

CITY OF COVE
BICYCLE-PEDESTRIAN PLAN
A Comprehensive Land Use Plan Supplement

DRAFT
AUGUST 1995

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This project is partially funded by a grant from the Transportation Growth Management (TGM) Program, a Joint Program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. TGM grants rely on federal Intermodal Surface Transportation Efficiency Act and Oregon Lottery funds.

BICYCLE AND PEDESTRIAN PLAN FOR CITY OF COVE

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PLAN PURPOSE

I. INTRODUCTION

Bicycling and walking are ecological, energy efficient, and cost effective modes of transportation, which can help reduce traffic congestion, air and water pollution, road wear and the cost of road construction and repair. Urban bikeway and walkway networks address nicely the mobility and access needs of those who do not drive, including children too young to drive, people with income too low to own a car, many elderly people, and people with disabilities.

A. PURPOSE

This Plan addresses the Transportation Planning Rule bicycle and pedestrian requirements for the City of Cove. The Plan identifies and directs opportunities for developing and improving bicycle and pedestrian facilities to assure that new streets and new development are designed in ways that provide safe, convenient, and direct bicycle and pedestrian access.

The Bicycle and Pedestrian Plan serves several purposes:

- . Guide the development of bicycle and pedestrian facilities in the participating jurisdictions;
- . Educate and inform about bicycle and pedestrian transportation; and
- . Set standards for planning and construction bikeways and walkways.

The Plan is intended to be used by the people of Cove as a tool to preserve and enhance the livable character of the community and the quality of the road network by increasing non-motorized transportation choices. Most existing land use and transportation patterns and land development codes are oriented toward automobiles as the dominant transportation mode, with little thought given to the needs of people who bicycle and walk as a means of transportation. Today, each household owns more cars, makes more trips, and travels more miles per year than ever before. This has undesirable consequences as urban areas grow. Traffic volumes increase. More traffic means increased congestion, noise, and air and water pollution. Livability of communities declines, and demand for expensive road improvements increases.

Walking for recreation is a popular activity, and 75% percent of us own bikes. Most of our trips are short trips, less than two miles from home. Yet most of us make even short trips by automobile because there aren't safe and easy ways to get from one place to another by walking or bike riding. If safe, convenient walkways and bikeways are provided people will choose

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to walk and bicycle more and drive less for short trips around town.

B. POLICY FRAMEWORK AND RELATED DOCUMENTS

All levels of government recognize bicycling and walking as viable modes of transportation and encourage planning Transportation systems to include safe and convenient bicycle and pedestrian facilities.

1. FEDERAL POLICY

The federal government signed the Intermodal Surface Transportation Efficiency Act (ISTEA) into law in December 1991. The ISTEA requires states to staff a bicycle and pedestrian coordinator and to plan for bicycles and pedestrians. It also makes funds available to states for a variety of bicycle and pedestrian projects.

2. STATE POLICY

Oregon is recognized as a leader in bicycle and pedestrian planning. The state provides specific policies and standards for developing bicycle and pedestrian facilities to help local governments reach goals and build the multi-modal transportation system.

a. Bicycle Bill

Oregon's statewide bicycle program began in 1971 when the "Oregon Bicycle Bill" passed into law (HB 1700, now ORS 366.514). The first of its kind in the country, it mandated a minimum one percent gas-tax be dedicated to construct, maintain and operate bicycle and pedestrian facilities.

b. Oregon Transportation Plan

The Oregon Transportation Plan (OTP) sets the general direction for transportation development statewide for the next 20 years. The OTP outlines a vision of a multi-modal transportation system, and sets project and program priorities for the allocation of resources. Specific plans for each transportation mode - aviation, highways, mass transit, bicycle and pedestrians, railroads, and transportation corridors - refine and extend the general provisions in the OTP. These specific plans also include two programs to reduce traffic deaths, and to promote connections.

c. The Oregon Bicycle and Pedestrian Plan, 1995 Draft

The Oregon Bicycle/Pedestrian Plan establishes statewide policies and standards for planning and developing safe, attractive transportation facilities that emphasize bicycling and walking.

d. Statewide Planning Goals

Statewide Planning Goals support bicycling and walking as sensible transportation choices, because they help reduce air

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pollution, traffic congestion and consumption of petroleum resources; they reduce the consumption of land for roads and parking resulting in compact urban growth; and they have very low impact on land uses and natural systems.

e. **Transportation Planning Rule 12**

The Transportation Planning Rule (OAR Chapter 660, Division 12) adopted in April 1991, requires cities and counties to plan for non-automotive transportation choices including bicycling and walking. Rule provisions vary based on a jurisdiction's population. Small jurisdictions are defined as cities with population under 2,500; small counties are those with populations under 25,000. Except for the City of La Grande, eight of the nine jurisdictions in Union County are defined as small jurisdictions, and are eligible to apply for whole or partial exemption from the Rule.

The TPR 12 bicycle and pedestrian facility requirements are as follows:

. **Safe and Convenient Bike and Pedestrian Access**

Facilities providing safe and convenient pedestrian and bicycle access shall be provided within and from new subdivisions, planned developments, shopping centers and industrial parks to nearby residential areas, transit stops, and neighborhood activity centers, such as schools, parks and shopping. This shall include:

- (A) Sidewalks along arterials and collectors in urban areas;
- (B) Bikeways along arterials and major collectors;
- (C) Where appropriate, separate bike or pedestrian ways to minimize travel distances within and between the areas and developments listed above.

"Safe convenient and adequate" 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 direct route of travel between destinations, such as between transit stop and a store; and, (C) meet the travel needs of cyclists and pedestrians considering the destination and length of trip. (045(3)(b)).

. **Internal Pedestrian Circulation**

Internal pedestrian circulation shall be provided in new office parks, and commercial developments through clustering buildings, construction of pedestrian ways, skywalks, where appropriate, and similar techniques. (045(3)(d)).

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- **Sidewalks and Bikeways**

Sidewalks shall be provided along arterials and collectors in urban areas. (045)(3)(b)(A).

- **Bike Parking Facilities**

Bicycle parking facilities shall be provided as part of new multifamily residential developments of four units or more, new retail, office institutional developments and all transit transfer stations and park and ride lots. (045)(3)(a)).

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II. EXISTING FACILITIES INVENTORY, NEEDS ANALYSIS, AND RECOMMENDED BICYCLE AND PEDESTRIAN FACILITY PROJECTS

A. COMMUNITY PROFILE

Cove is a small rural city, population 545, situated in a sheltered cove of the Grande Ronde Valley at the base of the Wallow Mountains. Historically Cove was an agricultural community known for its cherry orchards. At present, employment opportunities are limited in Cove. The majority of households are families with two persons in the workforce who drive 15 to 35 minutes to work, shop, and seek entertainment in neighboring towns. In 1990, 76% of workers drove alone to work in an automobile, 16% carpooled, 1% walked to work, and 5% worked at home. The area's transportation network is designed for automobiles, essential for transportation in rural areas.

B. COMPREHENSIVE PLAN

The City of Cove Comprehensive Plan supports the development and use of alternative types of energy efficient and economical transportation for local citizens. The City supports the use of bicycles and walking as transportation; it supports programs to improve transportation conditions for the disadvantaged; and cooperates with other local, state and federal agencies to help provide an efficient and economical transportation system.

C. BICYCLE AND PEDESTRIAN PLANNING IN COVE

Cove has developed without curbs, gutters, sidewalks, or bike facilities. It does not have a storm drain system. However, it does have good soil permeability and maintains barrow ditches and swales adjacent City streets for snow removal and drainage. In the past, the citizens and local government of the City of Cove felt the City was too small and rural in nature, and financial resources too limited to consider planning for alternative modes of transportation.

In summer 1995, the Oregon Department of Transportation reconstructed State Hwy 237, (Main Street and Jasper Street in Cove), adding curbs and gutters, sidewalks, and bike lanes to Main Street. Jasper Street was reconstructed to provide curbs, gutters, and bike lanes from Antles Lane to Haefer Lane, and a sidewalk adjacent the school.

Despite challenges, there are opportunities to improve bicycling and walking conditions and preserve and enhance the quality of life enjoyed in Cove. The City is about one mile across, small enough that the schools, churches, stores, post office, library, swimming pool, and other destinations are within walking and biking distance. Cove's urban residential densities range from one to four dwellings per acre. The residential development pattern in Cove includes concentrations of residences interspersed with pasture, orchards, and other non-developed uses.

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All City streets are maintained by City crews. However, major City street construction projects are contracted to other public or private road builders. The City of Cove does not receive gasoline tax funds for developing bicycle and pedestrian facilities. Development of these facilities would rely partly on City resources for matching funds which are presently unavailable.

D. EXISTING ROAD SYSTEM

The area north of Main Street and west of Jasper Street is built on a grid of approximately 300 foot blocks. City streets north of Main Street which run north and south have 60 foot right-of-way widths and those which run east and west have 40 foot right-of-way widths. All other City streets have 60 foot right-of-way widths. Much of the developable land within Cove's City Limits is unplatted. There is an undeveloped area at the south end of Cove where steep slopes present hazards which will limit transportation circulation when it develops.

Most of the City residential development has occurred within the platted portion of the City; or along Antles Lane, Conklin Lane, and Haefer Lane; and along French Street, Hill Street, and 2nd Street. However, relatively dense rural residential housing is also found on the hillside east of Cove and up Mill Creek.

E. NEEDS ANALYSIS

During the preparation of this plan, July 1, 1994 to June 30, 1995, the Cove City Council served as the Citizen Involvement Committee. The guidelines the committee used to develop the bicycle and pedestrian facility recommendations are based on the requirements of the Transportation Planning Rule as discussed in the POLICY section of this Plan, and guidelines provided in the Oregon Bicycle and Pedestrian Plan and summarized in the STANDARDS section of this Plan.

The Transportation Planning Rule (TPR) requires that cities provide safe, direct, continuous, well connected networks for bicycles and pedestrian travel. In general the TPR requires sidewalks and bikeways along arterials and major collectors in urban areas, as well as along minor collectors and local streets as needed to connect bike and pedestrian facilities and to provide access to important destinations. The TPR also directs local governments to adhere to the standards and guidelines established in ODOT's Bicycle and Pedestrian Plan.

In urban areas the appropriate type of bicycle and pedestrian facility is determined by the functional classification of the street. The Cove Bicycle and Pedestrian Plan employs urban facility standards modified for low density rural city streets without storm drain systems. In portions of Cove where densities

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are very low, rural standards are recommended to meet the needs of existing and foreseeable urban development.

F. INVENTORY AND RECOMMENDATIONS

1. State Hwy 237

Jasper Street

From Antles Lane to Haefer Lane

State hwy 237, The Cove Highway, is a major collector with an 80 foot right-of-way. It is called Jasper Street in Cove from Antles Lane to Haefer Lane. The road was reconstructed in 1995 to include curbs, gutters, two 12 foot travel lanes, and two 6 foot bike lanes. A sidewalk was provided on the west side adjacent the school from Foster Street to Main Street.

Recommendations: No change.

Main Street

From Haefer Lane to Cove west City Limits

State Highway 237 turns west at Haefer Lane; it is called Main Street in Cove from Haefer Lane to the west City Limits. The portion between Haefer Lane and Church Street was reconstructed in 1995 to include two 12 foot travel lanes, two 5 foot bike lanes, two 8 foot parking lanes, curbs, gutters, and two 5 foot sidewalks. From Church Street to the west City Limits the Cove Hwy 237 provides two 14 foot travel lanes and fog lines.

Recommendations: No change.

2. French St, Hill St, and 2nd St (County Road #65)

French Street, Hill Street, and 2nd Street together form a major collector route in Cove and in Union County. The road has a 60 foot right-of-way and a 28 paved surface including two 14 travel lanes, and no shoulders or fog lines. Second Street becomes Mill Creek Lane in the unincorporated County, which provides access to the Wallowa-Whitman National Forest and to the nearby Eagle Cap Wilderness Area in the Wallow Mountains. Poor sight distances at several sharp corners create hazards for all users.

From Main Street to 1st Street

From Main Street to 1st Street the road serves many users including commercial farm and forest trucks and children on foot and bikes going to and from the Cove Hot Springs Swimming Pool.

Recommendations: Widen the pavement from 28 feet to 38 feet to maintain two 14 foot travel lanes to accommodate

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commercial farm and forest truck traffic, and provide two 5 foot bike lanes. Install one 5 foot sidewalk, from Main Street to 1st Street, on the westerly side of the street separated from traffic by an 8 foot (4 foot min.) planting strip or drainage swale.

Project	From-To	Miles	Cost	Priority
Widen pavement +10 ft asphalt for bike lanes.	Main-1st	.2	\$15,768	high
1x5 ft sidewalk	Main-1st	.2	\$23,400	high

From 1st Street to east City Limits

Recommendations: Maintain 14 foot travel lanes on Hill Street and 2nd Street to accommodate commercial farm and forest trucks and add two 4 foot paved shoulder bikeways. This section of road has 90 degree turns and poor sight distances. Shoulder bikeways would increase safety and convenience for residential and commercial users.

Project	From-To	Miles	Cost	Priority
Widen pavement +8 ft asphalt	1st-east CL	.41	\$12,960	low

3. **Antles Lane (County Road #123)**
From Hwy 237/Jasper to Conklin Lane
 Antles Lane is an east-west minor collector for Cove which intersects State Hwy 237 at the north City Limits. Antles Lane collects traffic from the rural residential area of east Cove. The road surface is 18 to 20 feet of oil mat without shoulders. On both sides the road edge slopes steeply into deep barrow ditches. The right-of-way is 40 feet wide.

Recommendations: Widen the Antles Lane road surface from the existing variable 16-20 feet to 32 feet to allow for two 12 foot travel lanes and two 4 foot paved shoulder bikeways.

Project	From-To	Miles	Cost	Priority
Widen pavement +16 ft asphalt	Jasper-Conklin	.41	\$12,960	medium

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4. Conklin Lane (County Road #512)

From Antles Lane to Haefer Lane

Conklin Lane is the primary north-south collector in the rural residential area of east Cove. It provide access to the center of town. The road surface is 16 to 18 feet of asphalt without shoulders. On both sides the road edge slopes steeply into deep barrow ditches. The right-of-way is 40 feet wide.

Recommendations: Widen the Conklin Lane road surface from the existing variable 16-18 feet to 32 feet to provide two 12 foot travel lanes and two 4 foot paved shoulder bikeways.

Project	From-To	Miles	Cost	Priority
Widen pavement +16 ft asphalt	Antles-Haefer	.62	\$73,800	high

5. Haefer Lane (County Road #121)

From Hwy 237/Jasper to Conklin Lane

Haefer Lane extends east from Main Street to intersect Conklin Lane providing direct access to the center of town from residential areas. The road surface is 24 feet of oil mat without shoulders. The right-of-way is 60 feet wide.

Recommendations: Widen the road surface from 28 feet to 36 feet to provide two 14 foot travel lanes and two 4 foot paved shoulder bikeways.

Project	From-To	Miles	Cost	Priority
Widen pavement +8 ft asphalt	Hwy 237-Conklin	.27	\$8,640	medium

6. 1st Street

From Hill Street to Water Street

First Street is a local street that provides direct access to the Cove Hot Springs Swimming Pool from Hill Street. This one-block long road section receives substantial use by summer camp children on foot and bikes going to and from the swimming pool during summer months. The street surface is 10 feet of asphalt without shoulders. The right-of-way is 60 feet wide.

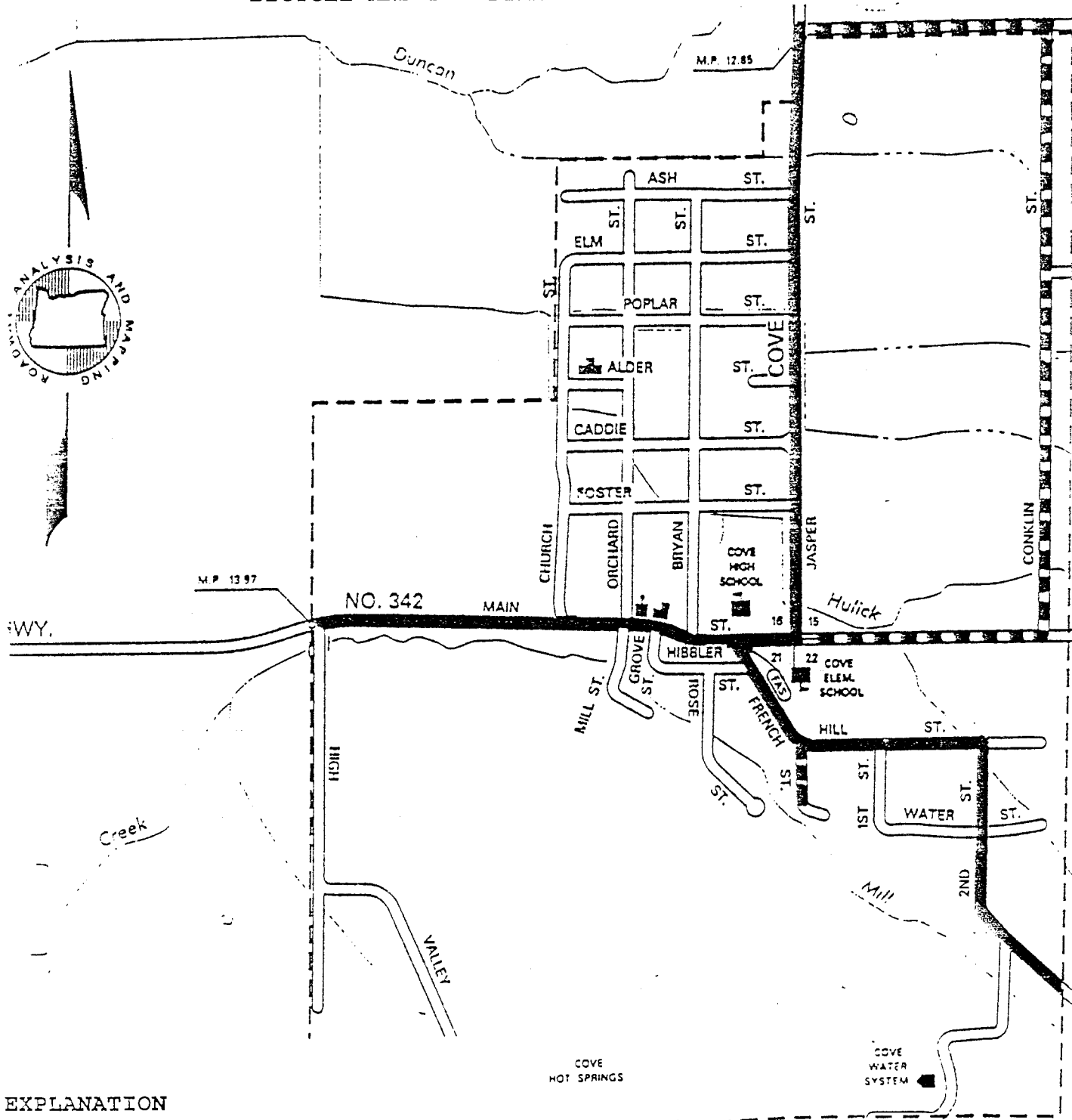
Recommendations: Widen the pavement on 1st Street from 10 to 34 feet to provide two 12 foot travel lanes and two 5 foot bikes lanes. Install one 5 foot sidewalk from Hill Street to the Cove pool on the west side of the road separated from traffic by 8-10 feet (4 foot min).

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Project	From-To	Miles	Cost	Priority
Widen pavement +24 ft asphalt for bike lanes.	Hill-Water	.076	\$14,464	high
1x5 ft sidewalk	Hill-Water	.076	\$9,000	high

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CITY OF COVE, UNION COUNTY, OREGON
ROADWAY FUNCTIONAL CLASSIFICATIONS FOR
BICYCLE AND PEDESTRIAN PLAN - 1995

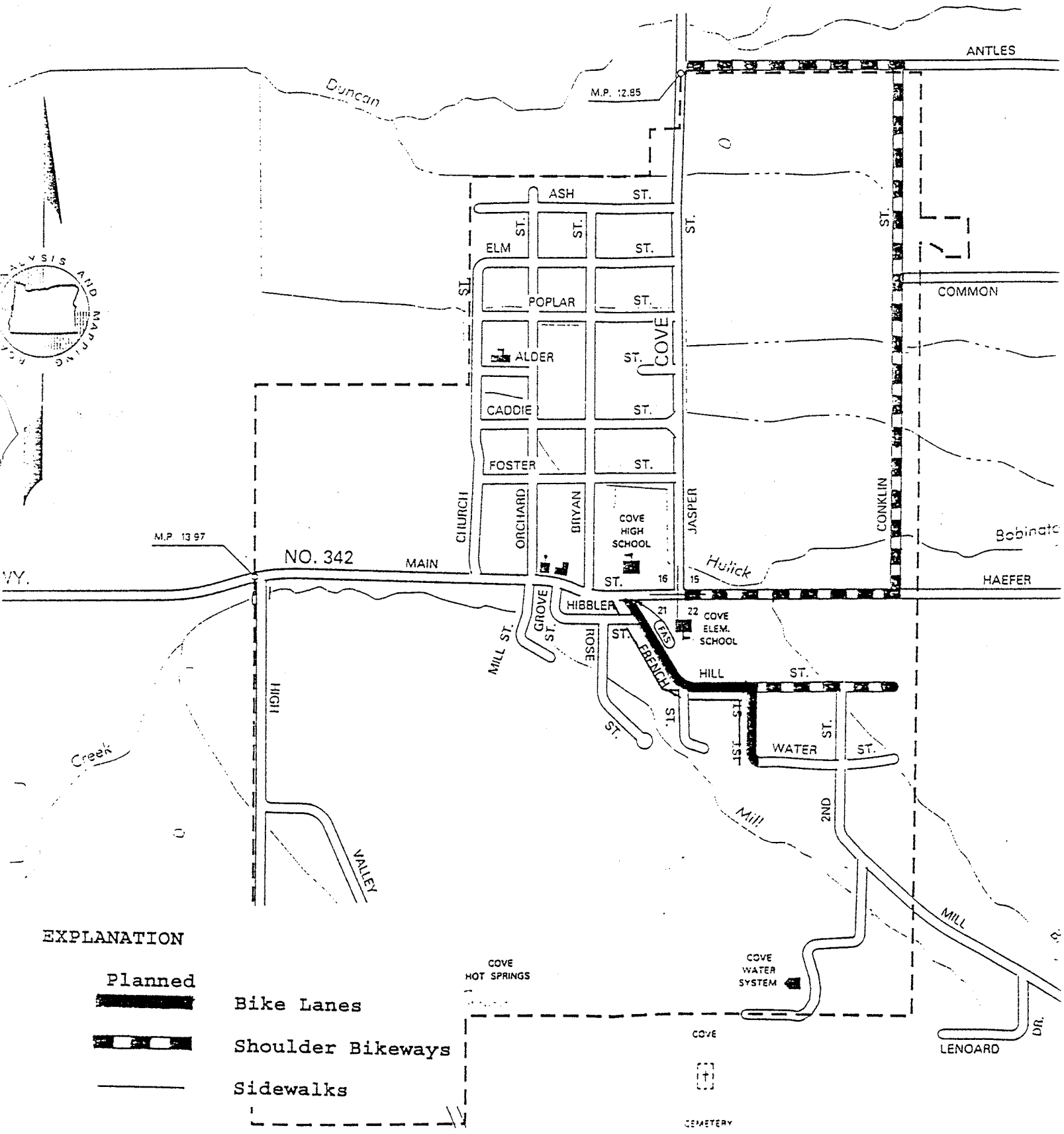


EXPLANATION



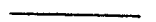
- Arterials and Major Collectors
- Minor Collectors

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CITY OF COVE, UNION COUNTY, OREGON
BICYCLE AND PEDESTRIAN PLAN MAP - 1995



EXPLANATION

-  Planned Bike Lanes
-  Shoulder Bikeways
-  Sidewalks

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Table 1: Summary of Existing Facilities and Recommendations

Road Name, Segment	Existing Geometry	Recommendations
State Scenic Hwy 237 Cove Hwy-Jasper St	Major Collector Right-of-way: 80	
Antles Ln-Foster St	Pave: 2(12t) 2(6sh)	No change.
Foster St-Main St Access to schools and city center.	2(12t) 2(6bl) 1(5sw) west side. New construction.	No change.
Cove Hwy Main Street Haefer Ln-Church St	Pave: 34 2(12t) 2(5bl) 2(5sw)	No change.
Church St-west CL Access to schools and city center.	Pave: 28 2(14) fog line. New construction.	No change.
Antles Lane (County Road #123)	Minor Collector Right-of-way: 40	
Jasper St-Conklin Ln Part of popular loop for walking, riding.	Length: .26 mi. Pave: 16-20 2(8t-10t)	Pave: 32 2(12t) 2(4sh)
Conklin Road (County Road #512)	Minor Collector Right-of-way: 40	Pave: 32
Antles Ln-Haefer Ln Part of popular loop for walking, riding.	Length: .62 mi. Pave: 16-18 2(8t-9t)	Pave: 32 2(12t) 2(4sh)
<p>Key: t travel lane, bl bike lane, sh shoulder bikeway, p parking, sw sidewalk, Pave pavement width.</p>		

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Table 1: Summary of Existing Facilities and Recommendations

Road Name, Segment	Existing Geometry	Recommendations
<p>French, Hill, 2nd (County Road #65)</p> <p>Main St-1st St Access to Cove pool. Bike and pedestrian use. Log and farm truck route.</p> <p>1st St-east CL and farm trucks on roadway. Poor sight distances.</p>	<p>Major Collector Right-of-way: 60</p> <p>Length: .2 mi. Pave: 28 2(14t)</p> <p>Length: .41 mi. Pave: 28 2(14t)</p>	<p>Pave: 38 2(14t) 2(5bl) 1(5sw) sidewalk separated from road on west side</p> <p>Log</p> <p>Pave: 32 2(14t) 2(4sh)</p>
<p>Haefer Lane (County Road #121)</p> <p>Jasper St-Conklin Ln</p> <p>Part of popular loop for walking, riding.</p>	<p>Minor Collector Right-of-way: 60</p> <p>Length: .27 mi. Pave: 28 2(14t)</p>	<p>Pave: 36 2(14t) 2(4sh)</p>
<p>1st Street Hill-Water</p> <p>Hill St-Water St</p> <p>Access to Cove pool, bike and pedestrian</p>	<p>Local Street Right-of-way: 60</p> <p>Length: .076 mi. Pave: 10 2(5t)</p>	<p>Pave: 34</p> <p>Pave: 34 2(12t) 2(5bl) 1(5sw) sidewalk separated from use. road on west side</p>
<p>Key: t travel lane, bl bike lane, sh shoulder bikeway, p parking, sw sidewalk, Pave pavement width.</p>		

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III. BIKEWAY AND WALKWAY PLANNING PRINCIPLES, OBJECTIVES, PLAN POLICIES AND DESIGN STANDARDS

The bikeway and walkway planning principles and design standards discussed below were derived in whole or part from the Oregon Bicycle and Pedestrian Plan, 1995 draft, which has been an invaluable aid in preparation of this plan.

A. PLANNING PRINCIPLES

1. INTRODUCTION

New national and statewide emphasis on increasing walking and bicycling as important modes of transportation require that we design and provide appropriate bicycling and pedestrian facilities that are safe, direct, convenient and attractive to users.

It is physically, financially and politically impractical to provide a new and separate bicycle and pedestrian network in developed urban areas. It is therefore necessary to reconfigure existing roads to accommodate bicycles and pedestrians.

In Oregon, a basic principle for planning bikeway and walkway networks is to build and reconfigure roads to serve all users, both motorized and non-motorized. Bicycling and walking should occur on the existing roadway system that already serves all destinations.

2. ARTERIAL AND COLLECTOR STREETS

The arterial and collector street network is important to pedestrian and bicycle circulation in urban areas because it serves the mobility and access needs of the entire community. Arterial streets carry mostly through traffic. Collector streets carry traffic to and from local streets and arterials. Arterials and collectors provide direct, continuous and convenient access to most destinations. However, problems need to be overcome before they can be effectively used. Many arterial and collector streets have very high traffic volumes and speeds that discourage people who might want to walk or bike. Local streets are quieter, but are often not as direct or convenient.

Arterial and collector streets can be modified to accommodate bicycles and pedestrians when they are newly built or reconstructed, or by renovating them with bikeways and walkways.

In developed urban areas there is often little opportunity to add bicycle and pedestrian facilities by widening roadways because right-of-ways are utilized. Therefore, it will often be necessary to rededicate existing roadway space from automobile to bicycle and pedestrian use. This can help reduce traffic speeds

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and make the streets more attractive safe and pleasant for all users.

3. RURAL AND URBAN BICYCLE AND PEDESTRIAN FACILITIES

Union County's road network contains urban and rural areas with both paved and gravel semi-rural roads as well as city streets with and without curbs and sidewalks. The principles used to design bike and pedestrian facilities for urban and rural areas are summarized below.

a. Rural Areas

Rural areas include the unincorporated portion of the county. For small incorporated rural cities with low population densities rural standards may suffice for existing levels of urban development. However, as urban development increases, urban standards should be used.

Bikeways

On most rural county roads shoulder bikeways are appropriate. In general the standard shoulder widths recommended by ODOT for rural highways are adequate for bicycle travel. These standards take into account traffic volumes, traffic speeds, and other traffic operation considerations.

Walkways

In small rural cities with low population density 6 foot wide roadway shoulders may be used as interim pedestrian facilities. On rural county roads or state highways where residential and commercial uses abut the road, sidewalks may be needed. In a rural community, sidewalks or streets without curbs and gutters, on one or both sides of the street, will provide adequate pedestrian facilities and preserve the rural residential character of the street better than paving 6 foot shoulders.

b. Urban Areas

In urban areas the type of bicycle and pedestrian facilities is determined by the functional classification of the roadway.

Bikeways

Arterials and Major Collectors

On arterial and collector streets the appropriate facilities for bicycles are bike lanes. Bike lanes help define the road space, provide bicyclists a path free of obstructions, increase the comfort and confidence level of bicyclists riding in traffic, and signal to motorists that bicyclists have a right to the road.

Where it is not physically possible to provide bike lanes due to physical constraints such as existing buildings or environmentally sensitive areas, a 14 foot wide outside lane may be substituted. A 14 foot wide lane allows a motor

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vehicle to pass a bicycle without leaving the travel lane. The bike lane should resume where the constraint ends.

Where bike lanes cannot be provided, a safer bike and pedestrian environment can be achieved by reducing traffic speeds to 25 MPH or less using traffic calming techniques.

Minor Collectors and Local Streets

The appropriate facilities for bikes on minor collectors and local streets are shared roadways, because the low traffic speeds and volumes allow bicycles and automobiles to safely share the road.

Bike lanes are appropriate on minor collectors if traffic speed is above 25 MPH or traffic ADT is over 3000. Bike lanes on minor collectors are also appropriate to connect existing bike lanes or to extend bike lanes to destination points that generate high bicycle use, such as schools, parks and multi-family residential uses.

Walkways

Sidewalks are the appropriate pedestrian facilities in urban areas and should be provided on all urban streets. They provide a hard all-weather surface, physically separated from motor vehicle traffic as required by ADA regulations. Planting strips separate pedestrians from traffic and increase user comfort and safety.

Arterials and Major Collectors

Sidewalks should be provided on both sides of arterial and major collector streets in urban areas. In developing areas at the urban fringe or in small rural cities a paved 6 foot shoulder for shared pedestrian and bicycle use may be used as an interim pedestrian facility. This notion is based on rural standards. As urban development proceeds sidewalks should be provided.

Minor Collectors and Local Streets

Sidewalks should be provided continuous on one or both sides of all new minor collector and local streets. Often it isn't possible to install sidewalks in neighborhoods which were developed without them. On minor collector and local streets which do not have sidewalks, and have very low traffic volumes and speeds, it may be appropriate for pedestrians to share the road with vehicles. When pedestrians must share the road, a safer pedestrian environment can be achieved by reducing traffic speeds to 25 MPH or less using traffic calming techniques.

4. AASHTO GUIDELINES

To establish design practices and standards for bicycle facilities the Oregon Department of Transportation adopted the

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American Association of State Highway and Transportation Officials' (AASHTO) manual "Guide for the Development of Bicycle Facilities 1991," with minor changes and supplements. The guide is available from the American Association of State Highway and Transportation Officials, 444 N. Capitol Street, N.W., Suite 225, Washington, D.C. 20001.

Local bikeway projects funded by ODOT grants must conform to the AASHTO guidelines as supplemented in the Oregon Bicycle and Pedestrian Plan. The Oregon Bicycle and Pedestrian Plan is available from ODOT's Bicycle and Pedestrian Program, 210 Transportation Building, Salem, OR 97310.

All traffic control devices must conform to the national "Manual on Uniform Traffic Control Devices" (MUTCD) as supplemented by the Oregon Traffic Control Devices Committee.

5. TRANSPORTATION PLANNING RULE, AND THE OREGON BICYCLE AND PEDESTRIAN PLAN

The Transportation Planning Rule (OAR 660 Chapter 12) requires local bicycle and pedestrian plans to comply with the Oregon Transportation Plan (OTP). The Oregon Bicycle and Pedestrian Plan is a refinement of the OTP that sets statewide standards for the design, construction, operation, and maintenance of safe and attractive bicycle and pedestrian facilities. The City of La Grande Bicycle and Pedestrian Plan is guided by the Oregon Bicycle and Pedestrian Plan and adheres to the statewide standards.

B. OBJECTIVES AND LOCAL PLAN POLICIES

The goal of this Plan is to integrate a county-wide network of safe, convenient and attractive bicycle and pedestrian facilities that will link state, county and city systems and enable people in urban and rural residential areas to access any destination within 5 miles of their homes by bike or foot.

The plan policies identify general guidance for future bicycle and pedestrian facilities. They are developed to implement specific Oregon Transportation Planning Rule requirements.

Land use plan policies and planning standards are implemented by land use regulation code provisions, i.e. zoning, partition and subdivision ordinances; which are specific, usually establishing specific standards for future development.

The plan policies, planning standards and code provisions are an assimilation of local experience and other local references -- i.e. Transportation Rule Implementation Project - City of Eugene, October 1992 and Recommendations for Pedestrian, Bicycle and Transit Friendly Development Ordinances - APA, February 1993 Draft.

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The following Objectives and Plan Policies will be incorporated into the land use plan during implementation. These provisions are also intended to be used as a model for other jurisdictions when they are addressing federal and state bicycle and pedestrian transportation planning requirements.

Objective 1

Integrate bicycle and pedestrian planning into all transportation planning, design, construction and maintenance activities of ODOT, Union County and the eight incorporated cities.

Plan Policies

. Bicycle and pedestrian routes along road and street networks are preferred over separate pathways or accessways to provide safe, direct and convenient facilities.

. Separate bicycle and pedestrian pathways and accessways are reserved for situations where bicycle and pedestrian access would be enhanced and where street connections do not exist or are inappropriate.

. New residential streets will connect with existing street networks in order to provide more direct and convenient routes for automobiles, pedestrian and bicycle travel. Cul-de-sacs will be discouraged except where necessitated by environmental or existing development limitations.

Plan policies are adopted to satisfy the bicycle and pedestrian elements of the TPR 12.

Implementing ordinances, codes and standards are adopted to carry out the Plan Policies.

A Bicycle Coordinator and perpetual Bicycle Advisory Committee will coordinate the efforts of planning, public works, enforcement, and promotional activities as described in this Plan, and will be responsible for monitoring the continuing achievements of the Plan.

Develop dependable funding sources and actively seek additional sources.

Objective 2

Provide and maintain a network of safe and convenient pedestrian and bicycle access within and from new subdivisions, planned developments, shopping centers and industrial parks to nearby residential areas, and neighborhood activity centers, such as schools, parks and shopping.

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Plan Policies

Provide bicycle facilities along all arterial and major collectors and sidewalks along all arterials and collector streets in urban areas.

Improve access and mobility for commuter and recreational bicyclists and foot travelers of all ages by removing hazards or barriers and minimizing travel distances.

Designate and develop bikeways and sidewalks connecting neighborhoods, schools, commercial, industrial and recreation centers.

Provide internal pedestrian circulation in new office parks, and commercial developments by clustering buildings, and constructing sidewalks.

Provide bicycle parking facilities as part of new multifamily residential developments of four units or more, new retail, office, and institutional developments.

Provide convenient and secure parking and commuter facilities at destinations.

Establish expenditure priorities for the minimum 1 percent State Highway Funds set aside by ORS 366.514 to construct, maintain and operate bicycle and pedestrian facilities.

Adopt design standards and policies that promote safe, convenient and pleasurable bicycle and pedestrian facilities to encourage bicycling and walking.

Provide uniform signing and marking of all bike and pedestrian facilities.

Identify and adopt management practices such as regular sweeping, patching and maintenance to preserve bikeways and sidewalks in a generally smooth, clean and safe condition.

Objective 3

Promote bicycling and walking as safe and convenient forms of transportation for all ages and all trip types by promoting bicycle and pedestrian safety education and enforcement programs.

Plan Policies

Build bicycle safety education programs to improve bicycle skills, observance of traffic laws, and promote overall safety for bicyclists and pedestrians of all ages.

Monitor and analyze bicycle accident data to formulate ways to improve bicycle safety.

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Plan Policies cont...

Moderate hazards due to high traffic speeds and volumes to encourage bike and foot travel for short trips.

Objective 4

Increase bicycling and walking in urban areas to encourage 10% of trips by bike or foot.

Plan Policies

Collect and analyze data annually to increase bicycle usage and to improve the system's safety and efficiency.

Establish benchmarks to measure progress.

C. BIKEWAY DESIGN STANDARDS

1. INTRODUCTION

Bicycles are legally classified as vehicles. They can and will be ridden, and should be expected on most public roadways in Oregon. New roadways in La Grande therefore should be designed and constructed to accommodate both automobile and bicycle traffic. Road improvements for automobiles should be planned to enhance bicycle travel whenever possible, and should not create barriers and hazards for bike travel.

La Grande's urban and rural areas contain both paved and gravel semi-rural roads as well as city streets with and without curbs and sidewalks. The following standards recognize this variety and address both new construction and improvements on existing roadways. The design standards are meant to give bicyclists space on the roadway where they can travel with convenience and safety; to allow bicyclists to emulate automobile drivers and blend into the traffic flow. Attention is given to minimizing conflicts with motorists and pedestrians. In all cases, it is important that bikeways be incorporated into other road work to both minimize cost and to create an integrated system where all modes - motorized and non-motorized - are considered.

2. TYPES OF BICYCLE FACILITIES

There are four types of bicycle facilities: 1. shared roadways, 2. wide outside lane, 3. shoulder bikeway, and 4. bike lanes. Each facility design is discussed below.

a. Shared Roadway

On a shared roadway bicycles and automobiles share the same travel lanes. An automobile driver usually crosses over into the adjacent travel lane to pass a bicycle.

Design Criteria

There are no specific bicycle standards or treatments for shared roadways; they are simply the roads as constructed

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for automobiles. Shared roadways are appropriate on urban and rural minor collectors and local roads which have low traffic volumes and speeds.

Shared roadways are suitable in urban areas on streets with speed limits of 25 MPH or less, or traffic volumes of 3,000 ADT or less. In rural areas, the suitability of a shared roadway decreases as traffic speeds increase, especially on roads with poor sight distance.

Oregon state law establishes 25 MPH as the speed limit for residential streets and 20 MPH in business districts. However, typical residential and commercial streets allow 35-45 MPH speeds and volumes which are higher than their functional classification would normally allow. Traffic speeds and volumes may be reduced using relatively low cost "traffic calming" techniques such as curb extensions and diagonal diverters.

b. Wide Outside Lanes

A wide outside lane may be used where shoulder bikeways or bike lanes are warranted but cannot be provided due to physical constraints.

Design Criteria

A wide outside lane should be 14 feet wide but no more than 16 feet wide. A 14 foot wide outside lane allows an average size automobile to pass a bicycle without crossing over into the adjacent travel lane. Lane widths greater than 14 feet encourage the undesirable operation of two automobiles in one lane. In this situation, it is best to stripe a bike lane or shoulder bikeway. The pavement width is normally measured from curb face to lane stripe with adjustments made for drainage grates, parking, and longitudinal ridges between pavement and gutter sections.

c. Shoulder Bikeway

Smooth paved roadway shoulders on rural roadways provide a suitable area for bicycles, safe from conflicts with faster moving traffic. The majority of rural bicycle travel in unincorporated Union County will be accommodated on shared roadways or roadway shoulders.

Design Criteria

In rural areas the suitability of a shared roadway decreases as traffic speeds increase, especially on roads with poor sight distance. Where bicycle use or demand is expected to be high, roads should be widened to include shoulder bikeways or bike lanes. If traffic speeds are greater than 45 MPH and the ADT above 2000, bike lanes are recommended.

Paved shoulders are provided on rural roadways for a variety of safety, operational, and maintenance reasons, including emergency stopping, improved sight distance, structural

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support of the paved surface, and other maintenance and operation considerations. In general, the shoulder widths recommended for rural roadways and highways in the ODOT Highway Design Manual will serve bicycles well.

The standard width for shoulder bikeways is 6 feet. This provides ample width for bicycles, allows bicyclists to ride far enough from the edge of the pavement to avoid debris, and far enough from passing vehicles to avoid conflicts. Where there are physical width limitations, a minimum 4 foot shoulder may be adequate. Shoulders against a curb face must have a 5 foot minimum width, measured from lane stripe to curb face, the face of a guard rail, or other roadside barrier. On climbing lanes, a 6 foot shoulder (5 foot minimum) is needed to give uphill bicyclists the additional space needed to maneuver.

Whenever a highway or roadway is constructed, widened or overlain, all gravel driveways should be paved back a minimum 15 feet to prevent loose gravel from tracking onto the roadway shoulders.

ODOT's Standard Shoulder Widths for Rural Highways

Traffic Volume	Shoulder Widths		
	Rural Arterial	Collector	Rural Local
ADT under 250	4 ft	2 ft	2 ft
ADT 250-400	4 ft	2 ft	2 ft
ADT 400-DHV *100	6 ft	4 ft	4 ft
DHV 100-200	6 ft	6 ft	6 ft
DHV 200-400	8 ft	8 ft	6 ft
DHV over 400	8 ft	8 ft	8 ft

*DHV (Design Volume) is the expected traffic volume in the peak design hour (usually commuter times). DHV can vary from 13% to 25% of ADT. Source: Oregon Bicycle and Pedestrian Plan, 1995 draft.

Many paved county roads are 24 feet wide or less without a fog line. If present, fog lines are striped 10 or 11 feet from the center line. The remaining 2 feet of pavement should not be considered a shoulder bikeway (minimum width is 4 feet for a shoulder bikeway). These are considered shared roadways because most bicyclists will ride on or near the fog line.

Where existing gravel shoulders have sufficient width and base to support shoulder bikeways, minor excavation and the addition of 3 to 4 inch asphalt mat is often all that is required to provide shoulder bikeways. It is better to construct shoulder widening projects in conjunction with pavement overlays for the following reasons:

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- . The top lift of asphalt will add structural strength.
- . The final lift will provide a smooth, seamless joint.
- . The overall cost will generally be less per ton of material because labor and equipment can be used more efficiently.
- . Traffic will be disrupted only once for both operations (widen the shoulder and overlay the pavement).

Pavement Design

When shoulder bikeways are constructed as part of a reconstruction project the pavement structural design should be the same as for the roadway. On shoulder widening projects that primarily benefit bicycles, consider building to a lesser thickness to reduce costs. Two to three inches of aggregate and two to four inches of asphalt over the existing roadway shoulders may be adequate if the following conditions are met:

- . There are no planned widening projects for the road section in the foreseeable future.
- . The existing shoulder area and roadbed are stable and there is adequate drainage or adequate drainage can be provided without major excavation and grading work.
- . The existing travel lanes have adequate width and are in stable condition.
- . The horizontal curvature is not excessive, so that the wheels of large vehicles do not track on the shoulder area. On roads that have generally good horizontal alignment, it may be feasible to build only the inside curves to full depth.
- . The existing and projected ADT and heavy truck traffic is not considered excessive (e.g., under 10%).

The thickness of base material and pavement will depend upon local conditions. Engineering judgment should be used. On short sections where travel lanes must be reconstructed or widened, the road pavement should be constructed to normal full-depth base design standards.

When paved shoulder bikeways are added to an existing roadway to accommodate bicycles where no overlay project is scheduled, a saw-cut one foot inside the existing edge of the pavement allows a good tight joint, eliminates a ragged joint at the edge of the existing pavement.

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d. Bike Lanes

A bike lane is a well marked travel lane on the roadway designated for preferential use by bicycles. Bike lanes are appropriate on urban arterials and major collectors. They may also be established on rural roads where significant bicycle use is expected.

Design Criteria

Bike lanes are one-way facilities that carry bicycle traffic in the same direction as adjacent motor vehicle traffic.

The standard bike lane width is 6 feet, wide enough for a bicyclist to ride far enough from the curb to avoid debris and drainage grates and far enough from adjacent traffic to avoid conflicts. Bicyclists riding three or four feet from the curb are more visible to passing traffic than bicyclists who hug the curb.

The minimum width for a bike lane is 4 feet on open shoulders, or 5 feet from the face of a curb, guard rail or parked cars. Bike lanes wider than 6 feet may be mistaken for a motor vehicle travel or parking lane.

A bike lane must be marked with an 8-inch wide lane stripe and pavement stencils to mark it for preferential use by bicycles.

If parking is permitted the bike lane should always be placed between the parked cars and the travel lane and be a minimum 5 feet wide.

Bike lanes on one-way streets should be on the right side of the roadway except where a bike lane on the left will decrease the number of conflicts (e.g., conflicts with right-turn lanes, driveway entrances). Bike lanes should only be located on the left side of one-way street if it is possible to safely reenter the traffic flow at the ends of the section.

A contra-flow bike lane on a one-way street is permitted in the December 1994, draft Oregon Bike and Pedestrian Plan, page 112, in some situations including the following:

1. The contra-flow bike lane is short and provides direct access to a high use destination.
2. Bicyclists can safely and conveniently reenter the traffic stream at either end of the section.
3. Bicyclists already use the street.
4. There is sufficient street width to accommodate full-dimension bike lanes.

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5. The contra-flow bike lane would be placed on the right hand side of the street (to drivers' left) and must be separated from the oncoming traffic by a double yellow line. This indicates that the bicyclists are riding on the street legally, in a dedicated travel lane.

3. ADDITIONAL BIKEWAY DESIGN CONSIDERATIONS

a. Signalized Intersections

At controlled intersections along roadways designated for bicycles, the traffic signal timing and detection devices should be responsive to bicycles. Bicyclists can usually cross an intersection in the same time allowed for automobiles. On multi-lane streets it is important to use longer signal intervals.

b. Drainage Grates

Drainage grate inlets and utility covers pose potential problems for bicycles. When new roadways are designed and constructed all grates and covers should be kept out of the bikeway. It is important that grates and utility covers be installed flush with the roadway surface, even after the road is resurfaced.

Existing parallel bar drainage grates with bar spacing wide enough to catch bicycle wheels can cause serious damage to a bicycle wheel or frame and/or injure the rider. The grates should be replaced with bicycle-safe and hydraulically efficient ones. As a short-term safety measure steel cross bars should be welded perpendicular to the parallel bars. Simply flagging parallel grates with pavement markings doesn't make them safe for bikes.

c. Railroad Crossings

Railroad highway grade crossings should be at right angles to the rails. The greater the crossing deviates from 90 degrees, the greater the chances of a bicycle front wheel being caught in the flangeway causing the rider to fall. It is also important for the roadway approach to be the same elevation as the rails. The angles, elevations, materials, and signs used for railroad crossings should conform to AASHTO standards.

d. Community Path System

A system of community trails and paths can contribute to the bikeway and walkway network if carefully designed and developed. Refer to the The Oregon Bicycle and Pedestrian Plan for standards and guidelines.

e. Touring Routes

Bicycle touring may be an important regional recreation activity. The cities, county and chambers of commerce are encouraged to work together to develop guides, maps, and brochures to promote recreational bicycling opportunities.

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D. WALKWAY DESIGN STANDARDS

1. TYPES OF WALKWAY FACILITIES

Walkways, usually sidewalks, are designed and constructed to provide safe, convenient, and attractive places for people to walk separated from traffic. Walkways include sidewalks, paths, and roadway shoulders.

a. Sidewalks

In urban areas sidewalks are recommended for pedestrians. Curbs and gutters help drain the road and separate pedestrians from traffic. However, curb and gutter can add substantially to the cost of providing sidewalks in areas without storm drain systems. There are many situations in Eastern Oregon where sidewalks are needed but the cost of curb, gutter, and drainage cannot be justified, or where curbs don't fit the rural character of the community.

Design Criteria

Ideally a sidewalk should be 6 feet wide, but in most situations a 5 foot sidewalk is adequate. This width allows two people to walk side by side, or to pass a third person without leaving the sidewalk surface. Sidewalk width does not include the curb.

The useable 5 foot sidewalk space must be unobstructed from street furniture, trees, planters, mail boxes, light poles, signs, or other obstructions.

A sidewalk directly adjacent a travel lane should be 6 feet wide. In commercial areas and other areas with high foot traffic an 8 foot sidewalk is recommended. It is best to buffer pedestrians from traffic by placing a planting strip, bike lane, or parking lane adjacent the sidewalk.

Vertical clearance under signs, trees, and other vertical obstructions should be 8 feet, minimum 7 feet.

Sidewalks on bridges should match the width of the approach sidewalk, but should not be less than 5 feet. Raised sidewalks on bridges with design speeds greater than 40 MPH require a fence or other vertical barrier at curb line.

In small cities with open drainage systems, sidewalks without curb and gutter may be installed separated from traffic behind drainage swales or drainage ditches. These sidewalks should be built to the same standard as curbed sidewalks.

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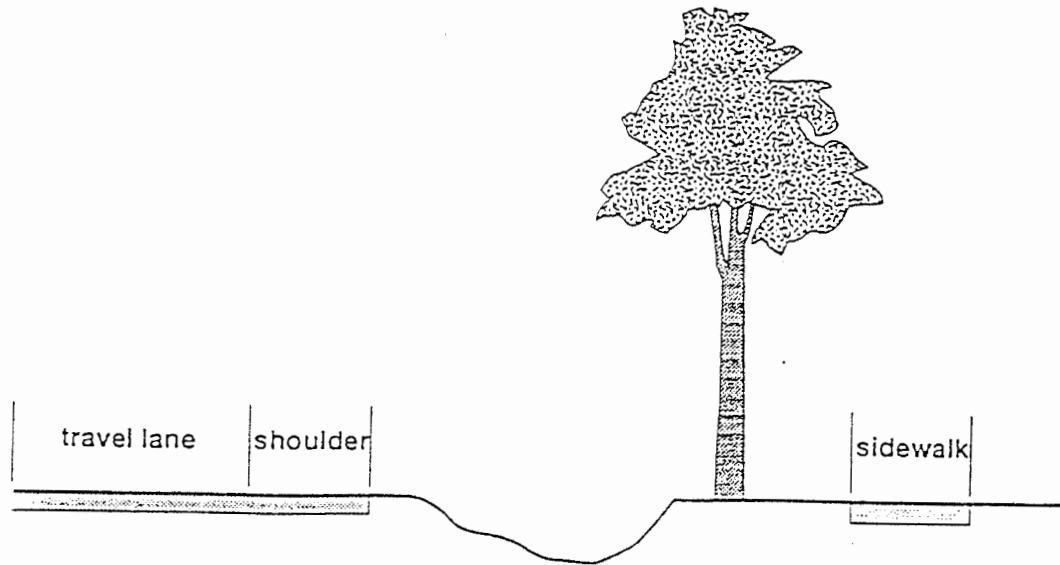


Figure 1: Sidewalk placed behind drainage ditch
Source: Oregon Bicycle and Pedestrian Plan, 1995 draft.

Portland Cement Concrete (PCC) is the best sidewalk material. It provides a smooth durable all weather surface that is easy to grade and repair. Asphaltic Concrete (AC) may be used, but it is susceptible to plant root damage, requires more maintenance, and is less durable than PCC.

b. Paths

In developing urban areas within an Urban Growth Boundary a path along rural roads may be adequate. For example, a path to a rural school may serve pedestrians where sidewalks, curbs, and gutters are not warranted.

Design Criteria

Paths can be either paved or unpaved. In general the standard width of an unpaved path is the same as for sidewalks. As a rule, an unpaved path should not be constructed where a sidewalk is more appropriate. The unpaved surface must be packed hard enough for wheelchair use. Recycled pavement grindings, if available, are usually inexpensive and easy to grade and pack. Paved paths are surfaced with the same materials used for sidewalks.

c. Roadway Shoulders

Along sections of rural roads where few residences or businesses abut the roadway, the roadway shoulder widths recommended by ODOT may be adequate to accommodate pedestrians.

Design Criteria

Paved shoulders are recommended as pedestrian facilities primarily on quiet sections of rural roads, not as urban pedestrian facilities. However, in low density rural

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communities a 6 foot paved shoulder may serve pedestrian needs in the interim. Note that roadway shoulders do not satisfy ADA requirement for pedestrian facilities which are physically separated from motor vehicle traffic. On rural county roads or state highways where residential and commercial uses abut the road, sidewalks may be needed. Sidewalks without curb and gutter, provided on one or both sides of the road will provide adequate pedestrian facilities and preserve the rural residential character of the community better than paving 6 foot shoulders.

E. ADDITIONAL PLANNING CONSIDERATIONS

1. AMERICANS WITH DISABILITIES ACT (ADA)

The American with Disabilities Act (ADA) requires that transportation facilities accommodate disabled persons. For most practical purposes wheelchair users and vision-impaired people are the pedestrian facility user groups whose needs require special attention. ADA requires that pedestrian facilities be physically separated from motor vehicle traffic.

Sidewalk standards used by the jurisdictions in Union County are based on ODOT's standards and meet or exceed minimum ADA requirements.

a. Width

ADA requires a minimum 3 foot wide sidewalk; ODOT's standard 6 foot wide sidewalk exceeds this requirement.

b. Grade

ADA requires that facilities have 5% or less grade. A maximum grade of 12:1 (8.33%) is acceptable for a rise not more than 2.5 feet if a level landing at least five feet long is provided at each end. It would be better to extend the length of the rise to achieve a flatter grade of 5%.

Often when roads are built in hilly terrain, and the adjacent residential and commercial land uses warrant sidewalks, they will probably have to be built to the grade of the adjacent road.

c. Crossings

The allowable cross-slope for sidewalks and paths is 2%. At driveway approaches and curb cuts a minimum 3 foot wide area should be maintained at 2%.

d. Facilities for the Visually Impaired

Pedestrian facilities should be designed so visually impaired people can track through intersections. It is important to install crosswalks so they form a 90 degree angle with the curb, because visually impaired pedestrians are conditioned to depart the curb at 90 degrees and go straight to the opposite side. If angles other than 90 degrees are used, then the pavement marking material should be detectable to the visually impaired using the

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long cane method. Most recommended practices for sidewalk construction satisfy these requirements.

2. PLANTING STRIPS

Planting strips separate pedestrians on sidewalks from noisy fast moving traffic, adding to the safety, convenience and enjoyment of walking. A planting strip should be at least 4 feet wide. Wider planting strips allow room for landscaping, street furniture, utilities, and provide a place to store snow removal during winter. Planting strips help improve wheelchair access because sidewalks can be kept at a constant 2% slope (or less) if driveway slopes are built into the planting strip.

3. PEDESTRIAN STREET CROSSINGS

A system of sidewalks is not complete without safe and convenient places to cross the street. Streets can become barriers to pedestrians without safe, convenient crossings to reduce the risk of automobile-pedestrian accidents.

a. Illumination

Many walkway crossings are not well lit. At many locations, improved lighting can increase pedestrian crossing safety at night.

b. Signage

Pedestrian crossing signs, such as advance warning signs (W11-2) and pedestrian crossing signs (W11-A2), located at the crossing can benefit pedestrians. Regulatory signs at intersections reinforce the message that motorists must yield to pedestrians (ORS 17-5). These signs should only be placed at warranted locations because if too many signs are used they may be missed or ignored.

c. Crosswalks

Crosswalks are marked or unmarked areas on the street surface used by people to cross a road. Crosswalks are intended to channel pedestrian movement to designated areas and reduce pedestrian conflicts with motorists. Combined, illumination, signage, and marked crosswalks increase pedestrian safety.

d. Curb Extensions

Curb extensions can reduce the crossing distance for pedestrians on roads and should be considered at all intersections where on-street parking is allowed. On arterial and collector streets, space must be provided for existing or planned bike lanes. Mid-block curb extensions may be constructed where there are pedestrian generators on both sides of the road, i.e., schools, stores, or multiple-family dwellings where significant foot traffic translates into many street crossings. Curb extensions are illustrated in the subsection on Traffic Calming.

4. MULTI-USE PATH DESIGN STANDARDS

The Union County Bicycle and Pedestrian Plan adopts and incorporates the Oregon Bicycle and Pedestrian Plan design

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standards and practices for multi-use paths, including at-grade and separated crossings, width and clearance, typical pavement structural sections, grades, structures, railings, fences and barriers.

Multi-use paths, known as "bike paths" in the past, are separated from automobile traffic. It is important to recognize these paths will be used by bicycles, pedestrians, joggers, and skaters, and sometimes even by equestrians, and to design them for a variety of uses.

In certain situations multi-use paths can help complete the bicycle and pedestrian network by providing a shorter, more direct path to destination points than the street network allows. This includes shortcuts through parks, connecting cul-de-sacs, and grade separated freeway, railroad, stream bridge crossings. They may also be components of a community trail system.

Multi-use paths have some disadvantages that are important to note. They create security problems if they are located in isolated places; personal security can become a problem if users cannot be seen. In case of emergency, it could take longer for medical or police help to arrive.

Multi-use paths are difficult and expensive to install and maintain. They must be built to higher standards and require special maintenance.

Multi-use paths should not be placed directly adjacent to roadways because some of the bicyclists will have to ride against traffic, a dangerous and illegal situation. Although not generally encouraged, multi-use paths can be constructed parallel to roadways under specific conditions. Refer to the Oregon Bicycle and Pedestrian Plan.

5. INTERSECTION DESIGN

At intersections the various roadway users must cross paths, giving rise to conflicts and accidents. Intersections should be designed so motorists, bicyclists and pedestrians clearly understand their best trajectory across the intersection and who has right-of-way.

a. Right Angle Intersections

At right angle intersections, bike lanes should be striped to the marked crosswalks or a point where turning vehicles would normally cross them. The bike lanes should resume at the other side of the intersection.

Crosswalks, marked or unmarked, are considered an extension of sidewalks. They should be as short as possible. Wheelchair curb cuts should be placed in line with the crosswalk.

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b. Skewed Intersections

Skewed intersections pose problems for all road users and introduce the following complications for bicycles and pedestrians:

- . Bicycles and pedestrians are not as visible to motorists;
- . The crossing distance for pedestrians is increased; and
- . The best way across the intersection may not be evident.

To address these concerns, sight distances should be improved by removing obstacles. Curb extensions and pedestrian refuge islands should be provided. Bike lanes may be striped with dashes to guide bicyclists across.

c. Multiple Intersections

Multiple intersections pose problems for all road users and introduce the following complications for bicyclists and pedestrians:

- . Multiple conflict points are created as motorists arrive from several directions;
- . The visibility of bicycles and pedestrians is poor as they cross several lanes of traffic;
- . Increased distance across the intersection; and
- . At least one leg of the intersection will be skewed.

Again, to address these concerns, sight distances should be improved by removing obstacles. Curb extensions and pedestrian refuge island should be provided. Bike lanes may be striped with dashes to guide bicyclists across.

d. Right-Turn Lanes

Right-turn lanes present special problems for bicyclists and pedestrians for several reasons:

- . Right turning cars and through bicycles must cross paths;
- . The Additional lane width adds crossing distances for pedestrians; and
- . Drivers queued to turn right, may not notice pedestrians on the right, even if pedestrians have the right-of-way..

To address these concerns for bicyclists, the paths of through bicyclists and right turning drivers should merge and cross prior to the intersection for the following reasons:

- . Their paths cross and potential conflicts occur prior to the intersection;

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- . The different travel speeds allow a vehicle driver to pass a bicyclist rather than ride side-by-side; and
- . All users are encouraged to follow the rules of the road requiring through vehicles to proceed to the left of right-turning vehicles.

For pedestrian safety and convenience, the pedestrian crossing must be clearly visible to the approaching right-turning vehicles. Where needed, curb extensions and pedestrian refuges should be provided to increase visibility and decrease the total crossing distance.

F. BIKEWAY SIGNING, MARKING, AND RESTRIPING

1. INTRODUCTION

As previously mentioned, all traffic control devices must conform to the national "Manual on Uniform Traffic Control Devices" (MUTCD) as supplemented by the Oregon Traffic Control Devices Committee. It is very important that signing and marking of bikeways and walkways is uniform and consistent if the facilities are to command the respect of the public and be safe for users. To provide uniformity and continuity, all jurisdictions in Union County will adopt the statewide traffic control standards.

2. BIKEWAY SIGNING AND MARKING

Standards for bikeway signing and marking are provided in the Oregon Bicycle and Pedestrian Plan, and the MUTCD, and are summarized below.

There are three groups of signs: regulatory, warning and guidance. Regulatory signs inform bicyclists, motorists and other users of traffic laws or regulations. Warning signs inform bicyclists and other users of potential hazardous conditions such as turns and curves, intersections, stops, hills, slippery surfaces, and railroad tracks. Guidance signs direct bicyclists and other users along an established bikeway.

a. Shared Roadways and Shoulder Bikeways

Signing and Marking

Signs aren't usually required on shared roadways and shoulder bikeways. Bicyclists should be expected on all urban local streets which are mostly shared roadways. Roadway shoulders that meet ODOT standards have adequate width and surface to serve bicyclists.

On narrow rural roads heavily used by bicyclists it may be helpful to install bike warning signs (W11-1) with the rider "ON ROADWAY" or "ON BRIDGE ROADWAY." These signs should be used where there is insufficient shoulder width for a significant distance. This signing should be placed in advance of the roadway condition. If the roadway condition

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is continuous, an Additional rider "NEXT XX MILES" may be used.



Figure 2: Sign W11-1 with riders

Source: Oregon Bicycle and Pedestrian Plan, 1995 draft.

Directional signs are used when bicycles follow a route different from automobiles for reasons of safety, convenience, or because bicycle are banned from a section of roadway. The detour route should have obvious advantages over the other route.

No special markings are used on shared roadways. A normal 4 inch fog line stripe is used to mark shoulder bikeways.

b. Bike Lanes

Signing and Marking

Official marking of bike lanes on urban arterials and collectors, and on appropriate suburban and rural roadways, creates an exclusive or preferential travel lane for bicycles.

Bike lanes are differentiated from the automobile travel lane by an 8 inch white bike lane stripe, and by stenciling a bicycle symbol and directional arrows on the bike lane pavement.

If parking is allowed next to the bike lane, the parking area should be defined by parking space markings or a solid 4 inch wide stripe.

Normally, bike lanes are not striped adjacent to diagonal parking. Where there is ample roadway width and parking

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spaces are long enough for large vehicles a bike lane may be located behind angled parking. A 4 inch stripe is used to separate the bike lane from the parking.

Bicycle stencils should be placed after most intersections to alert drivers and bicyclists entering the roadway that bike lanes are designated for bicycle use. Stencils should be placed after every intersection where a parking lane is placed between the bike lane and the curb. Avoid placing stencils where automobiles frequently cross the bike lane, such as driveways, and the area immediately past intersections.

Extra stencils should be placed on long sections of roadway with no intersections. To determine the stencil spacing, multiply the travel speed (in MPH) by 40. For example, in a 35 MPH zone stencils would be placed approximately every 1400 feet. Stencils can be placed closer together if necessary.

Where parking is restricted, install "NO PARKING" signs (R7-9 and R7-9a) if problems with parking occur, or paint curbs yellow to indicate that parking is prohibited.

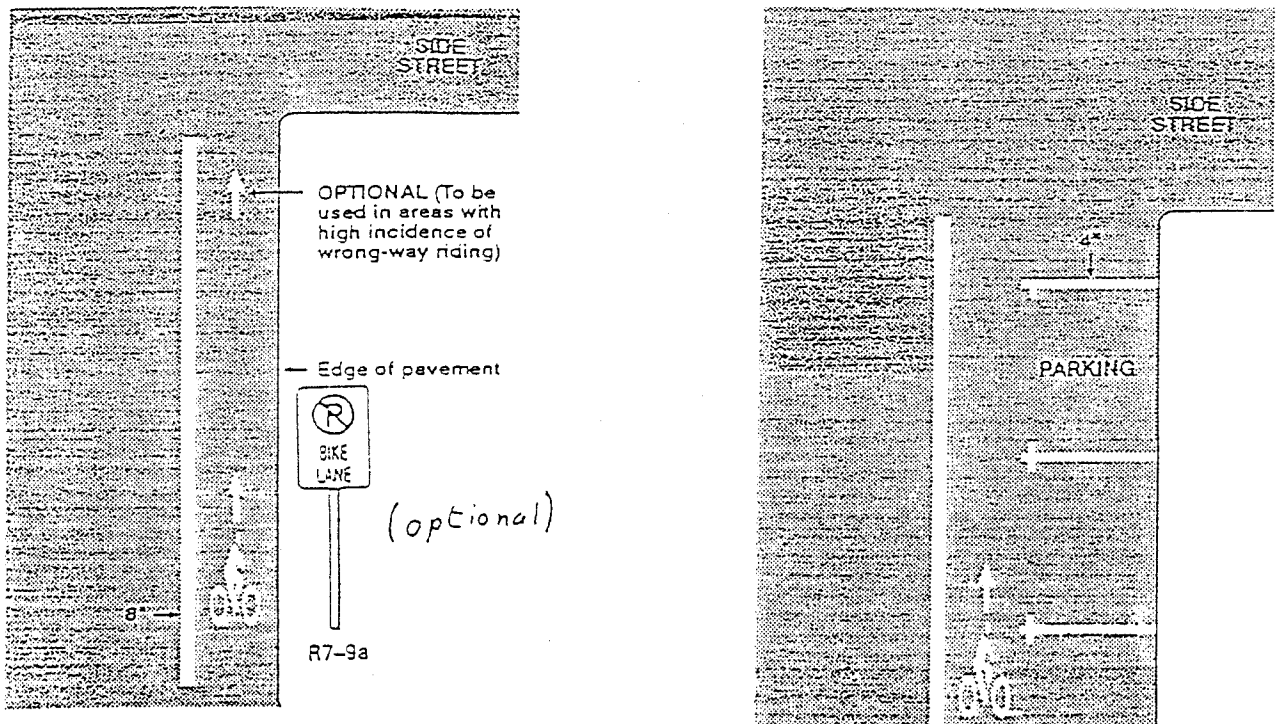


Figure 3: Typical bike lane markings
Source: Oregon Bicycle and Pedestrian Plan, 1995 draft.

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For right turn lanes at intersections, the short through bike lane segment should be striped with two 8 inch stripes to the left of the right-turn lane and connect to the proceeding bike lane with a dashed line, using 8x24 inch segments on 15 foot centers. This allows turning motorists to cross the bike lanes. A stencil must be placed at the beginning of the through bike lane. Sign R4-4, "BEGIN RIGHT TURN LANE, YIELD TO BIKES," must be placed at the beginning of the taper (see ODOT Bicycle and Pedestrian Plan for standard taper rates).

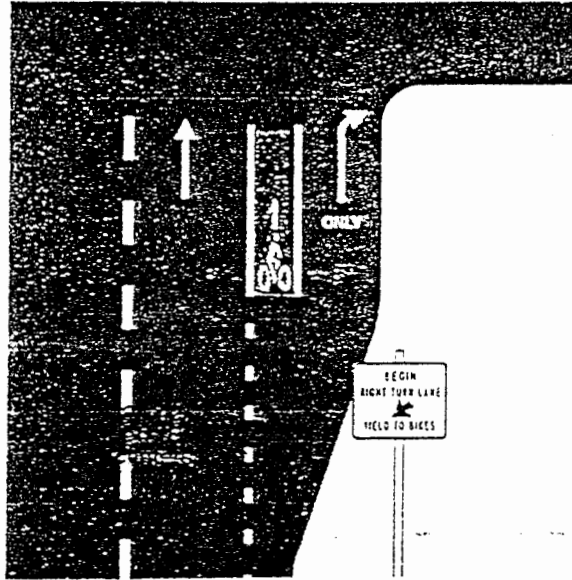


Figure 4: Right turn bike lane

Source: Oregon Bicycle and Pedestrian Plan, 1995 draft.

c. Multi-Use Paths

Signing and Striping

Multi-use paths should be signed with appropriate regulatory, warning and directional signs. Refer to the Oregon Bicycle and Pedestrian Plan.

d. Review of Existing Bikeway Signing and Marking

Many older bikeway signs are now obsolete. It is necessary to periodically inventory and review existing bikeway signs and markings to upgrade and standardized them. In most cases this results in a net decrease in the number of signs.

3. BIKE LANE RESTRIPIING GUIDELINES

As noted, many roadways in the urban areas of Union County were constructed without accommodations for bicycles. Few roads include bike lanes. However, bike lanes can be provided to remove barriers and encourage bicycle travel by retrofitting existing roadways using the following methods:

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- . Mark and sign existing shoulders as bike lanes. Bike lane standards are listed above and outlined in the Oregon Bicycle and Pedestrian Plan.
- . Physically widen the road to add bike lanes. Standards are outlined in the Oregon Bicycle and Pedestrian Plan.
- . Restripe the existing road to add bike lanes. On many roadways it is necessary to use the existing road surface to accommodate bike lanes.

Three options for modifying existing roads to accommodate bike lanes or wide outside lanes are discussed below: 1. reduce travel lane widths; 2. reduce number of travel lanes; and 3. reconsider the need for parking.

a. Reduce Travel Lane Widths

Current urban roadway width standards are 12 foot travel lanes, 14 foot center turns lanes, 6 foot bike lanes, and 8 foot parking lanes. The reduced lanes widths presented below are within ASSHTO guidelines. However, review by a traffic engineer is advised. The need for full-width travel lanes decreases with traffic speed.

- . In 25 MPH speed zones, travel lanes may be reduced to 10 or 10.5 feet;
- . In 30 to 40 MPH speed zones, 11 foot travel lanes and 12 foot center turn lanes may be adequate; and
- . In 45 MPH or greater speed zones, maintain a 12 foot outside travel lane, and if traffic volumes are high, maintain a 14 foot center turn lane.

b. Reduce Number of Travel Lanes

Many one-way couplets were originally two-way streets. In some cases traffic can be handled with one less lane.

c. Reconsider the Need for Parking

A roadways primary function is to move people and goods not to store stationary vehicles. When parking is removed safety and road capacity are generally improved. Restricting parking will require negotiations with city councils and affected businesses and residents. To stave off potential conflicts, careful research is needed before making a proposal. This includes:

- . Counting the number of businesses and residences and the availability of both on-street and off-street parking.
- . Selecting which side would be less affected by removal. It will usually be the side with fewer businesses and residences or the side with residences rather than businesses in a mixed-use neighborhood.
- . Proposing alternatives such as-

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- . Allow parking for church or school activities on adjacent lots during services or special events;
- . Businesses share parking; or
- . Construct special parking spaces for residents or businesses with no other options.

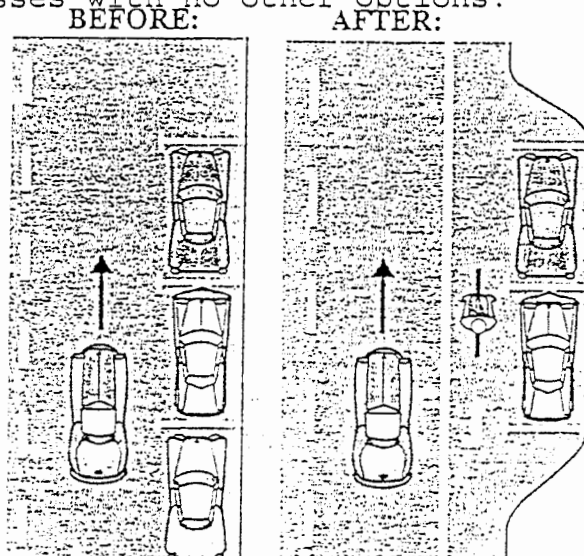


Figure 5: Providing parking when there are no reasonable alternatives. Source: Oregon Bicycle and Pedestrian Plan, 1995 draft.

Remove Parking on One Side Only

It may be necessary to remove parking from one side of the street to provide bike lanes.

Changing from Diagonal to Parallel Parking

Diagonal parking takes up an inordinate amount of roadway width relative to the number of parking spaces provided. It can be hazardous as drivers backing out often can't see oncoming traffic. Changing to parallel parking reduces parking spaces by less than one-half.

Prohibit Employee Parking

Most businesses cite the fear of losing potential customers as the main reason to retain on-street parking. Many cities have had successes with ordinances prohibiting employees parking on the street. This could help increase the number of parking spaces available for customers, even if the number of parking spaces is reduced. Note that one parking space occupied by an employee for eight hours is the equivalent of 16 customers parking for half an hour each, or 32 customers for 15 minutes.

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d. Other Considerations

Obviously not all existing roadway conditions and options for retrofitting roads for bicycles are discussed here. The examples listed provide options to combine and use in unique and creative ways to modify existing roads for bike lanes. It is important to have a traffic engineer review proposals which reduce roadway widths below the current urban standards.

Adding bike lanes can increase safety because automobile travel lanes are farther from curbs, traffic lanes are better defined, and parking is reduced. Adding bike lanes often improve sight distances and increase radii at intersections and driveways.

Restriping travel lanes relocates automobile traffic lanes which can help extend the pavement life as traffic is no longer driving in the same well worn ruts.

G. BICYCLE PARKING STANDARDS

1. INTRODUCTION

The Transportation Planning Rule requires jurisdictions to adopt bicycle parking standards. OAR 660-12-045(3)(a) requires local governments to adopt land use or subdivision regulations for urban areas and rural communities to require: (a) bicycle parking facilities as part of new multi-family residential developments of four units or more, new retail, office and institutional developments. . ."

Safe and convenient parking facilities are essential to all modes of transportation, including bicycles. Any bicycle trip includes parking. The lack of secure and convenient places to park bicycles discourages their use as transportation. The same consideration should be given to bicyclists as is given to automobile drivers who expect to find parking at their destinations.

2. TYPES OF BIKE PARKING

There are two types of bike parking, Class 1 and Class 2:

- a. Class 1, long-term parking should provide complete security and protection from weather. It is intended for situations where a bicycle is left unattended for extended periods of time. For example, apartment complexes, places of employment, schools, libraries, entertainment centers, and shopping centers.
- b. Class 2, short-term parking, provides racks that allow the bicycle frame and both wheels to be locked to the rack, but is not necessarily protected from the weather.

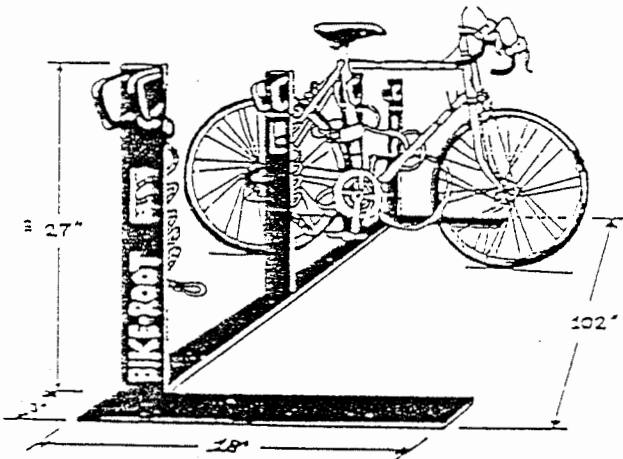
3. BICYCLE RACKS

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3. BICYCLE RACKS

Bicycle racks for required bicycle parking must be designed so that they:

- . Do not bend wheels or damage other bicycle parts;
- . Accommodate the high security U-shaped locks; and
- . Accommodate locks securing the frame and both wheels.



BIKE-ROOT

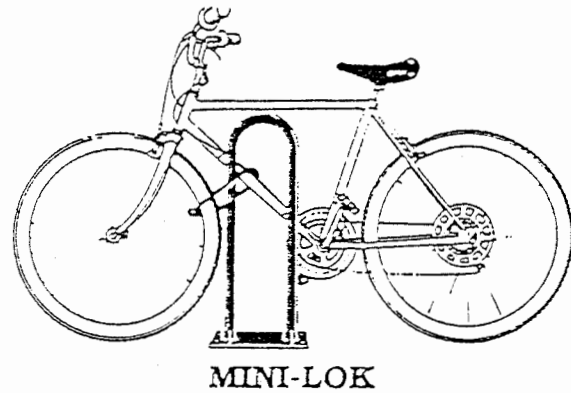


Figure 6: Preferred bike racks

Source: Oregon Bicycle and Pedestrian Plan, 1995 draft.

4. BICYCLE PARKING SPACE DIMENSIONS

The following dimensions assure that bicycle racks will be convenient to use and bicycles may be securely locked, safeguarded from theft or accidental damage:

- . Bicycle parking spaces should be at least 6 feet long and 2 feet wide and overhead clearance in covered spaces should be at least 7 feet;
- . A 5 foot aisle should be provided beside and between rows of bike racks; and
- . Bicycle racks should be securely anchored to the surface or a structure.

5. COVERED BICYCLE PARKING REQUIREMENTS

Covered long term bicycle parking is critical in inclement weather for multifamily residential uses, for employees, and other commuters. Covered parking is not so important for short utilitarian or casual trips.

The requirement for covered bike parking can be met in a number of ways including building or roof overhangs, awnings, lockers, or bicycle storage spaces within buildings. Covered parking

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should be visible for security purposes. The following requirements apply to covered bicycle parking:

- . All of the required bicycle parking for residential, school and places of employment should be covered.
- . 50% of required bicycle parking for commercial uses should be covered.
- . If motor vehicle parking is covered, required bicycle parking should also be covered.
- . If 10 or more bicycle parking spaces are required, then at least 50% of the bicycle parking spaces should be covered.

6. BICYCLE PARKING LOCATION

Required bicycle parking should be located in well lighted, secure locations within 50 feet of a main entrance to a building, but not further from the entrance than the closest automobile parking space. A highly visible location with significant pedestrian traffic reduces the risk of theft. Care must be taken to avoid conflicts with pedestrian traffic.

Short term bike parking for customers may be located up front; long term parking for employees should be covered and may be located farther from an entrance.

In Central Business Districts efforts should be made to provide bicycle parking on the street or in established parking lots rather than on sidewalks. Bike parking on sidewalks encourages riding on the sidewalks and reduces the available sidewalk width. Care must be taken to protect on-street bike parking from automobiles.

Bicycle parking may be provided within the public right-of-way in areas without building setbacks, subject to approval of local officials and provided it meets other bicycle parking requirements. Bicycle parking within a public right-of-way should allow 6 feet clearance around parked bikes to allow pedestrians to pass.

7. NUMBER OF PARKING SPACES

The required number of bicycle parking spaces should be based on easily measured criteria such as, square feet of buildings, number of residential units, number of classrooms, etc. Employment and retail centers are encouraged to voluntarily provide additional parking to satisfy the needs of their customers and employees.

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8. SIGNAGE

Bicycle parking facilities may be under used if they are not identified with appropriate signs, particularly when parking locations are not visible from the main building entrance. Signs indicating the bicycle parking location should be installed.

9. PARKING FEES

Bicycle parking should be provided free of cost to bicyclists with only a nominal fee for key deposit for locker use.

H. TRAFFIC CALMING TECHNIQUES

1. INTRODUCTION

Well designed local streets are intended to provide only low volume, low speed traffic access to neighborhoods. However, citizens often complain about excessive traffic speeds and volumes on neighborhood streets.

Traffic calming involves reducing traffic speeds and volumes on neighborhood streets. Reduced traffic speeds and flows allow bicycles and pedestrians to share the road. Streets are safer, quieter and easier for people of all ages to cross. In general, traffic calming involves designing and redesigning streets so local traffic moves at slower speeds, and through traffic is discouraged.

Several traffic calming techniques useful for reducing traffic speeds and discouraging through traffic on neighborhood streets are summarized below. There are many other techniques; design details are discussed in other publications such as, FHWA-PD-03-028, Case Study No. 19, Traffic Calming, Auto Restricted Zones and Other Traffic Management Techniques - Their Effects on Bicycling and Walking, and in the Oregon Bicycle and Pedestrian Plan, 1995 draft.

2. REDUCE TRAFFIC SPEEDS

Many traffic calming techniques used to control traffic on local streets physically constrict the roadway, while others create an illusion of less space.

a. Physical Constraints and Illusion of Less Space

- . Narrow local streets tend to reduce traffic speeds and cost less to construct and maintain.
- . Narrower travel lanes make many drivers slow down to adjust to the available lane width.
- . Speed humps (not speed bumps) cause drivers to slow to the intended speed as they proceed over the hump with minimal discomfort.

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- . Curb extensions restrict the street width and provide pedestrians a shorter crossing distance.
- . Creating vertical lines by bringing buildings closer to the roadway edge, or by adding trees, make the street appear narrower than it is.

3. DISCOURAGING THROUGH TRAFFIC ON LOCAL STREETS

Techniques that limit access to local streets for through vehicles have advantages but may require some out-of-direction travel for some residents.

- . One-way curb extensions allow motor vehicles in or out of a street, but not both. However, bicycles and pedestrians are allowed through travel in both directions.
- . Diverters and cul-de-sacs prohibit all movements into certain segment of the roadway. Cul-de-sacs restrict access and may conflict with other transportation goals, such as an open grid system, and should be used judiciously. Cul-de-sacs must provide bicycle and pedestrian access.

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IV. IMPLEMENTATION

A. COORDINATION & MAINTENANCE

The success of any plan depends on proper coordination between affected parties. To properly implement the policies and standards identified in this document coordination among affected parties will need to be on going.

Facility projects identified in this plan have been developed according to the Oregon Department of Transportation (ODOT) guidelines. ODOT should actively communicate with all local jurisdictions to inform them about State improvement projects in their areas. Opportunities may exist for local projects to be developed in conjunction with State projects. It may also be possible for jurisdictions within the La Grande-Wallowa Lake Transportation Corridor to have certain projects performed by ODOT as part of their Corridor Management Plan.

The Union County Planning Department which has supplied staff and resources for the creation of this plan shall continue to encourage the adoption of this material and to offer technical support. This Department has acted as a nucleus for this planning effort and will continue to work with local communities and State Agencies on an as needed basis.

Local incorporated jurisdictions are now responsible for implementing their own bicycle and pedestrian facility plans. Most jurisdictions are not adequately staffed, therefore County and State agencies if requested must be available to aid in this process.

Internal coordination between local Public Works and Road Departments and other offices will be essential during implementation. All departments must have a firm understanding of the location and magnitude of each improvement project. Their role must be identified prior to starting any projects.

Many identified bikeway projects can be accomplished by restriping and/or minor widening of the existing roadway surface. Integrating these projects into the jurisdictions regular improvement schedule can be an orderly and cost effective way to complete these projects. For example, roads identified to include bicycle lanes can be reconfigured during annual striping rather than receiving the traditional striping. Roadways which are scheduled to be paved or resurfaced may be widened to properly accommodate bicycle and pedestrian traffic. Communication between agencies will ensure that the projects have been identified and properly funded.

When facilities have been constructed or improvements have been completed the final step is coordinating operation and maintenance. Union County's seasonal conditions require many

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roads be sanded or gravelled in the late fall and winter and many areas are subject to high water or run off in the spring and early summer months. These conditions dictate that debris will accumulate along roadways and will inevitably end up on the bikeways or shoulders, directly in the path of the bicyclist and pedestrians. This unwanted material often includes other items such as larger rocks, broken glass and woody debris. All of these items represent a hazard to bicyclists and pedestrians.

The presence of vegetation on, in or near the bicycle or pedestrian facility will also discourage the use of these alternate forms of transportation. Tree branches which are allowed to extend into the bikeway or walkway will provide a constant nuisance. Such branches can also create conflicts as bicyclists are encouraged to swerve out into the travel lane to avoid them. Vegetation near intersections can reduce vision and create hazardous conditions for automobile users, bicyclists and pedestrians alike. The roots of trees and other types of large vegetation can also run under the facilities which will cause cracking and splitting.

The occurrence of relatively cold winters and warm summers presents a wide temperature range which is hard on road surfaces and sidewalks. Given time, these surfaces will begin to crack and/or fray which will seriously compromise the integrity of the facility.

If nothing is done to remedy these conditions bicycle and pedestrian traffic will be reduced or will be moved back into the travel lanes. Either of these situations is in direct conflict with the purpose of establishing facilities for bicycle and pedestrian mobility.

Fortunately the development of a comprehensive maintenance program in coordination with the applicable Public Works Department can ensure that the above described scenarios do not occur. Probably the simplest and most necessary component of a maintenance program would be a regular cleaning schedule. Most jurisdictions currently have some type of sweeping program. Sweeping the high use bike lanes and shoulders should be incorporated into the existing street programs. A program which identifies bike lanes and shoulders to be swept at least as frequently as streets will be essential. It may also be beneficial to plan to sweep bicycle routes after large storms which may deposit mud and other debris on the bicycle routes.

Vegetation removal and reduction can focus on a component of the maintenance program. Targeting identified problem areas for regular pruning is necessary to provide safe and efficient opportunities for bicycle and pedestrian mobility. Incorporating leaf and woody debris removal into this program would help to eliminate other potential hazards. Removing problem trees will also help to maintain the condition of the facility. Utilizing a

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root barrier (12 inch recommended) when constructing new facilities will help to supplement this effort.

The edges of paved areas are typically very susceptible to deterioration. Since this is the portion of the roadway which is utilized for bicycle and pedestrian activity it is important they are maintained in an acceptable condition. Chip sealing and oiling needs to be extended across the entire roadway so the ability to utilize shoulders for alternate sources of transportation is not jeopardized. This action will also ensure that the surface of the roadway is smooth and accommodating and that noticeable inconsistencies between travel lanes and other portions are rare. Items such as manhole covers and drainage gates should be improved so that they match the surface of the roadway with a minimum margin of error (no more than 3/4" is recommended). Where this can not be accomplished, edges should be tapered to provide a transition area in the roadway surface.

Maintenance work which is limited to one area or spot on the roadway surface may also prove to be detrimental unless precautionary measures are taken. If possible, the improvement project should extend across the entire roadway to maintain a consistent surface. If this is not possible, fill or patch material should be properly compacted and excess or loose materials should be swept away before they are able to stray onto a bikeway or shoulder and cause conflicts. Rolling is preferred to utilizing a grader blade although a grader having smooth tires will work acceptably. Maintenance projects which occur directly on the shoulder or in the bike lane should leave a smooth surface. Eliminating sharp edges is also important.

Ideally each jurisdiction would be capable of creating a position for a Bicycle/Pedestrian Coordinator. This position would oversee the development and maintenance of the program. Acting as a liaison between involved agencies the coordinator would have primary responsibility to ensure that facilities are planned, funded, constructed, maintained and used. This position would also work with the public on awareness and educational items. Lacking such an individual to work exclusively and extensively with bicycle and pedestrian elements, a Bicycle/Pedestrian Advisory Committee can play a key role in the implementation of the bicycle/pedestrian program.

The committee can identify current or potential conflicts between transportation system users due to a lack of signing, maintenance and/or high levels of traffic. Holding meetings in an open forum can solicit public input. The committee can provide support to local law enforcement officers who are required to issue tickets for violations related to bicycle use and provide the public with educational information about bicycling standards and the location of bicycle and pedestrian routes. In addition, the Bicycle/Pedestrian Advisory Committee can work to encourage recreational uses.

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Promoting riding and/or walking as recreational activities can be achieved through a number of ways. Identifying routes that are conducive to this type of activity and being able to provide information on their location and condition will encourage these activities. Working with the public to increase awareness of such opportunities will also increase recreational uses. People who ride or walk recreationally are that much more likely to utilize these same sources for transportation.

B. PRIORITIZATION

Specific bikeway and walkway projects identified in this plan have been designated a high, medium or low priority status. This determination has been made based on public input and other factors relating to levels of current use, safety and funding availability.

C. COST ESTIMATES

The project cost estimates have been calculated using a variety of information. Shoulder additions have been estimated assuming they will be built to County or City road standards and have been calculated based on the following figures:

4 foot shoulders

Estimate: \$2.80 - \$4.00/Linear Foot x 5280 Feet
\$14,784 - \$21,120/mile one side
\$27,568 - \$42,240/mile both sides

6 foot shoulders

Estimate: \$4.00 - \$6.00/Linear Foot x 5280 Feet
\$22,176 - \$31,680/mile one side
\$44,352 - \$63,360/mile both sides

These cost figures were based on a road right-of-way being able to accommodate surface widening with minimal fill.

County roads needing widening have been designated a "chaos factor" of 2 while City streets were given a "chaos factor" of 1.5. This factor is meant to take into account the reality that the majority of County roads will need substantial barrow pit filling so that they can be improved. City streets were given a lower chaos factor because less filling and compacting will be necessary to complete the widening. These factors also account for all labor, material and hopefully, all unforeseen circumstances which will be part of construction. Examples are as follows:

County Road:

Widen roadway 6 feet for a distance of 1000 feet (fill needed)
\$6.00 multiplied by 1000 feet = \$6,000.00 (one side)
\$6,000.00 multiplied by a chaos factor of 2 = \$12,000.00
\$12,000.00 is the estimated expense of the improvement for one side

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City Street:

Widen roadway 6 feet for a distance of 1000 feet (fill needed)
\$6.00 multiplied by 1000 feet = \$6,000.00 (one side)
\$6,000.00 multiplied by a chaos factor of 1.5 = \$9,000.00
\$9,000.00 is the estimated expense of the improvement for one side

These figures are estimates and can not be considered to represent the true cost of the improvement projects. This method of calculating costs has been reviewed by representatives of the Union County Road Department. The analysis concluded that although the figures may not be correct, they should by no means be under stated.

The expense of striping the road surface to delineate bicycle lanes and shoulder bikeways has been determined with more precision. Information gathered from the Oregon Department of Transportation identifies the following costs for painting lines:

4" Solid Line	- \$180.00/mile	approximately \$.034/foot
8" Solid Line	- \$384.00/mile	approximately \$.073/foot
4" Skip Line	- \$70.00/mile	

ODOT estimates striping projects at cost plus 10%. This method was used to calculate project expenses. The cost for an eight-inch solid line was utilized.

Sidewalk construction costs have also been estimated with relative precision. Information provided the City of La Grande Public Works Department identifies the City's low bid for sidewalks at \$4.50 per square foot. This figure has been used to calculate project expenses. Curb installation cost the City of La Grande \$21.00 per foot. Storm drains have been estimated at \$1400.00 per catch basin, \$2500.00 per man hole into which the catch basin drains and \$30.00 per foot for pipe (8").

D. FUNDING

Finding funding sources will be critical to the implementation of this plan. Programs such as the federal Intermodal Surface Transportation Efficiency Act (ISTEA) and the State Highway Fund are potential sources.

ISTEA was passed in 1991 to facilitate and encourage the development of transportation facilities which are not dependant on the automobile. Along with the passage of this act vast sums of money were dedicated to supporting transportation enhancements. These enhancements have been defined as follows:

" with respect to any projects or the area to be served by the project, provision of facilities for pedestrians and bicycles, acquisition of scenic easements and scenic or historic sights, scenic or historic highway programs, landscaping and other scenic

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beautification, historic preservation, rehabilitation and operation of historic transportation buildings, structures or facilities (including historic railroad facilities and canals), preservation of abandoned railway corridors (including the conservation and use thereof for pedestrian and bicycle trails), control and removal of outdoor advertising, archaeological planning and research, and mitigation of water pollution due to highway runoff."

- [23 USC 101]

To be eligible for ISTEA funding a project must meet one of three tests. A project must:

1. Have a functional relationship to an existing or planned transportation facility (a bicycle facility is a good example of this). OR
2. Be related in proximity (ex. removing illegal billboards in the viewshed of a scenic highway) OR
3. Have an impact on an existing transportation facility (ex. if constructing a system of pedestrian ways reduces auto use in an area, that is an impact related enhancement).

The State Highway Fund may also be a source of financing. ORS 366.514 states that out of the funds received by any County or City from this source reasonable amounts shall be expended as necessary to provide foot paths and bicycle paths. One percent of the State Highway Funds received in one fiscal year is the minimum amount a jurisdiction can spend on these types of facilities. However, Cities or Counties in which one percent of received highway funding is less than \$250.00 (cities) or \$1500.00 (counties) are exempt from this requirement.

Bicycle and pedestrian projects which are completed with this funding source are divided into four categories.

Category 1 describes the construction of bikeways associated with new, reconstructed or relocated highways. The cost of these types of improvements is usually quite small when compared to the cost of the overall project.

Category 2 describes projects which maintain and improve existing facilities. Examples of a category 2 project would be the replacement of old signs and the establishment of a regular maintenance and sweeping schedule.

Category 3 describes bikeway projects which occur within the State Highway right-of-way. Widening the road surface to provide bike lanes or shoulder bikeways are examples of category 3 projects. The establishment of a separated multi-use path within the right-of-way would also fall into this category.

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Category 4 is the name given to local assistance grants which jurisdictions are eligible to apply for. In this category applications can be made for construction projects with 80% state grants up to \$50,000. Bicycle plan development with 50% state grants up to \$20,000 and Bicycle map development with 50% state grants up to \$10,000.

The Oregon Community Development Block Grant Program is also a possible source of state funding for bicycle projects. The Oregon Special Works Fund is another. Education and safety programs may be partially funded by the Oregon Traffic Safety Division.

Some projects for jurisdictions such as Union County, La Grande, Imbler and Elgin may be eligible to be included in the Oregon Department of Transportation's Corridor Management Plan for the La Grande-Wallowa Lake Transportation Corridor. The intent of this management plan is to analyze all types of transportation within the corridor and to encourage alternate sources of transportation which are not dependent on the automobile. The inclusion of some of these projects into ODOT's improvement program may shift the responsibility from the affected jurisdiction.

In addition, private citizens, businesses and developers may all be persuaded to encourage the use of alternate sources of transportation and perhaps even fund the construction of facilities or donate materials and/or equipment. Abandoned railroad lines, utility easements and many other types of corridors present opportunities to establish bicycle and pedestrian facilities. Jurisdictions need to be constantly on the look out for potential facilities.

E. EDUCATION & ENFORCEMENT

Along with providing facilities for bicycle and pedestrian mobility the public needs to be educated about their use. First of all, the public needs to understand where such facilities are located, so they can choose safe routes and reduce conflicts with the other system users.

Educating the public how to use these facilities is also extremely necessary. This aspect is commonly overlooked. Bicyclists who are turned onto the roadway with little or no regulations and an equally deficient understanding of how to effectively utilize the facilities are a potential threat to themselves and other system users.

Failing to educate the public about location and proper use can have several adverse effects. Facilities which are constructed but not used are of no benefit to anyone. Misuse of the facilities can create an animosity between motorists and bicyclists which discourage bicycle use and encourage conflict between the two users.

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Several tools are available to educate the public about bicycling opportunities and pedestrian mobility. One item which may be easily prepared and cost effective to distribute are INFORMATION PACKAGES. These packages should include a map of the particular jurisdiction showing the locations and types of facilities which are offered. The map may also identify recreational or scenic routes and supply language which suggests which route or type of route would be most appropriate. Other beneficial information would be the location of local services and the names of local contacts. This information will prove useful to both local users and those from out of the area. The final item is an informational listing of safety tips and bicycle/pedestrian etiquette. This material will act to inform and remind the users how they should act to reduce the potential for injury to themselves and others and to reduce the potential for conflict.

In addition to the information packets, jurisdictions should strive to establish TRAINING CLASSES. Bicyclists need to be taught to interact with motorists. The use of the facilities in a safe and efficient manner can be demonstrated through these types of classes. This can help to encourage individuals who had previously been reluctant to use the system because of a lack of experience or confidence. While schools are the ideal place to begin these classes, the education does not have to be, and should not be, limited to children. Churches, community centers, health and recreational centers, community events and skills fairs are only a few of a long list of locations and activities which can present opportunities for bicycle/pedestrian education. Several types of programs have been developed with a variety of age groups and skill levels in mind. There are also videos on bicycle rules and safety precautions available from the State of Oregon.

The creation of COMMUTER PROGRAMS can also be beneficial in encouraging people to utilize the bicycle and pedestrian facilities. Sponsoring "bike-to-work" events has had large amounts of success through out the nation. These types of activities are very beneficial because most people have never ridden a bike to work and may not have gotten on a bicycle for utility reasons since childhood. They need advice and encouragement. They also need to feel secure that they will not be the only ones doing it.

Just as education is necessary, enforcement of bicycle rules is equally important. Bicycles are considered vehicles and must act accordingly on the roadway. A brochure detailing the rules of riding on Oregon's Highways may be obtained from the Department of Motor Vehicles. The Oregon Bicycle Plan identifies 32 statutes relating to bicycle use and ORS 814.400 specifically states that "everyone riding a bicycle or an animal on a public way is subject to the same provisions applicable to and has the same rights and duties as the driver of another vehicle..."

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Requiring bicyclists to obey the rules designed for them has a farther reaching effect than simply issuing citations. Statistics show that many bicycle/automobile accidents are the result of a bicyclist failing to yield at a stop sign or weaving in and out of traffic with reckless abandon. These activities and similar traffic infractions place both the cyclist and the motorist in danger. These are also the type of activities which enrage motorists and discourages their support for construction of bicycle and pedestrian facilities. Police officers must be willing and able to enforce bicycle laws. They must receive the support of the community in doing so.

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APPENDIX A: GLOSSARY OF TERMS AND ABBREVIATIONS

AASHTO__ American Association of State Highway and Transportation Officials. Their publication, *Guide for Development of New Bicycle Facilities*, provides the basic facility construction guidelines and specifications for this plan.

Accessway__ An interconnecting paved pathway that provides pedestrian and or bicycle passage between blocks running from street to street.

ADA__ The Americans with Disabilities Act; civil rights legislation passed in 1990, effective July 1992.

ADT__ Average daily trips, a measure of traffic volume.

Arterial__ A through road that connects major traffic generators. Arterials are designated by the Transportation Plan/Comprehensive Plan and the various City Comprehensive Plan.

BADT__ Bicycle average daily trips measured during the months of June through September.

Bicycle__ In the strictest sense a bicycle is a human-powered land vehicle with two tandem wheels, a steering handle, a saddle seat, and pedals by which it is propelled. In legal terms, the definition is expanded to include other velocipedes: (1) designed to operate on the ground on wheels, (2) propelled solely by human power, upon which any person or persons may ride, and (3) with every wheel more than 14 inches in diameter. This takes in the broader range of bicycle-type vehicle (recumbents, tricycle, etc.) while excluding such vehicles as pushcarts. Bicycles are legally classified as vehicles that may be ridden on public roadways in Oregon.

Bicycle Facilities__ General term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including parking facilities, all bikeways, and shared roadways not specifically designated for bicycle use.

Bicycle Parking Facilities__ Space and improvements dedicated for securing bicycles including but not limited to marked spaces, structures including lockers, racks and enclosures and areas providing maneuvering space for access to parking spaces and improvements.

Bike Lane__ A portion of the roadway which has been designated by striping, signing, and pavement marking for preferential or exclusive use by bicyclists.

Bike Lane Stripe__ An 8-inch wide line separating a bike lane from a travel lane.

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Bike Route__A segment of bikeway system designated with appropriate directional and information markers by the jurisdiction having authority.

Bikeway__Any road, path, or way which in some manner is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use by bicycles or are shared with other transportation modes.

CBD__Central Business District - A traditional downtown area usually characterized by established businesses fronting the street, sidewalks, slow traffic speeds, on-street parking and a compact grid system.

Clearance, Lateral__Width required for safe passage of a bicycle as measured in a horizontal plane.

Clearance, Vertical__Height necessary for the safe passage of a bicycle as measured in a vertical plane.

Collector__A branch road that feeds into an arterial from the local roads. Collectors are designated by Union County Comprehensive Plan and Transportation Plan and the respective City Comprehensive Plans.

Commuter Parking__Long-term parking, such as at work or school, where the bicycle must be left unattended for the greater part of the day.

Commuter/Utility Bicyclist__Riders who regularly travel to and from a specific destination, usually as quickly and directly as possible, for very practical purposes, such as to purchase or transport goods and services or to travel to and from work or school.

Convenience Parking__Short-term parking, such as at a store or park, where the bicycle is left for a brief time.

Crosswalk__The portion of a roadway designated for pedestrian crossing. They may be marked or unmarked. Unmarked crosswalks are a natural extension of the shoulder, curb line or sidewalk.

Direct Route__The shortest reasonable route between two points. A route is direct if it does not involve significant out of direction travel which could be avoided. Out of direction travel is significant if it is more than 50% longer than the straight line distance between two points.

Fog Line__A 4-inch white stripe delineating the edge of the roadway and separating it from the shoulder.

Grade (percent)__The rise (+) or fall (-) of a roadway measured in feet per 100 feet of length, expressed as a percentage.

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Grade Separation__ Vertical separation of travelways through the use of a structure so the traffic crosses without interference.

Highway__ A general term denoting a public way for purposes of travel, including the entire area within the right-of-way.

ISTEA__ The Intermodal Surface Transportation Efficiency Act.

Local Street__ A street designated to provide access to and from residences or businesses.

Main Entrance__ The principle building entrance or entrances. A main entrance door is not a door that is locked during normal business hours.

Motor Vehicles__ A vehicle that is self propelled or designed for self-propulsion.

Multi-Use Path__ A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way.

MUTCD__ Abbreviation for Manual on Uniform Traffic Control Devices approved by the Federal Highway Administration as a national standard for placement and selection of all traffic control devices on or adjacent to all roadways open to public travel.

MVC__ Motor Vehicle Code which contains the rules of the road that motorists and cyclists must follow.

Mountain Bike__ A bicycle generally characterized by rugged construction, wide tires, extra bottom bracket clearance, low gears, and stable handling - attributes that enhance its rideability on rough and steep terrain.

Mountain Bike Route__ A rough or unpaved bikeway upon which an average cyclist using a normal road bike would have difficulty.

OAR__ Oregon Administrative Rule, A rule written by an affected government agency, intended to clarify the intent of an ORS.

ODOT__ Oregon Department of Transportation

ORS__ Oregon Revised Statute. ORS 366.514, the "Oregon Bicycle Bill," is the law describing funding and development of bikeways.

Pavement Marking__ Painted or applied line(s) or legend placed on any bikeway surface for regulating, guiding or warning traffic.

Pedestrian__ A person whose mode of transportation is on foot. A person walking a bicycle becomes a pedestrian.

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Pedestrian Facilities__Any facility provided for the benefit of pedestrian travel, including walkways, crosswalks, signs, signals, illumination and benches.

Pedestrian Scale Lighting__Light standards or placements no greater than 14 feet in height located along walkways

Public Building Entrance__An entrance to a building intended for use by members of the general public, such as customers, clients and visitors. Also, employee or resident entrances used by more than 50 employees or residents per day.

Racing__Bicycle racing is a specialized sport. Race courses may use public roadways with the approval of appropriate government agencies. For more information on bicycle racing in Oregon, please contact the Bikeway/Pedestrian Program Manager, to obtain the "Guidelines for Administration of Bicycle Racing on Oregon Roads."

Recreational Cyclist__An individual who enjoys local bike rides for pleasure or fitness. The destination is of secondary importance.

Right-of-Way__A general term denoting land, property or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

Roadway__The portion of the highway for vehicle use.

Shared Roadway__A type of bikeway where bicyclists and motor vehicles share the same roadway.

Shoulder__A portion of a highway contiguous to the roadway that is primarily used by pedestrians, bicyclists and stopped vehicles for emergency use.

Shy Distance__The distance between the edge of a travelway and a fixed object.

Sidewalk__The portion of the roadway or street designated for preferential or exclusive use by pedestrians.

Sight Distance__A measurement of a vehicle operator's visibility, unobstructed, along the normal path to the farthest visible point of the roadway surface.

Skew Angle__The angle formed between a roadway, bikeway, or walkway and an intersecting roadway, bikeway, walkway or railroad line, measured away from the perpendicular.

Touring__An extended bicycle trip requiring some advance planning to identify destination, accommodations, services and routes.

TPR__The Transportation Planning Rule (OAR 660-12).

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Traffic Control Devices__ Signs, signals or other fixtures, whether permanent or temporary, placed on or adjacent to the travelway by authority of public body having jurisdiction to regulate or guide traffic.

Traffic Volume__ The number of vehicles that pass a give point for a given amount of time, usually expressed as Average Daily Trips (ADT).

Travelway__ Any way, path, road or other travel facility used by any and all modes of transportation.

UGB__ Urban Growth Boundary defines the area near an incorporated city, that is deemed suitable and necessary for urban uses.

Vehicle__ Any device in, upon or by which any person or property is or may be driven or drawn upon a public highway. A bicycle is a vehicle.

Walkway__ A transportation facility built for use by pedestrians, including persons in wheel chairs. Walkways include sidewalks, paths and paved shoulders.

Wide Outside Lane__ A wider than normal curbside travel lane that is provided for ease of bicycle operation where there is insufficient room for a bike lane or shoulder bikeway.

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APPENDIX B: LAND USE REGULATION CODE PROVISIONS

TPR Requirements for Urban Areas and Rural Communities [OAR 660-12-045 (3) (a)]

(3) (a) Bicycle parking facilities as a part of new multi-family residential developments (9+ units), new retail, office and institutional developments.

A. Discussion

Two types of bicycle parking are needed: long-term parking for employees and residents and short-term parking for visitors and customers. Long-term parking needs to be especially secure and protected because it may be unattended for hours at a time or overnight and possibly even longer. However, it does not need to be located any closer to a building entrance than auto parking. Short-term parking does not need to be as secure, bicycles will not be left unattended for long periods of time. To be convenient, short-term bicycle parking does need to be located near a building entrance.

Bicycle parking requirements need to address two distinct needs. Generally, long-term bicycle parking should be provided for one out of ten employees.

The need for the second type of bicycle parking, short-term, will vary from use to use. For example, an industrial use will not receive many visitors or customers, and therefore would not need a large amount of short-term parking of any kind. Retail uses, on the other hand, can expect to receive a large amount of short-term traffic and should provide for greater amounts of short-term parking. The recommended bicycle parking requirements are based on these concepts.

B. CODE PROVISIONS

Standards for Commercial, Professional and Public Zones, and Commercial Uses in Residential Zones

1. Number of Parking Spaces Required

- Integrate bicycle parking space requirements with auto parking space requirements - i.e, one space per multi-family residential unit, one space per 5,000 square feet of retail show room floor, one space per five employees and one space per five persons for places of assembly - churches, granges, etc.

- Shared bicycle parking areas shall be encouraged where all of the bicycle standards can be satisfied for the collective uses.

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- The only exempt uses from meeting bicycle parking standards would be seasonal or part-time uses, i.e. fruit stands, fireworks stands and others.

2. Bicycle Parking Facilities

(Short-term sheltering from precipitation is not a necessary requirement in Union County with an average annual precipitation of 16 inches in the Grande Ronde Valley)

- Covered long-term bicycle parking will be provided for multi-family, residential, schools and places of employment

- Appropriate security methods will be adopted as a part of new construction or redevelopment for both long-term and short-term bicycle parking.

- Bicycle parking areas will be well-lighted, secure locations within 50 feet of the primary building entrance for new buildings and 100 feet for redevelopment. Require pedestrian access from bicycle parking area to building entrance. Bicycle parking area shall be as close as the closest auto parking area.

- Each bicycle parking space shall be a minimum six feet length, two feet width, seven feet clearance and at least five feet between rows.

- For buildings with multiple entrances, required short-term bicycle parking shall be distributed proportionally at the various public entrances. Required long-term public parking shall also be located at the employee entrance, if applicable.

- Bicycle parking may be provided within a building, but the location must be easily accessible for bicycles.

- In areas of demonstrated, anticipated or desired high bicycle use, additional bicycle parking, in exchange for required motor vehicle parking, may be authorized by the decisionmaker.

- Employee and residential bicycle parking shall offer a high level of security, i.e., bicycle lockers or a locked cage or room with locking facilities inside, to provide safe, long-term parking.

- Bicycle parking may be provided within the public right-of-way in areas without building setbacks, subject to approval of the appropriate local official and provided it meets the other bicycle parking requirements.

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- (A) Sidewalks along arterial and collectors in urban areas;
 - (B) Bikeways along arterials and major collectors;
 - (C) Where appropriate, separate bicycle and pedestrian ways to minimize travel distances within and between areas; and
- (3) (c) "Safe, convenient and adequate" mean facilities that -
- (A) Are reasonably free from hazards, particularly automobile traffic that would discourage short trips;
 - (B) Provide direct routes of travel between uses; and
 - (C) Meet cyclists and pedestrian travel needs considering length of trip destination.

A. DISCUSSION

While the TPR does not explicitly require sidewalks on local urban streets, they should be required by local ordinances. Sidewalks are critical to home-based pedestrian trips and transit. Without sidewalks, pedestrians must walk either in the road or on the roadway shoulder. These conditions make walking unsafe and inconvenient and discourage walking trips.

B. CODE PROVISIONS

Future Street Extensions

- All streets, alleys, bicycle and pedestrian pathways shall connect to other streets within the development and to existing and planned streets outside the development. Streets shall terminate at other streets or at parks, schools or other public land within a neighborhood.
- Local roads shall align and connect with other roads when crossing collectors and arterials.
- Cul-de-sacs, dead end streets or alleys, and flag lots shall only be permitted when the following conditions are met:
 - (a) One or more of following conditions prevent a required street connection: excess slope (20% or more); presence of a wetland or other body of water which cannot be bridged or crossed; existing development on adjacent property prevents a street connection, presence of a freeway or railroad;
 - (b) A street pattern which either meets standards for connection and spacing or requires less deviation from standards than possible;
 - (c) An accessway is provided consistent with the standards for Accessways;

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- When a sidewalk in good repair is required and does not exist an applicant for a building permit shall, prior to obtaining the building permit, or in conjunction with the issuance of a building permit, obtain a permit to construction a sidewalk for the full frontage of the lot or parcel. No final inspection or certificate of occupancy shall be issued for said building permit until there exists such a sidewalk in accordance with the requirements of the permit to construct the sidewalk.

- Sidewalks are not required along freeways and other fully access controlled highways.

- The provisions of sidewalks may be waived in residential zones where the street serves fewer than five potential dwelling units and cannot be continued or extended to other properties.

- To ensure access between a development site and an existing developed facility such as a commercial center, school, park or trail system, the decisionmaking body may require off-site pedestrian improvements concurrent with development where need for the access and its costs can be shown to be roughly proportional to the traffic created by the development.

- Structures are not allowed in any dedicated sidewalk areas which will obstruct movements of the sidewalk. The minimum areas of obstructions must meet ADA standards. All structures placed in the sidewalk are allowed only with permission of the City or County.

- Sidewalks shall be designed to parallel streets in line and grade and shall avoid unnecessary meandering and elevation changes except as necessary to avoid significant trees or traverse topographic barriers.

- Sidewalks shall be constructed to meet the following minimum widths:

Street Type	Land Use Designation/Sidewalk Type			
	Residential/Industrial		Commercial/Institutional	
	Curb	Setback	Curb	Setback
Local	6 ft	5 ft	7 ft	6 ft
Collector	7 ft	6 ft	8 ft	7 ft
Arterial	7 ft	6 ft	10 ft	8 ft

* Curb sidewalks shall maintain a minimum unobstructed width two feet less than the required sidewalk width. (Example - A mailbox may be located within two feet of the curb)

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- * A setback sidewalk shall be separated from the curb by a planting strip of at least four feet in width. The planting strip may be paved in neighborhood commercial areas.
 - * Bike lanes and shoulder bikeways along collectors and arterials shall be six feet wide and shall be provided for each direction of travel allowed on the street.
 - * Sidewalk and bicycle path lighting shall be provided in conjunction with new road construction and new development.
 - * Wheelchair ramps and other facilities shall be provided as required by the Americans with Disabilities Act (ADA). The lower lip of the wheelchair ramp shall be flush with the roadway surface.
 - * Bikeways shall be designed and constructed consistent with the design standards in the Oregon Bicycle Plan, 1992 and AASHTO's "Guide for the Development of Bicycle Facilities, 1991".
- Adequate overhead clearance on sidewalks, pedestrian paths and bicycle paths shall be eight feet for all signs projecting over such routes except where a marquee projects more than two-thirds of the distance from the property line to the curb or street side of the bicycle way, the minimum clearance shall be 12 feet.
 - Vegetation shall not overhang or encroach upon a sidewalk, pedestrian path or bicycle path lower than nine feet. The city may require the person(s) responsible for encroachment into clearance areas to trim, prune or remove all trees, shrubs, plants and vegetation.
 - Sidewalks along collector and arterial streets shall be set back from the curb where possible. On low-volume, residential collector streets, a five foot wide, curb-side sidewalk may be acceptable. On high-volume collector streets if the sidewalk is built adjacent to the curb, it shall be a minimum of seven feet wide. Greater width, up to 10 feet, may be required where higher pedestrian volumes, shared use with bicycles, or other pertinent factors require a safer and more convenient facility.

Vacating Public Right-of-Way

When vacating improved or unimproved public right-of-way, pedestrian and bicycle easements shall be established for public safety and convenience where determined necessary.

Accessways [045 (3) (b) (C)]

A. DISCUSSION

_____ explain how an accessway is different from bicycle/pedestrian routes.

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B. CODE PROVISIONS

Accessways shall be provided in the following situations:

- a. In residential areas and industrial parks where addition of a walkway/bikeway would reduce walking or cycling distance to a school, shopping center, or neighborhood park by 400 feet and by at least 50% over other available pedestrian routes and a street connection is not feasible.
- b. For schools, commercial uses where addition of a walkway/bikeway would reduce walking or cycling distance to an existing or planned transit stop, school, shopping center, or neighborhood park by 200 feet and by at least 50% over other available pedestrian routes.

For purposes of (a) and (b) other available pedestrian routes include sidewalks and walkways including walkways within shopping centers, planned developments and industrial parks. (Routes may be across parking lots on adjoining properties if the route is open to public pedestrian use, hard surface, unobstructed, e.g. not through landscaped areas unless step stones are provided.)

- c. For cul-de-sacs or dead end streets except when the review authority determines based on evidence in the record that construction of a separate accessway is infeasible or inappropriate. Such evidence may include but is not limited to:
 1. When other federal, state or local requirements prevent construction of an accessway;
 2. When the nature of abutting existing development makes construction of an accessway impractical;
 3. When the walkway/bikeway would cross a natural area with significant natural habitat and construction would be incompatible with protection of natural values;
 4. When the accessway would cross land designated for water quality, flood control or flood hazard and the accessway is incompatible with the designated use;
 5. When the accessway would cross topography where slopes exceed 30% or where path grade would exceed 12% slope except when construction or a crossing structure is found to be feasible; or,
 6. When a cul-de-sac or dead end street abuts rural resource land in farm or forest use at an urban growth boundary except where the adjoining land is designated as an urban reserve area.

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Accessways shall be provided to adjacent developments when feasible. Development patterns must not preclude eventual site-to-site connections even if infeasible at the time of development.

(3) (d) Provide internal pedestrian circulation in new office parks and new commercial developments by clustering buildings; constructing pedestrian ways, skywalks, where appropriate; and similar techniques.

A. DISCUSSION

Walkways should be provided for the following:

- . New office parks and commercial developments.
- . Recommended for institutional development and public buildings.
- . To each street abutting the property, not including limited access freeways.
- . For every 300 feet of street frontage or for every eight rows of vehicle parking.
- . To any bikeway or walkway along a frontage of the site which is not bordered by a street.

B. CODE PROVISIONS

- Walkways shall connect building entrances to one another and from building entrances to public street entrances.
- Onsite walkways shall connect with walkways, sidewalks, bikepaths, alleyways and other bicycle or pedestrian connections on adjacent properties used or planned for commercial, multi-family, institutional or park use.
- Walkways and driveways shall provide a direct connection to walkways and driveways on adjacent developments.
- Potential pedestrian connections between the proposed development and existing or future development on adjacent properties other than connections via the street system shall be identified. The development application shall designate these connections on the proposed site plan or findings shall be submitted demonstrating that the connection is infeasible.
- Rights-of-way or public easements shall be provided for all required walkways which provide a direct connection to adjacent properties.

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- Accessways shall be located to provide a reasonably direct connection between likely pedestrian destinations. A reasonably direct connection is a route which minimizes out of direction travel for most of the people likely to use the walkway/bikeway considering terrain, safety and likely destinations.

- The length of an accessway shall not exceed 400 feet.

- Accessways shall be as short as possible and, where possible, straight enough to allow one end of the accessway to be seen from the other.

- Stairways shall be at least five feet wide with a handrail on both sides.

- Accessways shall be lighted either by street lights on adjacent streets or pedestrian scale lighting along the accessway. Lighting shall not shine into adjacent residences.

Fencing along accessways shall meet one of the following standards:

- Accessways shall be fenced from adjoining residential properties with at least a five foot high chain link or similarly constructed fence without a top rail; or,

- Residences along accessways which are 200 feet or longer shall have the building fronts oriented to the accessway and shall treat the yard along the accessway as the front yard. Fences along such accessways shall not exceed three and one-half feet in height; or,

- For purposes of fencing only, accessways will be treated as a front yard.

Pedestrian walkways shall be directly linked to entrances and the internal circulation of the building. The onsite pedestrian circulation system shall directly connect the street to the main entrance of the primary structure on the site.

- Walkways shall be at least five feet in paved unobstructed width. Walkways bordering parking spaces shall be at least seven feet wide unless concrete bumpers, bollards, or curbing and landscaping or other similar improvements are provided which prevent parked vehicles from obstructing the walkway.

- Pedestrian scale lighting fixtures shall be provided along all walkways. Onsite pedestrian walkways must be lighted to a level where the system can be used at night by employees, residents and customers.

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- Stairs or ramps shall be provided where necessary to provide a direct route. Walkways without stairs shall have a maximum slope of eight percent and a maximum cross slope of two percent. Where walkways provide principal access to building entrances maximum slope is limited to five percent to meet ADA standards.

- Where the pedestrian system crosses driveways, parking areas and loading areas, the system must be clearly identifiable through the use of elevation changes, speed bumps, a different paving material or other similar method.

- Walkways on private property that provide direct links between publicly owned pedestrian routes shall be placed in public easements or be dedicated to the public.

APPENDIX C: TRANSPORTATION PLANNING RULE; OAR CHAPTER 660,
DIVISION 12

660-12-000 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 ensure 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.

660-12-005 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) Affected local government, means a city, county or metropolitan service district that is directly impacted by a proposed transportation facility or improvement.

(3) 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.

(4) 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.

(5) 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.

'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.

'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.

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.

(6) Metropolitan Planning Organization (MPO): 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-Kaslo-Rainier MPO is not considered an MPO for the purposes of this rule.

(7) ODOT: means the Oregon Department of Transportation.

(8) 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 660-12-045(5)(c) park and ride lots, handicapped parking, and parking spaces for carpools and vanpools.

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

(10) Preliminary Design means an engineering design which specifies in detail the location and

alignment of a planned transportation facility or improvement

(11) Refinement Plan: 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.

(12) Roads: means streets, roads and highways.

(13) 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 pedestrian paths to support high levels of pedestrian access within the TOD and high levels of transit use.

(14) Transportation facilities: means any physical facility that moves or assists in the movement of people and goods including facilities identified in 660-12-020 but excluding electricity, sewage and water systems.

(15) 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 for high occupancy vehicle (HOV) lanes.

(16) 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.

(17) 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

(18) 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

(19) 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.

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

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

(22) 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.

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

660-12-010 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.

660-12-015 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 660-12-030, 035, 050, 055 and 070. 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 660-12-040 may be adopted as a supporting document to the comprehensive plan.

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

(b) 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 provisions to eliminate the conflicts;

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.

660-12-020 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 660-12-030.

(b) A road plan for a network of arterials and collectors. 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.

(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, and park-and-ride stations.

(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 subsection 2(c)(C) of this section.

(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 660-12-045(5)(c).

(h) Policies and land use regulations for implementing the TSP as provided in 660-12-045.

(i) For areas within an urban growth boundary containing a population greater than 2500 persons, a transportation financing program as provided in 660-12-040.

(3) Each element identified in subsection (2)(b)-(d) of this section 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.

660-12-025 Complying with the Goals in Preparing Transportation System Plans: Refinement Plans

(1) Except as provided in subsection (3) of this section, 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.

660-12-030 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 660-12-045 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 660-12-035(4) to reduce reliance on the automobile.

660-12-035 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 660-12-045(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 consistent 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 transportation and shall reduce principal reliance on the automobile. In MPO areas this shall be accomplished by selecting transportation alternatives which meet the requirements in 660-12-035(4).

(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 10 years of adoption of a plan as required by OAR 660-12-055(1);

(b) A 10% reduction within 20 years of adoption of a plan as required by OAR 660-12-055(1); and,

(c) Through subsequent planning efforts, a 20% reduction within 30 years of adoption of a plan as required by OAR 660-12-055(1).

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

(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 requirements 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.

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

660-12-040 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.

660-12-045 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 660-12-065, 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 660-12-050. 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 COG 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 to require:

(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) Facilities providing safe and convenient pedestrian and bicycle access within and from new subdivisions, planned developments, shopping centers and industrial parks to nearby residential areas, transit stops, and neighborhood activity centers, such as schools, parks and shopping. This shall include:

(A) Sidewalks along arterials and collectors in urban areas;

(B) Bikeways along arterials and major collectors;

(C) Where appropriate, separate bike or pedestrian ways to minimize travel distances within and between the areas and developments listed above.

(c) For purposes of subsection (b) "safe, convenient and adequate" 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 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;

(d) Provision of internal pedestrian circulation in new office parks and commercial developments through clustering of buildings, construction of pedestrian ways, skywalks, where appropriate, 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

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system is feasible, local governments shall adopt land use and subdivision regulations to require:

(a) Design of transit routes and transit facilities 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 existing or planned transit stops to provide preferential access to transit through the following measures:

(A) Orienting building entrances to the transit stop or station;

(B) Clustering buildings around transit stops; and,

(C) Locating buildings as close as possible to transit stops.

(c) New industrial and commercial developments to provide preferential parking for carpools and vanpools.

(d) An opportunity for existing development 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.

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

(f) 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 660-12-035(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 660-12-035(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 660-12-020(2)(a), 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.

660-12-050 Transportation Project Development

(1) For projects identified by ODOT pursuant to OAR 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 decisionmaking, 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.

660-12-055 Timing of Adoption and Update of Transportation System Plans; Exemptions

(1) MPOs shall complete regional TSPs for their planning areas within four years following the effective date of this division. 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 within five years of the effective date of this division.

(3) Within two years of adoption of this rule affected cities and counties shall, for urban areas of 25,000 or more, adopt land use and subdivision ordinances or amendments required by 660-12-045(3), (4)(a)-(e) and (5)(a).

(4) 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 660-12-035(6) have not been achieved; or,

(b) If a refinement plan has not been adopted consistent with the requirements of 660-12-025(3).

(5) 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 exemption 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 660-02-020 (Delegation of Authority Rule).

(6) 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 660, Division 18, Post Acknowledgement Procedures.

660-12-060 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

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

(3) Determinations under subsections (1) and (2) of this section 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 660-04-022 and 028.

660-12-065 Transportation Improvements on Rural Lands

(1) This section identifies transportation 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 section, the following definitions apply:

(a) Access roads, means low volume public or private roads that provide access to property and travel within a built and committed area.

(b) Local service roads, means collectors and arterials, but does not include state highways of regional or statewide significance.

(c) Local travel, means travel within a built and committed area, or between resource lands or a built

and committed area and a nearby urban area or rural community.

(d) State highways of regional or statewide significance, means highways identified in ODOT's Highway Plan as interstate highways, Access Oregon highways, and highways of regional or statewide significance.

(e) Major road improvement, means a major realignment; addition of travel lanes; and new interchanges and intersections. Major road improvements do not include replacement of an existing intersection with an interchange, the replacement of one or more intersections with another intersection to correct a safety deficiency, or the creation of an intersection for a log haul road.

(f) Major realignment, means a realignment where the center line of the roadway shifts outside of the existing right of way for a distance of one half mile or more.

(g) Realignment means replacement of an existing road segment where the replaced road segment is either abandoned or is modified to function as an access road. New road segments which do not meet this definition are considered new roads for purposes of this section.

(3) The following transportation facilities and improvements are consistent with Goals 3 and 4 and may be sited on rural agricultural and forest land:

(a) On land zoned for agricultural use, transportation facilities and improvements permitted outright or conditionally under ORS 215.213 (1) or (2) or ORS 215.283 (1) or (2); and,

(b) On land zoned for forest use, transportation facilities and improvements permitted outright or conditionally under OAR 660, Division 6.

(4) The following transportation facilities and improvements are consistent with Goals 11 and 14 and may be located on rural lands:

(a) Maintenance or repair of an existing transportation facility.

(b) Reconstruction, surfacing, minor widening or realignment of an existing road, but not including the addition of travel lanes;

(c) Replacement of bridges;

(d) Replacement of docks, and other facilities without significantly increasing the capacity of those facilities.

(e) Climbing and passing lanes;

(f) New access roads in built and committed exception areas.

(g) Temporary improvements in association with construction projects, such as temporary roads and detours:

- (h) Bikeways, footpaths, and recreation trails;
- (i) Turn refuges at existing street intersections.

(j) Transportation system management measures, including medians which limit or prevent turning movements, but not including the creation of additional travel lanes or median turn lanes;

(k) Streets and bridges on farm or forest lands for the purpose of managing land for farm or forest uses:

- (l) Railroad mainlines and branchlines;
- (m) Pipelines;
- (n) Navigation channels;

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

(p) Accessory uses to transportation facilities, such as weigh stations, maintenance stations, stockpile sites, and safety rest areas.

(q) New local service roads and extensions of existing local service roads on farm and forest lands as provided in subsection (5) of this section:

(r) Major road improvements to state highways of regional and statewide significance as provided in subsection (6) of this section;

(s) Other transportation facilities, services and improvements serving local needs as provided in subsection (7) of this section.

(5) New local service roads including extensions of existing local service roads shall comply with the following standards:

- (a) Only two lanes of traffic shall be accommodated.
- (b) Intersections and private accesses shall be limited to be consistent with rural uses and densities.
- (c) Major realignments shall not be permitted.
- (d) New local service roads shall be permitted only to connect built and committed areas or to reduce local access to and local traffic on a state highway. Access to farm and forest lands shall be limited.

(6) Major road improvements to state highways of regional or statewide significance shall comply with the following standards:

(a) Accesses shall be reduced to the minimum practicable and shall not exceed that which would be consistent with the function and operation of the

highway considering traffic at buildout of nearby rural lands

(b) Local travel may be accommodated to the extent that it is not feasible to meet such needs on other existing roads or through improvements to other existing roads, including construction of local access roads in built and committed areas.

(c) New interchanges or intersections may be allowed only in the following circumstances:

- (A) To connect to other state highways of regional or statewide significance;
- (B) To replace existing interchanges or intersections; or
- (C) To reduce and consolidate direct road accesses consistent with (a) and (b) above.

(d) Direct private access to new facilities shall not be permitted.

(e) Median turn lanes shall comply with the following standards:

(A) The median turn lane is needed to correct a safety problem which cannot practicably be corrected through other measures such as:

- (i) Limited left turn refuges;
- (ii) Construction or extension of local service roads as otherwise permitted by this section;
- (iii) Median barriers; and
- (iv) Reconstruction of existing road accesses or purchase of access rights.

(B) The median turn lane is consistent with the function and operation of the facility considering traffic on affected roads and accesses at buildout of nearby rural lands; and

(f) Realignment shall not create new parcels of land that are provided direct access to the highway.

(g) A bypass of all or part of an urban growth boundary shall be permitted only if planned, designed and operated to limit use for trips between locations within the urban growth boundary to be less than a third of the average daily traffic on the bypass.

(7) Other transportation facilities, services or improvements serve local needs if:

(a) The facility, service or improvement serves the rural land uses identified in the acknowledged comprehensive plan; and

(b) The facility, service or improvement provides travel capacity and a level of service which is adequate but which does not exceed that required to serve travel needs in the rural area over the planning period. Travel

needs in the rural area includes travel that would result from development otherwise anticipated to occur in the rural area consistent with plan policies including those which encourage new development to locate within urban growth boundaries.

660-12-070 Exceptions for Transportation Improvements on Rural Land

(1) Transportation facilities and improvements which do not meet the requirements of 660-12-065 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 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 the assure compatibility with adjacent uses.

(4) To address Goal 2, Part II(c)(1) the exception shall demonstrate that there is a transportation need ~~identifying~~ consistent with the requirements of 660-12-030 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 subsections (4) and (5) of this section, 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 660-12-070(3).

(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 non/farm 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.