contribution to state moneys. The maximum amount per grant is $500,000, and the total annual program provides $5 million in funds.

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 County may be able to apply for SPWF funds for roadway improvements as new population increases in the area.

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 those enhancement funds from the ISTEA should be pursued by the County to further develop their bicycle and pedestrian systems.

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. While inexpensive, these bonds require voter approval, and state statutes require that a jurisdiction not exceed three percent of the total value of taxable property within the County. Whether voters would approve the property tax levy to fund the repayment of the bond would depend 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. The August 1996 Model Transportation Planning Rule Ordinances and Policies for Small Jurisdictions provides guidance to smaller jurisdiction by recommending policies and ordinances relevant to the TPR in the following areas:

- Approval of land use and transportation facilities.
- Protection of existing and future transportation facilities.
- Coordination of review of land use decisions.
- Safe and convenient pedestrian and bicycle circulation.

Many of these suggested policies have been already included in Morrow County's TSP in Chapter 2 and Chapter 6. The sections below summarize each of the policies and recommend specific actions for Morrow County. This discussion recognizes that many of the model ordinances and policies are directed towards urban and suburban environments and are not directly applicable or appropriate to the rural nature of the County. Specific ordinance implementation language is located in Appendix E.

APPROVAL PROCESSES FOR TRANSPORTATION FACILITIES

Summary of Policy Recommendations

Section 660-12-045(1) of the TPR requires that jurisdictions amend their land use requirements to conform to the adopted TSP. The section specifically develops a set of policies and recommends ordinance language for the approval of transportation improvement projects. Policies related to this TPR requirement are found in Chapter 2. County ordinances also enable the jurisdiction to set standards and require transportation improvements for permitted and conditional uses and for land partitions and subdivisions. However, specific requirements are not improved in all areas. For example, the current zoning ordinance addresses access issues generally but not specifically.

Recommendation Action

Approval processes for transportation projects are addressed in Table 6-3 of Chapter 6 and are reflected in ordinance changes in Appendix E.

PROTECTING EXISTING AND FUTURE OPERATION ON FACILITIES

Summary of Policy Recommendations

Section 660-12-045(2) of the TPR requires that jurisdictions protect existing and future transportation corridors from incompatible land uses. Ordinances describing access controls and protection of public use airports are included in the policy guidelines found in Chapter 2 of the Morrow County TSP.

Access controls include standards for spacing between driveways, shared access provisions, and connectivity to adjacent development, as well as the provision of site plan review procedures and requested variances. The Morrow County Subdivision Ordinance in Article 8 designates design standards for streets. Section 8.020 contains provisions for the connectivity and extension of future streets.

Airport facility protection is implemented by the adoption of an airport overlay zone that defines and controls permitted land uses within the zone. Sections 3.090 and 3.091 of the Morrow County Zoning Ordinance provide for both an airport approach (AA) and an airport hazard (AH) zone, in accordance with Federal Aviation Regulations Part 77. The ordinance defines permitted, conditional, and non-conforming uses for the AA and AH zones and establishes the permitting, variance, and appeal procedures.

Recommendation Action

Access Controls

Modify the subdivision ordinance and zoning ordinance to include definitions and provisions for the access management, corner clearance, and driveway provisions. Procedures for review of and standards for variances to these provisions should be included.

Airport Controls

Existing regulations meet the intent of the TPR.

PROCESS FOR COORDINATED REVIEW OF LAND USE DECISIONS

Summary of Policy Recommendations

The TPR (Sections 660-12-045 (2) d, e, and g) calls for the coordinated review of land use decisions that affect transportation facilities. The intent of the policy is to allow interjurisdictional review of land use decisions and to condition development proposals to minimize the impacts on the transportation systems and ensure that changes to the Comprehensive Plan are consistent with the TSP. Policies related to these topics are found in Chapter 2.

Recommendation Actions

Notice to Public Agencies

Existing goals, policies and ordinances must meet the intent of the TPR.

Application of Conditions to Development Proposals

Develop guidelines to assess traffic-related impacts and appropriate mitigation from new developments generating more than 30 average daily trips (ADTs).

Consistency with the TSP

Modify the Comprehensive Plan and the Morrow County Zoning Regulations to ensure that all development proposals, plan amendments, and zoning changes conform to the TSP.

SAFE AND CONVENIENT PEDESTRIAN AND BICYCLE CIRCULATION

Summary of Policy Recommendations

TPR 660-12-045 (3) requires that communities include planning for bicyclists and pedestrians in the TSP. The recommended policies in the model ordinance are primarily directed to suburban and urban locations and include elements such as bicycle parking standards, definition and development of bicycle and pedestrian facilities, and the modification of roadway standards to better accommodate pedestrians and bicyclists. Morrow County has included policies and recommendations in this TSP for the encouragement of new bicycle and pedestrian facilities as well as the modification of roadway design standards to increase bicyclist and pedestrian safety and mobility. Section 9.030 of the county Subdivision Ordinance includes requirements for bicycle and pedestrian improvements as part of all subdivision developments.

Recommendation Actions

Recommended changes to the Morrow County Subdivision Ordinance include the addition of the definition of accessway, bicycle facility, bikeway, pedestrian facilities, walkway, and rural/commercial activity center. Modification to subdivision and planned unit development required site plan elements should include the identification of bicycle and pedestrian circulation provisions.

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 that are identified in the Model Transportation Planning Rule Ordinances and Policies for Small Jurisdictions (August 1996) and shows how the Morrow County TSP meets each requirement.

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 TSP (Chapter 2). To implement these policies, a set of procedures has also been developed in the TSP (Chapter 6). These procedures include new road standards, a traffic impact analysis (TIA) procedure, and a clarification of the approval process for development. The County is also modifying its land use ordinances to reflect these changes.

An analysis of the requirements and how they have been met is shown in Table 9-1.

TABLE 9-1
TPR COMPLIANCE ANALYSIS

TPR Required Elements	Morrow County TSP
1. Amend land use regulations to reflect and implement the TSP.	• Land use goals and policies are included in Chapter 2 of the TSP that support and protect future transportation corridors. • Changes to the county zoning regulations and land use ordinance have been recommended as outlined in Chapter 8 of the TSP A TSP recommendation for guidelines for traffic impact studies is included in Chapter 8.
2. Clearly identify which transportation facilities, services and improvements are allowed outright and which will be conditionally permitted or permitted through other procedures.	• Coordination/Process Policies 1.5-1.8 identify measures to plan, schedule, and fund projects through the capital improvement program. • Approval processes adequately covered in existing ordinances.
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:	
• Access and management control.	• 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 Chapter 8.
• Protection of public use airports.	• The County has adopted Goal 7 and Air Transportation Policies 7.3, 7.5, and 7.6 to protect public use airports.
• Coordinated review of land use decisions potentially affecting transportation facilities.	• 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.

TABLE 9-1
TPR COMPLIANCE ANALYSIS

TPR Required Elements	Morrow County TSP
• Conditions to minimize development impacts to transportation facilities.	• 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. • TIAs will be required for all developments creating more than 30 ADTs.
• Regulations to provide notice to public agencies providing transportation facilities and services of land use applications that potentially affect transportation facilities.	• 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.
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.	• 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.
5. Establish street standards that minimize pavement width and total right-of-way.	• County road standards are included in the TSP in Chapter 6 that represent minimum design standards

TRANSPORTATION PLANNING RULE

A copy of the TPR is included below as Figure 9-1, Transportation Planning Rule.

Oregon Administrative Rules
1998 Compilation

LAND CONSERVATION AND DEVELOPMENT DEPARTMENT

DIVISION 12

TRANSPORTATION PLANNING

660-012-0000

Purpose

The purpose of this Division is to implement Statewide Planning Goal 12 (Transportation). It is also the purpose of this Division to explain how local governments and state agencies responsible for transportation planning demonstrate compliance with other statewide planning goals and to identify how transportation facilities are provided on rural lands consistent with the goals. The division sets requirements for coordination among affected levels of government for preparation, adoption, refinement, implementation and amendment of transportation system plans. Transportation system plans adopted pursuant to this Division fulfill the requirements for public facilities planning required under ORS 197.712 (2)(e), Goal 11 and OAR Chapter 660, Division 11, as they relate to transportation facilities. Through measures designed to reduce reliance on the automobile, the rule is also intended to assure that the planned transportation system supports a pattern of travel and land use in urban areas which will avoid the air pollution, traffic and livability problems faced by other areas of the country. The rules in this Division are not intended to make local government determinations "land use decisions" under ORS 197.015(10). The rules recognize, however, that, under existing statutory and case law, many determinations relating to the adoption and implementation of transportation plans will be land use decisions.

Stat. Auth.: ORS Ch. 183 & 197.040

Stats. Implemented: ORS 195.025, 197.015, 197.040, 197.230, 197.245, 197.712 & 197.717

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91

660-012-0005

Definitions

For the purposes of this division, the definitions in ORS 197.015, the Statewide Planning Goals and OAR Chapter 660 shall apply. In addition the definitions listed below shall apply:

(1) "Access Management" means measures regulating access to streets, roads and highways from public roads and private driveways. Measures may include but are not limited to restrictions on the siting of interchanges, restrictions on the type and amount of access to roadways, and use of physical controls, such as signals and channelization including raised medians, to reduce impacts of approach road traffic on the main facility.

(2) "Accessway" means a walkway that provides pedestrian and or bicycle passage either between streets or from a street to a building or other destination such as a school, park, or transit stop. Accessways generally include a walkway and additional land on either side of the walkway, often in the form of an easement or right-of-way, to provide clearance and separation between the walkway and adjacent uses. Accessways through parking lots are generally physically separated from adjacent vehicle parking or parallel vehicle traffic by curbs or similar devices and include landscaping, trees and lighting. Where accessways cross driveways, they are generally raised, paved or marked in a manner which provides convenient access for pedestrians.

(3) "Affected Local Government" means a city, county or metropolitan service district that is directly impacted by a proposed transportation facility or improvement.

(4) At or near a major transit stop: "At" means a parcel or ownership which is adjacent to or includes a major transit stop generally including portions of such parcels or ownerships that are within 200 feet of a transit stop. "Near" generally means a parcel or ownership that is within 300 feet of a major transit stop. The term "generally" is intended to allow local governments through their plans and ordinances to adopt more specific definitions of these terms considering local needs and circumstances consistent with the overall objective and requirement to provide convenient pedestrian access to transit.

(5) "Committed Transportation Facilities" means those proposed transportation facilities and improvements which are consistent with the acknowledged comprehensive plan and have approved funding for construction in a public facilities plan or the Six-Year Highway or Transportation Improvement Program.

(6) "Demand Management" means actions which are designed to change travel behavior in order to improve performance of transportation facilities and to reduce need for additional road capacity. Methods may include but are not limited to the use of alternative modes, ride-sharing and vanpool programs, and trip-reduction ordinances.

(7) "Local Street Standards" include but are not limited to standards for right-of-way, pavement width, travel lanes, parking lanes, curb turning radius, and accessways.

(8) "Major" means, in general, those facilities or developments which, considering the size of the urban or rural area and the range of size, capacity or service level of similar facilities or developments in the area, are either larger than average, serve more than neighborhood needs or have significant land use or traffic impacts on more than the immediate neighborhood:

(a) "Major" as it modifies transit corridors, stops, transfer stations and new transportation facilities means those facilities which are most important to the functioning of the system or which provide a high level, volume or frequency of service;

(b) "Major" as it modifies industrial, institutional and retail development means such developments which are larger than average, serve more than neighborhood needs or which have traffic impacts on more than the immediate neighborhood;

(c) Application of the term "major" will vary from area to area depending upon the scale of transportation improvements, transit facilities and development which occur in the area. A facility considered to be major in a smaller or less densely developed area may, because of the relative significance and impact of the facility or development, not be considered a major facility in a larger or more densely developed area with larger or more intense development or facilities.

(9) "Major transit stop" means:

(a) Existing and planned light rail stations and transit transfer stations, except for temporary facilities;

(b) Other planned stops designated as major transit stops in a transportation system plan and existing stops which:

(A) Have or are planned for an above average frequency of scheduled, fixed-route service when compared to region wide service. In urban areas of 1,000,000 or more population major transit stops are generally located along routes that have or are planned for 20 minute service during the peak hour; and

(B) Are located in a transit oriented development or within 1/4 mile of an area planned and zoned for:

(i) Medium or high density residential development; or

(ii) Intensive commercial or institutional uses within 1/4 mile of subsection (i); or

(iii) Uses likely to generate a relatively high level of transit ridership.

(10) "Metropolitan Planning Organization (MPO)" means an organization located within the State of Oregon and designated by the Governor to coordinate transportation planning in an urbanized area of the state including such designations made subsequent to the adoption of this rule. The Longview-Kelso-Rainier MPO is not considered an MPO for the purposes of this rule.

(11) "ODOT" means the Oregon Department of Transportation.

(12) "Parking Spaces" means on and off street spaces designated for automobile parking in areas planned for industrial, commercial, institutional or public uses. The following are not considered parking spaces for the purposes of OAR 660-012-0045(5)(c): park and ride lots, handicapped parking, and parking spaces for carpools and vanpools.

(13) "Pedestrian connection" means a continuous, unobstructed, reasonably direct route between two

points that is intended and suitable for pedestrian use. Pedestrian connections include but are not limited to sidewalks, walkways, accessways, stairways and pedestrian bridges. On developed parcels, pedestrian connections are generally hard surfaced. In parks and natural areas, pedestrian connections may be soft-surfaced pathways. On undeveloped parcels and parcels intended for redevelopment, pedestrian connections may also include rights of way or easements for future pedestrian improvements.

(14) "Pedestrian district" means a comprehen-sive plan designation or implementing land use regulations, such as an overlay zone, that establish requirements to provide a safe and convenient pedestrian environment in an area planned for a mix of uses likely to support a relatively high level of pedestrian activity. Such areas include but are not limited to:

(a) Lands planned for a mix of commercial or institutional uses near lands planned for medium to high density housing; or

(b) Areas with a concentration of employment and retail activity; and

(c) Which have or could develop a network of streets and accessways which provide convenient pedestrian circulations.

(15) "Pedestrian plaza" means a small semi-enclosed area usually adjoining a sidewalk or a transit stop which provides a place for pedestrians to sit, stand or rest. They are usually paved with concrete, pavers, bricks or similar material and include seating, pedestrian scale lighting and similar pedestrian improvements. Low walls or planters and landscaping are usually provided to create a semi-enclosed space and to buffer and separate the plaza from adjoining parking lots and vehicle maneuvering areas. Plazas are generally located at a transit stop, building entrance or an intersection and connect directly to adjacent sidewalks, walkways, transit stops and buildings entrance or an intersection and connect directly to adjacent sidewalks, walkways, transit stops and building. A plaza including 150-250 square feet would be considered "small".

(16) "Pedestrian scale" means site and building design elements that are dimensionally less than those intended to accommodate automobile traffic, flow and buffering. Examples include ornamental lighting of limited height; bricks, pavers or other modules of paving with small dimensions; a variety of planting and landscaping materials; arcades or awnings that reduce the height of walls; and signage and signpost details that can only be perceived from a short distance.

(17) "Planning Period" means the twenty year period beginning with the date of adoption of a TSP to meet the requirements of this rule.

(18) "Preliminary Design" means an engineering design which specifies in detail the location and alignment of a planned transportation facility or improvement.

(19) "Reasonably direct" means either a route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for likely users.

(20) "Refinement Plan" means an amendment to the transportation system plan, which resolves, at a systems level, determinations on function, mode or general location which were deferred during transportation system planning because detailed information needed to make those determinations could not reasonably be obtained during that process.

(21) "Roads" means streets, roads and high-ways.

(22) "Transit-Oriented Development (TOD)" means a mix of residential, retail and office uses and a supporting network of roads, bicycle and pedestrian ways focused on a major transit stop designed to support a high level of transit use. The key features of transit oriented development include:

(a) A mixed use center at the transit stop, oriented principally to transit riders and pedestrian and bicycle travel from the surrounding area;

(b) High density of residential development proximate to the transit stop sufficient to support transit operation and neighborhood commercial uses within the TOD;

(c) A network of roads, and bicycle and pedes-trian paths to support high levels of pedestrian access within the TOD and high levels of transit use.

(23) "Transportation Facilities" means any physical facility that moves or assist in the move-ment of people or goods including facilities identified in OAR 660-012-0020 but excluding electricity, sewage and water systems.

(24) "Transportation System Management Measures" means techniques for increasing the efficiency, safety, capacity or level of service of a transportation facility without increasing its size. Examples include, but are not limited to, traffic signal improvements, traffic control devices including installing medians and parking removal, channelization, access management, ramp metering, and restriping of high occupancy vehicle (HOV) lanes.

(25) "Transportation Needs" means estimates of the movement of people and goods consistent with acknowledged comprehensive plan and the requirements of this rule. Needs are typically based on projections of future travel demand resulting from a continuation of current trends as modified by policy objectives, including those expressed in Goal 12 and this rule, especially those for avoiding principal reliance on any one mode of transportation.

(26) "Transportation Needs, Local" means needs for movement of people and goods within communities and portions of counties and the need to provide access to local destinations.

(27) "Transportation Needs, Regional" means needs for movement of people and goods between and through communities and accessibility to regional destinations within a metropolitan area, county or associated group of counties.

(28) "Transportation Needs, State" means needs for movement of people and goods between and through regions of the state and between the state and other states.

(29) "Transportation Project Development" means implementing the transportation system plan (TSP) by determining the precise location, alignment, and preliminary design of improve-ments included in the TSP based on site-specific engineering and environmental studies.

(30) "Transportation Service" means a service for moving people and goods, such as intercity bus service and passenger rail service.

(31) "Transportation System Plan (TSP)" means a plan for one or more transportation facilities that

are planned, developed, operated and maintained in a coordinated manner to supply continuity of movement between modes, and within and between geographic and jurisdictional areas.

(32) "Urban Area" means lands within an urban growth boundary or two or more contiguous urban growth boundaries.

(33) "Urban Fringe" means:

(a) Areas outside the urban growth boundary that are within 5 miles of the urban growth boundary of an MPO area; and

(b) Areas outside the urban growth boundary within 2 miles of the urban growth boundary of an urban area containing a population greater than 25,000.

(34) "Walkway" means a hard surfaced area intended and suitable for use by pedestrians, including sidewalks and surfaced portions of accessways.

Stat. Auth.: ORS Ch. 183 & 197.040, 197.2456

Stats. Implemented: ORS 195.025, 197.015, 197.040, 197.230, 197.245, 197.712 & 197.717

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 3-1995, f. & cert. ef. 3-31-95; LCDC 4-1995, f. & cert. ef. 5-8-95

660-012-0010

Transportation Planning

(1) As described in this division, transportation planning shall be divided into two phases: transportation system planning and transportation project development. Transportation system planning establishes land use controls and a network of facilities and services to meet overall transportation needs. Transportation project development implements the TSP by determining the precise location, alignment, and preliminary design of improvements included in the TSP.

(2) It is not the purpose of this division to cause duplication of or to supplant existing applicable transportation plans and programs. Where all or part of an acknowledged comprehensive plan, TSP either of the local government or appropriate special district, capital improvement program, regional functional plan, or similar plan or combination of plans meets all or some of the requirements of this division, those plans or programs may be incorporated by reference into the TSP required by this division. Only those referenced portions of such documents shall be considered to be a part of the TSP and shall be subject to the administrative procedures of this division and ORS Chapter 197.

(3) It is not the purpose of this division to limit adoption or enforcement of measures to provide convenient bicycle and pedestrian circulation or convenient access to transit that are otherwise consistent with the requirements of this division.

Stat. Auth.: ORS Ch. 183 & 197.040 & 197.245

Stats. Implemented: ORS 195.025, 197.040, 197.230, 197.245, 197.712 & 197.717

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 4-1995, f. & cert. ef. 5-8-95

660-012-0015

Preparation and Coordination of Transportation System Plans

(1) ODOT shall prepare, adopt and amend a state TSP in accordance with ORS 184.618, its program for state agency coordination certified under ORS 197.180, and OAR 660-012-0030, 660-012-0035, 660-012-0050, 660-012-0065 and 660-012-0070. The state TSP shall identify a system of transportation facilities and services adequate to meet identified state transportation needs:

(a) The state TSP shall include the state transportation policy plan, modal systems plans and transportation facility plans as set forth in OAR 731, Division 15;

(b) State transportation project plans shall be compatible with acknowledged comprehensive plans as provided for in OAR 731, Division 15. Disagreements between ODOT and affected local governments shall be resolved in the manner established in that division.

(2) MPOs and counties shall prepare and amend regional TSPs in compliance with this division. MPOs shall prepare regional TSPs for facilities of regional significance within their jurisdiction. Counties shall prepare regional TSPs for all other areas and facilities:

(a) Regional TSPs shall establish a system of transportation facilities and services adequate to meet identified regional transportation needs and shall be consistent with adopted elements of the state TSP;

(b) Where elements of the state TSP have not been adopted, the MPO or county shall coordinate the preparation of the regional TSP with ODOT to assure that state transportation needs are accommodated;

(c) Regional TSPs prepared by MPOs other than metropolitan service districts shall be adopted by the counties and cities within the jurisdiction of the MPO. Metropolitan service districts shall adopt a regional TSP for areas within their jurisdiction;

(d) Regional TSPs prepared by counties shall be adopted by the county

(3) Cities and counties shall prepare, adopt and amend local TSPs for lands within their planning jurisdiction in compliance with this division:

(a) Local TSPs shall establish a system of transportation facilities and services adequate to meet identified local transportation needs and shall be consistent with regional TSPs and adopted elements of the state TSP;

(b) Where the regional TSP or elements of the state TSP have not been adopted, the city or county shall coordinate the preparation of the local TSP with the regional transportation planning body and ODOT to assure that regional and state transportation needs are accommodated.

(4) Cities and counties shall adopt regional and local TSPs required by this division as part of their comprehensive plans. Transportation financing programs required by OAR 660-012-0040 may be adopted as a supporting document to the comprehensive plan.

(5) The preparation of TSPs shall be coor-dinated with affected state and federal agencies, local governments, special districts, and private providers of transportation services.

(6) Mass transit, transportation, airport and port districts shall participate in the development of TSPs for those transportation facilities and services they provide. These districts shall prepare and adopt plans for transportation facilities and services they provide. Such plans shall be consistent with and adequate to carry out relevant portions of applicable regional and local TSPs. Cooperative agreements executed under ORS 197.185(2) shall include the requirement that mass transit, transportation, airport and port districts adopt a plan consistent with the requirements of this section.

(7) Where conflicts are identified between proposed regional TSPs and acknowledged comprehensive plans, representatives of affected local governments shall meet to discuss means to resolve the conflicts. These may include:

(a) Changing the draft TSP to eliminate the conflicts; or

(b) Amending acknowledged comprehensive plan provision to eliminate the conflicts;

(c) For MPOs which are not metropolitan service districts, if conflicts persist between regional TSPs and acknowledged comprehensive plans after efforts to achieve compatibility, an affected local government may petition the Commission to resolve the dispute.

Stat. Auth.: ORS Ch. 183 & 197.040

Stats. Implemented: ORS 184.618, 195.025, 197.040, 197.180, 197.230, 197.245, 197.712 & 197.717

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91

660-012-0020

Elements of Transportation System Plans

(1) A TSP shall establish a coordinated network of transportation facilities adequate to serve state, regional and local transportation needs.

(2) The TSP shall include the following elements:

(a) A determination of transportation needs as provided in OAR 660-012-0030;

(b) A road plan for a system of arterials and collectors and standards for the layout of local streets and other important non-collector street connections. Functional classifications of roads in regional and local TSPs shall be consistent with functional classifications of roads in state and regional TSPs and shall provide for continuity between adjacent jurisdictions. The standards for the layout of local

streets shall provide for safe and convenient bike and pedestrian circulation necessary to carry out OAR 660-012-0045(3)(b). New connections to arterials and state highways shall be consistent with designated access management categories. The intent of this requirement is to provide guidance on the spacing of future extensions and connections along existing and future streets which are needed to provide reasonably direct routes for bicycle and pedestrian travel. The standards for the layout of local streets shall address:

(A) Extensions of existing streets;

(B) Connections to existing or planned streets, including arterials and collectors; and

(C) Connections to neighborhood destinations.

(c) A public transportation plan which:

(A) Describes public transportation services for the transportation disadvantaged and identifies service inadequacies;

(B) Describes intercity bus and passenger rail service and identifies the location of terminals;

(C) For areas within an urban growth boundary which have public transit service, identifies existing and planned transit trunk routes, exclusive transit ways, terminals and major transfer stations, major transit stops, and park-and-ride stations. Designation of stop or station locations may allow for minor adjustments in the location of stops to provide for efficient transit or traffic operation or to provide convenient pedestrian access to adjacent or nearby uses.

(D) For areas within an urban area containing a population greater than 25,000 persons, not currently served by transit, evaluates the feasibility of developing a public transit system at buildout. Where a transit system is determined to be feasible, the plan shall meet the requirements of paragraph (2)(c)(C) of this rule.

(d) A bicycle and pedestrian plan for a network of bicycle and pedestrian routes throughout the planning area. The network and list of facility improvements shall be consistent with the requirements of ORS 366.514;

(e) An air, rail, water and pipeline transportation plan which identifies where public use airports, mainline and branchline railroads and railroad facilities, port facilities, and major regional pipelines and terminals are located or planned within the planning area. For airports, the planning area shall include all areas within airport imaginary surfaces and other areas covered by state or federal regulations;

(f) For areas within an urban area containing a population greater than 25,000 persons a plan for transportation system management and demand management;

(g) A parking plan in MPO areas as provided in OAR 660-012-0045(5)(c);

(h) Policies and land use regulations for implementing the TSP as provided in OAR 660-012-0045;

(i) For areas within an urban growth boundary containing a population greater than 2500 persons, a transportation financing program as provided in OAR 660-012-0040.

(3) Each element identified in subsections (2)(b)-(d) of this rule shall contain:

(a) An inventory and general assessment of existing and committed transportation facilities and services by function, type, capacity and condition:

(A) The transportation capacity analysis shall include information on:

(i) The capacities of existing and committed facilities;

(ii) The degree to which those capacities have been reached or surpassed on existing facilities; and

(iii) The assumptions upon which these capacities are based.

(B) For state and regional facilities, the transportation capacity analysis shall be consistent with standards of facility performance considered acceptable by the affected state or regional transportation agency;

(C) The transportation facility condition analysis shall describe the general physical and operational condition of each transportation facility (e.g., very good, good, fair, poor, very poor).

(b) A system of planned transportation facilities, services and major improvements. The system shall include a description of the type or functional classification of planned facilities and services and their planned capacities and levels of service;

(c) A description of the location of planned facilities, services and major improvements, establishing the general corridor within which the facilities, services or improvements may be sited. This shall include a map showing the general location of proposed transportation improvements, a description of facility parameters such as minimum and maximum road right of way width and the number and size of lanes, and any other additional description that is appropriate;

(d) Identification of the provider of each transportation facility or service.

Stat. Auth.: ORS Ch. 183, 197.040 & 197.245

Stats. Implemented: ORS 195.025, 197.040, 197.230, 197.245, 197.712 & 197.717

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 4-1995, f. & cert. ef. 5-8-95

660-012-0025

Complying with the Goals in Preparing Transportation System Plans; Refinement Plans

(1) Except as provided in section (3) of this rule, adoption of a TSP shall constitute the land use decision regarding the need for transportation facilities, services and major improvements and their function, mode, and general location.

(2) Findings of compliance with applicable statewide planning goals and acknowledged

comprehensive plan policies and land use regulations shall be developed in conjunction with the adoption of the TSP.

(3) A local government or MPO may defer decisions regarding function, general location and mode of a refinement plan if findings are adopted which:

(a) Identify the transportation need for which decisions regarding function, general location or mode are being deferred;

(b) Demonstrate why information required to make final determinations regarding function, general location, or mode cannot reasonably be made available within the time allowed for preparation of the TSP;

(c) Explain how deferral does not invalidate the assumptions upon which the TSP is based or preclude implementation of the remainder of the TSP;

(d) Describe the nature of the findings which will be needed to resolve issues deferred to a refinement plan; and

(e) Demonstrate that the refinement effort will be completed within three years or prior to initiation of the periodic review following adoption of the TSP.

(4) Where a Corridor Environmental Impact Statement (EIS) is prepared pursuant to the requirements of the National Environmental Policy Act of 1969, the development of the refinement plan shall be coordinated with the preparation of the Corridor EIS. The refinement plan shall be adopted prior to the issuance of the Final EIS.

Stat. Auth.: ORS Ch. 183 & 197.040

Stats. Implemented: ORS 195.025, 197.040, 197.230, 197.245, 197.712 & 197.717

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91

660-012-0030

Determination of Transportation Needs

(1) The TSP shall identify transportation needs relevant to the planning area and the scale of the transportation network being planned including:

(a) State, regional, and local transportation needs;

(b) Needs of the transportation disadvantaged;

(c) Needs for movement of goods and services to support industrial and commercial development planned for pursuant to OAR 660-09 and Goal 9 (Economic Development).

(2) Counties or MPOs preparing regional TSPs shall rely on the analysis of state transportation needs

in adopted elements of the state TSP. Local governments preparing local TSPs shall rely on the analyses of state and regional transportation needs in adopted elements of the state TSP and adopted regional TSPs.

(3) Within urban growth boundaries, the determination of local and regional transportation needs shall be based upon:

(a) Population and employment forecasts and distributions which are consistent with the acknowledged comprehensive plan, including those policies which implement Goal 14, including Goal 14's requirement to encourage urban development on urban lands prior to conversion of urbanizable lands. Forecasts and distributions shall be for 20 years and, if desired, for longer periods;

(b) Measures adopted pursuant to OAR 660-012-0045 to encourage reduced reliance on the automobile.

(4) In MPO areas, calculation of local and regional transportation needs also shall be based upon accomplishment of the requirement in OAR 660-012-0035(4) to reduce reliance on the automobile.

Stat. Auth.: ORS Ch. 183 & 197.040

Stats. Implemented: ORS 195.025, 197.040, 197.230, 197.245, 197.712 & 197.717

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91

660-012-0035

Evaluation and Selection of Transportation System Alternatives

(1) The TSP shall be based upon evaluation of potential impacts of system alternatives that can reasonably be expected to meet the identified transportation needs in a safe manner and at a reasonable cost with available technology. The following shall be evaluated as components of system alternatives:

(a) Improvements to existing facilities or services;

(b) New facilities and services, including different modes or combinations of modes that could reasonably meet identified transportation needs;

(c) Transportation system management measures;

(d) Demand management measures; and

(e) A no-build system alternative required by the National Environmental Policy Act of 1969 or other laws.

(2) Local governments in MPO areas of larger than 1,000,000 population shall and other governments may also evaluate alternative land use designations, densities and design standards to meet local and regional transportation needs. Local governments preparing such a strategy shall

consider:

(a) Increasing residential densities and establishing minimum residential densities within one quarter mile of transit lines, major regional employment areas and major regional retail shopping areas;

(b) Increasing densities (i.e., minimum floor area ratios) in new commercial office and retail developments;

(c) Designating lands for neighborhood shopping centers within convenient walking and cycling distance of residential areas;

(d) Designating land uses to provide a better balance between jobs and housing considering:

(A) The total number of jobs and total of number of housing units expected in the area or subarea;

(B) The availability of affordable housing in the area or subarea; and

(C) Provision of housing opportunities in close proximity to employment areas.

(e) Establishing maximum parking limits for office and institutional developments consistent with OAR 660-012-0045(5)(c) which reduce the amount of parking available at such developments.

(3) The following standards shall be used to evaluate and select alternatives:

(a) The transportation system shall support urban and rural development by providing types and levels of transportation facilities and services appropriate to serve the land uses identified in the acknowledged comprehensive plan;

(b) The transportation system shall be con-sistent with state and federal standards for protection of air, land and water quality including the State Implementation Plan under the Federal Clean Air Act and the State Water Quality Management Plan;

(c) The transportation system shall minimize adverse economic, social, environmental and energy consequences;

(d) The transportation system shall minimize conflicts and facilitate connections between modes of transportation;

(e) The transportation system shall avoid principal reliance on any one mode of trans-portation and shall reduce principal reliance on the automobile. In MPO areas this shall be accom-plished by selecting transportation alternatives which meet the requirements in section (4) of this rule.

(4) In MPO areas, regional and local TSPs shall be designed to achieve the following objectives for reducing automobile vehicle miles travelled (VMT) per capita for the MPO area:

(a) No increase within ten years of adoption of a plan as required by OAR 660-012-0055(1);

(b) A 10% reduction within 20 years of adoption of a plan as required by OAR 660-012-0055(1); and

(c) Through subsequent planning efforts, a 20 percent reduction within 30 years of adoption of a plan as required by OAR 660-012-0055(1).

(5) Regional TSPs shall specify measurable objectives for each of the following and demonstrate how the combination selected will accomplish the objectives in section (4) of this rule:

(a) An increase in the modal share of non-automobile trips (i.e., transit, bicycle, pedestrian); for example, a doubling of the modal share of non-automobile trips;

(b) An increase in average automobile occupancy (i.e., persons per vehicle) during; for example, an increase to an average of 1.5 persons per vehicle; and

(c) Where appropriate, a decrease in the number or length of automobile vehicle trips per capita due to demand management programs, rearranging of land uses or other means.

(6) Regional and local TSPs shall include interim benchmarks to assure satisfactory progress towards meeting the requirements of this section at five year intervals over the planning period. MPOs and local governments shall evaluate progress in meeting interim benchmarks at five year intervals from adoption of the regional and local TSPs. Where interim benchmarks are not met, the relevant TSP shall be amended to include new or additional efforts adequate to meet the require-ments of this section.

(7) The Commission shall, at five year intervals from the adoption of this rule, evaluate the results of efforts to achieve the reduction in VMT and the effectiveness of the standard in achieving the objective of reducing reliance on the automobile. This shall include evaluating the requirements for parking plans and a reduction in the number of parking spaces per capita.

(8) Where existing and committed trans-portation facilities and services have adequate capacity to support the land uses in the acknowl-edged comprehensive plan, the local government shall not be required to evaluate alternatives as provided in this section.

(9) Transportation uses or improvements listed in OAR 660-012-0065(3)(d) to (g) and (o) and located in an urban fringe may be included in a TSP only if the improvement project identified in the Transportation System Plan as described in section (11) of this rule, will not significantly reduce peak hour travel time for the route as determined pursuant to section (10) of this rule, or the jurisdiction determines that the following alternatives can not reasonably satisfy the purpose of the improvement project:

(a) Improvements to transportation facilities and services within the urban growth boundary;

(b) Transportation system management measures that do not significantly increase capacity; or

(c) Transportation demand management measures. The jurisdiction needs only to consider alternatives that are safe and effective, consistent with applicable standards and that can be implemented at a reasonable cost using available technology.

(10) An improvement project significantly reduces peak hour travel time when, based on recent data, the time to travel the route is reduced more than 15% during weekday peak hour conditions over the length of the route located within the urban fringe. For purposes of measuring travel time, a route

shall be identified by the predominant traffic flows in the project area.

(11) A "transportation improvement project" described in section (9) of this rule:

(a) Is intended to solve all of the reasonably foreseeable transportation problems within a general geographic location, within the planning period; and

(b) Has utility as an independent transportation project.

Stat. Auth.: ORS Ch. 183 197.040 &197.245

Stats. Implemented: ORS 195.025, 197.040, 197.230, 197.245, 197.712 & 197.717

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 3-1995, f. & cert. ef. 3-31-95; LCDC 4-1995, f. & cert. ef. 5-8-95

660-012-0040

Transportation Financing Program

(1) For areas within an urban growth boundary containing a population greater than 2,500 persons, the TSP shall include a transportation financing program.

(2) A transportation financing program shall include:

(a) A list of planned transportation facilities and major improvements;

(b) A general estimate of the timing for planned transportation facilities and major improvements.

(c) Determination of rough cost estimates for the transportation facilities and major improvements identified in the TSP.

(3) The determination of rough cost estimates is intended to provide an estimate of the fiscal requirements to support the land uses in the acknowledged comprehensive plan and allow jurisdictions to assess the adequacy of existing and possible alternative funding mechanisms. In addition to including rough cost estimates for each transportation facility and major improvement, the transportation financing plan shall include a discussion of the facility provider's existing funding mechanisms and the ability of these and possible new mechanisms to fund the development of each transportation facility and major improvement. These funding mechanisms may also be described in terms of general guidelines or local policies.

(4) Anticipated timing and financing provisions in the transportation financing program are not considered land use decisions as specified in ORS 197.712(2)(e) and, therefore, cannot be the basis of appeal under ORS 197.610(1) and (2) or ORS 197.835(4).

(5) The transportation financing program shall implement comprehensive plan policies which provide for phasing of major improvements to encourage infill and redevelopment of urban lands prior to facilities which would cause premature development of urbanizable areas or conversion of rural lands to urban uses.

Stat. Auth.: ORS Ch. 183 & 197

Stats. Implemented: ORS 197.040

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 4-1995, f. & cert. ef. 5-8-95; LCDC 11-1995, f. & cert. ef. 12-22-95

660-012-0045

Implementation of the Transportation System Plan

(1) Each local government shall amend its land use regulations to implement the TSP.

(a) The following transportation facilities, services and improvements need not be subject to land use regulations except as necessary to implement the TSP and, under ordinary circumstances do not have a significant impact on land use:

(A) Operation, maintenance, and repair of existing transportation facilities identified in the TSP, such as road, bicycle, pedestrian, port, airport and rail facilities, and major regional pipelines and terminals;

(B) Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards;

(C) Uses permitted outright under ORS 215.213(1)(m) through (p) and ORS 215.283(1)(k) through (n), consistent with the provisions of 660-012-0065; and,

(D) Changes in the frequency of transit, rail and airport services.

(b) To the extent, if any, that a transportation facility, service or improvement concerns the application of a comprehensive plan provision or land use regulation, it may be allowed without further land use review if it is permitted outright or if it is subject to standards that do not require interpretation or the exercise of factual, policy or legal judgment.

(c) In the event that a transportation facility, service or improvement is determined to have a significant impact on land use or to concern the application of a comprehensive plan or land use regulation and to be subject to standards that require interpretation or the exercise of factual, policy or legal judgment, the local government shall provide a review and approval process that is consistent with 660-012-0050. To facilitate implementation of the TSP, each local government shall amend its land use regulations to provide for consolidated review of land use decisions required to permit a transportation project.

(2) Local governments shall adopt land use or subdivision ordinance regulations, consistent with applicable federal and state requirements, to protect transportation facilities, corridors and sites for their identified functions. Such regulations shall include:

(a) Access control measures, for example, driveway and public road spacing, median control and

signal spacing standards, which are consistent with the functional classification of roads and consistent with limiting development on rural lands to rural uses and densities;

(b) Standards to protect future operation of roads, transitways and major transit corridors;

(c) Measures to protect public use airports by controlling land uses within airport noise corridors and imaginary surfaces, and by limiting physical hazards to air navigation.

(d) A process for coordinated review of future land use decisions affecting transportation facilities, corridors or sites;

(e) A process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities, corridors or sites.

(f) Regulations to provide notice to public agencies providing transportation facilities and services, MPOs, and ODOT of:

(A) Land use applications that require public hearings;

(B) Subdivision and partition applications;

(C) Other applications which affect private access to roads; and

(D) Other applications within airport noise corridors and imaginary surfaces which affect airport operations.

(g) Regulations assuring that amendments to land use designations, densities, and design standards are consistent with the functions, capacities and levels of service of facilities identified in the TSP.

(3) Local governments shall adopt land use or subdivision regulations for urban areas and rural communities as set forth below. The purposes of this section are to provide for safe and convenient pedestrian, bicycle and vehicular circulation consistent with access management standards and the function of affected streets, to ensure that new development provides on-site streets and accessways that provide reasonably direct routes for pedestrian and bicycle travel in areas where pedestrian and bicycle travel is likely if connections are provided, and which avoids wherever possible levels of automobile traffic which might interfere with or discourage pedestrian or bicycle travel.

(a) Bicycle parking facilities as part of new multi-family residential developments of four units or more, new retail, office and institutional developments, and all transit transfer stations and park and ride lots.

(b) On-site facilities shall be provided which accommodate safe and convenient pedestrian and bicycle access from within new subdivisions, multi-family developments, planned developments, shopping centers, and commercial districts to adjacent residential areas and transit stops, and to neighborhood activity centers within one-half mile of the development. Single family residential developments shall generally include streets and accessways. Pedestrian circulation through parking lots should generally be provided in the form of accessways.

(A) "Neighborhood activity centers" includes, but is not limited to, existing or planned schools, parks, shopping areas, transit stops or employment centers.

(B) Bikeways shall be required along arterials and major collectors. Sidewalks shall be required along arterials, collectors and most local streets in urban areas, except that sidewalks are not required along controlled access roadways, such as freeways.

(C) Cul-de-sacs and other dead-end streets may be used as part of a development plan, consistent with the purposes set forth in this section.

(D) Local governments shall establish their own standards or criteria for providing streets and accessways consistent with the purposes of this section. Such measures may include but are not limited to: standards for spacing of streets or accessways; and standards for excessive out-of-direction travel.

(E) Streets and accessways need not be required where one or more of the following conditions exist:

(i) 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.

(ii) Buildings or other existing development on adjacent lands physically preclude a connection now or in the future considering the potential for redevelopment; or

(iii) 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.

(c) Where off site road improvements are otherwise required as a condition of development approval, they shall include facilities accom-modating convenient pedestrian and bicycle travel, including bicycle ways along arterials and major collectors.

(d) For purposes of subsection (b) "safe and convenient" means bicycle and pedestrian routes, facilities and improvements which:

(A) Are reasonably free from hazards, particularly types or levels of automobile traffic which would interfere with or discourage pedestrian or cycle travel for short trips.

(B) Provide a reasonably direct route of travel between destinations such as between a transit stop and a store; and,

(C) Meet travel needs of cyclists and pedestrians considering destination and length of trip; and considering that the optimum trip length of pedestrians is generally 1/4 to 1/2 mile.

(e) Internal pedestrian circulation within new office parks and commercial developments shall be provided through clustering of buildings, construction of accessways, walkways and similar techniques.

(4) To support transit in urban areas containing a population greater than 25,000, where the area is already served by a public transit system or where a determination has been made that a public transit system is feasible, local governments shall adopt land use and subdivision regulations as provided in (a)-(f) below.

(a) Transit routes and transit facilities shall be designed to support transit use through provision of bus stops, pullouts and shelters, optimum road geometrics, on-road parking restrictions and similar facilities, as appropriate.

(b) New retail, office and institutional buildings at or near major transit stops shall provide for convenient pedestrian access to transit through the measures listed in (A) and (B) below.

(A) Walkways shall be provided connecting building entrances and streets adjoining the site.

(B) Pedestrian connections to adjoining properties shall be provided except where such a connection is impracticable as provided for in OAR 660-012-0045(3)(b)(E). Pedestrian connections shall connect the on site circulation system to existing or proposed streets, walkways, and driveways that abut the property. Where adjacent properties are undeveloped or have potential for redevelopment, streets, accessways and walkways on site shall be laid out or stubbed to allow for extension to the adjoining property.

(C) In addition to (A) and (B) above, on sites at major transit stops provide the following:

(i) Either locate buildings within 20 feet of the transit stop, a transit street or an intersecting street or provide a pedestrian plaza at the transit stop or a street intersection;

(ii) A reasonably direct pedestrian connection between the transit stop and building entrances on the site;

(iii) A transit passenger landing pad accessible to disabled persons;

(iv) An easement or dedication for a passenger shelter if requested by the transit provider; and,

(v) Lighting at the transit stop.

(c) Local governments may implement 4(b)(A) and (B) above through the designation of pedestrian districts and adoption of appropriate implementing measures regulating development within pedestrian districts. Pedestrian districts must comply with the requirement of 4(b)(C) above.

(d) Designated employee parking areas in new developments shall provide preferential parking for carpools and vanpools.

(e) Existing development shall be allowed to redevelop a portion of existing parking areas for transit oriented uses, including bus stops and pullouts, bus shelters, park and ride stations, transit oriented developments, and similar facilities, where appropriate.

(f) Road systems for new development shall be provided that can be adequately served by transit, including provision of pedestrian access to existing and identified future transit routes. This shall include, where appropriate, separate accessways to minimize travel distances.

(g) Along existing or planned transit routes, designation of types and densities of land uses adequate to support transit.

(5) In MPO areas, local governments shall adopt land use and subdivision regulations to reduce

reliance on the automobile which:

(a) Allow transit oriented developments (TODs) on lands along transit routes;

(b) Implements a demand management program to meet the measurable standards set in the TSP in response to 660-012-0035(4).

(c) Implements a parking plan which:

(A) Achieves a 10% reduction in the number of parking spaces per capita in the MPO area over the planning period. This may be accomplished through a combination of restrictions on development of new parking spaces and requirements that existing parking spaces be redeveloped to other uses;

(B) Aids in achieving the measurable standards set in the TSP in response to 660-012-0035(4);

(C) Includes land use and subdivision regulations setting minimum and maximum parking requirements; and,

(D) Is consistent with demand management programs, transit-oriented development requirements and planned transit service.

(d) Require all major industrial, institutional, retail and office developments to provide either a transit stop on site or connection to a transit stop along a transit trunk route when the transit operator requires such an improvement.

(6) In developing a bicycle and pedestrian circulation plan as required by 660-012-0020(2)(d), local governments shall identify improvements to facilitate bicycle and pedestrian trips to meet local travel needs in developed areas. Appropriate improvements should provide for more direct, convenient and safer bicycle or pedestrian travel within and between residential areas and neighborhood activity centers (i.e. schools, shopping, transit stops). Specific measures include, for example, constructing walkways between cul-de-sacs and adjacent roads, providing walkways between buildings, and providing direct access between adjacent uses.

(7) Local governments shall establish standards for local streets and accessways that minimize pavement width and total right-of-way consistent with the operational needs of the facility. The intent of this requirement is that local governments consider and reduce excessive standards for local streets and accessways in order to reduce the cost of construction, provide for more efficient use of urban land, provide for emergency vehicle access while discouraging inappropriate traffic volumes and speeds, and which accommodate convenient pedestrian and bicycle circulation. Not withstanding subsection (1) or (3) of this section, local street standards adopted to meet this requirement need not be adopted as land use regulations.

Stat. Auth.: ORS Ch. 183 & 197

Stats. Implemented: ORS 197.040

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 4-1995, f. & cert. ef. 5-8-95; LCDC 11-1995, f. & cert. ef. 12-22-95

660-012-0050

Transportation Project Development

(1) For projects identified by ODOT pursuant to OAR Chapter 731, Division 15, project development shall occur in the manner set forth in that Division.

(2) Regional TSPs shall provide for coordinated project development among affected local governments. The process shall include:

(a) Designation of a lead agency to prepare and coordinate project development;

(b) A process for citizen involvement, including public notice and hearing, if project development involves land use decision-making. The process shall include notice to affected transportation facility and service providers, MPOs, and ODOT;

(c) A process for developing and adopting findings of compliance with applicable statewide planning goals, if any. This shall include a process to allow **amendments to acknowledged comprehensive** plans where such amendments are necessary to accommodate the project;

(d) A process for developing and adopting findings of compliance with applicable acknowledged comprehensive plan policies and land use regulations of individual local governments, if any. This shall include a process to allow amendments to acknowledged comprehensive plans or land use regulations where such amendments are necessary to accommodate the project.

(3) Project development involves land use decision-making to the extent that issues of compliance with applicable requirements remain outstanding at the project development phase. Issues may include, but are not limited to, compliance with regulations protecting or regulating development within floodways and other hazard areas, identified Goal 5 resource areas, estuarine and coastal shoreland areas, and the Willamette River Greenway. Where project development involves land use decision-making, all unresolved issues of compliance with applicable acknowledged comprehensive plan policies and land use regulations shall be addressed and findings of compliance adopted prior to project approval. To the extent compliance has already been determined during transportation system planning, including adoption of a refinement plan, affected local governments may rely on and reference the earlier findings of compliance with applicable standards.

(4) Where an Environmental Impact Statement (EIS) is prepared pursuant to the National Environmental Policy Act of 1969, project development shall be coordinated with the preparation of the EIS. All unresolved issues of compliance with applicable acknowledged comprehensive plan policies and land use regulations shall be addressed and findings of compliance adopted prior to issuance of the Final EIS.

(5) If a local government decides not to build a project authorized by the TSP, it must evaluate whether the needs that the project would serve could otherwise be satisfied in a manner consistent with the TSP. If identified needs cannot be met consistent with the TSP, the local government shall initiate a plan amendment to change the TSP or the comprehensive plan to assure that there is an adequate transportation system to meet transportation needs.

(6) Transportation project development may be done concurrently with preparation of the TSP or a

refinement plan.

Stat. Auth.: ORS Ch. 183 & 197.040

Stats. Implemented: ORS 195.025, 197.040, 197.230, 197.245, 197.712 & 197.717

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91

660-012-0055

Timing of Adoption and Update of Transportation System Plans; Exemptions

(1) MPOs shall complete regional TSPs for their planning areas by May 8, 1996. For those areas within an MPO, cities and counties shall adopt local TSPs and implementing measures within one year following completion of the regional TSP. Urban areas designated as MPOs subsequent to the adoption of this rule shall adopt TSPs in compliance with applicable requirements of this rule within three years of designation.

(2) For areas outside an MPO, cities and counties shall complete and adopt regional and local TSPs and implementing measures by May 8, 1997.

(3) By November 8, 1993 affected cities and counties shall, for non-MPO urban areas of 25,000 or more, adopt land use and subdivision ordinances or amendments required by OAR 660-012-0045(3), (4)(a) - (f) and (5)(d). By May 8, 1994 affected cities and counties within MPO areas shall adopt land use and subdivision ordinances or amendments required by OAR 660-012-0045(3), (4)(a)-(e) and (5)(d). Affected cities and counties which do not have acknowledged ordinances addressing the requirements of this section by the deadlines listed above shall apply OAR 660-012-0045(3),(4)(a)-(f) and (5)(d) directly to all land use decisions and all limited land use decisions.

(4)(a) Affected cities and counties that either:

(A) Have acknowledged plans and land use regulations that comply with this rule as of May 8, 1995, may continue to apply those acknowledged plans and land use regulations; or

(B) Have plan and land use regulations adopted to comply with this rule as of April 12, 1995, may continue to apply the provisions of this rule as they existed as of April 12, 1995, and may continue to pursue acknowledgment of the adopted plans and land use regulations under those same rule provisions provided such adopted plans and land use regulations are acknowledged by April 12, 1996. Affected cities and counties that qualify and make this election under this subsection shall update their plans and land use regulations to comply with the 1995 amendments to OAR 660-012-0045 as part of their transportation system plans.

(b) Affected cities and counties that do not have acknowledged plans and land use regulations as provided in subsection (a) of this section, shall apply relevant sections of this rule to land use decisions and limited land use decisions until land use regulations complying with this amended rule have been adopted.

(5) Cities and counties shall update their TSPs and implementing measures as necessary to comply

with this division at each periodic review subsequent to initial compliance with this division. This shall include a reevaluation of the land use designations, densities and design standards in the following circumstances:

(a) If the interim benchmarks established pursuant to OAR 660-012-0035(6) have not been achieved; or

(b) If a refinement plan has not been adopted consistent with the requirements of OAR 660-012-0025 (3).

(6) The director may grant a whole or partial exemption from the requirements of this division to cities under 2,500 population outside MPO areas and counties under 25,000 population. Eligible jurisdictions may, within five years following the adoption of this rule or at subsequent periodic reviews, request that the director approve an exemption from all or part of the requirements in this division until the jurisdiction's next periodic review:

(a) The director's decision to approve an exemp-tion shall be based upon the following factors:

(A) Whether the existing and committed transportation system is generally adequate to meet likely transportation needs;

(B) Whether the new development or population growth is anticipated in the planning area over the next five years;

(C) Whether major new transportation facilities are proposed which would affect the planning areas;

(D) Whether deferral of planning requirements would conflict with accommodating state or regional transportation needs; and

(E) Consultation with the Oregon Department of Transportation on the need for transportation planning in the area, including measures needed to protect existing transportation facilities.

(b) The director's decision to grant an exemption under this section is appealable to the Commission as provided in OAR 660-002-0020 (Delegation of Authority Rule).

(7) Portions of TSPs and implementing measures adopted as part of comprehensive plans prior to the responsible jurisdiction's periodic review shall be reviewed pursuant to OAR Chapter 660, Division 18, Post Acknowledgement Procedures.

Stat. Auth.: ORS Ch. 183, 197.040 & 197.245

Stats. Implemented: ORS 195.025, 197.040, 197.230, 197.245, 197.610 -625, 197.628 - 646, 197.712 & 197.717

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 1-1993, f. & cert. ef. 6-15-93; LCDC 4-1995, f. & cert. ef. 5-8-95

660-012-0060

Plan and Land Use Regulation Amendments

(1) Amendments to functional plans, acknowledged comprehensive plans, and land use regulations which significantly affect a transportation facility shall assure that allowed land uses are consistent with the identified function, capacity, and level of service of the facility. This shall be accomplished by either:

(a) Limiting allowed land uses to be consistent with the planned function, capacity and level of service of the transportation facility;

(b) Amending the TSP to provide transportation facilities adequate to support the proposed land uses consistent with the requirements of this division; or

(c) Altering land use designations, densities, or design requirements to reduce demand for automobile travel and meet travel needs through other modes.

(2) A plan or land use regulation amendment significantly affects a transportation facility if it:

(a) Changes the functional classification of an existing or planned transportation facility;

(b) Changes standards implementing a functional classification system;

(c) Allows types or levels of land uses which would result in levels of travel or access which are inconsistent with the functional classification of a transportation facility; or

(d) Would reduce the level of service of the facility below the minimum acceptable level identified in the TSP.

(3) Determinations under sections (1) and (2) of this rule shall be coordinated with affected transportation facility and service providers and other affected local governments.

(4) The presence of a transportation facility or improvement shall not be a basis for an exception to allow residential, commercial, institutional or industrial development on rural lands under this division or OAR 660-004-0022 and 660-004-0028.

Stat. Auth.: ORS Ch. 183 & 197.040

Stats. Implemented: ORS 195.025, 197.040, 197.230, 197.245, 197.610 - 625, 197.628 - 646, 197.712, 197.717 & 197.732

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91

660-012-0065

Transportation Improvements on Rural Lands

(1) This rule identifies trans-portation facilities, services and improvements which may be permitted on rural lands consistent with Goals 3, 4, 11 and 14 without a goal exception.

(2) For the purposes of this rule, the following definitions apply:

(a) "Access Roads" means low volume public roads that principally provide access to property or as specified in an acknowledged comprehensive plan;

(b) "Collectors" means public roads that provide access to property and that collect and distribute traffic between access roads and arterials or as specified in an acknowledged comprehensive plan;

(C) "Arterials" means state highways and other public roads that principally provide service to through traffic between cities and towns, state highways and major destinations or as specified in an acknowledged comprehensive plan;

(d) "Accessory Transportation Improvements" means transportation improvements that are incidental to a land use to provide safe and efficient access to the use;

(e) "Channelization" means the separation or regulation of conflicting traffic movements into definite paths of travel by traffic islands or pavement markings to facilitate the safe and orderly movement of both vehicles and pedestrians. Examples include, but are not limited to, left turn refuges, right turn refuges including the construction of islands at intersections to separate traffic, and raised medians at driveways or intersections to permit only right turns. "Channelization" does not include continuous median turn lanes;

(f) "Realignment" means rebuilding an existing roadway on a new alignment where the new centerline shifts outside the existing right of way, and where the existing road surface is either removed, maintained as an access road or maintained as a connection between the realigned roadway and a road that intersects the original alignment. The realignment shall maintain the function of the existing road segment being realigned as specified in the acknowledged comprehensive plan;

(g) "New Road" means a public road or road segment that is not a realignment of an existing road or road segment.

(3) The following transportation improvements are consistent with goals 3, 4, 11, and 14 subject to the requirements of this rule:

(a) Accessory transportation improvements for a use that is allowed or conditionally allowed by ORS 215.213, 215.283 or OAR 660, Division 6 (Forest Lands);

(b) Transportation improvements that are allowed or conditionally allowed by ORS 215.213, 215.283 or OAR 660, Division 6 (Forest Lands);

(c) Channelization not otherwise allowed under subsections (a) or (b) of this section;

(d) Realignment of roads not otherwise allowed under subsection (a) or (b) of this section;

(e) Replacement of an intersection with an interchange;

(f) Continuous median turn lane;

(g) New access roads and collectors within a built or committed exception area, or in other areas

where the function of the road is to reduce local access to or local traffic on a state highway. These roads shall be limited to two travel lanes. Private access and intersections shall be limited to rural needs or to provide adequate emergency access.

(h) Bikeways, footpaths and recreation trails not otherwise allowed as a modification or part of an existing road;

(i) Park and ride lots;

(j) Railroad mainlines and branchlines;

(k) Pipelines;

(l) Navigation channels;

(m) Replacement of docks and other facilities without significantly increasing the capacity of those facilities;

(n) Expansions or alterations of public use airports that do not permit service to a larger class of airplanes; and

(o) Transportation facilities, services and improvements other than those listed in this rule that serve local travel needs. The travel capacity and level of service of facilities and improvements serving local travel needs shall be limited to that necessary to support rural land uses identified in the acknowledged comprehensive plan or to provide adequate emergency access.

(4) Accessory transportation improvements required as a condition of development listed in subsection (3)(a) of this rule shall be subject to the same procedures, standards and requirements applicable to the use to which they are accessory.

(5) For transportation uses or improvements listed in subsection (3)(d) to (g) and (o) of this rule within an exclusive farm use (EFU) or forest zone, a jurisdiction shall, in addition to demonstrating compliance with the requirements of ORS 215.296:

(a) Identify reasonable build design alternatives, such as alternative alignments, that are safe and can be constructed at a reasonable cost, not considering raw land costs, with available technology. Until adoption of a local TSP pursuant to the requirements of OAR 660-012-0035, the jurisdiction shall consider design and operations alternatives within the project area that would not result in a substantial reduction in peak hour travel time for projects in the urban fringe that would significantly reduce peak hour travel time. A determination that a project will significantly reduce peak hour travel time is based on OAR 660-012-0035(10). The jurisdiction need to consider alternative that are inconsistent with applicable standards or not approved by a registered professional engineer;

(b) Assess the effects of the identified alternatives on farm and forest practices, considering impacts to farm and forest lands, structures and facilities, considering the effects of traffic on the movement of farm and forest vehicles and equipment and considering the effects of access to parcels created on farm and forest lands; and

(c) Select from the identified alternatives, the one, or combination of identified alternatives that has the least impact on lands in the immediate vicinity devoted to farm or forest use.

(6) Notwithstanding any other provision of this division, if a jurisdiction has not met the deadline for TSP adoption set forth in OAR 660-012-0055, or any extension thereof, a transportation improvement that is listed in section (5) of this rule and that will significantly reduce peak hour travel time as provided in OAR 660-0120-035(10) may be allowed in the urban fringe only if the jurisdiction applies either:

(a) The criteria applicable to a "reasons" exception provided in Goal 2 and OAR 660, Division 4; or

(b) The evaluation and selection criteria set forth in OAR 660-012-0035.

Stat. Auth.: ORS Ch. 183 & 197.040, 197.245, 215.213, 215.283 & 215.296

Stats. Implemented: ORS 195.025, 197.040, 197.230, 197.245, 197.712, 197.717, 197.232, 215.213 & 215.283

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91; LCDC 3-1995, f. & cert. ef. 3-31-95

660-012-0070

Exceptions for Transportation Improvements on Rural Land

(1) Transportation facilities and improvements which do not meet the requirements of OAR 660-012-0065 require an exception to be sited on rural lands.

(2) Where an exception to Goals 3, 4, 11, or 14 is required, the exception shall be taken pursuant to ORS 197.732(1)(c), Goal 2, OAR Chapter 660, Division 4 and this division.

(3) An exception adopted as part of a TSP or refinement plan shall, at a minimum, decide need, mode, function and general location for the proposed facility or improvement:

(a) The general location shall be specified as a corridor within which the proposed facility or improvement is to be located, including the outer limits of the proposed location. Specific sites or areas within the corridor may be excluded from the exception to avoid or lessen likely adverse impacts;

(b) The size, design and capacity of the proposed facility or improvement shall be described generally, but in sufficient detail to allow a general understanding of the likely impacts of the proposed facility or improvement. Measures limiting the size, design or capacity may be specified in the description of the proposed use in order to simplify the analysis of the effects of the proposed use;

(c) The adopted exception shall include a process and standards to guide selection of the precise design and location within the corridor and consistent with the general description of the proposed facility or improvement. For example, where a general location or corridor crosses a river, the exception would specify that a bridge crossing would be built but would defer to project development decisions about precise location and design of the bridge within the selected corridor subject to requirements to minimize impacts on riparian vegetation, habitat values, etc.;

(d) Land use regulations implementing the exception may include standards for specific mitigation measures to offset unavoidable environmental, economic, social or energy impacts of the proposed facility or improvement or to assure compatibility with adjacent uses.

(4) To address Goal 2, Part II(c)(1) the exception shall demonstrate that there is a transportation need identified consistent with the requirements of OAR 660-012-0030 which cannot reasonably be accommodated through one or a combination of the following measures not requiring an exception:

(a) Alternative modes of transportation;

(b) Traffic management measures; and

(c) Improvements to existing transportation facilities

(5) To address Goal 2, Part II(c)(2), the exception shall demonstrate that non-exception locations cannot reasonably accommodate the proposed transportation improvement or facility.

(6) To determine the reasonableness of alternatives to an exception under sections (4) and (5) of this rule, cost, operational feasibility, economic dislocation and other relevant factors shall be addressed. The thresholds chosen to judge whether an alternative method or location cannot reasonably accommodate the proposed transportation need or facility must be justified in the exception.

(7) To address Goal 2, Part II(c)(3), the exception shall:

(a) Compare the economic, social, environmental and energy consequences of the proposed location and other alternative locations requiring exceptions;

(b) Determine whether the net adverse impacts associated with the proposed exception site are significantly more adverse than the net impacts from other locations which would also require an exception. A proposed exception location would fail to meet this requirement only if the affected local government concludes that the impacts associated with it are significantly more adverse than the other identified exception sites;

(c) The evaluation of the consequences of general locations or corridors need not be site-specific, but may be generalized consistent with the requirements of section (3) of this rule.

(8) To address Goal 2, Part II(c)(4), the exception shall:

(a) Describe the adverse effects that the proposed transportation improvement is likely to have on the surrounding rural lands and land uses, including increased traffic and pressure for nonfarm or highway oriented development on areas made more accessible by the transportation improvement;

(b) Adopt as part of the exception, facility design and land use measures which minimize accessibility of rural lands from the proposed transportation facility or improvement and support continued rural use of surrounding lands.

Stat. Auth.: ORS Ch. 183 & 197.040

Stats. Implemented: ORS 195.025, 197.040, 197.230, 197.245, 197.712, 197.717 & 197.732

Hist.: LCDC 1-1991, f. & cert. ef. 5-8-91

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APPENDIX A.
OPEN HOUSE COMMENT SUMMARY

OPEN HOUSE COMMENT SUMMARY

The two open houses were held September 24-25, 1996. Fifteen total questionnaires were completed and received. Results are as follows:

1. Within Morrow County, what one **general transportation** need or issue do you think is most important for this plan to address? Why?

   — Long range planning for a road network that supports and sustains Morrow County's growth and development.

   — Morrow County is an exporting county--that is our livelyhood. There are six state hwys. for access or egress from the county. 207 east carries some livestock to market & some logs and lumber, but by far the greater portion of our agriculture & forest products move over Bomb Range Rd. for some distance some cases all the way and sometimes very short distance. The north area is the destination where most projects are processed or continue to markets via barge or the interstate. The Heppner-Boardman coridor is the lifeline of the county. A second road to the west could help, but B.R.R. is the heart of the system.

   — The Road (proposed) between Ione and the P.A.E. plant I-84 just west of Boardman. This is a major need for the communities of Ione.

   — Primary means of transport is auto and truck so we need safe and convenient government arterials.

   — Road maintenance & identification & development of platted roads.

   — All weather roads--enough base rock and gravel to hold up in freeze-thaw or wet conditions. Why? Any road has to be <u>all</u> weather otherwise maintenance will kill you.

   — The streets in the City of Heppner need to be paved to the sidewalks so they were wide enough to get over.

   — Gravel roads--wash board.

2. Are there particular **traffic circulation** and congestion problems in areas of the county the plan should address? Yes 7 No 8 If yes, where are they? *List the area, road names, and intersections.*

   — By Green Feed--Intersection needs work Badly!

   — The grade school street and the fact there is not enough room for buses and all the parents who have to take there kids to school.

   — 1) The intersection by Green Feed store needs something different. 2) There needs to be a stop sign instead of yeild at Quaid and Elder. 3) A stop light at the intersection of Coast to Coast and the forest service (blinking light). All of these are in Heppner.

   — 1) Heppner--Quaid and Elder--by grade school. 2) Heppner--Highway 207 & May St. by Les Schwab Tires.

   — W. Washington Ave. between 8th St. west and City of Irrigon W. 2nd to Wagon Wheel.

   — Traffic circulation--Ione-Boardman Road. Congestion--Hwy. 730--Umatilla to I84 at Boardman.

   — a) Ione-Boardman north/south arterial. b) Port of Morrow industrial traffic: 1) Complete widening of Columbia Ave east from Laurel Ave. and west from Almond through Main St. 2) Replace RR overpass on Main St. to Marine Drive. 3) Upgrade Marine Drive to heavy traffic standard. c) Extend W. Wilson Rd. through to Tower Rd. to complete a parallel arterial to the I-84 freeway to more adequately serve local access needs. d) Complete reconstruction of the Horseshoe Bend curve on State Highway 74 near Morgan.

3. Are there problems caused by **special events** such as the fall wheat/potato harvest that could be better handled with improvements to the road system or traffic flow? Yes 7 No 8 If yes, what are they?

   — Port of Morrow industrial traffic: 1) Complete widening of Columbia Ave east from Laurel Ave. and west from Almond through Main St. 2) Replace RR overpass on Main St. to Marine Drive. 3) Upgrade Marine Drive to heavy traffic standard.

   — Grade sometimes during summer.

   — The Boardman-Ione Road would serve maybe $50,000 a year in hauling.

   — Wheat harvest & potato--Ione-Boardman will lessen damage to Bomb. Range Road.

— All weather roads--enough base rock and gravel to hold up in freeze-thaw or wet conditions. Why? Any road has to be all weather otherwise maintenance will kill you. Also, heavier farm or county hauling needs total adequate base.

— Logging trucks too fast in town & country.

— Soft spots on the gravel roads by the amount of traffic on them. Really slow moving traffic on the roads.

4. Given the fact that the **Union Pacific Railroad Line** has been abandoned, do you feel this has impacted our roads? Yes 9 No 6 If yes, how?

— No longer have to stop for the trains.

— Heavier tracks more numerous.

— Added truck traffic.

— RR tonnage--both lumber and grain must move by truck.

— Lot more by trks. A new road Ione Boardman would help.

— More traffic--heavy load of products.

— Not too much. More wheat by trucks (no problem).

— Minor because not much grain, lumber or livestock moved by rail in recent years, but what did must now go over the highways.

— Minimum--there are a few stretches that won't be converted to farm use that could provide space for bike lanes, e.g. Kinzua Mill north to Carlson property, Lexington south adjacent to Padberg property and a few other short segments.

5. Do you feel there are adequate facilities for **bicycles and pedestrians** within the towns or county communities or along the scenic route? Yes 11 No 4

— a) Bike lanes are needed from Heppner to Lexington and on to Ione. b) Rural roads with population build-up in the Boardman and Irrigon areas need bike lanes.

— I have yet to see a bycyle in a bycpath.

— I think we could use more bike lanes & shoulder room for walkers & joggers.

— Practically non-existent.

5A. Are there specific locations where improvements would increase the likelihood that people would bike or walk to destinations within towns and communities or more congested areas? Yes 7 No 8 If yes, where are they? *List street names, towns or locations.*

— Make the city side streets wider so they have some place to ride bikes or jog. The sidewalks could sure use a lot of improvements.

— Heppner particularly needs jogging and bike trails. The abandoned Railroad would make excellent facility. Effort to do rails to trails failed but should be reviewed. *Important.

— Division Street Bike/Pedestrian Path.

— If Columbia Blvd. & Old Hwy. 30 were reconnected between Irrigon and Boardman it would be far superior to Hwy. 84 as a bike route.

— All over town.

— Ione, Lex. & Heppner could use more bike paths & wider shoulders.

— a) Heppner downtown to Heppner High School. b) Heppner downtown to Willow Cr. Lake picnic/fishing/swimming/day use areas via State Highway 207/206 and the Willow Creek Rd. c) Rural roads with population build-up in the Boardman and Irrigon areas need bike lanes.

6. Are **public transit** services, facilities or equipment improvement needed? Yes 4 No 11

✔	Category	What is needed? Why?
4	Elderly or disabled	— Maintain and enhance "dollar ride" and shopping/medical appointments senior transportation services.
		— Some sort of public transportation weekly or bi weekly north from south county to bus lines, train or air source in Pasco or Pendleton.
		— For them to park in Heppner where parking was made for them instead of on Main Street.
		— Transportation from home to doctor & shopping.
3	Youth	— Plan a strategy to reduce home to school to town vehicular use by high school students and increase walking/biking for this group!

✔	Category	What is needed? Why?
		— Some sort of public transportation weekly or bi weekly north from south county to bus lines, train or air source in Pasco or Pendleton.
		— Kids need to drive slower. Watch more for kids in the crosswalk.
2	Everyone	— Some sort of public transportation weekly or bi weekly north from south county to bus lines, train or air source in Pasco or Pendleton.
		— Needs to watch crosswalks better and drive slower.
1	Other	— Some sort of public transportation weekly or bi weekly north from south county to bus lines, train or air source in Pasco or Pendleton.

7. Are there **parking** problems in towns or communities or other locations within the county? Yes 6 No 9 If yes, where and what should be done?

— At certain times of day within Heppner.

— When it is old folks day have them park behind the hotel where they are supposed to park instead of where all the other people park.

— We could use more parking areas & more designated signs to show where not to park in the school zones.

— Downtown--Unknown as to solution.

— Yes but minor. A few nights a year Heppner has a problem on high school football nights. How much can you afford to aleviate the situation? Probably a low priority.

— Maintenance of diagonal parking on Main St. of downtown Heppner is essential.

8. As Morrow County and the cities within the county and the region grow, what forms of transportation do you feel would be most appropriate to serve new growth and the region in general? *Check all that you feel should be considered.*

✓	Mode	Comments
4	Auto	— Maintain and upgrade all existing routes as dictated by present and potential use.
		— Good roads.
2	Transit	— Maintain senior subsidized transit service for local intra- and inter-city needs, e.g. medical and shopping.
		— South county plus counties to our south are isolated.
3	Bikes	— Establish bike lanes where justified by actual or potential use.
3	Pedestrians	— Provide safe walkways along **all** arterials in urban areas.
3	Rail	— Sidings supporting Port of Morrow industrial development.
		— An Amtrac station would be nice but it won't happen.
		— Retain Amtrack.
4	Intercity bus	— Possible need for north county and on to Hermiston as population grows.
		— Especially for elderly.
		— Serves north county. No access for south county.
2	Air	— When MC grows enough to warrant an air service, it will be too crowded.
		— The old Boeing strip is not on aeronautical charts. Has no lights or service.
2	Other	— Ferrie service areas or up & down river (just thinking).
		— Ione is not growing. We need the road.

8A. If the nerve gas incineration project at the Umatilla Army Depot materializes, are alternate forms of transportation needed to serve the area? Yes 14 No 1

— Transport for citizens without personal transportation capacity.

9. If this plan recommends new improvements to the transportation system, what methods should be used to pay for improvements? *Check all that you feel should be considered.*

✓	Methods	Comments
2	System development charges *(tied to a new development and paid for by developers and including impact fees).*	— Residential sub-divisions, industrial expenses.
1	User fees *(like a gas tax).*	— County assessed 1 cent/gallon for county roads.
2	General obligation bonds *(repayment is tied to a general revenue source, like a property tax).*	— Major construction, e.g. Ione-Boardman arterial.
1	Revenue bonds *(repayment is tied to a specific stream of revenue, like a gas tax or auto registration).*	N/A
0	Ad Valorem Tax Levy	N/A
5	Other. *Please explain.*	— Not sure. — A county level gas tax may be needed to replace dwindling timber revenues earmarked for roads. — Planning should access various federal and state sources. — NO MORE TAXES. — If new improvement can't be paid for with the existing taxes we don't need them. More taxes will only drive industry away and make improvements unnecessary.

10. Are Morrow County roads generally adequate to meet your needs? Yes 12 No 3 If no, what specific improvements are needed?

    — Better access to river ports.

    — Road network with ordinary upgrades and maintenance is o.k. at present time.

    — For now--But the future for Ione is not good unless we get the Road.

11. Was this open house interesting and useful in gaining a better understanding of the Morrow County Transportation System Plan process? Yes 5 No 0 No Comment 11 What part did you like best?

    — The ability to participate at an easy level. The people were very concerned about our needs.

    — A chance to provide input to the planning process.

    — The informal approach put witnesses at ease and better able to present their views. Questions by the consultants were well presented and didn't provoke resentment. Non harassing.

    — Didn't attend but am a long term County Road committee man.

    — Got to take this form home and think about the answers.

    What part did you like least?

    — They shut up bussiness befor the cookies were all gone.

    — Starting time should be no earlier than 5 p.m. and probably continue until 8:30 or 9:00 in S. County where some have to travel greater distances. Five to eight is probably ok in North County.

    — This questionnaire is too dang long!!

    — The ability for the people in charge of the meeting to give us more input & help us explain our needs.

12. Would you like to receive more information on this planning effort? Yes 6 No 9 If yes, please provide your name and address:

— Jim Swanson
Box 7 [A?]
Ione, OR 97843

— Don McElligott
P.O. Box 5
Ione, OR 97844

— Donald V. Eppenbach
City of Irrigon
P.O. Box 428
Irrigon, OR 97844

— John Edmundson
P.O. Box 146
Heppner, OR 97836

— Irv Rauch
Box 4180
Lexington, OR 97839

— Ken Turner
Rt. 2, Box 2218
Heppner, OR 97836

13. Any other comments or suggestions?

— Maintenance of an adequate and safe road network is essential to all aspects of the county's economy--industry, agriculture, tourism, etc.

— Certain safety issues must be considered. Alcohol related accidents such as certain wreck on the Western Rte. cannot be compared with four lumber truck wrecks on the hairpin curve on Highway 74 east of Morgan in the last year. Safety improvement such as widening, daylighting curves, appropriate culverts and surface improvements on county roads should be a function of the county road fund and local taxes. Some improvements and plans are probably state and federal: 1) Improvement to Hwy. 730, 2) Reconstruction of 730 & 84 intersection, 3) Hwy. 74 curves, 4) Planning for an Interstate Bridge. Other: Port of Morrow plus state and federal airport funds: 1) Boardman Airport. County with state and federal funds: 1) Boardman-Ione Road, 2) Columbia Blvd., 3) Ordinance Access Roads, 4) Replacement of Unsafe Bridges.

— Glad to see planning department iniciating some action before the need arrives. I think the idea of citizen involvement is good. You probably get a lot of crackpot ideas along with some sound ones, but out of the whole sometimes a completely new idea emerges.

— I feel adequate funding must be maintained. Otherwise poorly based roads will cost more do to patch work–high maintenance crisis type program. Therefore more money now, will be less costly in long run.

Thank you. You may return this questionnaire at the open house or send to:

Morrow County Planning Department, P.O. Box 706, Irrigon, OR 97844
Phone: (541) 922-4624, Fax: (541) 922-3472

APPENDIX B.
ROAD INFORMATION DATABASE

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES

Jurisdiction	Road Number:	Road Name:	Milepost Start:	Milepost End:	Federal Classification:	Surface and Mileage	Condition	Actual Width	Right of Way Width, FT	ADT	Parking	Sidewalk	Bicycles	Remarks
Federal	I-84	Columbia River Highway No. 2	149.5	167.6						12800				
	I-84	Old Oregon Trail No. 6	167.6	177.1						10100				
State	730	Columbia River Highway No. 2	167.6	178.7						5700				
	74	Heppner Highway No. 52	0	36.4						130-950				Jct. 207
	74/207	Heppner Highway No. 52	36.4	45.9						1500-3000				Jct. 206
	74	Heppner Highway No. 52	45.9	72.7						80-570				Co. Line
	206	Wasco-Heppner Highway No. 300	54.9	73.3						90-230				
	206/207	Wasco-Heppner Highway No. 300	73.3	84.1						390-1200				
	207	Heppner-Spray Highway No. 321	0	24.7						170-330				
	207	Lexington-Echo Highway No. 320	0	19.9						760-1200				
County	522	MCNAB WEST (OLEX)	0	5.67	RMaC	PAVED			40					
	546	CECIL	0	2.69	RMaC	PAVED			40					
	559	HOMESTEAD	0	4.02	RMaC	PAVED 4.02			40					
	584	SOUTH MAIN-KINCAID	0	1.53	RMaC	PAVED .50			80					
	598	KUNZE	0	9.75	RMaC	PAVED			40					
	603	COAL MINE HILL/DITCH CREEK (WES	0	2.37	RMaC	PAVED			40					
	662	WILSON	0	4.17	RMaC	PAVED								
	668	BIG BUTTER CR	0	3.25	RMaC	PAVED								
	669	ART DALZELL (RIDGE ROAD)	0	8.43	RMaC	PAVED 1.30 GRAVEL 7.13			40					
	670	SUNFLOWER FLAT	0	10.1	RMaC	GRAVEL			40-60					
	678	WILLOW CR	0	18.65	RMaC	PAVED			40-130					
	681	GOOSEBERRY-IONE (MARKET)	0	19.42	RMaC	PAVED			40-80					
	693	RHEA CREEK (MARKET)	0	18.6	RMaC	PAVED			60					
	715	(UPPER) RHEA CREEK (BASEY CANYC	0	7.56	RMaC	PAVED 4.19 GRAVEL 3.37			40					
	728	FRONTAGE	0	5.26	RMaC	PAVED			60 (EASE.)					
	746	BIG BUTTER CR.	0	9.95	RMaC	PAVED			40					
	759	BOMBING RANGE	0	7.32	RMaC	PAVED			60-155					
			17.73	20.75	RMaC									
	798	WILLOW CREEK (SHAW GRADE)	0	1.25	RMaC	GRAVEL			100-110					
	810	BOMBING RANGE	0	12.36	RMaC	PAVED			100-150					
	905	POLE LINE	0	6.05	RMaC				40					
	930	PATTERSON FERRY	0	4.99	RMaC				60-100					
	971	BOARDMAN-IRRIGON	0	0.85	RMaC				50-110					
	540	BAKER EAST-WEST	0	0.8	RMiC	PAVED 3.82 GRAVEL 5.88			40					
			1.5	6.19	RMiC									
			6.22	9.72	RMiC									

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES

Jurisdiction	Road Number:	Road Name:	Milepost Start:	Milepost End:	Federal Classification:	Surface and Mileage	Condition	Actual Width	Right of Way Width, FT	ADT	Parking	Sidewalk	Bicycles	Remarks
			4.02	10.55	RMiC	GRAVEL 6.53								
	570	BUTTERMILK CANYON	0	5.94	RMiC	GRAVEL			40					
	581	BRENNER CANYON	0	3.4	RMiC	PAVED 3.40			40					
			4.88	7.24	RMiC	PAVED 2.36								
	587	MORGAN	0	1.85	RMiC	PAVED .12 GRAVEL 1.73			40					
	589	VALBY	0	7.81	RMiC	PAVED 4.85 GRAVEL 2.95			40					
			2.37	6.37	RMiC									
	608	UPPER RHEA CR (PORCUPINE	0	19.78	RMiC	PAVED 4.90 GRAVEL7.14 DIRT 7.74			40					
	612	FULLER CANYON	0	8.35	RMiC	PAVED 2.29 GRAVEL 6.06			40					
	630	JUNIPER	0	7.47	RMiC	PAVED			40					
			2.29	2.8	RMiC	PAVED 6.16								
	673	TUPPER	0	3	RMiC	GRAVEL			40-60					
			3.23	5.57	RMiC									
	685	KINZUA	0	2.33	RMiC	GRAVEL 2.03 DIRT .30			40-66 (EASE.)					
	704	RIVERSIDE AVE	0	0.06	RMiC	PAVED .20			50					
	711	REDDING	0	2.33	RMiC	PAVED 1.10 GRAVEL 3.91			40					
			4.92	7.1	RMiC									
	717	VAN SCHOIACK	0	2.77	RMiC	GRAVEL			40					
	729	TURNER	0	1.19	RMiC	PAVED			40 (EASE.)					
	785	COURT ST (Balm Fork)	0	7.3	RMiC	PAVED 6.89			40					
	793	LITTLE BUTTER CR	0	17.73	RMiC	PAVED			40					
	809	H STREET, IONE (ELLA ROAD)	0	9.43	RMiC	PAVED 7.11 GRAVEL 2.23			40-60					
	847	WESTERN ROUTE	0	3.03	RMiC				40					
	966	CLARKS CANYON (LEXINGTON MAR	0	16.26	RMiC				40-60					
	3004		0	1.02	RMiC				40 (EASE.)					
	500	MCELLIGOTT	0	1.93	RL	Paved .40, Gravel 1.53								
	502	WARREN	0	2.28	RL	Paved .59, Gravel 1.69								

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Jurisdiction	Road Number:	Road Name:	Milepost Start:	Milepost End:	Federal Classification:	Surface and Mileage	Condition	Actual Width	Right of Way Width, FT	ADT	Parking	Sidewalk	Bicycles	Remarks
	504	TURNER	0	2.17	RL	Paved								
	505	Morrow -Gilliam Co Line	0	2.56	RL	PAVED .35 GRAVEL 2.21								
	506	BILL BERGSTROM	0	4.02	RL	PAVED .51 GRAVEL 2.92								
	507	LUNDELL	0	2.44	RL	GRAVEL 2.44								
	508	ART DALZELL- RANSOM	0	5.23	RL	PAVED 1. DIRT 4.23								
	509	LOVGREN	0	1.51	RL	GRAVEL								
	510	BAKER-PAUL TEWS	0	2.5	RL	GRAVEL 1.01 DIRT 2.50								
	511	KINCAID-HOLTZ	0	4.92	RL	GRAVEL								
	512	ZINTER	0	2.87	RL	GRAVEL								
	513	NO NAME	0	0.96	RL	DIRT								
	514	AIRPORT	0	0.4	RL	PAVED								
	515	SWANSON	0	2.51	RL	GRAVEL								
	516	IONE RADIO TOWER	0	1.47	RL	GRAVEL .86								
	517	M.BAKER SOUTH	0	1.5	RL	GRAVEL 1.05								
	518	B/T MCNABB W & ZINTER	0	0.69	RL	GRAVEL								
	520	MCNABB WEST	0	7.39	RL	GRAVEL								
	523	GABBERT-EIGHTMILE	0	4.29	RL	GRAVEL								
	524	LIBERTY SCHOOL	0	1	RL	GRAVEL								
	525	NO NAME	0	2.03	RL	GRAVEL								
	526	JOHNSON GRADE	0	4.83	RL	GRAVEL								
	527	SOCIAL RIDGE	0	4.78	RL	PAVED								
	528	BELL CANYON	0	5.85	RL	GRAVEL 4.81								
	529	M BAKER NORTH TO SOUTH	0	2.66	RL	PAVED .52 GRAVEL 2.14								
	530	ELY CANYON	0	2.96	RL	PAVED .27 GRAVEL 2.69								
	531	HEPPNER HIGH SCH	0	0.24	RL	PAVED .14								
	532	ELY CANYON	0	4.89	RL	PAVED 1.66 GRAVEL 3.23								
	533	PORCUPINE	0	2.24	RL	GRAVEL								
	534		0	1.84	RL	GRAVEL								

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES

Jurisdiction	Road Number:	Road Name:	Milepost Start:	Milepost End:	Federal Classification:	Surface and Mileage	Condition	Actual Width	Right of Way Width, FT	ADT	Parking	Sidewalk	Bicycles	Remarks
	535	FOURMILE CANYON	0	1.9	RL	GRAVEL								
	536	MORGAN EAST	0	6.17	RL	PAVED 2.65 GRAVEL 3.52								
	537	MORGAN	0	4.61	RL	PAVED .50 GRAVEL 4.11								
	538	ALBERT LINDSTROM	0	3.14	RL	GRAVEL								
	539	LINDSTROM	0	2.03	RL	DIRT								
			0.8	1.5	RL									
			6.19	6.22	RL									
	541	STEFANI	0	2.37	RL	GRAVEL								
	542	FOURMILE TO CECIL	0	3.18	RL	PAVED .10 GRAVEL 3.08								
	543	(MORGAN)	0	0.09	RL	GRAVEL								
	544	NR HOLTZ-KINCAID	0	0.5	RL	GRAVEL								
	548	DALZELL	0	0.89	RL	DIRT								
	549	NO NAME	0	0.88	RL	DIRT								
	550	IMMIGRANT	0	12.21	RL	GRAVEL								
	551	TEWS	0	2.53	RL	GRAVEL .92 DIRT 1.61								
	552		0	4.6	RL	DIRT								
	553	EWING	0	0.87	RL	GRAVEL								
	555	EIGHTMILE	0	2.41	RL	DIRT								
	556	BUTTERFLY FLAT RNCH	0	0.33	RL	GRAVEL								
	557	MCLAUGHLIN	0	2.41	RL	GRAVEL								
	558	HUGHES-HIRL	0	1.94	RL	GRAVEL								
	560	NO NAME	0	2	RL	GRAVEL								
	561	RIPPEE	0	0.74	RL	PAVED								
	562	TOM CAMP	0	1.26	RL	PAVED								
	565	MCCABE	0	2.04	RL	GRAVEL .55 DIRT 2.39								
	567	SUMNER	0	2.12	RL	GRAVEL								
	569	DALE BROWN	0	5.41	RL	GRAVEL 4.73 DIRT .68								
	571	WYLAND	0	9.92	RL	GRAVEL								
	572	DALE BROWN	0	2.75	RL	GRAVEL								
	573	WEST OF KECK CANYON	0	0.88	RL	DIRT								
	576	BERGEVIN	0	4.07	RL	GRAVEL								
	577	EIGHTMILE	0	10.38	RL	PAVED 4.91 GRAVEL 5.47								

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Jurisdiction	Road Number:	Road Name:	Milepost Start:	Milepost End:	Federal Classification:	Surface and Mileage	Condition	Actual Width	Right of Way Width, FT	ADT	Parking	Sidewalk	Bicycles	Remarks
	578	MYERS	0	11.15	RL	PAVED								
	579	JOHN BERGSTROM	0	3.33	RL	PAVED .48 GRAVEL 2.85								
	580	EAST OF BOARDMAN-IONE RD	0	1.07	RL	DIRT								
			3.4	10.04	RL	GRAVEL 2.94 DIRT 3.70								
	582	WEST OF 809 (ELLA)	0	0.62	RL	GRAVEL								
	583	PETERSON	0	0.65	RL	GRAVEL								
	585	BARLOW CANYON	0	4.88	RL	GRAVEL 4.88								
	586	NO NAME	0	0.14	RL	DIRT								
	588	STRAWBERRY EAST	0	7.87	RL	PAVED .20 GRAVEL 3.49								
	590	NO NAME	0	2.19	RL	GRAVEL								
	591	HARDMAN CEMETERY	0	0.95	RL									
	594	PAUL BROWN (BUNKER HILL)	0	3.59	RL	PAVED								
	595	NOLAN	0	5.99	RL	GRAVEL								
	599	JORDAN GRADE	0	1.63	RL	PAVED								
	601	CAMAS PRAIRIE	0	5.31	RL	GRAVEL 3.30 DIRT 2.01								
	602	KENNY RANCH (SANDHOLLOW)	0	2.51	RL	GRAVEL								
	605	DAVE RIETMANN	0	6.04	RL	GRAVEL 4.06 DIRT 1.98								
	606	BLUE MTN RANCH	0	1.34	RL	GRAVEL .82 DIRT .52								
	607	KINCAID-HOLTZ	0	1	RL	GRAVEL								
	610	NO NAME	0	1.83	RL	DIRT								
	614	STOCK DRIVE	0	4.4	RL	GRAVEL								
	616	BERT PECK	0	2.21	RL	GRAVEL								
	617	NO NAME	0	0.78	RL	GRAVEL								
	620	AIRPORT	0	7.6	RL	PAVED .50 GRAVEL 7.10								
	622	POINTER	0	4.63	RL	PAVED 1.48 GRAVEL 3.15								
	626	FROM STATE 207 TO MILLER'S	0	1.68	RL	GRAVEL								
	629	BOARDMAN CANAL	0	2.64	RL	GRAVEL								

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Jurisdiction	Road Number:	Road Name:	Milepost Start:	Milepost End:	Federal Classification:	Surface and Mileage	Condition	Actual Width	Right of Way Width, FT	ADT	Parking	Sidewalk	Bicycles	Remarks
	633	CAMAS PRAIRIE	0	3.93	RL	GRAVEL 1.75 DIRT 2.18								
	634	NO NAME	0	1.3	RL	DIRT								
	635	DEADMAN HILL	0	7.48	RL	GRAVEL								
	636	LINDSAY WEST	0	0.73	RL	GRAVEL .26 DIRT .47								
	637	EMMA WHITE (BECHDOLT)	0	8.5	RL	GRAVEL 4.44 DIRT 4.06								
	638	IONE-BOARDMAN	0	2.29	RL	GRAVEL 2.29								
			2.8	8.45	RL									
	639	MORGAN CEMETERY	0	0.28	RL	GRAVEL								
	641	BENGE NORTH	0	3.63	RL	GRAVEL								
	641	BENGE SOUTH	0	1.97	RL	DIRT								
	642	SAM BOARDMAN AVE	0	0.63	RL	GRAVEL								
	643	MEADOWBROOK FARM	0	3.45	RL	PAVED 2.02 GRAVEL 1.43								
	645	CEMETERY HILL (LEXINGTON)	0	2.62	RL	PAVED .75 GRAVEL 1.65								
	647	PIEPER CANYON	0	4.37	RL	GRAVEL								
	650	NO NAME	0	1.06	RL	DIRT								
	651	CUTSFORTH-BASE LINE	0	2.59	RL	PAVED								
	652	COYOTEATION RD	0	0.56	RL	GRAVEL								
	653	NELSON	0	1.56	RL	GRAVEL								
	655	BASE LINE	0	9.36	RL	PAVED								
	656	PAUL SMITH	0	1.58	RL	PAVED 1.58								
	657	PETERS	0	1.52	RL	PAVED								
	663	WELLS SPRING	0	4.39	RL	GRAVEL								
	664	NO NAME	0	2.24	RL	DIRT								
	671	EUBANKS	0	2.8	RL	GRAVEL								
	672	RHEA	0	0.83	RL	GRAVEL								
	674	TOLL ROCK	0	4.55	RL	DIRT								
	676	STOCK DRIVE	0	5.04	RL	GRAVEL								
	677	NO NAME	0	1.48	RL	GRAVEL								
	680	MILLER-CUTSFORTH	0	1.62	RL	PAVED								
	683	(Lundsford Canyon)Upper Willow	0	3.23	RL	GRAVEL								
			0	3.23	RL	GRAVEL								
	684	FK WILLOW CR	0	4	RL	GRAVEL .10								
	686	CLARK-RICE-BEACH	0	2.51	RL	GRAVEL								
	687	ELY	0	0.98	RL	GRAVEL								

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES

Jurisdiction	Road Number:	Road Name:	Milepost Start:	Milepost End:	Federal Classification:	Surface and Mileage	Condition	Actual Width	Right of Way Width, FT	ADT	Parking	Sidewalk	Bicycles	Remarks
	688	KEMP	0	2.5	RL	GRAVEL								
	689	OLSON	0	0.75	RL	PAVED								
	692	KLINGER-DOHERTY	0	3.59	RL	GRAVEL								
	696	MELVILLE	0	4.04	RL	GRAVEL								
	697	CANYON	0	8.99	RL	GRAVEL								
	698	BARCLAY	0	4.39	RL	PAVED 1.06 GRAVEL3.33								
	702	ALPINE-NELSON	0	4.57	RL	PAVED 2. GRAVEL 2.57								
	703	BOARD CREEK	0	3.36	RL	GRAVEL								
			0.06	0.7	RL									
	705	SPRING HOLLOW	0	10.44	RL	GRAVEL 3.09 DIRT 7.35								
	706	NO NAME	0	2.2	RL	DIRT 2.29								
	707	HALE RIDGE	0	8.77	RL	PAVED 3.04 GRAVEL 5.73								
	708	HARDMAN RIDGE	0	2.45	RL	GRAVEL								
	710	BECKET-PORCUPINE	0	2.27	RL	GRAVEL								
			2.33	5.01	RL									
	712	ALPINE, North of	0	0.48	RL	DIRT								
	713	SHOBE CANYON	0	4.92	RL	GRAVEL								
	714		0	0.11	RL									
	716	COUNTY LINE TO UMATILLA	0	0.41	RL	PAVED								
	718	IDAHO AVE	0	0.52	RL	PAVED								
	719	STINGEL CANYON	0	13.05	RL	PAVED 9.49 GRAVEL 3.21								
	720	NO NAME	0	0.14	RL	GRAVEL								
	721	WILSON CREEK	0	4.98	RL	GRAVEL.67								
	722	OREGON AVE	0	1.31	RL	GRAVEL .67								
	723	DEE COX	0	4.98	RL	PAVED .77 GRAVEL 4.21								
	724	WASHINGTON AVE	0	2.37	RL	PAVED 1.58								
			0	2.37	RL	PAVED 1.58								
	726	2ND WEST ST	0	0.32	RL	GRAVEL								
	731	DOLVEN	0	1.35	RL	GRAVEL								
	733	SAND HOLLOW	0	9.45	RL	PAVED								
	734	PATTERSON FERRY ELEV	0	0.12	RL	GRAVEL								
	735	JERRY DOUGHERTY	0	10.13	RL	PAVED 2.13 GRAVEL 8.								

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES

Jurisdiction	Road Number:	Road Name:	Milepost Start:	Milepost End:	Federal Classification:	Surface and Mileage	Condition	Actual Width	Right of Way Width, FT	ADT	Parking	Sidewalk	Bicycles	Remarks
	736	Stock Dr to Hwy 207	0	0.38	RL	GRAVEL								
	737	CUTSFORTH-BASE LINE	0	2.36	RL	GRAVEL								
	738	NO NAME	0	3.23	RL	GRAVEL								
	739	KILKENNY	0	2.93	RL	PAVED								
	740	NO NAME	0	0.75	RL	GRAVEL								
	741	SAND HOLLOW	0	4.08	RL	PAVED								
	743	NO NAME	0	0.65	RL	GRAVEL								
	744	NO NAME	0	2.01	RL	DIRT								
	747	MILLER LN	0	1.34	RL	PAVED .52 GRAVEL .82								
	752	23RD ST	0	0.24	RL	GRAVEL								
	754	15TH ST	0	0.7	RL	GRAVEL .62								
	755	LOWER SAND HOLLOW	0	0.9	RL	GRAVEL								
	760	V DALZELL	0	2.2	RL	GRAVEL								
	761	IRRIGON	0	4.21	RL	GRAVEL 2.20								
	762	LAWRENCE-JONES	0	1.29	RL	GRAVEL								
	764	MCELLIGOTT	0	2.18	RL	GRAVEL								
	766	OLD ALIGNMENT	0	1.54	RL	PAVED .31 GRAVEL 1.23								
	767	M BAKER	0	2.62	RL	PAVED								
	768	NO NAME	0	1.75	RL	DIRT								
	769	WARREN ST	0	0.08	RL	DIRT								
	770	WILLOW ST	0	0.24	RL	GRAVEL								
	771	FK WILLOW CR	0	4	RL	GRAVEL								
	774	(HARMAN)	0	0.12	RL	GRAVEL								
	775		0	2.73	RL									
	777	4TH WEST ST	0	2.26	RL	PAVED 1.08 GRAVEL .79								
	778	LITTLE BUTTER CR	0	9.91	RL	PAVED 4.18 GRAVEL 5.73								
	780	CHURCH ST	0	0.16	RL	GRAVEL								
	781	WATER ST	0	0.13	RL									
	782	WATER ST	0	0.15	RL									
	783	2ND ST	0	0.24	RL									
	784	3RD ST (HARDMAN)	0	0.1	RL									
	786		0	0.07	RL									
	789	HANNA-ARBUCKLE	0	15.57	RL	PAVED .20 GRAVEL 15.37								
	792	DON KENNY	0	0.64	RL	GRAVEL								
	795	CAMPBELL	0	4.02	RL	GRAVEL								

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES

Jurisdiction	Road Number:	Road Name:	Milepost Start:	Milepost End:	Federal Classification:	Surface and Mileage	Condition	Actual Width	Right of Way Width, FT	ADT	Parking	Sidewalk	Bicycles	Remarks
	799	RITTER	0	11.6	RL	GRAVEL 4.64 DIRT 6.36								
	802	TEWS RD	0	0.65	RL	GRAVEL								
	803	HISLER to JOHNSON GRADE	0	4.21	RL	GRAVEL								
	804	MORPHINE SPRING	0	5.64	RL	GRAVEL 2.58 DIRT 3.06								
	806	(MORGAN)	0	0.21	RL	GRAVEL .01								
	811	FREEZEOUT RIDGE	0	4.12	RL	GRAVEL								
	813	KENNY	0	9.95	RL	GRAVEL								
	816	SLAUGHTER	0	0.71	RL	PAVED .63 GRAVEL .08								
	817	KNIGHTON	0	0.47	RL	PAVED								
	818	ORDNANCE	0	0.69	RL	PAVED								
	819	HUGHES-HIRL	0	5.4	RL	GRAVEL 2.51 DIRT 2.89								
	821	NORTH off BIG BUTTER CREEK	0	3.38	RL									
	825		0	4.55	RL	DIRT								
	827	TONY VEY	0	4.37	RL	GRAVEL								
	835	3RD WEST ST	0	0.15	RL	GRAVEL								
	837	7111 WEST ST	0	0.44	RL	GRAVEL								
	843	ARCHIE BALL	0	2.79	RL	GRAVEL								
	844	ARBUCKLE MTN	0	5.34	RL	GRAVEL .86 DIRT 4.48								
	845	HISLER	0	9.75	RL	GRAVEL .22 DIRT 9.53								
	848	FRENCH	0	4.91	RL									
	849	BROWN PRAIRIE	0	11.13	RL									
	850	HALE RIDGE	0	1.8	RL									
	852	GURDANE	0	8.88	RL									
	856		0	4.9	RL									
	857	KINCAID-HOLTZ	0	4.68	RL									
	873	BERGSTROM	0	0.57	RL									
	874	CARLSON	0	2.75	RL									
	890	FALER	0	0.58	RL									
	894	OLSON	0	0.59	RL									
	900		0	0.93	RL									
	901	TATON	0	2.65	RL									
	902	ROOT LN	0	1.01	RL									
	904	SLAUGHTER	0	1	RL									
	906	NEVADA, 3RD AVE	0	1.28	RL									
	908	8TH WEST ST	0	2.18	RL									

MORROW COUNTY TRANSPORTATION SYSTEM PLAN - INVENTORY OF EXISTING FACILITIES

Jurisdiction	Road Number:	Road Name:	Milepost Start:	Milepost End:	Federal Classification:	Surface and Mileage	Condition	Actual Width	Right of Way Width, FT	ADT	Parking	Sidewalk	Bicycles	Remarks
	909	7TH WEST ST	0	0.81	RL									
	910	WASHINGTON AVE	0	1.19	RL									
	911	PATERSON FERRY	0	1.6	RL									
	913		0	0.21	RL									
	921	BARAK-MARTIN	0	4.53	RL									
	922	BASE LINE-LINDSAY	0	3.02	RL									
	923	JUNIPER CANYON	0	5.91	RL									
	924	LLOYD MORGAN	0	3.8	RL									
	925		0	1.44	RL									
	927	ALPINE	0	3.94	RL									
	929	North of Alpine	0	1.02	RL									
	931	ALPINE-NELSON	0	0.29	RL									
	932	D O NELSON	0	1.42	RL									
	936	LAUREL	0	0.36	RL									
	960	FREEZEOUTWAY DR	0	0.37	RL									
			0.85	11.38	RL									
	972	RIPPEE	0	0.57	RL									
	3002	W. MAIN ST, Ione	0	0.96	RL									
	3003	TOM ST	0	0.15	RL									
			1.02	1.98	RL									
	3005	HIGHVIEW CEM	0	0.36	RL									
	3013		0	0.6	RL									
	3015		0	1.6	RL									
	3017	FREEZEOUT RIDGE	0	8.5	RL									

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 seven 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 ARTERIAL

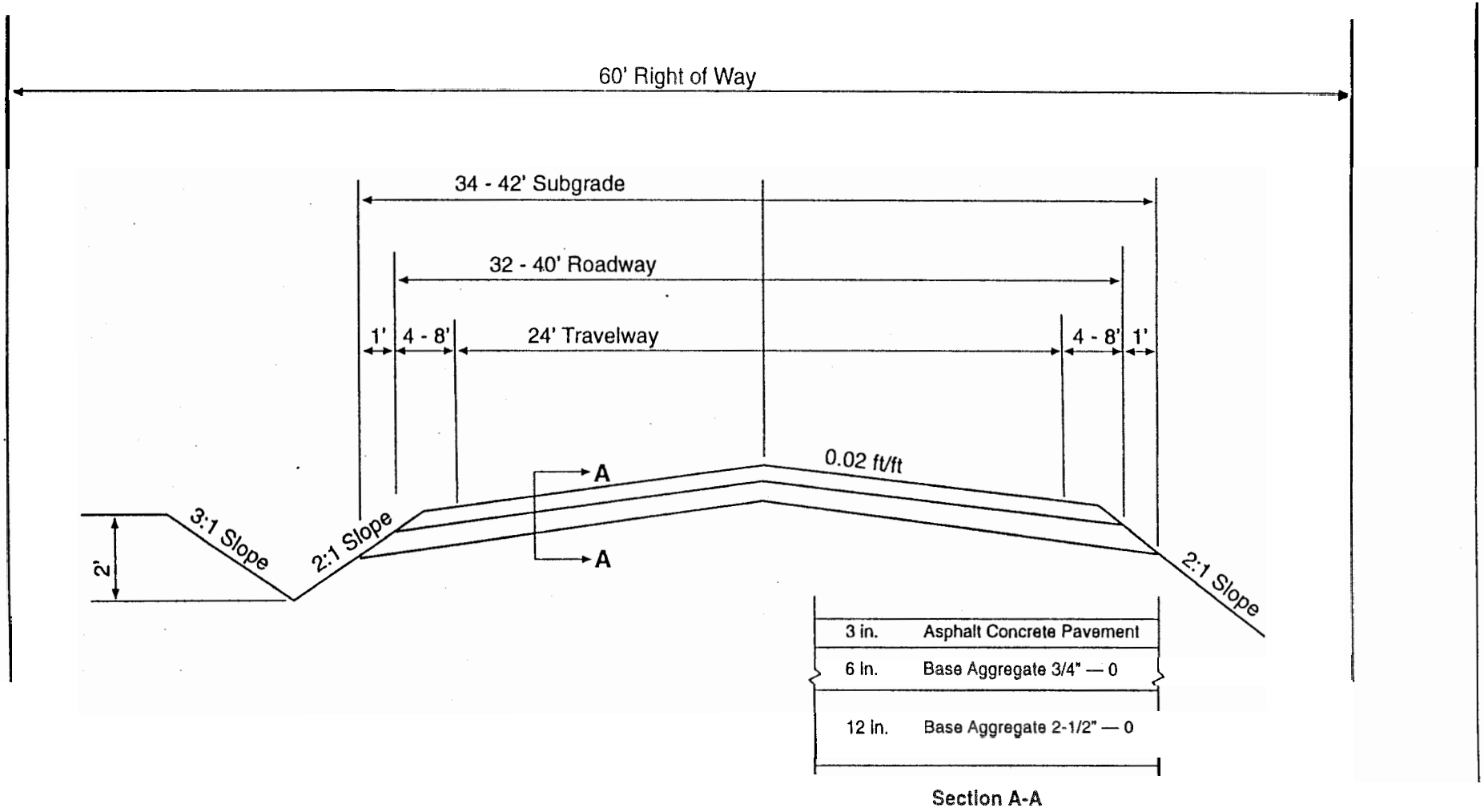
Rural arterials are design for roadways where higher traffic volumes are common or along major truck corridors. This standard of road is characterized by long-wearing asphalt concrete pavement over a base of 10 to 18 inches of aggregate. Travel lanes for this standards are 12-feet wide and a minimum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



Section A-A

NOTES:

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 Specification 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.

Not to Scale

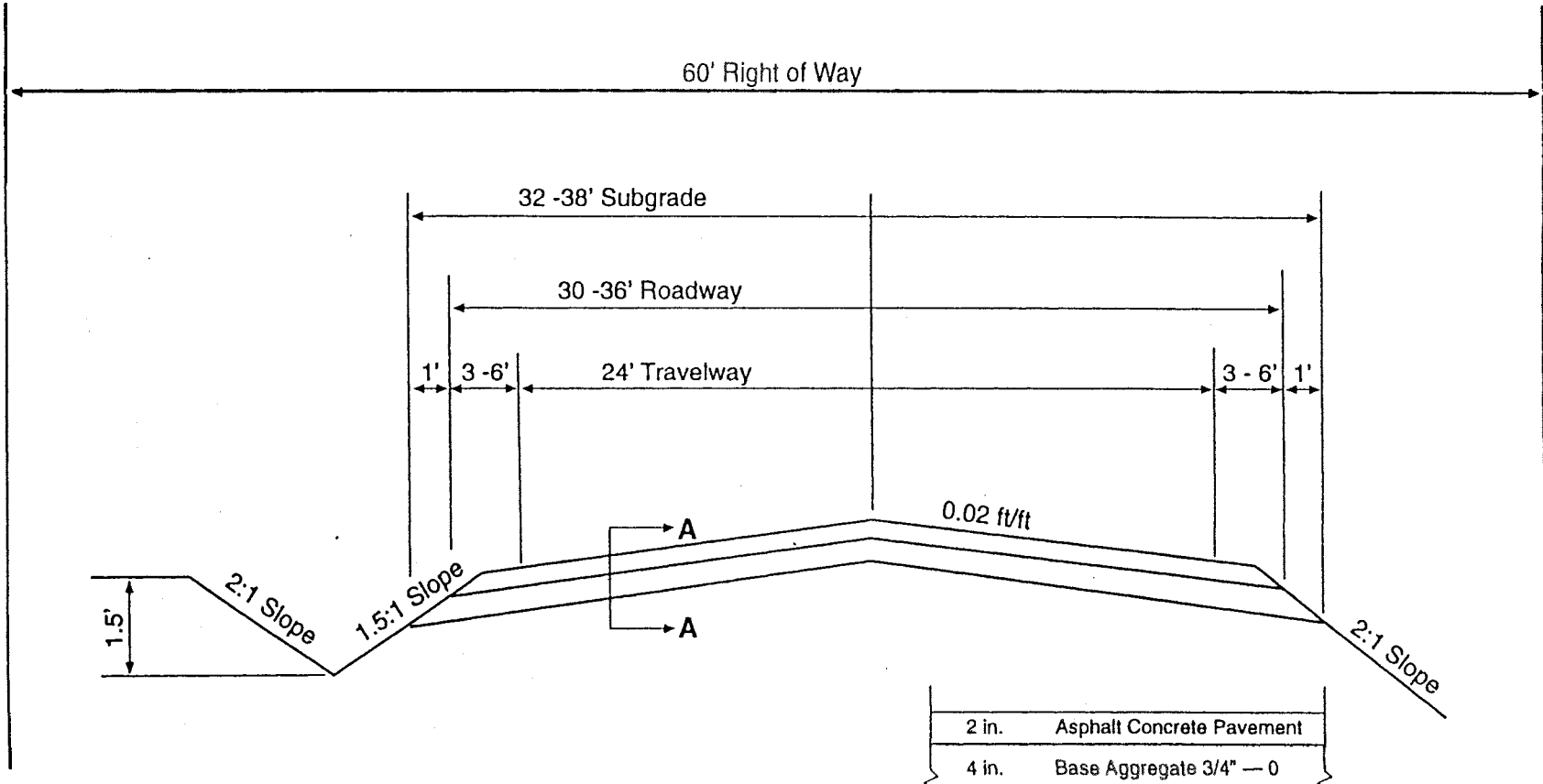
June 1997

KCM
1917 First Avenue
Seattle, Washington 98101

Morrow County Public Works
ROAD STANDARDS

REVISIONS:

RURAL ARTERIAL I



2 in.	Asphalt Concrete Pavement
4 in.	Base Aggregate 3/4" — 0
6 in.	Base Aggregate 2-1/2" — 0

Section A-A

NOTES:

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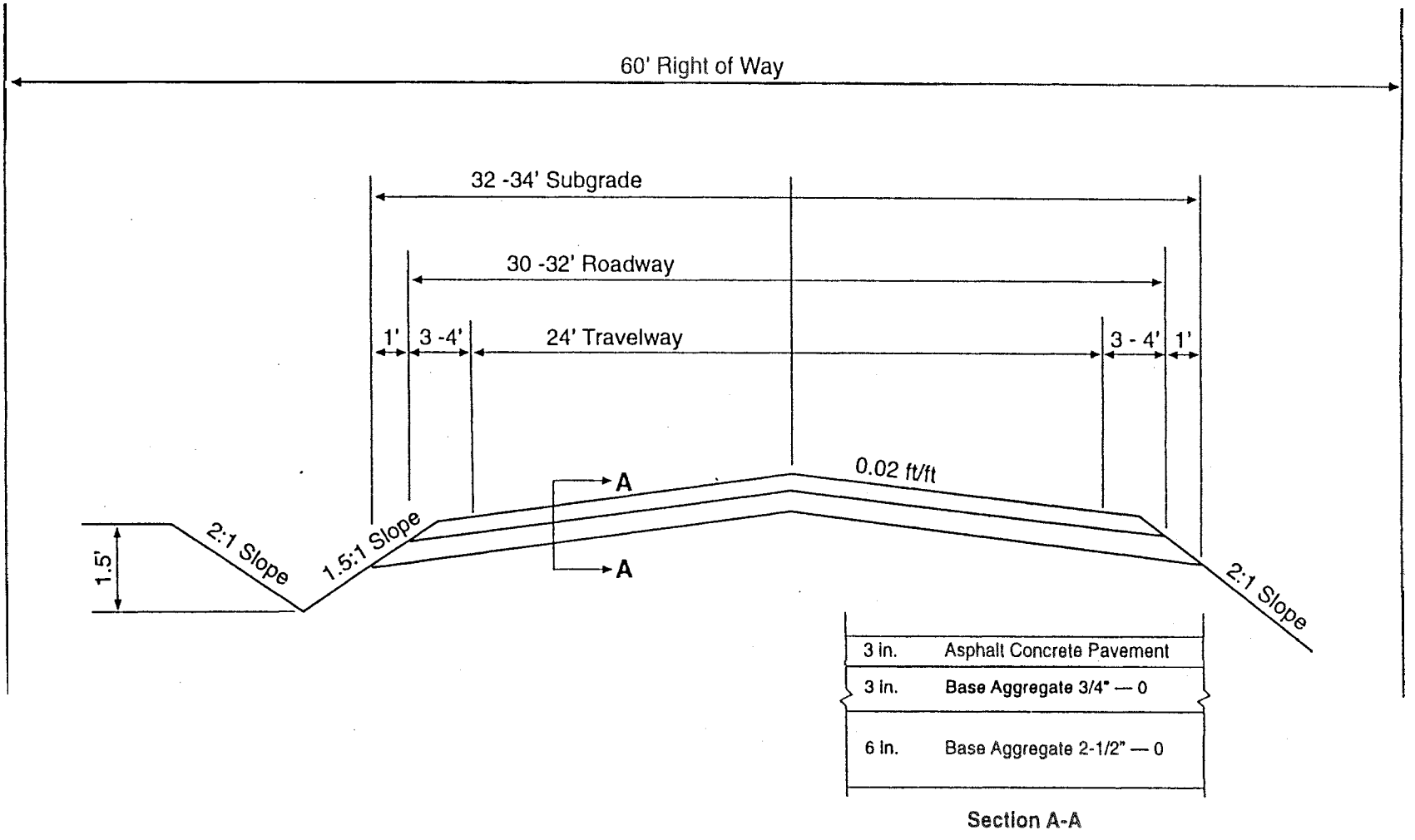
Morrow County Public Works
ROAD STANDARDS

REVISIONS:

RURAL ARTERIAL II



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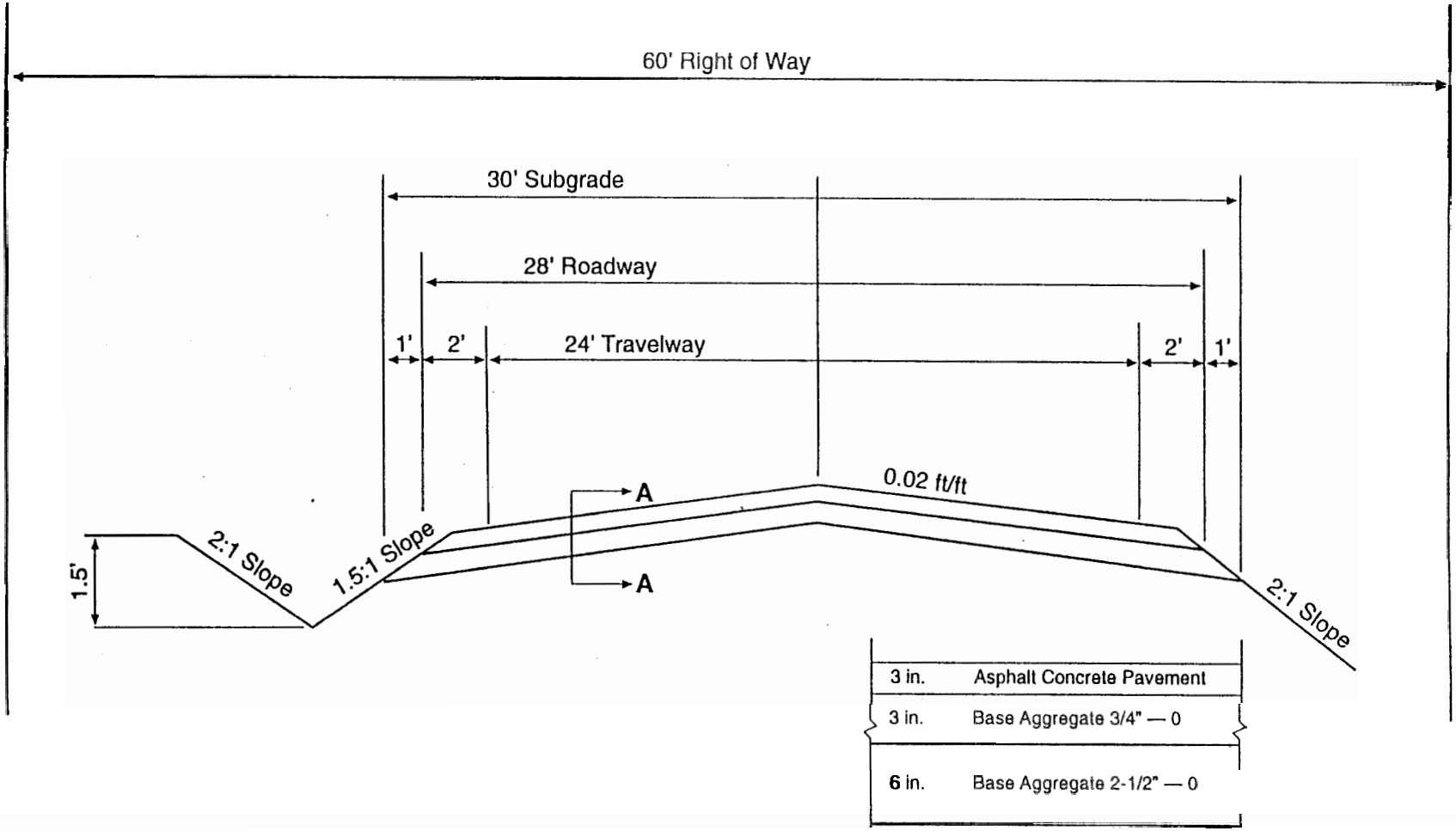
Morrow County Public Works
ROAD STANDARDS

REVISIONS:

RURAL COLLECTOR I



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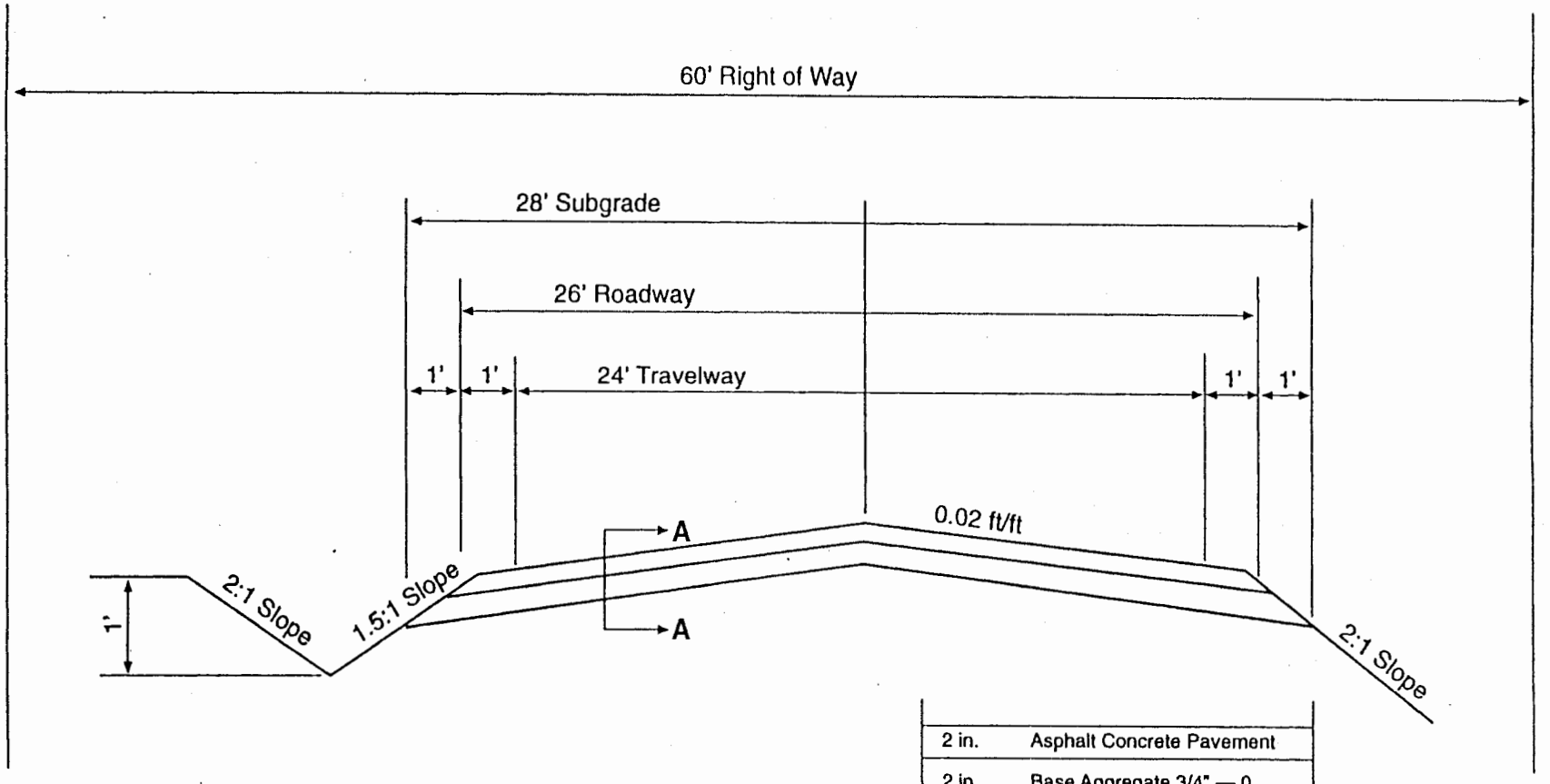
Morrow County Public Works
ROAD STANDARDS

REVISIONS:

RURAL COLLECTOR II



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6 in.	Base Aggregate 2-1/2" — 0

Section A-A

NOTES:

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Not to Scale

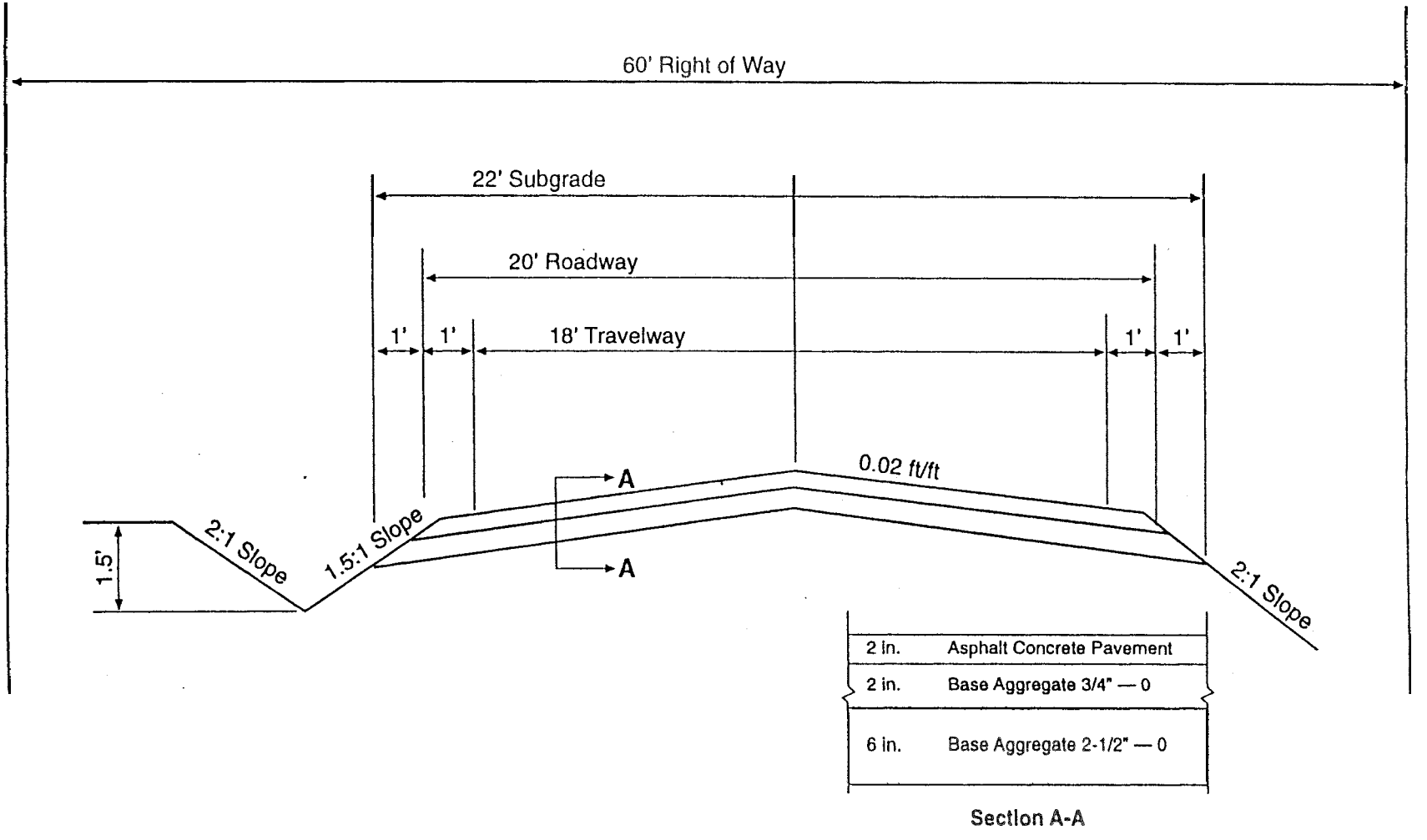
June 1997

KCM
1917 First Avenue
Seattle, Washington 98101

Morrow County Public Works
ROAD STANDARDS

REVISIONS:

RURAL COLLECTOR III



2 in.	Asphalt Concrete Pavement
2 in.	Base Aggregate 3/4" — 0
6 in.	Base Aggregate 2-1/2" — 0

Section A-A

NOTES:

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Not to Scale

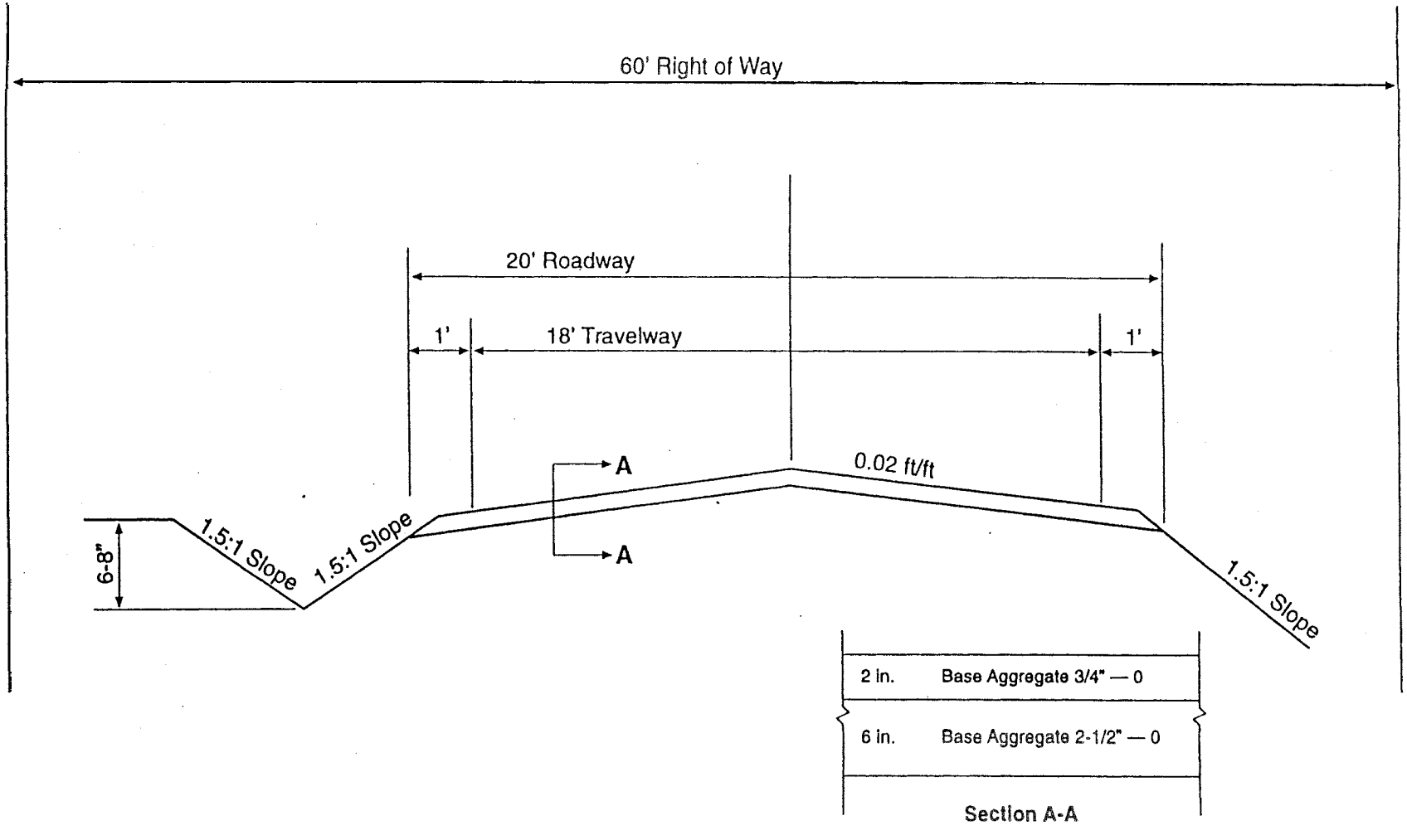
June 1997

KCM
1917 First Avenue
Seattle, Washington 98101

Morrow County Public Works
ROAD STANDARDS

REVISIONS:

RURAL ACCESS I



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KCM
1917 First Avenue
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Morrow County Public Works
ROAD STANDARDS

REVISIONS:

RURAL ACCESS II

APPENDIX D.
TRANSPORTATION IMPACT ANALYSIS GUIDELINES

TRANSPORTATION IMPACT ANALYSIS GUIDELINES

INTRODUCTION

Morrow County is requiring all permit applications generating more than 30 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 impacts of the proposed project.

While the determination of whether a TIA is required is based on the number of daily trips, traffic impacts within the TIA are assessed during the PM peak-hour of area-wide traffic, typically 4:30-5:30 PM on weekdays.

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 attached table or using 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 30 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 (1997 dollars) should range from a minimum of $2,500 (small subdivision) to over $15,000 (new retail area).

QUALIFICATIONS OF PREPARER

A licensed 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 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 that are likely to be impacted by more than 10 PM-peak-hour trips or are directly associated with the project (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-hour 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 the system PM peak-hour. Counts must be collected by individual movement at each intersection.

— Features such as the number of pedestrians, bicyclists, 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 1985 Highway Capacity Manual methodology, the level of service (LOS) is calculated for existing conditions for each study intersection. LOS at either signalized or all-way stop controlled intersections are defined by the overall LOS. At an intersection with stop controls only on the minor movements, the LOS is defined by the worst approach to the intersection.

III. **Accident data. Three years of accident data is used to describe the number,** type, and severity of accidents that occurred at each study intersection. 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 description of school bus services, if applicable.

BACKGROUND CONDITIONS

This section refers 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 that occur prior to the project year.

II. **Planned changes in land use within the study area. 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 the factoring of existing traffic to the future year using the background growth rate and the addition of 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 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 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 (employees home address, 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 operation of the study intersections based on the sum of the project trip assignment and the background trips.

V. Identify project impacts. All impacts to the transportation system should be identified, including vehicle sight distance, truck traffic, roadway geometrics, site access, vehicle queueing, 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:

- The payment of a transportation impact fee based on the number of peak-hour trips generated by the project.
- When the addition of project trips cause an individual intersection to exceed the LOS standard, the mitigation measures necessary to bring the intersection back into compliance need to be identified, as well as the cost and the project's contribution to the overall cost of the improvement (pro rata share). Payment of the pro rata share is required. Typical mitigation includes the following:
  - Adjustments to signal timing.
  - Addition of turning lanes.
  - Installation of traffic signals, or other traffic control device.
  - Note: developers are not required to mitigate individual intersections that exceed the LOS standard in existing or background conditions as determined by HCM methodology.
- Other mitigation as appropriate that alleviates the impacts to the transportation system such as improvement of sight distance, reduction of vehicle queueing, and increases in pedestrian, bicycle, or equestrian travel and safety should be considered.

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 3rd edition of the ITE Trip Generation Manual. An example calculation is as follows:

Project: Construct 4 homes on a subdivided lot.
Daily trip generation: 9.55 x 4 dwelling units = 38 trips
PM peak-hour: 1.01 x 4 = 4 trips (3 entering, 1 exiting)

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

TABLE 1
TRIP GENERATION RATES

Land Use (ITE Code)	Weekday Daily Rate	PM Peak-Hour Rate	Percent Entering/ Exiting in Peak-Hour
Single Family Detached (210)	9.55/ D.U.	1.01/ D.U.	65%/35%
Apartment (220-Post 1973)	6.28/D.U.	0.49/D.U.	64%/35%
Mobile Home Park (240)	4.81/D.U.	0.56/D.U.	62%/38%
Church (560)	9.32/1000 GFA	0.72/1000 GFA	54%/46%
Office--General (710)			
• 10,000 GFA			
25,000 GFA	24.6/1000 GFA	3.40/1000 GFA	17%/83%
• 50,000 GFA	19.72/1000 GFA	2.68/1000 GFA	
• 100,000 GFA	16.58/1000 GFA	2.24/1000 GFA	
• 200,000 GFA	14.03/1000 GFA	1.87/1000 GFA	
• 300,000+ GFA	11.85/1000 GFA	1.56/1000 GFA	
	refer to ITE Trip Generation	refer to ITE Trip Generation	
Retail-Specialty (814)	40.67/1000 GLA	4.93/1000 GLA	57%/43%
Restaurant-High Turnover (832)	205.36/1000 GFA	16.26/1000 GFA	54%/46%
Fast Food Restaurant (834)	632.12/1000 GFA	46.26/1000 GFA	52%/48%
Supermarket (850)	12.3/1000 GFA	10.34/ 1000 GFA	51%/49%
General Light Industrial (110)	6.97/1000 GFA	0.98/1000 GFA	12%/88%

D.U. - Dwelling Units, GFA - Gross Floor Area, GLA - Gross Leasable Area

APPENDIX E.
MODIFICATIONS TO THE ZONING AND SUBDIVISION ORDINANCES

Appendix E. Regulation and Ordinance Modifications

Recommended Changes to the Morrow County Zoning Ordinances

ARTICLE 1. INTRODUCTORY PROVISIONS

Add the following sections to Section 1.030 Definitions. It may be useful to reorder the entire section to maintain alphabetical order:

(77) Traffic Impact Analysis (TIA) -- A study conducted to identify the impacts from a new development or increased use of an existing facility.

(80) Functional Classification. A system used to group public roadways into classes according to their purpose in moving vehicles and providing access.

ARTICLE 3. USE ZONES

Add the following additional sub-sections to each Land Use Zone in ARTICLE 3. For example, add to Section 3.010. EXCLUSIVE FARM USE, EFU ZONES:

(7) Transportation Impacts

(a) Traffic Impact Analysis (TIA). In addition to the other standards and conditions set forth in this section, a TIA will be required for all projects generating more than 400 passenger car equivalent trips per day. Heavy vehicles -- trucks, recreational vehicles and buses -- will be defined as 2.2 passenger car equivalents. A TIA *will include: trips generated by the project, trip distribution for the project, identification of intersections for which the project adds 30 or more peak hour passenger car equivalent trips, and level of service assessment, impacts of the project, and, mitigation of the impacts.* If the corridor is a State Highway, use ODOT standards.

Add the following to Section 3.010. EXCLUSIVE FARM USE, EFU ZONES; Sub-Section (1) Uses Permitted Outright:

(h) Climbing and passing lanes within the right of way existing as of July 1, 1997

(i) Reconstruction or modification of public *roads and* highways, not including the addition of travel lanes where no removal or displacement of buildings would occur, or no new land parcels result.

(j) Temporary public road and highway detours that will be *abandoned* and restored to original condition or use at such time as no longer needed.

(k) Minor betterment of existing public road and highway related facilities such as *maintenance* yards, weigh stations and rest areas within right of way existing as of July 1, 1987, and contiguous public-owned property utilized to support the operation and *maintenance* of public roads and highways.

Add the following to Section 3.010. EXCLUSIVE FARM USE, EFU ZONES; Sub-Section 2. Conditional Uses Permitted:

(r) Personal -use airports for airplanes and helicopter pads, including associated hanger, *maintenance* and service facilities.

(s) Construction of additional passing and travel lanes *requiring* the acquisition of right of way but not resulting in the creation of new land parcels.

(t) Reconstruction or modification of public *roads and highways involving* the removal or displacement of buildings but not resulting in the creation of new land parcels.

Improvement of public road and highway related facilities, such as *maintenance* yards, weigh stations and rest areas, where additional property or right of way is required but not resulting in the creation of new land parcels.

ARTICLE 4. SUPPLEMENTARY PROVISIONS

Revise Section 4.010 Access-Minimum Lot Frontage, as follows:

Section 4.010. Access~~-Minimum Lot Frontage. 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~~. *Access shall be provided based upon the requirements below:*

*(1) **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.*

*(2) **Where access is to a county road is needed, a permit from Morrow County Public** Works department is required. Where access to a state highway is needed, a permit from ODOT is required as part of the land use application.*

(3) It is the responsibility of the land owner to provide appropriate access for emergency vehicles at the time of development.

(4) 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'.*

(5) Projects shall meet access management standards that are consistent with ODOT Access Management Standards. Each standard is listed by the functional classification of the roadway, as specified in the table below:

ODOT Access Management Standards

Category	Access Treatment	Level of Importance	Urban / Rural	Intersection				Signal Spacing	Median Control
				Public Road		Private Dr.			
				Type	Spacing	Type	Spacing		
1	Full Control (Freeway)	Interstate/ Statewide	U	Interchange	2-3 Mi.	None	NA	None	Full
			R	Interchange	3-8 Mi.	None	NA	None	Full
2	Full Control (Expressway)	Statewide	U	At grade/Intch	1/2-1 Mi.	None	NA	1/2-1 Mi.	Full
			R	At grade/Intch	1-5 Mi.	None	NA	None	Full
3	Limited Control (Expressway)	Statewide	U	At grade/Intch	1/2-1 Mi.	Rt. Turns	800′	1/2-1 Mi.	Partial
			R	At grade/Intch	1-3 Mi.	Rt. Turns	1200′	None	Partial
4	Limited Control	Statewide/ Regional	U	At grade/Intch	1/4 Mi.	Lt./Rt. Turns	500′	1/2 Mi.	Partial/None
			R	At grade/Intch	1 Mi.	Lt./Rt. Turns	1200′	None	Partial/None
5	Partial Control	Regional/ District	U	At grade	1/4 Mi.	Lt./Rt. Turns	300′	1/4 Mi.	None
			R	At grade	1/2 Mi.	Lt./Rt. Turns	500′	1/2 Mi.	None
6	Partial Control	District	U	At grade	500′	Lt./Rt. Turns	150′	1/4 Mi.	None
			R	At grade	1/4 Mi.	Lt./Rt. Turns	300′	1/2 Mi.	None

Oregon Highway Plan 1991[1]

(6) Intersection Spacing: New intersections and traffic signals shall meet the spacing standard for their functional classification as described in the table above.

A new section should be added addressing the Permit requirements for each type of land use. Section 4.035 PERMIT REQUIREMENTS FOR LAND USE DEVELOPMENT.

Except where otherwised noted, all proposed projects should meet the following Plot Plan Requirements as described in the Table below:

Permit Requirements for Land Use Development

Permit Type	Plot Plan Requirements		Conditions					Review/Approval Type	
	Footprint (setbacks)	Access*	Transportation Improvements	DEQ Site Suitability	Parking	Sign	Other	Review	Action
Zoning Permit									
Residential	Y	Designated access.	Frontage improvements.	Y	N/A	N/A	N	Staff	Bldg. permits Road approach
Commercial	Y	Legal access via r/w or easement.	Under 400 trips: front-age improvements. Over 400 trips: TIA.		Y	Y	N	Staff	Bldg. permits Road approach permit
Industrial	Y	Legal access via r/w or easement.	Under 400 trips: front-age improvements. Over 400 trips: TIA.		Y	Y	N	Staff	Bldg. permits Road approach permit
Farm Exempt	Y	Y	N/A	N/A	N/A	N/A	N	Staff	Copy BOA
Land Partition									
1 to 3 Lots			Frontage improvements, legal access via r/w or easement.				Y	Planning Comm.	Approval Road Approach permit
Subdivision									
More than 3 Lots		Legal access via r/w.	TIA.				Y	Planning Comm.	Approval Road Approach Permit
Conditional Use Permit	Y	Legal access via r/w or easement.	Under 400 trips: front-age improvements. Over 400 trips: TIA.		Review	Review	Y	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.

[1] Oregon Highway Plan, Oregon Department of Transportation, 1991

Add the following as a new section; Section 4.150 USES PERMITTED OUTRIGHT:
Section 4.150 STANDARDS FOR TRANSPORTATION IMPROVEMENTS

Section 4.150(A) Uses Permitted Outright.

(1) Except where otherwise specifically regulated by this ordinance, the following uses are permitted outright unless specifically prohibited elsewhere:

a) Normal operation, maintenance, repair, and preservation of existing transportation facilities (roadways, bridges, etc.).

b) Installation of culverts, pathways, medians, fencing, guardrails, lighting, and similar types of improvements within the existing right-of-way.

c) Projects specifically identified in the Transportation System Plan as not requiring further land use regulations.

d) Landscaping as part of a transportation facility.

e) Emergency measures necessary for the safety and protection of property.

f) 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 the exclusive farm use or forest zones.

g) Construction of a street or road as part of an approved subdivision or land partition approved consistent with the applicable land division ordinance.

Section 4.150(B) Conditional Uses Permitted

(1) Construction, reconstruction, or widening of highways, roads, bridges, or other transportation projects that are: (1) not improvements designated in the Transportation Systems Plan or (2) not designed and constructed as part of a subdivision or planned development subject to site plan and/or conditional use review, 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 EA(Environmental Assessment), 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 and social patters, including 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) Project includes provision for bicycle and pedestrian circulation as consistent with the comprehensive plan and other requirements of this ordinance.

(2) Construction of rest areas, weigh stations, temporary storage, and processing sites.

(3) If review under this Section indication that the use or activity is inconsistent with the Transportation System Plan, the procedure for a plan amendment shall be undertaken prior to or in conjunction with the conditional use permit review.

Section 4.150(C) Time Limitation on Transportation -Related Conditional Use Permits.
(1) 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.

ARTICLE 6. CONDITIONAL USES

Recommended changes to Section 6.030 GENERAL CONDITIONS:

Existing Sub-heading 4:

(4) Designating the size, number, location and nature of vehicle access points.

Recommended addition:

(a) Where access to a county road is needed, a permit from Morrow County Public Works department is required. Where access to a state highway is needed, a permit from ODOT is required.

(b) In addition to the other standards and conditions set forth in this section, a Traffic Impact Analysis (TIA) will be required for all projects generating more than 400 passenger car equivalent trips per day. *A TIA will include: trips generated by the project, trip distribution for the project, identification of intersections for which the project adds 30 or more peak hour passenger car equivalent trips, and level of service assessment, impacts of the project, and, mitigation of the impacts.* If the corridor is a State Highway, use ODOT standards.

Existing Sub-heading 5:

(5) Increasing the amount of street dedication, roadway width or improvements within the street right-of-way.

Recommended addition:

(a) It is the responsibility of the land owner to provide appropriate access for emergency vehicles at the time of development.

ARTICLE 9. ADMINISTRATIVE PROVISIONS

Recommended addition to Section 9.050, Sub-heading 7A:

(a) Amendments to the zoning ordinance or zone changes which significantly affect a transportation facility shall assure that land uses are consistent with the function, capacity, and level of service of the facility identified in the Transportation System Plan. This shall be accomplished by one of the following:

1) *Limiting allowed land uses to be consistent with the planned function of the transportation facility or roadway;*

2) *Amending the Transportation System Plan to ensure that existing, improved, or new transportation facilities are adequate to support the proposed land uses consistent with the requirement of the Transportation Planning Rule; or,*
3) *Altering land use designations, densities, or design requirements to reduce demand for automobile travel to meet needs through other modes.*

(b) A plan or land use regulation amendment significantly affects a transportation facility if it:

1) *Changes the functional classification of an existing or planned transportation facility;*
2) *Changes standards implementing a functional classification;*
3) *Allows types or levels of land use that would result in levels of travel or access that are inconsistent with the functional classification of a transportation facility; or*
4) *Would reduce the level of service of the facility below the minimal acceptable level identified in the Transportation System Plan.*

Recommended Changes to the Morrow County Subdivision Ordinances

ARTICLE 1 INTRODUCTORY PROVISIONS

Recommended Additions: It is recommended that the Morrow County Subdivision Ordinance, Section 1.070 DEFINITIONS, be amended to include the following definitions:

Access Management: The provision of improvements, signals, and/or the regulation of access to adjacent property while preserving the flow of traffic in terms of safety, capacity, and speed. [2]*:*

Corner Clearance: The distance from an intersection of a public or private road to the nearest public or private access connection, measured from the closest edge of the pavement of the intersecting road to the closest edge of the pavement of the connection along the traveled way. [3]*:*

Driveways: A private vehicles access way or point of entry from a public or private road into adjacent or nearby property development parcels. [4]*:*

Functional Area(Intersection): That area beyond the physical intersection of two roads that comprises decision and maneuver distance, plus any required vehicle storage length.

Functional Classification. A system used to group public roadways into classes according to their purpose in moving vehicles and providing access.

Joint Access. A driveway connecting two or more contiguous sites to the public street system.

Lot, Flag: A lot not meeting minimum frontage requirements and where access to the public road is by a narrow, private right-of-way line.

Accessway: A walkway that provides the pedestrian and bicycle passage either between streets or from a street to a building or other destination such as a school, park, or transit stop. Accessways generally include a walkway and land on either side of the walkway, often in the form of an easement or right-of-way, to provide clearance and separation between the walkway and adjacent uses. Accessways through parking lots are generally physically separated from adjacent vehicle parking or parallel vehicle traffic by curbs or similar devices and including landscaping, trees, and lighting. Where accessways cross driveways, they are generally raised, paved or marked in a manner that provides convenient access for pedestrians. [5]*:*

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[2] Model Transportation Planning Rule Ordinances and Policies for Small Jurisdictions, David Evans and Associates for ODOT/DLCD Transportation and Growth Management Grant Program, August 1996
[3] Ibid.
[4] Ibid.
[5] Ibid.

Bicycle Facilities: A general term denoting improvements and provisions made to accommodate or encourage bicycling, including parking facilities and all bikeways[6]*:*

Bikeways: Any road, path or way that is in some manner specifically open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are shared with other modes. The five types of bikeways are:

Multi-use path: A paved 10 to 12 foot wide way that is physically separated from motorized traffic; typically shared with pedestrians, skaters, and other non-motorized users.

Bike Lanes: A 4 to 6 foot wide portion of the roadway that has been designated by permanent stripping and pavement markings for the exclusive use of bicycles.

Shoulder Bikeways: The paved shoulder of a roadway that is a4 feet or wider; typically shared with pedestrians in rural areas.

Shared Roadway: A travel lane that is shared by bicyclists and motor vehicles.

Multi-use trails: An unpaved path that accommodates all-terrain bicycles; typically shared with pedestrians. [7]*:*

Pedestrian Facilities: A general term denoting improvements made to accommodate or encourage walking, including sidewalks, accessways, crosswalks, ramps, paths, and trails. [8]*:*

Walkways: A hard surfaced area intended and suitable for pedestrians, including sidewalks and the surfaced portions of accessways. [9]*:*

Rural/Commercial Activity Center: A Rural/Commercial Activity Center consists primarily of commercial or industrial uses providing goods and services to the surrounding rural area or to persons traveling through the area, but also includes some dwellings.[10]

ARTICLE 2. SUBDIVISION REQUIREMENTS AND SUBDIVISION REVIEW COMMITTEE

Optional Revision to Section 2.030 SUBDIVISION REVIEW COMMITTEE:

(11) Oregon Department of Transportation District 12 (optional and ex-officio)

ARTICLE 3. TENTATIVE PLAN

Revise and add to Section 3. OUTLINE DEVELOPMENT PLAN:

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[6] Ibid.
[7] Ibid.
[8] Ibid.
[9] Ibid.
[10] Definition from "Rural Service Center", Unincorporated Communities Rule, Land Conservation and Development Commission, 1995

(2) (e) A statement setting forth expected types of housing and other uses to be accommodated, a *Traffic Impact Analysis* (TIA), population and sectors thereof to be served and any other information relative to demands on public services and facilities and public needs.

(f) A Traffic Impact Analysis (TIA) *will include: trips generated by the project, trip distribution for the project, identification of intersections for which the project adds 400 or more trips, and level of service assessment, impacts of the project, and, mitigation of the impacts. The TIA must be completed by a certified engineer.*

(1) If the property frontage includes a state highway, the TIA must meet ODOT Traffic Impact Study requirements.

Revise Section 3.070. MASTER DEVELOPMENT PLAN:

(3) Overall transportation and traffic pattern plan, *including a Traffic Impact Analysis (TIA) completed by a certified engineer.*

(a) If the property frontage includes a state highway, the TIA must meet ODOT Traffic Impact Study requirements.

ARTICLE 5. LAND PARTITIONINGS

Add to Section 5.030: REQUIREMENTS FOR APPROVAL

6) Flag lots will not be permitted when the results would be to increase the number of properties requiring direct and individual access from a State Highway or other arterial. Flag lots may be permitted to achieve planning objectives under the following conditions:

a. when flag lot driveways are separated by at least twice the minimum frontage distance.

b. the driveway must meet driveway standards described in Article 8. Section 8.020(17)(f).

c. that the flags lots are less than 10 percent of the total number of building sites, or three lots or more, whichever is greater.

d. the lot meets the minimum lot area of the zoning district, without including the driveway.

e. only one flag lot shall be permitted per private right-of-way or access easement.

(7) the depth of any lot shall not exceed 4 times its width (3 times its width in urban areas) unless there is a topographical or environmental constraint, or man-made feature such as a railroad line.

ARTICLE 6. PLANNED UNIT DEVELOPMENTS

Add to Section 6.080: COMMON OPEN SPACE:

(5) Bicycle and Pedestrian Circulation. Bicycle and pedestrian circulation plans shall be included in Planned Unit Development Applications. If appropriate, the Planning Commission may require the installation of bicycle and/or pedestrian facilities as provided in Section 9.030 of the Morrow County Subdivision Code.

ARTICLE 8. DESIGN STANDARDS

Revise Section 8.020 STREETS, as follows:

(2) Minimum Right of Way and Road Width.

Add sub-section:

(a) The Roadway Standards set forth in the following table shall be observed unless a variance has been obtained.

Recommended Roadway Standards				
Road Classification	Right of Way (feet)	Lane Width (feet)	Paved Shoulder Width (feet)	Pavement Width (feet)
Rural Access I	60	9	1	20
Rural Access II	60	9	1	20
Rural Access III (within UGA)	60	9	2 foot bike lanes with sidewalks	22
Rural Collector I	60	12	3-4	30-32
Rural Collector II	60	12	2	28
Rural Collector III	60	12	1	26
Rural Arterial I	60	12	4-8	32-40
Rural Arterial II	60	12	3-6	32-40

Source: Morrow County Transportation System Plan

Existing Sub-heading 5:

(5) Future Street Extensions. Where necessary to give access to or permit a satisfactory future subdivision of 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 may be required to preserve the objectives of street extensions. Streets and accesssways are always required unless one or more of the following conditions exists:

1. Physical or topographic conditions make a street or acessway connection impractivable. Such condtions include but are not limited to freeways, reailroads, streep slopes, wetlands or other bodies of water where a connection could not reasonable be provided;
2. Buildings or other existing development oadjacent lands physically preeclude a connection now or in the future consiering the potnetal for redevelopment; or
3. Where streets or accessways would violate provisions of leases, easements, convenants, restrictions or other agreements existing as of

May 1, 1995 which preclude a required street or accessway connection.

Recommended Addition:

(a) 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.

Recommended Changes to Sub-heading 9:

(9) Cul-de-sac. A cul-de-sacs may be used as part of a development plan, consistent with other provision of this section. Cul-de-sacsshall be as short as possible and shall have a maximum length of 400 feet and serve building sites for not more than more than 9 dwelling units unless otherwise approved by the Commission. A cul-de-sac shall terminate with a circular turn around.

Recommended additions to Section 8.020 STREETS:

(16) Proposed Corridors. For land adjacent to or containing a proposed corridor (see map)[11] the Planning Commission may require the dedication of a suitable right-of-way that shall be provided at the time of land division.

(17) Access Management: Projects shall meet access management standards that are consistent with ODOT Access Management Standards.

ODOT Access Management Standards

Category	Access Treatment	Level of Importance	Urban / Rural	Intersection				Signal Spacing	Median Control
				Public Road		Private Dr.			
				Type	Spacing	Type	Spacing		
1	Full Control (Freeway)	Interstate/ Statewide	U	Interchange	2-3 Mi.	None	NA	None	Full
			R	Interchange	3-8 Mi.	None	NA	None	Full
2	Full Control (Expressway)	Statewide	U	At grade/Intch	1/2-1 Mi.	None	NA	1/2-1 Mi.	Full
			R	At grade/Intch	1-5 Mi.	None	NA	None	Full
3	Limited Control (Expressway)	Statewide	U	At grade/Intch	1/2-1 Mi.	Rt. Turns	800′	1/2-1 Mi.	Partial
			R	At grade/Intch	1-3 Mi.	Rt. Turns	1200′	None	Partial
4	Limited Control	Statewide/ Regional	U	At grade/Intch	1/4 Mi.	Lt./Rt. Turns	500′	1/2 Mi.	Partial/None
			R	At grade/Intch	1 Mi.	Lt./Rt. Turns	1200′	None	Partial/None
5	Partial Control	Regional/ District	U	At grade	1/4 Mi.	Lt./Rt. Turns	300′	1/4 Mi.	None
			R	At grade	1/2 Mi.	Lt./Rt. Turns	500′	1/2 Mi.	None
6	Partial Control	District	U	At grade	500′	Lt./Rt. Turns	150′	1/4 Mi.	None
			R	At grade	1/4 Mi.	Lt./Rt. Turns	300′	1/2 Mi.	None

Oregon Highway Plan 1991[12]

(a) Access permit requirements for land use development are outlined in table 6-3 of the Morrow County TSP and in Section 4.035 of the Morrow County Zoning Code.

[11] Please Note: a map adopted which shows proposed improvements or specific reference should be made in the TSP.

[12] Oregon Highway Plan, Oregon Department of Transportation, 1991

(b) 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.

(c) 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:

(1) Indirect or restricted access cannot be obtained;

(2) No engineering or construction solutions can be applied to mitigate the condition; and,

(3) No alternative access is available from a street with a lower functional classification than the primary roadway.

(d) No variance shall be granted where such hardship is self-created.

~~(18)~~(e) 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.[13]

~~(19)~~(f) Driveways: Driveway spacing standards shall be consistent with ODOT Access Management Standards.

1 *Driveways shall meet the following standards:*

If the driveway is a one-way in or out drive, then the driveway shall be a minimum width of 10 feet and shall have appropriate signage designating the driveway as a one way connection.

For two way access, the driveway shall have a minimum width of 20 feet.

2 *Driveway approaches must be designed and located to provide an exiting vehicle with an unobstructed view. Construction of driveways along acceleration or deceleration lanes and tapers shall be avoided due to the potential for vehicular weaving conflicts.*

3 *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.*[14]

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[13] Model Transportation Planning Rule Ordinances and Policies for Small Jurisdictions, David Evans and Associates for ODOT/DLCD Transportation and Growth Management Grant Program, August 1996, Section 5: Corner Clearance, page 10

[14] Ibid. Section 7: Access Connection and Driveway Design, page 12

~~(20)~~(g) 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, an easement width of 20'*
2. *More than 1000', an easement width of 40'*
3. *Parcels where 3 or more lots share an access (current or potential), an easement of 60'.*

(h) Joint and Cross Access: Adjacent commerical or office properties classified as major traffic generators shall provide a cross access drive and pedestrian access to allow ciculation 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 easment allowing joint or cross access between parcels, record an agreement on the 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 maintneace responsibilities of property owners.

(i) 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 ordinances. This shall also apply to phased development plans.

(j) Nonconfroming 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.

(k) Reverse Frontage: Lots that front more than one street shall be required to locate motor vehicle access on the street with the lower functional classification.

(l) Shared Access: Subdivisions with frontage on the state highway system shal 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 ecouraged, along with closing the state hgihway access.