



THE Dalles **Bicycle Master Plan**

Prepared by
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for the
City of The Dalles
Wasco County
Port of The Dalles
Northern Wasco County
Parks and Recreation District

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ACKNOWLEDGMENTS

Preparation of The Dalles Bicycle Master Plan began in 1989 as a cooperative effort by Wasco County, the City of The Dalles, and the Northern Wasco County Parks and Recreation District. The Bicycle Master Plan is a natural outgrowth of and complement to The Dalles Riverfront Plan which was completed in October of 1989.

The dedicated members of The Dalles Bicycle Advisory Committee which met regularly to ride their bikes over all of the proposed routes and assemble recommendations for The Dalles Bicycle Master Plan include:

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CONTENTS

SUMMARYvii

1. INTRODUCTION 1

- Goals 1
- Purpose 1
- Objectives 1
- Authority 2
- Challenges 2
- Organization 4

2. PLANNING BACKGROUND 5

- Riverfront Plan 5
- Bicycle Planning in The Dalles 5
 - Bicycle Master Plan Task Force 6
 - Community Profile 7
 - Prior Planning 7
- Existing Road System and Constraints 8
 - Roadway Classifications 8
 - Bicycle Counts 9
 - Central City 9
- State and Federal Bicycle Planning 10
 - State Policies 10
 - Federal Policies 11

3. RECOMMENDATIONS 13

- Introduction 13
- Considerations 13
- Project Summary 14
 - Bike Paths 16
 - Bike Lanes 16
 - Shoulder Bikeways 18
 - Shared Roadways 19

4. IMPLEMENTATION 23

- Introduction 23
- Plan Adoption 23
- Responsibility for Implementation 23
 - Bicycle Coordinator 23
 - Bicycle Advisory Committee 25
- Public Participation 25
- Funding Sources and Strategy 26
 - Local Government Funding 27
 - State Funding 27
 - Federal Funding 29
 - Other Funding 30
 - Facility Costs 30
- Priorities 32

5. SUITABILITY CRITERIA	33
Roads as Bikeways	33
Overview	33
Factors	33
Use	34
Width	34
Connectivity	34
Safety	35
Grades	36
Sight Distance	36
Pavement Quality	36
Attractiveness	37
Imageability	37
Air Quality	37
Noise	37
Aerodynamic Impact	37
Funding	37
Competing Uses	38
Security	38
Other Issues	38
Suitability Formula	40
6. BIKEWAY STANDARDS	41
Oregon Bicycle Plan	41
Application to The Dalles	42
Design Practices	42
Design Speed	42
Stopping Sight Distance	42
Grades	43
Drainage Grates	43
Railroad Crossings	43
Pavements	43
Traffic Control Devices	44
Bike Routes	44
Wide Curb Lanes	44
Shoulders	45
Bike Lanes	45
Intersections	46
Bicycle Paths	46
7. SUPPLEMENTAL FACILITIES	49
Parking Facilities	49
Commuter Facilities	50
Signing	52

8. EDUCATION	53
Introduction	53
Information Packages	53
Training Classes	53
Commuter Programs	55
Special Incentives	56
Event Sponsorship	57
Promoting Bicycling	57
9. ENFORCEMENT	59
Need	59
Accident Causes	59
Support	60
Motivation	60
Bicycle Equipment	60
Bicycle Court	61
10. OPERATION AND MAINTENANCE	63
Maintenance Standards	63
Sweeping	63
Vegetation Removal	63
Oiling and Chip Sealing	63
Overlays and Patching	64
Widening and Restriping	64
Responsibility	64
APPENDICES	65
A. Survey Results	67
B. Model Bicycle Ordinances	73

Figures

1. Transportation in The Dalles	3
2. The Dalles has moderate density	3
3. The Dalles area	4
4. The Dalles area roads	8
5. Essential links in a bicycle program	11
6. Typical bicycle racks	51

Tables

1. Traffic volume and bikeways	14
2. Bikeway projects summary	15
3. Bikeway facility costs	32
4. Suitability rating index	40
5. Bikeway types	41
6. Bicycle parking categories	50



SUMMARY**Background**

Bicycle planning is a part of the overall transportation planning undertaken by all levels of government. This document provides The Dalles with a comprehensive, bicycle-specific transportation plan that aims to promote bicycle use.

Bicycles are an attractive option to an automobile-dominated system that has reached the limits of our ability to sustain it and threatens community livability. Various new transportation guidelines at the State and Federal levels provide further impetus to bicycle planning as a means to lessen energy demands, reduce pollution, and make options available to those who do not drive an automobile (about half the population). Notable among these guidelines are the State Transportation Planning Rule and the Federal Intermodal Surface Transportation Efficiency Act.

The Dalles has much to offer bicyclists. Although bicycle use is currently low, the potential for substantial increase is high due to the compact community and existing road system. Also, the surrounding rural areas and Columbia River frontage have great recreational potential.

Previous bicycle planning efforts have pointed to the need for a safe, continuous east-west route, for better access to the Columbia River, and for improved facilities on many existing roads. The Riverfront Plan stresses how bicycling can contribute to a more prosperous, accessible and livable area.

Highlights**Priorities**

A successful bicycle program must embrace not only facilities construction but also maintenance, community awareness, education, and enforcement. The most appropriate agency to maintain a strong and active bicycle program should be determined. A staff Bicycle Coordinator should be the focal point for program efforts, and an appointed Bicycle Advisory Committee should oversee all efforts.

Bicycle system priorities

-
- Bike path along Columbia River and creeks.
 - Bike lanes on arterials and collectors.
 - Shoulder bikeways on highways.
 - Shared roadways on residential streets.
 - Direct routes that minimize travel distances between residential areas and employers, businesses, schools, and recreational sites.
 - Elimination of hazards, including speeds or amounts of automobile traffic that discourage local bicycle travel.
 - Convenient and secure parking at destinations.
 - Regular sweeping, patching and maintenance.
 - Active education and enforcement programs.
 - Bicycle Coordinator and Bicycle Advisory Committee to coordinate efforts.
-

Adoption and Implementation

In order for this Bicycle Master Plan to be effective both for obtaining funds and improving bicycle use, it must be formally adopted into the Transportation Element of The Dalles Comprehensive Plan. The prioritized list of bikeway projects should be placed on the Transportation Improvement Plan and appropriate

projects included on the Six-Year Capital Improvement Plans in order to improve the chances for obtaining State and Federal funding.

The bicycle plan will be implemented through the codes, ordinances and standards that are the working documents referenced by planners, engineers and developers. These documents should reflect the needs of bicyclists so that bicycle facilities are routinely considered during project application, review, approval, and design.

The entire bikeway system of about 37 mi will take many years to complete. By scheduling 2 to 3 mi each year, the system can be finished in about 15 years. This should keep pace with a gradual conversion from an automobile-dominated system to one that incorporates more cycling and walking for short-range trips.

Funding

Bicycle facilities and programs can be funded through a broad combination of local, state, federal and private sources. By State law, bikeways must be created whenever City, County, State or Federal roads are built or reconstructed. Arterials and collectors require bike lanes. The Dalles should ensure that any road project in the area is built to bikeway standards for the street classification and that costs are included as a normal part of the project.

Standards

The Oregon Bicycle Plan contains detailed standards based on the AASHTO Guide. It contains many excellent and comprehensive recommendations for all types of bikeways and situations. Prominent features are a hierarchical system of bikeways tied into the existing road grid, bicycle parking requirements, and a focus on maintenance.

Projects

Existing roads, with relatively minor improvements, can change character from poor bikeways to good ones. Often, this is a simple matter of overcoming a few obstacles such as dangerous intersection design, or giving riders more space through striping of bike lanes. Several highly needed bikeway projects are identified (see summary below), along with other useful and less expensive spot improvements.

Trails along the Columbia River and its drainages, as described in the Riverfront Plan, present an excellent opportunity for the community to develop an off-road bikeway framework. A multi-use trail, offering walking and bicycling paths, nature observation, and pleasant scenery, could be a recreational centerpiece for the community as well as an important part of the non-motorized transportation system.



Project summary

Facility Type	Length, mi	Projects
Bike Path	9.2	3
Bike Lane	11.7	14
Shoulder Bikeway	3.2	5
Shared Roadway	13.7	6

INTRODUCTION

Purpose

This document provides a bicycle-specific planning guide to the City of The Dalles and Northern Wasco County. It is intended to meet the needs of the residents and to pursue the vision of the Oregon Bikeway and Pedestrian Program:

Oregonians envision the day when they will be able to bicycle safely, conveniently and pleurably to all destinations within five miles of their homes. All streets and roads will be "bicycle friendly" and well-designed to accommodate both motorized and nonmotorized modes of transportation.

Goals

The Bicycle Master Plan has four primary goals:

- Integrate bicycle planning into the community's overall transportation planning.
- Provide and maintain a comprehensive system for safe and convenient bicycle access to all destinations within the City.
- Promote bicycling as a viable form of transportation for all ages and trip purposes.
- Increase bicycle use within the City every year until 10 percent of all trips are made by bicycle.

Each of these goals—integration, provision, promotion, and use—is consistent with The Dalles' vision of a prosperous and liveable community.

Highlights

- This document addresses the unique characteristics of The Dalles in providing a comprehensive and bicycle-specific plan.
- A Bicycle Advisory Committee shall coordinate the Plan.
- The area poses numerous challenges to cycling but shows great potential as well.

Objectives

Objectives to meet the goals are:

Integration

- Adopt the goals and policies of this Plan by the City Council as part of the City's Transportation Plan. (This will be needed to satisfy the State's Transportation Planning Rule.)
- Adopt implementing ordinances, codes and standards necessary to carry out the Plan.
- Appoint a Bicycle Coordinator and Bicycle Advisory Committee, possibly in conjunction with Wasco County.
- Develop dependable funding sources and actively seek additional sources.
- Encourage land uses that give priority to pedestrians and bicyclists.
- Integrate with the proposed Riverfront Trail in The Dalles Riverfront Plan.

Provision

- Improve access and mobility by identifying routes that penetrate barriers, avoid bottlenecks and obstacles, and minimize travel distances.
- Designate and develop bikeways connecting neighborhood, school, commercial, industrial and recreational centers.

- Eliminate hazards, including speeds or amounts of automobile traffic that discourage local bicycle travel.
- Provide convenient and secure parking and commuter facilities at destinations.
- Conduct regular sweeping, patching and maintenance.
- Review project scheduling and implementation annually and amend the project list as needed to respond to changes in funding opportunities, demographics and development.

Promotion

- Enhance the quality of the bicycling experience by identifying attractive routes with desired amenities and support services.
- Provide guidance to educational and enforcement agencies to enhance cyclists' safety and effectiveness.
- Maintain public awareness and support of the Plan.

Use

- Establish benchmarks to measure progress.
- Collect and analyze data annually to increase bicycle usage and to improve the system's safety and efficiency.

Authority

The Dalles Bicycle Master Plan is in accordance with the City's Comprehensive Plan, the Riverfront Plan, and the State Transportation Planning Rule, all of which require city-wide bicycle planning.

A broad range of planning, public works, enforcement, and promotional activities are described in the Bicycle Master Plan. To coordinate these efforts, there shall be a Bicycle Advisory Committee. The Committee shall be

perpetual with the responsibility of monitoring the continuing achievement of the Plan.

The Committee should primarily include cyclists, but should also include other concerned persons such as law enforcement personnel, city and county administrative personnel, and persons with route maintenance and design expertise.

Challenges

In recent years there has been an increased interest in bicycling as healthy, clean, cost-effective transportation in urban settings. Various new transportation policies, plans and standards at the State and Federal levels provide further impetus to bicycle planning as a means to lessen energy demands, reduce pollution, and make options available to those who do not drive an automobile.

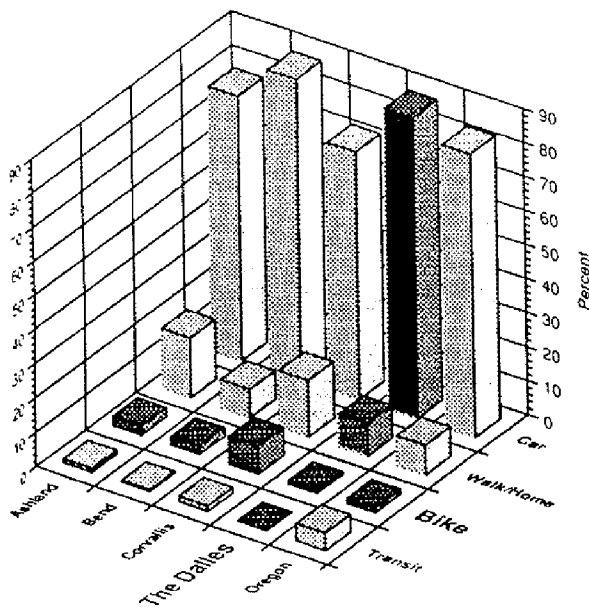
The development of a quality bikeway system is a prerequisite to promoting bicycling. The Dalles has much to offer cyclists despite a lack of bicycle-specific facilities. Although bicycle use is low, the potential of bicycling in the area is high.

The Dalles faces some challenges in developing a bikeway system:

- The city is located in a topographically difficult area for cycling because of fairly steep hills and abrupt cliffs, which limit available and reasonable routes for cycling. The Columbia River Gorge is also noted for its high winds which can affect The Dalles.
- The street layout and width does not present ideal conditions for convenient and safe bicycle routing, nor for the most part in providing separated bike lanes without taking space from motorists. Thus, nearly all the local routes are currently shared roadways. Sixth St. (U.S. 30) from the Chenoweth bridge to Webber St. (about 1.5

- mi) is the only striped, signed bike route in The Dalles.
- Clearly designated bike routes connecting neighborhoods, schools, commercial, industrial and recreational centers do not exist.
- Very few bicycle parking racks and other facilities exist.
- The City has been cut off from recreational and transportation access to and along the Columbia River by construction of Bonneville Dam, the railroad, and the I-84 Freeway.
- The transportation system is dominated by the automobile (see Figure 1). In particular, single-occupancy automobile use ranks in the top third among cities in Oregon at 70.7%.

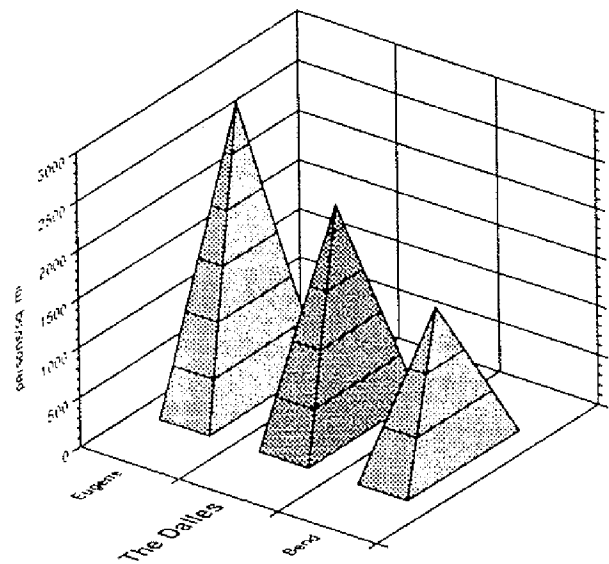
Figure 1. Transportation in The Dalles is dominated by automobiles



Source: 1990 Journey-to-Work data

Despite these negatives, there are strong opportunities for improving the cycling environment and increasing ridership. The restrictive topography has also limited sprawl, so that urban destinations are always close. Indeed, The Dalles has a moderate density, compared to some other popular cycling cities (see Figure 2), which makes cycling attractive.

Figure 2. The Dalles has moderate density



Source: 1990 Census data

...just as an ecological system is healthiest when it displays great diversity and differentiation, so too is a transportation system most healthy and robust when diverse modal options are available to those moving people and goods. A transportation system dependent on only one or two modes of transport is far more susceptible to disruption and system failure.

Transportation coordinator and author
Michael Replogle

The City wraps around a bend in the Columbia River, providing a strong community identity. A central downtown is within easy bicycling distance of the adjacent residential neighborhoods (see Figure 3). Scenic, historical and recreational attractions bring visitors and contribute to the community's vitality. A mild climate generally favorable to cycling is due to the river's moderating influence and the low elevation.

Organization

The following chapters delve into the range of bicycling issues and recommend actions to create a comprehensive bikeway system. Additional information is included in the Appendices, and a foldout map of the bikeway system is attached.

Chapter 2 provides background information, including a review of applicable documents.

Chapter 3 summarizes proposed bikeway projects.

Chapter 4 discusses how to implement a bicycle program.

Chapter 5 details the suitability criteria used to select bicycle routes.

Chapter 6 describes bikeway standards.

Chapter 7 discusses supplementary facilities.

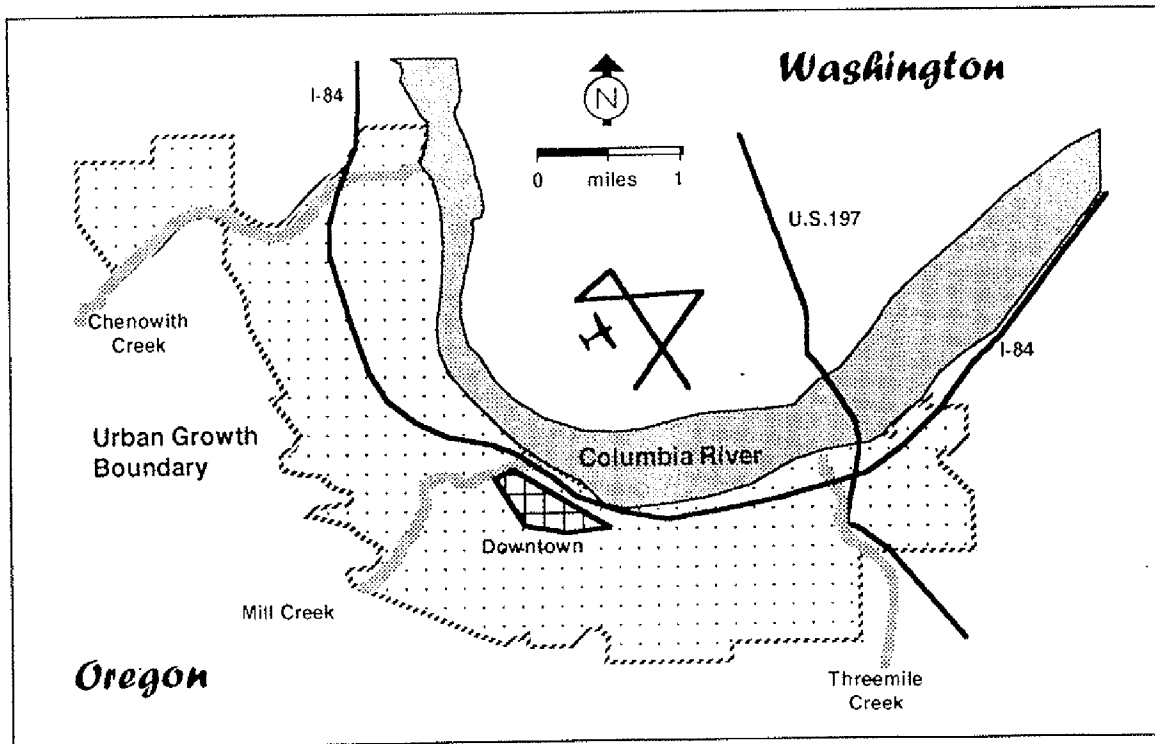
Chapter 8 deals with education.

Chapter 9 deals with law enforcement.

Chapter 10 covers operation and maintenance issues.



Figure 3. The Dalles area



PLANNING BACKGROUND

Bicycle planning is an integral part of the overall transportation planning undertaken by local, State and Federal government. Transportation agencies are unique in their ability to determine the nature of the roads and how bicycles fit in.

Municipal planning undertaken by The Dalles has identified local bicycle needs, established priorities, and put forth solutions as described below.

State and Federal transportation planning has also acknowledged the bicycle as an attractive option for urban travel. Various new transportation policies, plans and standards have been created that draw on a wealth of bicycle-related experience. The relevant documents are summarized below.

Bicycle Planning in The Dalles

Several planning efforts in The Dalles specifically endorse improved bicycle conditions. Together, they provide a clear statement that the community would like a safe and functional bikeway network and decreased dependence on the automobile.

Riverfront Plan

The Dalles Riverfront Plan, adopted in October 1989, is the community's vision for a 9-mile length of the Columbia River. Given the importance of the River in the area's past and future, the Plan touches on nearly all aspects of the community, including transportation. The Plan recommends:

- Existing plans establish the need and desire for an improved bicycle system.
- State and Federal guidelines provide standards and funding sources.
- The Riverfront Plan features several multiuse paths that could form the backbone of a city-wide bikeway system.
- The Dalles Bicycle Master Plan Task Force has coordinated research and provided an avenue for public participation.

- A City-County bikeway plan and system to provide safe, pleasant ways to ride from home to schools, parks, other community facilities, business areas, and the riverfront.
- The Riverfront Trail and greenway trails along Mill and Chenoweth Creeks, for bicycling and walking to and from neighborhoods, parks, schools, other community facilities and business areas throughout the community.
- Coordinated transportation and recreation planning among local agencies to develop bikeways and trails.
- Incorporation of bikeways into public and semi-public capital improvements and routine construction, improvement and maintenance of sidewalks, streets, utilities and other corridors.
- Subdivision and site plan regulations and review that encourage incorporation of trails, bikeways and walkways for transportation.

The Riverfront Plan also identified:

- Bicycle lanes on:
 - E. 2nd St.
 - W. 6th St./3rd Pl./4th St.
 - W. 10th St.
 - U.S. 197
 - Brewery Grade and overpass

Cherry Heights Rd.
 Court St. (S. of 4th)
 Hostetler St.
 Old Dufur Rd./Fremont St.
 Scenic Dr.
 Washington St. (N. of 4th)
 Webber St.

The Riverfront Trail would serve as a centerpiece of a bikeway system. Besides the aesthetic attractions, there are over 1,300 people presently employed near the Riverfront from The Dalles Dam on the east to the Mountain Fir Chip Mill on the west. To this will be added additional employees in the Port Industrial Center plus many recreational users as the Interpretive (Discovery) Center is built.

Bicycle Master Plan Task Force

The Bicycle Master Plan Task Force first met in March 1990 to develop a bicycle plan in accordance with the Riverfront Plan and with the State of Oregon Bicycle Master Plan. They reviewed the efforts of other communities, discussed options, examined routes, surveyed riders, held a public hearing, and made a list of recommendations that are the foundation of this plan.

A rider survey, extensive route evaluations, and other efforts of the Task Force are summarized below.

The written *rider survey*, conducted in August 1990, received 81 responses. The results are summarized in Appendix A. Some of the results are:

- The respondents are predominantly male (70%), over 16 years of age (90%), and recreational or fitness riders (87%).
- Over 64% ride more than 10 mi per week with 17% riding over 50 mi per week.

- Many (88%) feel that signed bike routes are a good idea and would encourage them to ride more often (69%).
- The only existing bike lane (on W. 6th St.) is rated only 5.5 for safety (10 being very dangerous). The street is rated 7.2 without the bike lane.
- The most important factor in choosing a route is traffic volume, with surface material and width being of second highest importance. Directness of route does not rate as highly.
- Respondant comments tend to focus on poor road maintenance and conflicts with cars (especially due to narrow streets).

This survey provides a snapshot of a subset of existing cyclists. While not representative of all cyclists, much less of the average citizen, the survey provides useful information from a group that knows the local riding conditions. They reiterate the primary concerns expressed by cyclists in many communities about inadequate maintenance, poor bike lane design, and discomfort with high traffic levels on shared roadways.

The *route evaluations* are aimed at identifying primary routes to be signed and secondary routes to be included only on a map. The signing is intended to help cyclists find the primary routes and to alert motorists to expect cyclists on the roadway. In most cases, existing conditions (road surface, intersections, traffic volume, lane width, etc.) are used to determine the safest routes. Elevation gain (or 'energy output'), directness, continuity, and destinations are also considered. The Task Force is well aware of the tradeoffs involved in choosing one route over another and that not everyone will agree with the choices.

The resulting recommendations from the Task Force are a system of primary and secondary routes that provide several options for east-west and north-south travel. While occasionally devious, these routes are a useful synthesis of the committee's experience with local streets.

The Committee also studied plans from other communities, and members attended State-sponsored conferences for bicycle advisory committees. This research broadened their perspective by seeing how other communities have responded to similar needs and how the State plays a key role in providing guidance and funding. The critical contribution of maintenance, education and law enforcement in creating a safe and attractive environment for cyclists became apparent to the Committee, and these concerns are incorporated into the Plan.

Community Profile

A community profile, *Pioneering The Dalles: Exploring the Trail to 2020*, was produced in January 1993. This included an analysis of the community and an "attitudes and values" survey.

The analysis pointed out how highway development and increased use of the automobile caused the City to grow away from the river. Reestablishment of the river connection is a high priority. A *bikeway and pedestrian plan* to provide safe access throughout the community is seen as a way to support planned growth and to encourage economic development. Gradual population growth between 1% and 2% is predicted.

A survey of 1500 randomly-selected households in The Dalles was conducted to help guide community development. A supplemental survey of high school students was also conducted. A variety of questions were asked to determine community values and priorities. Several questions touched upon transportation and access:

- Bicycle and pedestrian pathways are important to The Dalles (77% of households and 69% of students agreed).
- The city should place more emphasis on paving and maintaining streets (63% of households and 70% of students agreed).
- More and better access to the river will benefit residents and visitors (79% of households and 72% of students agreed).
- The Dalles should implement the Riverfront Master Plan (74% of households and 69% of students agreed).
- There is a need for public transportation in The Dalles (58% of households and 59% of students agreed).

The survey indicates that improvements in bicycle facilities as well as other nonmotorized modes are a high priority among residents.

Prior Planning

Bicycle planning in The Dalles dates back to at least 1976 when C. Dennis Kramer, Wasco County Surveyor, wrote *A Guide for Bikeway Development in The Dalles and Vicinity*, a 14-page document with map attachment. It argued for the need to service and promote bicycling, summarized the facility design standards available at the time, and recommended a system of developed bicycle routes not much different from the ones chosen by the Task Force in 1990.

The City of The Dalles Comprehensive Plan, December 1982, recognizes the bicycle as a desirable mode of transportation, establishes basic standards, and directs that bikeways be considered.

Existing Road System and Constraints

The Dalles is craddled between the south shore of the Columbia River and the nearby hills (see Figure 4). Urban destinations are scattered throughout the area, and several roads lead into the surrounding country. There are few east-west through routes, and the north-south routes are hilly. Two major east-west highways, I-84 (Columbia River Hwy.) and U.S. 30 (Mosier-The Dalles Hwy.) traverse the city. U.S. 197 (The Dalles-California Hwy.) passes through the east end of the city and provides the only nearby river crossing.

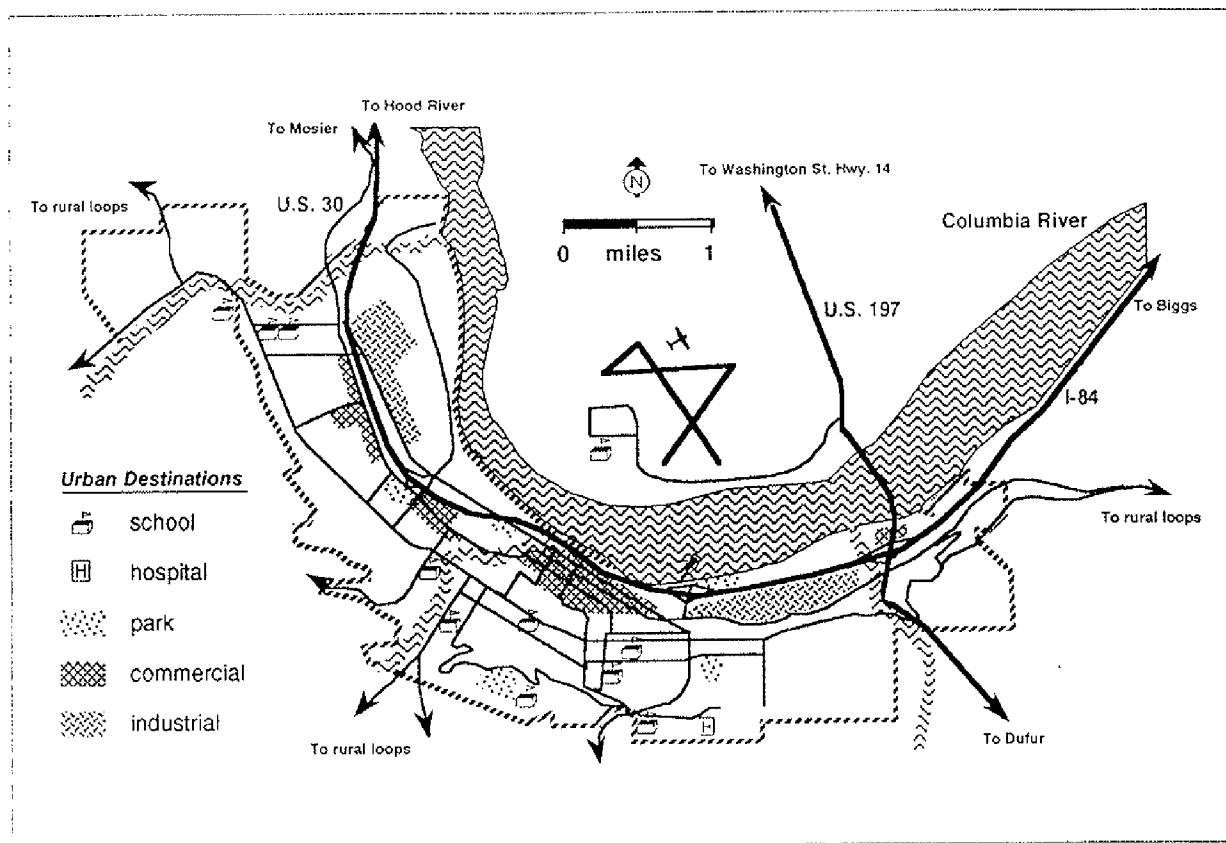
Roadway Classifications

The Dalles Transportation Plan is being updated. The existing functional classification map of the urban area shows the following arterials and collectors:

East-west trending urban arterials:

- 2nd-3rd St. couplet (U.S. 30)
- 6th St. (U.S. 30) (the only bike lane is along this street)
- Chenoweth Rd./10th St./Old Dufur Rd./Fremont St.
- Seven Mile Hill Rd.
- Hostetler St.

Figure 4. The Dalles area



East-west trending urban collectors:

1st St.
 4th St.
 9th St. (east of Dry Hollow)
 12th St. (east of Kelly)
 13th St. (west of Kelly)
 Scenic Dr.
 19th St.

North-south trending urban arterials:

Cherry Heights Rd.
 Mt. Hood St. (south of 10th)/Mill Creek Rd.
 Skyline Rd.
 Union St. (north of 10th)
 Court St. (north of 10th)
 Washington/7th/Kelly
 Brewery Grade/Dry Hollow Rd.

North-south trending urban collectors:

Snipes St.
 Walnut St.
 Webber St.
 Trevitt St.
 Liberty St. (1st to 2nd)
 Union St. (10th to 13th)
 Federal St. (2nd to 4th)
 Laughlin St. (2nd to 4th)
 Jefferson St. (2nd to 4th)
 Madison St. (1st to 4th)
 Quinton St. (north of 12th)
 Thompson St.
 Richmond St.

Except for a section of bike lane on W. 6th St., all these facilities are shared roadways with a few short segments of shoulder bikeway (refer to Chapter 6: Bikeway Design Standards for definitions of bikeway types).

Bicycle Counts

The limited bicycle data that are available show mixed bicycle use in The Dalles. Journey-to-work data, which includes only work trips made by those over 17 years of age, is a meager 0.9%. However, a 1990 bicycle count at W. 6th St. (along the U.S. 30 bike lane) yielded an ADT (average daily traffic) of about 40. Pedestrian counts taken in 1992 showed many streets exceeding 100 ADT, which implies that bicycle use is probably over 20 ADT at those locations (based on experience in other communities). While not high, these numbers show that bicycle use continues despite obstacles and little encouragement.

Central City

The central city is built on a tight grid (approximately 300 ft) with ample sidewalks. Curb-to-curb width varies but 38 ft is typical. Most streets allow parking on both sides (even Liberty St. which is only 32-ft wide). There is some diagonal parking downtown. The major physical impediments to bicycling (and walking) are the hills to the south, Mill Creek which has limited east-west crossings, and U.S. 30 which is difficult to cross.

Bicycle travel is complicated by inconsistent street widths, extensive on-street parking, traffic congestion on the main through routes, little space allocation to bicycles, and scarce bicycle parking.

Access to the river is limited due to the multiple barriers of I-84 and the parallel railroad tracks.

State and Federal Bicycle Planning

Oregon is fortunate in having a long-standing and supportive state program. Oregon was one of the first states to appoint a bicycle program manager and to establish a dependable funding source. Much of what Oregon pioneered is now reflected in new Federal legislation that applies to all states. The following sources provide the framework from which local bicycle programs are designed.

State Policies

Oregon has long led the way in bicycle planning in the U.S. It provides cities with clear and strong directions about bicycle provisions.

• Bicycle Program

Oregon has had a State-wide program for over 20 years that is supported by the 1971 "Oregon Bicycle Law" that mandates a minimum 1% gas-tax expenditure on bicycle and pedestrian facilities (refer to *Chapter 4: Implementation*). The Oregon Bicycle Plan (1992) describes how the program "serves the needs of bicyclists within the State by supporting bicycling as a form of transportation and recreation that enhances the livability of Oregon." The Oregon Bicycle Plan provides extensive information about the program, facility standards, and design issues that are directly applicable to The Dalles.

• Transportation Planning Rule

The Oregon Transportation Planning Rule (1991), OAR Chapter 660, Division 12, implements Statewide Planning Goal 12 (Transportation). The rule requires cities and counties to plan for non-automotive choices, including bicycling and walking, through various measures. The Rule states:

1. 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 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:
 - Sidewalks along urban arterials and collectors.
 - Bikeways along arterials and major collectors.
 - Where appropriate, separate bike or pedestrian ways to minimize travel distances within and between the areas and developments listed above.
 - c. Routes shall be:
 - Reasonably free from hazards, particularly types or levels of automobile traffic which would interfere with or discourage pedestrian or cycle travel for short trips.
 - Provide a direct route of travel between destinations.
 - Meet travel needs of cyclists and pedestrians considering destination and length of trip.
2. 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.

The Rule has a goal of no increase in metropolitan automobile trips in the first 10 years, a reduction of 10% in 20 years, and a reduction of 20% in 30 years.

• **Oregon Transportation Plan**

Oregon has also created a 20-year Transportation Plan in 1992 to meet the requirements of Goal 12 and the ISTEA. The Plan stresses that people must have choices and that transportation systems must support land-use plans. This includes improved circulation systems for bicycles and pedestrians whereby housing, daycare, schools, commercial areas and employment can be reached easily and safely.

• **Model Bicycle Ordinances**

The Oregon Chapter of the American Planning Association developed the Model Bicycle

Ordinances (1993) to recommend specific ordinances for use by Oregon municipalities when implementing bicycle plans. These are designed to meet the requirements of the Transportation Planning Rule.

Federal Policies

The Federal government has recently taken a strong stand in promoting bicycles as an alternative to automobiles.

• **National Bicycling and Walking Study**

The Federal Highway Administration conducted the National Bicycling and Walking Study to explore various issues and present existing data in a way that local agencies can use. Many studies have been completed, and the results provide useful insight into the benefits of bicycle transportation and the means required to promote bicycle use. For example, successful bicycle programs have been found to address three basic goals: provide usable facilities, establish program support, and make cycling attractive (see Figure 5).

Figure 5. Essential links in a bicycle program

