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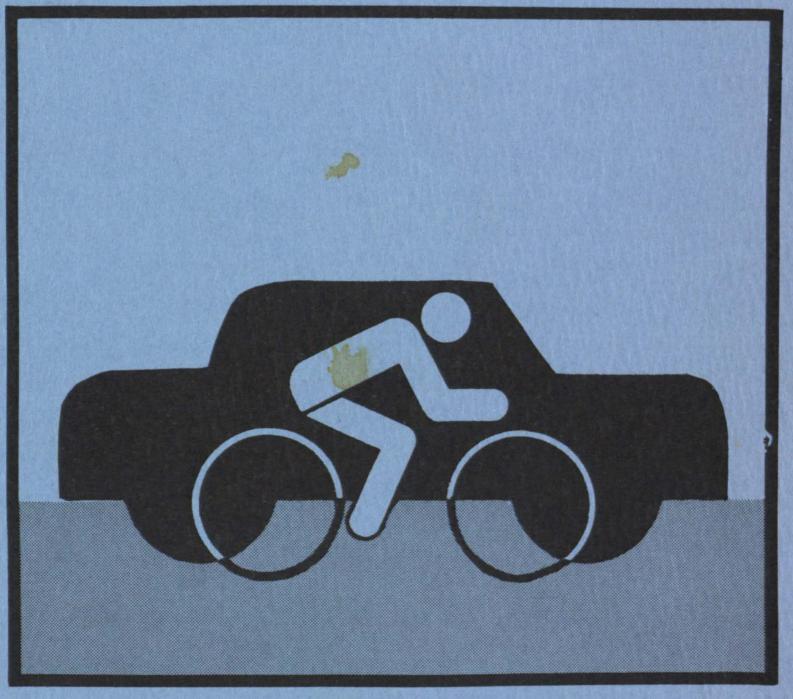
Regional Bicycle Plan

Metropolitan Service District

Andrew Cotugno
Metropolitan Service District

REGIONAL BICYCLE PLAN

August 1983



METROPOLITAN SERVICE DISTRICT
Providing Zoo, Transportation, Solid Waste and other Regional Services

METRO

REGIONAL BICYCLE PLAN

FOR THE

PORTLAND METROPOLITAN AREA

ADOPTED BY THE COUNCIL

OF THE

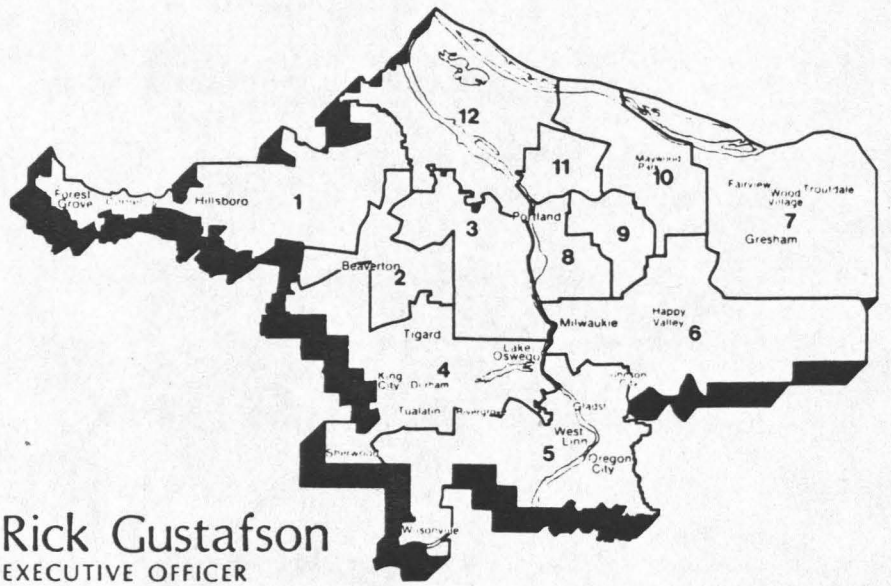
METROPOLITAN SERVICE DISTRICT

AUGUST 4, 1983

PUBLISHED BY:

Metropolitan Service District
527 S.W. Hall Street
Portland, Oregon 97201
(503) 221-1646

METROPOLITAN SERVICE DISTRICT



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Cover graphics courtesy of City of Portland Bicycle/Pedestrian Program

The preparation of this report has been financed in part by funds from the United States Department of Transportation, Federal Highway Administration; and by funds from the Oregon Department of Transportation.

Acknowledgements

The following members of the Technical Advisory Committee and the Citizens' Advisory Committee provided valuable guidance and assistance in the development of this plan:

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Janet Schaeffer, City of Portland
Jeff Davis, City of Gresham
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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER I - INTRODUCTION AND SUMMARY

A. Introduction

The Regional Bicycle Plan is a tool to be used by local governments and citizens alike to identify and address the needs of the increasing number of commuter bicyclists in the Portland metropolitan area. The broad range of policies included in the plan are designed to define the intent of this region with respect to bicycle facilities and programs for the next 10 years, as well as to streamline the process for local jurisdictions to follow when implementing such facilities. Enactment of these policies will also improve the status of bicycles as a viable mode of transportation.

To understand the significance of bicycling in the Portland metropolitan area, it is necessary to place it in perspective. Locally and nationally, bicycling is continuing to grow in importance as a means of transportation and as a recreational activity. During the past 10 years, more bicycles than automobiles have been sold in the United States. The new enthusiasm for bicycling has stimulated a corresponding growth in the use of bicycles for transportation. In Portland, bicycle commuting--already twice the national average as a percentage of all work trips--has doubled in volume since 1974.

In a 1982 survey conducted for the Metropolitan Service District, two of the key responses showed that:

- Over half of all Portland area adults bicycled during the past year, mostly for recreational purposes; and
- Approximately 120,000 area residents are potential bicycle commuters--more than 10 times the number regularly commuting by bicycle today.

The survey also found that to make commuting by bicycle safer and to change conditions that would allow potential bicyclists to become active commuter bicyclists, several areas of concern must be addressed. Of primary importance were more safe bicycle routes and bicycle parking facilities. These and related issues are thus the major emphasis of the plan.

To direct our efforts in responding to these issues, local jurisdictions and citizens were drawn together in a cooperative venture to develop an improved regional bicycle system, with supporting policies and programs.

B. Summary of the Plan

The Regional Bicycle Plan addresses this region's recognition of bicycling as a legitimate form of transportation. The primary intent of the plan is to designate a system of safe, direct bicycling routes serving major trip destinations

throughout the region. Addressing routes alone, however, does not sufficiently meet those needs; thus, the Regional Bicycle Plan also establishes policies regarding funding, bicycle parking, registration, and safety education. Major highlights of the plan are as follows:

- The plan designates approximately 270 miles of regional bicycle routes throughout the Metropolitan Service District. This bicycling network is intended to afford the opportunity for convenient travel by bicycle between local jurisdictions and to major trip attraction areas such as employment centers, schools, and shopping areas throughout the region.

- The plan requires local jurisdictions to include regional bicycle routes in their comprehensive plans and establishes a process for amending the regional network.

- The plan establishes a process for jurisdictions to cooperatively define on an annual basis which bicycle routes in the region, constructed independently of a highway project, are the highest priority for implementation. This will ensure an efficient and equitable use of the State Bicycle Fund. The plan also calls for a concerted regional effort to seek additional funds to complete the network more quickly than is possible when relying solely on existing funding sources.

- The plan requires secure bicycle parking facilities to be provided at designated major transit stations and major park and ride lots. Because adequate parking facilities are essential to the bicycle commuter, the plan also encourages jurisdictions to establish bicycle parking requirements at new developments. Guidelines are provided for different land uses.

- The plan encourages local jurisdictions to implement voluntary bicycle registration or marking programs. This preventive measure will afford citizens the opportunity to mark their bicycles with an identification number which will deter bicycle thefts and allow recovered, stolen bicycles to be quickly returned to their owners.

- The plan encourages local jurisdictions and bicycle interest groups to implement safety education and awareness programs. These are intended to make bicycling safer and increase public awareness of bicycling as a viable mode of transportation. They can also educate the bicyclist, as well as the motorist, to the rights and responsbilities of each when sharing the road. Guidelines are provided.

1. Relationship to the Regional Transportation Plan

The Regional Bicycle Plan will be incorporated into the Regional Transportation Plan (RTP) as an important element in this region's unified policy direction of achieving a well-balanced, cost-effective transportation system.

Three types of actions addressed in the RTP are aimed at providing the mobility needed in the region: highway improvements, transit service expansion and demand management programs. The policies of the Regional Bicycle Plan are included as part of the demand management strategy, which is a combination of actions designed to reduce the high transit and highway travel demand during peak hours. Other elements included as part of this strategy include ridesharing and flextime programs.

As part of the RTP, the bicycle plan addresses bicycling as an alternative mode of transportation. In doing so, the plan concurs with the current federal policy of planning for bicycles in conjunction with planning for other transportation modes. This policy was developed because improvements in facilities which increase or enhance bicycle travel may also benefit other modes of travel. The converse is also true in that consideration of bicycles in conjunction with highway improvements will enhance the safety and convenience of bicycle travel.

The implementation of facilities and programs recommended in this plan are in accordance with federal policy and this region's overall transportation improvement strategy. Therefore, adoption of the Regional Bicycle Plan will be followed by selective amendments to the RTP.

Because trip destinations will change over the years with new developments or because policies adopted today may not be viable in future years, amendments to the Regional Bicycle Plan will become necessary. Proposed amendments to the Regional Bicycle Plan will be reviewed by Metro's Transportation Policy Alternatives Committee (TPAC) and subsequently by the Joint Policy Advisory Committee on Transportation (JPACT). These committees are composed, respectively, of planners and locally elected officials, and provide advice to the Metro Council on air quality and transportation issues. The committees will review and adopt by resolution amendments to the bicycle plan throughout the year. Amendments will also be adopted by ordinance, together with other transportation issues, during the annual RTP amendment process.

2. Planning Process

a. Development of the Plan

This Regional Bicycle Plan was originally designed to update the 1974 Columbia Region Association of Governments (CRAG) Regional Bikeway Plan; however, the issues involved in defining a "regional" bicycle network and programs associated with it have changed substantially since that time, necessitating an entirely new planning effort.

There are several important differences between the current plan and the earlier CRAG plan. First, the regional bicycle network was scaled down to reflect current funding realities, as well as new policy directions concerning the purpose of a regional bicycle network. Second, the plan establishes bicycle parking policies and guidelines for jurisdictions and developers to follow. Third, the plan establishes policies and guidelines which formalize and create a structure for the decision-making process of implementing new bicycle routes. These and the other areas addressed in the plan make it a comprehensive approach to commuter bicycle use.

b. Role of the Technical Advisory Committee and Citizens' Advisory Committee

Cooperation and assistance from both a Technical Advisory Committee and a Citizens' Advisory Committee were instrumental in the development of the Regional Bicycle Plan. Letters requesting participation on the Technical Advisory Committee were sent to all jurisdictions; seven representatives actually participated for the duration of the planning process. Other representatives on the Committee included one from the Oregon Department of Transportation (ODOT) and two citizens representing the Citizens' Advisory Committee. Their knowledge and expertise concerning all aspects of bicycle planning were critical to the development of the Plan.

There were approximately 15 citizens who actively participated on the Citizens' Advisory Committee. Many of these citizens have extensive experience in bicycle-related issues and were members of a local jurisdiction's bicycle advisory group. Since many of these citizens were simultaneously participating in updating their own local bicycle plans, they were instrumental in defining what the purpose of a regional bicycle plan should be and in their understanding of how local plans fit into the context of the regional plan.

Bicycle routes and policies developed by the citizens' committee were always reviewed by the technical committee; likewise, recommendations made by the technical group were presented to the citizens. This established a well-defined working relationship between the two groups. The combination of technical expertise from the technical committee and the knowledge of bicyclists' needs and concerns from the citizens' committee was the main impetus to the successful completion of this plan. Both groups will be called upon in the future to advise Metro on changes or amendments to the plan.

CHAPTER II - GOALS AND POLICIES OF THE PLAN

The goals and policies established in the Regional Bicycle Plan are significant in defining what direction this region will take in supporting bicycling as a viable commuter alternative. The goals of the plan clearly state the intentions of this region concerning needed improvements in bicycle development. Policies supporting these goals form the basis of the plan and will be used to achieve its objectives. All policies of the Regional Bicycle Plan will be adopted by JPACT and the Metro Council.

This chapter summarizes the major goals and policies of the plan. Details and rationales for the policies are discussed in the chapters pertaining to each area.

A. Plan Goals:

1. To integrate the efforts of cities and counties in the Metro region toward the most cost-effective, aesthetic, practical and safe system of regional bikeways.

2. To develop a regional bikeway system which will function as part of the overall regional transportation system.

3. To secure additional funding sources for constructing bicycle facilities and initiating new bicycle programs.

4. To establish a prioritization process for implementing new regional bicycle routes.

5. To form guidelines for local jurisdictions to follow in designing bicycling safety education and awareness programs.

6. To provide guidelines for local communities to follow in the planning, design and implementation of the regional bikeway system.

7. To determine the feasibility of developing a bicycle registration program for the region as an identification system to prevent bicycle thefts and/or as a potential source of revenue.

B. Plan Policies:

1. Bicycle Facilities

Bicycle facilities are of three major types:

- A bicycle path is a bikeway which is physically separated from motorized vehicular traffic by an open space or barrier and is either within the highway right-of-way or within an independent right-of-way;

- A bicycle lane is that portion of a roadway which has been designated by striping and signing or pavement markings for the preferential use of bicyclists and/or pedestrians; and

- A bicycle route is a segment of a system of bikeways designated by the jurisdiction with directional and informational markers only.

  (Note: In this plan, the term bicycle route is used generically to indicate any bicycle facility.)

Decisions regarding the type of bikeway to construct in a particular area are left to the discretion of local jurisdictions. These decisions are based on various factors including funding availability and the condition of the existing street.

Policies

a. The regional bicycle route network shall afford the opportunity for convenient travel by bicycle between local jurisdictions and to major attraction areas throughout the region.

b. Metro shall serve as an advisor to jurisdictions in developing bicycle routes which are compatible with the Regional Bicycle Plan.

c. All routes shown on the regional network shall be identified in local comprehensive plans. If a jurisdiction proposes to eliminate a regional route, it must consult with other affected jurisdictions, amend its comprehensive plan accordingly, and concurrently seek an amendment to the RTP by Metro.

d. ORS 366.514 (Appendix A) requires local jurisdictions to establish footpaths and bicycle trails, with certain exceptions, wherever a street is being constructed, reconstructed or relocated using State Highway Fund revenues. Footpaths and bicycle trails are not required to be established under this law:

   1) "where the establishment of such paths and trails would be contrary to public safety;

   2) "if the cost of establishing such paths and trails would be excessively disproportionate to the need or probable use; or

   3) "where sparsity of population, other available ways or other factors indicate an absence of any need for such paths and trails."

As such, any jurisdiction planning such street improvements on roadways designated as regional bicycle routes that are proposed to not include bicycle facilities shall consult with Metro and other affected jurisdictions.

e. ODOT policy requires local jurisdictions to follow the design guidelines set forth in the 1981 Guide For Development of New Bicycle Facilities as published by the American Association of State Highway and Transportation Officials (AASHTO), as supplemented and adopted by the Oregon Transportation Commission, on all federally and State-funded bicycle projects. Exceptions will be considered on an individual basis.

f. ODOT policy requires all traffic control devices used in conjunction with bicycle routes to conform to the Manual on Uniform Traffic Control Devices (MUTCD), as supplemented and adopted by the Oregon Transportation Commission, on all federally and State-funded bicycle projects. Exceptions will be considered on an individual basis.

2. Funding

Funding of bicycle facilities and programs is essential to the implementation of this plan. Without a commitment to seek new funding sources and efficiently use existing sources, many of the proposals called for in the plan may never be realized. The plan thus calls for:

a. Metro and local jurisdictions to cooperatively seek additional funding sources for constructing bicycle facilities and developing new bicycle programs.

b. Supporting continuation of the State one percent gas tax fund for construction of local and regional bicycle routes in the Portland metropolitan area.

c. Limiting expenditure of the State's one percent bicycle fund monies for bicycle projects constructed independently of a highway project (Priority 3) primarily to bicycle routes designated on the regional bicycle network.

d. Supporting a change in current Oregon Transportation Commission policy to make Priority 3 money available not only to independent bikeways within State-owned rights-of-way, but also on routes parallel to and serving the same corridors as State highways.

e. Allowing the use of State one percent funds for financial assistance to local government bikeway projects (Priority 4) on either local or regional

bicycle routes (at the discretion of local jurisdictions).

f. Supporting a change in ODOT policy 1) to establish an annual target amount of local discretionary grant (Priority 4) money and 2) to establish an equitable distribution policy for this money that is not biased against areas of highest bicycling use.

g. Establishing a regional funding committee to annually prioritize bicycle projects in this region to submit to the State for funding. This applies to projects eligible for Priority 3 and 4 funds only.

3. Bicycle Parking

Two distinct types of parking facilities are needed by bicyclists at a variety of destination points, with the responsibility for the security of parked bicycles shared by the bicyclists and the provider of bicycle parking.

Long-term parking facilities should be provided at locations such as employment centers, transit stations, park and ride lots, schools and multi-family dwellings. Short-term parking facilities should be provided at locations such as shopping centers, libraries, recreation areas and post offices, among others.

Policies

a. Tri-Met shall provide adequate bicycle parking facilities at major transit stations and major park and ride lots. Bicycle parking facilities at these locations shall follow guidelines and design standards established by this plan. Exceptions to this provision may be made by agreement among Metro, Tri-Met and the affected jurisdiction.

b. Tri-Met is encouraged to provide at least four bicycle lockers at major transit stations and major park and ride lots when agreement can be reached with the local jurisdiction regarding maintenance of the lockers.

c. Tri-Met and jurisdictions are encouraged to provide high security bicycle racks, where practical, at minor transit stations.

d. Jurisdictions are encouraged to include in their comprehensive plans a requirement that bicycle parking facilities be provided at major commercial and employment centers and in high density residential areas. Jurisdictions are encouraged to follow the bicycle parking guidelines and design standards

applicable to these areas established by this plan.

4. Registration and Licensing

Registration or marking of bicycles is important in detering thefts and in returning stolen bicycles to their owners.

Policies

a. All jurisdictions are encouraged to implement and maintain voluntary bicycle marking programs.

b. The licensing of bicycle operators is not recommended in the metropolitan area.

5. Bicycling Safety Education and Enforcement Programs

In addition to providing bicycle routes, components of a bicycle program such as safety education and enforcement are equally important to minimize potential conflicts between bicycles and motor vehicles, pedestrians, and other bicycles.

Policies

a. Jurisdictions are encouraged to support police programs for consistent enforcement of all rules of the road as they pertain to bicyclists.

b. Jurisdictions are encouraged to support development of and provide guidelines for safety education and awareness programs and materials.

CHAPTER III - THE REGIONAL BICYCLE ROUTE SYSTEM

A. Overview of the Regional System

The development of the regional bicycle route system by planners and citizens, has established a network that will serve the commuter bicyclist by interconnecting cities, counties, communities, major shopping and employment areas, and other areas of regional significance. When completed, this network will afford the opportunity for convenient travel by bicycle between major destination points within the Metro boundary.

To be designated as a regional bicycle route, a route must primarily serve commuting trips. The definition of the term "commuting trip" as used in this plan includes trips to employment centers, schools, shopping centers, recreation areas, and other similar destinations. Although the plan does not specifically address recreational routes, many of the proposed routes do connect major recreational bicycle paths. Routes designated solely for recreational purposes--that is, for pleasure riding--are not addressed in this plan, but are included in local bicycle plans.

The reader should also be aware that there are numerous bicycle routes throughout the region which are not included in this plan, because they are not regionally significant, as defined by the policies established in Chapter II. These routes are of local importance, however, and in many instances support the regional network.

A map of all local bicycle routes in the region is shown in Appendix B.

B. Route Selection Process

The regional bicycle route map is shown on Figure 1. Except for the Willamette Greenway and portions of the 40-Mile Loop, almost all routes selected are on or adjacent to streets and arterials also traveled by automobiles. The reasons for this are primarily economic. The costs for building a separated, off-street bicycle path involving right-of-way acquisition are significantly higher than the costs of establishing a bicycle route on or adjacent to an existing street. Also, the availability of funds for bicycle facilities constructed independently of a highway project is very limited. (Details on funding are described in Chapter IV.)

In addition, 1) because Oregon law (ORS 366.514) requires, with some exceptions, that pedestrian and bicycling facilities be established wherever a road is constructed, reconstructed or relocated and 2) because use of the Oregon Highway Fund is restricted to highway rights-of-way, there is a much greater opportunity to implement in a timely manner a bicycle route

Existing routes

Routes programmed or under construction

Proposed routes (no funds identified)

Corridors (specific routes to be determined)

Urban growth boundary

REGIONAL BICYCLE ROUTE NETWORK

August 1983

network which is associated with the existing street system. (A description of ORS 366.514 is found in Chapter II, Section B(1)d.)

Another reason for placing bicycle routes on arterials rather than recommending off-street paths reiterates the primary intention of this plan; that is, to provide convenient travel by bicycle to major destination points throughout the region. Commuter bicyclists generally agree that to reach their destinations of work, shopping, or school, they prefer to take the most direct route which will get them there in the shortest possible time. The regional system, as proposed, addresses those desires.

1. Categories of Regional Routes

Routes shown on the regional bicycle map are divided into four categories:

a. Existing routes - Only those bicycle routes which are in place and considered to be of regional significance are shown. Existing routes that are not shown serve local trips and are included on local plans.

b. Routes programmed or under construction - Those routes which have an identifiable funding source or are currently under construction are shown.

c. Proposed routes - Those designated by the plan, but which do not have a specific funding source identified are shown.

d. Corridors - Shaded areas depict corridors where more than one street may be appropriate as the regional route. It is the responsibility of the affected jurisdiction and local bicycle committees to designate the regional route through a particular corridor. The plan will be updated as these decisions are made.

2. Plan Amendments (Route Changes)

The Regional Bicycle Plan requires all local jurisdictions to include in their comprehensive plans the adopted regional bicycle network in their jurisdiction. If a jurisdiction proposes to eliminate a regional route or portions of a regional route, it must consult with other affected jurisdictions, amend its comprehensive plan accordingly and concurrently seek an amendment to the RTP by Metro. (This recognizes that a regional bicycle route serves multiple jurisdictions and ensures that removal of the route does not create a gap in the network or negatively impact a neighboring jurisdiction.)

Proposed amendments to the Regional Bicycle Plan will be reviewed by Metro's Transportation Policy Alternatives Committee (TPAC) and subsequently by the Joint Policy Advisory Committee on Transportation (JPACT). These committees will review amendments to the bicycle plan as they are proposed. The plan will be amended on an annual basis, simultaneously with the RTP amendment process.

C. Bikeway Design Standards

When establishing bicycle routes on urban streets, it is imperative that the routes be properly designed, constructed and maintained for bicycles. Design guidelines for bicycle routes are found in the publication, 1981 Guide for Development of New Bicycle Facilities, as published by the AASHTO. ODOT policy requires jurisdictions to follow the AASHTO design guidelines on all federally and State-funded bicycle projects with exceptions considered on an individual basis. Supplements and exceptions to the AASHTO guidelines adopted by the Oregon Transportation Commission are shown in Appendix C.

In addition, ODOT requires that all traffic control devices used in conjunction with bicycle routes conform to the Manual on Uniform Traffic Control Devices, as supplemented and adopted by the Oregon Transportation Commission, on all federally and State-funded projects, with exceptions considered on an individual basis.

Because most bicycle commuters ride on streets which have not been designated as bicycle routes, extra safety measures should be implemented when bicycle traffic is expected. Roadway improvements and maintenance can reduce conflicts among pedestrians, bicyclists and motorists and can correct conditions unsafe for bicycle riding. Improvements such as safe drainage grates and railroad crossings, smooth pavements, and signals responsive to bicycles should be provided on designated bicycle routes or wherever there is significant bicycle use. Also, facilities such as bicycle lanes, bicycle routes, shoulder improvements and wide curb lanes should be developed where necessary in accordance with local bicycle plans.

D. Relation to Other Plans

1. Oregon Statewide Bicycle Master Plan

The objective of the Statewide Plan is to establish goals for a comprehensive bicycle program at the State level. The plan focuses on routes designated for bicycle touring (recreation) as well as utilitarian trips. The relationship between the Regional Plan and the State Plan is defined below:

a. All bicycle routes designated on the State Plan leading into the Portland metropolitan area connect with regional routes.

b. The design criteria guidelines referenced in the State Plan are also included in the Regional Plan.

c. Sources of funds used for construction of bicycle facilities are similar for both plans.

d. The Regional Bicycle Plan includes more extensive policies and guidelines regarding bicycle parking.

e. State and Regional Plan objectives are similar for improving safety and education of bicyclists, and enforcement of bicycling laws.

2. Local Bicycle Plans

As mentioned in the previous chapter, many local jurisdictions are updating their own bicycle plans. The relationship between these and the Regional Plan is an important one. The regional system addresses routes which interconnect jurisdictions and major regional attractions. To complement this system, the local networks are necessary to enable bicyclists to travel conveniently by bicycle within their own jurisdiction or to a point on the regional system. Metro will provide assistance to jurisdictions as necessary to ensure that routes are compatible with both plans.

CHAPTER IV - FUNDING REGIONAL BICYCLE ROUTES

A. Introduction

Implementation of proposed bicycle routes in this region is contingent primarily on the amount of funding available and the manner in which priority projects are determined. Although funding sources have remained the same over the past ten years, revenue from the State Highway Fund has stabilized or partially declined as a result of lower gasoline consumption rates. This has occurred even as construction costs continue to escalate. This chapter describes the existing sources of funds available for bicycle projects, recommends a methodology for allocating these funds in an efficient and equitable manner, and discusses the importance of securing additional funds to hasten facilities development.

B. Background

During the early 1970s, there was a bicycle boom across the country and in Oregon. Rising gasoline prices forced many people to seek alternatives to the automobile for their transportation needs, and many turned to the bicycle. As more and more bicyclists took to the streets, they found that many of those streets were not adequate to ride on.

Concerned citizens felt this issue to be important enough to warrant legislative action. As a result, the Oregon Legislature enacted what became known as the "Bicycle Bill." This 1971 legislation mandated the expenditure of not less than one percent of the State Highway Fund (gasoline tax revenues) received each year by the State or by any city or county for the establishment of bicycle trails and footpaths.

This statute further requires that the amount "shall never in any one fiscal year be less than one percent of the total amount of the funds received from the highway fund" (unless that amount is less than $250.00 in any year for a city, or $1,500.00 for a county). In lieu of spending these funds each year, a city or county may credit the funds to a bikeway financial reserve where they can be held for not more than 10 years.

The success of that legislation, together with the comprehensive bicycling development effort that emerged from it, resulted in the completion of over 70 miles of bicycle routes throughout the region, representing an investment of over $6.5 million over the past 10 years.

C. Funding Sources

In addition to local jurisdictions' general funds, there are presently two major sources of funds available for bicycle projects in this region: Federal Highway Trust Funds and Oregon Gasoline Tax Revenues. These are described below.

1. Federal Highway Trust Funds -- Although no federal statute requires bikeways to be built on federal highways, federal policy (23 CFR 652.5) states that "full consideration is to be given to safely accommodate bicycle/pedestrian traffic on all Federal Aid highway projects." Further, 23 USC 109(n) prohibits "severance or destruction of an existing major route for non-motorized vehicles unless such project provides for a reasonable alternative route or if such a route already exists."

   From the Federal Highway Trust Fund, two alternatives for funding bicycling facilities are provided:

   a. Constructing bicycle and pedestrian facilities as part of any Federal Aid highway project and within publically-owned right-of-way. Federal participation for bicycle projects is at the same rate (usually 88 percent) as the highway facility to which it is attached. However, Federal Aid Urban projects are eligible for 100 percent federal funding.

   b. Constructing bicycle and pedestrian facilities independently of a highway project, but serving corridors that are part of the federal highway system.

2. Oregon Gasoline Tax Revenues -- The entire State Highway Gas Tax Fund is divided among the State (68 percent), the counties (20 percent) and the cities (12 percent). The formula used by the State for allocating gasoline tax revenues to individual cities and counties is based on total vehicle registration for counties and total population for cities. The Bicycle Bill mandates that a portion of these funds be used for bicycle facilities development as described below:

   a. Cities' and Counties Portion

      Cities and counties are required to spend not less than one percent of their State Highway Fund monies for the establishment of footpaths and bikeways.

      In addition, the Oregon Transportation Commission has determined that this money may be spent for other uses such as:

      - Administrative and personnel costs of bicycle programs.
      - Preliminary engineering costs of bikeways.
      - Construction and right-of-way costs for bikeway/footpath facilities within highway right-of-way.
      - Auxiliary facilities such as signs, curb cuts,

ramps, and parking.
- Maintenance of existing bikeways/footpaths.
- Development and printing of bicycle route maps and brochures.

b. State's Portion

The State is required to spend not less than one percent of total gasoline tax revenues on bicycle and pedestrian projects under the following system of priorities:

Priority One

- Construction of bikeway projects wherever a highway, road or street is constructed, reconstructed or relocated. This is primarily used as match for projects funded with Federal Aid monies and for State projects.

Priority Two

- Maintenance of existing bikeways for which the State is responsible.

Priority Three

- Construction of bikeway projects independent of a highway project, but within State highway right-of-way.

Priority Four

- Construction of local governments' bikeway projects on or off the State highway system (requires local match).

D. Allocation of Funding Sources

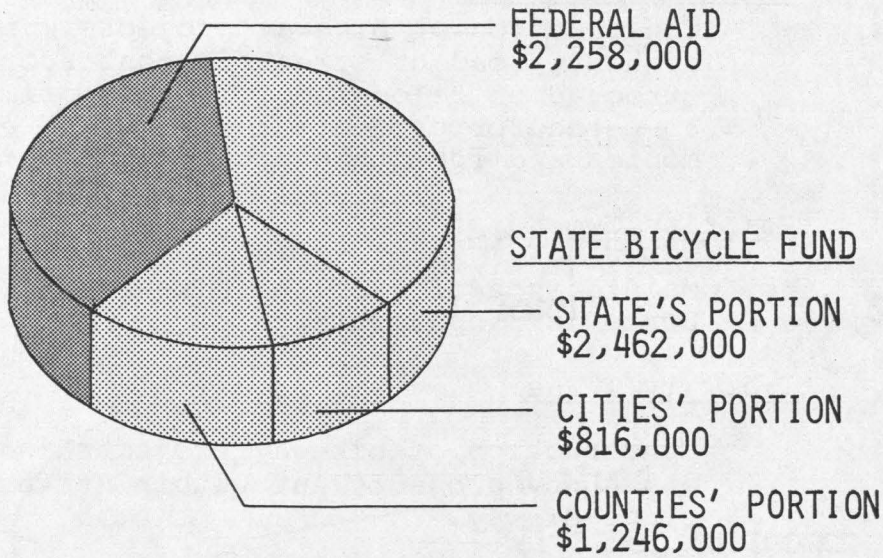
The total amount of funds spent from major funding sources over the last decade in the Portland metropolitan area is shown in Figure 2. Federal Highway Trust Fund monies were the second largest source of revenues for bicycle projects during this time period. The majority of these funds were spent on bicycle projects constructed as part of a highway project. However, the total amount also includes some bicycle projects constructed independently of a highway project.

Figure 2 also illustrates that the State's portion of the Bicycle Fund was the largest source of funds for constructing bicycle projects in this region during the last 10 years. While expenditures for the State's portion cannot be delineated by priority category, the majority of the fund was used to construct Priority 1 and Priority 3 projects.

Fig. 2

TEN YEAR BICYCLE EXPENDITURE RECORD FY 1972-1982

Portland metropolitan area



Total
$6,782,000

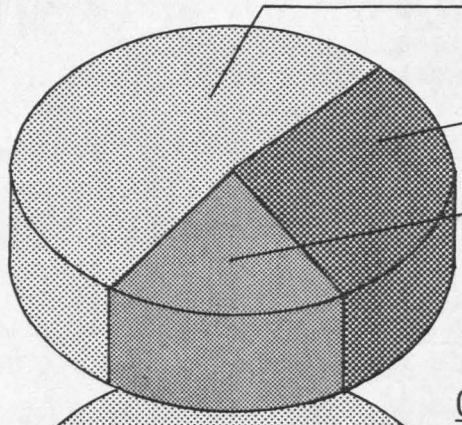
The cities' and counties' portions of the State Bicycle Fund may be spent by jurisdictions on any bicycle projects which they deem appropriate. These projects may be in conjunction with or independent of highway projects. Figure 3 illustrates the amounts received by cities and counties in the Portland metropolitan area in FY 1982.

Multnomah, Washington and Clackamas Counties received a combined total of $117,000 in 1982. Over one-half of the total amount was received by Multnomah County; 25 percent received by Clackamas County and 23 percent by Washington County.

Fig. 3

BICYCLE FUND REVENUES: FY 1982

Cities' & counties' portions



COUNTIES' PORTION

Multnomah	$61,100
Clackamas	29,400
Washington	27,300
Total	**$117,800**

CITIES' PORTION

Portland	$48,500
All other Multnomah Co. cities	5,600
Lake Oswego	3,100
All other Clackamas Co. cities	7,800
Beaverton	4,100
All other Washington Co. cities	9,400
Total	**$78,500**

Based on their population, 19 cities in the tri-county area within the Urban Growth Boundary (UGB) received a combined total of $78,000 for bicycle projects. Amounts ranged from a low of $308.00 allocated to Wood Village to a high of $48,549 allocated to Portland. (Medium-sized cities such as Beaverton and Lake Oswego received between $3,000 and $4,000 each.)

Five cities in the metropolitan area (Rivergrove, Maywood Park, Johnson City, Happy Valley, and Durham) received no funds from the State in 1982 because their gasoline tax receipts totaled less than $250.00. The totals illustrate that on an annual basis, most cities do not receive sufficient funds to implement even a fairly modest bicycle project. Appendix D lists specific amounts received by cities and counties throughout the State for FY 1972 through 1982.

Figure 4 shows how the State's portion of the Bicycle Fund was allocated to the Portland metropolitan area, by priority category, in FY 1983. The largest portion of the State's funds were spent on projects built in association with a highway project. (This money is used primarily to match Federal Aid participation in bicycle projects at a 12 percent rate.)

Funds for maintaining existing bicycle routes on State highways comprised only 15 percent of the total State budget for bicycle routes; however, funds for maintenance will increase as more bikeways are built.

Funds spent on bicycle projects constructed independently of a State highway (Priority 3) nearly equaled the amount spent under Priority 1 projects. However, there were no funds available in FY 1983 for Priority 4 projects (assistance to local governments). This was because distribution of money under Priority 4 varies from year to year based on the amount remaining after allocation of funds to the first three priorities. This policy is currently under review by ODOT and the State Bicycle Advisory Committee.

E. Recommendations for Expenditure of Existing Sources

This plan recommends that current methods of funding bicycle projects from Federal or State sources remain intact with two exceptions pertaining to the State Bicycle Fund program. A discussion of these recommendations follows.

1. Federal Program

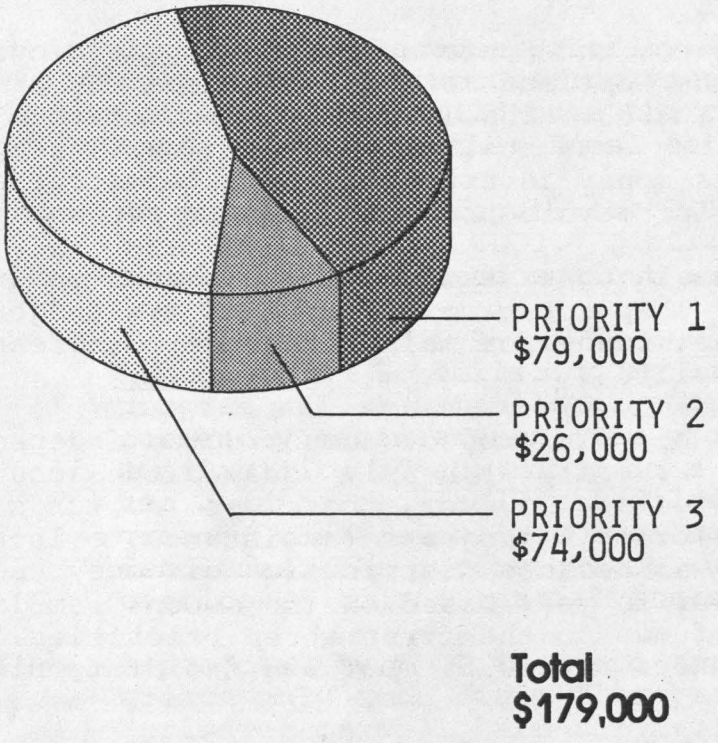
The Federal policy which requires consideration of bicycle/pedestrian facilities on all Federal Aid highway projects should be continued.

Because almost all highway projects constructed with Federal funds must consider bicycle projects at time of construction, Federal Aid projects continue to be an important part of bicycle facilities development in the region.

Fig. 4

BICYCLE FUND REVENUES: FY 1983

By priority category
State's portion



Total
$179,000

Note: No funds remained for distribution to local governments under Priority 4 in FY 1983.

2. State Bicycle Fund Program

The Regional Bicycle Plan recommends that all policies regarding the State's Bicycle Fund remain intact with the exception of the use of Priority 3 funds (funds used to construct bicycling and pedestrian facilities independently of highway projects on State-owned right-of-way) and Priority 4 funds (discretionary grants to local jurisdictions).

Policies

a. Expenditure of Priority 3 funds used for bicycle projects shall be limited to routes designated on the regional bicycle network. Exceptions to this policy may be made during the project evaluation process established for the expenditure of Priority 3 funds (see Section F). Priority 3 funds used for pedestrian facilities are not affected by this policy.

Discussion: The majority of money spent on bicycle projects in the region continues to come from highway reconstruction projects (Federal Aid and Priority 1 monies). Because there is a limited amount of State money available for independent projects, it is important that resources be focused to complete a minimum network of bicycle routes. (Note: the use of the term "independent project," used here and elsewhere in this plan, refers to a bicycle project constructed independently of a highway project.)

Currently, Priority 3 funds are available for bicycle projects on any State highway or within State highway right-of-way. Adoption of the proposed policy would limit expenditure of these funds to those State highways designated by the Plan. State highways not eligible are listed in Appendix E.

Metro recognizes that there will be certain projects, not on the regional network, which should appropriately use Priority 3 funds. These may be pedestrian ways or bikeways. Recommendations regarding exceptions to this policy will be made during the annual process for ranking bicycle projects discussed in Section F or as needed to proceed with immediate implementation.

b. Priority 3 monies should be made available for construction of independent bicycle projects on roadways parallel to a State highway serving the same travel corridor.

Discussion: Priority 3 monies are presently limited to projects within State highway rights-of-way. In some instances, because of economic, engineering or

safety factors, it may be more appropriate to designate a route parallel to the State highway as the preferred bicycling route. (Example: Cedar Hills Boulevard and Hall Boulevard are designated as regional routes rather than Highway 217.) The designation of a preferred alternative route would be by consensus of ODOT, Metro and the affected jurisdictions.

Metro and interested jurisdictions will work with ODOT staff in presenting the proposed policy to the Oregon Transportation Commission.

c. Priority 4 funds shall be made available to projects on either the local or regional system.

Discussion: Because Priority 4 funds are designed to help local governments implement bicycle facilities, jurisdictions should have the option of spending these funds on either local or regional routes.

d. An annual target figure for Priority 4 funds should be established by ODOT. Distribution of these funds should not be biased against areas of highest bicycling use.

Discussion: Establishing an annual amount for this program will benefit local jurisdictions. As currently administered, the program cannot guarantee availability of any money in a given year. As there has been no regularly scheduled program for awarding grants, there also have been no regular application deadlines. As a consequence, some jurisdictions have overlooked this potential source of funds.

A proposal by ODOT to award the funds in $25,000 grants only once every five years to a particular jurisdiction will have the impact of disproportionately limiting the funding in jurisdictions with high bicycling use and need. An alternative distribution mechanism should be sought.

F. Priority Process for Funding Bicycle Projects in the Region

In order to have more local control over which bicycle facilities in this region are funded by State Priority 3 and 4 Bicycle Fund monies, the plan establishes the following policy:

Policy: A regional funding committee shall be established to annually designate regional and local bicycle projects for which State Priority 3 and 4 bicycle funds will be sought.

Discussion: This will constitute a major change in how the region will apply for funding for independent bicycle projects. Currently, ODOT determines where Priority 3 funds are spent, and local jurisdictions apply individually to ODOT for Priority 4 funds. The funding committee will allow decisions regarding which projects are most important to be made first at a regional level and then submitted to ODOT for further consideration. Establishing this process may also increase local interest in bicycle facilities development. A detailed description of the process follows.

The first step will be to establish a regional funding committee to collectively review and rank bicycle projects in this region. This committee will be patterned after the Transportation Improvement Program (TIP) Subcommittee, which makes decisions regarding funding and scheduling of transportation projects in the region for five-year periods. Specific components of such a process will include the following:

- Committee membership will include one representative from ODOT, Metro and each jurisdiction submitting a bicycle project.

- The committee will meet annually for the project selection process, and additionally as needed. Meetings will be scheduled to meet ODOT's schedule for submission of proposed projects.

- Priority 3 projects and Priority 4 projects will be ranked separately because of their different funding sources.

- Selected projects will be endorsed by Metro's TPAC, JPACT and Council before submitting them to the State for further consideration.

- Based upon this input and submittals from other areas of the state, ODOT will select projects for implementation.

The second step of this process will be to rank proposed bicycle projects according to a given set of criteria. The format for evaluating candidate bicycle projects is discussed below.

Project Evaluation

Each jurisdiction will initially evaluate bicycle projects in their locale by whatever process they choose. Those projects submitted to the Regional Funding Committee will also be evaluated by the jurisdiction on a point system based on several criteria listed below.

The Committee will then collectively evaluate and select the highest priority projects from the region. The total point score, the estimated cost and whether or not the project is part of a local or regional system will determine the rank of each project.

Figure 5 lists six criteria to be used for evaluating bicycle projects eligible for funding under Priorities 3 and 4.

FIGURE 5

CRITERIA FOR RANKING
PRIORITY 3 AND 4 BICYCLE FUND PROJECTS

1. Potential use of route (based on access to major activity centers) for transportation purposes.

2. Present degree of travel hazard.

3. Availability of alternative routes (high score = no feasible alternative routes are available).

4. Does project link an existing route?

5. Does project extend an existing route?

6. Potential use of route for pleasure riding only.

G. Cost of Building the Regional System

A variety of factors enter into the construction of a bikeway system, and for that reason, cost estimates at a regional level cannot be developed easily or with great confidence. The configuration for a particular bicycle project depends upon the type of bikeway (whether it is a separated path, a bikeway which is adjacent to the travel lane, or a bikeway that shares the road with motor vehicles), the amount of right-of-way required, the type of construction materials used and the degree of safety for which the bikeway is designed. In addition, jurisdictions estimate costs differently for shoulder widening, striping, signing, and other improvements.

Because of this difference between jurisdictions, a general cost estimate of constructing the regional system has been derived. These general averages are: $100,000 per mile for shoulder widening, $300 per mile for striping, $1,000 per mile for signing in urban areas and $300 per mile for signing in rural areas. A special situation occurs in the City of Portland, where shoulder widening for the purpose of accommodating bicycles is, for the most part, not feasible on narrow city streets. Therefore, a figure of $10,000 per mile was used for bicycle-related improvements such as traffic diverters, striping, signing, and turn bays within the City of Portland.

Each link of the regional bicycle route system yet to be constructed was briefly examined for needed improvements. The cost per mile estimates previously discussed were then applied. The total cost estimates for the regional bicycle route system within each county and the City of Portland are:

Clackamas County	$ 2,000,000
Washington County	4,700,000
Multnomah County	2,800,000
City of Portland	4,600,000
Total	$14,100,000

It must be emphasized that these figures are very general and are only intended to put into context the amount of money required to build approximately 270 miles of proposed bicycle facilities needed to complete the network. A more definitive cost estimate for completion of these routes would necessitate a formal preliminary engineering process for each route.

Comparison of Capital Costs and Revenues

Of the 270 miles of proposed bicycle routes:

1. 60 miles are under construction or are programmed for construction primarily in conjunction with a highway project, at an approximate cost of $3 million; and

2. 26 miles are likely to be built in conjunction with a highway project within the next 10 years at an approximate cost of $1.4 million.

The remainder of the system has no funding currently identified. However, funds from the State bicycle fund will be sought for many of the routes, and jurisdictions will use general fund and their allocated State bicycle funds to construct other routes.

To understand the magnitude of the expense of constructing a bikeway system, it is necessary to compare costs to the resources available. As described previously, there are very limited sources of funds available to this region for constructing bicycle projects.

As shown in Figure 2, money spent on bicycle facilities in this region over the last decade has amounted to $2.2 million from Federal Highway revenues; $2.4 million from the State Bicycle Fund; $1.2 million from gasoline tax revenues received by all three counties; and $0.8 million from gasoline tax revenues received by 19 cities in the metropolitan area. Nearly $7 million has been spent on bikeways in the region over the last 10 years. With 70 miles of completed bikeways, an average cost is estimated at $100,000 per mile.

In most cases, cities and counties have had to accumulate their annual one percent money over several years in order to construct even a one-mile segment of bikeway. This procedure will most likely continue because construction costs continue to increase while revenues are decreasing.

The estimated costs of $14 million to complete the regional system is nearly double the amount spent over the past 10 years. Because revenues from the State gas tax have been relatively constant over the last 10 years while construction costs have continued to escalate, it is imperative that the region and the State look toward procurement of additional resources to fund future bicycle projects. At a minimum, this plan strongly supports retention of the one percent bicycle fund law.

In addition, the Regional Funding Committee should begin to explore options for securing new funding sources for bicycle facilities development. This effort will require cooperation from the region as a whole to ensure completion of the regional bicycle route system.

CHAPTER V - BICYCLE PARKING POLICIES AND GUIDELINES

The provision of safe and adequate bicycle parking facilities is an essential element of the Regional Bicycle Plan and in the overall effort to promote bicycling. This is because people are often discouraged from using bicycles for transportation where there are inadequate parking facilities available to them. To address this problem, provisions for adequate bicycle parking facilities are necessary at a variety of destinations, including places of employment, retail shops, major transit stations, institutions, offices and others.

The intent of the guidelines discussed in this chapter is to aid jurisdictions in formulating their own bicycle parking policies. These guidelines are modeled after bicycle parking provisions contained in the City of Portland's Planning and Zoning Code, which are based on Portland's goal of having five percent of all work trips on bicycle by 1987. Because the experience in the City of Portland does not always reflect the situation facing smaller jurisdictions, some of Portland's guidelines have been modified or eliminated.

A. Providing Adequate Parking Facilities

Bicycle parking facilities should provide for an adequate degree of protection from theft, damage and weather. The type and location of bicycle racks should, therefore, be such that they provide the most adequate protection from those elements. There are two types of bicycle parking which should be provided for: commuter or long-term parking, and convenience or short-term parking. The amount of security required for theft and weather protection varies under these two categories and is described below.

1. Long-Term Parking

Long-term parking should be provided at locations such as employment centers, transit stations, park and ride lots, schools and multi-family dwellings. Dual responsibility for security at these locations is essential. The provider of bicycle parking should supply secure racks which also offer protection from the weather, while the individual bicyclist should use an adequate locking device to secure his or her bicycle to the rack. Bicycle lockers, high security bicycle racks, and attended storage areas are good examples of long-term parking facilities.

2. Short-Term Parking

Short-term parking facilities should be provided at locations such as shopping centers, libraries, recreation areas and post offices. Convenience to the building entrance and location of racks in a highly visible area are two key requirements of short-term facilities. Again,

for short-term use, the bicyclist is responsible for possessing an adequate lock to safely secure his or her bicycle.

3. General Guidelines

Guidelines to consider when providing bicycle parking facilities for both short- and long-term parking include:

a. Bicycle parking spaces located outside a structure should be placed no farther from the structure's main entrance than the closest off-street motor vehicle parking space.

b. Bicycle parking spaces located outside a structure should be visible from the sidewalk adjacent to the building's main entrance.

c. Bicycle parking racks or lockers should be anchored securely.

d. Bicycle racks should be of a design which allows both wheels and the frame of a bicycle to be fastened to the rack with a high-security, U-shaped lock. For long-term parking, the rack itself should be capable of securing both wheels and the frame by a mechanism that cannot be severed by bolt cutters. The locking receptacle on a long-term rack should either accommodate a high-security lock or provide a shield against bolt cutters for a padlock.

e. An aisle for bicycle maneuvering should be provided and maintained beside or between each row of bicycle parking. This aisle should be at least five feet wide.

f. Each required bicycle parking space should be accessible without moving another bicycle.

g. Bicycle spaces shall be rented or leased only where motor vehicle parking is rented or leased.

h. Areas established for required bicycle parking should be clearly marked and reserved for bicycle parking only.

B. Recommended Minimum Bicycle Parking Requirements

Policy

- Local jurisdictions are encouraged to amend their comprehensive plans and zoning codes to include requirements for bicycle parking in new developments.

Bicycle parking policies found in the City of Portland's Planning and Zoning Code have been modified as guidelines for local jurisdictions to follow in determining minimum numbers of bicycle parking space to require or recommend for various land uses. These guidelines are intended to simplify the effort required by jurisdictions when adopting local bicycle parking policies.

1. Commercial, Office, Institutional and Industrial Land Uses

   Bicycle parking requirements should be expressed as a percentage of motor vehicle parking provided in new construction of commercial outlets, general offices, industrial parks, parking garages, gymnasiums/arenas, regional shopping centers, auditoriums, libraries, churches and hospitals. For these uses, the number of bicycle spaces provided should be equivalent to a minimum of five percent of the total available motor vehicle parking spaces. For all of the above uses, 50 percent of the spaces should be covered.

2. Schools

   Elementary and high schools should provide one bicycle parking space for every ten students. Colleges should provide at least one bicycle parking space for every 20 automobile spaces provided. All spaces at schools and colleges should be covered.

3. Multi-Family Residential

   For multi-family developments, the number of bicycle parking spaces should reflect the number of units in the building. A general recommendation is to supply one bicycle parking space for every 5 to 10 units. Covered bicycle parking should be required where the development includes a basement or provides covered motor vehicle parking.

4. Other Uses

   For hotels or motels, one space for every 20 employees is recommended. For all other uses, several options should be considered: 1) provide ten bicycle parking spaces; or 2) one space for every 20,000 gross square feet of building area; or 3) one space for every 20 automobile parking spaces allowed.

C. Provisions for Bicycle Parking at Major Transit Stations and Major Park and Ride Lots

Providing bicycle parking facilities at major transit stations and park and ride lots offers a unique opportunity to encourage multi-modal commuting trips throughout the region and an

opportunity to reduce the amount of costly automobile parking provided at these facilities. To be effective, bicycle parking facilities at transit stations and park and ride lots in the region should offer safe, convenient parking to the bicycle commuter. Providing such facilities will also act as an incentive for potential bicycle commuters.

Policies outlined here are intended to ensure that bicycle parking needs are accommodated at all new major transit stations because of their significance in the regional transit network. These stations include: Hollywood, Gateway, Gresham, Milwaukie, Beaverton, Tigard, Sunset, Clackamas Town Center, Oregon City, Lake Oswego, Burlingame and Vancouver. Although Vancouver is not within Metro's jurisdiction, that city is encouraged to develop similar policies of its own.

Provisions for bicycle parking at major park and ride lots in the region are also required for the following locations: Columbia/Sandy, Lents, Clackamas Town Center, Oregon City, Milwaukie, Tigard, Tualatin, Washington Square and Beaverton. On the proposed Sunset light rail line, lots at 170th Avenue, 185th Avenue and Hillsboro are also included.

Three policies related to these parking needs are described as follows:

Policies

1. Tri-Met shall provide a number of high security bicycle racks at major transit stations and major park and ride lots equivalent to at least one percent of the morning peak period trips using the station (usually a range of five to 30 racks). This shall be subject to funding availability and local government approval. Exceptions to this provision may be made by agreement among Metro, Tri-Met and the affected jurisdiction. Ongoing monitoring of rack usage will determine the need for additional racks. Tri-Met shall be responsible for installing and maintaining bicycle racks at each transit station.

   "High security" bicycle racks are defined as those which are capable of securing both the wheels and the frame of a bicycle, with the cyclist supplying a padlock or other appropriate locking device.

2. Tri-Met and jurisdictions are encouraged to provide, where practical, high security bicycle racks at minor transit stations. Providing such racks may reduce the need for parking and "kiss and ride" trips to the station.

3. Tri-Met is encouraged to install bicycle lockers at all of the transit stations listed above when agreement can be reached with the affected jurisdiction regarding maintenance of the lockers. (Bicycle lockers offer the greatest

degree of protection from theft and the elements and are, therefore, particularly appropriate at transit stations.) A minimum of four lockers is recommended to be installed at each major transit station and park and ride lot; any additional lockers should be installed based on usage and subsequent demand for more. Metro will work with jurisdictions and Tri-Met to determine needs on a case-by-case basis.

It must be emphasized that all parking policies, with the exception of those related to bicycle racks at transit stations, are guidelines to be used at the discretion of local governments and Tri-Met, and are not required by this plan. However, all jurisdictions are urged to seriously consider these recommendations in order to provide more and better parking accommodations for bicyclists throughout the region.

CHAPTER VI - BICYCLE REGISTRATION/LICENSING

A. History of Bicycle Registration in the Region

A major shift in emphasis has occurred regarding regional bicycle registration during the past decade. The 1974 CRAG Bikeway Plan encouraged bicycle registration at the local level and simultaneously supported a proposal for a mandatory statewide registration and licensing program. The policy called for in the Regional Bicycle Plan, however, encourages voluntary bicycle marking programs to be operated at the local level.

Although the CRAG plan pointed out deficiencies of local registration programs (poor enforcement, insufficient revenue collected from registration fees, and low return rates of stolen bicycles), it nevertheless called for their implementation if a 1975 legislative proposal, which would have required mandatory statewide bicycle registration, did not pass. That proposal was intended to serve two purposes: 1) to deter thefts and aid recovery of stolen bicycles; and 2) to raise additional revenue from registration fees for other bicycle programs.

Most bicycling experts agreed at the time that mandatory registration programs implemented at the statewide level would be more effective in returning lost or stolen bicycles to their owners than a similar program at the local level. A central computer system run by the State would have streamlined the process of matching lost or stolen bicycles to their owners. At the same time, problems of retrieving stolen bicycles from different jurisdictions would have been virtually eliminated.

Although a mandatory, statewide bicycle registration program was preferred, the proposal presented to the 1975 Legislature was defeated. The main reason for failure of the bill was the presumed excessive administrative costs and responsibilities associated with it. Similar legislation had been proposed during Oregon's 1973 legislative session, but it was also defeated because of excessive penalties for non-registration of bicycles.

Given the fact that the Oregon Legislature has twice failed to enact legislation requiring statewide mandatory bicycle registration, it is unlikely that new legislation could be successful today without a groundswell of public support. Therefore, one of the goals of the development of the Regional Bicycle Plan was to determine what type of registration program (mandatory or voluntary, regional or local) would be feasible to implement in this region. The purpose of such a program was also examined to determine whether it should be an identification system to prevent bicycle thefts, serve as a potential source of revenue, or both. The issue of licensing bicyclists was also explored.

Policies

The staff examined experiences in other cities and explored with the two advisory committees alternatives which could be considered in this region. The Regional Bicycle Plan thus:

1. encourages local jurisdictions to implement voluntary bicycle registration or marking programs in the Portland metropolitan area, and

2. recommends that licensing of bicyclists should not be initiated in this region.

The basis for these conclusions and variations in bicycle registration and licensing concepts are discussed below.

Definitions

For this plan, bicycle registration is defined as the identification of a bicycle and its owner by recording an identification number (either engraved on the frame or issued as a sticker) that is kept on file at a central location. The two main purposes which registration programs serve are to deter bicycle thefts and to aid in recovery of stolen bicycles.

A variation of registration is simply bicycle "marking," where an identification number (usually a driver's license number or other identification number) is engraved on a bicycle, without the number being recorded in a central file. In the event a stolen bicycle is recovered, the number is run through a computer and matched to the driver's license of the owner. An advantage of this system is that most police departments in the nation have access to the National Crime Information System computer, which has on file recorded identification numbers of personal property. Once an identification number is recorded, it is usually a simple procedure to retrieve stolen property.

Bicycle licensing is defined as issuance of a permit (in the form of a card or license plate) to operate a bicycle after successful completion of testing the ability to operate such a vehicle. Licensing may aid in "legitimizing" the bicycle as a vehicle, increasing public awareness and acceptance of bicycles, and aiding cyclists in developing a more "responsible" image.

B. Experience with Mandatory Registration

Local

Bicycle registration in the Portland metropolitan area is currently administered by individual jurisdictions, whether they be mandatory or voluntary. In most cases, where programs are mandatory, they are not strictly enforced nor are the monies derived from them sufficient to help pay for other

bicycle programs or facilities. The City of Portland had a mandatory registration program which was dropped approximately two years ago because of high administrative costs and the ineffectiveness of recovering stolen bicycles. The failure of retrieving stolen bicycles under this system was due to the fact that bicycle thieves could easily scratch off or paint over an existing serial number, making it impossible to trace the stolen bicycle.

Beaverton, Lake Oswego and Hillsboro currently have mandatory registration programs required by city ordinance. Officials from all three jurisdictions have concluded that their registration or marking programs have been fairly successful in returning stolen bicycles to their owners, although enforcement of the ordinance continues to be a problem.

National

In addition to Portland, many other cities across the country have had mandatory registration programs at one time, but have since abandoned them in favor of voluntary bicycle marking programs. The major reason cited in cities such as Kansas City, Missouri; Austin, Texas; and Seattle, Washington was the excessive administration responsibility associated with mandatory programs. Additional problems associated with these programs included: 1) defining the purpose of such a program (whether it be a source of revenue or as an aid to theft prevention); 2) change of ownership and change of address made tracking ownership of a stolen bicycle difficult; 3) registration stickers were easily removed; 4) coordination with other agencies and surrounding cities proved difficult; 5) renewal costs were often as high or higher than the original registration; and 6) the manufacturer's serial number is often hard to read and can be easily scratched off.

For a mandatory registration program to succeed, bicycle shops would probably be required to register bicycles at the point of sale. Two disadvantages are evident with this type of procedure: a) there is no real incentive for shops to assume this additional responsibility, and b) this process would bypass the large number of bicycles already on the road.

In addition, a) in most cities that have mandatory bicycle registration programs, many citizens still choose not to register their bicycles, and b) the minimal fee charged to register a bicycle is often not sufficient to even support the administrative costs of operating the program. If fees were raised to try and generate income for other bicycle programs, there would probably be even more noncompliance with the requirement. Given these experiences, a mandatory regional bicycle registration program is not recommended.

C. Experience With Voluntary Registration

Voluntary programs have proven to be as effective as mandatory programs in returning stolen bicycles to their owners. This is because both programs use a similar system which match recorded identification numbers on the bicycle to its owner. Although mandatory registration programs have been successful in some cases in returning lost or stolen bicycles to their owners, voluntary registration programs are preferred and encouraged.

The voluntary system now used in most cities, including Portland, is to engrave an identification number (such as a driver's license number) on the bicycle frame. When a change of ownership occurs, the new owner adds his or her identification number to the frame. If a stolen bicycle is recovered, all identification numbers are contacted and the bicycle is returned to the current owner. In Portland, the Police Bureau is responsible for administering the program and has been quite successful in returning bicycles to their owners, largely because of this method of marking bicycles. To increase awareness of the engraving procedure, bicycles should be included in local crime prevention drives which engrave identification numbers on valuables. Also, marking clinics could be held by service clubs at special events and at bicycle shops.

The advantages of this system are:

1. It would be free for the bicycle owner (although the owner may have to pay the cost of renting an engraver);

2. Drivers' licenses or other identification numbers are already recorded in computer systems at police departments; and

3. There is interjurisdictional cooperation in returning lost or stolen bicycles to their owners.

In addition to providing an effective means of recovering stolen bicycles, voluntary registration or marking programs offer an added measure of theft protection by affording those persons who wish to register or mark their bicycles the opportunity to do so, without making it a requirement by law. Jurisdictions are, therefore, encouraged to implement voluntary bicycle registration or marking programs.

D. Licensing of Bicyclists

The plan recommends that licensing of bicycle operators should not be initiated in this region. There are no known successful bicycle licensing programs anywhere in the country. The reason for this may be that the problems associated with the licensing of bicyclists are readily apparent: 1) over half of all

bicyclists are children; 2) because many people don't ride a bicycle very frequently, there is a strong probability that there would be widespread noncompliance with a licensing requirement; and 3) enforcement of such a requirement would likely be a low priority.

CHAPTER VII - BICYCLING SAFETY EDUCATION, ENCOURAGEMENT AND ENFORCEMENT

A. Introduction

The implementation of bicycle routes in urban areas generates a corresponding need for educating the public concerning bicycling safety, rules of the road, and laws pertaining to motorists and bicyclists. Bicycling safety education programs are a key factor in increasing awareness in these areas and in minimizing potential conflicts between bicycles and motor vehicles, pedestrians, and other bicycles. Accidents will not be reduced and bicycling encouraged unless all bicyclists and motor vehicle operators understand the rules of the road and begin to obey them.

Furthermore, police enforcement is a critical component of maintaining these laws. Without proper enforcement, laws will be neglected and the potential for accidents increased. Responsibility for implementing education and encouragement programs should not rest with any one group, but should involve a cooperative effort among local governments, police departments, schools and volunteer organizations.

B. Safety Education Programs

The purpose of bicycling education is to teach bicyclists, motorists and pedestrians about bicycling safety. The ultimate goal is to increase public awareness and acceptance of bicycles as part of the traffic flow on streets and highways.

While bicyclists, motorists and pedestrians are equally responsible for learning and implementing proper safety techniques, it is perhaps the bicyclist who can do the most to prevent accidents. A bicyclist who develops good riding skills; who uses well-maintained and proper equipment including helmets, lights and brakes; who learns where safe bicycle routes are located; and who obeys the rules of the road can greatly reduce his or her chance of being involved in an accident.

Safety education programs should thus be used as a tool in developing skills and knowledge related to bicycling. Some examples of how responsible parties should implement these programs are discussed below.

1. Local Governments, Police and Fire Departments

Because local governments are the primary providers of bicycle routes in their own locale, they should also participate in educating bicyclists and motorists on how bicycling facilities should be used. In addition, services provided by local law enforcement agencies could be incorporated into safety education programs. Thus, local governments and police or fire departments are

encouraged to implement any or all of the following measures:

- Make available bicycle safety literature, bicycle maps and other resources which include tips on how to ride in traffic and a summary of Oregon laws pertaining to bicyclists. This material could be placed in police departments, schools, libraries, bicycle shops, and city offices. An example of what the promotional material might include is shown in Appendix F. In addition, several excellent bicycle route maps have been published by local jurisdictions, as well as a recently completed regional bicycle route map.

- Maintain accurate records of bicycling accidents in order to identify poorly designed facilities, age groups of accident victims, and the type of violation which occurred. These statistics are forwarded to local police departments, who in turn submit them to the State Highway Division. They are then entered into an existing computer program which classifies accident types. This will aid in identifying age groups at which various education efforts should be directed.

- Create a position with the responsibility of developing a comprehensive bicycling education program for the local community.

- Sponsor bicycle rodeos at fairs or special events teaching youngsters proper riding technique, inspecting bicycles for necessary equipment, and marking them for protection against theft.

- In cooperation with local grade schools, conduct on-street bicycle training sessions and review rules of the road and laws pertaining to bicyclists.

2. Schools

Although schools are not required to include bicycle safety in their curriculum, they can play an important role in the education of young bicyclists. Individual teachers are encouraged to develop safety education programs in their own classrooms. Methods to accomplish this are:

- Establish bicycle and traffic safety classes in the classroom and on-bike training as well. A good local example of an innovative safety program was developed by a teacher in the Milwaukie school system, which is included in Appendix G.

- Include bicycling safety education information in driver education classes at the high school level.

3. Volunteer Organizations

Volunteer organizations are playing an increasing role in providing bicycle safety education services, especially for adults. Groups which could potentially provide such services might include local PTAs, the Optimists, American Automobile Association (AAA), bicycle clubs and others. Safety education programs might include:

- Lectures, films and rodeos conducted by these groups, aimed at educating adult bicyclists;

- Incorporating bicycle safety information in private driver education programs for adults;

- Providing maintenance and road safety techniques as part of touring services.

There may be other innovative methods of providing needed bicycling education services; these examples are merely basic strategies used by many public and private groups in this area. Informational material which may be useful to any group or individual wanting to develop a safety education program is listed below:

a. Bicycle School Resource Packet - ($3.00)
Bicycle Federation
1101 - 15th Street, N.W., Suite 309
Washington, D.C. 20005

b. Guide on Effective Bicycle Education Programs - (Free)
Peter Lagerwey
SEMCOG
800 Book Building
Detroit, MI 48226

c. Montana Bicyclist Training Program
c/o Roger and Sharon DiBrito
11150 Napton Way
Lolo, MT 59847

d. Middle School Bicycle Education Program
c/o Diana Lewiston
1849 Newell
Palo Alto, CA 94303
(415) 326-3704

e. Bicycle Safety Program

Traffic Safety Education for Oregon Schools, Grades K-9
Oregon Department of Education
942 Lancaster Drive, N.E.
Salem, OR 97310

Because many local communities are currently faced with extensive funding cutbacks, it is important that creative methods of educating and encouraging the public on bicycling safety be developed. Although fiscal constraints do pose problems, local governments must continue to be responsive to the safety needs of the bicycling public.

C. Bicycling Safety and Encouragement Program

When money can be made available, there are unique opportunities to implement innovative education and/or encouragement programs for bicycling. One nationally-recognized program which is currently being implemented in the Portland area is the Bicycling Safety and Encouragement Program. This grant was awarded jointly to the City of Portland and Metro in November 1981 by the Federal Highway Administration (FHWA). Its intent is to implement a variety of measures aimed at improving bicycling safety and ultimately increasing the number of bicyclists in the region.

To help design this program, a survey of public attitudes about bicycling was conducted. Widespread support for programs to encourage bicycling and bicycling safety was found. Recommendations by the survey consultant on what this specific program should include are:

- The program should assist recreational riders in beginning to bicycle to work.
- The program should point out the respective roles of motorists and bicyclists in improving bicycling safety.
- The program should develop and disseminate information about good bicycling routes.
- At the workplace, the program should focus on the need for secure parking, route information, and places to change clothes.
- The program should focus on bicycling opportunities during the good weather months of the year.

A number of program elements are currently being implemented in reference to these recommendations, including an extensive public information campaign conveying bicycling safety information messages, an employer contact program to encourage

bicycling to work, regional bike-to-work days, and group rides and races to increase the visibility of bicycling in the region. Private co-sponsorship of many of the elements was acquired to help with promotion.

It is hoped that programs such as this will be incorporated into local jurisdictions' bicycle programs and will have ongoing effects in promoting safe bicycling for residents of the region.

D. Enforcement

Enforcement of bicycle regulations should be a natural extension of safety education and public awareness programs. Without firm and consistent enforcement of all regulations, disregard for laws pertaining to bicyclists will continue. Some typical violations which are committed by bicyclists include running stop signs and traffic signals, riding the wrong way on streets, and riding at night without lights. To help reduce these problems:

- Local police departments are encouraged to give consideration to bicycle law enforcement as a part of the community's total law enforcement program.

- Jurisdictions are encouraged to establish regular contact and coordination between police departments, local bicycle advisory groups and planners. This can help identify types and locations of violations in order to educate the public on reducing or eliminating bicycling errors.

As a preventive measure, education of bicyclists may reduce the need for enforcement. In addition, the combination of education and community support for enforcement of bicycling laws will ultimately increase respect among bicyclists, pedestrians and motorists.

TB/gl
8446B/180

APPENDIX A

DESCRIPTION OF OREGON BICYCLE LAW

366.460 **Construction of sidewalks within highway right of way.** The department may construct and maintain within the right of way of any state highway or section thereof sidewalks, footpaths, bicycle paths or trails for horseback riding or to facilitate the driving of livestock. Before the construction of any of such facilities the department must find and declare that the construction thereof is necessary in the public interest and will contribute to the safety of pedestrians, the motoring public or persons using the highway. Such facilities shall be constructed to permit reasonable ingress and egress to abutting property lawfully entitled to such rights.

366.514 **Use of highway fund for footpaths and bicycle trails.** (1) Out of the funds received by the department or by any county or city from the State Highway Fund reasonable amounts shall be expended as necessary to provide footpaths and bicycle trails, including curb cuts or ramps as part of the project. Footpaths and bicycle trails, including curb cuts or ramps as part of the project, shall be provided wherever a highway, road or street is being constructed, reconstructed or relocated. Funds received from the State Highway Fund may also be expended to maintain footpaths and trails and to provide footpaths and trails along other highways, roads and streets and in parks and recreation areas.

(2) Footpaths and trails are not required to be established under subsection (1) of this section:

(a) Where the establishment of such paths and trails would be contrary to public safety;

(b) If the cost of establishing such paths and trails would be excessively disproportionate to the need or probable use; or

(c) Where sparsity of population, other available ways or other factors indicate an absence of any need for such paths and trails.

(3) The amount expended by the department or by a city or county as required or permitted by this section shall never in any one fiscal year be less than one percent of the total amount of the funds received from the highway fund. However:

(a) This subsection does not apply to a city in any year in which the one percent equals $250 or less, or to a county in any year in which the one percent equals $1,500 or less.

(b) A city or county in lieu of expending the funds each year may credit the funds to a financial reserve or special fund in accordance with ORS 280.100, to be held for not more than 10 years, and to be expended for the purposes required or permitted by this section.

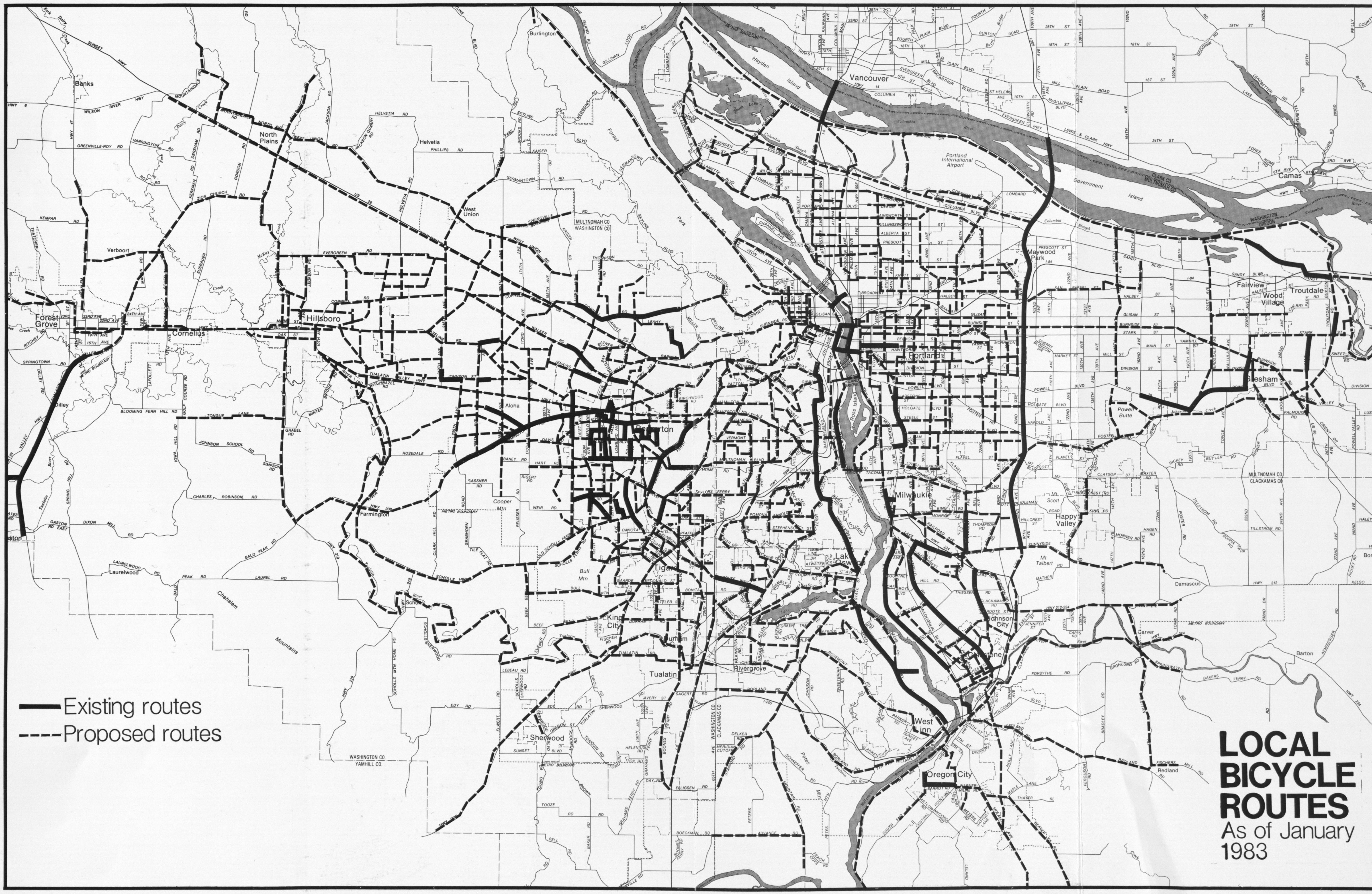
(4) For the purposes of this chapter, the establishment of paths, trails and curb cuts or ramps and the expenditure of funds as authorized by this section are for highway, road and street purposes. The department shall, when requested, provide technical assistance and advice to cities and counties in carrying out the purpose of this section. The division shall recommend construction standards for footpaths and bicycle trails. Curb cuts or ramps shall comply with the requirements of ORS 447.310. The division shall, in the manner prescribed for marking highways under ORS 487.850, provide a uniform system of signing footpaths and bicycle trails which shall apply to paths and trails under the jurisdiction of the department and cities and counties. The department and cities and counties may restrict the use of footpaths and bicycle trails under their respective jurisdictions to pedestrians and nonmotorized vehicles.

(5) As used in this section, "bicycle trail" means a publicly owned and maintained lane or way designated and signed for use as a bicycle route. [1971 c.376 §2; 1979 c.825 §1]

366.515 [Amended by 1971 c.376 §3; 1973 c.249 §39; repealed by 1975 c.436 §7]

APPENDIX B

COMPOSITE LOCAL BICYCLE ROUTE MAP


LOCAL BICYCLE ROUTES
As of January 1983
Existing routes
Proposed routes
Banks
North Plains
Burlington
Helvetia
West Union
Verboort
Forest Grove
Cornelius
Hillsboro
Aloha
Beaverton
Farmington
Cooper Mtn
Bull Mtn
Tigard
King City
Durham
Tualatin
Sherwood
Laurelwood
Chehalem Mountains
Vancouver
Hayden Island
Portland International Airport
Government Island
Camas
Maywood Park
Fairview
Wood Village
Troutdale
Portland
Gresham
Powell Butte
Milwaukie
Mt. Scott
Happy Valley
Mt Talbert
Damascus
Lake Oswego
Rivergrove
West Linn
Oregon City
Gladstone
Johnson City
Carver
Redland
Barton
Ross Island
MULTNOMAH CO
WASHINGTON CO
CLACKAMAS CO
YAMHILL CO
CLARK CO
WASHINGTON
OREGON

APPENDIX C

SUPPLEMENTS AND EXCEPTIONS TO AASHTO GUIDELINES

734-20-060. The Department of Transportation adopts by reference [the manual Bikeway Design", dated January, 1974] The American Association of State Highway and Transportation Officials Guide for Development of New Bicycle Facilities, dated October 3, 1981, to establish design and construction standards, and classify bikepaths for such purposes, establish guidelines for traffic control devices on bikepaths including location and type of traffic warning signs, and to recommend illumination standards, all in accordance and pursuant to ORS 366.514.

(2) The following constitute supplements and exceptions to the October 3, 1981 edition of the "Guide for Development of New Bicycle Facilities.

(a) Signing and Marking

(1) All bicycle signing and markings on the State Highway System or installed on local City Streets or County Roads under State contract shall be in conformance with the signing and markings as shown in Exhibits 1 and 2 attached here to and made a part hereof. Any signing or markings not shown on these drawings, but which is deemed necessary and required for the bicycle facility shall conform to the Manual on Uniform Traffic Control Devices as adopted by the Oregon Transportation Commission.

(2) The standard width longitudinal painted solid line separating the vehicle travel way and a shoulder bike lane shall be as required by OAR 734-20-055.

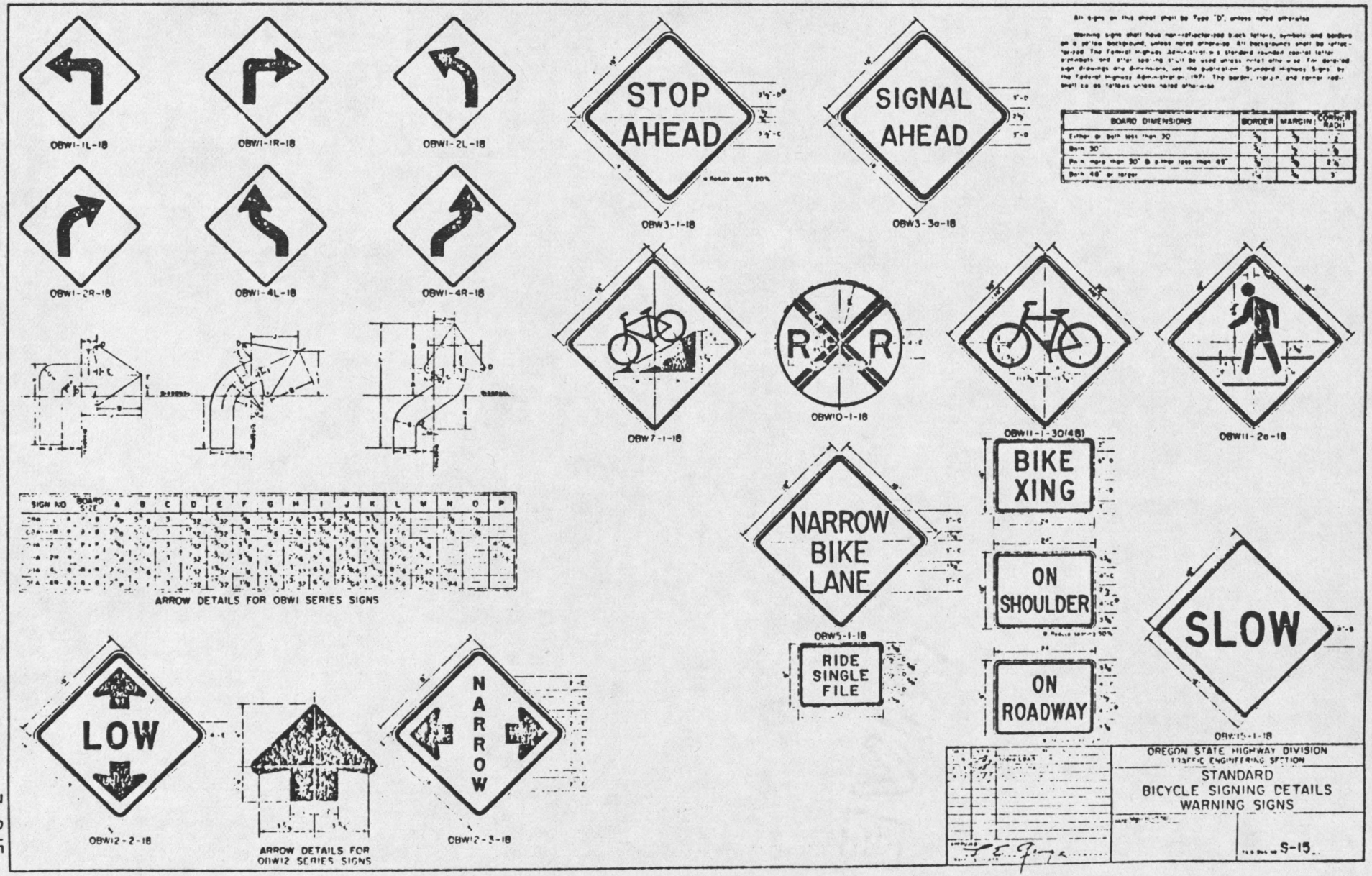
(3) The desirable width for a one-way bike lane on the State Highway System or installed on local City Streets or County Roads under State contract is 6 feet. Where 6 feet is not practical to achieve because of physical or economic constraints, a minimum width of 4 feet may be designated as a bicycle lane.

(b) Definitions

For purposes of this rule and the Guide, the definitions on page two of the Guide shall control, rather than any conflicting statutory or rule definitions. Terms not defined in the Guide shall be given their ordinary every day interpretation, even if defined otherwise for use in specific chapters in the Oregon Revised Statutes.

Exhibit 1

(OAR 734-20-060)



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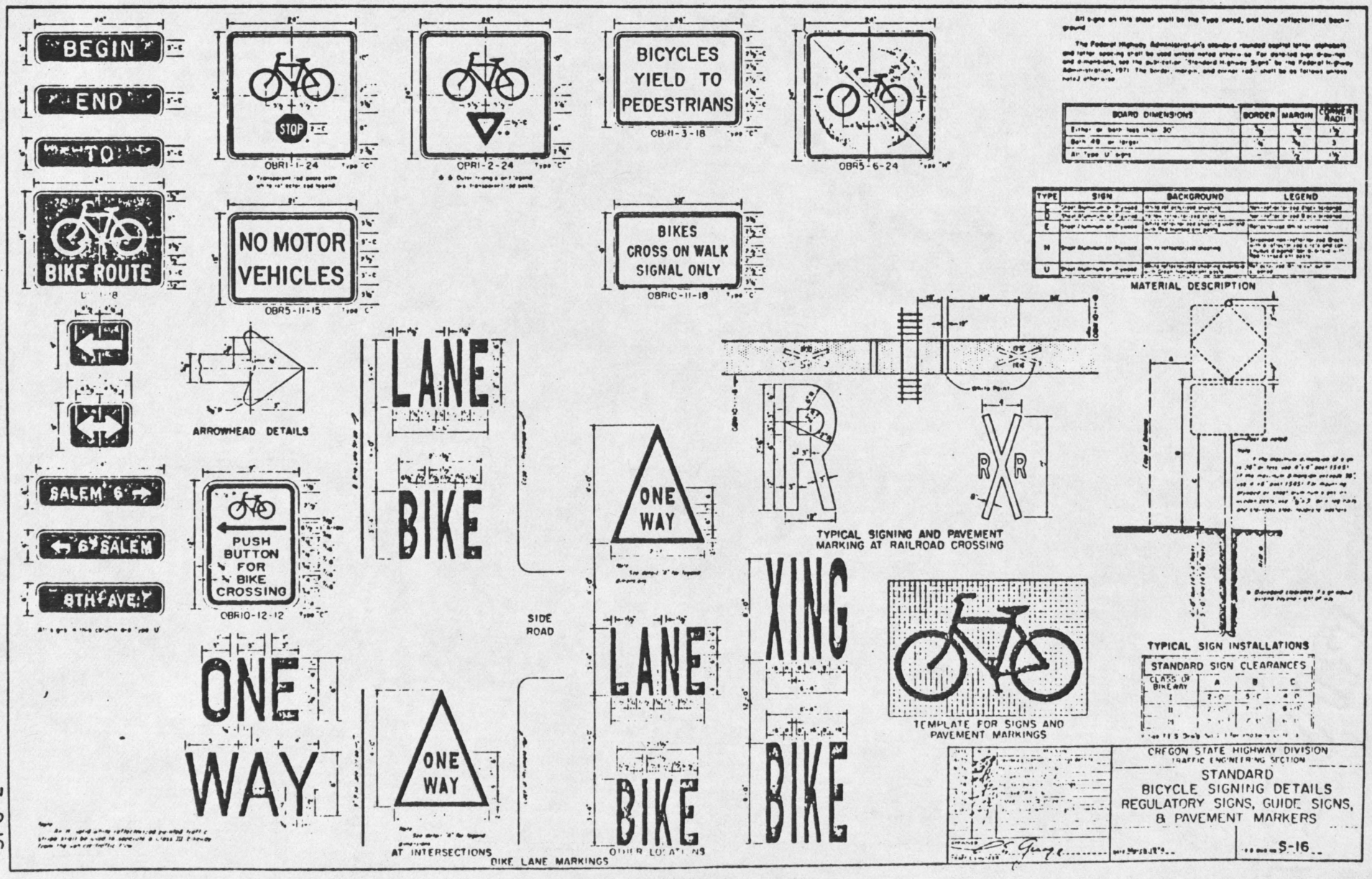
3-2.15

Exhibit 2

(OAR 734-20-060)



(c) Applicable Oregon Law

Oregon statutes pertaining to bicycles are:

292.495	Compensation - Advisory Committee on Bicycles
366.112	Advisory Committee
366.460	Construction of Sidewalks, Bicycle Paths, Footpaths or Horse Trails
366.514	Bicycle Fund
447.310	Standards for Curbing - Curb Cuts
481.004	Bicycle and Moped Defined
483.002	Definitions - Bicycle, Bicycle Lane, Bicycle Path, Bicycle Trail
483.547	Parents Responsbility
483.549	Required Equipment
483.552	Definitions - Public Way, Street Drain
483.554	Bicycle Safe Drains
483.556	Construction Guidelines
487.750	Motor Vehicle Rules
487.760	Unlawful Bicycle Operation
487.765	Riding on Roadways, Bicycle Paths and Lanes
487.770	Use of Bicycle Lane by Motor Vehicles Restricted
487.775	Use of Bicycle Path by Motor Vehicles Prohibited
487.785	Bicyclists on Sidewalks
487.790	Bicycle Racing
487.795	Clinging to a Vehicle
487.870	Regulating Use of Freeways

APPENDIX D

BICYCLE/FOOTPATH FUNDS TO CITIES AND COUNTIES
(FY 1972-1982)

BICYCLE/FOOTPATH FUNDS TO CITIES
(Based on one percent of total amount received from the State Highway Fund)

City	FY 1972	FY 1973	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980	FY 1981	FY 1982	TOTAL FY 72-82
Albany	2,152	2,413	2,631	3,441	3,032	3,000	3,038	3,644	3,713	3,745	3,616	34,425
Ashland	1,482	1,658	1,784	2,295	1,993	1,938	1,932	2,212	2,169	2,157	1,994	21,614
Astoria	1,191	1,260	1,325	1,692	1,477	1,430	1,393	1,557	1,438	1,396	1,314	15,473
Baker	1,076	1,144	1,194	1,505	1,306	1,270	1,244	1,432	1,370	1,339	1,258	14,138
Bandon	*	*	*	318	285	282	283	337	350	346	314	2,515
** Beaverton	2,188	2,402	2,621	3,451	3,051	3,041	3,082	3,626	3,809	4,190	4,135	35,596
Bend	1,596	1,729	1,892	2,536	2,216	2,128	2,112	2,431	2,446	2,477	2,302	23,865
Brookings	316	341	370	483	428	427	429	496	458	466	456	4,670
Burns	377	397	425	551	482	477	473	509	494	503	466	5,154
Canby	454	513	586	814	765	766	779	962	987	1,040	1,023	8,689
Central Pt	469	519	594	817	752	747	750	892	884	888	842	8,154
Coos Bay	1,528	1,601	1,705	2,218	1,940	1,880	1,849	2,138	2,077	2,047	1,911	20,894
Coquille	490	518	562	723	623	610	603	681	635	625	593	6,663
** Cornelius	*	272	296	390	359	363	399	470	541	608	586	4,284
Corvallis	4,111	4,434	4,813	6,280	5,398	5,311	5,137	5,706	5,726	5,863	5,551	58,330
Cottage Gr	700	760	810	1,039	916	910	915	1,054	1,002	994	958	10,058
Creswell	*	*	*	*	*	*	*	250	251	*	*	501
Dallas	746	826	901	1,172	1,042	1,025	1,028	1,232	1,207	1,191	1,146	11,516
Eagle Point	*	*	*	304	311	334	341	402	381	382	370	2,825
Elgin	*	*	*	251	*	*	*	*	*	*	*	251
Enterprise	*	*	*	281	*	250	*	282	273	276	264	1,626
Estacada	*	*	*	*	*	*	*	257	*	251	*	508
Eugene	9,223	10,062	11,057	14,664	12,995	12,797	12,789	14,724	14,711	14,934	14,035	141,991
** Fairview	*	*	*	*	*	*	*	258	255	251	*	764
Florence	265	292	379	501	426	406	405	509	546	589	590	4,908
** Forest Gr	975	1,050	1,252	1,565	1,397	1,385	1,385	1,592	1,590	1,629	1,553	15,373
** Gladstone	729	812	923	1,250	1,116	1,099	1,118	1,324	1,268	1,291	1,301	12,231
Gold Beach	*	*	*	*	*	*	*	281	251	*	*	582
Grants Pass	1,416	1,529	1,639	2,114	1,852	1,805	1,790	2,090	2,046	2,069	2,030	20,380
** Gresham	1,417	1,601	1,907	3,088	2,870	2,962	3,159	4,043	4,316	4,572	4,458	34,393
Harrisburg	*	*	*	*	*	*	*	251	*	255	*	506
Subtotal	32,901	36,133	39,666	53,743	47,032	46,643	46,433	55,642	55,194	56,374	53,066	522,827

NOTE: Bicycle/footpath legislation does not apply to a city in which one percent of State Highway Fund receipts in any year equals $250 or less.

* One percent of State Highway Fund receipts equals less than $250.

** Cities in the Portland metropolitan area.

Bicycle/Footpath Funds to Cities - 2

City	FY 1972	FY 1973	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980	FY 1981	FY 1982	TOTAL FY 72-82
Subtotal Forwarded	32,901	36,133	39,666	53,743	47,032	46,643	46,433	55,642	55,194	56,374	53,066	522,827
Hermiston	567	615	674	896	813	842	966	1,136	1,174	1,273	1,270	10,226
** Hillsboro	1,834	1,967	2,160	2,887	2,617	2,630	2,730	3,437	3,526	3,821	3,747	31,356
Hood River	460	500	544	707	625	610	596	682	655	629	573	6,581
Independence	350	374	411	547	496	505	511	603	591	578	534	5,500
Jacksonville	*	*	*	319	284	280	279	314	291	284	266	2,317
John Day	*	*	*	280	256	255	251	293	282	280	266	2,163
Jct City	275	299	322	416	370	370	376	434	403	429	435	4,219
** King City	*	*	*	315	273	265	258	286	276	270	*	1,943
K Falls	1,808	1,916	2,011	2,565	2,241	2,201	2,206	2,566	2,509	2,425	2,262	24,710
LaGrande	1,131	1,227	1,300	1,652	1,436	1,403	1,393	1,662	1,604	1,592	1,525	15,925
** Lake Oswego	1,742	1,981	2,217	2,940	2,626	2,606	2,658	3,114	3,125	3,238	3,069	29,316
Lakeview	310	327	344	438	384	381	374	424	407	396	372	4,157
Lebanon	883	915	970	1,262	1,120	1,113	1,131	1,332	1,300	1,382	1,399	12,807
Lincoln City	494	539	575	735	629	605	596	691	684	740	732	7,020
Madras	*	*	*	306	270	269	269	308	286	304	304	2,316
McMinnville	1,246	1,423	1,524	1,963	1,724	1,082	1,678	1,994	1,953	1,799	1,889	18,275
Medford	3,439	3,696	4,033	5,300	4,684	4,612	4,666	5,539	5,444	5,513	5,294	52,223
Milton-Fwtr	473	500	528	678	603	607	618	758	754	744	689	6,952
** Milwaukie	1,927	2,090	2,222	2,865	2,507	2,299	2,276	2,619	2,557	2,543	2,373	26,278
Molalla	*	270	298	399	370	373	373	433	415	416	404	3,751
Monmouth	621	682	726	934	821	810	805	934	883	819	739	8,774
Mt. Angel	*	253	271	367	341	335	333	386	381	399	384	3,450
Myrtle Cr	308	328	351	460	416	421	423	482	470	459	444	4,562
Myrtle Pt	291	312	331	427	379	377	374	426	391	396	387	4,091
Newberg	792	901	987	1,289	1,129	1,106	1,114	1,359	1,401	1,450	1,411	12,939
Newport	606	649	696	916	825	818	822	987	1,052	1,058	1,008	9,437
N Bend	988	1,045	1,095	1,405	1,240	1,224	1,232	1,442	1,393	1,373	1,287	13,724
Nyssa	302	321	338	432	380	372	374	428	406	400	376	4,129
Oakridge	396	423	457	601	534	524	520	605	579	547	490	5,676
Ontario	773	850	917	1,199	1,071	1,051	1,052	1,242	1,216	1,220	1,176	11,767
** Ore City	1,076	1,202	1,351	1,823	1,676	1,722	1,775	2,078	2,000	2,025	1,964	18,692
Subtotal	55,993	61,738	67,319	91,066	80,172	78,711	79,462	94,636	93,602	95,176	90,135	888,010

NOTE: Bicycle/footpath legislation does not apply to a city in which one percent of State Highway Fund receipts in any year equals $250 or less.

* One percent of State Highway Fund receipts equals less than $250.

** Cities in the Portland metropolitan area.

Bicycle/footpath Funds to Cities - 3

City	FY 1972	FY 1973	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980	FY 1981	FY 1982	TOTAL FY 72-82
Subtotal Forwarded	55,993	61,738	67,319	91,066	80,172	78,711	79,462	94,636	93,602	95,176	90,135	888,010
Pendleton	1,527	1,635	1,738	2,226	1,953	1,912	1,880	2,141	2,027	2,041	1,929	21,009
Philomath	*	*	*	310	274	278	294	347	347	379	356	2,585
Phoenix	*	*	*	*	*	*	*	270	275	305	310	1,160
Pilot Rock	*	*	*	260	*	*	*	254	*	*	*	514
** Portland	43,754	46,344	48,413	60,619	51,843	51,057	49,929	54,474	51,309	51,883	48,549	558,174
Prineville	486	536	572	786	705	738	745	857	836	816	698	7,775
Rainier	*	*	*	289	253	*	*	285	273	*	*	1,100
Redmond	431	468	510	708	623	608	792	917	904	875	869	7,705
Reedsport	476	515	546	708	631	620	615	728	719	708	657	6,923
Roseburg	1,660	1,788	1,914	2,518	2,298	2,254	2,221	2,560	2,500	2,410	2,178	24,301
St. Helens	719	781	836	1,075	950	933	950	1,136	1,102	1,058	936	10,474
Salem	8,180	8,917	9,533	12,103	10,639	10,483	10,600	12,504	12,532	12,712	12,148	120,351
Sandy	*	*	*	301	271	284	302	367	376	404	410	2,715
Scappoose	*	264	291	396	355	364	390	455	431	442	455	3,843
Seaside	506	538	569	729	638	624	615	700	670	697	689	6,975
Sheridan	*	*	252	326	289	285	285	333	317	314	297	2,698
** Sherwood	*	*	*	275	*	258	281	312	309	328	318	2,081
Silverton	500	540	585	753	666	652	678	784	762	751	694	7,365
Springfield	3,150	3,461	3,922	5,347	4,793	4,716	4,738	5,742	5,784	5,836	5,528	53,017
Stayton	367	399	430	553	493	498	511	619	604	608	596	5,678
Sutherlin	361	403	455	617	560	577	590	668	622	629	605	6,087
Sweet Home	447	483	522	680	605	598	918	1,035	1,039	957	930	8,214
Talent	*	*	265	357	325	330	333	382	359	357	341	3,049
The Dalles	1,251	1,321	1,380	1,733	1,501	1,493	1,444	1,628	1,539	1,534	1,484	16,308
** Tigard	877	872	1,013	1,546	1,399	1,422	1,490	1,836	1,982	1,993	2,003	16,433
Tillamook	456	489	519	662	575	558	550	623	574	556	524	6,086
Toledo	329	356	377	487	434	429	422	485	449	435	420	4,623
** Troutdale	*	*	*	331	335	365	370	468	566	737	809	3,981
** Tualatin	*	*	312	444	447	472	536	768	901	1,050	1,146	6,076
Umatilla	*	*	*	*	*	270	334	408	417	445	416	2,290
Union	*	*	*	289	261	259	256	300	289	287	276	2,217
Subtotal	121,470	131,848	142,273	188,494	164,288	162,048	162,531	189,022	184,416	186,723	176,704	1,809,817

NOTE: Bicycle/footpath legislation does not apply to a city in which one percent of State HighwayFund receipts in any year equals $250 or less.

* One percent of State Highway Fund receipts equals less than $250.

** Cities in the Portland metropolitan area.

Bicycle/footpath Funds to Cities - 4

City	FY 1972	FY 1973	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980	FY 1981	FY 1982	TOTAL FY 72-82
Subtotal Forwarded	121,470	131,848	142,273	188,494	164,288	162,048	162,531	189,022	184,416	186,723	176,704	1,809,817
Vale	*	*	*	271	*	*	*	271	258	*	*	800
Veneta	*	*	*	285	267	270	276	348	346	339	321	2,452
Vernonia	*	*	*	262	*	*	*	264	260	256	*	1,042
Warrenton	*	*	*	304	272	278	288	346	361	366	330	2,545
** West Linn	816	904	983	1,323	1,201	1,210	1,268	1,580	1,635	1,750	1,746	14,416
** Wilsonville	*	*	*	*	*	*	*	317	352	396	419	1,484
Winston	295	313	340	450	401	390	389	459	431	443	441	4,352
Woodburn	877	970	1,090	1,472	1,319	1,321	1,344	1,543	1,485	1,539	1,499	14,459
** Wood Village	*	*	256	339	328	324	292	338	331	324	308	2,840
TOTAL	123,458	134,035	144,942	193,200	168,076	165,841	166,388	194,488	189,875	192,136	181,768	1,854,207

NOTE: Bicycle/footpath legislation does not apply to a city in which one percent of State Highway Fund receipts in any year equals $250 or less.

* One percent of State Highway Fund receipts equals less than $250.

** Cities in the Portland metropolitan area.

BICYCLE/FOOTPATH FUNDS TO COUNTIES
(Based on one percent of total amount received from the State Highway Fund)

County	FY 1972	FY 1973	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980	FY 1981	FY 1982	TOTAL FY 72-82
Baker	1,916	2,146	2,205	2,279	2,453	2,523	2,283	2,672	2,599	2,653	2,537	26,266
Benton	4,841	5,400	5,515	5,990	6,420	6,474	6,688	7,665	7,442	7,621	7,272	71,328
** Clackamas	17,362	19,400	21,763	23,749	25,448	24,468	27,686	30,958	30,129	30,797	29,406	281,166
Clatsop	2,988	3,133	3,259	3,474	3,639	3,478	4,030	4,414	4,237	4,294	4,132	41,078
Columbia	3,317	3,513	3,883	4,178	4,575	4,721	4,664	5,413	5,202	5,240	4,963	49,669
Coos	6,570	7,133	7,278	7,797	8,185	7,983	8,398	9,363	9,007	9,002	8,321	89,037
Crook	*	1,540	1,587	1,723	1,914	2,041	1,779	2,116	2,073	2,097	2,011	18,881
Curry	1,715	1,871	1,916	2,084	2,316	2,397	2,248	2,756	2,701	2,776	2,695	25,475
Deschutes	4,143	4,759	5,233	5,793	6,460	6,667	7,150	8,521	8,759	9,273	9,081	75,839
Douglas	8,862	9,796	10,238	11,077	12,025	12,145	12,115	13,799	13,221	13,298	12,637	129,213
Gilliam	*	*	*	*	*	*	*	*	*	*	*	*
Grant	*	*	*	*	*	*	*	*	*	*	*	*
Harney	*	*	*	*	*	*	*	*	*	*	*	*
Hood River	1,736	1,894	1,924	2,079	2,304	2,394	2,302	2,652	2,524	2,562	2,461	24,832
Jackson	11,758	13,127	13,954	15,154	16,529	16,953	16,465	19,428	18,812	19,128	18,367	179,671
Jefferson	*	*	*	*	1,666	1,861	*	1,768	1,685	1,749	1,742	10,471
Josephine	4,903	5,481	5,828	6,400	7,113	7,522	7,046	8,595	8,362	8,547	8,223	78,020
Klamath	6,354	6,925	7,149	7,589	8,399	8,808	7,800	9,405	9,046	9,081	8,596	89,152
Lake	*	*	*	*	*	*	*	*	*	*	*	*
Lane	24,663	26,751	27,802	29,715	31,274	30,520	32,991	37,032	35,847	36,059	33,980	346,634
Lincoln	2,953	3,189	3,373	3,601	3,811	3,661	4,357	4,871	4,817	4,975	4,788	44,396
Linn	8,391	9,109	9,758	10,316	11,215	11,303	11,242	12,879	12,447	12,437	11,739	120,836
Malheur	3,094	3,289	3,492	3,672	4,447	5,397	3,388	4,548	4,252	4,281	4,114	43,974
Marion	16,655	17,771	18,603	20,041	21,233	10,326	23,695	25,787	25,193	25,712	24,618	239,634
Morrow	*	*	*	*	*	*	*	*	*	*	*	*
Subtotal	132,221	146,227	154,760	166,711	181,422	181,642	186,327	214,642	208,355	211,582	201,683	1,985,572

NOTE: Bicycle/footpath legislation does not apply to a county in which one percent of State Highway Fund receipts in any year equals $1,500 or less.

* One percent of State Highway Fund receipts equals less than $1,500.

** Counties in the Portland metropolitan area.

BICYCLE/FOOTPATH FUNDS TO COUNTIES
(Based on one percent of total amount received from the State Highway Fund)

County	FY 1972	FY 1973	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980	FY 1981	FY 1982	TOTAL FY 72-82
Subtotal from Pg. 1	132,221	146,227	154,760	166,711	181,422	181,642	186,327	214,642	208,355	211,582	201,683	1,985,572
** Multnomah	61,016	62,823	64,661	67,161	67,757	64,470	59,172	68,395	65,837	65,513	61,109	707,914
Polk	3,467	3,875	4,241	4,503	4,778	4,655	5,022	5,563	5,427	5,576	5,356	52,463
Sherman	*	*	*	*	*	*	*	*	*	*	*	*
Tillamook	2,063	2,252	2,300	2,449	2,549	2,448	2,859	3,111	3,025	3,101	3,007	29,164
Umatilla	5,857	6,208	6,483	6,929	8,191	9,290	7,590	9,474	9,115	9,248	8,874	87,259
Union	2,369	2,601	2,840	3,021	3,326	3,460	3,203	3,706	3,530	3,568	3,427	35,051
Wallowa	*	*	*	*	*	*	*	*	*	*	*	*
Wasco	2,514	2,683	2,773	2,906	3,207	3,347	3,138	3,560	3,349	3,377	3,262	34,116
** Washington	16,437	18,910	19,953	21,765	23,161	21,974	24,322	27,529	27,427	28,446	27,307	257,276
Wheeler	*	*	*	*	*	*	*	*	*	*	*	*
Yamhill	4,676	5,089	5,353	5,786	6,192	6,205	6,644	7,531	7,366	7,550	7,309	69,701
Total	230,620	250,668	263,364	281,231	300,583	297,491	298,277	343,511	333,476	337,961	320,334	3,258,516

NOTE: Bicycle/footpath legislation does not apply to a county in which one percent of State Highway Fund receipts in any year equals $1,500 or less.

* One percent of State Highway Fund receipts equals less than $1,500.

** Counties in the Portland metropolitan area.

APPENDIX E

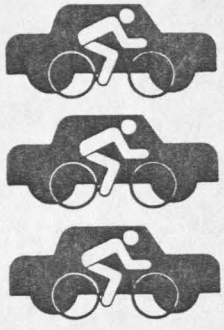
STATE HIGHWAYS NOT DESIGNATED AS REGIONAL BICYCLE ROUTES

1. Hwy. 217 -- Sunset Hwy. to 99W
2. OR 8 (Canyon Rd.) -- Sunset Hwy. to OR 8 (T.V. Hwy.)
3. OR 210 (Scholls Ferry Rd.) -- Southern leg from Scholls Ferry Rd. to UGB
4. Hwy. 99W -- I-405 to I-5 and Hwy. 217 to McDonald St.
5. I-405
6. Hwy. 99 W (Interstate Ave.) -- I-5 to Greeley Ave.
7. I-5 (Columbia River to Barbur Blvd.)
8. OR 99E (Union Ave./McLoughlin Blvd.) -- Columbia River to I-205
9. U.S. 30 Bypass (Lombard St./Killingsworth St.) -- St. Johns Bridge to Sandy Blvd.
10. I-84 -- I-5 to I-205
11. Sandy Blvd. -- Madison St. to I-84
12. OR 213 (82nd Ave.) -- Airport Way to I-205
13. U.S. 26 (Powell Blvd.) -- Ross Island Bridge to I-205
14. Hwy. 224 -- McLoughlin Blvd. to I-205
15. Hwy. 212-224 -- I-205 to Rock Creek Rd.
16. OR 213 (Molalla Ave.) -- I-205 to UGB

APPENDIX F

SAMPLE BICYCLE SAFETY LITERATURE

How To Ride in Traffic



TIPS FOR PEOPLE
WHO BICYCLE
ON PORTLAND STREETS

City of Portland
Bicycle and Pedestrian Program
Mike Lindberg, Commissioner

Reprinted from the Portland Bicycle Map

Rule 1 Be predictable
Ride so drivers can see you and predict your movements.

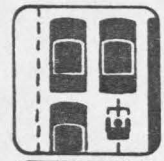
1 **Obey traffic signs and signals**
Bicycles must drive like other vehicles if they are to be taken seriously by motorists.

2 **Never ride against traffic**
Motorists aren't looking for bicyclists riding on the wrong side of the road.

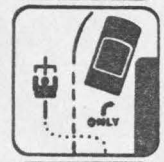
3 **Use hand signals**
Hand signals tell motorists what you intend to do. Signal as a matter of law, of courtesy, and of self-protection.

4 **Ride in a straight line**
Whenever possible, ride in a straight line, to the right of traffic but about a car door away from parked cars.

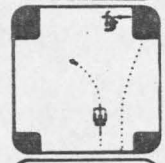
5 **Don't weave between parked cars**
Don't ride out to the curb between parked cars, unless they are far apart. Motorists may not see you when you move back into traffic.



6 **Ride in middle of lane in slow traffic**
Get in the middle of the lane at busy intersections and whenever you are moving at the same speed as traffic.



7 **Follow lane markings**
Don't turn left from the right lane. Don't go straight in a lane marked right-turn-only.

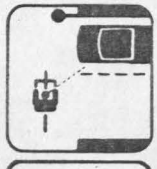


8 **Choose the best way to turn left**
There are two ways to make a left turn. (1) Like an auto. Signal, move into the left lane, and turn left. (2) Like a pedestrian.

9 **Don't pass on the right**
Motorists may not look for or see a bicycle passing on the right.

10 **Go slow on sidewalks**
Pedestrians have the right of way. By law you must give pedestrians audible warning when you pass.

Rule 2 Be alert
Ride defensively and expect the unexpected.



1 **Watch for cars pulling out**
Make eye contact with drivers. Assume they don't see you until you are sure they do.

2 **Scan the road behind**
Learn to look back over your shoulder without losing your balance or swerving left. Some riders use rear-view mirrors.

3 **Avoid road hazards**
Watch out for parallel-slat sewer grates, slippery manhole covers, oily pavement, gravel, ice. Cross railroad tracks carefully at right angles.

4 **Keep both hands ready to brake**
You may not stop in time if you brake one-handed. Allow extra distance for stopping in the rain.

5 **Watch for chasing dogs**
Ignore them, or try a firm, loud "NO." If the dog doesn't stop, dismount with your bike between you and the dog.

Rule 3 Be equipped
You'll ride easier and safer.

1 **Keep bike in good repair**
Adjust your bike to fit you, and keep it working properly. Check brakes and tires regularly.

2 **Use lights at night**
The law requires a strong headlight and rear reflector or tail light at night or when visibility is poor.

3 **Dress appropriately**
In rain, wear a poncho or a parka made of fabric that "breathes." Generally dress in layers so you can adjust to temperature changes. Wear a sturdy helmet.

4 **Use pack or rack to carry things**
Saddlebags, racks, baskets, backpacks all are good ways to carry packages, freeing your hands for safe riding.

5 **Lock your bike when you're gone**
Lock up to a post or tree or bike rack if there is one, threading the chain or cable through both wheels and the frame.

Summary of Oregon bicycle laws

Bicycles have the right to use all public rights of way except interstate highways in the Portland area.

Bicyclists must:

- Obey traffic lights, stop signs, one-way streets, and other basic traffic laws. A bicyclist has the same rights and duties on the road as drivers of other vehicles.
- Ride as far "as practicable" to the right (or to the outside lanes on a one-way street).
- Use a bikelane or path adjacent to a road if the facility is judged suitable for safe bicycling at reasonable speeds following a public hearing. (No Portland facilities so far are affected by this rule.)
- Yield the right of way to pedestrians. Give audible warning when overtaking a pedestrian.
- Keep at least one hand on handlebars. Keep control of bicycle at all times.
- When riding from sunset to sunrise or whenever visibility is poor, use headlight with a white light visible from at least 500 feet ahead and a red reflector visible from at least 600 feet behind.
- Keep brakes adjusted so that, when braked, your bicycle skids on a clean, dry pavement.
- Ride astride a fixed seat (kiddie seat and tandems acceptable). Riding "double" prohibited.
- Ride no more than two abreast.

For more information about bicycling in Portland contact: Bicycle and Pedestrian Program
1120 SW Fifth Avenue Room 834
Portland, OR 97204
796-7082

APPENDIX G

SAMPLE OF A LOCAL SAFETY EDUCATION PROGRAM

Junior high teacher Doug Force has developed and used the following lesson plan for instructing students on safe and proper bicycling techniques. This innovative program has been adapted into the required Language Arts/Social Studies curriculum, and has been quite successful over the past several years.

BICYCLE SAFETY EDUCATION LESSON PLAN

FOR MILWAUKIE SCHOOLS

WEEK ONE

Monday - Lecture/Discussion

1. Introduce Safety as primary goal of bicycling in class, and all other aspects of riding are attuned to this singular need. Survival = Safety
2. In class, the old attitude that a bicycle is a toy has no place as well. For us the bicycle is a serious form of transportation on public roads and as such we are entitled to certain rights and also have legal responsibilities . I also tell the students that without the use of such an energy-efficient mode of travel the program probably would not exist due to the cost of the school district supplying buses.
3. Introduce the idea that young people have a stereotyped image for most people and that I don't believe in that often negative image. That they, our school, this program and all people their age will be judged by how they are conducting themselves; especially as competent bicyclists rather than just "bike riders."
4. Lastly that the skills and techniques they learn in class are designed to help them survive in a modern metropolitan cycling environment, one in which they are the weakest component, most vulnerable and least understood form of transportation.

Tuesday - Lecture/Demonstration - Wednesday

1. Introduce concepts that develope safe bicycle riding skills
   - A. Visiblity
     1. Seeing - "Scanning" environment and cyclist awareness of what is transpiring around them - group and individual communication skills; including hand and verbal signals - predictability - for the cyclist as a safe way of blending and positively interacting with vehicular and pedestrian traffic.
     2. Being seen by others - use of safety vests (bright orange) on rides
        - a) use of movement by bicyclist to enhance visibility by motorists and pedestrians. (ie-waving, friendly style, to a motorist who may not see you.)
        - b) use of eye contact and communication checks (signal your intention to move to a motorist and then "O.K." hand sign to get a response; - smile and be smiled at in return. I stress courteous behavior at all times, no matter how badly the cyclist may be treated in return.)
   - B. Hazard Identification - Getting used to "defensive" driving. The idea of being able to see a potential problem and plan various ways of safely dealing with them.
   - C. Hazard Avoidance Behaviors - Emphasizing ways that a cyclist can behave to avoid accidents.
     1. I stress that a bicylist can control themselves and help others not run over them by sensibly taking action themselves (responsibility of vehicle operator.) That this is preferred to having an accident, no matter who is legally right or wrong.
     2. That you never want to take chances-a 7,500 lb. Cadillac is even bigger when it's parked on you!

D. Signals we use; (as seen from rear of rider) Non-Verbal(signals) Communication - Group Riding

LEFT TURN

1. RIGHT TURN - I know! This is not legal! But it is effective communication and it allows the rider to make a quick look over left shoulder to see if the most dangerous zone is clear.

2. Before making any manuver or turn I teach the 4-step sequence:

   a) "Check" - scan environment quickly all around
   b) "Signal" - communicate your intention to maneuver - be predictable and motorists will be more willing to adjust their behavior to meet your needs.
   c) "Check" - never assume anything is safe. Take another quick look before you maneuver - it's your life.
   d) "Maneuver - if Safe" - If not,there is nothing in "the book" that says just because you signaled you must put yourself in jeaprody, slow or stop to avoid an accident.

3. Hazard in the Road Way - One finger pointing to the side the hazard is on. The "hazard" can be almost anything. Either hand can be used.

4. Slow/Stop Either hand down, with fingers fully spread.

5. Dismount - Often times, especially in heavy traffic the safest thing to do is get off your bicycle and become a pedestrian. This has some technical, legal advantages, at crosswalks at busy inter-sections when it's often much safer and faster to dismount and walk across.

6. Waving - We use this to attract attention to us across intersections as an opener for a directional signal. A bicyclist can be sitting in front or to the side of a day-dreaming motorist and never be "seen" until they move. Never assume you've been seen.

7. Directional Signals - Once you have a motorists attention, tap your head or chest and then point in the direction you are going to go. This helps them predict what your going to do and helps both of you maneuver safely. Then signal "O.K.?" to check to see if the communication has been received and understood. Always smile and look pleasant when you do this, it really helps!

E. Verbal Communication - Group Riding

1. Yelling "Car!" If someone in the line (we always ride single file) sees a vehicle approaching from the rear only, they yell "car!" It doesn't matter if it's a bus or van, just yell car. Everyone in line also yells when they hear the warning. This does two things; it warns all riders of a potential hazard and it generally causes motorists to be more aware of the cyclists and adjust their driving behavior to avoid us.

2. "The Whistle" - The last person in line carries a whistle. If anyone stops, as on a long hill, he/she blows the whistle and we all stop, dismount and walk. The whistle means stop as safely and as soon as possible. This is especially important in heavy traffic or when riding with a group of five or more people.

Thursday - I usually give a written quiz over the signals and have asked the students to bring their bikes to school for today and tomorrow. Then we clean our bikes (no matter how clean they might be) and check them over for loose wheel nuts, fender stay bolts, etc; and any other mechanical difficulties. Minor things I take care of, major things I insist be done by a reputable bike shop. In our program, kids that don't have bikes use one supplied by the school. These bikes were furnished by the local Lion's Club and Kiwanis Club. They supplied the funds and I bought good, servicable used bikes. Spares are also provided by a small budget through the school district.

Lots of old rags and soapy water in small spray bottles are used. S.O.S. pads are good to have handy.

Friday - Introduce "Skills" test requirements and take students onto play ground to practice on the course I've painted on black top.

1. Test 1 - Balance - The student puts one foot on a pedal and pushes bicycle but does not mount. They must coast through a lane 8" wide and 20' long without going outside of lane. They get a 5'-10' run or 3 pushes with dismounted foot.

2. Test 2 - One handed obstacle course - I layout a "track" that students pedal through with one hand. It is on and off the black top, over smooth and rough ground. They go through one way using left hand and reverse using right hand only (both if a fall is eminant).

3. Test 3 - Coasting Seated- through 8"x20' lane after a 5'-10' pedal.

4. Test 4 - Stopping - Students get a 50' - 60' run down a track lane up to 8-10 mph and then must stop with the front wheel inside a 2'x2' square . The wheel must not touch the lines and no skidding is allowed.

5. Test 5 - Signaling Test - the students ride a black top route that requires them to turn left, right and stop. They must "check" - signal(maintain signal)- check and then (if safe) maneuver before each turn and stop.

6. (optional) - Parts of Bicycle Test - This is a ditto handout I gave them (many available from AAA or bicycle repair books) listing "real" names of frame parts and components on bikes.

Everyone must pass all of these tests before we go to the road. This can be a hassel but these are basic skills that build confidence and every bike rider must be competent in before they can become "bicylists."

WEEK TWO

Monday - Practice Skills Tests

Tuesday - Practice Skills Tests

Wednesday - Practice Skills Test

Thursday - Seat and handle bar adjustments

Friday - Skills Tests

WEEK THREE

Monday - By this time the students generally have packets in Lanuage Arts and Social Studies and are ready for rides.

Tuesday - Friday We do and discuss the "Ten Great Accidents Book." This was developed from information developed by Dr. Kenneth Cross who has added five more "Accident types" (see Bicycling Magazine)

WEEK FOUR

Monday - Friday I made up a map project for Portland, Oregon using the "Portland Bicycle Map " (see Bicycle Forum , No. 5, 1980) And we use these to go over routes to learning site in the city.

WEEK 5/6- OREGON DRIVERS MANUAL WORK, 1979-1980

These are 18 "Lessons" using the Oregon Drivers Manual and help make students aware of legal aspects of operating a vehicle on public roads in Oregon. (Sterling Karen, Olive Press, Ptld. Ore. Distributed through Northwest Textbook Depository Co. 17970 S.W. Lower Boones Ferry Road, Lake Oswego Ore. 97034)

WEEK 7/8 - I've developed Work Sheets to be used with the following Books, a work sheet per chapter.

Bicycle Commuting, Basic Riding Techniques

Both of the above books are published by Bicycling Books, 33 East Minor St Emmans, Pa. 18049

Another publication that is a superb teaching tool is the Sproket Man (comic book), Urban Scientific and Educational Research inc., W20-002, M.I.T. Cambridge, Ma. 02139.

Much of this program has benefited from Effective Cycling by John Forrester, Custom Bicycle Fitements, 782 Allen Court, Palo Alto, California 94303. To my thinking, this may be the most definitive book on modern bicycling in the United States.

One glaring point is left to be answered now. Do I teach bicycle maintainence? Yes and no. I am working on a "laboratory" series where kids take apart and put back together old hubs, cranks, pedals, head sets, and the district shop is cutting down frames and re-welding these on stands to be smaller and more manageable. Anything else I do is strictly "as the need arises. Many community school/colleges in our area teach bicycle repair and I support these. There are also certain liability reasons that do not allow me much latitude in this realm.

The rest of the students experience is based on the rides to learning sites in the Language Arts, Social Studies portion of the S.O. P. program. I lead the rides and always carry a first-aid kit, spare tubes for various size bicycles and extra water bottles. Before each ride I cover the route with the students and advise them of appropriate clothing and food for the ride and when we get to the learning site. I also carry enough money to taxi a kid back to school although I've never done that in four years. All of the kids memorize the school phone number and we cover emergency procedures if I or anyone else should require aid.

On the rides I often stop and explain difficult places, such as inter-sections and how we will negociate them, or better, let the students develope their own options and then evaluate each of them on the spot. Again, much of the lane-position, communication skills and other parts of the riding were based on Foresters' Effective Cycling Book.

The Language Arts/Social Studies part of the course is based on a Packet-Learning Strategy. The students select the packets they want to do and then complete the various activities in the packet. Each packet is related directly to an aspect of the 8th grade Social Studies Curriculum for our district and meets basic minimum competencies established by the State and District. Those are included with each packet. I'm developing the Language Arts competencies now and they should be done by 1981-82. The "rides" or Learning Sites are listed below with the area of concentration and a brief synopsis of the on-sight learning focus.

Bicycle Shop - Career Education

Students complete ditto sheets designed to help them explore and experience various aspects of career planning and employment. They then travel to a local bicycle Shop (Beckwith's Schwinn Shop, 4235S.E. Woodstock Bv. Portland, Or. 97206, 774-3531) and work on their bikes under the direciton of myself and the mechanics. They learn what it would take to be a mechanic, the pros and cons of the job and other requirements an employer looks for is general. Ride length - 11½ miles.

John McLoughlin House - Oregon History

The students complete a research and creative writing packet that portrays the importance of fur trade and John McLoughlin's role as Chief Factor of the Hudson's Bay Company in the development of Oregon. We then ride to his restored house in Oregon City and the curator gives us a first hand glimpse of his life by sharing the articles he used and the home he lived in when alive. She also covers his life and fall as a citizen of Oregon. Ride length - 19½ miles

Mt. Tabor - Volcanos and Geography

According to a marker on this cinder cone, Portland is the only city in the United States to have a volcano in its limits. With Mt. St. Helens, this has become a very popular ride. We work on a packet that gives basic processes in Volcanism, vocabulary and creative writing experiences and then ride to the top of this park to see the crater and observe the other cinder cones that border the Portland Metropolitan area. Ride length - 18 miles

Milwaukie Museum - Local Milwaukie

History - The local historical society bought and restored a homestead house of one of the first settlers in our area. They converted it to a museum in which you can touch and use most of the artifacts displayed. This gives students first hand experience with the past and a new persepctive on the present. Ride length - 2 miles

Shopping Center - Consumer Education

This packet gives a greater awareness of consumer protection and marketing techniques used in modern capital economies. The ride focuses on methods of marketing and display used by current chains and specialty retail organizations to induce consumerism. Ride length - 12 miles

ALL OF THE ABOVE RIDES ARE 1/2 DAY (3-4 periods) THE LAST TWO ARE FULL DAY RIDES. During the time I'm gone the program provides a substitute teacher to fulfill my responsibilities. This is the major cost of the program.

Portland Zoological Gardens - Land Use and Park Planning

The students do short research on animals and plan a park, recognizing that space and recreation are essential to maintainence of a healthy life style in our modern society. Ride length - 46 miles

Oregon Historical Society - Oregon History

This packet focuses on the role of migration to Orégon of Fur trappers, Clergy, Agrarians and later still industry and commercial enterprise. It also allows students to explore the growth of Portland, physically. The Oregon Historical Society facility includes large dioramas and displays, special presentations on all aspects of Oregon History and resources for the research of topics related to Oregon History, and balances the two toher historical rides by giving general information on the region. Ride length - 38 miles

The packet system works in a two-fold way. Students complete items in the packet for a grade (A-F) and for points. Each ride is "worth" a set number of points. How much they do is determined by them and it is possible to "earn" a ride and not earn a very high or "good" grade. This program was designed to meet the needs of any level student and those who accel do as well in it as those who are slower. Students are required to do a minimum of six different packets to meet the minimum requirements of the course. At present I am adding two packets to the list and they should be done by May of 1981. Points from one packet are not transferrable to another packet.

I've found that this system helps motivate students to succeed and makes training in school much easier to relate to the world outside our cloistered halls. The community has been extremely supportive and interested, and it's a tremendous public relations move for both bicycling responsibility and the school district as a dynamic educational system.

Again, thank you for your interest, please let me know how you use or design your own program and if you need anything else don't hesitate to call or write. I have been doing 1-3 day clinics for interested groups and can send you particulars on these if you wish.

Sincerely,

Doug Force

Doug Force
Lang.Arts/Social Studies
McLoughlin Junior High
14450 SE Johnson Road
Milwaukie, Oregon 97222
653-3704

Copies of the detailed bicycle course curriculum are available by contacting either Doug Force or the Metropolitan Service District.

DF/sb