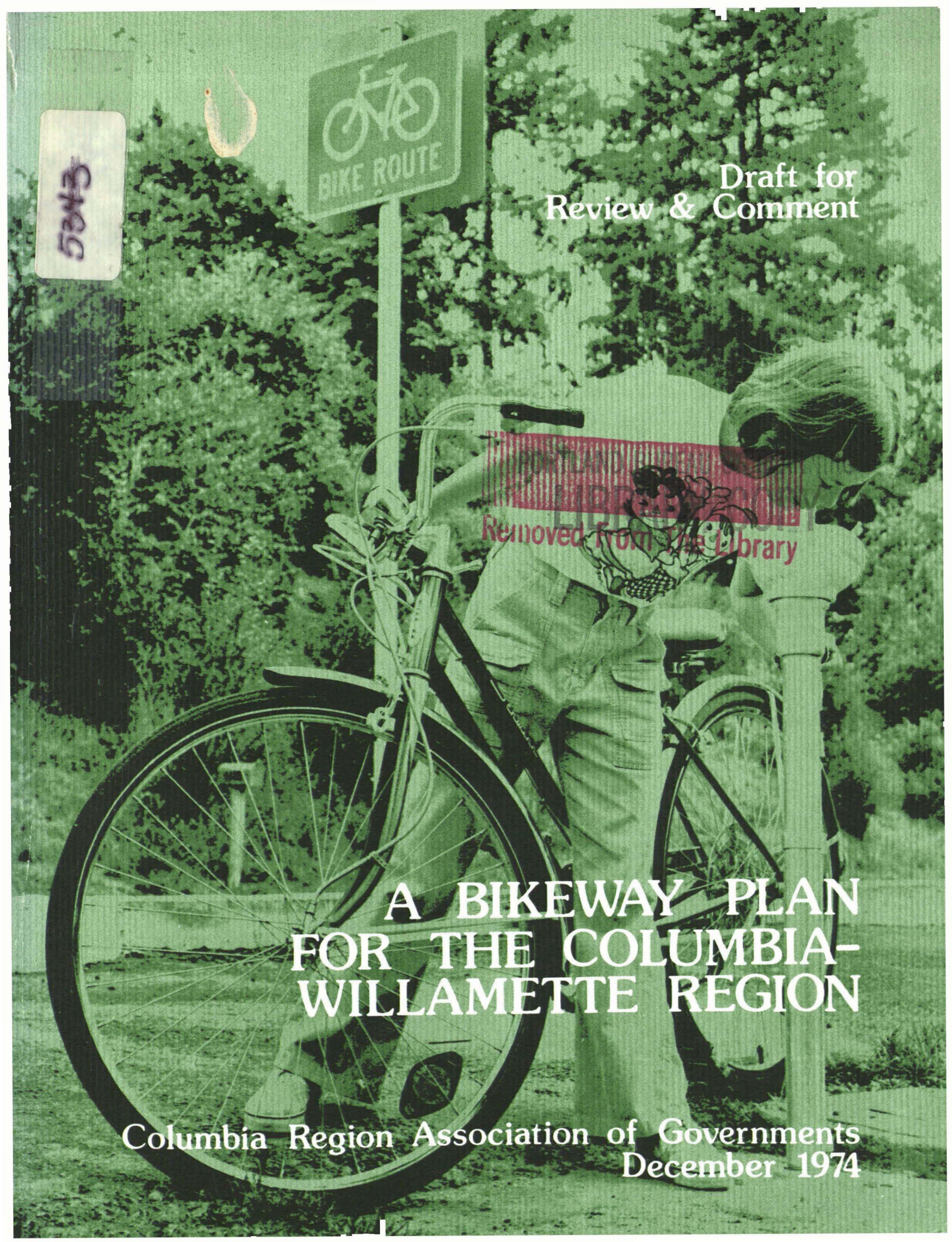
12-1974

A Bikeway Plan for the Columbia-Willamette Region: A Proposed Element of the Columbia-Willamette Region Comprehensive Plan (Draft for Review and Comment)

Columbia Region Association of Governments



Draft for
Review & Comment

A BIKEWAY PLAN FOR THE COLUMBIA-WILLAMETTE REGION

Columbia Region Association of Governments

December 1974

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CONTRIBUTING AGENCIES

The following units of state and local government contributed to the financial support of this project. That support is hereby gratefully acknowledged.

Clackamas County
Canby
Gladstone
Happy Valley
Lake Oswego
Milwuakie
Oregon City
West Linn

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The preparation of this report was financed by the Oregon State Department of Transportation, the Washington State Highway Department and local government members of the Columbia Region Association of Governments. Oregon funds designated for footpaths and bicycle trails under Chapter 376, Oregon Laws, assisted in project funding.

Draft for
Review & Comment

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A Proposed Element of the Columbia-Willamette Region Comprehensive Plan

Columbia Region Association of Governments
December 1974

LETTER OF TRANSMITTAL

TO REVIEWERS OF THIS REPORT

This report has been prepared in response to the need for an overall, regional perspective on bikeway planning in the Columbia-Willamette Region. It proposes a master plan for a regional network of bikeways integrated with local routes. You will also find recommendations on bikeway planning policies, suggested priorities and design standards.

The Proposed Regional Bikeway Plan was formulated with the help of a variety of public agencies, bicycle interest groups and individuals. The CRAG Board now requests your review and appropriate comments to make it a better plan.

The task of revising the plan falls to the CRAG Transportation Technical Committee. Please forward your comments to "Bicycle Plan Review" CRAG - 527 S.W. Hall Street, Portland, Oregon 97201, or call them in to John Krawczyk -- 221-1646.

Sincerely,

Bill Young

Bill Young

Chairman - Board of Directors
Columbia Region Association of Governments

ACKNOWLEDGEMENTS

It would be difficult to list all of the individuals and groups whose cooperation was instrumental in the preparation of this report. At the risk of some oversights, a word of gratitude is nevertheless expressed to the following individuals and groups:

Jim Baily
Mike Bauer
Bill Bieker
Rusty Blake
Gary Braasch
Gil Brently
Judy Bower
Winslow Brooks
Steve Brown
Don Byard
Belle Canon
Don Covile
Don Curry
Mike Dorough
Dick Dunnets
Bill Dygert
Tim Ellis
Ed Erickson
Dean Fitzwater
Alan Fox
Kent Fruitiger
Patty Gazely
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Rich Lawrence
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Jim McClure
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Judy Nedry
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John Perrin
Keith Thompson
Nancy Tracy
Karl VonPrais
Gordon Whitehead
Laura Williamson
Pat Whiting
Ira Winograd
K.J. Won
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Lyle Wold
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Bernard Straight
Leonard Strobel
Jim Taylor

Bicycle Advocates - Clark County
City of Gresham Park Board Citizens Advisory Committee on Bikeways
City of Portland Bicycle Path Task Force
Clackamas County Citizen's Advisory Committee for Bikeway Planning
East Multnomah County Citizen's Advisory Committee
Forest Grove Bikeway Group
Greenway Path Committee - Beaverton
Lake Oswego Bicycle Group
Oregon Department of Transportation Highways Division
Tigard Area Pedestrian-Bicycle Pathway Committee
Washington County Bikeway Task Force

NOTE TO THE READER

Responding to a groundswell of public interest, the Oregon State Legislature in 1971 passed House Bill 1700, commonly known as the "Bicycle Bill." Oregon Revised Statute 366.514 requires that not less than one percent of the funds expended by the State Highway Division or received by any city or county from the State Highway Fund shall be used to establish footpaths and bicycle trails along existing highways and in parks and recreation areas.

Funds for pedestrian and bicycle facilities were welcomed by citizens concerned with bicycle and pedestrian safety as well as individuals favoring decreased transportation dependence on the automobile. However, it soon became apparent that coordination among the many units of local government would be necessary to ensure continuity of local plans and provide an idea of route funding priorities within a regional framework. The Columbia Region Association of Governments accepted this coordination responsibility, the following report being the first step toward a coordinated regional approach to bikeway planning and development.

Cooperating with the States of Oregon and Washington, CRAG has worked closely with its member jurisdictions to create a document defining the importance and need for footpaths and bikeways. The document also provides a basis for identifying regional routes, suggests route priorities and encourages the use of uniform bikeway design standards. Information concerning bikeway funding sources, bikeway costs and bikeway safety are also included.

Central to most reader's interest will be the route map and route descriptions. The integrated regional bikeway network formed by these routes is the result of coordination with local governments and appropriate citizen advisory committees. These groups, in concert with CRAG, have worked to provide a regional plan overlying and synchronized with local bikeway planning efforts.

An opportunity exists to implement a pedestrian and bicycle pathway network as one element of a balanced transportation system. On the road to such a system, changes may occur in the assumptions used to formulate this plan. Because of the dynamics of the planning process, the following document should be considered flexible and subject to periodic revision. Readers of this plan hopefully will be stimulated to suggest improvements or additions. Continued dialogue related to this document and its periodic revision will be essential if it is to remain up-to-date and relevant.

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LIST OF MAPS

A BIKEWAY PLAN FOR THE COLUMBIA-WILLAMETTE REGION

CHAPTER 1

Introduction to Bikeways

Public Demand for Bikeways

Between 70 and 80 million Americans ride bicycles. According to the Bicycle Institute of America there will be more than 100 million cyclists in the U.S. by 1975. Popularity and enthusiam for bicycles is reaching an all time high. According to recent estimates about one person in three now owns a bicycle. A recent U.S. Department of Interior report revealed that bicycle riding is nationally the fastest growing adult-participation sport, with an increase of approximately 105 percent since 1960.

The Bicycle Institute of America estimates that 12 to 13 million new bicycles were purchased in 1972 alone, compared with less than 8.8 million in 1971. Assuming one bicycle for every three persons there are now approximately 740,000 bicycles in the State of Oregon and an estimated 360,000 in the five-county Columbia-Willamette region.

Reasons for the resurgence of bicycling have to do not only with recreation but with ecology, health and the economics of transportation. Combustion and noise pollution are absent and no non-renewable natural resources are consumed in the operation of bicycles. Sixteen bikes will fit a parking space designed for an automobile. Initial costs are minimal compared to other transportation, and maintenance costs are negligible. Although inclement weather is a factor not to be ignored in the Columbia-Willamette region, the use of a bicycle can provide transportation savings for many months of the year, both to the suburbanite and to the economically disadvantaged who may not have other good transportation alternatives. Whatever one's economic status, bicycling has gained stature as an ideal form of exercise.

Bicycles and Energy Consumption

According to a report issued by the City of Chicago (Guidelines for a Comprehensive Bicycle Route System), a bicycle could reach that city's business district faster than rush hour automobiles, buses or commuter trains from a distance of up to five miles. Bicycles in such cases are directly competitive with other transportation modes. They can lessen dependence on the automobile in urban areas and thus help to deal with the energy crisis.

Current energy problems have highlighted the importance of efficiency as a factor in transportation. Engineering studies of the relative efficiency of various transport vehicles have shown the bicycle to outperform its competition by an impressive

margin. The following table, based on data developed by the School of Engineering, California State University, San Diego, illustrates this:

Table I

VEHICLE AND PAYLOAD TRANSPORT EFFICIENCY*

	Vehicle Transport Efficiency	Payload Transport Efficiency
Bicycle	53	47
City bus 3/5 full	6	1.2
Auto with driver	2.8	0.14

**The higher value indicates greater efficiency. Vehicle Transport Efficiency (VTE) is determined as follows:*

$$\frac{\textit{vehicle gross weight X average speed}}{\textit{Total installed power}}$$

The VTE represents efficiency of the entire vehicle in carrying itself through its operating medium. Payload Transport Efficiency (PTE) is arrived at by multiplying the VTE by the payload/gross weight ratio. The PTE represents the efficiency of the vehicle in carrying cargo and passengers.

Source: Toward a Dual-Mode Bicycle Transportation System, by David E. Eggleston, California State University, San Diego, California.

A recent study by the State of Oregon's Office of Energy Research and Planning has examined the total energy requirements of various transportation systems. This study considered more than just vehicle efficiency alone; the energy consumed in constructing the system as well as its impacts on other energy flows were also taken into account. If these wider considerations are weighed, the bicycle's cost and energy-saving advantages are even more impressive (see Appendix A).

Legislative Mandate for Bikeways

The legislative mandate for bikeways in Oregon is provided by ORS 366.514, passed by the 1971 Legislature, and generally known as "The Bicycle Bill." That bill is thought by many to be the best in the nation, and it currently serves as a model for other states. In the State of Washington, bikeways are covered by House Bill 1060, also enacted in 1971. Passage of the 1973 Federal Aid Highway Act and its provision for $120 million for bikeways over the next three years gives additional impetus to bikeways.

Implementation of the legislative mandate for bikeways in the Columbia-Willamette region has been furthered by an Oregon Department of Transportation policy providing 5 percent matching funds for bikeway planning to Oregon councils of government provided their local member governments are willing to spend 5 percent of their own bikeway funds for region-wide planning. This has provided the basic funding for the regional bikeway planning effort; the State of Washington and the cities of Vancouver and Camas have also contributed to the program's funding. The interest and participation of all cities and counties in the region will remain a key factor in moving ahead on the legislative mandate for bikeways.

CHAPTER 2
Approach & Recommended Policies

This section explains briefly the approach, goals and planning assumptions underlying the regional bikeway planning effort. Policy recommendations that have emerged from the study are also included.

Approach to Project

Citizen participation was a major consideration in approaching this project, and it was actively solicited by CRAG in the plan's formulation. Such participation proved to be a valuable resource, resulting in the initiation of several local bikeway plans. Although the project's main emphasis was regional-scale, it still required the involvement of persons with knowledge of local conditions. To increase regional awareness of local concerns direct contact was made with county commissioners, mayors, city managers, planners, engineers and bicycle interest groups in each city and county. Citizens' bikeway advisory groups were organized to work in concert with the regional planning staff in developing the plan. These groups were composed of people with various skills, interests and points of view, ranging from the bicycle enthusiasts to the concerned citizen. Work sessions were well attended and contributed significantly to the planning effort.

The initial part of the program consisted of an inventory of all bikeway plans previously prepared or in progress by local governmental jurisdictions and by the State of Oregon within the Columbia-Willamette region. While the inventory provided a starting point, the final regional plan does not purport to include all bikeways within local communities. The regional plan is intended to provide the framework within which local bikeways can be interconnected. Local planning is best handled by citizens and local officials whose familiarity with local conditions uniquely qualifies them for the task.

Bikeway Report Goals

In the preparation of this report, the following basic goals were formulated to give it purpose and direction:

1. To integrate the efforts of each city and county in the Columbia-Willamette region and the states of Oregon and Washington toward the most economical, aesthetic, practical and safe system of regional bikeways that will serve the needs of those choosing the bicycle for transportation and/or recreation.

2. To identify corridors and areas with the greatest potential for bicycling and to assure region-wide continuity of the bikeway system.

3. To enhance the safety of the bicyclist.

4. To locate funding sources for constructing bicycle facilities and initiating new bicycle programs.

5. To assist local communities in the planning and implementation of bikeways.

6. To encourage educational and registration programs designed to reduce bicycling accidents and theft, and to aid in the enforcement of state and local bicycling laws.

Bikeway Planning Assumptions

The regional bikeway plan rests on the following basic assumptions:

1. The bicycle is a legitimate transportation alternative to the automobile.

2. The bicycle can play an important role in the solution to the energy crisis, offering a means of transportation with minimal energy consumption.

3. A regional bicycle pathway system will provide the facilities for an alternate transportation mode, thus furthering the opportunity for a balanced transportation system.

4. More people of all ages will develop an interest in bicycling if a bikeway system is developed eliminating or reducing many of the physical hazards associated with bicycle riding in a stream of motorized traffic.

5. Participation by adults in recreation bicycle riding will increase as bikeways are improved and hazards reduced.

6. A safe bikeway system will reduce safety hazards for small children riding to and from schools.

Recommended Policies

The following policies are proposed as a basis for state and local plan and project review and to give general implementation direction to the Regional Bikeway System:

1. Any bikeway construction project submitted for A-95 review shall conform to the Regional Plan and to a locally adopted city or county bikeway plan.

2. Local bikeway planning should consider the regional bikeway system to insure necessary connections and avoid duplication of routes.

3. The bikeway system should be recognized as a support system for all forms of mass transit.

4. Bikeways and pedestrian paths should be provided in all new subdivisions for travel to schools, commercial and employment centers, and other traffic generators.

5. All local jurisdictions constructing, reconstructing or relocating a street or road shall comply with ORS 366.514, which requires footpaths and bicycle trails to be established wherever a road is constructed, reconstructed or relocated.

6. For regional uniformity for safety purposes, local jurisdictions should follow design standards given in the Oregon Department of Transportation publication titled Bikeway Design, January 1974, and subsequent revisions.

7. State-wide bicycle licensing and registration is supported to discourage bicycle thefts and to provide additional monies to local jurisdictions for bikeway construction and maintenance.

CHAPTER 3
The Regional Bikeway System

The System in Overview

The bikeway network described in this report is tied closely to regional land use and transportation proposals described in more detail in a separate report entitled Columbia-Willamette Region Comprehensive Plan, Discussion Draft. The broad configuration of the bikeway system has been guided by a basic underlying principle: commuter routes have been emphasized in urban areas while recreation bikeways have been given more emphasis in non-urban areas. This relationship can be seen on Map 1 (page 46) which depicts the regional bikeway system superimposed on the tentative regional patern of urban and non-urban lands now under discussion.

Generally, the bikeway locations were selected to link residential areas to major activity centers such as schools, parks, commercial and employment centers. Discontinuities between separate local bikeway planning projects were resolved to whatever degree was feasible. Final location and design of each route will, in many instances, require further detailed engineering studies. The bikeways comprising the regional system frequently cross jurisdictional boundaries further emphasizing the importance of resolving differences in route locations, construction and maintenance responsibilities, cost estimates, completion dates and priorities.

Relation to Other Plans

In addition to the overall regional comprehensive planning noted above, the regional bikeway system reflects exploratory work done in a 1971 CRAG open space planning study. The proposals of that study, published under the title The Urban Outdoors, stressed the need for a network of linear open spaces and recreation facilities. It specifically included a proposal for a regional bikeway system with preliminary ideas concerning route locations. This report essentially carries on where The Urban Outdoors left off.

In recent months a number of cities and counties, as well as the state of Oregon, have also issued bikeway planning reports. They have provided important input for the regional planning effort and include the following:

Beaverton Bikeway Program
Beaverton Planning Department
July, 1974

Tigard Area Comprehensive Pedestrian/Bicycle Pathway Plan
Tigard Area Pedestrian-Bicycle Pathway Committee
March, 1974

Bicycle Facilities for Portland
Portland Bicycle Paths Task Force
March, 1973

Bikeways
Regional Planning Council of Clark County
March, 1973

Bikeways for Gresham
Gresham Bikeways Committee
1974

Citizen's Bikeway Report
East Multnomah County Citizen's Advisory Committee
February, 1974

Lake Oswego Bicycle Plan
Lake Oswego Bicycle Task Force
1974

Forest Grove Bikeways Report
Bikeways Study Group
January, 1974

Oregon Bikeways Progress Report
Oregon Department of Transportation Highway Division
February, 1973

Washington County Bicycle-Pedestrian Pathway Master Plan,
Washington County Citizen Bicycle-Pedestrian Advisory Task Force, December, 1974.

The local bikeway systems described in these reports and their relationships to the regional network are illustrated by a series of maps beginning on page 48 .

Regional Route Descriptions

Descriptions of each bikeway route in the regional system have been prepared. They include written location narratives, lists of involved jurisdictions, estimated route lengths, suggested implementation priorities, design comments and major points of rider interest or other trip-generating activity centers.

Suggested implementation priorities are regional in perspective and may not reflect all local route priorities. A general consensus of involved citizen groups and the CRAG staff gave commuter routes higher priority over short recreation routes in

populated areas. It was also felt short recreation routes in densely populated areas should have higher priority over long distance bicycle touring routes. Other factors considered when assigning suggested priorities were projected use, safety problem areas, road surfaces and grades, the foreclosing of opportunities by other impending projects, scenic and historic points of interest, and the relative location of higher intensity commercial centers as well as schools and parks. A regional route-priority summary immediately follows the detailed regional route descriptions. The routes have been classified in terms of three priority levels:

Priority 1 (High) - Generally commuter-oriented; usually located in urban areas.

Priority 2 (Medium)- Generally shorter recreation routes in urban areas.

Priority 3 (Low) - Generally recreation or touring routes, often located in rural areas.

Although the bicycle has traditionally served as a recreation vehicle for the bicycle enthusiast -- particularly children -- there is growing interest in bicycles among adults as an alternative to the automobile for commuting purposes. Consequently, the regional bikeways recommended in this report have been separated into "commuter" and "recreation" routes. Many routes may serve a dual role because of their proximity to work, school, and recreation, but their predominant use was the basis for categorizing them. The Bicentennial Bikeway has been treated as a unique facility and is, therefore, not categorized.

Various segments of bikeways have been proposed for different "Class" designations. Bikeway Classes are described in detail in Chapter 4; the following are summarized definitions:

Class I Bikeway - A fully separated way, sometimes independent of other transit facilities.

Class II Bikeway - A way adjacent to motorized traffic, but usually separated by some physical means.

Class III Bikeway - A way that shares the roadway with motorized vehicles.

The following detailed route-by-route descriptions of the regional bikeway system define corridor locations and should not be interpreted as ruling out alternate routes that accomplish essentially the same purpose. Route locations are illustrated on Map 1 page 46.

Route 1. THE BICENTENNIAL BIKEWAY: A Demonstration Project

This bikeway was selected to serve as a demonstration project to illustrate what a high quality facility will do to stimulate further bicycling activity. It also intended to focus public enthusiam on commemoration of the nation's 200th birthday by highlighting our region's heritage.

The proposed North Willamette River Bicentennial Bikeway generally follows the Willamette River for about fifty miles southward from its confluence with the Columbia River at Kelley Point Park. There, spectacular views of ships and barges are a reminder of Portland's historic importance in international trade and cooperation. This facility would be completed by July 4, 1976. State and local cooperation would be emphasized to provide a facility enhancing the Willamette River Greenway Program, re-orienting people to the river, and be a reminder of our rich historical and physical heritage. This heritage is symbolized by: the confluence of the rivers, first visited by Lewis and Clark; Union Station; the Park Blocks; the magnificent view of Portland from Terwilliger Blvd. Bikeway; the old iron foundry in George Rodgers Park in Lake Oswego; the old pioneer road to West Linn; the McLoughlin House among other places in historic Oregon City; the old townsites of Butteville and Champoeg.

The Bicentennial Bikeway will provide a safe means of commuter transportation for cyclists with origin and destination points in the urbanized areas. For the recreation rider, the route provides a long distance tour that mixes pleasant urban and rural landscapes. The varied use aspects of the route make it a project of top regional priority.

The northern terminus would be Kelley Point Park from which point the route proceeds south along the Columbia Slough to Pier Park, Pier Park to Ainsworth Street via Willamette Boulevard, Ainsworth to the Broadway Bridge, crosses the Broadway Bridge and follows Park Avenue to Terwilliger Boulevard, follows Terwilliger to Lake Oswego to Old River Drive, follows Old River Drive to Mary S. Young State Park. From here the route uses State Highway 43 to the Willamette River, crosses the old Oregon City-West Linn Bridge to Oregon City, follows Highway 99E south to Territorial Road in Canby, follows Territorial Road east to Canby Buckman Road (Holly Street), follows Canby Buckman south to Knights Bridge Road and crosses the Molalla River and goes west to Arndt Road. The route then uses Arndt Road, crosses the Pudding River and I-5 Freeway to Butteville Road, follows Butteville west to Butteville where the route would join an existing bikeway to Champoeg State Park.

Jurisdictions Involved: Oregon State Highway Department; Port of Portland; Multnomah County; Clackamas County; Lake Oswego; West Linn; Oregon City and Canby.
Suggested Priority: 1.

Route 2. PORTLAND-ASTORIA LOOP

This recreation route would follow U.S. Highway 30 from Portland to Astoria, Astoria to Vernonia via State Highway 202 and State Highway 47. From

Vernonia the route follows the old Burlington-Northern Railroad right-of-way to U.S. Highway 26 (Sunset Highway). At this point two alternatives would be offered. The cyclist may choose to ride east along Highway 26 to Portland or may continue to follow the railroad right-of-way to Banks. Because of its length, it may be desirable to provide overnight camping facilities along the route. The Vernonia to Banks (old Burlington-Northern Railroad right-of-way) segment could provide hiking and equestrain as well as biking opportunities. The majority of the Banks-Vernonia right-of-way has been purchased by the State Parks and Recreation Branch of the State Highway Division and planning for this segment has begun.

Jurisdictions Involved: Oregon State Highway Division.
Estimated Length: 200 miles.
Suggested Priority: 3.
Major Activity Centers: Scappoose; St. Helens, Columbia City and Rainier Central Business Districts; Clatskanie; St. Helens Industrial Area; Vernonia; Astoria.
Points of Interest: Scappoose Airport; Trojan Nuclear Power Plant; Columbia County Fairgrounds; Columbia River Views.
Comments: Paving of uphill sections required; stripe and sign; clean and maintain shoulders.

Route 3. SKYLINE BIKEWAY

The proposed Skyline Boulevard Bikeway is a recreation facility beginning at the intersection of Skyline Boulevard and Canyon Road. From here the route follows Skyline to Cornelius Pass where two alternatives are suggested. The first alternate follows Skyline to the Dixie Mountain area and to Highway 30 via Rocky Point Road. The second alternate follows Cornelius Pass Road, to Highway 26.

Jurisdictions involved: Oregon State Highway Division; Multnomah County; Washington County.
Estimated Length: 18 miles.
Suggested Priority: 3.
Major Activity Centers: Sylvan.
Points of Interest: Tualatin Valley Views; Willamette Stone State Park.
Comments: Designated as potential scenic drive or parkway in The Urban Outdoors report; low traffic volume; not recommended for beginners; stripe and sign.

Route 4. CORNELL ROAD BIKEWAY

A recreation route following N.W. Cornell Road from N.W. Skyline Boulevard to N.W. Summit, Summit to N.W. Lovejoy and Lovejoy to N.W. 23rd Avenue.

Jurisdictions involved: Multnomah County, Portland.
Estimated Length: 7 miles.
Suggested Priority: 2.
Points of Interest: MacLeay Park.
Comments: Not recommended for beginners; pave uphill sections; stripe and sign; substantial grades; expected low use; serves as an alternate to Canyon Road as a route to the Tualatin Valley.

Route 5. WEST UNION BIKEWAY

This proposed route would connect North Plains and the community of Bethany by following West Union Road, thence southeast on West Union to N.W. 143rd and south on 143rd to N.W. Cornell Road. It is designated as a recreation facility and serves as an alternate to Highway 26.

Jurisdictions Involved: Oregon State Highway Division , Washington County.
Estimated Length: 7 miles.
Suggested Priority: 2.
Major Activity Center: Riviera Industrial Park.
Points of Interest: Rock Creek Golf Course.
Comments: Protect hillcrests with signs; stripe and sign; Class III paved shoulder bicycle - pedestrian path along Glencoe Road.

Route 6. SUNSET BIKEWAY

This recreation route would follow Highway 26 from North Plains to Seaside.

Jurisdictions Involved: Oregon State Highway Division.
Estimated Length: 66 miles.
Suggested Priority: 3.
Comments: Adequate paved shoulders; stripe and sign, Class III.

Route 7. FOREST GROVE-BANKS BIKEWAY

This is a proposed recreation route following Highway 47 from Forest Grove to Banks.

Jurisdictions Involved: Oregon State Highway Division.
Estimated Length: 6 miles.
Suggested Priority: 3.
Major Acitivity Centers: Forest Grove Central Business District.
Point of Interest: Sunset Golf Course; Banks.
Comments: Lack paved shoulders; stripe and sign; Predominantly Class III.

Route 8. WILSON RIVER-GALES CREEK BIKEWAY

This bikeway is a proposed route following Highway 6 (Wilson River Highway) from Sunset Highway to Gales Creek Road. At this point the cyclist may choose to continue to follow Highway 6 to Tillamook or may choose to follow Highway 8 east to Forest Grove.

Jurisdictions Involved: Oregon State Highway Division , Washington County, Forest Grove.
Estimated Length: 18 miles.
Suggested Priority: 3.
Point of Interest: Banks.
Comments: Sign protected at all critical points; scenic route; low traffic volume; stripe and sign. Predominantly Class III.

Route 9. SCOGGIN CREEK BIKEWAY

The Scoggin Creek Bikeway would follow the relocated State Highway 8 (Tualatin Valley Highway) bypassing Forest Grove to State Highway 47. The route then follows Highway 47 to Scoggin Valley Road, follows Scoggin Valley Road to the Scoggin Dam-Hagg Lake Recreation Area.

Jurisdictions Involved: Oregon State Highway Division , Washington County.
Estimated Length: 9 miles.
Suggested Priority: 2.
Point of Interest: Hagg Lake.
Comments: Class II bikeway with free standing curbs; 8 feet wide to permit 2-way bike traffic; segment between Forest Grove and Highway 47 has been implemented by the Sate and is a commuter route.

Route 10. HAGG LAKE LOOP

The Hagg Lake is a recreation route following a perimeter road encircling the lake. This route is currently under construction.

Jurisdictions Involved: Oregon State Highway Division , Washington County.
Estimated Length: Not Available.
Suggested Priority: 2.
Comments: Class II bikeway with freestanding curbs on inside shoulder of roadway; prohibit parking on inside shoulder; currently under construction.

Route 11. TUALATIN VALLEY BIKEWAY

The Tualatin Valley Bikeway would be a major commuter bikeway covering the area between Forest Grove and Portland. The facility follows Pacific Avenue east as shown on the Forest Grove Bicycle Plan, then follows the north side of the Tualatin Valley Highway to Cornelius, crosses the Tualatin Valley highway and proceeds to Hillsboro on the southside. In Hillsboro the route follows the West Main Street Extension to East Main Street, East Main to S.E. Brookwood Avenue, south on Brookwood to S.E. Drake Road, east on Drake to S.W. Johnson Road, east on Johnson to S.W. 170th Avenue. The route then follows 170th to Beaverton Creek, follows Beaverton Creek to Hocken Avenue, proceeds south on Hocken to S.W. Farmington Road, follows a drainage canal to Erickson Avenue, follows Erickson south to S.W. Sixth Street, east of Sixth to S.W. Stott Street, north on Stott to S.W. Fifth Street. From here the route follows Fifth Street and certain property lines east to the Scholls Ferry Road intersection.

Jurisdictions Involved: Oregon State Highway Division , Forest Grove, Washington County, Hillsboro, Cornelius, Beaverton, Portland.
Estimated Length: 23 miles.
Suggested Priority: 1.
Major Activity Centers: Forest Grove, Cornelius, Hillsboro, and Beaverton Central Business Districts; Aloha Business District; Tektronix; Beaverton Industrial Park.

Point of Interest: Pacific University.
Comments: Class II between Forest Grove and Hillsboro to accommodate 2-way traffic; Drake and Johnson Road segments Class III with protective signs; install signs along Tualatin Valley Highway directing cyclists to Drake-Johnson Bikeway; eastern segments are part of Beaverton Bikeway Program; Class I on Beaverton Creek.

Route 12. HILLSBORO-SCHOLLS LOOP

The proposed Hillsboro-Scholls Loop bikeway begins at the parking lot of the Washington County Courthouse and follows Highway 219 (Hillsboro-Silverton Highway) to Highway 208 (Farmington Road). At this point two alternatives are suggested. The cyclist could choose to continue to follow Highway 219 south to Highway 210 (Scholls Ferry Road) at Scholls or follow Highway 208 east to Farmington. The Scholls alternative follows Highway 210 north to S.W. River Road and north on River Road to Farmington. From here the loop would proceed to follow River Road north to S.W. Witch Hazel Road, follow River Road west to Highway 8 (Tualatin Valley Highway), Tualatin Valley Highway through Shute Park to S.E. 9th Avenue, 9th Avenue to East Main Street and East Main to the County Courthouse parking lot. Except for segments in Hillsboro serving as commuter routes, the major portion of the bikeway would be for recreation use.
Jurisdictions Involved: Oregon State Highway Division , Washington County, Hillsboro.
Estimated Length: 20 miles.
Suggested Priority: 3.
Major Activity Centers: Hillsboro Central Business District, Scholls, Farmington.
Points of Interest: Meriwether Golf Course; Butternut Creek Park, Shute Park.
Comments: Predominant Class III; stripe and sign; scenic route

Route 13. BEAVERTON-FARMINGTON LOOP

The Beaverton-Farmington Loop bikeway will serve as a recreation as well as a commuter route. This route begins at the Farmington Road-Menlo Drive intersection, proceeds west on Farmington to S.W. River Road, follows River Road east to Highway 210 (Scholls Ferry Road) follows Highway 210 to S.W. Hall Boulevard and west on Hall to Fanno Creek. From this intersection the route follows a segment of the Beaverton Bikeway Program. The route then crosses Fanno Creek, follows Hall to a point where the route leaves Hall and heads west along property lines to S.W. Sorrento Road, follows Sorrento and property lines north to S.W. Allen Boulevard, crosses Allen to Main Street, Main to Tenth Street, west on Tenth to the future Stott Street Park, continues north along a drainage canal to S.W. Sixth Street, west on Sixth to S.W. Erickson Avenue and north following Erickson to the drainage canal and following the drainage canal to Farmington Road. This bikeway offers an alternative route at the Scholls Ferry Road-Hall Boulevard intersection. The cyclist may choose to continue to follow Scholls Ferry north to the S.W. Hamilton Street intersection.

Jurisdictions Involved: Oregon State Highway Division , Washington County, Beaverton.
Estimated Length: 23 miles.
Suggested Priority: 1.
Major Activity Centers: Beaverton Central Business District; Washington Square; Farmington.
Points of Interest: Fanno Creek; Portland Golf Club; Progress Downs Municipal Golf Course.
Comments: Predominantly Class II; a part of the Beaverton Bicycle Program; segment of Farmington Road constructed to Class II standards.

Route 14. CORNELL-WALKER BIKEWAY

This commuter route would provide an east-west system between Hillsboro and Beaverton. The westerly terminus of this route would be the East Main intersection in Hillsboro. The route would then follow S.W. Baseline Road to S.W. Walker Road and S.W. Walker to Highway 217, the easterly route terminus.

Jursidictions Involved: Washington County, Hillsboro.
Estimated Length: 11 miles.
Suggested Priority: 1.
Points of Interest: Orenco Golf Course, Oregon Regional Primate Center.
Comments: Eastern segment partially implemented by Washington County with Class I facility; suggest Class I or II design to S.W. Murray Boulevard; Class III west of Murray to Hillsboro; Class II in Hillsboro; pave shoulders; stripe and sign where necessary.

Route 15. RIVER ROAD-WITCH HAZEL BIKEWAY

A proposed commuter route, this would serve as an alternate to the Tualatin Valley Highway. The route follows River Road to Witch Hazel Road, and Witch Hazel east to the Tualatin Valley Highway. At this point the route would cross Tualatin Valley Highway, follow Brookwood Avenue north to Drake Road where it joins the Tualatin Valley Highway Bikeway.

Jurisdictions Involved: Oregon State Highway Division.
Estimated Length: 1 mile.
Suggested Priority: 1.
Comments: Suggest Class II bikeway with free standing curbs; 10 foot wide bikeways to accommodate cyclists as well as pedestrians; serves Hillsboro Senior High School; signs required; route would serve as an alternate to the construction of a bikeway on Tualatin Valley Highway

Route 16. CORNELIUS PASS BIKEWAY

The Cornelius Pass Bikeway is a commuter type route beginning at the intersection of S.W. Johnson Street and S.W. 219th Avenue. The route follows 219th north to S.W. Baseline Road and S.W. 216th Avenue, follows 216th north to Cornelius Pass Road, follows Cornelius Pass Road north to

West Union where the route joins the Skyline Bikeway and West Union Bikeway systems.

Jurisdiction: Washington County.
Estimated Length: 5 miles.
Suggested Priority: 2.
Major Activity Center: Riviera Industrial Park.
Point of Interest: Orenco Golf Course.
Comments: Suggest Class II design with curbs when road system is improved.

Route 17. 185th AVENUE BIKEWAY

A primary north-south commuter route connecting the Portland Community College - Rock Creek Campus with the Cooper Mountain area. The southern route terminus is Gassner Road. This route provides a connection to the Tualatin Valley, Beaverton - Farmington Loop, Cornell-Walker and Springville Road Bikeways.

Jurisdiction: Washington County.
Estimated Length: 5 miles.
Suggested Priority: 2.
Major Activity Centers: Portland Community College - Rock Creek Campus; Aloha.
Point of Interest: Rock Creek Reservoir.
Comments: Suggest Class II design with free- standing curbs when road is improved.

Route 18. POWERLINE BIKEWAY

The Powerline Bikeway would be a Class I facility utilizing the right-of-way of the Bonneville Power Administration powerline from N.W. Springville Road south to S.W. Davis Street, east on Davis to S.W. Murray Road and south on Murray to S.W. Scholls Ferry Road.

Jurisdiction: Washington County.
Estimated Length: 5 miles.
Suggested Priority: 2.
Comments: 10 foot wide bikeways suggested sign protected at major intersections; potential use as equestrian trail.

Route 19. WEST SLOPE BIKEWAY

A commuter route following Sunset Highway east form Cornelius Pass Road to S.W. Cornell Road, east on Cornell to N.W. Barnes Road then on Barnes to S.W. Cedar Hills Boulevard. At this point, the route rejoins Sunset Highway to the Sylvan interchange and follows Canyon Court to Portland.

Jurisdiction: Oregon State Highway Division.
Estimated Length: 12 miles.
Suggested Priority: 1.
Points of Interest: Washington Park; Portland Zoo; Oregon Museum of Science and Industry.

Comments: Predominantly Class III; sign protect all interchanges and intersections.

Route 20. BEAVERTON-TIGARD-LAKE OSWEGO BIKEWAY

This proposed bikeway is a commuter facility from Sunset Highway to Lake Oswego, its northern terminus being the Sunset Highway-Highway 217 intersection. The route then proceeds to Fanno Creek and follows Fanno Creek to S.W. Hall Boulevard. The route then follows Hall Boulevard east to Scholls Ferry Road, crosses Scholls Ferry and continues on Hall to S.W. Hunziker Road where the cyclist would have two alternative routes. The first alternative continues south on Hall to S.W. Durham Road, then west on Durham to Highway 99W. The second alternate route proceeds east on Hunziker to S.W. 72nd Avenue, crosses Highway 217 to S.W. Hampton Street and follows Hampton east to I-5. At I-5 an overcrossing is necessary to the east side where the route follows the north side of the Kruseway Bikeway to Boones Ferry Road. This alternate then follows Boones Ferry to Country Club Road, follows Country Club Road east to 10th STreet, thence south on to "B" Avenue, and east on "B" to First Avenue where the route joins the Bicentennial Bikeway.

Jurisdictions Involved: Oregon State Highway Division , Washington County, Clackamas County, Beaverton, Tigard, Lake Oswego.
Estimated Length: 13 miles.
Suggested Priority: 1.
Major Activity Centers: Cedar Hills Shopping Center; Beaverton Industrial Park; Washington Square; Tigard Central Business District; Tigard High School and Swim Center.
Point of Interest: Cook Park.
Comments: No safe access points to Highway 217 from the S.W. Barnes Road-Cedar Hills Shopping Center; segment between Sunset Highway and Fanno Creek-Hall Boulevard intersection suggested as Class I in because of minimum available right-of-way and open space; segment on Hall between Fanno Creek and Scholls Ferry Road suggested as a Class II route on the west side of Hall for safety purposes; suggest segment on Hall between Scholls Ferry and Highway 99W be constructed on the east side of Hall to reduce the number of automobile crossing points; the Kruseway segment is suggested as Class I; refer to Lake Oswego's Bicycle Path Masterplan and the Tigard Area Comprehensive Pedestrian/Bicycle Pathway Plan.

Route 21. RALEIGH HILLS-ZOO BIKEWAY

The Raleigh Hills-Zoo Bikeway would provide a commuter-recreation route between the Raleigh Hills district and the Portland Zoo area. The Scholls Ferry Road-Laurelwood Avenue intersection is the southern terminus of this route and Sylvan the northern terminus. Because of the difficulty experienced in locating a safe route in this area, it is suggested several route alternatives be closely studied.

Jurisdictions Involved: Oregon State Highway Division , Washington County, Portland.
Estimated Length: 3 miles.

Suggested Priority: 1.
Major Activity Centers: Sylvan, Raleigh Hills Shopping Center.
Point of Interest: Portland Zoo.
Comments: High usage anticipated; refer to Bicycle Facilities for Portland report.

Route 22. COUNCIL CREST LOOP

The Council Crest Loop is an existing recreation route utilizing S.W. Fairmount Boulevard, S.W. Hewett Boulevard and S.W. Humphrey Boulevard.

Jurisdiction: Portland
Estimated Length: 10 miles
Suggested Priority: 2
Major Activity Center: Sylvan
Comments: Suggest a dominantly Class III facility; heavily used by cyclists and pedestrians; narrow roadway with numerous curves; Portland has installed "Bike on Roadway" signs; recommended parking lot near the vicinity of the Sylvan end of Hewett and Humphrey Boulevards to permit cyclists to park their autos while riding the Council Crest bikeway; this parking facility could also be used to provide a mini park and ride facility for Tri-Met; refer to the Bicycle Facilities for Portland report.

Route 23. HAMILTON STREET BIKEWAY

The Hamilton Street Bikeway would be an east-west facility located between Scholls Ferry Road and S.W. Capitol Highway. This commuter route would head east on Hamilton from Scholls Ferry to S.W. Dosch Road, follow Dosch south to S.W. Sunset Boulevard, and follow Sunset Boulevard to Capital Highway, Capital Highway to S.W. Burlingame Avenue, Burlingame to S.W. Chestnut and the Vermont Street Bikeway.

Jurisdictions Involved: Oregon State Highway Division , Portland.
Estimated Length: 3 miles.
Suggested Priority: 1.
Major Activity Center: Wilson High School.
Comments: Suggest a Class III paved shoulder facility; existing roadway is narrow with no shoulders; cut and fill required; heavy pedestrian and bicycle usage; stripe and sign; refer to the Bicycle Facility for Portland report.

Route 24. VERMONT STREET BIKEWAY

The proposed Vermont Street Bikeway is southwest Portland's primary east-west commuter bikeway, connecting the regional bikeways of east Washington County with the Terwilliger boulevard Bikeway (Bicentennial Bikeway). The route would follow Nichol Road south from Scholls Ferry Road to Fanno Creek, follow Fanno Creek to S.W. Vermont Street, follow Vermont east to S.W. Chestnut and follow to Terwilliger.

Jurisdictions Involved: Oregon State Highway Division , Portland.
Estimated Length: 4 miles.
Suggested Priority: 1.
Major Activity Centers: Hillsdale Shopping Center; Jewish Community; Wilson High School.
Point of Interest: Gabriel Park.
Comments: Predominantly Class III; a safe alternative to the Beaverton-Hillsdale Highway; serves Gabriel Park, stripe and sign along Class III segments; heavily used; provide paved shoulders; refer to the Bicycle Facilities for Portland report.

Route 25. GARDEN HOME BIKEWAY

This existing commuter route is located between Scholls Ferry Road and Oleson Road and follows Garden Home Road.

Jurisdiction: Washington County.
Estimated Length: 1 mile.
Comments: Segment between Oleson and 92nd Avenue completed by Washington County; recommend completion of route from 92nd to Scholls Ferry with Class III facility; stripe and sign.

Route 26. GREENBERG-OLESON BIKEWAY

This proposed commuter route would provide a north-south bikeway from the Tigard Central Business District to S.W. Vermont Street. The route follows S.W. Tigard Street north from S.W. Main Street to S.W. Tiedeman Avenue, then follows Tiedeman north to S.W. Greenberg Road, follows Greenberg north to S.W. Oleson Road and follows Oleson to S.W. Vermont Street.

Jurisdictions Involved: Washington County, Tigard.
Estimated Length: 4 miles.
Major Activity Centers: Washington Square; Tigard Central Business District
Suggested Priority: 1.
Comments: Suggest Class III facility with paved shoulders; stripe and sign; refer to Tigard Area Comprehensive Pedestrian/Bicycle Pathway Plan.

Route 27. MULTNOMAH BIKEWAY

This commuter route would follow Multnomah Boulevard from Garden Home Road to S.W. Capital Highway.

Jurisdictions Involved: Washington County, Portland.
Estimated Length: 2 miles.
Suggested Priority: 1.
Major Activity Center: Multnomah Business District.
Comments: Suggest Class III design with paved shoulders; stripe and sign; low bicycle-pedestrian traffic; refer to Bicycle Facilities for Portland.

ROUTE 28. TAYLORS FERRY BIKEWAY

This bike route would be a commuter facility following Taylors Ferry Road between Hall Boulevard and Capitol Highway. The western terminus would be at the Hall Boulevard-Locust Street intersection. The route would then use Locust, 80th Avenue, and Taylors Ferry Road to Capitol Highway.

Jurisdictions Involved: Oregon State Highway Division , Washington County, Multnomah County.
Estimated Length: 3 miles.
Suggested Priority: 1.
Comments: Suggest Class III facility with paved shoulders; stripe and sign; steep grades in sections; potential to be implemented as a part of transit support system for the Southwest Portland Park and Ride Station; refer to Tigard Area Comprehensive Pedestrian/Bicycle Pathway Plan; Suggest City of Portland consider Taylors Ferry Road as route addition to Portland's Comprehensive Bicycle Path Plan.

Route 29. PACIFIC HIGHWAY BIKEWAY

The Pacific Highway (99W) Bikeway would function as a commuter route serving the Tigard and King City areas and as a recreation route to the Oregon coast. The route would begin at Hall Boulevard's intersection with Pacific Highway, proceed south using existing sidewalks to Main Street in Tigard, follow Main to its southern intersection with Pacific Highway and then southwest on Pacific Highway to Lincoln City.

Jurisdiction: Oregon State Highway Division.
Estimated Length: 74 miles.
Suggested Priority: 3.
Major Activity Centers: Tigard, King City, and Sherwood Commercial Areas.
Comments: Predominantly Class III; Suggest Tigard's Main Street segment have one-way bikelanes painted on the street with sign protection wherever appropriate; stripe and sign; refer to Tigard Area Comprehensive Pedestrian/Bicycle Pathway Plan.

Route 30. SHERWOOD-TUALATIN LOOP

This is a proposed recreation facility located between the cities of Sherwood and Tualatin. The southern segment follows the Tualatin-Sherwood Road from Tualatin to Highway 99W. It then follows Highway 99W north to State Highway 212, and then heads east on Highway 212 to Tualatin.

Jurisdictions Involved: Oregon State Highway Division , Washington County, Tualatin, Sherwood.
Estimated Length: 9 miles.
Suggested Priority: 3.
Major Activity Centers: Tualatin and Sherwood Central Business Districts.
Comments: Suggest Class III design on Tualatin-Sherwood Road segment; suggest eight foot wide Class II facility constructed on north side of Highway 212 west city limit line of Tualatin; recommend completion of bikeway on Highway 212, refer to Tigard Area Comprehensive Pedestrian/Bicycle Pathway Plan; construct path from Sherwood city center to Hwy 99W.

Route 31. DURHAM ROAD BIKEWAY

This commuter route would follow S.W. Durham Road east from S.W. Hall Boulevard to Upper Boones Ferry Road and then south on Upper Boones Ferry to the intersection of Upper Boones Ferry and Lower Boones Ferry Roads.

Jurisdictions Involved: Oregon State Highway Division , Washington County.
Estimated Length: 2 miles.
Suggested Priority: 1.
Major Activity Centers: Tigard High School; S.W. 72nd Avenue Industrial area.
Comments: Recommend Class I facility; refer to Tigard Area Comprehensive Pedestrian/Bicycle Pathway Plan.

Route 32. BOONES FERRY ROAD BIKEWAY

The Boones Ferry Bikeway would begin at Lake Oswego High School, follow S.W. Boones Ferry Road south and cross the I-5 Freeway to the Tualatin Central Business District. It would then continue along Boones Ferry Road to the Wilsonville Frontage Road. At this point the route would follow the frontage road south to the Wilsonville interchange, continue south on the I-5 Freeway, cross the Willamette River, connecting to the Bicentennial Bikeway and Champoeg State Park.

Jurisdictions Involved: Oregon State Highway Division , Lake Oswego, Clackamas County, Washington County, Tigard, Tualatin.
Estimated Length: 11 miles.
Suggested Priority: 2.
Major Activity Centers: Lake Oswego High School; Tualatin Central Business District; Wilsonville.
Points of Interest: Willamette River; Champoeg State Park.
Comments: Partially implemented; commuter route between Lake Oswego and Tualatin; suggest Class II design with free standing curbs when Boones Ferry Road is improved; refer to Lake Oswego Bicycle Plan and Tigard Area Comprehensive Pedestrian/Bicycle Pathway Plan.

Route 33. CAPITOL HIGHWAY BIKEWAY

A proposed commuter route located between Lake Oswego and Terwilliger Boulevard in Portland, this route commences at the Boones Ferry Road-Country Club Road intersection in Lake Oswego and follows S.W. Kerr Road to S.W. 49th , 49th to S.W. Capitol Highway, Capitol to S.W. Troy Street, Troy to S.W. Capitol Hill Road and Capitol Hill to the Vermont Street Bikeway.

Jurisdictions Involved: Clackamas County, Lake Oswego, Multnomah County, Portland
Estimated Length: 6 miles.
Suggested Priority: 1.
Major Activity Centers: Lake Oswego High School, Portland Community College
Comments: Suggest predominantly Class III; suggest Class II between Barbur and Multnomah; bicycle-pedestrian crossing needed at Capitol Hill Road-Bertha Boulevard intersection; coordinate bikeway construction with the

Southwest Portland Park and Ride Station; refer to Lake Oswego's Bicycle Path Masterplan and the Bicycle Facilities for Portland.

Route 34. LAKE OSWEGO LOOP

A proposed recreation route encircling Lake Oswego and beginning at George Rodgers Park; traveling north on Furnace Street to Wilbur Street; west on Wilbur to State Street; south on State to McVey Avenue; southwesterly on McVey to South Shore Blvd; following South Shore to Lake View Blvd.; Lake View to Iron Mountain Blvd; Iron Mountain to North Shore Blvd; North Shore to Middlecrest Road and following Middlecrest to the intersection of State and Wilbur Streets.

Jurisdiction: Lake Oswego.
Estimated Length: 7 miles.
Suggested Priority: 1.
Comments: Suggest predominantly Class III; stripe and sign; refer to Lake Oswego's Bicycle Path Masterplan.

Route 35. STAFFORD ROAD BIKEWAY

The Stafford Road Bikeway would originate at the Lake Oswego Loop Bikeway, then travel south on Stafford Road to Meridian Road, from Meridian Road continuing westerly on Elisson Road (Stafford Road) to a connection with The Boones Ferry Road Bikeway at the Interstate 5 interchange.

Jurisdictions Involved: Clackamas County, Lake Oswego.
Estimated Length: 8 miles.
Suggested Priority: 3.
Major Activity Centers: Stafford Elementary School.
Comments: Suggest predominantly Class III, striped and signed; A commuter route between Lake Oswego and Stafford School; Recreational between I-205 and I-5; refer to Bicycle Path Masterplan.

Route 36. CANBY FERRY BIKEWAY

A proposed recreation route beginning at the intersection of Stafford Road and Mountain Road, then following Mountain Road south to the Willamette River, crossing the river via the Clackamas County Ferry service, and proceeding to Canby.

Jurisdictions Involved: Clackamas County, Canby.
Estimated Length: 7 miles.
Suggested Priority: 3.
Major Activity Centers: Canby Central Business District.
Points of Interest: Canby Ferry; Sandelie Golf Course
Comments: Suggest predominantly Class III, striped and signed; recommended in The Urban Ourdoors.

Route 37. HIGHWAY 212 BIKEWAY

This bikeway is designated as a commuter route connecting West Linn with the Willamette area by following the right-of-way of an existing powerline. From Willamette the route would follow Highway 212 to the Stafford Road Bikeway. An alternate route connecting to the Canby Ferry Bikeway travels westerly from Highway 212 on Turner Road to Mountain Road.

Jurisdictions Involved: Oregon State Highway Division , West Linn.
Estimated Length: 6 miles.
Suggested Priority: 2.
Points of Interest: Willamette and Tualatin River Views.
Comments: Suggest Class I design along powerline right-of-way; suggest Class III facility on Highway 212 with paved shoulders, stripe and sign.

Route 38. ROSEMONT BIKEWAY

The proposed Rosemont Bikeway is a commuter route connecting the Stafford Road Bikeway and the Highway 212 Bikeway. The route would commence in West Linn and follow Sunset Avenue west to Parker Road, Parker to Rosemont Road and Rosemont to the Stafford Road Bikeway.

Jurisdictions Involved: Clackamas County, West Linn.
Estimated Length: 4 miles.
Suggested Priority: 2.
Comments: Suggest Class III facility with paved shoulders, stripe and sign.

Route 39. 24th-FLANDERS BIKEWAY

The 24th-Flanders Bikeway is a proposed commuter route connecting the Willamette River waterfront area with U.S. Highway 30 (Portland-Astoria Loop). The route would follow N.W. Flanders Street west from the Steel Bridge area to 24th Avenue, 24th to N.W. Thurman Street, Thurman to N.W. 29th Avenue, and 29th to Highway 30.

Jurisdiction: Portland.
Estimated Length: 3 miles.
Suggested Priority: 1.
Comments: Suggest predominantly Class III, striped and sign; refer to Bicycle Facilities for Portland.

Route 40. SAUVIE ISLAND BIKEWAY

The Sauvie Island Bikeway is a proposed recreation facility using the existing rights-of-way of Gillihan Loop Road and Reeder Road.

Jurisdiction: Multnomah County.
Estimated Length: 13 miles.
Suggested Priority: 2.

Points of Interest: Columbia and Willamette River Views; Belle Vue Point; Bybee-Howell House; Oak Island State Park

Comments: Suggest Class II, free standing curb facility; or Class I if cost permits; has potential of becoming one of the finest areas in this region for bicycling - conflicts between the cyclists, motorists and residents should be resolved; currently being analyzed as part of Multnomah County's Suavie Island-Westhills Comprehensive Planning Project; extreme length, heavy use, and lack of sanitary facilities will require periodic rest areas; noted in The Urban Outdoors report as an area offering unique opportunities which should be preserved for future generations .. indicates popularity of the island for pleasure driving and bicycling .. recommends enhancement of bicycle touring opportunities.

Route 41. MARINE DRIVE BIKEWAY

The proposed Marine Drive Bikeway is a recreation route beginning at East Delta Park and terminating in Troutdale.

Jurisdiction: Multnomah County.
Estimated Length: 15 miles.
Suggested Priorities: 2.
Major Activity Centers: Troutdale Central Business District; Reynolds Aluminum; Troutdale Airport.
Points of Interest: Blue Lake Park; Columbia Edgewater Golf Course
Comments: Suggest Class III facility using existing paved shoulders striped and signed; Noted in The Urban Outdoors as a scenic drive or parkway; refer to Citizen's Bikeway Report (East Multnomah County).

Route 42. COLUMBIA SLOUGH BIKEWAY

This recreational route would begin at the Slough's crossing of the Bicennial Bikeway and follow the Slough east to Blue Lake Park.

Jurisdictions Involved: Oregon State Highway Division , Multnomah County, City of Portland, Port of Portland.
Estimated Length: 13 miles.
Suggested Priority: 3.
Major Activity Center: Rivergate Industrial Area; Portland International Airport.
Points of Interest: Delta Park; Riverside, Broadmoor and Colwood Golf Courses; Portland Meadows Race Track; Blue Lake Park.
Comments: Suggest a Class I facility; Columbia slough is noted in The Urban Outdoors as a potential greenway.

Route 43. INTERSTATE BIKEWAY

The Interstate Bikeway is a proposed commuter route beginning at the Interstate Bridge in Vancouver, Washington, then following Interstate 5 south to North Denver Avenue in Portland, Denver to North Interstate

Avenue and Interstate Avenue to Ainsworth Street. From Ainsworth the bikeway would join the Bicentennial Bikeway and travel into downtown Portland.

Jurisdictions Involved: Oregon State Highway Division , Washington State Highway Division, Multnomah County, Portland.
Estimated Length: 7 miles.
Suggested Priority: 1.
Major Activity Centers: Jantzen Beach; Kenton Commercial Area; Kenton School.
Points of Interest: Delta Park; Exposition Center.
Comments: Requires the combined efforts of jurisdictions in Oregon and Washington, suggest predominantly Class III, striped and signed; refer to Bikeways by Regional Planning Council of Clark County.

Route 44. AINSWORTH STREET BIKEWAY

The Ainsworth Street Bikeway would be a commuter route running from Willamette Boulevard to Fernhill Park.

Jurisdiction: Portland.
Estimated Length: 4 miles.
Suggested Priority: 1.
Major Activity Centers: John Adams High School; Kennedy School; Vernon School; Ockley Green School.
Points of Interest: Fernhill Park; Alberta Park; Peninsula Park
Comments: Segment from Willamette Boulevard to Denver Avenue is an element of the Bicentennial Bikeway; suggest predominatly Class III facility, striped and signed, refer to Bicycle Facilities for Portland.

Route 45. TILLAMOOK-HALSEY BIKEWAY

This proposed regional facility offers an east-west commuter route from the Burnside Bridge to Troutdale. From Burnside Street the route follows Grand and Union Avenues to N.E. Lloyd Boulevard, Lloyd to N.E. 9th Avenue, 9th Avenue to N.E. Schuyler Street, Schuyler to N.E. 24th Avenue, 24th to N.E. Hancock Street, Tillamook to N.E. 92nd Avenue, 92nd to Halsey Street and then following Halsey to Troutdale.

Jurisdictions Involved: Multnomah County, Portland, Troutdale, Wood Village, Fairview.
Estimated Length: 15 miles.
Suggested Priority: 1.
Major Activity Centers: Lloyd Center; Rose City Park School; Grant High School; Fernwood School; Jason Lee School; Madison High School; Gateway Shopping District; Reynolds High School; Troutdale Central Business District.

Points of Interest: U.S. Grant Park; Rose City Park and Golf Course; Hancock Park; Glendover Golf Course
Comments: Suggest predominatly Class III facility; suggest Class I design adjacent to Glendover Golf Course; pave shoulders where necessary; refer to Bicycle Facilities for Portland and Citizen's Bikeway Report, East Multnomah County.

Route 46. GLISAN STREET BIKEWAY

This commuter route would be located between the Burnside Bridge and Fairview Avenue on Glisan Street. The route would begin at the Burnside Bridge, follow Ankeny Street to 22nd Avenue, 22nd to Glisan Street and Glisan to 202nd Avenue. An extension of this bikeway to 223rd Avenue would be appropriate when Glisan is improved beyond 202nd Avenue. The 202nd to 223rd section of Glisan Street is dangerous for bicycle riding with one recorded bicycle fatality.

Jurisdictions Involved: Multnomah County, Portland.
Estimated Length: 12 miles.
Suggested Priority: 1.
Major Activity Centers: Gateway Shopping District; Benson High School; Monroe High School; Reynolds High School.
Points of Interest: Montavilla Park.
Comments: Suggest predominantly Class III facility; pave shoulders where necessary; refer to Bicycle Facilities for Portland and Citizen's Bikeway Report.

Route 47. STARK STREET BIKEWAY

This proposed regional bikeway would be located on Stark Street from the proposed I-205 Freeway to Dabney State Park.

Jurisdiction: Multnomah County.
Estimated Length: 10 miles.
Suggested Priority: 1.
Comments: Suggest predominantly Class III; stripe and sign; pave shoulders where necessary; current cycling activity is high; most on-street parking has been removed; refer to Citizen's Bikeway Report and Bikeways For Gresham; commuter route between I-205 and Fairview Avenue; recreational route between Fairview Avenue to eastern terminus.

Route 48. HAWTHORNE BRIDGE-182nd AVENUE BIKEWAY

This commuter bikeway would begin at the Hawthorne Bridge-Water Avenue area and use Clay Street to Ladd Avenue, Ladd to Harrison Street, Harrison to Lincoln Street, Lincoln to Mt. Tabor Park, through Mt. Tabor Park to 72nd Avenue, 72nd to Mill Street, Mill to Market Street, Market to 130th Avenue, 130th to Mill Street, Mill to Main Street and Main to 182nd Avenue.

Jurisdictions Involved: Multnomah County, Portland.
Estimated Length: 10 miles.
Suggested Priority: 1.
Major Activity Centers: Abernathy School; Hosford School; Richmond School, Franklin High School; Atkinson School; Bridger School; Cherry Park School; Mill Park School; David Douglas High School; Lincoln Park School; North Powellhurst School; Lynch Plaza School; Lynch View School; Mall 205.
Points of Interest: Sewallcrest Park; Mt. Tabor Park; Rockwood Park
Comments: Suggest predomintly Class III; stripe and sign; suggest Class I on Mt. Tabor Park segment; a commuter route; refer to Bicycle Facilities for Portland and Citizen's Bikeway Report.

Route 49. DIVISION STREET BIKEWAY

This bikeway would begin at S.E. 182nd Avenue and follow Division Street east to S.E. 257th Avenue, then traveling north on S.E. 257th to the Stark Street Bikeway.

Jurisdiction: Multnomah County.
Estimated Length: 8 miles.
Suggested Priority: 1.
Major Activity Centers: West Powellhurst School; South Powellhurst School; Lynch Park School; Lynch Terrace School; Gresham High School; Gresham Golf and Country Club; Mt. Hood Community College; Gresham Mall Shopping Center.
Points of Interest: Division-Powell Park; Gresham Golf and Country Club
Comments: Suggest predominantly Class III; route and sign; a commuter route; refer to Citizen's Bikeway Report and Bikeways for Gresham.

Route 50. POWELL BOULEVARD BIKEWAY

The Powell Boulevard Bikeway extends between the I-205 Freeway and Main Street in the City of Gresham.

Jurisdiction: Oregon State Highway Division.
Estimated Length: 8 miles.
Suggested Priority: 1.
Major Activity Centers: Centennial High School; Gresham Central Business District.
Points of Interest: Grant Butte; Powell Butte.
Comments: Suggest a predominantly Class III route, stripe and sign; Segment between 136th Avenue and Gresham has been implemented by the State.

Route 51. GLADSTONE-CENTER STREET BIKEWAY

The Gladstone-Center Street Bikeway would extend between S.E. 28th Avenue and the I-205 Freeway, serving as the easterly extension of the

Powell Boulevard Bikeway. The route would use the Marshall High School grounds to Center Street, proceed west on Center to 52nd Avenue, 52nd south to Gladstone Street and use Gladstone to 28th Avenue.

Jurisdiction: Portland.
Estimated Length: 4 miles.
Suggested Priority: 1.
Major Activity Centers: Marshall High School; Essex Park; Creston School and Park; Foster-Powell Commercial Area.
Comments: Suggest predominantly Class III route, stripe and sign; Refer to Bicycle Facilities for Portland.

Route 52. JOHNSON CREEK BIKEWAY

The proposed Johnson Creek Bikeway is a recreation facility using the Johnson Creek corridor from Milwaukie to the Orient area.

Jurisdictions Involved: Metropolitan Service District, Multnomah County, Portland, Milwaukie, Gresham.
Estimated Length: 20 miles.
Suggested Priority: 3.
Comments: Class I design; suggest this route be studied in conjunction with the Drainage Management Program proposed by the Metropolitan Service District; potential for outstanding bikeway; Also recommended in The Urban Outdoors; Bikeways for Gresham identifies the Johnson Creek Lineal Recreational Corridor from S.E. 190th Avenue to the Orient district.

Route 53. I-205 FREEWAY BIKEWAY

The I-205 Freeway Bikeway would follow the proposed freeway from Sunnyside Road to the Columbia River and across the proposed Interstate bridge to Vancouver, Washington.

Jurisdictions Involved: Oregon State Highway Division , Washington State Highway Department.
Estimated Length: 16 miles.
Suggested Priority: 1.
Major Activity Centers: Clackamas Town Center (proposed); Battin School Marshall High School; Foster-82nd Commercial area; Eastgate Commercial Area; Clark School; Mall 205; Gateway Commercial Area; Jason Lee School; Rocky Butte.
Points of Interest: Johnson Creek; Lents Park; Rocky Butte.
Comments: A Class I bikeway proposed by the State and will be built in conjunction with the freeway construction; will require approval of the Federal Highway Administration; Refer to Bicycle Facilities for Portland.

Route 54. 182nd AVENUE BIKEWAY

This is a proposed commuter route connecting Halsey Street and Powell Blvd.

Jurisdiction: Multnomah County.
Estimated Length: 3 miles.
Suggested Priority: 1.
Major Activity Centers: Centennial High School; Lynch Terrace School; Rockwood School; Rockwood Industrial Park; Rockwood Commercial Area.
Comments: Suggest Class III design; pave shoulders where necessary; Refer to Citizen's Bikeway Report.

Route 55. FAIRVIEW AVENUE BIKEWAY

The proposed Fairview Avenue Bikeway is a commuter route located between Blue Lake Park and the City of Gresham. This route has been rejected by the Multnomah County Citizen's Advisory Committee on Bikeways because of generally unsafe conditions along the route. These conditions are related to serious width constraints at the Interstate 80N and Union Pacific Railroad undercrossing and to seasonal traffic volume peaks generated by Blue Lake Park and the Multnomah Kennel Club. The speed of traffic on this 2-lane roadway was also a consideration. There is a definite need for a north-south bikeway in this area of East Multnomah County. Consequently, close attention should be given to a detailed study of alternate bikeway routes to determine if a north-south route is feasible in this area. An alternate route could possibly follow the powerline right-of-way located east of S.W. 202nd Avenue, such route being close to Reynolds High School and also serving Blue Lake Park. Further study of this route is recommended.

Jurisdictions Involved: Multnomah County, Fairview, Gresham.
Estimated Length: 5 miles.
Suggested Priority: 1.

Route 56. CROWN POINT HIGHWAY BIKEWAY

This would be a north-south connector route located between Stark and Division Streets.

Jurisdiction: Multnomah County.
Estimated Length: 1 mile.
Suggested Priority: 3.
Major Activity Centers: Mt. Hood Community College.
Comments: Suggest predominantly Class III design; Refer to Bikeways for Gresham and Citizen's Bikeway Report.

Route 57. CROWN POINT HIGHWAY BIKEWAY

This recreation route is located between Lewis and Clark State Park and Dabney State Park paralleling the Sandy River.

Jurisdiction: Oregon State Highway Division.
Estimated Length: 3 miles.
Suggested Priority: 3.
Points of Interest: Sandy River views
Comments: Suggest predominantly Class III design; stripe and sign; this bikeway would connect the Halsey and Stark Street Bikeways providing a fine bicycle touring loop for inexperienced touring riders; Refer to Citizen's Bikeway Report.

Route 58. ROOSTER ROCK BIKEWAY

The Rooster Rock Bikeway would be a recreation route beginning at Lewis and Clark State Park and following I-80N east to Rooster Rock State Park.

Jurisdiction: Oregon State Highway Division.
Estimated Length: 7 miles.
Suggested Priority: 2.
Points of Interest: Sandy River Delta; Columbia George view.
Comments: Suggest Class III design; stripe and sign; for the experienced cyclist; install bike racks.

Route 59. MT. HOOD BIKEWAY

A proposed recreation facility located between Gresham and the Mt. Hood National Forest via U.S. Highway 26.

Jurisdiction: Oregon State Highway Division.
Estimated Length: 40 miles.
Suggested Priority: 3.
Major Activity Centers: Gresham and Sandy Central Business Districts, Wemme, Zigzag and Rhododendron Commercial Areas, Welches School.
Points of Interest: Wildwood Recreation Mt. Hood National Forest recreation areas; views of Mt. Hood.

Route 60. 28th AVENUE-RIVER ROAD BIKEWAY

The 28th Avenue-River Road Bikeway is a proposed north-south commuter route beginning at Ladd Circle in Portland, following Ladd to Division Street, south on 20th Avenue to Woodward Street, east on Woodward to 26th Avenue, south on 26th to Bybee Boulevard, west on Bybee to 16th Avenue, south on 16th to Ochoco Street, east on Ochoco to River Road, south on River Road to Milport Road, Milport to Main Street, west on Jefferson to the sewerage treatment plant; then south via on undetermined route to River Road and following River Road to Gladstone.

Jurisdictions Involved: Oregon State Highway Division , Portland, Clackamas County, Milwaukie, Gladstone.
Estimated Length: 13 miles.
Suggested Priority: 1

Major Activity Centers: Cleveland High School; Southern Pacific Railroad, Brooklyn Yard; Reed College; Westmoreland Commercial Area; Sellwood Commercial Area; Milwaukie Industrial Area, Milwaukie Central Business District; Milwaukie Junior High School; Milwaukie high School; Willamette View Manor; Concord School; Jennings Lodge School.

Points of Interest: Powell Park; Rhododendron Test Gardens; Eastmoreland Golf Course; Westmoreland Park.

Comments: Suggest predominantly Class III design; suggest Class I or II design on 28th adjacent the Eastmoreland Golf Course; stripe and sign; widen and pave shoulders along River Road; Refer to Bicycle Facilities for Portland.

Route 61. LINWOOD AVENUE BIKEWAY

This is a proposed commuter route located on Linwood Avenue between Harmony Road and the Johnson Creek Bikeway.

Jurisdictions Involved: Oregon State Highway Division , Clackamas County.

Estimated Length: 2 miles.

Suggested Priority: 1.

Comments: Suggest a Class III facility; shoulders widened and paved.

Route 62. WEBSTER ROAD BIKEWAY

The Webster Road Bikeway would be a commuter route following Webster Road from the Oatfield Road Bikeway to the Milwaukie-Boring Bikeway.

Jurisdictions Involved: Oregon State Highway Division , Clackamas County, Gladstone.

Estimated Length: 4 miles.

Suggested Priority: 1.

Major Activity Centers: Clackamas High School; Bilquist School, Kraxberger School.

Comments: Suggest predominantly Class III design, segment between the Milwaukie Expressway and Bilquist School has been constructed; heavy use expected.

Route 63. OATFIELD ROAD BIKEWAY

This is a proposed commuter route beginning at the intersection of River Road and Park Avenue, then following Park east to Oatfield Road, south on Oatfield to Clackamas Boulevard and west on Clackamas Boulevard to River Road.

Jurisdictions Involved: Oregon State Highway Division , Clackamas County, Gladstone.

Estimated Length: 6 miles.

Major Activity Centers: Rex Putman High School; Oak Grove Commercial Area
Comments: Suggest predominantly Class III design; shoulders widened and paved; provide crossing lanes on McLoughlin Boulevard.

Route 64. MILWAUKIE-BORING BIKEWAY

The proposed Milwaukie-Boring Bikeway is intended to function as a commuter as well as a recreation facility. The route's western terminus would be Milwaukie High School. It would then proceed east on Lake Road to Harmony Road, continue east on Harmony to Sunnyside Road, follow Sunnyside to State Highway 212 and follow Highway 212 to the intersection with the Mt. Hood Bikeway.

Jurisdictions Involved: Oregon State Highway Division , Clackamas County, Milwaukie.
Estimated Length: 14 miles.
Suggested Priority: 3.
Major Activity Centers: Milwaukie Central Business District; Milwaukie High School; Mark Industrial Park; Clackamas Town Center (proposed); Damascus and Boring Commercial Areas.
Points of Interest: Top O'Scott Golf Course; Pleasant Valley Golf Course; Mt. View Golf Course.
Comments: Suggest predominantly Class III design; shoulders widened and paved wherever necessary; suggest providing Class II system in conjunction with road improvement projects.

Route 64A. HAPPY VALLEY BIKEWAY

The Happy Valley Bikeway could be a recreation route proceeding north on S.E. 122nd Avenue from Sunnsydie Road to S.E. King Road, then easterly on King to S.E. 132nd Avenue, northerly on 132nd to Callahan Road, east on Callahan to 145th Avenue southerly on 145th to King Road, and then westerly on King to S.E. 122.

Jurisdictions Involved: Clackamas County, Happy Valley.
Estimated Length: 4 miles.
Suggested Priority: 2.
Comments: Suggest predominantly Class III route.

Route 65. ROCK CREEK ROAD BIKEWAY

The proposed Rock Creek Road Bikeway (172nd Avenue) is a recreation route located between the Milwaukie-Boring Bikeway on Sunnyside Road and the Johnson Creek Bikeway.

Jurisdiction: Clackamas County.
Estimated Length: 4 miles.
Suggested Priority: 3.
Comments: Suggest predominantly Class III facility; shoulders widened and paved.

Route 66. HOGAN ROAD BIKEWAY

The Hogan Road Bikeway (242nd Avenue) is north-south recreation route located between the Milwaukie-Boring Bikeway on Highway 212 and the City of Gresham.

Jurisdictions Involved: Clackamas County, Multnomah County.
Estimated Length: 5 miles.
Suggested Priority: 3.
Comments: Suggest predominantly Class III route; stripe and sign; shoulders widened and paved.

Route 67. BORING-ESTACADA BIKEWAY

This recreation route would follow the North Fork of Deep Creek from Boring to Deep Creek County Park, then follow Highway 242 to Estacada.

Jurisdictions Involved: Oregon State Highway Division , Clackamas County.
Estimated Length: 12 miles.
Suggested Priority: 3.
Major Activity Centers: Boring Commercial Area; Estacada Central Business District.
Points of Interest: Barton Park; Deep Creek Park.
Comments: Suggest predominantly Class III route; recommend Class I design on North Fork segment to accomodate equestrian and pedestrian traffic.

Route 68. CLACKAMAS RIVER LOOP

This recreation facility would begin at Kelly Field in Oregon City, proceeding north on Highway 213, proceeding east on Clackamas River Road to Bakers Ferry-Eagle Creek Road, follow Bakers Ferry-Eagle Creek Road to Highway 224, west on Highway 224 to Highway 212, west on Highway 212 to 82nd Drive, south on 82nd Drive to Highway 213 and Kelly Field.

Jurisdictions Involved: Oregon State Highway Division , Clackamas County.
Estimated Length: 23 miles.
Suggested Priority: 3.
Major Activity Centers: Oregon City Central Business District; Carver Commercial Area; Clackamas Commercial Area; Clackamas Industrial Park.
Points of Interest: Clackamas River Park; Barton Park; Deep Creek Park
Comments: Suggest predominantly Class III route; shoulders widened and paved.

Route 69. OREGON CITY-REDLAND LOOP

A proposed route originating at Kelly Field, then heading east on Redland Road to Fischers Mill Road to Mattan Road, north on Mattan and returning to Kelly Field via the Clackamas River Loop Bikeway.

Jurisdiction: Clackamas County.
Estimated Length: 16 miles.
Suggested Priority: 3.
Major Activity Center: Redland Commercial Area.
Comments: Suggest predominantly Class III design; and pave shoulders where necessary.

Route 70. CANBY-MOLALLA BIKEWAY

The proposed Canby-Molalla Bikeway is a recreation route beginning in Canby, using State Highway 170 to State Highway 211 and following Highway 211 to Molalla.

Jurisdiction: Oregon State Highway Division.
Estimated Length: 13 miles.
Suggested Priority: 3.
Major Activity Centers: Canby and Molalla Central Business Districts.
Comments: Suggest predominantly Class III route; shoulders widened and paved where necessary.

Route 71. OREGON CITY-MOLALLA BIKEWAY

The Oregon City-Molalla Bikeway would be a recreation facility following an old railroad grade from Kelly Field in Oregon City to Highway 213 (Molalla Highway). The route would then continue south on Highway 213 to Market Road 25 and proceed to Molalla via Market Road 25.

Jurisdictions Involved: Oregon State Highway Division , Clackamas County.
Estimated Length: 15 miles.
Suggested Priority: 3.
Major Activity Centers: Molalla Central Business District; Mulino Commercial Area; Clackamas Community College.
Comments: Segment using old railroad grade would be a Class I design; remainder of route would be Class III design.

Route 72. SPRINGVILLE ROAD BIKEWAY

The proposed Springville Road Bikeway is a recreation route connecting the 185th Avenue Bikeway with the Skyline Bikeway.

Jurisdictions Involved: Multnomah County, Washington County.
Estimated Length: 5 miles.
Suggested Priority: 3.

Route 73. WEST VANCOUVER LAKE-RIDGEFIELD BIKEWAY

This route is predominantly a recreation bikeway beginning at the Interstate Bridge. From the Interstate Bridge the route follows Columbia Street north to Esther Short Park. From Esther Short Park the route travels west on 8th Street, to Franklin Street, north on Franklin to McLoughlin Boulevard, west on McLoughlin to Kauffman Avenue, north on Kauffman to 4th Plain Boulevard, then following State Route 501 to its terminus northwesterly of Vancouver Lake. The route then continues to Ridgefield via a proposal trail system.

Jurisdictions Involved: Washington State Highway Department, Clark County, City of Vancouver.
Estimated Length: 16¼ miles
Suggested Priority: 1
Major Activity Centers: Vancouver Central Business District; Hough School; Port of Vancouver Industrial Area; ALCOA
Points of Interest: Columbia River; Esther Short Park; Vancouver Lake; Vancouver Lake Park; Lake River; Ridgefield Federal Wildlife Refuge.
Comments: Suggest city jurisdiction Class II facility; SR 501 Class III design and trail portion Class I design.

Route 74. EAST VANCOUVER LAKE-RIDGEFIELD BIKEWAY

Primarily a recreation route, this route would begin at the intersection of 4th Plain Boulevard and N.W. Fruit Valley Road, then proceeds north on Fruit Valley to Lake Shore Drive, Lake Shore to N.W. 31st Avenue, north on 31st to N.W. 119th Street, west on 119th to N.W. 36th Avenue, north on 41st to N.W. 209th Street, east on 209th to N.W. 31st, north on 31st to Hillhurst Road, then north and west on Hillhurst Road to the Ridgefield city limits.

Jurisdictions Involved: Washington State Highway Department, Clark County, City of Vancouver.
Estimated Length: 15½ miles
Suggested Priorities: 2-urban portion, 3-rural portion.
Major Activity Centers: Fruit Valley School; Ridgefield High School; Ridgefield Commercial Area.
Points of Interest: Vancouver Lake, Burn and Bridge Creek Greenway; Salmon Creek, Ridgefield National Wildlife Refuge.
Comments: Suggest Class II and III bikeway design where appropriate; suggest bikeway connection from Ridgefield to Pioneer.

Route 75. VANCOUVER-HAZEL DELL BIKEWAY

A proposed commuter route, this bikeway begins at the intersection of McLoughlin Boulevard and Franklin Street. The route then follows McLoughlin east to F Street, north on F to east 39th Street, west on 39th to Main Street, north on Main to Hazel Dell Avenue, north on Hazel Dell to N.E. 117th Street, east on 117th to Highway 99, north on 99 to

N.E. 20th Avenue, north on 20th to Union Road, north on Union to State Route 502 and then north on 502 to Duluth (intersection of N.E. 10th Avenue and N.E. 219th Street).

Jurisdictions Involved: Washington State Highway Department, Clark County, City of Vancouver.
Estimated Length: 10½ miles
Suggested Priority: 1
Major Activity Centers: Vancouver Central Business District; Shumway Junior High School; Memorial Hospital; Marshall Community Center, Hazel Dell School; Hazel Dell Commercial Area; Salmon Creek School
Points of Interest: Salmon Creek; Covington House; Kiggins Bowl; Leverich Park; Clark County Fairgrounds.
Comments: Suggest route extension from Duluth to LaCenter.

Route 76. VANCOUVER-ST. JOHNS BIKEWAY

The Vancouver-St. Johns Bikeway would be a commuter route beginning at the intersection of McLoughlin Boulevard and "F" Street, proceeding east on McLoughlin to Fort Vancouver Way, Fort Vancouver to east 28th Street, east on 28th to Grand Boulevard, north on Grand to St. Johns Road and then north on St. Johns to the Interstate 205 corridor.

Jurisdictions Involved: Clark County, City of Vancouver
Estimated Length: 2½ miles
Suggested Priority: 1-F Street to Minnehaha Area; 2-Minnehaha Area to I-205
Major Activity Centers: Vancouver Central Business; Marshall Community Center; Clark College; Veterans Administration Hospital; Minnehaha School.
Comments: Suggest Class I trail connection through the proposed Central Park; such a trail would replace Fort Vancouver Way and connect to Grand Boulevard via "T" Street and east 29th Street.

Route 77. VANCOUVER-CAMAS-SR 500 BIKEWAY

This proposed route would commence at the intersection of St. Johns Road and State Route 500, following SR 500 to the Camas city limits. The St. Johns Road - N.E. 117th Avenue section of SR 500 is proposed. Construction is contemplated during the late 1970's or early 1980's. Until this section is completed, the following routing is proposed. Beginning at the Brandt Road and Mill Plain Boulevard intersection an interim route would follow Mill Plain to N.E. 112th Avenue, north on 112th to 4th Plain Boulevard, then east and south on 4th Plain to Camas.

Jurisdictions Involved: Washington State Highway Department, Clark County, City of Vancouver, City of Camas
Estimated Length: 18 miles
Suggested Priority: 2-urban portion, 3-rural portion
Major Activity Centers: Vancouver Mall; Covington Junior High School, Orchards School; Sifton School; Lacamas School, Camas High School

Camas Central Business District
Points of Interest: Arnolds Park; Leverich Park; Lacamas Lake; Lacamas Lake Park
Comments: Combined commuter and recreation route; suggest Class III design in urban areas and Class III design in rural areas

Route 78. VANCOUVER-CAMAS-MILLPLAIN BOULEVARD BIKEWAY

A combined commuter-recreation bikeway, this route would commence at the Fort Vancouver Way and McLoughlin Boulevard intersection, follows McLoughlin east to Brandt Road, south on Brandt to Mill Plain Boulevard, east on Mill Plain to S.E. 172nd Avenue, north on S.E. 172nd to S.E. First Street, east on S.E. First to S.E. Lake Road, east on Lake to S.E. Everett Road and then south on Everett to Camas.

Jurisdictions Involved: Washington State Highway Department, Clark County, City of Vancouver.
Estimated Length: 13½ miles
Suggested Priority: 1-Fort Vancouver Way to S.E. 162nd Avenue; 2-S.E. 162nd Avenue to Camas
Major Activity Centers: Marshall Community Center, Clark College; Hudson Bay High School; Washington State School for the Blind; Tower Mall Shopping Center; Harney Recreation Center; Martin Luther King School; Heights Shopping Center; Garrison Square Shopping Center; St. Joseph's Hospital; Mill Plain School; Camas Central Business District.
Points of Interest: Lacamas Lake; Lacamas Lake Park; David Douglas Park; Evergreen Airfield
Comments: Commuter route west of S.E. 164th Avenue and recreation route east of S.E. 164th.

Route 79. 99th STREET BIKEWAY

This proposed route begins at the intersection of Hazel Dell Avenue and N.W. 99th Street and then proceeds east on 99th to St. Johns Road.

Jurisdiction: Clark County
Estimated Length: 2½ miles
Suggested Priority: 3
Major Activity Center: Columbia River High School
Comments: Suggest Class III design

Route 80. 78th STREET BIKEWAY

A commuter-recreation facility, this route begins at the intersection of Fruit Valley Road and N.W. 78th Avenue, then proceeds east on 78th to the Interstate 205 corridor.

Jurisdiction: Clark County
Estimated Length: 4½ miles

Suggested Priority: 1-Fruit Valley Road to Hazel Dell Avenue; 3-Hazel Dell Avenue to I-205 corridor
Major Activity Center: Jason Lee Junior High School; Hazel Dell Commercial Area
Points of Interest: Vancouver Lake; Burnt Bridge Creek, Green Meadows Golf Course
Comments: Suggest Class II design

Route 81. BATTLE GROUND BIKEWAY

This proposed route begins in Duluth, Duluth being located at the intersection of N.E. 10th Avenue and N.E. 219th Street, and continues east on 219th (SR 502) to Battle Ground.

Jurisdiction: Washington State Highway Department
Estimated Length: 5 3/4 miles
Suggested Priority: 2
Major Activity Centers: Battle Ground High School; Lewisville Intermediate School; Chief Umtuch School; Battle Ground Commercial Area
Points of Interest: Daybreak Park, Camp Juliana Park, Lewisville Park
Comments: Suggest predominantly Class II design

Route 82. ORCHARDS-BATTLE GROUND BIKEWAY

A proposed recreation facility, this route commences at the intersection of 4th Plain Boulevard and N.E. 117th Avenue, (SR 503) and follows SR 503 to Battle Ground.

Jurisdiction: Washington State Highway Department
Estimated Length: 8½ miles
Suggested Priority: 1
Major Activity Centers: Orchards School; Glenwood Heights School; Columbia Academy; Battle Ground Commercial Area
Point of Interest: Puckett Airfield
Comments: Suggest Class III design; route should be continued northerly to the Clark-Cowlitz County Boundary

Route 83. BATTLE GROUND-MOULTON FALLS BIKEWAY

The Battle Ground-Moulton Falls Bikeway is a recreation route that begins in Battle Ground; proceeds east and north on Heissen Road to County Road No. 12 and then proceeds east on County Road No. 12 to its termination point at Moulton Falls County Park.

Jursidiction: Clark County
Estimated Length: 10 3/4 miles
Suggested Priority: 3
Points of Interest: Battle Ground Lake; Battle Ground Lake State Park; East Fork of the Lewis River; Lucia Falls; Lucia Fall Park (private);

Moulton Falls; Moulton Falls County Park
Comments: Suggest Class III design; route should extend from Moulton Falls County Park to Yacolt via County Road No. 16 and thence to Woodland, LaCenter and Duluth.

Route 84. WASHOUGAL RIVER BIKEWAY

This recreational bikeway would begin in Washougal, proceeding north and east on State Route 140 to the Clark County Boundary.

Jurisdiction: Washington State Highway Department
Estimated Length: 10 3/4 miles
Suggested Priority: 3
Major Activity Center: Cape Horn-Skye School
Point of Interest: Washougal River

Route 85. EVERGREEN BIKEWAY

Beginning at Esther Short Park, this commuter-recreation route proceeds north on Columbia Street to Evergreen Boulevard and east on Evergreen to the State Route 14 overpass.

Jurisdiction: City of Vancouver
Estimated Length: 4 miles
Suggested Priority: 1
Major Activity Centers: Vancouver Central Business District; Clark County Library; Washington State School for the Deaf; Harney School; Columbia Industrial Park Area.
Points of Interest: Pearson Airpark; Edgewood Park; Officers Row; Fort Vancouver National Historical Site

Route 86. OLD EVERGREEN HIGHWAY BIKEWAY

This recreation route commences at the eastern terminus of the Evergreen Bikeway, proceeds east on Columbia Way to Riverside Drive, follows Riverside Drive east to Chelsea Drive, north on Chelsea to the Old Evergreen Highway, east on the Evergreen Highway to N.W. 6th Avenue (Camas city limits) east on 6th to Garfield Street, south on Garfield to 3rd Avenue, east on 3rd to S.E. Sheperd Road and east on Sheperd to State Route 140.

Jurisdictions Involved: Clark County, City of Vancouver, City of Camas
Estimated Length: 14 miles
Suggested Priority: 1
Major Activity Centers: Camas and Washougal Central Business Districts
Points of Interest: Winther County Park; Marine Park; Columbia River Gorge; Washington State Fish Hatchery; Site of Washington's First Sawmill.
Comments: Recreation route of considerable historical and scenic importance; current heavy use by bicyclists; suggest Class II design in urban areas.

SUMMARY OF SUGGESTED PRIORITIES

CLACKAMAS COUNTY BIKEWAYS

Suggested Priority #1

Route 1. The Bicentennial Bikeway (Commuter-Recreation)
Route 20. Beaverton-Tigard-Lake Oswego Bikeway (Commuter)
Route 33. Capitol Highway Bikeway (Commuter)
Route 34. Lake Oswego Loop (Recreation)
Route 60. 20th Avenue-River Road Bikeway (Commuter)
Route 61. Linwood Avenue Bikeway (Commuter)
Route 62. Webster Road Bikeway (Commuter)
Route 63. Oatfield Road Bikeway (Commuter)

Suggested Priority #2

Route 37. Highway 212 Bikeway (Commuter)
Route 38. Rosemont Bikeway (Commuter)
Route 64A Happy Valley Bikeway (Recreation)

Suggested Priority #3

Route 35. Stafford Road Bikeway (Commuter-Recreation)
Route 36. Canby Ferry Bikeway (Recreation)
Route 59. Mt. Hood Bikeway (Recreation)
Route 64. Milwaukie-Boring Bikeway (Commuter-Recreation)
Route 65. Rock Creek Road Bikeway &
Route 66. Hogan Road Bikeway &
Route 67. Boring-Estacada Bikeway (Recreation)
Route 68. Clackamas River Loop (Recreation)
Route 69. Oregon City-Redland Loop (Recreation)
Route 70. Canby-Molalla Bikeway (Recreation)
Route 71. Oregon City-Molalla Bikeway (Recreation)

SUMMARY OF SUGGESTED PRIORITIES

CLARK COUNTY BIKEWAYS

Suggested Priority #1

Route 73. West Vancouver Lake-Ridgefield Bikeway (Recreation)
Route 75. Vancouver-Hazel Dell Bikeway (Commuter)
Route 82. Orchards-Battle Ground Bikeway (Recreation)
Route 85. Evergreen Bikeway (Commuter-Recreation)
Route 86. Old Evergreen Highway Bikeway (Recreation)

Suggested Priority #1 and #2 (Combined)

Route 76. Vancouver St. Johns Bikeway (Commuter)
Route 78. Vancouver-Camas-Mill Plain Boulevard Bikeway (Commuter-Recreation)

Suggested Priority #1 and 3 (Combined)

Route 80. 78th Street Bikeway (Commuter-Recreation)

Suggested Priority #2

Route 81. Battle Ground Bikeway (Commuter-Recreation)

Suggested Priority #2 and #3 (Combined)

Route 74. East Vancouver Lake-Ridgefield Bikeway (Recreation)
Route 77. Vancouver-Camas-SR500 Bikeway (Commuter-Recreation)

Suggested Priority #3

Route 79. 99th Street Bikeway (Commuter)
Route 83. Battle Ground - Moulton Falls Bikeway (Recreation)
Route 84. Washougal River Bikeway (Recreation)

SUMMARY OF SUGGESTED PRIORITIES

MULTNOMAH COUNTY BIKEWAYS

Suggested Priority #1

Route 1. The Bicentennial Bikeway (Commuter-Recreational)
Route 19. West Slope Bikeway (Commuter)
Route 23. Hamilton Street Bikeway (Commuter)
Route 24. Vermont Street Bikeway (Commuter)
Route 27. Mulnomah Bikeway (Commuter)
Route 28. Taylors Ferry Bikeway (Commuter)
Route 33. Capitol Highway Bikeway (Commuter)
Route 39. 24th-Flanders Bikeway (Commuter)
Route 43. Interstate Bikeway (Commuter)
Route 44. Ainsworth Bikeway (Commuter)
Route 45. Tillamook-Halsey Bikeway (Commuter)
Route 46. Glisan Street Bikeway (Commuter)
Route 47. Stark Street Bikeway (Commuter-Recreation)
Route 48. Hawthorne Bridge - 18th Avenue Bikeway (Commuter)
Route 49. Division Street Bikeway (Commuter)
Route 50. Powell Boulevard Bikeway (Commuter)
Route 51. Gladstone Center Street Bikeway (Commuter)
Route 53. I-205 Freeway Bikeway (Commuter)
Route 54. 182nd Avenue Bikeway (Commuter)
Route 55. Fairview Avenue Bikeway (Commuter)
Route 60. 28th Avenue-River Road Bikeway (Commuter)

Suggested Priority #2

Route 4. Cornell Road Bikeway (Recreation)
Route 40. Sauvie Island Bikeway (Recreation)
Route 41. Marine Drive Bikeway (Recreation)
Route 58. Rooster Rock Bikeway (Recreation)

Suggested Priority #3

Route 2. Portland Astoria Loop (Recreation)
Route 3. Skyline Bikeway (Recreation)
Route 42. Columbia Slough Bikeway (Recreation)
Route 52. Johnson Creek Bikeway (Recreation)
Route 56. 257th Avenue Bikeway (Recreation)
Route 57. Crown Point Highway Bikeway (Recreation)
Route 59. Mt. Hood Bikeway (Recreation)
Route 65. Rock Creek Road Bikeway (Recreation)
Route 66. Hogan Road Bikeway (Recreation)
Route 72. Springville Road Bikeway (Recreation)

SUMMARY OF SUGGESTED PRIORITIES

WASHINGTON COUNTY BIKEWAYS

Suggested Priority #1

Route 11. Tualatin Valley Bikeway (Commuter)
Route 13. Beaverton Farmington Loop (Commuter-Recreation)
Route 14. Cornell-Walker Bikeway (Commuter)
Route 15. River Road-Witch Hazel Bikeway (Commuter)
Route 19. West Slope Bikeway (Commuter)
Route 20. Beaverton-Tigard-Lake Oswego Bikeway (Commuter)
Route 21. Raleigh Hill-200 Bikeway (Commuter)
Route 23. Hamilton Street Bikeway (Commuter)
Route 24. Vermont Street Bikeway (Commuter)
Route 26. Greenburg-Oleson Bikeway (Commuter)
Route 27. Multnomah Bikeway (Commuter)
Route 28. Taylors Ferry Bikeway (Commuter)
Route 31. Durham Road Bikeway (Commuter)

Suggested Priority #2

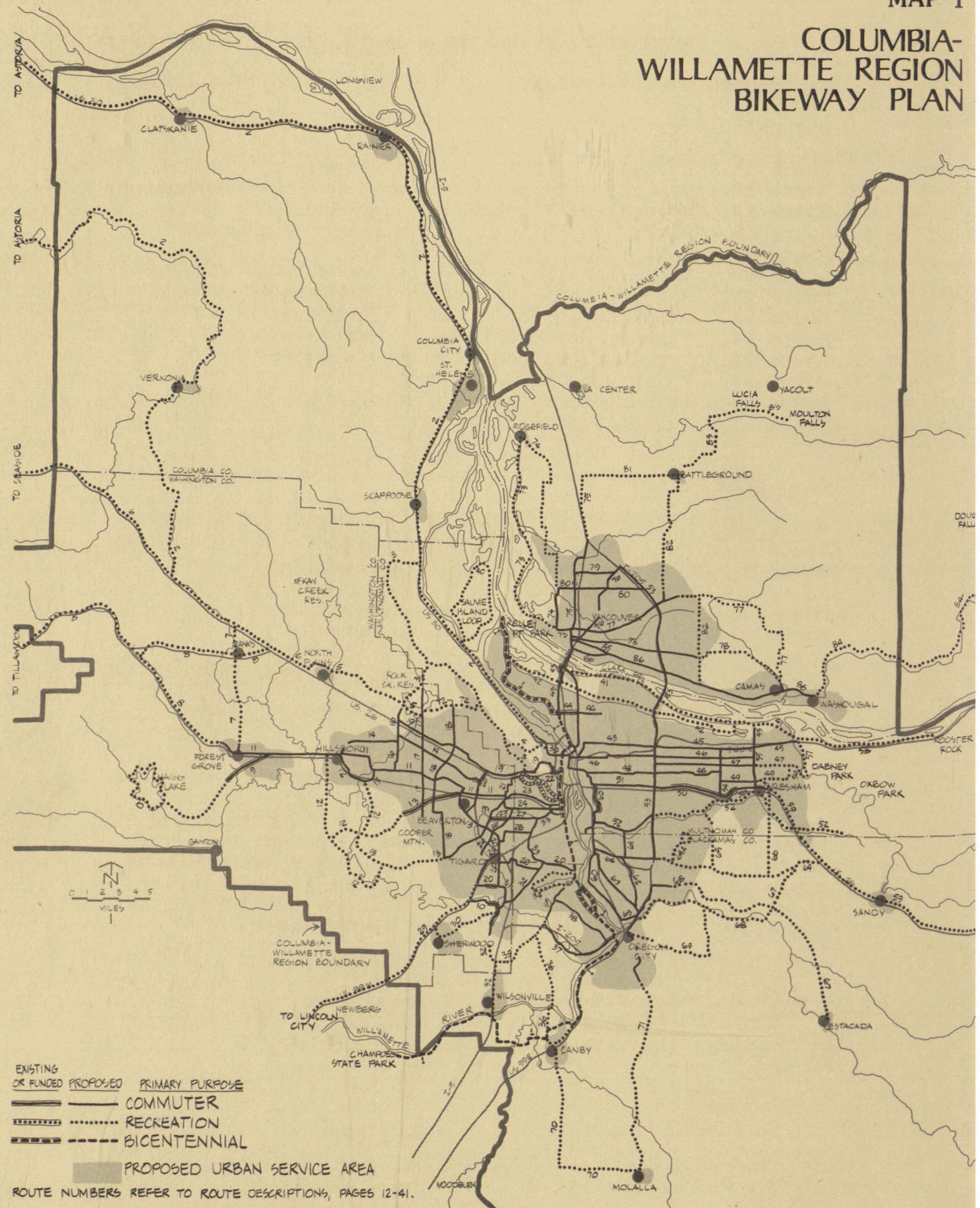
Route 4. Cornell Road Bikeway (Recreation)
Route 5. West Union Bikeway (Recreation)
Route 9. Scoggin Creek Bikeway (Recreation)
Route 10. Hagg Lake Loop (Recreation)
Route 16. Cornelius Pass Bikeway (Commuter)
Route 17. 185th Avenue BIkeway (Commuter)
Route 18. Poweline Bikeway (Commuter-Recreation)
Route 32. Boones Ferry Road Bikeway (Commuter-Recreation)

Suggested Priority #3

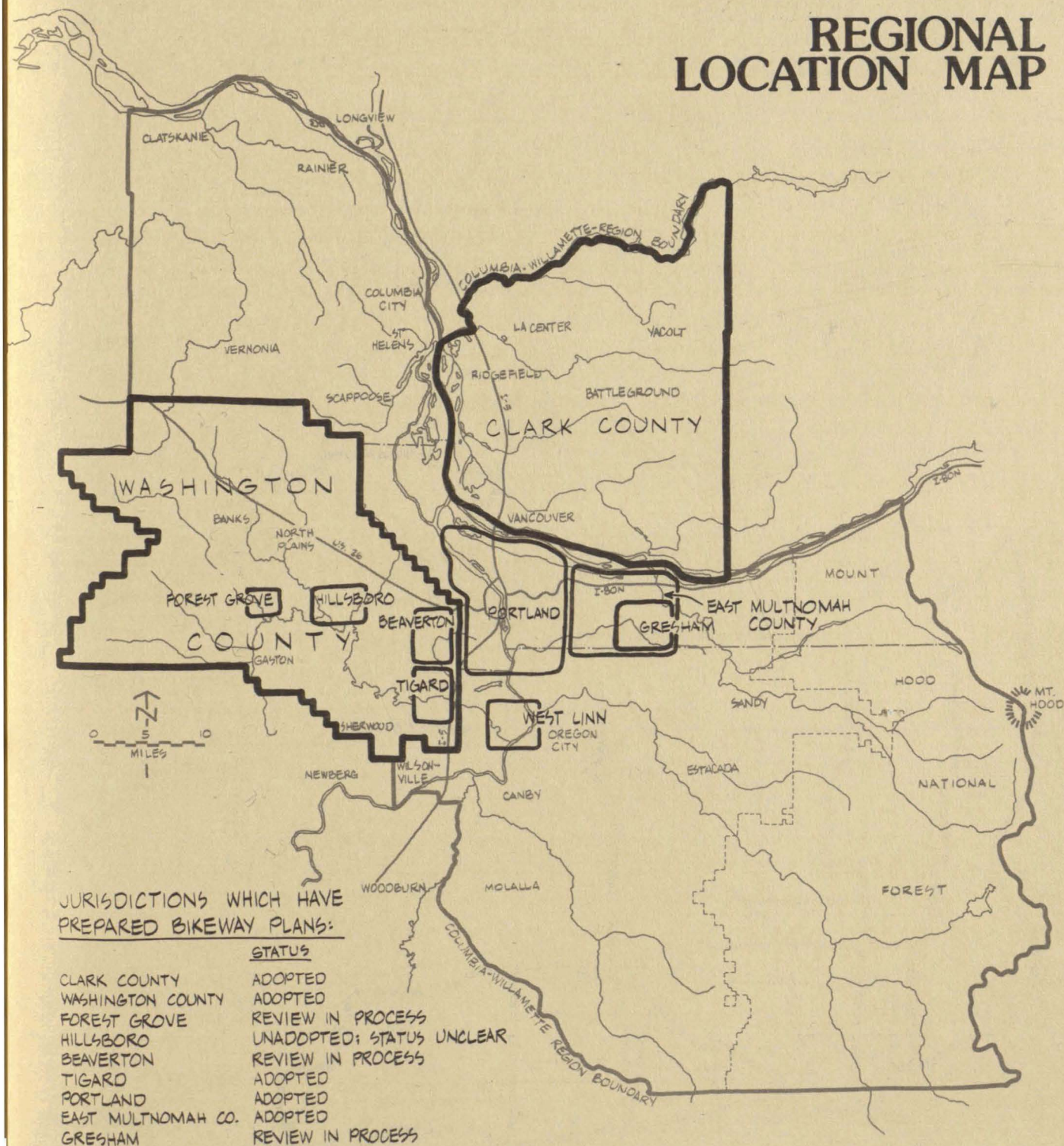
Route 2. Portland-Astoria Loop (Recreation)
Route 3. Skyline Bikeway (Recreation)
Route 6. Sunset Bikeway
Route 7. Forest Grove-Banks Bikeway (Recreation)
Route 8. Wilson River-Gales Creek Bikeway (Recreation)
Route 12. Hillsboro-Scholls Loop (Recreation-Commuter)
Route 29. Pacific Highway Bikeway (Commuter-Recreation)
Route 30. Sherwood-Tualatin Loop (Recreation)

MAP 1

COLUMBIA-WILLAMETTE REGION BIKEWAY PLAN



MAP 2
REGIONAL LOCATION MAP



JURISDICTIONS WHICH HAVE PREPARED BIKEWAY PLANS:

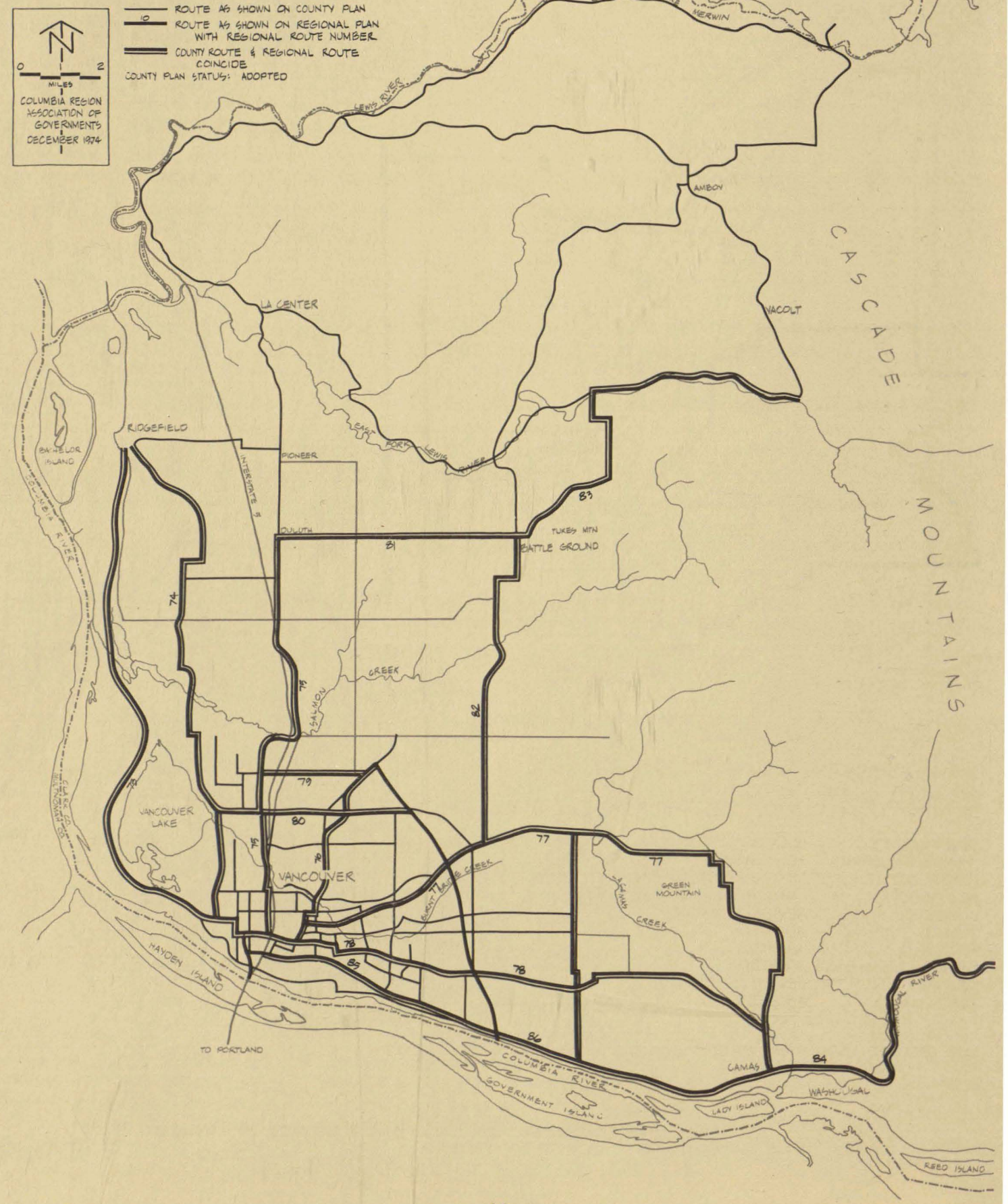
	STATUS
CLARK COUNTY	ADOPTED
WASHINGTON COUNTY	ADOPTED
FOREST GROVE	REVIEW IN PROCESS
HILLSBORO	UNADOPTED; STATUS UNCLEAR
BEAVERTON	REVIEW IN PROCESS
TIGARD	ADOPTED
PORTLAND	ADOPTED
EAST MULTNOMAH CO.	ADOPTED
GRESHAM	REVIEW IN PROCESS
WEST LINN	ADOPTED

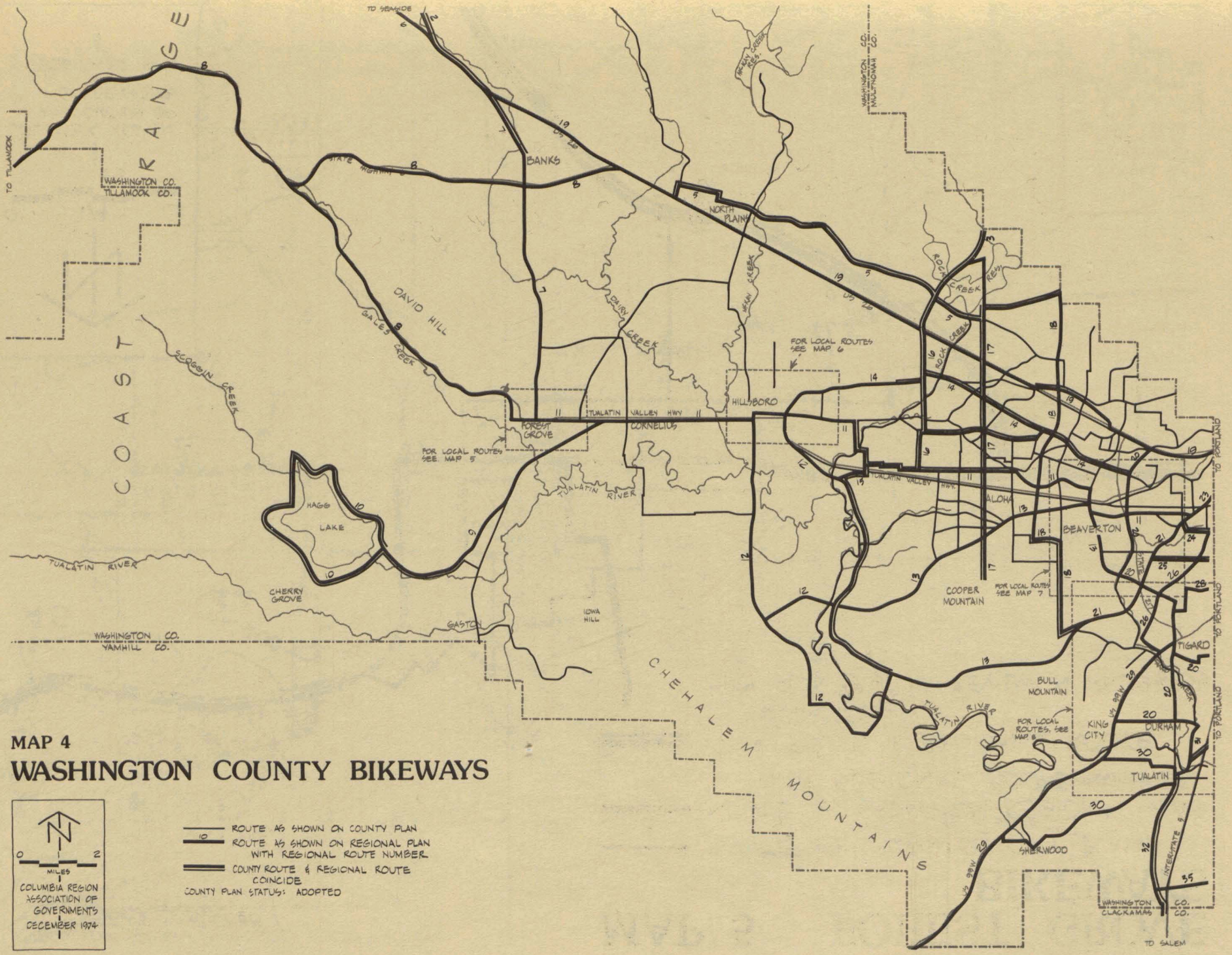
(SEE DETAILED MAPS, PAGES 46 - 57)

Columbia Region Association of Governments • December 1974

MAP 3

CLARK COUNTY BIKEWAYS





MAP 4

WASHINGTON COUNTY BIKEWAYS

0 2
MILES

COLUMBIA REGION ASSOCIATION OF GOVERNMENTS
DECEMBER 1974

ROUTE AS SHOWN ON COUNTY PLAN

10 ROUTE AS SHOWN ON REGIONAL PLAN WITH REGIONAL ROUTE NUMBER

COUNTY ROUTE & REGIONAL ROUTE COINCIDE

COUNTY PLAN STATUS: ADOPTED

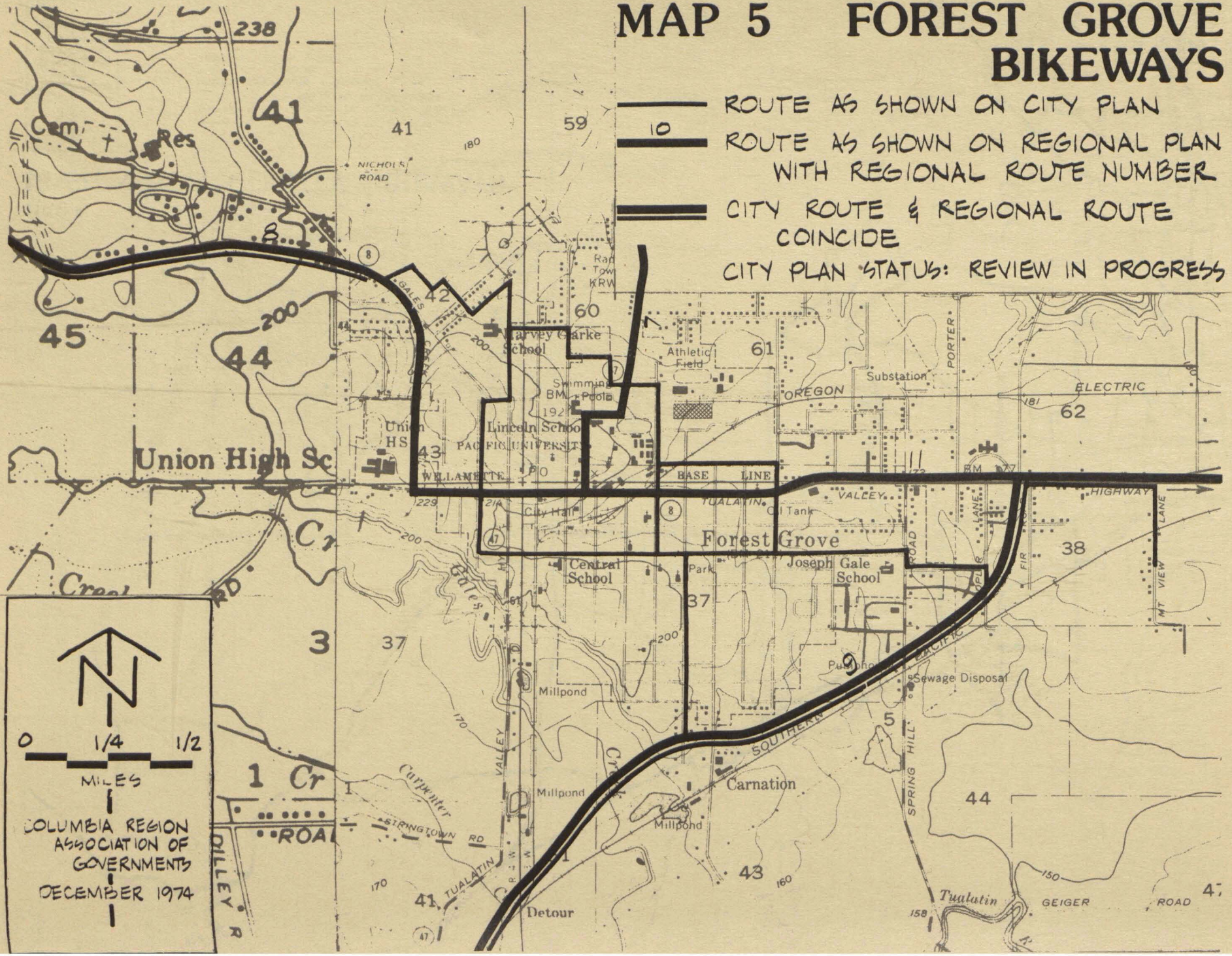
MAP 5 FOREST GROVE BIKEWAYS

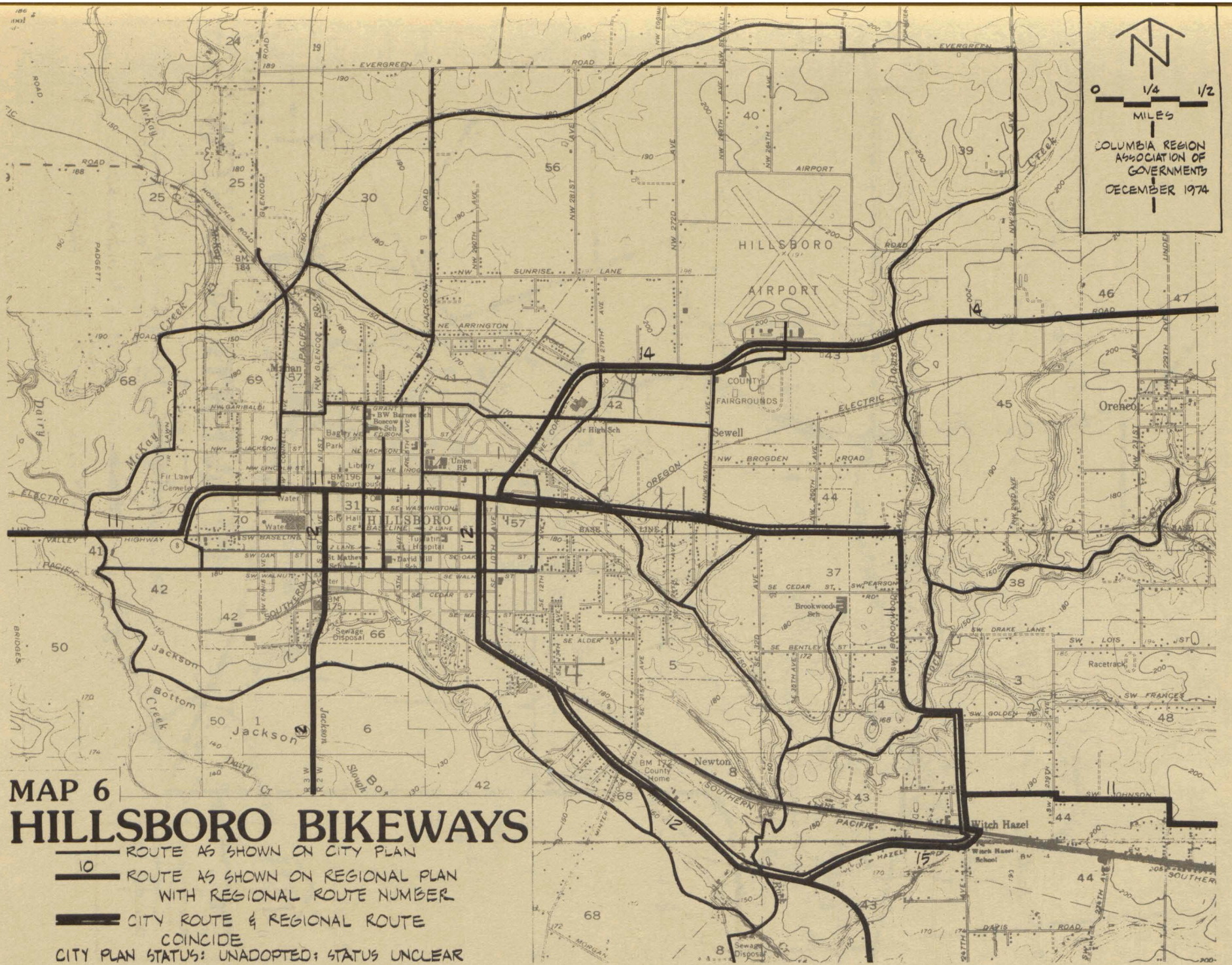
ROUTE AS SHOWN ON CITY PLAN

10 ROUTE AS SHOWN ON REGIONAL PLAN WITH REGIONAL ROUTE NUMBER

CITY ROUTE & REGIONAL ROUTE COINCIDE

CITY PLAN STATUS: REVIEW IN PROGRESS





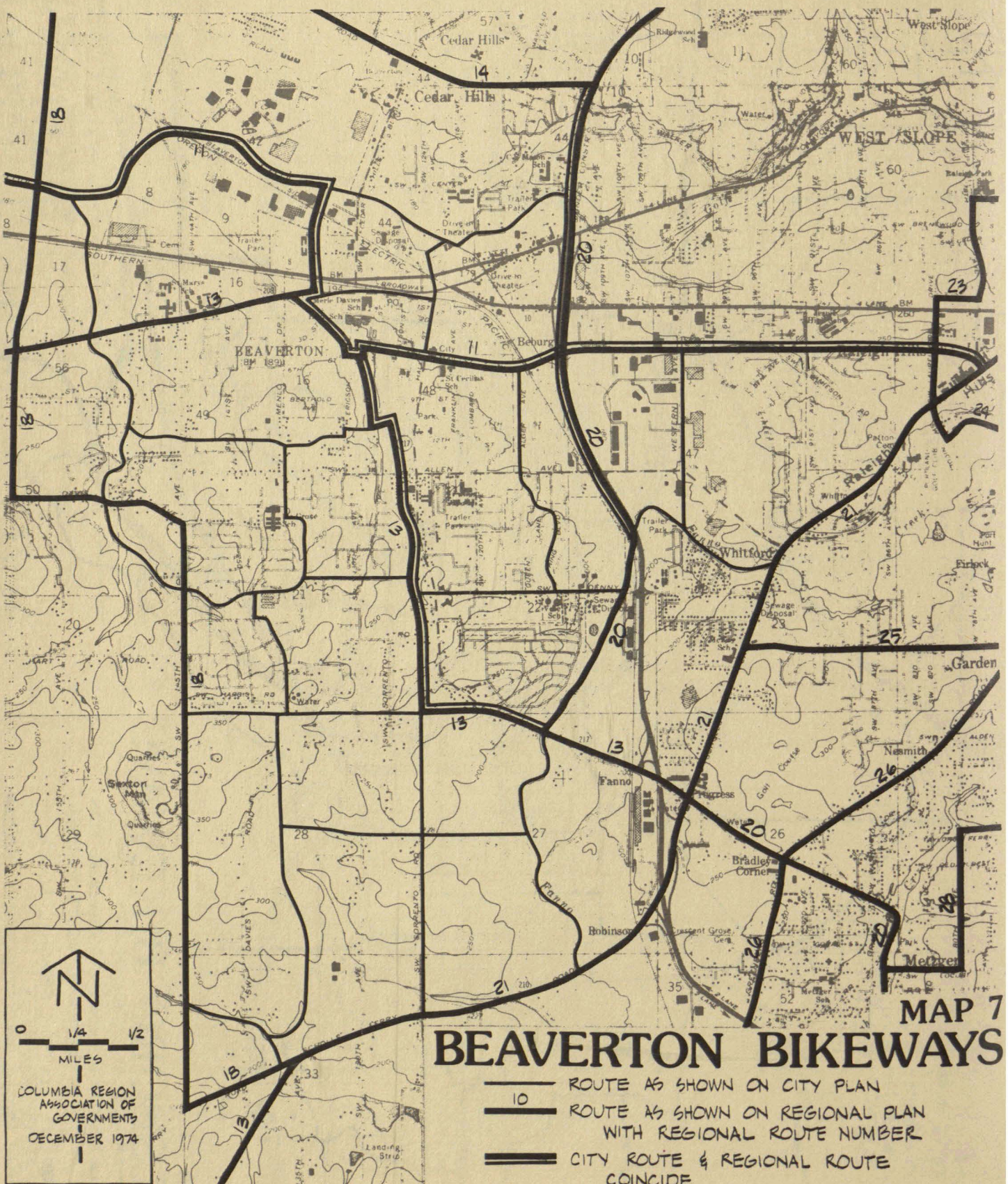
MAP 6
HILLSBORO BIKEWAYS

——— ROUTE AS SHOWN ON CITY PLAN

10 ROUTE AS SHOWN ON REGIONAL PLAN WITH REGIONAL ROUTE NUMBER

▬▬ CITY ROUTE & REGIONAL ROUTE COINCIDE

CITY PLAN STATUS: UNADOPTED; STATUS UNCLEAR



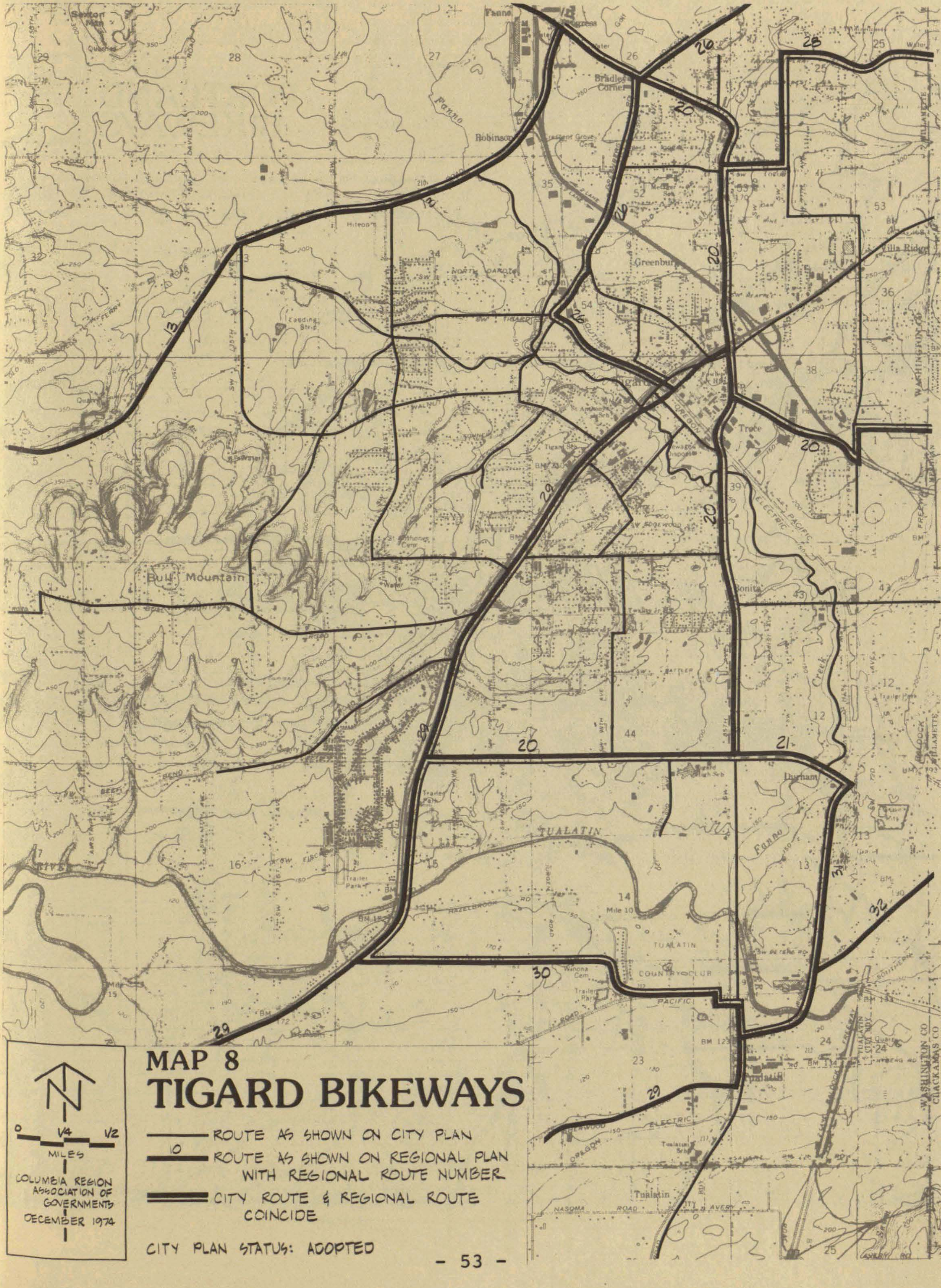
MAP 7
BEAVERTON BIKEWAYS

——— ROUTE AS SHOWN ON CITY PLAN

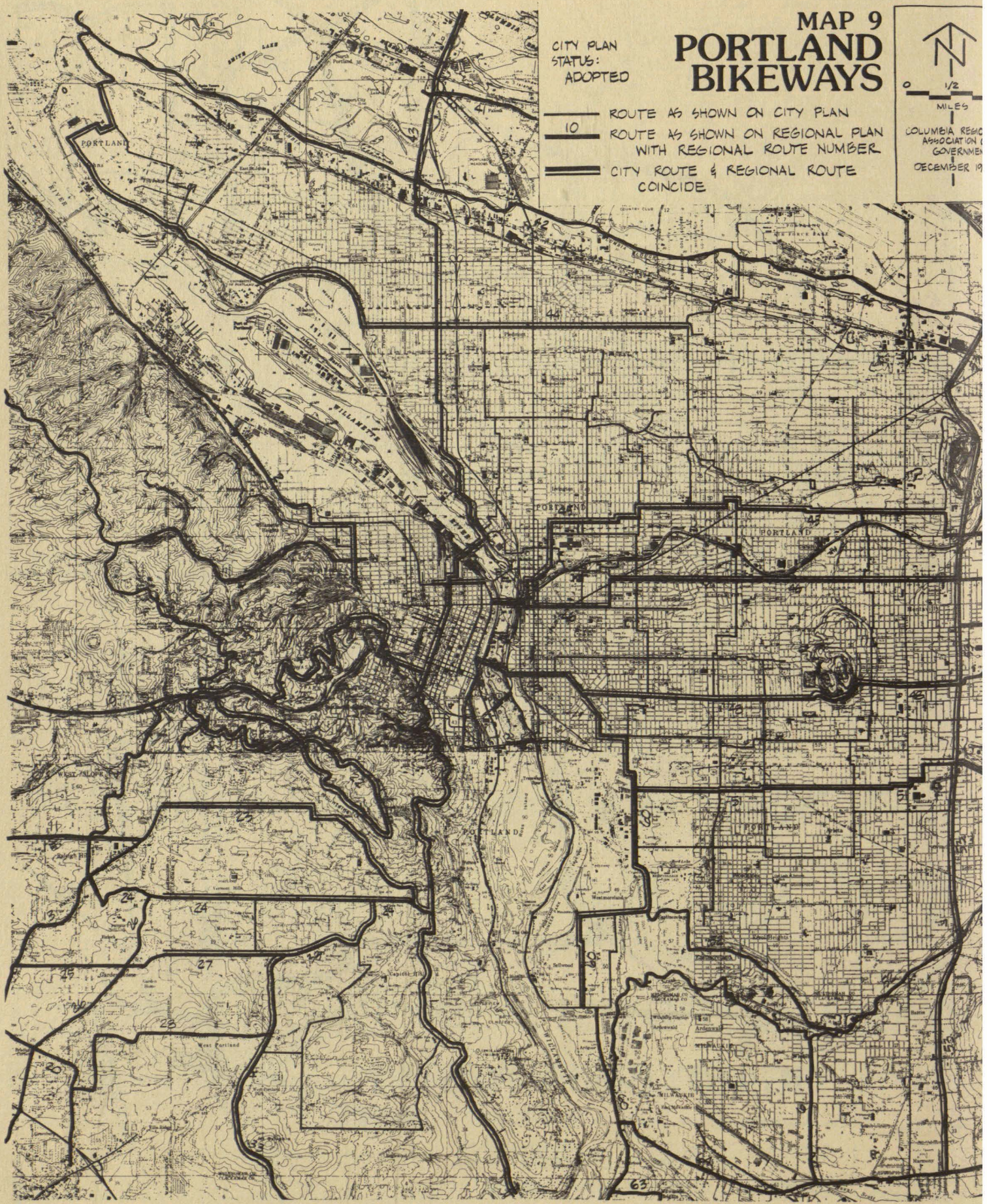
10 ROUTE AS SHOWN ON REGIONAL PLAN WITH REGIONAL ROUTE NUMBER

═══ CITY ROUTE & REGIONAL ROUTE COINCIDE

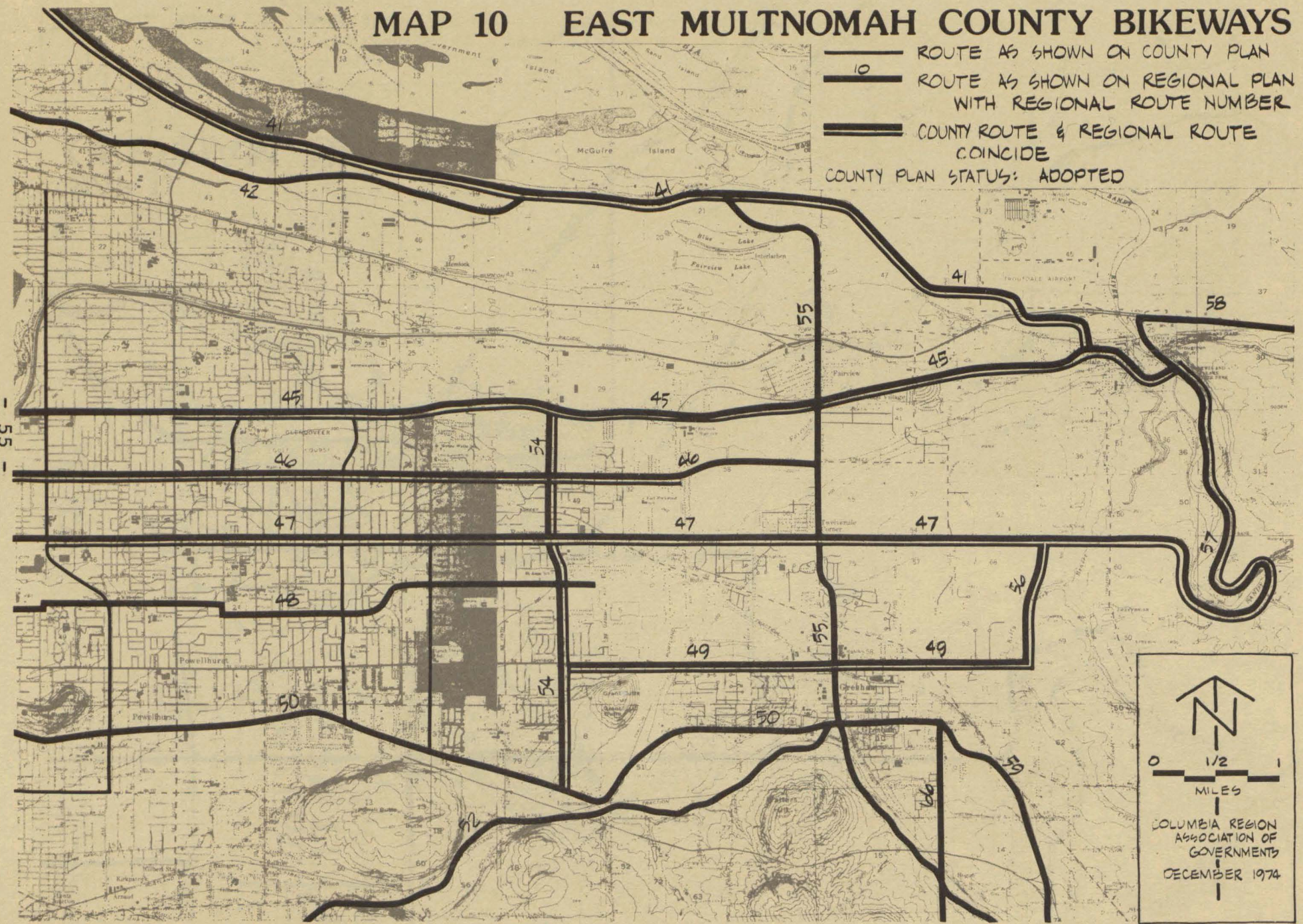
CITY PLAN STATUS: REVIEW IN PROGRESS

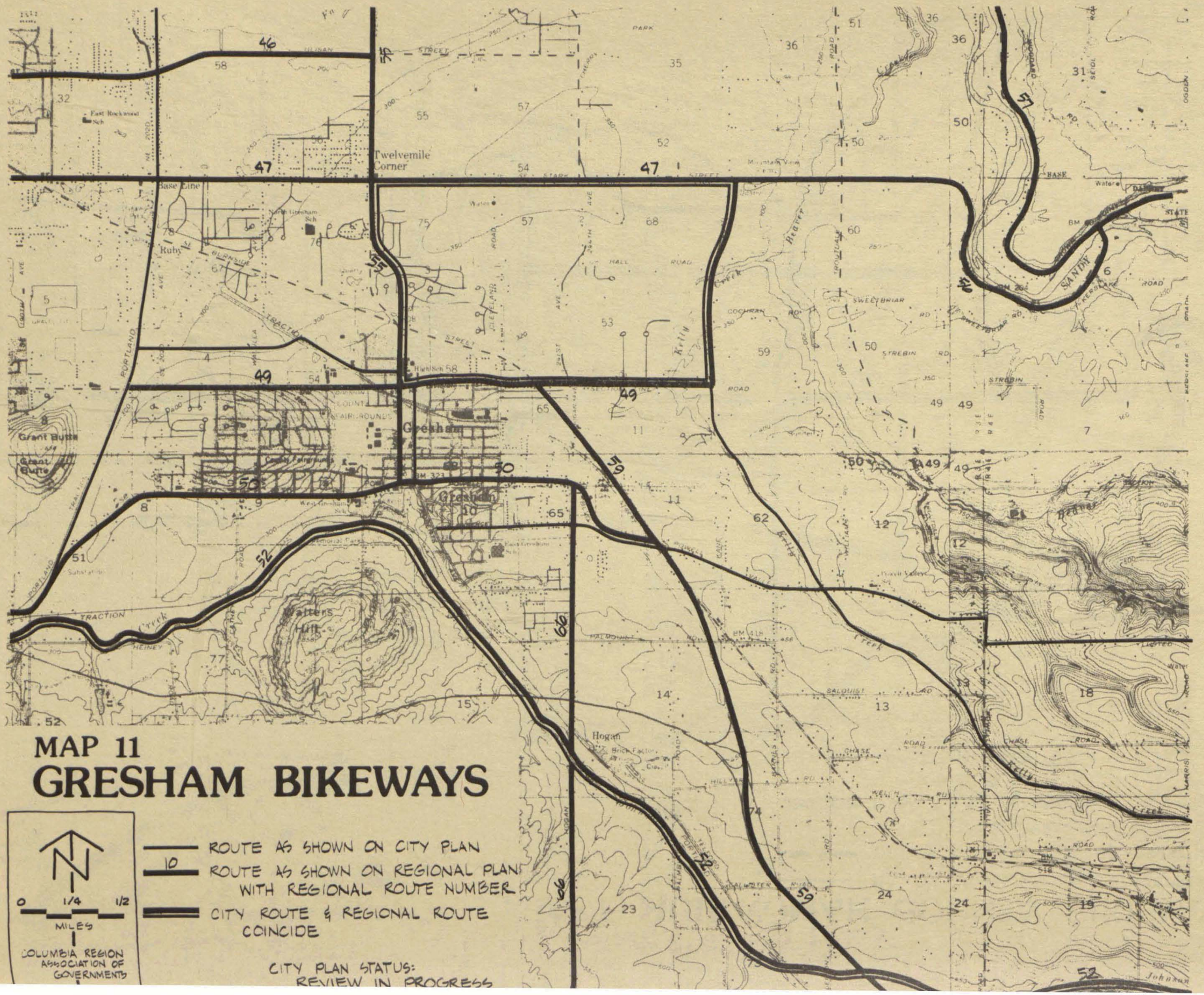


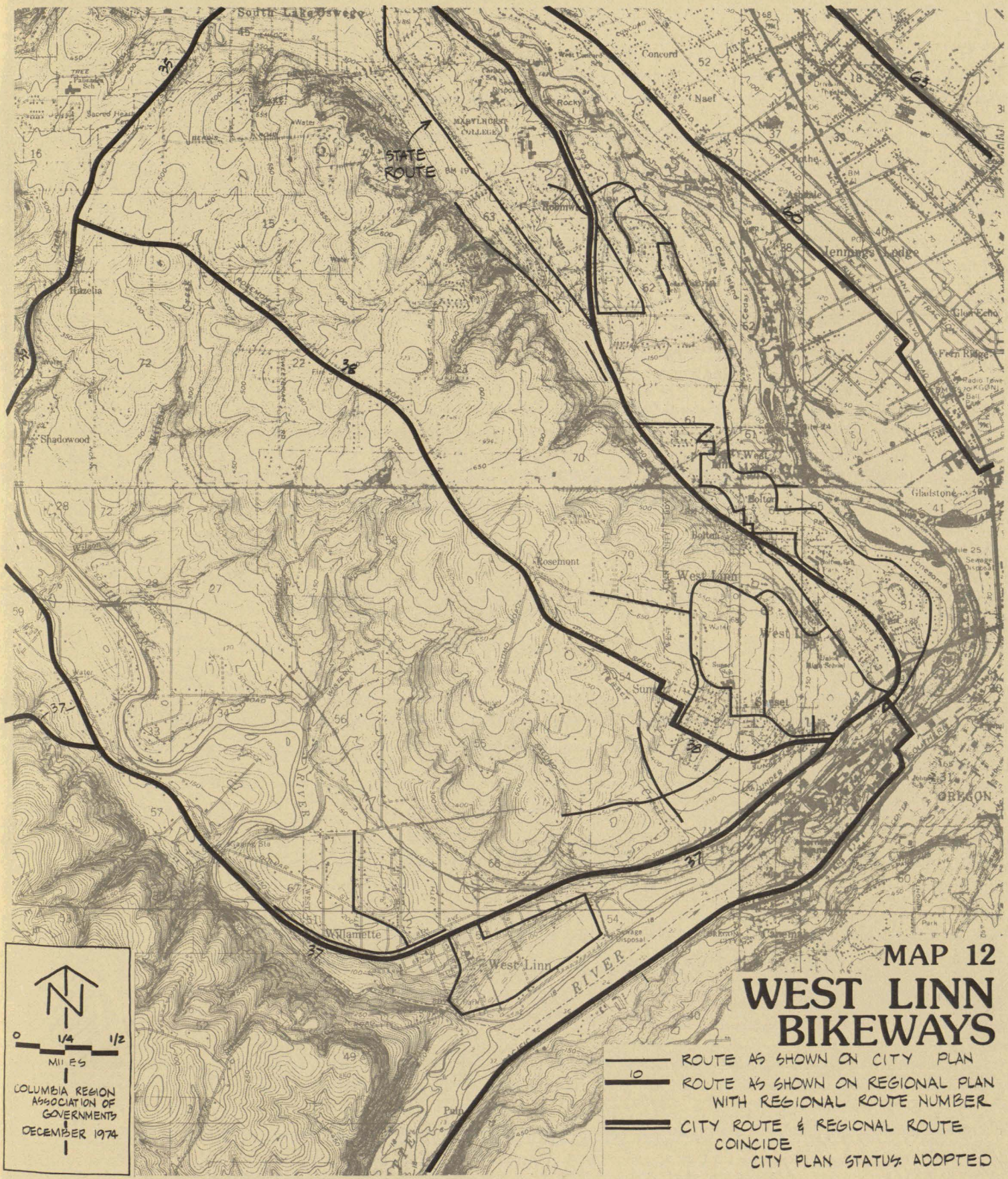
MAP 8
TIGARD BIKEWAYS


MAP 9
PORTLAND
BIKEWAYS
CITY PLAN
STATUS:
ADOPTED
ROUTE AS SHOWN ON CITY PLAN
10
ROUTE AS SHOWN ON REGIONAL PLAN
WITH REGIONAL ROUTE NUMBER
CITY ROUTE & REGIONAL ROUTE
COINCIDE
0
1/2
MILES
COLUMBIA REGIO
ASSOCIATION
GOVERNME
DECEMBER 19
PORTLAND
WILLAMETTE
RIVER

MAP 10 EAST MULTNOMAH COUNTY BIKEWAYS




Twelvemile Corner
Gresham
Grant Butte
Walters Hill
Hogan
Base Line
Ruby
Kelly
Beaver
Sandy
Johnson
Portland Traction
East Rockwood Sch
Powell Valley Sch
Hancock Sch
Mountain View
Fairgrounds
Cochran Rd
Strebin Rd
Sweetbriar Rd
Chase Rd
Salquist Rd
Heiney
Hall Road
Stark Street
Division Street
Burnside
Base Line
Sandy Blvd
Powell Valley Road
Kelly Creek
Beaver Creek
Johnson Creek
Gresham Creek
Trick Creek
Walters Hill
Grant Butte
MAP 11
GRESHAM BIKEWAYS
ROUTE AS SHOWN ON CITY PLAN
10 ROUTE AS SHOWN ON REGIONAL PLAN WITH REGIONAL ROUTE NUMBER
CITY ROUTE & REGIONAL ROUTE COINCIDE
0 1/4 1/2
MILES
COLUMBIA REGION ASSOCIATION OF GOVERNMENTS
CITY PLAN STATUS:
REVIEW IN PROGRESS



MAP 12
WEST LINN BIKEWAYS

ROUTE AS SHOWN ON CITY PLAN

10 ROUTE AS SHOWN ON REGIONAL PLAN WITH REGIONAL ROUTE NUMBER

CITY ROUTE & REGIONAL ROUTE COINCIDE

CITY PLAN STATUS: ADOPTED

CHAPTER 4

Bikeway Design

This section provides an explanation of bikeway classifications, design information as well as a brief description of bicycle parking facilities. It is intended to acquaint the reader with examples of bikeway design criteria and standards.

Bikeway Classification

The term "bikeway", as used in this report, means any facility that provides expressly for bicycle or pedestrian travel. It may be a facility fully separated from streets and roads for motorized vehicles or it may utilize streets and be designated only by a bike route sign.

For planning and discussion purposes, bikeways are generally divided into three classes. Choice of classification for any given bikeway segment depends upon the individual situation and the interrelation of the following factors:

- special landscape features
- land use pattern
- motor vehicle volume
- motor vehicle speed
- projected bicycle volume
- pavement width
- right-of-way availability
- abutting land use
- grade profile
- drainage
- safety considerations

The three generally recognized bikeway classifications are as follows:

Class I Bikeway --

A separated trail for joint use of bicycles and pedestrians. It may be entirely independent of other transportation facilities.

Class II Bikeway --

A bikeway that is adjacent to the travel lane of motorized traffic, but provides a physically separated through lane for bicycles and pedestrians.

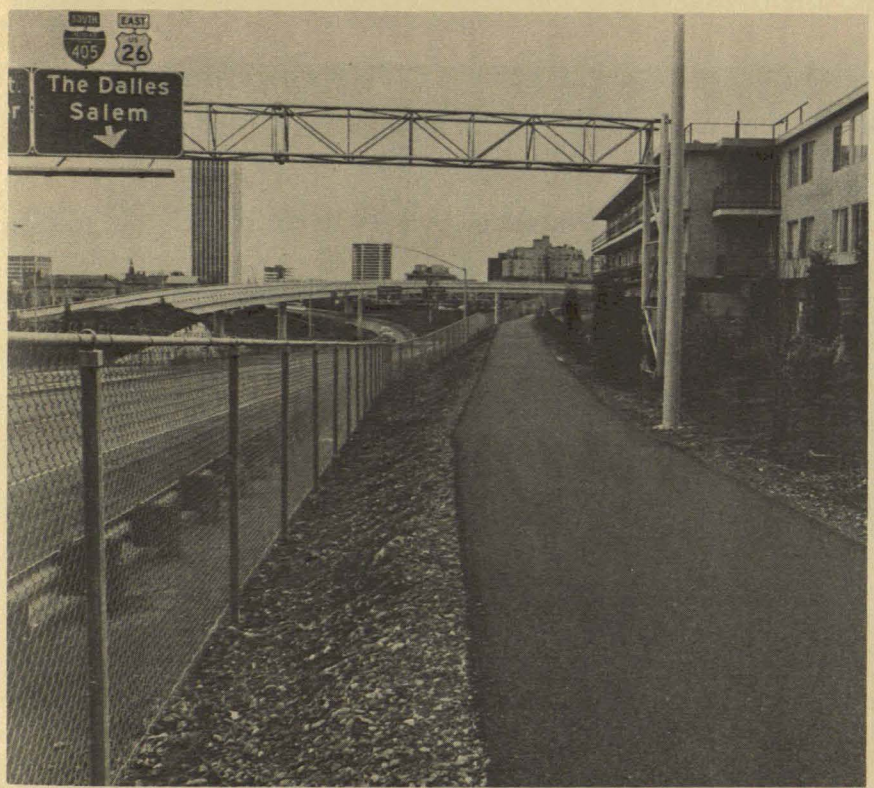
Class III Bikeway --

A bikeway that shares the roadway with motor vehicles. Routes are designated by signing, striping, or other visual markings only.

The Class I bikeway is the safest, most desirable and generally the most expensive. Sometimes opportunities may be found to convert or designate existing facilities, such as abandoned rights-of-way, park walkways, irrigation canals, flood control channelization project, or powerline rights-of-way at a lower cost. River and stream banks, flood plains and other open space areas may also offer special opportunities for the Class I bikeways. The Class II bikeway utilizes portions of roadways and therefore may not be feasible in areas where on-street parking is necessary. The Class III bikeway is the most hazardous and least convenient because the cyclist must share the travel lane or sidewalk with the motorist or pedestrian with no physical separation.

Although the Class I bikeway is the most desirable facility to construct, Class II or III bikeways are often used because of lack of funds and/or the lack of right-of-way.

Examples of the various bikeway classifications are portrayed on the following pages.

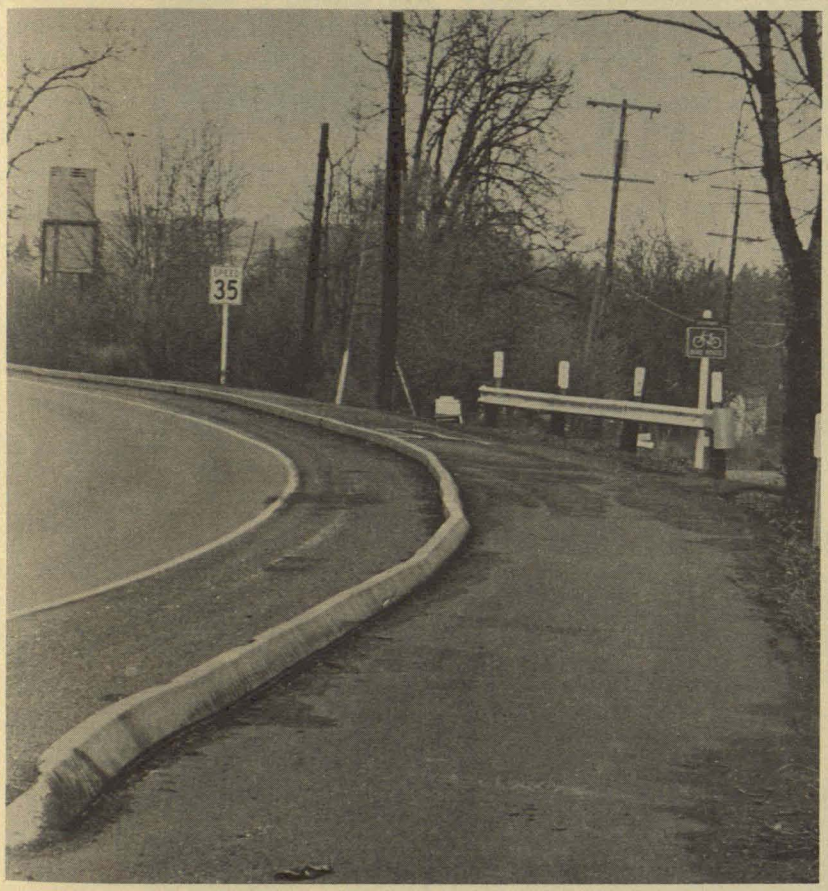


The Goose Hollow Bikeway (Class I), on an existing path on freeway right-of-way between SW 17th Street and SW Montgomery Street in Portland. Facility is 0.5 miles long, 8 feet wide and cost approximately $38,000 in 1974.

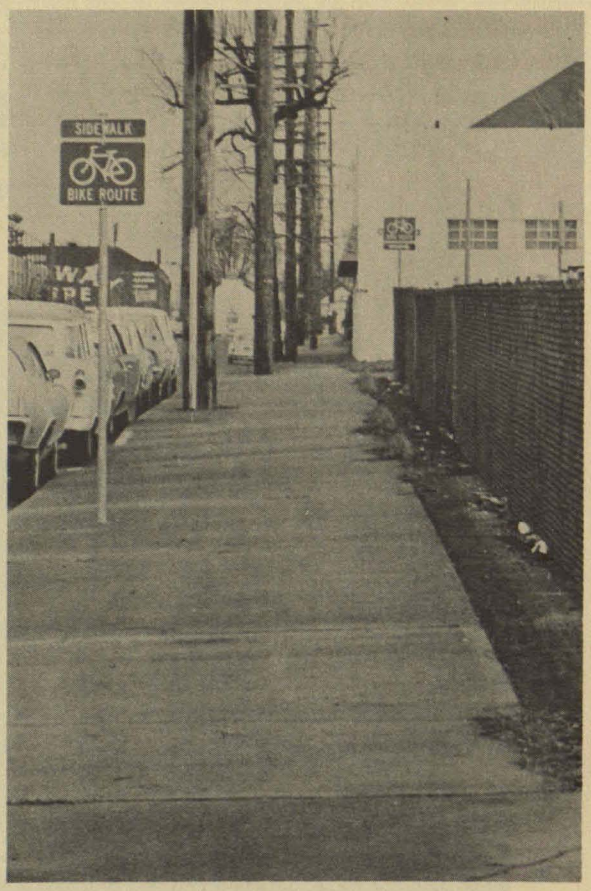
Class I Bikepath in Mary S. Young State Park in West Linn, 1.1 miles long, cost approximately $4,000 in 1974.

Bicyclers and a jogger are separated from traffic flow on the Terwilliger Blvd. Bikeway (Class I). The facility is 3.9 miles long and cost approximately $370,000 in 1973.

A potential Class I Bikepath using an existing powerline right-of-way, originally an abandoned trolley car right-of-way connecting the West Linn business district with the community of Willamette.



A Class II Bikelane with extruded curbing, located on State Highway 43 between West Linn and Lake Oswego. Facility permits two-way bicycle traffic on one side of the highway.



A Class II Bikelane using an existing sidewalk between the Portland Memorial Coliseum and the Lloyd Center. This type of bikeway is feasible where pedestrian volumes are low.

A Class III Bikeroute constructed on an extended shoulder and marked by signing and striping, located on State Highway 43 between Lake Oswego and West Linn, 1.8 miles long, cost $26,194 in 1973.

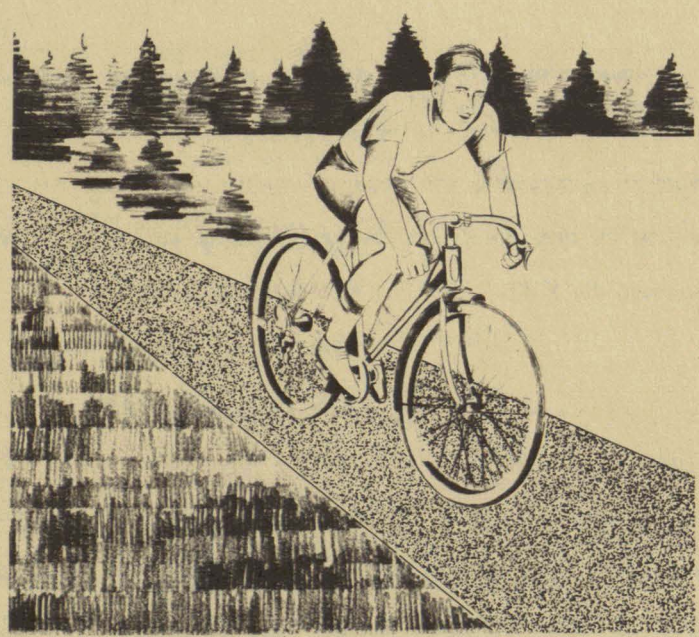
A Class III Bikeroute which needs visual marking devices to alert motorists to potential bike traffic.

Bikeway Design Standards

In January of 1972 the Oregon State Highway Division published a manual entitled Footpaths and Bikeroutes: Standards and Guidelines. This publication was designed to provide general considerations and methods for bicycle trail and footpath planning, design and construction. In January of 1974, after two years of planning, designing, building and maintaining bikeways throughout Oregon, the Highway Division published a revised manual and renamed it Bikeway Design.

Bikeway Design is an excellent resource for a community that intends to develop a bikeway system. Copies may be obtained by contacting the Oregon State Highway Division, Salem, Oregon 97301. ($2.00 per copy). Excerpts from the manual are shown on the following pages to illustrate its usefullness to local jurisdictions. It is recommended that local officials as well as private citizens review this manual to gain a better understanding of bikeway design. Local governments are encouraged to use the standards set forth in Bikeway Design so the regional bikeway system may be developed to uniform standards.

BIKEWAY DESIGN



January 1974

OREGON STATE HIGHWAY DIVISION

CLASSIFICATION

The standards and guidelines shown in this manual are primarily intended for Class I independent bikeways. Class II and III bikeways are largely controlled by adjacent or coincident motor vehicle or pedestrian facilities.

DESIGN SPEEDS

A design speed of 20 mph shall be used for bikeways with grades between +3% and -7%. Sections with grades steeper than -7% shall use a 30 mph design speed and one-way climbing grades of +3% or more may use a 15 mph design speed.

CURVE WIDENING

Uniform width curves on two-way bikeways may create a hazard of collision with opposing traffic. Bicyclists lean to the inside of a turn, considerably increasing the required width of the bikeway. A bicyclist operating at high speed on the outside of a curve may have his entire torso over the inside lane, thus effectively blocking it.

WIDTHS AND CLEARANCES

Allowances must be made for passing width and shy distance. A horizontal distance of two feet is close to the minimum through which a bicycle can pass, and some bicycles have handlebars wider than two feet. Three-wheeled pedaled vehicles and wheelchairs, both of which have axle

widths of 32 inches or more, are also being operated on Oregon bikeways. Therefore, the minimum pavement width for a two-way bikeway shall be eight feet, and for a one-way bikeway, six feet. In divided sections of a two-way bikeway, the minimum width of the one-way sections shall be six feet. Widths greater than these are desirable and should be considered whenever large amounts of bicycle traffic or bicycle and pedestrian traffic is anticipated.

Adequate vertical and horizontal clearances must be provided to prevent conflicts. The desirable vertical clearance is 9.5 feet, and in no case shall it be less than 8.5 feet. Clearances of less than 9.5 feet shall be used only with the approval of the Location Engineer. The standard horizontal clearance between the edge of the pavement and any obstruction (including bikeway signs) should be two feet; vegetation along the right-of-way should be trimmed to provide this clearance. In particularly critical areas, at least a minimum one-foot clearance shall be provided to allow shy distance. Fences, walls, and guardrails may be placed a minimum of one foot from the edge of the pavement if it is impractical to obtain the standard two-foot clearance. Sight distance may control the horizontal clearance on the inside of curves.

Standard bridge or other crossing structure width is twelve feet.

INTERSECTIONS AND CROSSINGS

For bikeway crossings and intersections at grade, some means of channelization (pavement markings designating bike lanes, islands, curb cuts, divider strips, etc.) is needed to ensure that bicyclists stay in the parts of the roadway designated for bicycle traffic. A suggested solution is shown in Figure 10.

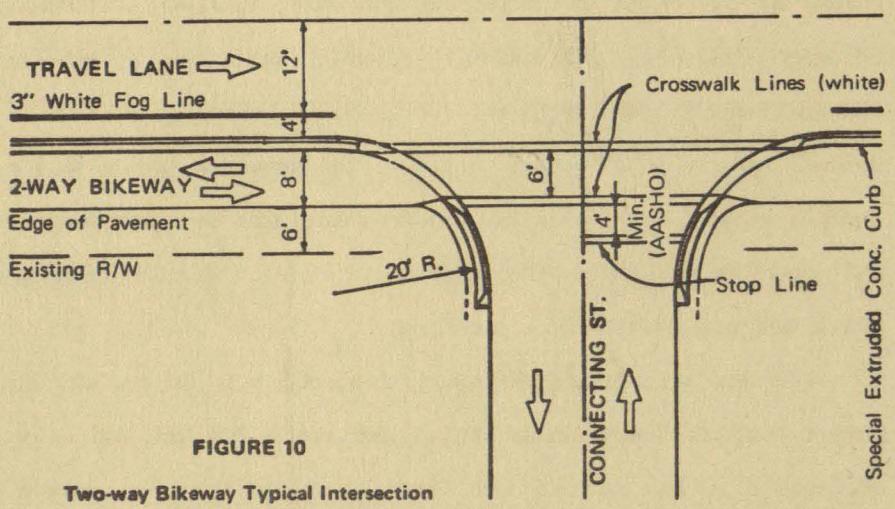


FIGURE 10

Two-way Bikeway Typical Intersection

LENGTH

Bikeways may be of any length, providing they fit into an overall development plan, commence and end at points that are accessible from traffic generators, and are usable facilities. Longer routes should ideally be capable of serving both utility riders and overall transportation needs. Some routes may be primarily intended for special recreational uses (access to parks, historical sites, etc.) or for long range touring. Therefore, there is no definite minimum or maximum length that can be prescribed for a usable bikeway. However, experience shows touring routes should be at least 15 miles in length to serve their purpose, and that commuter routes will be very little used if the distance from point of origin to destination is more than 7 miles.

RAILROAD TRACKS, MANHOLES, AND GRATES

Any metal surface presents a potential safety hazard for bicyclists, especially when wet. Even morning dew or ground fog can make them very slippery. When bikeways must cross railroads at grade the right-angle crossing is more desirable. Manholes and other items that

might cause skids should not be placed on curves. Grates for drains, storm sewers, and similar structures are especially hazardous, since a bicycle's wheel may be caught in the grill. If grates must be installed in bikeway surfaces rather than in curbs, the grillwork must be designed to avoid a safety hazard.

BASES AND SURFACING

Bikeways must be designed to support light maintenance vehicles as well as heavy vehicles at crossings at streets and driveways. Present surfacing design is based on loading by an 8,000-pound pickup truck making one trip per day. The "traffic coefficient" is 3.2. The "crushed base equivalent" is 8 inches. Bikeway subgrades should be treated with an approved soil sterilant. Specific surfacing designs for individual projects should be obtained from the Location Engineer. Some typical sections that have been used on various projects are shown in Figure 13.

Finish surfaces must be made as smooth as possible. Most bicycles have no suspension to absorb shocks and ride on tires inflated to pressures averaging 80 pounds per square inch. Particular attention should be paid to smoothing expansion joints, driveways, railroad crossings, and paving joints. Asphalt concrete surfacing shall be box or machine laid rather than being placed by hand. Gravel-surfaced driveways should be paved at the point where the bikeway crosses them to at least five feet beyond the edge of the bikeway on each side (see Figure 14). If the driveway is descending to the bikeway, paving should be extended to ten feet on the high side of the bikeway.

Always avoid the use of exposed base rock next to the bikeway surface. Sod or topsoil shall be specified instead.

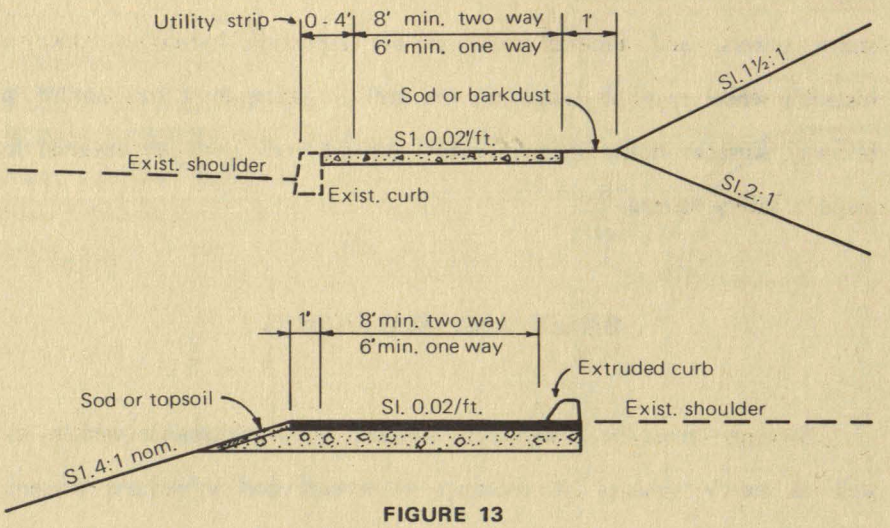
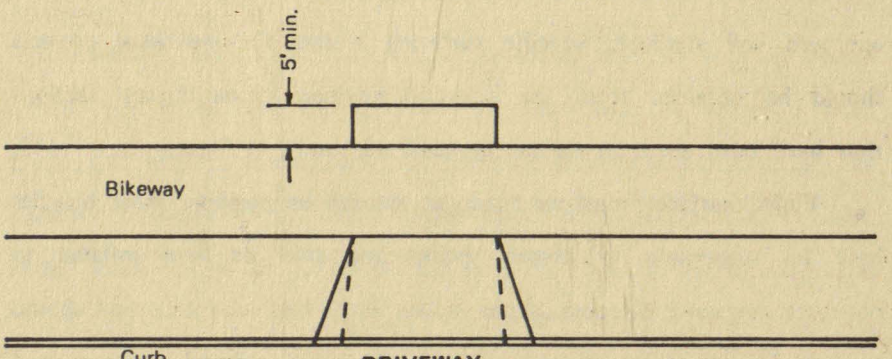
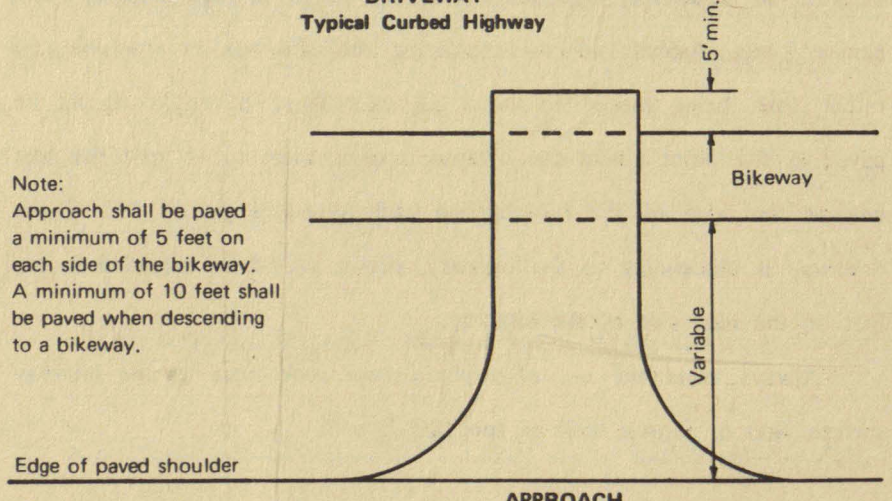


FIGURE 13
Class II Bikeway
Typical Sections



DRIVEWAY
Typical Curbed Highway

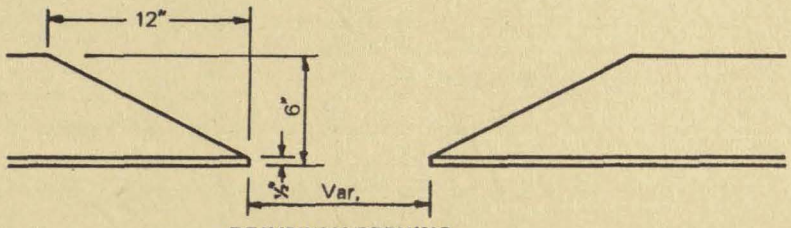


Note:
Approach shall be paved a minimum of 5 feet on each side of the bikeway. A minimum of 10 feet shall be paved when descending to a bikeway.

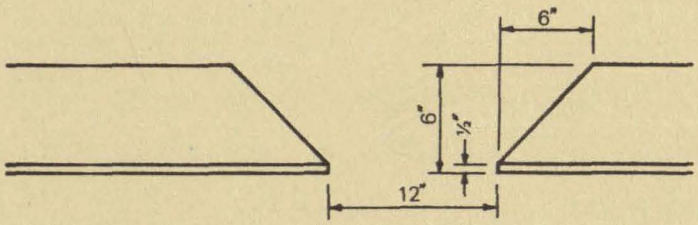
APPROACH
Typical Non-curbed Highway

FIGURE 14
Driveways and Approaches
Plan View

In many suburban areas, a Class II bikeway can be economically constructed by widening one or both shoulders of an existing highway, and by installing "non-mountable" curbs between the highway and the bikeway. These can be modified to allow the mail carrier access to mailboxes where they exist, but approval of the local postal authorities must be obtained for the use of the curb in that case.

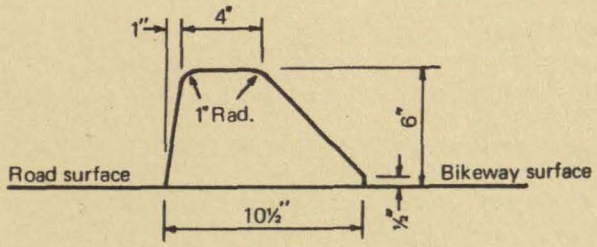


DRIVEWAY OPENING
Elevation



50' C. to C. or as directed

DRAIN OPENING
Elevation



TYPICAL SECTION

FIGURE 18
Bicycle Path Extruded Curb

SIGNING AND SIGNALS

Standard Uniform Traffic Code signs and pavement marking stencils for bikeways that are approved by the Highway Division are to be used. Characteristics of these bikeway signs are shown in Figures 19 through 24. Recommendations for the placement of bikeway signs and pavement markings are shown in Table 2. The principles to be considered in deciding the signing and pavement markings for a particular bikeway are:

1. Adequate signing is necessary at all decision points along the bikeway. These may include:
   a. Signs informing the cyclist of directional changes;
   b. Confirmatory signs to ensure that route direction has been accurately comprehended.
2. Route or guide signing must be provided at regular intervals to ensure that:
   a. Newcomers to the route know that they are traveling on an officially designated bikeway;
   b. Cyclists already on the bikeway, especially in Class III facilities, do not stray from it and lose their way.
3. Warning signs informing motorists that bikes may be encountered, and bicyclists that motor vehicles or pedestrians may be encountered, should be positioned:
   a. Whenever a bikeway crosses a roadway or sidewalk;
   b. When a bikeway either begins or ends;
   c. At any other points where large numbers of bikes may be expected (e.g. parks, schools, recreational facilities).
4. In urban areas, motorist-directed warning signs should be **positioned a minimum of one-half block before bikes may be encountered.**

5. Along Class I bikeways and for all hazardous conditions on Class II or III bikeways for which there are no existing signs, specific bicycle-directed warning signs should be erected. In order to provide sufficient response time, these should be positioned not less than 50 feet in advance of the condition toward which they are directed.

Stenciled warnings on the pavement are recommended at the entrances to bikeways and at stops and other points where bike traffic speeds are slow and a definite risk of confusion exists. Care should be taken in their placement to avoid creating a slippery surface in a critical area.

Signs erected at the side of rural roads shall be at least 7 feet above the roadway edge, measured from bottom of sign. Height to the bottom of secondary sign (arrow) may be 1 foot less than the appropriate height specified above. Sign clutter may detract from any aesthetic values and add to the confusion on the route.

OBR 1-1-24
24 in. x 24 in.

Used at connections of Class I and II bikeways with roadways and at roadway crossings where engineering studies find that they are required. Not generally used on Class III bikeways.

OBR 1-2-24
24 in. x 24 in.

Used at roadway crossings of Class I and II bikeways when the crossing is located where automobiles are controlled by a stop sign. Not generally used on Class III bikeways.

OBR 1-3-18
24 in. x 18 in.

Used at pedestrian crossings on Class I bikeways and at other locations where engineering studies find that they are required.

OBR 5-6-24
24 in. x 24 in
24 in. x 18 in.

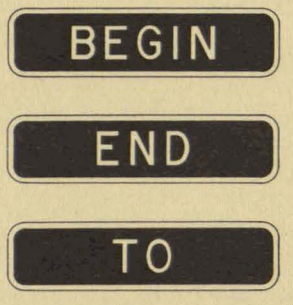
Used along one-way bikeways to prohibit wrong-way usage. Generally required to supplement pavement stencils.

FIGURE 21
Regulatory Signs - continued

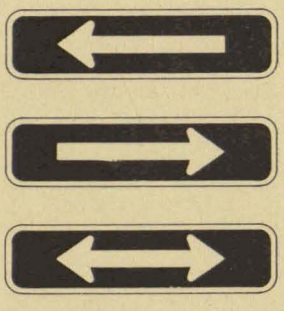
OBD 11-1-18
24 in. x 18 in.

The official marker for bikeways.

Riders For Use With Official Marker
24 in. x 6 in.



To be mounted above the official marker to designate the beginning and ending of the bike route, and to trailblaze to the bikeway.



To be mounted below the official marker to guide cyclists along the bikeway and to trailblaze to the bikeway.

Example destination signs for use at major decision points. The signs should be mounted below the official marker.

FIGURE 19
Guide Signs

TABLE 2

Summary of Bikeway Signing Recommendations			
	CLASS I	**CLASS II**	**CLASS III**
Lateral placement	2 ft. from edge	2 ft. from edge	Roadway criteria
Vertical placement	5 ft.	7 ft.	7 ft.
Positioning before hazards	50 ft.	not less than 50 ft.	not less than 50 ft.
Sign spacing	At all decision points	10-20/mile	10-20/mile
Sign message	Standard	Standard	Standard
Sign illumination	If considerable night usage, must be illuminated	Roadway criteria	Roadway criteria
Sign size: a. Route b. Warning	 Standard May be less than standard	 Standard Standard	 Standard Standard
Overhead signs: Clearance	9½ ft.	9½ ft.	Not recommended
Stencilled warnings- Size and use: a. "BIKE ROUTE" (D11-1)	24 in. x 18 in.	Recommended for sidewalk use only (24 in. x 18 in.)	24 in. x 18 in.
b. Bicycle symbol	3½ ft. x 7 ft.	3½ ft. x 7 ft.	3½ ft. x 7 ft.
c. "BIKE LANE" (lettered)	4 ft. x 4 ft.	4 ft. x 4 ft.	4 ft. x 4 ft.
d. "BIKE ONLY" (lettered)	6 ft. x 31 ft. (Total)	6 ft. x 31 ft. (Total)	—
Additional signs: a. "NO MOTOR VEHICLES" (Wht)	 Rectangular 24 in. x 18 in.	 Rectangular 24 in. x 18 in.	 —
b. "WATCH FOR BIKES" (Yel)	—	Diamond 30 in. x 30 in.	Diamond 30 in. x 30 in.
c. "BEGIN, END BIKE ROUTE" (Grn)	Standard	Standard	Standard

NOTE: — Indicates designation is not recommended.

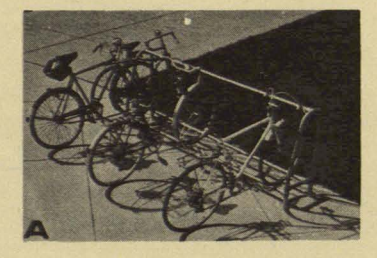
Bicycle Parking Facilities

The overall success of the regional bikeway system will depend not only on the routes, but on amenities such as bicycle parking facilities. These should be located at all major points of bicycle traffic generation such as schools, shopping centers, employment centers, parks, libraries and other public places. Security is a key consideration for all bicycle parking areas. With a substantial increase in bicycle use and a parallel increase in theft, it is imperative that bicycle parking be secure. Parking facilities should be installed in open areas where people are moving about continually and should be equipped with provisions for locking.

The following are examples of various types of bicycle parking equipment. One type of parking facility not illustrated is that with check-in, check-out procedures used in some urban core areas and university communities. This type of parking requires an attendant and an enclosed space. A parking fee is usually charged and the bikes are checked in and out of the enclosure. A facility of this type in Western Oregon would probably require a cover for bicycle protection during inclement weather.

BICYCLE RACKS

Type A: STANDARD



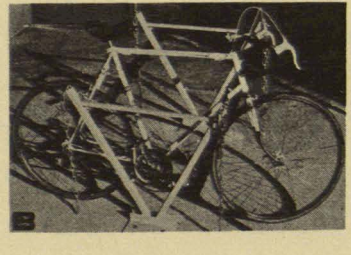
Approximate Cost: $140/12 unit rack

Construction: Standard pipe material

Locking Mechanism: Rider provides own chain and padlock

Security Rating: Low

Type B: V-BAR



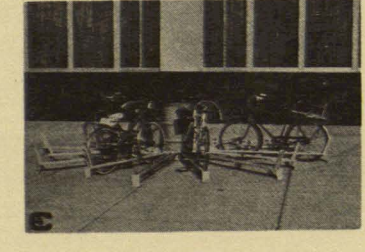
Approximate Cost: $180/12 unit rack

Construction: Heavy gauge material, chain or cable permanently welded to rack

Locking Mechanism: Chain or cable; rider provides padlock

Security Rating: High

Type C: RADIAL



Approximate Cost: $225/12 unit rack

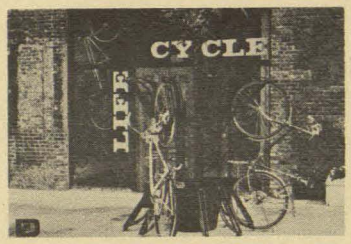
Construction: Heavy gauge material, chain or cable permanently welded to rack

Locking Mechanism: Chain or cable; rider provides padlock

Security Rating: High

Source: The Bicycle - Technical Appendix, Atlanta Regional Commission, 1973

Type D: TREE GUARD



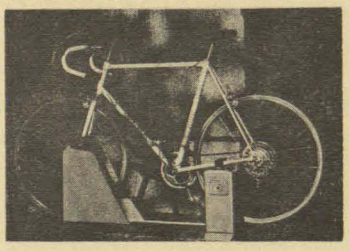
Approximate Cost: $350/12 unit rack

Construction: Heavy gauge material, chain or cable permanently welded to rack

Locking Mechanism: Chain or cable; rider provides padlock

Security Rating: High

Type E: KEY/COIN LOCK



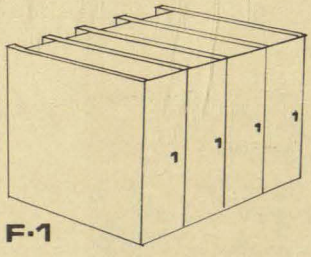
Approximate Cost: $35/unit

Construction: 11 gauge galvanized steel plate, modular design

Locking Mechanism: Key/coin, adjustable rachet locking bar

Security Rating: High

Type F: LOCKER



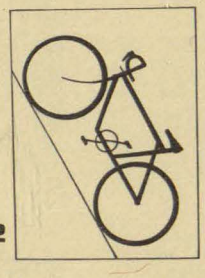
F-1

Approximate Cost: $150/unit

Construction: Standard pipe and standard metal locker doors

Locking Mechanism: Key

Security Rating: Very high



F-2

Source: The Bicycle - Technical Appendix, Atlanta Regional Commission, 1973.

CHAPTER 5

Bikeway Funding and Costs

Getting Bikeways Built

Implementation of specific bicycle route proposals will depend on three key factors: 1) general availability of funds; 2) cost of individual projects; and 3) the extent of citizen demand and support for any particular project. All factors are interrelated and it is often difficult to say which is most important in getting bikeways built. For example, citizen demand and support for a project may create interest in raising or allocating funds to such a project. This may eventually result in a project's construction.

An additional factor is the Oregon Bicycle Bill's requirement that all construction, reconstruction or relocation of streets and highways must include the establishment of bicycle trails and footpaths. This provision could result in a Priority 3 project being implemented prior to a Priority 1 project merely because of necessary road work scheduled for non-bicycle reasons.

While funding may seem no more important than the cost or citizen demand for a project, it is really the primary implementation consideration. No matter how low the cost or high the demand, if funds can't be found no project will be built. The following paragraphs outline examples of funding programs offered by the Federal, State and local governments. It should be noted that the information is intended to serve as a general guide, and that such programs may be subject to change.

Federal Funding

At the present time there are no Federal programs specifically designed to provide funds for the planning and construction of bikeway facilities. Guidelines established under the Federal Aid Highway Act of 1973, authorize for the first time expenditure of Federal Aid Highway Funds for the construction of bikeways and pedestrian walkways outside the normal highway right-of-way along Federal-Aid Highways. This program provides for the use of any Federal Aid Highway apportionment, except the Interstate, for construction of cyclist and pedestrian facilities on a 70/30 matching funds basis. Federal funds previously expended for bikeways and pedestrian facilities limited such construction within the normal highway right-of way and was merely considered as an incidental feature of a larger highway program primarily intended for automobiles. Other possible Federal funding sources for bikeways are listed in the following table:

TABLE II

POTENTIAL FEDERAL FUNDING SOURCES

Administering Agency	Act/Bill	Type of Funding (Amount)	Basis of Bicycle Facility Funding
Department of Interior Bureau of Outdoor Recreation	Land & Water Conservation Fund Act of	50/50 Cost sharing	Must be part of statewide recreation plan; must be sponsored by public agency; priority to urban areas; for planning, acquisition & development; State determines to which projects and in what order money awarded; special consideration to improving environment.
	Federal Water Project Recreation Act (Public Law 89-72)	Joint costs on new projects borne by Federal gov't; separate costs 50/50 cost sharing except in federally managed areas	Necessary facilities on new & old reservoirs; non-federal agency manages project.
	Historic Preservation Program	Up to 50% of cost	Acquisition or development for historic preservation purposes of districts, sites, buildings, structures, objects; preparation of statewide historic preservation surveys & plans; must be in accord with comprehensive statewide historic preservation plan approved by Secretary of the Interior.
	Pending in Congress	50/50 cost sharing	Non-urban recreational development.
Jointly with Dept. of Agriculture	National Trails Systems Act	---	Primarily for land acquisition; possible aid for development & maintenance.
Dept. of Agriculture Farmers Home Administration	Watershed Loans	Loans repayable over periods up to 50 yrs.	May be used to finance recreational developments in or adjacent to reservoirs, lakes, natural streams, shorelines, including minimum facilities needed for public health & safety, access & use; local sponsoring agency; project must be approved by Soil Conservation Service.
Soil Conservation Service	Watershed Portection & Flood Prevention (Small Watershed) Act of 1954	Up to 50% of	Construction, land rights, & basic facilities needed for public health & safety, access & enjoyment of public; recreation & fish & wildlife developments in small watershed projects.
Agricultural Stabilization & Conservation Service	Cropland Adjustment Program (Food & Agriculture Act of 1965)	Compensation for loss of income	Adjustment payments to farmers for conversion of cropland into public benefit uses.
	Green span	Grants	State & local gov'ts for purchasing cropland for recreational, wildlife facilities & open space.
Department of Transportation, Federal Highway Administration	Highway Trust Fund	90/10 cost sharing Interstate System	Must be applied for by State Highway Department in conjunction with Interstate federal aid highway projects.
Bureau of Public Roads	Highway Beautification Act of 1965	---	Focuses attention on better roadside development, the conservation of recreation & natural resources, etc.; designs & constructs roads in park & forest areas.
	Highway Safety Grant (Bicycle Safety Project)	Grant	For education primarily

TABLE II

POTENTIAL FEDERAL FUNDING SOURCES

(CONTINUED)

Administering Agency	Act/Bill	Type of Funding (Amount)	Basis of Bicycle Facility Funding
Department of Housing and Urban Development	Title I of Housing and Community Development Act of 1974	100% Grant	For projects in conjunction with a program for providing suitable living environments principally for persons of low and moderate income.
	Title IV of Housing and Community Development Act of 1974	Grant up to 2/3 of eligible planning costs	Must be element of public facilities or transportation plan.
Department of Defense, U.S. Army Corp of Engineers	Federal Water Project Recreation (PL 89-72)	Cost sharing (½ of separable costs	Non-federal agency must agree to assume ½ of separable costs & all maintenance, operation, replacement, & administration costs; otherwise, only minimum facilities for protection of public health & safety will be provided.
Department of Health, Education & Welfare, Office of Education	Title I, II, IV & V of Elementary & Secondary Education Act of 1965 and Title I of Higher Education Act of 1965	Grant-in-Aid programs	Must be used in association with educational improvement or research depending on which grant applied for.
Department of Labor, Manpower Administration	Neighborhood Youth Corps	Up to 90% of cost of approved projects	Projects which contribute to conservation, development, management of natural resources or recreation area; priority given to high training potential.
	Operation Mainstream & Green Thumb Projects	Up to 90% of cost of approved projects	Improve physical or social environment of local communities (designed to prepare chronically unemployed adults for permanent job); Green Thumb projects are rural and sponsored by the National Farmers' Union.

Source: Adapted from The Bicycle - Technical Appendix, (Atlanta Regional Commission, 1973)

State Funding

The State of Oregon is a prime example of a state committing its financial resources to the construction of bikeway facilities. The legislative mandate for bikeways in Oregon is provided by House Bill 1700, commonly known as the "Bicycle Bill." This 1971 Legislation is thought by many to be one of the best in the nation, and it currently serves as a model for other states. The most significant aspect of this legislation is the provision for funding a continuing bikeway program. The bill authorizes the expenditure of not less than one percent of the State Highway Fund monies received by the State Transportation Commission or by any city or county for the establishment of bicycle trails and footpaths. The bill also requires footpaths and bicycle trails be established wherever a highway, road or street is being constructed, reconstructed or relocated. These funds may also be expended to construct or maintain bikeways and footpaths along other highways, roads or streets not requiring construction or relocation and in parks and recreation areas. House Bill 1700 is

included in Appendix B. Existing and potential state funding sources are listed in the following table:

TABLE III

EXAMPLES OF STATE FUND SOURCES

Type of Funding	*Comments*	*Examples*	*Status*
1% gas tax revenues	*States, cities & counties must spend at least 1% on bicycle facilities; may credit to financial reserve for 10 years*	*Oregon Michigan Washington California*	*passed*
Gas	*On-street marking & signing*	*Illinois*	*passed committee*
Motor License Fund Monies	*Foot & bike trails part of highway system*	*Pennsylvania*	*in committee*
Highway Trust Fund	--- --- ---	*Maryland New York Washington*	*passed*
Highway Department	*Bicycle facilities within highway system*	*Arkansas*	*passed*
Department of Natural Resources Grants	*Acquisition, development and maintenance*	*Alaska*	*passed*
	Authority to buy rights-of-way, right of eminent domain	*Ohio*	*passed*
$100 million Recreation Bond Program	*Usually confined to state parks and forests*	*Michigan*	*in effect*
Special appropriations	*Willamette River Parks Program: 75% acquisition of right-of-way*	*Oregon*	*in effect*
	Administered by Hwy. Dept. ($50,000)	*Arizona*	*approved*
	Administered by Dept. of Natural Resources ($30,000)	*Minnesota*	*approved*
	Administered by Dept. of Trans. ($25,000 planning, $50,000 pilot bicycle trail)	*Georgia*	*approved*
	$10,000 to study needs --- ---	*Iowa Tennessee Wisconsin*	*approved approved approved*
2¢ cigarette Tax	*Two long-distance trails*	*Minnesota*	*approved*
Registration & Licensing	*Potential $2,000,000 to $4,000,000 per bieunium to cities & counties*	*Oregon*	*Proposal by Oregon Advisory Committee on Bicycles to 1975 Legislature*
5% sales tax new bikes & parts	---	*California*	*not passed*
Bike licensing	---	*California*	*not passed*

Source: Adapted from The Bicycle - Technical Appendix, Atlanta Regional Commission, 1973.

Local Funding

It may be advantageous for a local community to use several sources of funding to implement its bikeway programs. In this manner the financial burden is spread over a variety of sources and is not dependent upon a single fund. Several funding alternatives appear to have the most potential at the local level:

1. General Fund Revenues: Where the financial situation of local government permits, monies may be allocated from general-revenue sources for bikeway facilities. This is not a dependable basis for a long-range program, since there is little assurance that such funds will be available from year to year.

2. Continuing Tax Levy: Requires an election for approval, but would provide a fixed amount of money for a specific time period for a specific purpose such as bikeway construction, maintenance and right-of-way acquisition. Assurance of regular annual revenue permits a stronger program than relying on uncertain funds from year to year.

3. General Obligation Bonds: The use of bonds requires an election for approval. Despite interest costs, borrowing may be the best method of raising money when it is needed most. Interest costs may prove to be less costly through time than inflated construction and right-of-way acquisition costs.

4. Revenue Sharing: The demand on funds received through revenue sharing far exceeds the funds available. However, the transportation and recreation aspects of bikeways would merit consideration of this potential funding source.

5. Bicycle License Fee: Estimating revenue from this source may be difficult to determine due to the apparent difficulty in enforcing bicycle registration. Nevertheless, fees collected from newly purchased bicycles will provide assurance that the purchaser has contributed toward the implementation of a bikeway facility. This local option may be affected by a state-wide bicycle registration and licensing proposal now being proposed to the 1975 Legislative Session by the Oregon Adivsory Committee on Bicycles.

The following table summarizes examples of local funding sources:

TABLE IV

EXAMPLES OF LOCAL FUND SOURCES

Type of Funding	Comments	Examples	Status
1% of gas tax	Minimum expenditure	Portland, Oregon	State law
Gas Tax	$40,000 in 1971-72 $17,000 in 1973-74	San Jose, California	in effect
Highway improvement funds	Bicycle facilities considered in all highway improvements	Lakewood, Colorado	recommendation
Transportation funds	Right-of-way acquisition	DuPage County, Illinois	---
Capital improvement budget	$25,000- $56,000	Denver, Colorado	approved
General fund appropriation	$15,000 in 1971-72	San Jose, California	in effect
General obligation bonds	$300,000 earmarked	Denver, Colorado	pending voter approval
Sales tax on bikes & parts	---	Honolulu, Hawaii Fullerton, California	recommendation
Rental concession	---	Fullerton, California	recommendation
Dealer licensing	$10,00/year - used for admin.	St. Paul, Minnesota	in effect
Bike licensing and/or registration	$1.00/year - used for facilities	Portland, Oregon	in effect
	$1.00/year - used for administration	Denver, Colorado	trying to change to $5.00/2 yrs. expected revenue $50,000/yr.
	$1.00/life of bike - used administration	St. Paul, Minnesota	in effect
Bike licensing and/or registration	---	Minniapolis, Minnesota	in effect
	---	Lakewood, Colorado	recommendation
		Fullerton, California	recommendation
		Torrance, California	recommendation
		Honolulu, Hawaii	recommendation
Sale of impound bicycles	Used for administration	St. Paul, Minnesota	in effect
"Citizens for Bikeways" & Dept. of Transit & Traffic	Sharing cost, citizens group has responsibility	Baltimore, Maryland	in effect
Illinois Prairie Path, Inc.	Non-profit organization develops, manages, maintains, Ill. Prairie Path	DuPage County, Illinois	---
"Pollution Probe" (e.g., bicycle rally)	Community organization financed and built bikeway	Scarborough, Ontario	---
Citizen contributions	$15,000 raised, emphasis on safety	Torrance, California	---
		Abington, Pa.	---
		Austin, Texas	---

Source: Adapted from The Bicycle - Technical Appendix, Atlanta Regional Commission, 1973

Bikeway Cost Framework

A variety of factors enter into the construction of a bikeway system. The configuration for a particular segment depends upon the selection of the bikeway class (i.e., Class I, Class II, or Class III), the amount of right-of-way required, the type of construction materials used and the degree of safety for which the bikeway is designed. Each bikeway route will include various combinations of these components.

The following tables contain estimated unit costs for the significant components of a bikeway facility. The first series of tables (beginning on this page) are based on national experience and were adapted from The Bicycle (Atlanta Regional Commission, 1973). They reflect a wide variation in labor and material cost and should, therefore, be used only as a rough guide when selecting combinations of components that might be acceptable or appropriate for a particular local project. The second series of tables (beginning on page 90) are based on the local experience of the City of Portland's Public Works Department as of December, 1973.

Due to continually changing price conditions, caution should be exercised in the use of these tables. Particular attention should be given to the date of the cost estimate as well as the current annual inflation rate for labor and materials.

TABLE V
BIKEWAY COST ESTIMATES
Series I - Based on National Experience

BICYCLE FACILITY COSTS:
PAVEMENT MARKINGS

Item	*Cost*	*Source*
Stenciled pavement markings (paint)	*$0.50/SF*	*Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering, U.C.L.A., April, 1972*
Stenciled pavement markings (thermoplastic)	*$2.00/SF*	*"*
Street message (2 per block)	*$7.00/each*	*The Bikeway Plan, Denver, Colorado, October, 1972*
Remove stenciled pavement markings (paint)	*$0.60/SF*	*Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering, U.C.L.A., April, 1972*
Remove stenciled pavement markings (thermoplastic)	*$1.50/SF*	*"*
Type G one-way clear reflective marker	*$2.00/each*	*"*
Type A non-reflective marker	*$0.75/each*	*"*

Source: Adapted from The Bicycle - Technical Appendix, Atlanta Regional Commission, 1973.

BICYCLE FACILITY COST:
SIGNING

Item	Cost	Number of Signs	Source
"Bikeway" national standard sign including hardware for installation	$10.75 ea.	100	Bikeway and Bike Trail Feasibility Study, Torrance, California, June 1971
Including installation	$22.00 ea.	4/block	Guidelines for a Comprehensive Bicycle Route System, Chicago, March, 1971
"Bikelane" sign	$ 6.50 ea.	40/mile	Preliminary Study of Bicycle Facilities for the City of Port., OR, Oct. 1971
Bicycle Lane Crossing signs	$18.95 ea.	40/mile	"
Bikeway sign (enamel painted) mounted on wooden post	$15.00 ea.	-----	Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering U.C.L.A., April, 1972
Regulatory signs (3' x3' enamel painted sign mounted on wooden post)	$25.00 ea.	-----	"
No parking signs	$250/mile	-----	A Proposed Bikeway System, Fullerton California, July, 1971
Route signing	$300/mile	-----	"
24" x 24" reflective base	$ 7.50 ea.	-----	The Bikeway Plan, Denver, Colorado, October, 1972
Installation	$14.50 ea.	-----	"

Source: Adapted from The Bicycle - Technical Appendix, Atlanta Regional Commission, 1973

BICYCLE FACILITY COSTS:
BRIDGES AND RETAINING WALLS

Item	Cost	Source
Pedestrian overcrossing including ramps 8' width, max. 100' span	$280/LF	Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering, U.C.L.A. 4-72
Pedestrian undercrossing, min. 18' wide x 14' high required for freeways (cost does not include traffic detour)	$1250/LF	"
Cantilevered bikeway attached to existing bridge (10' width inclusing wire mesh railing)	$155/LF	"
Wooden trestle (70 feet long, 12 feet wide)	$11,000	State of Minnesota Highway Dept.
Concret trestle (70 feet long, 12 feet wide)	$16,000	"
4' height retaining wall	$25/LF	Bikeway Planning Criteria and Guidelines, Institute of Transportation & Traffic Engineering, U.C.L.A 4-72
6' height retaining wall	$35/LF	"
8' height retaining wall	$50/LF	"

Source: Adapted from The Bicycle - Technical Appendix, Atlanta Regional Commission, 1973

BICYCLE FACILITY COSTS:
STRIPING

Item	Cost	Source
Single 3" solid white or green line (paint)[1]	$500/mile	Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering, U.C.L.A., April, 1972
Single 3" solid white or green line (thermoplastic)[2]	$2,000/mile	
*Single 4" dashed white lane line (paint)	$500/mile	"
*Single 4" dashed white lane line (thermoplastic)	$2,000/mile	"
Single 5" solid yellow strip	$.025/mile	The Bikeway Plan, Denver, Colorado, October, 1972
*Double 4" solid yellow center line (paint)	$700/mile	Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering, U.C.L.A., April, 1972
*Double 4" solid yellow center line (thermoplastic)	$2,800/mile	"
Crosswalk stripe (12" white thermoplastic)	$1.00/LF	"
Cross Stripe at intersection (12" x 36' , 5 stripes)	$13.68/ intersection	The Bikeway Plan, Denver, Colorado, October, 1972
*Remove traffic stripe (paint)	$0.20/LF	Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering U.C.L.A., April, 1972
*Remove traffic stripe (thermoplastic)	$0.50/LF	"

* These items are for striping or removal of traffic lanes

[1] White stripe is standard, green stripe may be considered for bicycle facility

[2] Use of thermoplastic lines may pose hazards to bicyclist when pavement is wet

Source: Adapted from The Bicycle - Technical Appendix, Atlanta Regional Commission, 1973

BICYCLE FACILITY COSTS:
EXCAVATION, PAVING, AND BASE TREATMENT

		BIKEWAY WIDTH		
Item	Unit Cost	2 Lanes 8 Feet	3 Lanes 12 Feet	4 Lanes 16 Feet
2" A.C. Surface	$8.00/TON	$0.82/LF	$1.23/LF	$1.64/LF
4" Aggregate Base	4.00/CY	0.39/LF	0.59/LF	0.78/LF
Excavation	2.00/CY	0.30/LF	0.45/LF	0.60/LF
Sub-total	--	1.51/LF	2.27/LF	3.02/LF
10% Contingencies	--	0.15/LF	0.23/LF	0.30/LF
TOTAL	--	1.66/LF	2.50/LF	3.32/LF
Minimum Cost per mile	--	$8,800	$13.200	$17,600

Source: Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering, U.C.S.A., April, 1972

BICYCLE FACILITY COSTS:
MODIFICATION OF EXISTING
STREETS, SIGNALS AND LIGHTING

Item	Cost	Source
Curb Cut (5' sidewalk, 2/block)	$482.00/each	The Bikeway Plan, Denver, Col. October, 1972
Construct concrete bikeway ramp (including curb removal, sidewalk removal and roadway excavation):		Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering, U.C.L.A. April 1972
4'width, 4'length, 4" depth	$24.00/each	
6'width, 4'length, 4" depth	$36.00/each	
8'width, 4'length, 4" depth	$48.00/each	
Construct concrete sidewalk (4" depth) Class B concrete at $45,000/CY	$0.55/LF	"
Construct Type A2-8 curb & gutter Class B concrete at $45.00/CY	$3.00/LF	"
Remove concrete curb	$0.60/LF	"
Remove concrete curb and gutter	$1.60/LF	"
Remove concrete sidewalk (4" depth)	$0.50/LF	"
Modify signal heads and controllers	$10,000/ intersection	"
Light standard and conduit utilization of existing street lighting facilities may reduce this item cost	$1000/each	"

Source: Adapted from The Bicycle - Technical Appendix, Atlanta Regional Commission, 1973

BICYCLE FACILITY COSTS:
DRAINAGE AND LANDSCAPING

Item	Cost	Source
Grade ditch excavation (1' wide Vee ditch 2 to 1 side slopes)	$2.40/CY or 0.06/LF	Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering April, 1972
Cross darins (6" Asbestos - cement drain pipe)	$6.00/LF	"
Modify existing catch basin grates (welded cross bars to prevent bicycle sheels from dropping in) Note: Hydraulic design should be considered.	$10.00/Each	"
Plant shrubs to form a screen or barrier - 10 foot on center including a one year maintenance period:		
With irrigation	$4.50 to 6.00/LF	"
Withoug irrigation	$1.50 to 3.00/LF	"
Other landscaping including irrigation	$8,000 to 20,000/Acre	"

BICYCLE FACILITY COSTS:
MAINTENANCE

Item	Cost	Source
Annual maintenance for office highway improvements	10% of initial cost	A Proposed Bikeway System, Fullerton, California, July 1971
Sign maintenance - first 2 or 3 years	$50/mile	"
Debris clean-up from flood (constructed in flood plain 4,000 feet long)	$2,000/year	Bikeways: A New Dimension for San Jose, California, Progress Report I, April, 1972

Source: Adapted from The Bicycle - Technical Appendix, Atlanta Regional Commission, 1973

BICYCLE FACILITY COSTS:
BARRIERS AND FENCES

Item	Cost	Source
Concrete Median Barrier	$12.00/LF	Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering 4-72
Single Metal Beam Barrier	$8.00/LF	"
Cable Barrier (with mesh)	$3.50/LF	"
Cable Barrier (without mesh)	$3.00/LF	"
0.5' Asphalt Dike	$0.70/LF	"
Type B3 Dowelled Curb (Parking Bumper) Class B concrete at $45.00/Cy	$0.50/LF	"
72" Chain Link Fence "CL-6"	$2.50/LF	"
72" Chain Link Fence	$3.50/LF	State of Minnesota Highway Dept.
60" Chain Link Fence	$2.75/LF	"
48" Chain Link Fence	$2.00/LF	Bikeway Planning Criteria and Guidelines, Institute of Transportation and Traffic Engineering 4-72
Wooden Barrier Fence	$10.000/mile	A Proposed Bikeway System, Fullerton, California July, 1971

Source: Adapted from The Bicycle - Technical Appendix, Atlanta Regional Commission, 1973.

TABLE VI
BIKEWAY COST ESTIMATES
Series II - Based on Local Experience

Costs by Item	
Signing	
1. Installation of sign:	$30.00/each
2. Installation of sign post:	$10.00/each
Painting	
2 - 4" Strips or 1 - 8" solid line	$220.00/mile
Intersections (school x-ing type)	$60.00/crossing
Stop lines	$10.00/each
Concrete Widening	
Sidewalk widening (2 ft. wide):	$10,560.00/mile
Curb Ramps	
Standard type No. 116	$100.00/each
Base Gravel & A.C. paving	
8 ft. wide path	$20,000.00/mile
Excavation costs:	$3.50/yd.
Traffic Bumpers	$4.50/bumper
Traffic Buttons	$ .55/button
Reflectors	$ .80/reflector
Concrete Curbing	$1.75/ft.
Asphalt jiggle-bar construction:	$ .20/ft.

Source: City of Portland, Public Works Department. Dec. 1973.

TABLE VI
BIKEWAY COST ESTIMATES
Series II - Based on Local Experience
(continued)

Costs by Class

Class I Bikeways:		
	Avg. Cost:	*$45,000/mile*
	Maintenance Cost:	*$ 4,500/yr./mile*
Examples:	*Terwilliger Bike Route:*	*$65,000/mile*
	Duniway Park Bike Route:	*$22,000/mile*
Class II Bikeways:		
	Avg. Cost:	*$18,000/mile*
	Maintenance Cost:	*$ 6,000/yr./mile*
	Traffic Bumper Separation:	*$15,000/mile*
	Concrete Curbing Separation:	*$28,000/mile*
	Jiggle-bar Separation:	*$12,000/mile*
Class III Bikeways:		
	Signing & Striping Only:	*$ 1,500/mile*
	Maintenance Costs:	*$ 275/yr./mile*
	(Avg.) Sidewalk Bikeway:	*$ 8,000/mile*
	Maintenance Costs:	*$ 150/yr./mile*

Source: City of Portland, Public Works Department., Dec. 1973.

CHAPTER 6

Bicycle Safety & Legislation

Bicycle Safety Education Programs

Regional bikeway planning rests upon the assumption that more people of all ages will develop an interest in bicycling if a system is developed eliminating or reducing the physical hazards associated with bike riding in the stream of motorized traffic. Thus, essential to the success of a regional bikeway system is the implementation of safe bikeways minimizing the potential conflict between bicycles and motor vehicles, bicycles and pedestrians and bicycles with other bicycles. Bicycle safety education programs are a key factor in any regional bikeway system. Accidents will not be reduced and bicycling encouraged unless all bicyclists and motor vehicle operators are familiarized with the rules of the road and begin to obey such rules.

An important step in this direction would be the establishment of safety educational programs for juveniles in the public schools system. Such programs should be designed to teach young bikers of pre-high school age rules of the road such as who has the right-of-way and where, particularly at intersections; the description and purpose of bikeway signs and stencilled pavement markers; the meaning of traffic signs and signals; and the importance of maintaining safe equipment. Most importantly, the programs should repeatedly emphasize essential bicycle safety rules.

The Oregon State Department of Education should be encouraged to provide the leadership and coordination to establish such programs. Bicycle safety education is not yet a mandatory part of the school curriculum and is taught at the discretion of local school boards, principal or individual teachers. Schools generally rely on facilities and information provided by the Oregon State Division of Motor Vehicles for bicycle safety education. The Motor Vehicles Division has published a 27-page manual called Community-School Bicycle Safety Program. This book contains guidelines for setting up a community safety program, an instructional text and sample test papers for Grades one through eight. The Division also maintains a circulating film library that has been designed to address grade school and junior high school students.

Service clubs, parents organizations and other civic organizations should be encouraged to provide safety education programs for adults. These organizations could provide the resources necessary to inform the adult bicyclist as well as the adult motorist of bicycle safety rules and regulations and of fundamental rules pertaining to the operation of a bikeway system.

Another way of "reaching" the adult bicyclist or motorist would be to include a section on bicycle safety in the State of Oregon Driver's Manual. In addition, the possibility of including questions relating to bicycle safety in the Oregon Motor Vehicles Operator's License examinations should be investigated.

The Bicycle Institute of America has five film and filmstrips on bikeways and safety which are circulated on a free loan basis. They include:

The Wonderful World of Bikes: 16 MM, sound-color, 27 minutes (all ages)

Championship Bicycle Safety: 16 MM, sound-color, 13 minutes (primary and secondary grades)

Planning A Community Bike Safety Program: 16 MM, sound-color, 27 minutes, (adults)

How To Improve Your Bicycling: 3 filmstrip units, recorded narration-color, 32 minutes (adults and teenagers)

Boom In Bikeways: 116 frames, filmstrip with 33 1/3 RPM recorded narration-color, 24 minutes

Other films available for rental or sale include:

Bikeways for Better Living: 16 MM, sound-color, 24 minutes, (adults)

Ride On: 16 MM, sound-color, 14 minutes, (primary and junior high grades)

Safe Bicycling: 16 MM, sound-color, 13 minutes, (general)

Bicycle Safety: 16 MM, sound-color, 12 minutes, (primary, elementary, junior, senior high)

Be Safe My Friend: 16 MM, sound-color, 15 minutes, (youngsters)

Other media which may be utilized to make the public aware of the bicycle safety educational program are television, radio, newspaper, magazine and individual mailings. In addition, it is suggested that any bicycle safety educational material developed by the Oregon Department of Transportation or the Oregon Department of Education be made available to all local law enforcement agencies. The agencies can then use the material in their presentation to various groups within their communities. Information regarding bicycle safety,

proper riding technique, safety codes, as well as safety recommendations and precautions are listed in Appendix D.

Bicycle Regulation and Enforcement

Enforcement of bicycle regulations should be a natural extension of safety education programs and public awareness. Without firm and consistent enforcement of all regulations, bicycling will never be taken seriously. Local police departments should be encouraged to give consideration to bicycle law enforcement as a part of the community's total law enforcement program. In many communities local police agencies do not have the staff to provide consistent enforcement of bicycle regulations. Furthermore, agencies with expanded manpower often experience difficulty in enforcing bicycle laws because many offenders are children. Officers may be reluctant to issue a citation to a child for riding against traffic or for riding on a sidewalk in a commercial district because the offense would be a blemish on the child's record and would very likely incur outcries of protest from the child's parents.

Enforcement of bicycle rules have proven to be successful where parents have been informed of the violation. In Fort Collins, Colorado, tickets are issued to young offenders for violations. These tickets are in the form of warning slips which include a note from the chief of police. Parents are required to sign the slips and return them to the police department by mail or in person. If the problem persists, a citation can be issued. This program has met with no parental resistance. In Keokuk, Iowa, parents are subjected to fines of $2 to $5 for their children's violations on bicycles. The results have been very successful. It became apparent that the threat of a fine seemed to effect the parents more than the possibility that their child could be hurt or killed by disobeying the laws.

The City of Tempe, Arizona conducts a bicycle court which meets monthly to consider bicycle citations. The presiding judge presents films and discussion of bicycle rules and may mete out sentences that serve to impress common sense safety rules upon the minds of young offenders. Bicycle violations are not recorded upon a permanent police record until the third offense.

The City of Palo Alto, California suggests a relatively inexpensive procedure of providing additional manpower for bicycling enforcement. A special "Bicycle Patrol is deputized in enforcement of bicycle laws during late afternoon and early evening hours and on weekends, when most bicycle accidents occur. The bicycle patrolmen mount on bicycles that are specially painted and equipped with a flashing red light and audible noise. They could be stationed near schools or

other areas with a history of bicycle accidents and large numbers of safety violations.

Improvements in local laws should be realistic and enforceable. Municipalities in this region with adopted bicycle ordinances should review their ordinances periodically to identify those provisions that are difficult and/or impractical to enforce.

Examples of State and local legislation affecting the use of the bicycle and construciton of bicycle facilities are included in Appendix C to serve as guides for other interested communities.

Bicycle Registration and Licensing

Currently, bicycle registration and licensing in Oregon is administered by individual local jurisdictions. These registration and licensing programs are not strictly enforced nor are the monies derived from them sufficient to construct bicycle facilities. Local registration and licensing programs are also decentralized and lose much of their effectiveness as a deterrent to bicycle theft, as many bicycles are stolen and transported to other cities and states.

The bicycle has been increasing rapidly in popularity as well as value, thus encouraging an alarming increase in bicycle thefts. Little has been done to deal with bicycle thefts and recovery, other than improvements in bicycle parking facilities and locking devices. Few stolen bikes are recovered by their owners, with each year seeing hundreds of bikes sold at public auctions because bike owners could not be identified.

To deter bicycle thefts and aid recovery of stolen bikes and to raise additional bikeway funds for cities and counties, the Oregon Advisory Committee on Bicycles has proposed to the 1975 legislature a statewide bicycle registration and licensing program. A draft of this proposed legislation is included in Appendix E. Similar legislation was proposed during Oregon's 1973 legislative session, but it was not passed because of excessive penalties for non-registration of bikes.

Basically, statewide bicycle licensing and registration would have the following advantages:

1. It would Increase the capability of police agencies to determine quickly whether a bicycle is stolen.

2. Owners of stolen bicycles could be quickly identified and bicycles quickly returned to their owners.

3. Resale of stolen bicycles would be made more difficult because of mandatory registration requiring the sale of all bicycles to be accomplished by a change of registration.

4. Periodic re-registration would provide an opportunity to inspect safety equipment such as brakes and reflectors.

5. It would provide an easy means of identifying a bicycle and/or its owner in case of an accident.

6. It could provide a means of raising revenue for the construction of bikeways.

While there are many advantages to statewide bicycle registration and licensing, there are problems as well. One of the most significant problems is enforcement. Generally, in the past, police departments have not always emphasized compliance with local registration and licensing laws. The success of a statewide registration and licensing effort will rest upon aggressive local enforcement.

Another related problem would be uneven enforcement from jurisdiction to jurisdiction. Lack of enforcement uniformity would perhaps be minimized if, as proposed, revenues from such enforcement would directly benefit each local jurisdiction.

If the statewide registration and licensing proposal before the 1975 Legislature does not pass, local communities would be wise to consider development of regional or local bike registration and licensing programs for the reasons noted above. As an aid to local jurisdictions, examples of bicycle registration and licensing laws from various parts of the country have been included in Appendix F.

APPENDICES

APPENDIX A

THE BICYCLE AND ENERGY CONSUMPTION

By Mikeal L. Roose, State Energy Study
Oregon State Office of Energy Research
and Planning

The major factors which must be considered in energetic analysis of transportation systems are: 1) the energy consumed in operating the transportation system; 2) the energy consumed in construction of the system; and 3) the impact of the transportation system on other energy flows.

The following table lists the BTU/ passenger mile for various means of transportation. Only operating energy is considered. It must be noted that the data on human powered modes do not consider that the human will consume energy while at rest. The figures in parenthesis for the bicycle are calculated from data given by S.S. Wilson in the March, 1973, Scientific American and are adjusted to account for the basal energy consumption by man.

TABLE 2

transportation mode	EI (Energy Intensiveness) BTU/ passenger mile
bicycle	200 (67)
walking	300
commuter rail	700
bus-urban	3,700
auto-urban	8,100

E. Hirst, "Transportation Energy Use and Conservation Potential", Science and Public Affairs 26, 36. Nov. 1973.

We assume that if the public increased use of bicycles, food consumption would also increase to supply the added energy. However, probably half of those who rode bicycles are overweight and would not need to increase food consumption. Thus, on the average, bicycles would increase food consumption by 67/2 or 33 BTU/passenger mile. The American agricultural system consumes about 10 BTU of fuel for each BTU of food it produces. Thus, a shift to bicycles demands about 330 BTU/passenger miles.

The EI for urban buses is calculated assuming current load factors (20%). At 100% load, urban buses would consume 670 BTU/PM.

Bikeways constructed of 2-inch asphalt on a 4-inch gravel base, 8 feet wide require 1.1×10^9 BTU/mile of materials. Fuel required for construction is estimated at 2% of total cost

$1,000/mile or about .42 x 10^9 BTU/mile. The total energy for construction is thus about 1.5 x 10^9 BTU/mile.

Construction of bicycles vs. auto

The modern bicycle is constructed mostly of forged alloy steel. Other materials such as magnesium are used in expensive bicycles, but we will not consider these beyond pointing out that magnesium requires three to four times as much energy to produce as alloy steel. Assuming the bicycle weighs 30 pounds, most of which is forged alloy steel, we find that the materials require .015 tons x 78 x 10^6 BTU/ton - 1.17 x 10^6 BTU.

Other components such as tires, the seat, brakes, etc. contribute relatively little to the total energy cost. Since the manufacture consists mostly of assembly, little additional energy is required. The total estimated cost is 1.2 x 10^6 BTU.

The energy cost of an automobile is calculated by Barry and Fels at 127 x 10^6 BTU. (Barry and Fels, The Production and Consumption of Automobiles, 1972). A typical bicycle, thus, requires only about 1% of the energy used to manufacture an automobile.

The average price of operating an auto in urban areas is calculated as 9.6 cents/PM by E. Hirst and R. Herendeen. Urban bus transportation costs 8.3 cents/PM. (These costs have probably increased since the study due to increased fuel costs, but not substantially.)

For comparison, the private costs of operating a bicycle are calculated below. We assume a bicycle costs $120 and has a lifespan of eight years, used 100 miles/month.

100 miles/month x 12 months x eight years = 9,600 miles. The yearly costs of repairs and maintenance is about $20 or $160 over the life of the cycle. The cost of food is 18 cents/1000 BTU or 1.2 cents/PM. Assuming only half the riders need increase food consumption, the average cost drops to .6 cents/PM for food. The total cost of bicycle transportatin is calculated as:

$$\frac{(\$120.00 + 160.00) \times 100}{9600 \text{ miles}} + .6¢/PM = 3.5¢/PM$$

Summary:

Table 3 below summarizes the energy and cost considerations for bikeways as opposed to urban bus, auto, or rail mass transit

systems. Construction energy and costs are not considered, but are generally only 10% of operating expenses.

TABLE 3

Mode	EI.	Cost (¢/PM)
walking	167	-
bicycle	330	3.5
commuter rail	700	-
urban bus	3700	8.3
urban auto	8100	9.6-11

APPENDIX B

FOOTPATH AND BICYCLE TRAIL
FUNDING LEGISLATION

STATE OF OREGON

OREGON LAWS 1971
CHAPTER 376

AN ACT

Relating to ways for public travel; creating new provisions; and amending ORS 366.515, 366.525 and 366.790.

Be It Enacted by the People of the State of Oregon:

SECTION 1. Section 2 of this Act is added to and made a part of ORS Chapter 366.

SECTION 2. (1) Out of the funds received by the commission or by any county or city from the State Highway Fund reasonable amounts shall be expended as necessary for the establishment of footpaths and bicycle trails. Footpaths and bicycle trails shall be established 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 such footpaths and trails and to establish 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 probably 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 commission 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 be expended for the purposes required or permitted by this section.

(4) For the purposes of this chapter, the establishment of paths and trails and the expenditure of funds as authorized by this section are for highway, road and street purposes. The commission shall, when requested, provide technical assistance and advice to cities and counties in carrying out the purposes of this section. The division shall recommend construction standards for footpaths and bicycle trails. The division shall, in the manner prescribed for marking highway under ORS 483.040, provide a uniform system of signing footpaths and bicycle trails which shall apply to paths and trails under the jurisdiction of the commission and cities and counties. The commission 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.

SECTION 3. ORS 366.515 is amended to read:

366.515.(1) The highway fund shall be expended under the jurisdiction of the commission.

(2) Except as provided in ORS 367.236 and 366.735, the commission shall set aside from the highway fund, in the following order:

(a) An amount sufficient for the salaries and expenses of the highway department.

(b) A sufficient amount to cover the cost of operating and maintaining state highways which have been constructed or improved.

(c) Sufficient funds to meet the Federal Government appropriation and requirements of sections 6 and 8 of

the Act of July 11, 1916, 39 Stat. 355, entitled "An Act to provide that the United States shall aid the states in the construction of rural post roads and for other purposes", or any federal appropriation that may be provided.

(d) The remainder shall be used for any of the purposes authorized by laws.

(3) All the highway fund not otherwise specifically applied shall be expended by the commission in its discretion, except as required by section 2 of this 1971 Act, on the construction, maintenance, betterment or pavement of roads and highways within the state.

SECTION 4. ORS 366.525 is amended to read:

366.525. There shall be and hereby are appropriated out of the highway fund annually such sums of money as will equal 20 percent of all moneys credited to the State Highway Fund by the State Treasurer between July 1 of any year and June 30 of the following year and which have accrued from funds transferred to the highway fund by the State Treasurer under ORS 481.950, paragraph (b) of subsection (2) of ORS 484.250 and ORS 767.635. The appropriation shall be distributed among the several counties for the purposes (now) provided by law.

SECTION 5. ORS 366.790 is amended to read:

366.790. Money paid to cities under ORS 366.785 to 366.820 shall be used only for the purposes stated in section 3, Article IX of the Oregon Constitution and the statutes enacted pursuant thereto including section 2 of this 1971 Act.

Approved by the Govenor June 11, 1971.

Filed in the office of Secretary of State June 11, 1971.

STATE OF WASHINGTON

WASHINGTON LAW
CHAPTER 130

(House Bill No. 1060)

HIGHWAYS - -

CREATION, PRESERVATION, REESTABLISHMENT
OF RECREATIONAL TRAILS AND PATHS

AN ACT Relating to public highways: and creating new sections.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

NEW SECTION. Section 1. (1) No limited access highway shall be constructed that will result in the severance or destruction of an exisiting recreational trail of substantial usage for pedestrians, equestrians or bicyclists unless an alternative recreational trail, satisfactory to the authority having jurisdiction over the trail being severed or destroyed, either exists or is is reestablished at the time the limited access highway is constructed. If a proposed limited access highway will sever a planned recreational trail which is part of a comprehensive plan for trails adopted by a state or local governmental authority, and no alternative route for the planned trail exists which is satisfactory to the authority which adopted the comprehensive plan for trails, the state or local agnecy proposing to construct the limited access highway shall design the facility and acquire sufficient right of way to accommodate future construction of the portion of the trail which will properly lie within the highway right of way. Thereafter when such trail is developed and constructed by the authority having jurisdiction over the trail, the state or local agency which constructed the limited access highway shall develop and construct the portion of such trail lying within the right of way of the limited access highway.

(2) Where a highway other than a limited access highway crosses a recreational trail of substantial usage for pedestrians, equestrians, or bicyclists, signing sufficient to insure safety shall be provided.

(3) Where the construction or reconstruction of a highway other than a limited access highway would destroy the usefulness of an existing recreational trail of substantial usage for pedestrians, equestrians, or bicyclists or of a planned recreational trail for pedestrians, equestrians, or bicyclists incorporated into the comprehensive plans for trails of the state or any of its political subdivisions, replacement land, space, or facilities shall be provided where such recreational trails exist at the time of taking, reconstruction of said recreational trails shall be undertaken.

NEW SECTION. Sec. 2. Facilities for pedestrians, equestrians, or bicyclists shall be incorporated into the design of highways and freeways along corridors where such facilities do not conform to the comprehensive plans of public agencies for the development of such facilities, will not duplicate existing or proposed routes, and that safety to both motorists and pedestrians, equestrians, and bicyclists would be enhanced by the segregation of traffic.

In planning and design of all highways, every effort shall be made consistent with safety to promote joint usage of rights of way for trails and paths in accordance with the comprehensive plans of public agencies.

Passed the House May 3, 1971.

Passed the Senate April 30, 1971.

Approved by the Governor May 18. 1971.

Filed in Office of Secretary of State May 20, 1971.

APPENDIX C

EXAMPLES OF OTHER STATE AND LOCAL LEGISLATION AFFECTING BICYCLE USE AND FACILITIES

OREGON LAW 1973
CHAPTER 480

Defines bicycles; applies traffic laws to bicycles and establishes minimum equipment standards (HB 2644).

AN ACT [HB 2644]

Relating to vehicles, including but not limited to bicycles; creating new provisions; and amending ORS 483.002 and 483.404.

Be It Enacted by the People of the State of Oregon:

SECTION 1. ORS 483.002 is amended to read:

483.002. As used in this chapter, except where the context otherwise requires:

(1) "Authorized emergency vehicle" means vehicles of the fire department or fire patrol, police vehicles, emergency vehicles of municipal departments or public service corporations and ambulances while being used for emergency purposes and displaying the required lights and sounding a siren or other audible warning.

(2) "Axle" means any structure or structures, whether in one or more segments, of any vehicle, supported by wheels and on which the wheels rotate, so spaced longitudinally that the centers thereof are included between two vertical parallel transverse planes 40 inches apart.

(3) "Business district' means the territory contiguous to a highway when 50 percent or more of the frontage thereon for a distance of 600 feet or more on one side, or 300 feet or more on both sides, is occupied by buildings used for business.

(4) "Bus trailer" means any trailer designed or used for carrying human beings.

(5) "Bicycle" means every device propelled by human power upon which any person may ride, having two tandem wheels either of which is more than 14 inches in diameter, or having three wheels, all of which are more than 14 inches in diameter.

(6) "Bicycle lane" means that part of the highway, adjacent to the roadway, designated by official signs or markings for use by persons riding bicycles.

(7) "Bicycle path" means a public way maintained for exclusive use by persons riding bicycles and designated as such by official signs or markings.

SECTION 2. ORS 483.404 is amended to read:

483.404. (1) Every motor vehicle other than a motorcycle shall be equipped with at least two head lamps, at least one on each side of the front of the vehicle.

(2) Every motorcycle shall be equipped with at least one and not more than two head lamps.

(3) When a bicycle is in use at nighttime the bicycle or its rider shall be equipped with a lamp exhibiting a white light visible from a distance of at least 500 feet to the front of such bicycle, and a red reflector of such size or characteristics and so mounted as to be visible from all distances from 100 feet to 600 feet to the rear when directly in front of lawful lower beams of head lamps on a motor vehicle. A red light visible from a distance of 500 feet to the rear may be used in addition to the rear reflector.

(4) Every bicycle shall be equipped with a brake which will enable the operator to make the braked wheels skid on dry, level, clean pavement.

SECTION 3. Sections 4 to 12 of this Act are added to and made a part of ORS chapter 483.

SECTION 4. The parent of any child and the guardian of any ward shall not authorize or knowingly permit any such child or ward to violate the provisions of ORS 483.404 or sections 4 to 12 of this 1973 Act.

SECTION 5. The regulations in this chapter applicable to bicycles shall apply whenever a bicycle is operated upon any highway, bicycle lane or bicycle path.

SECTION 6. (1) A person propelling a bicycle shall not ride other than upon or astride a permanent and regular seat attached thereto.

(2) No bicycle shall be used to carry more persons at one time than the number for which it is designed and equipped.

SECTION 7. No person riding upon any bicycle, coaster, roller skates, sled or toy vehicle shall attach the same or himself to any vehicle upon a roadway.

SECTION 8. (1) Every person operating a bicycle upon a roadway shall ride as near to the right side of the roadway as practicable, except when the highway is restricted to one-way traffic, and shall exercise due care when passing a standing vehicle or one proceeding in the same direction.

(2) Except as provided in subsection (3) of this section, persons riding bicycles upon a roadway shall not ride more than two abreast.

(3) Upon roadways where the designated speed exceeds 25 miles per hour, persons riding bicycles shall ride in single file.

(4) Wherever a bicycle lane has been provided adjacent to a roadway, bicycle riders shall use that lane and shall not use the roadway.

SECTION 9. No person operating a bicycle shall carry any package, bundle or article which prevents the driver from keeping at least one hand upon the handlebars and having full control at all times.

SECTION 10. No driver of a vehicle shall drive upon a bicycle lane except when passing another vehicle on the right as provided in paragraph (a) of subsection (3) of ORS 483.310 and until he has first ascertained that such movement can be made with safety. The driver of a vehicle shall give right of way to bicycles being operated upon the bicycle lane.

SECTION 11. No driver of a vehicle shall drive or park upon a bicycle path.

SECTION 12. (1) Any person operating a bicycle upon a sidewalk shall give an audible warning before overtaking and passing a pedestrian and shall yield the right of way to all pedestrians on the sidewalk.

(2) No person shall operate a bicycle on a sidewalk in a careless manner that endangers or would be likely to endanger any person or property.

SAMPLE MUNICIPAL BICYCLE ORDINANCE

VILLAGE OF YELLOW SPRINGS, OHIO

ORDINANCE NUMBER 72-11

Ordinance repealing chapter 373 - bicycles and motorcycles of title nine of part three - traffic code of the codified ordinances of the Village of Yellow Springs, Ohio, and re-enacting in lieu thereof chapter 373 - bicycles - of title nine of part three of the traffic code of the codified ordinances of the Village of Yellow Springs, Ohio, by providing for the regulation of the use of bicycles within the village on streets, sidewalks, bicycle paths, and multi-use paths.

THE COUNCIL OF THE VILLAGE OF YELLOW SPRINGS, OHIO, HEREBY ORDAINS:

Section 1. That Chapter 373 - Bicycles and Motorcycles - of Title Nine of Part Three - Traffic Code of the Codified Ordinances of the Village of Yellow Springs, Ohio, is hereby repealed and in lieu thereof Chapter 373 - Bicycles - of Title Nine of Part Three of the Traffic Code of the Codified Ordinances of the Village of Yellow Springs, Ohio, is hereby enacted to read as follows.

Section 2. That this Ordinance shall take effect and be in force from and after the earliest period allowed by law.

Passed: June 5, 1972

Effective: July 5, 1972

/s/ Wilson H. Bent

President of Council

Attest:
/s/ Hilda M. Rahn

Clerk of Council

Chapter 373

Bicycles

373.01 Definitions

(a) "Sidewalk" - That portion of the street closest to the edge of the street right-of-way for pedestrian use, generally paralleling but separate from the motor vehicular traveled portion of the street right-of-way and usually constructed of concrete and white in color.

(b) "Bicycle Path" - That portion of the street right-of-way for bicycle use, generally paralleling but separate from the motor vehicular traveled portion of the street right-of-way and usually constructed of asphaltic concrete and black in color.

(c) "Multi-Use Path" - That portion of the street right-of-way, designated by Council for shared use of pedestrians and bicycles, generally paralleling but separate from the motor vehicular traveled portion of the street right-of-way and usually constructed of asphaltic concrete and black in color.

(d) "Bicycle" - A wheeled vehicle propelled by pedals and operated by foot power.

(e) "Motor Bicycle" - A vehicle similar to a bicycle, with a motor as its primary source of power propulsion.

(f) "Marked Bicycle Crossing" - The extension of a bicycle path or multi-use path through an intersection or across a street and indicated on the street surface by approved pavement parkings and by approved warning signs.

373.02 Use of Sidewalks

(a) Sidewalks are primarily for the use of pedestrians, and pedestrians shall have the right of way thereon.

(b) The riding of bicycles on sidewalks where there is no bicycle path on the same side of the street shall be permissable except as hereinafter prohibited, but subject to the right of way of pedestrians.

(c) The parking of bicycles on sidewalks except in areas specifically set aside therefor and the parking of them in an unorderly manner shall be prohibited.

(d) The riding of bicycles on sidewalks shall be prohibited when:

(1) A bicycle path exists on the same side of the street, or

(2) In the following "Downtown business areas," defined as and including the following streets:

(a) Xenia Avenue from Limestone Street to Corry Street,

(b) Short Street from Walnut Street to Xenia Avenue,

(c) Glen Street from Xenia Avenue to alley,

(d) Corry Street from Dayton Street to alley,

(e) Dayton Street from Walnut Street to Corry Street.

373.03 Bicycle Paths

(a) Bicycle paths are for the exclusive use of bicycles which shall have the right of way thereon but shall be operated with due care towards other users thereof.

(b) Wherever a bicycle path has been provided adjacent to and to the right of the motor vehicular traveled portion of the street, bicycle riders shall use such path and shall not use the street or sidewalk.

(c) The parking of bicycles on a bicycle path except in areas specifically set aside therefor and parking them in an unorderly manner shall be prohibited.

(d) Where a bicycle path and/or a multi-use path exists on both sides of the street, the operator of a bicycle shall use the path on his right side of the street right-of-way.

373.04 Multi-Use Path

(a) The multi-use path is for the use of pedestrians and bicycles alike, each exercising due regard for the other, but with the pedestrians having the right of way.

(b) Wherever a multi-use path has been provided adjacent to and to the right of the motor vehicular traveled portion of the street, bicycle riders shall use such path and shall not use the street.

(c) The parking of bicycles on a multi-use path except in areas specifically set aside therefor and parking then in an unorderly manner shall be prohibited.

(d) Where a bicycle path and/or a multi-use path exists on both sides of the street, the operator shall use the path on his right side of the street right-of-way.

373.05 Motorized Vehicles

Motorized vehicles shall be prohibited on sidewalks, bicycle paths, and multi-use paths, excepting those vehicles being used for snow removal or maintenance work thereon.

373.06 Bicycles - Manner of Operation

(a) No operator of a bicycle within the motor vehicular traveled portion of the street right-of-way shall violate any provision of the Traffic Code applicable to the operator of motor vehicles, except those provisions as by their nature would have no application to bicycles.

(b) Bicycles shall be operated as closely as possible to the right side of the motor vehicular traveled portion of the street, the sidewalk, the bicycle path, or the multi-use path.

(c) No person shall operate a bicycle which is not equipped with an adequate and operable brake and an operable bell or other soft toned warning device capable of giving an audible warning signal, except that no bicycle shall be equipped with nor shall any person use upon a bicycle a siren or whistle.

(d) No person shall operate or park a bicycle upon any street, sidewalk, bicycle path, or multi-use path during the period beginning thirty (30) minutes after sunset and ending thirty (30) minutes before sunrise, or whenever by reason of fog or otherwise visibility is rendered difficult, unless such bicycle is equipped with a headlight displaying a beam of white light in the direction in which the bicycle is heading or proceeding, clearly visible at a distance of not less than 200 feet, which headlight shall be firmly attached to the bicycle and properly lighted, and also a red tail light or reflector displaying a red light or reflection clearly visible in the rear of the bicycle, and attached thereto, at a distance of at least 200 feet. However, no light other than a red light or reflector on the rear of the bicycle shall be required when such a bicycle is parked.

(e) (1) Riding bicycles more than two abreast is prohibited.

(2) Riding bicycles two abreast on a sidewalk or multi-use path is prohibited.

(3) Riding bicycles two abreast on a bicycle path or in the motor vehicular traveled portion of the street is permitted unless such interferes with other traffic.

(f) No person shall while riding a bicycle on a public right-of-way engage in trick riding or acrobatics of any kind or operate such bicycle without maintaining full control.

(g) Before stopping, turning, decreasing speed, or changing the course of any bicycle, the operator thereof shall first determine that any such movement can be made in safety, and then use the following hand signals to give notice of intention:

(1) right turn - hold left arm in upward vertical position

(2) left turn - hold left arm in horizontal position

(3) slow or stop - hold left arm extended in downward direction.

(h) The operator of a bicycle shall at all times operate such bicycle with due regard to his or her own safety and the safety of others.

(i) The operator of a bicycle shall yield the right of way to pedestrians within crosswalks.

(j) No bicycle shall start or pull away from a curb while another vehicle is passing abreast of such bicycle.

(k) The operator of a bicycle shall give a timely and audible signal when overtaking a pedestrian and shall pass to the left. Cyclists riding abreast shall pass pedestrians to the left and in single file after giving audible signal.

(l) No more than one person shall ride upon a bicycle unless such bicycle is designed and constructed to be ridden by the number of person conveyed.

(m) No person traveling upon any bicycle shall cling to or attach himself or his bicycle to any other bicycle or vehicle, moving or stationary, upon a street.

(n) No operator of any bicycle shall ride upon other than the permanent and regular seat attached thereto, or

carry any other person upon the operator's seat, package carrier, handle bar, frame, or fenders of such bicycle, and no person shall so ride upon any bicycle, except than a baby seat used for its designed purpose shall be permitted. Only children under seven (7) years of age may be carried on a bicycle on such a baby seat and only by person sixteen (16) years of age or older, with a special seat for the passenger and wheel covers or other devices to prevent the passenger's feet from getting into the spokes.

(o) No person operating a bicycle shall carry any passenger, package, bundle, or other article which prevents the operator from maintaining full control, or which interferes with or obstructs the forward view of the operator of the bicycle.

(p) No person shall operate or park a bicycle in such a manner as to unduly interfere with the safety or movement of any vehicular or pedestrian traffic.

373.07 Right-of-Way

(a) An operator of a bicycle in a bicycle path or multi-use path shall stop at each stop sign painted on or mounted adjacent to the path.

(b) An operator of a bicycle on a bicycle path or on a multi-use path shall obey any traffic control signal controlling an intersection of the street adjacent to the path with a street crossing the bicycle path or multi-use path.

(c) A motorist turning right or left from the (motor vehicular) traveled portion of the street across a bicycle path, multi-use path, or sidewalk shall yield the right-of-way to bicycles lawfully being operated thereon.

(d) Motorists shall yield the right-of-way to bicycles in crosswalks or in marked bicycle crossings.

373.08 Signs

The Village Manager shall cause to be erected such signs and shall cause to be placed such pavement markings as are necessary and as authorized by Council to control bicycle traffic within the Village in accordance with the regulations as prescribed by this Chapter.

373.09 Bicycle Registration

(a) No person a resident, permanent or transient, of the Village of Yellow Springs shall ride or operate a bicycle upon the public right-of-way of the Village unless such bicycle has been registered by the owner thereof and licensed as hereinafter provided.

(b) Application for bicycle registration shall be made by the owner of a bicycle to the Director of Public Safety upon forms provided by him, which application shall contain the name, age, and address of the applicant, the make, type, color, serial number, and other such identification characteristics of the bicycle, and such other information as the Director may require. Each application for registration shall be accompanied by a registration fee of $0.50.

(c) Upon proper application made therefor and upon payment of the fee, the Director shall issue to the owner of such bicycle a registration card, plate, and/or license of such form and design as approved by him and serially numbered, a certificate of registration to correspond with the said registration card, plate, and/or license, and a copy of the Bicycle Chapter of the Codified Ordinances of the Village of Yellow Springs.

(d) Said registration shall be non-transferrable and shall remain in full force and effect until the ownership of such bicycle is transferred or the bicycle abandoned by the owner of record.

(e) It shall be the duty of every person who sells or transfers ownership of any registered bicycle to report such sale or transfer within 48 hours to the Director, giving the name and address of the person to whom sold or transferred, together with a description of the bicycle and its serial number or other identifying mark, and its registration number.

373.10 Destruction of bicycles or Identifying Marks

No person shall willfully or maliciously remove, mutilate, or alter the serial number, registration certificate, card, plate or license required herein, or other identifying mark, nor willfully or maliciously remove, mutilate, or alter components of a bicycle of another.

373.11 Impounding Procedure

(a) Whenever any bicycle is impounded under provisions of this Chapter, it shall be surrendered at the expiration of the impoundment period to the owner of record and without charge for storage.

(b) Whenever any bicycle is found abandoned, it shall be immediately impounded.

(c) If a bicycle impounded under any provisions of this Chapter is not reclaimed by the owner of record within six (6) months, such bicycle shall be sold at public auction after publication of a notice of the sale at least ten (10) days prior to the date of the sale. Sale proceeds shall be deposited to the General Fund of the Village of Yellow Springs.

(d) A complete record of each impoundment of a bicycle shall be kept in the office of the Director of Public Safety.

373.99 Penalties

(a) Any person under the age of 18 years who violates any of the provisions of this Chapter shall for the first offense be reprimanded by the witnessing Public Safety Officer at the time of the violation, and in writing by the Director of Public Safety addressed to the parents or guardian of the offender, stating the nature of the violation, a warning that repetition of the violation, or any other violation, should be prevented or impoundment of the bicycle for a period of ten (10) days could result, and enclosing a copy of this Chapter. The witnessing officer in his discretion may impound the bicycle immediately at the time of the violation. A violation of this Chapter by any person under the age of 18 years shall not be considered a criminal offense and shall not be a matter of a court record.

(b) Any person 18 years of age or older violating any provision of this Chapter may be found guilty of a misdemeanor by the Court and fined not to exceed $50.00.

MESA, ARIZONA
BICYCLE ORDINANCE
CHAPTER 1
BICYCLES

SECTION:

10-1-1: DEFINITIONS: For the purpose of this Chapter a bicycle is defined as any two-wheeled vehicle, having a tandem arrangement of the wheels, and having cranks, levers or pedals or its propulsion by the feet.

The term "owner" shall mean any person who holds legal title of a bicycle or if the bicycle is the subject of a lease or an agreement for the conditional sale thereof with the right of purchase upon performance of the conditions stated in the agreement and with an immediate right of possession vested in the conditional vendee or lessee, or if mortgagor of a vehicle is entitled to possession, then such lessee, conditional vendee or mortgagor shall be deemed the owner.

10-1-2: REGISTRATION OF BICYCLES: Every owner of a bicycle before the same shall be operated on any of the public thoroughfares of the Municipality, shall apply to the office of the Chief of Police for the registration thereof.

10-1-3: APPLICATION FOR REGISTRATION: Application for registration shall be made by the owner of the bicycle upon a form which shall be furnished by the Police Department. The form shall be signed by the owner, contain his residence address, his physical description, a brief description of the bicycle to be registered, the make of the bicycle and its number and whether new or used. Upon the registration of a new or used bicycle, the date of sale by the dealer or person selling to the owner, and such other information as shall be required, shall be given. When the bicycle is of special construction or is reconstructed, such facts shall be stated in the application.

10-1-4: RECORDS: The Police Department shall file such application and when satisfied as to the genuineness and regularity thereof, and that the applicant is entitled thereto, shall register the bicycle described in said application and the owner thereof in books or on index cards as the Chief of Police may provide.

10-1-5: CERTIFICATE OF REGISTRATION: The Police Department, upon registering a bicycle, and upon the payment of the registration fee as herein provided, shall issue to the owner a certificate of registration, which shall contain on the face thereof (1) the date issued, (2) the license number assigned to the bicycle and owner, and (3) the name and address of the owner. The certificate of registration shall contain upon the reverse side thereof, a form of endorsement of notice to the Police Department of any transfer of the bicycle. The owner, upon receiving the registration card, shall sign his name with pen and ink in the space provided upon such card and it shall at all times be subject to inspection by any peace officer upon demand.

10-1-6: NUMBER PLATES: The Police Department shall furnish to every owner whose bicycle shall be properly registered, a number plate or plates, which shall have displayed upon it or them, the license number assigned to the bicycle and to the owner thereof, which said plate or plates, and the letters or numerals thereon, shall be of a size to be designated by the Chief of Police. The Chief of Police shall require the return to the Police Department of all number plates upon termination of the lawful use thereof.

10-1-7: NUMBER PLATES; HOW ATTACHED: The number plate or plates shall at all times be attached permanently to the frame of the bicycle in such a place as may be designated by the Chief of Police. All license plates shall be maintained so as to be clearly legible.

10-1-8: TERMS OF REGISTRATION: All bicycle registrations shall be for the full life of the bicycle registered, shall be appurtenant to the specific bicycle for which issued, and no other, and may not be transferred to or used on any other bicycle.

10-1-9: TRANSFER OF REGISTRATION: When the owner of a registered bicycle transfers or assigns his ownership or interest thereto, or when his ownership or interest is transferred by legal proceedings, the transferee, before operating or permitting the operation of such bicycle, shall first apply for, and obtain a certificate of transfer of registration. Upon a transfer being made, the holder of the certificate of registration shall endorse on the back thereof such assignment, and deliver same to the purchaser, or transferee at the time of delivery of the bicycle.

The purchaser or transferee shall forthwith present such certificate to the Chief of Police accompanied by the required fee, whereupon a new certificate of registration shall be issued to the assignee. Any person owning a bicycle may upon furnishing satisfactory proof to the Chief of Police of such ownership, obtain a certificate of registration for said bicycle, regardless of whether a certificate of registration has ever been issued previously. If the Chief of Police shall at any time determine that an applicant for a certificate of registration is not entitled thereto, he may refuse to issue same, or to register such bicycle, and he may after notice of hearing, for a like reason revoke a registration already acquired or revoke any outstanding certificate of registration. Such notice, herein mentioned, shall be served in person or by registered mail.

10-1-10: MANNER OF NUMBERING BICYCLE: Contemporaneously with delivery of certificate of registration, there shall be placed upon the bicycle to be registered, its registration and license number in places to be designated by the Chief of Police.

10-1-11: LOST PLATES OR REGISTRATION CERTIFICATE: In the event any plate or certificate of registration is lost, destroyed or so mutilated as not to be legible, the owner thereof shall immediately make

application to the Chief of Police for a duplicate number plate or certificate of registration, and same shall be furnished upon satisfactory proof to the Police Department of the ownership of said bicycle. (Ord. No. 227; 10-19-1948)

10-1-12: FEES: The following fees shall be paid:

For each original certificate of registration with plate of plates, one dollar ($1.00),

For issuing duplicate certificate of registration with plate or plates, one dollar ($1.00),

For transferring a certificate of registration, fifty cents (50¢).
(Ord. No. 357/ 1-19-1959)

10-1-13: DATE OF REGISTERING BICYCLE: Before January 1 of each year all bicycles must be registered in compliance with this Chapter, and all persons becoming the owners of new or rebuilt bicycles must immediately after acquiring such ownership, comply with the provisions hereof.

10-1-14: RENTAL AGENCIES: A rental agency shall not rent or offer any bicycle for rent unless the bicycle is licensed and a license plate is attached thereto as provided herein and such bicycle is equipped with the lamps and other equipment required in this Chapter.

10-1-15: BICYCLE DEALERS: Every person engaged in the business of buying or selling new or second-hand bicycles shall make a report to the Chief of Police of every bicycle purchased or sold by such dealer, giving the name and address of the person from whom purchased or or to whom sold, a description of such bicycle by name or make, the frame number thereof, and the number of license plate, if any, found thereon.

10-1-16: TRAFFIC LAWS APPLICABLE TO PERSONS RIDING BICYCLES: Every person riding a bicycle upon a roadway in the City of Mesa shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by the laws of this State declaring rules of the road applicable to vehicles or by the traffic laws of this City of Mesa applicable to the driver of a vehicle, except as to special regulations herein and except as to those provisions of law which by their nature can have no application.

10-1-17: OBEDIENCE TO TRAFFIC-CONTROL DEVICES: Any person operating a bicycle shall obey the instructions of official traffic-control signals, signs and other control devices applicable to vehicles, unless otherwise directed by a police officer.

Whenever authorized signs are erected indicating that no right or left or U turn is permitted, no person operating a bicycle shall disobey the direction of any such sign, except where such person dismounts from the bicycle to make such turn, in which event such person shall then obey the regulations applicable to pedestrians.

10-1-18: RIDING ON ROADWAYS AND BICYCLE PATHS: Every person operating a bicycle upon a roadway shall ride as near to the right hand side of the roadway as practicable, exercising due care when passing a standing vehicle or one proceeding in the same direction.

Persons riding bicycles upon a roadway shall not ride more than two (2) abreast except on paths or parts of roadways set aside for the exclusive use of bicycles.

10-1-19: SPEED: No person shall operate a bicycle at a speed greater than is reasonable and prudent under the conditions then existing.

10-1-20: EMERGING FROM ALLEY OR DRIVEWAY: The operator of a bicycle emerging from an alley, driveway or building, shall upon approaching a sidewalk or the sidewalk area extending across any alleyway, yield to all pedestrians approaching on said roadway.

10-1-21: CLINGING TO VEHICLES: No person riding upon any bicycle shall attach the same or himself to any vehicle upon a roadway.

10-1-22: CARRYING ARTICLES: No person operating a bicycle shall carry any package, bundle or article which prevents the rider from keeping at least one (1) hand upon the handle bars.

10-1-23: PARKING: No person shall park a bicycle upon a street other than upon the roadway against a building or at the curb, in such manner as to afford the least obstruction to pedestrian traffic.

10-1-24: RIDING ON SIDEWALKS: No person shall ride a bicycle upon a sidewalk within a business district.

The Chief of Police is authorized to erect signs on any sidewalk or roadway prohibiting the riding of bicycles thereon by any person and when such signs are in place no person shall disobey the same.

10-1-25: LAMPS AND OTHER EQUIPMENT ON BICYCLES: Every bicycle when in use at nighttime shall be equipped with a lamp on the front which shall emit a white light visible from a distance of at least five hundred feet (500') to the front and with a red reflector on the rear of a type which shall be visible from all distances from fifty feet (50') to three hundred feet (300') to the rear when directly in front of lawful upper beams of headlamps on a motor vehicle. A lamp emitting a red light visible from a distance of five hundred feet (500') to the rear may be used in addition to the red reflector.

No bicycle shall be equipped with nor shall any person use upon a bicycle any siren or whistle.

Every bicycle shall be equipped with a brake which will enable the operator to make the braked wheel skid on dry, level, clean pavement. (Res. No. 860 10-19-1948)

10-1-26: UNLAWFUL ACTS: It shall be unlawful for any persons to fail to register and secure a license for any bicycle owned by such person, or to violate any of the provisions of the City of Mesa Bicycle Code, as stated herein, providing for the registration, licensing and regulation of all bicycles operated in the Municipality.

That the parent of any child or the guardian of any ward shall not authorize or knowingly permit any such child or ward to violate any of the provisions of this Chapter.

Every person convicted of a violation of any provision of this Chapter shall be punished by a fine of not more than three hundred dollars ($300.00) or by imprisonment in the City Jail for not more than six (6) months, or by both, or by impounding of such person's bicycle for a period of not to exceed sixty (60) days. (Ord. No. 227 10-19-1948)

STATE OF ARIZONA

MODEL COMPOSITE ORDINANCE

SEC. DEFINITIONS:

Bicycle - A device propelled by human power upon which any person may ride, having two tandem wheels either of which is more than sixteen inches in diameter and including any device generally recognized as a bicycle though equipped with two front or two rear wheels.

Owner - A person who holds the legal title to a bicycle, or if the bicycle is the subject of a lease or an agreement for the conditional sale thereof, with the right of purchase upon performance of the conditions stated in the agreement and with an immediate right of possession vested in the conditional vendee or lessee, or if a mortgagor of a vehicle is entitled to possession, then such lessee, conditional vendee or mortgagor shall be deemed the owner.

SEC. TRAFFIC LAWS APPLICABLE TO PERSONS RIDING BICYCLES: Every person riding a bicycle upon a roadway or path set aside for exclusive use of bicycles in the city shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by the laws of this state declaring rules of the road applicable to the driver of a vehicle, except as to special regulations in this chapter and except as to those provisions of law which, by their nature, can have no application.

For similar state law, see A.R.S., / 28-812.

SEC. OBEDIENCE TO TRAFFIC-CONTROL DEVICES: Any person operating a bicycle shall obey the instructions of official traffic-control signals, signs and other control devices applicable to vehicles, unless otherwise directed by a police officer.

Whenever authorized signs are erected indicating that no right or left or U turn is permitted, no person operating a bicycle shall disobey the direction of any such sign, unless such person dismounts from the bicycle to make such turn, in which event, such person shall then obey the regulations applicable to pedestrians.

SEC. KEEPING TO RIGHT; RIDING MORE THAN TWO ABREAST: Every person operating a bicycle upon a roadway shall ride as near to the right-hand side of the roadway as practicable, exercising due care when passing a standing vehicle or one proceeding in the same direction.

Persons riding bicycles upon a roadway shall not ride more than two abreast except on paths or parts of roadways set aside for the exclusive use of bicycles. Wherever a usable path for bicycles has been provided adjacent to a roadway, bicycle riders shall use the path and shall not use the roadway.

For similar state law, see A.R.S. / 28-815.

SEC. SPEED: No person shall operate a bicycle at a speed greater than is reasonable and prudent under the conditions then existing.

SEC. EMERGING FROM ALLEY OR DRIVEWAY: The operator of a bicycle emerging from an alley, driveway or building shall, upon approaching a sidewalk or the sidewalk area extending across any alleyway, yield the right of way to all pedestrians approaching on such sidewalk or sidewalk area and upon entering the roadway shall yield the right of way to all vehicles approaching on such roadway.

SEC. CLINGING TO VEHICLES: No persons riding upon any bicycle shall attach the same or himself to any vehicle upon a roadway.

SEC. CARRYING ARTICLES: No person operating a bicycle shall carry any package, bundle or article which prevents the rider from keeping at least one hand upon the handlebars.

For similar state law, see A.R.S. / 28-816.

SEC. PARKING: No person shall park a bicycle upon a street other than upon the roadway against curb or upon the sidewalk in a rack to support the bicycle or against a building or at the curb in such manner as to afford the least obstruction to pedestrian traffic.

SEC. RIDING ON SIDEWALK; SIGNS PROHIBITING RIDING: The chief of police is authorized to erect signs on any sidewalk or roadway prohibiting the riding of bicycles thereon by any person and when such signs are in place, no person shall disobey the same. No person shall ride a bicycle on a sidewalk except where permission has been granted by the Police Department. Whenever any person is riding a bicycle upon a sidewalk, such person shall yield the right-of-way to any pedestrian and shall otherwise ride and operate such bicycle in compliance with the provisions of this Ordinance and the Laws of this State applicable to the driver of a vehicle except those provisions which, by their nature, can have no application.

SEC. LAMPS AND REFLECTORS; SIREN OR WHISTLE: Every bicycle, when in use at nighttime, shall be equipped with a lamp on the front which shall emit a white light visible from a distance of at least five hundred feet to the front and with a red reflector on the rear of a type which shall be visible from all distances from fifty feet to three hundred feet to the rear when directly in front of lawful upper beams of head lamps on a motor vehicle. A lamp emitting a red light visible from a distance of five hundred feet to the rear may be used in addition to the red reflector.

No bicycle shall be equipped with, nor shall any person use upon a bicycle, any siren or whistle.

For similar state law, see A.R.S. / 28-817.

SEC. BRAKES: Every bicycle shall be equipped with a brake which will enable the operator to make the braked wheels skid on dry, level, clean pavement.

SEC. RIDING "NO HANDS;" ACROBATIC RIDING: No operator of a bicycle shall remove both hands from the handlebars or feet from the pedals, nor practice any acrobatic or fancy riding on any street.

SEC. RACING, ENDURANCE CONTESTS PROHIBITED: No person operating a bicycle upon a roadway shall participate in any race, speed or endurance contest with any other vehicle.

The penalty for using a bicycle without the owner's consent shall be in accordance with State law.

SEC. RESPONSIBILITY OF PARENT OR GUARDIAN: The parent or guardian of a person under the age of eighteen (18) years shall not authorize or knowingly permit such person to violate any of the provisions of this Ordinance.

SEC. PENALTY: Any person who violates any of the provisions of this Ordinance shall be guilty of a misdemeanor and upon conviction fined for each offense not to exceed fifty dollars ($50.00) or imprisoned not to exceed ten (10) days, or both such fine and imprisonment. In addition to the penalty hereinabove set forth the Police Department of the City, or any of the members thereof, may impound and retain possession of any bicycle operated in violation of any of the provisions of this Ordinance, and when a bicycle is impounded for not having the license provided for herein the same shall be retained until the license is obtained by the owner of said bicycle.

DIVISION 3. ABANDONED BICYCLES

SEC. DUTY OF POLICE TO TAKE POSSESSION: It shall be the duty of the Police Department to take possession of all bicycles that may have been abandoned on any street, alley or any other place in the City.

SEC. NOTICE TO OWNER: Upon taking possession of any abandoned bicycle, it shall be the duty of the Police Department to ascertain, if possible, the owner thereof and to notify such owner that such bicycle is in the possession of the Police Department. This notice may be given to the owner in person, by phone or by ordinary mail.

SEC. SALE-REQUIRED: In the event that the owner of an abandoned bicycle cannot be found or does not claim such bicycle, the Chief of Police shall proceed to sell such bicycle and such sale shall be held in the manner hereinafter set forth.

SEC. SALE-NOTICE: After twenty days from the date of taking possession of an abandoned bicycle, the Police Department shall publish in the official newspaper of the City, at least once, a notice of sale of such bicycle and shall post a copy of such notice in three public places in the City. A copy of such notice shall be mailed to the owner, if known, at his last known address. This copy may be mailed in by ordinary mail. Such notice shall be published, posted, and mailed at least ten days before the date of the sale. Such notice shall contain a brief description of the bicycle, including the make of the bicycle, if known, its number, if known, and its last license number, if known, and shall also state the hour, date and place of sale and the place where the bicycle may be seen.

SEC. SALE-PLACE: All sales of abandoned bicycles shall take place at locales to be selected at the option of the Police Department.

SEC. SALE-AUCTION SALE; DISPOSITION OF FUNDS: The sale shall be at public auction to the highest bidder for cash. All monies received from such sale shall be paid over to the City Treasurer and deposited immediately into the general fund.

SEC. SALE-CLAIMANTS: Should any person, within six months after the date of the sale of a bicycle, make claim to such bicycle, such sum of money as may be in the hands of the City Treasurer, less the

sale and advertising costs, which has been derived from the sale, shall be paid over to such claimant upon proof of his right to receive the same. In no event shall any claim be considered unless it shall be presented to the City Treasurer in writing, under oath, and before the expiration of six months from the date of the sale.

SEC. CERTIFICATE OF SALE: On delivery to any purchaser of any bicycle sold under the provisions of this Division, the Chief of Police shall execute to such purchaser a certificate of sale of such bicycle, which certificate shall describe the bicycle in the same manner as in the advertisement of sale and shall recite the date of possession of the Police Department and the date of sale. Such certificate shall pass the title to the bicycle to the purchaser.

SEC. AFFIDAVITS: Each person performing any act in accordance with the provisions of this Division shall make an affidavit thereof and such shall be prima facia evidence of the facts contained in the affidavit.

SEC. RECORDS: The Police Department shall keep a record of all bicycles taken into possession, which records shall contain a copy of the notice of sale; a copy of the certificate of sale; the name and address of the purchaser and the amount paid by him; a statement of the costs of sale and advertising; the original affidavits; and a copy of any letters or matters pertaining to the sale as required by this Division. Such records shall at all times be open to the public inspection.

APPENDIX D

GENERAL BICYCLE SAFETY INFORMATION

The Bicycle Institute of America publishes a great deal of information regarding bicycle safety, including recommended educational programs and prepared safety "kits." This Appendix is based on information obtained from the Bicycle Institute of America and their suggestions are strongly recommended as part of an educational program for bicyclists.

PROPER RIDING TECHNIQUE

Riding techniques are valuable for the following reasons:

1. Helps rider avoid muscular fatigue, which otherwise leads to taking hands off handlebars, shifting in seat, etc. because of tired muscles.
2. Enables rider to concentrate on road conditions rather than some physical discomfort.
3. Good riding technique assures more responsive reflex actions under difficult road conditions.
4. Assures that the rider will always have proper control of wheel and will be ready to meet all emergencies.

Four steps are essential to obtain the best riding technique:

1. Always use the ball of the foot as contact point with the pedal.
2. Pedal evenly. Rhythm is essential for good control and untiring bicycle handling.
3. Pedal straight. Knees should be kept parallel with the bicycle frame for effortless operation.
4. Shoulders should be kept steady. Movement of the shoulders while pedaling is lost motion.

Proper fitting of the body to the bicycle will make for safer riding; proper length from the pedals to the seat is essential to safe operation. Saddle height should be adjusted so the rider sits almost erect, leaning only slightly to grasp the handlebar. A low seat is as tiring as one set too high. Here are the five correct positions:

1. Leg, thigh and heel of the foot which is on the low pedal should form a straight line.
2. Saddle should be parallel to the ground.
3. Upper part of the body should be inclined slightly.
4. Handlebar grips should be at right angles to the handlebar stem.
5. Handlebar grips should be approximately the same height as the saddle.

Source: The Bicycle, Technical Appendix, Atlanta Metropolitan Region.

BICYCLE SAFETY TESTS

Fifteen tests, which are thoroughly described in a booklet entitled "Bicycle Safety Tests" published by the Bicycle Institute of America, include the following:

1. Balance Test
2. Changes in Balance
3. Traffic Control
4. Pedaling and Braking
5. Maneuvering
6. Mounting
7. Obstacles
8. Emergency Stop
9. Stopping Ability
10. Direction Change by Sound
11. Quick Direction Changes
12. Turning Around
13. Signalling
14. Proper Care
15. Fitting and Mechanical Tests

BICYCLE SAFETY CODE

1. Do not carry passengers.
2. Always observe traffic regulations, stop signs.
3. Use hand signals to indicate turning and stopping.
4. Ride single file.
5. Do not ride from between parked cars.
6. Keep to the right side of the road.
7. Keep both hands on the handlebars.
8. Keep brakes in good condition.
9. Have proper equipment for night riding.
10. Do not speed in busy sections.
11. Avoid crowds.
12. Give right-of-way to pedestrians and automobiles.
13. Do not ride when tired or ill.
14. Avoid stunt riding, racing, and zig-zagging in traffic.
15. Do not "hitch" rides.
16. Slow down, look and listen at all intersections and driveways.
17. Make bicycle repairs off the road.
18. Dismount and walk across heavy traffic.
19. Make sure bike is in safe operating condition.
20. Always ride carefully.

MECHANICAL SAFETY PRECAUTIONS

1. Keep your bike in perfect running condition; check the brakes and other vital parts frequently.
2. See that moving parts of the bike are clean and properly lubricated.
3. The axle nuts are tight and wheels are easy to turn and properly aligned.
4. Frame is straight and true.
5. Front & rear wheels are safety mounted.
6. Always keep your tires inflated to the air pressure indicated on the side walls. If no pressure is indicated, ask your bike dealer.
7. Brake: A number one rule for bike safety is a perfect brake. Does it brake evenly and will it stop your wheels at once? The brake should be adjusted so that brake can stop within 10 feet at normal speed. Unless you are an expert, don't tamper with it. Have it cleaned and adjusted regularly by your bicycle serviceman.
8. Seat Saddle: Adjust to fit your size and tighten securely. A loose seat may mean a fall.
9. Handlebars: Adjust to fit your body. Tighten and keep stem well down in fork.
10. Handle grips: Replace worn handle grips. Cement them on tightly. Loose grips mean unsafe riding. Handlebars without grips,or broken grips, are dangerous.
11. Pedals: Lubricate and tighten pedal bearings and spindle. Replace worn pedal treads. Good pedals are important for bicycle control and power.
12. Warning Device: Horn or bell must always work properly to be heard at least 100 feet.

BICYCLE SAFETY RECOMMENDATIONS

1. Equip bicycle with a lamp on the front and red reflector or lamp on the rear.
2. Equip bicycle with horn or bell in proper operating condition.
3. Obey all traffic signals and signs.
4. Park vehicle in a safe place.
5. Stop while passengers are boarding and alighting from a street car.
6. Never carry any persons on the handlebars.
7. Never ride bicycle on sidewalk unless a local ordinance directs otherwise.
8. Ride in a straight line without weaving.
9. Ride at a safe distance from trucks, buses, and other vehicles.
10. Carry packages only if your bicycle has a carrying basket or luggage carrier.
11. Cross all streetcar tracks cautiously and as near at right angles as possible.
12. Avoid riding too fast down hill and on slippery or rough roads.
13. Use guard clips on trouser cuffs if the wheel has no chain guards.
14. Wear light-colored clothing at night so that you can be seen.

APPENDIX E

A STATEWIDE BICYCLE REGISTRATION AND LICENSING PROGRAM

Draft Legislation for the 1975 Oregon Legislature

Prohibits operation of bicycles on highways and bikeways unless the bicycle is registered and prescribed fee is paid. Provides for biennial registration of bicycles. Directs the Motor Vehicles Division to administer registration law. Establishes $5 biennial registration and renewal fee. Requires all bicycles to have identifying serial number imprinted or etched on frame. Permits division to designate agents to accept applications and collect fees for bicycle registration. Prescribes conditions for sale of bicycles at auction. Provides penalties and provides for cancellation of registration certificates improperly granted. Operative July 1, 1976.

Establishes Bicycle Account and credits designated fees to account. Appropriates 50 percent of moneys in account to cities and 50 percent to counties for construction and maintenance of bikeways, except that cities and counties receiving less than specified amount of money from State Highway Fund need not apply registration fees appropriated to construction or maintenance of bikeways. Limits biennial expenses of division for administration of Act to $_____. Authorizes division to incur expenses, promulgate rules and prepare for the implementation of Act after effective date of Act.

A BILL FOR AN ACT

Relating to bicycle registration; creating new provisions; amending ORS 481.100 and 481.990; appropriating money; limiting expenditures; and providing penalties.

Be It Enacted by the People of the State of Oregon:

Section 1. Sections 2 to 16 of this Act are added to and made part of ORS chapter 481.

Section 2. As used in sections 2 to 16 of this 1975 Act, except where the context otherwise requires:

(1) "Bicycle" means every devise propelled by human power having two wheels in tandem of a size which is 20 inches in diameter or greater or has three wheels of the same diameter.
(2) "Bikeway" includes "bicycle lanes" and "bicycle paths" as those terms are defined by ORS 483.002.

Section 3.

(1) A person shall not operate a bicycle upon a highway or bikeway of this state unless:

(a) The bicycle is registered pursuant to the provisions of sections 2 to 11 of this 1975 Act, and
(b) The fee provided by section 6 of this 1975 Act has been paid.

(2) A nonresident who has complied with the registration or licensing laws of his home state or country may operate a bicycle on the highways and bikeways of this state without complying with the provisions of sections 2 to 11 of this 1975 Act.

(3) A bicycle with wheels which are less than 20 inches in diameter may be registered pursuant to the provisions of sections 2 to 11 of this 1975 Act.

Section 4.

(1) Every owner of a bicycle shall apply to the division or its authorized agent for registration.

(2) The application shall be signed by the owner and shall contain:

(a) The name and residence or business address of the owner; and
(b) A description of the vehicle, including the name of the make and model, the serial number and any other information required by the division.

(3) At the initial registration, the division or its authorized agent may accept, as adequate proof that the person applying for a license is the lawful owner, a statement signed by the applicant on the application form, that he is the lawful owner of the bicycle.

Section 5.

(1) The registration of a bicycle shall be valid for a term of two years from the month of issuance.

(2) The division may initially register a bicycle for less than a 24-month period, or for more than a 24-month period, not exceeding a maximum of a 30-month period, and prorate the fee on a monthly basis, when in its opinion such fractional registration tends to fulfill the purpose of establishing a monthly series registration system.

(3) The division may adopt and enforce any administrative rules, including the proration of fees, necessary to accomplish the administration of this section.

Section 6. The registration fee for a bicycle shall be $5 and shall be paid to the division or its authorized agent upon the registration or upon the renewal of a registration.

Section 7.

(1) A temporary certificate of registration shall be issued by the division or its authorized agent at time of application and payment of the registration fee.
(2) A permanent registration certificate with an identifying number and a license decal bearing the same number shall be issued to the registrant by the division.
(3) The division shall determine the form of the license decal. The decal shall be attached to the frame of the bicycle as prescribed by the division.
(4) The record of registration of a bicycle as it appears in the files and records of the division, is prima facie evidence of ownership or right to possession of the bicycle. Possession of a license decal issued by the division is prima facie evidence that the bicycle is registered.
(5) The certificate of registration issued by the division shall contain the name and address of the owner, the make and model of the bicycle, the serial number and any other information prescribed by the division.

Section 8. All new bicycles sold in the state after July 1, 1976, shall be required to have a serial number imprinted on the frame. Bicycles sold or in use prior to July 1, 1976, which do not have a serial number shall be assigned a serial number by the division at the time of registration and that number shall be imprinted or etched on the frame. Imprinting or etching of the serial number on the frame shall be the responsibility of the owner.

Section 9. Within 10 days after the ownership of a bicycle changes, the new owner shall apply for a transfer of the certificate of registration and license decal. The previous owner must relinquish proof of ownership as prescribed by rules adopted by the division. The new owner shall pay a $2 fee to transfer the registration. There shall be no refund of the unexpired portion of a registration fee to a previous owner.

Section 10.

(1) Upon presentation of satisfactory evidence to the division, upon forms furnished by the division, that a certificate of registration for a bicycle has been lost, mutilated or destroyed, a duplicate registration may be issued for a fee of $1. The duplicate registration is valid only for the period of the certificate of registration which it replaces.

(2) In the event of the loss, destruction or mutilation rendering illegible the identifying number on the decal assigned to a bicycle, the owner of the registered bicycle shall apply to the division for a duplicate thereof, upon forms prepared by the division, together with a fee of $1. The division may, in lieu of a duplicate, assign and issue a new identifying number and decal, at the same fee. The duplicate or new number issued is valid only for the period assigned to the decal which it replaces.

Section 11.

(1) The division may designate authorized agents to accept applications and collect fees for the registration of bicycles. Application forms and temporary certificates of registration shall be provided to an agent by the division.

(2) The division shall adopt rules as may be necessary to insure proper acceptance of applications and fees to the agents and for remittance to the division of applications and fees collected by agents and such other rules as may be necessary to the administration of sections 2 to 15 of this 1975 Act.

Section 12. Before a bicycle may be sold at auction, the agency under whose auspices the auction is to be conducted shall make a reasonable effort to ascertain the name and address of the registered owner of the bicycle. If the name and address is ascertained, the agency shall notify the owner of the date and location of the auction and of the location of the bicycle.

Section 13.

(1) There is established in the General Fund of the State Treasury the Bicycle Account. All moneys received by the division from bicycle registration fees shall be paid to the credit of this account after the division has deducted the expenses of administering this 1975 Act. Fifty percent of the money in the account is appropriated to the cities of this state and 50 percent is appropriated to the counties of this state. The moneys so appropriated shall be used by cities and counties for the construction and maintenance of bikeways. However, the money so appropriated to cities and counties need not be spent for bikeways if one percent of the total amount of money received by a city from the State Highway Fund in any one fiscal year equals $250 or less, or if one percent of the total amount of money received by a county from the State Highway Fund in any one fiscal year equals $1,500 or less.

(2) Each city shall receive such share of the money appropriated to all cities as its population, as determined under ORS 190.510 to 190.590 last preceding such apportionment, bears to the total population of the cities of the state, and each county shall receive such share of the money as its population, determined under ORS 190.510 to 190.590 last preceding such apportionment, bears to the total population of the state.

Section 14. In addition to and not in lieu of any other expenditure limitation authorized by law, the sum of $ is being established for the biennium beginning July 1, 1975, as the limitation for the payment of expenses incurred by the Motor Vehicles Division in the administration of this 1975 Act.

Section 15. Upon conviction of any person for a crime described in subsections (2) to (5) of section 16 of this 1975 Act the court shall take up the invalid certificate of registration and forward it to the division. The division shall cancel any such registration improperly issued.

Section 16.

(1) It is a violation to operate a bicycle on the highways or bikeways of this state without a valid registration. Operating a bicycle without a valid registration is punishable upon conviction by a fine of $5.
(2) Any person who knowingly makes a false statement of a material fact about a bicycle or himself in applying for a certificate of registration commits a Class C misdemeanor.
(3) Any person, unless authorized by the division, who prints or produces, or causes to be printed or produced, any certificate or registration or license decal required by sections 2 to 11 of this 1975 Act commits a Class A misdemeanor.
(4) Any person, unless authorized by the division, who alters or forges or causes to be altered or forged any certificate of registration for a bicycle commits a Class A misdemeanor.
(5) Any person who knowingly possesses or uses a certificate of registration for a bicycle that is altered or forged, printed or produced without the authorization of the division or obtained by false statements commits a Class C misdemeanor.

Section 17. ORS 481.100 is amended to read:

481.100. Towing, pushing or otherwise propelling a vehicle <u>or bicycle</u> upon a highway <u>or bikeway</u> when any part of the vehicle

or bicycle touches the highway or bikeway, is considered the operation or movement of the vehicle or bicycle on the highway or bikeway within the provisions of this chapter.

Section 18. ORS 481.990 is amended to read:

481.990

(1) Excepting violations of ORS 481.095, 481.425, 481.955 and 481.960, and excepting violations for which other subsections of this section and section 16 of this 1975 Act expressly provide penalties, any violation of the provisions of this chapter, including the failure to obtain the proper permit or license required by this chapter, is punishable, upon conviction, by a fine of not more than $400, or by imprisonment in the county jail for not more than one year, or both.

(2) Any violation of ORS 481.345 to 481.370, 481.430 or 481.435, including the engaging in business without a license, is a Class A misdemeanor.

(3) Any person who alters or forges or causes to be altered or forged any certificate of title or certificate of registration issued by the division under this chapter (including a certificate of title for a tractor), or any assignment thereof, or who holds or uses any such certificate or assignment knowing that it has been altered or forged commits a Class C felony.

(4) Any person, unless authorized by the division, who prints or produces, or causes to be printed or produced any certificate of title or certificate of registration required by this chapter (including a certificate of title for a tractor), or any assignment thereof, or who holds or uses any such certificate or assignment knowing that it has been printed or produced without authority commits a Class C felony.

(5) A person commits the crime of unlawfully publishing certificate of title forms if he produces in any way, or causes to be produced, without the authority of the division, facsimiles of the blank forms upon which the division issues certificates of title under this chapter. Unlawfully publishing certificate of title forms is a Class C felony.

(6) Any person who knowingly makes any false statement of a material fact, either in his application for a certificate of title under this chapter (including a certificate of title for a tractor), or in any assignment thereof, or who, with intent to prosecute or pass title to a vehicle which he knows or has reason to believe has been stolen, receives or transfers possession of such vehicle from or to another, or who has in his possession any vehicle which he knows, or has reason to believe, has been stolen, and who is not an officer of the law engaged at the time in the performance of his

duty as such officer, shall be deemed guilty of a felony and, upon conviction thereof, shall be punished by a fine of not more than $1000 or by imprisonment in the penitentiary for not more than 10 years, or both.

(7) Any person who knowingly buys, sells, receives, disposes, conceals or has in his possession any vehicle whose manufacturer's serial number or other distinguishing number or identification mark has been removed, defaced, covered, altered or destroyed for the purpose of concealing or misrepresenting the identity of the vehicle, shall be punished, upon conviction, by a fine of not more than $200 or by imprisonment for not more than six months, or both.

(8) Any transferee, security interest holder or holder of a certificate of title who is required by ORS 481.405 or 481.410 to forward such certificate or a release to the division or to another person for delivery to the division, shall, upon conviction of a failure to comply with those provisions within the time specified, be punished by a fine of not more than $50.

(9) Any violation of ORS 481.305, 481.310, or 481.315 is a Class A misdemeanor.

(10) Violation of subsection (1) of ORS 481.115 is a misdemeanor.

(11) Any person who sells a vehicle without complying with the requirements of ORS 481.110 and 481.115 shall be guilty of a felony and, upon conviction thereof, shall be punished by a fine of not more than $1000 or by imprisonment in the penitentiary for not more than 10 years or both.

(12) Any person who knowingly makes any false affidavit, or knowingly swears or affirms falsely to any matter or thing required by this chapter to be sworn or affirmed to, is guilty of perjury and, upon conviction, shall be punished as provided in ORS 162.065.

(13) Violation of subsection (3) of ORS 481.385 is a misdemeanor.

(14) Violation of subsection (7), (8) or (10) of ORS 481.225 is a misdemeanor.

(15) Any violation of subsection (3) or (4) of ORS 481.150 is punishable upon conviction by a fine of not more than $50.

(16) Violation of ORS 481.444 or 481.448 is a Class A misdemeanor.

(17) Violation of ORS 481.195 is a Class A misdemeanor, but each day of violation does not constitute a separate offense.

(18) Violation of subsection (1), (2) or (3) of ORS 481.200 is a Class A misdemeanor, but each day of violation does not constitute a separate offense.

Section 19. Sections 2 to 13 and 15 to 18 of this ACt first become operative on July 1, 1976. However, after the effective date of this Act and prior to the operative date the division may incur expenses and do all things necessary to promulgate rules and otherwise prepare for the implementation of this Act.

APPENDIX F

EXAMPLES OF BICYCLE REGISTRATION AND LICENSING

State of California

Senate Bill 147 requires the following: Registration forms and license used by cities and counties must be approved by the Department of Justice (DOJ). All applicable bikes must have a unique serial number stamped into the frame in accordance with rules and regulations adopted by the DOJ. The DOJ must establish a computerized file to facilitate the recovery of stolen bicycles. Appropriates $150,000 to carry out the provisions of the bill and requires licensing jurisdictions to re-imburse the state for the cost of operating the computerized file.

Corvallis, Oregon

Corvallis restricts bicycle use to only those bicycles that bear a valid, current license issued by the city. Fee is $2.00 for a two year license and $1.20 for a one year license.

Lakewood, California

Lakewood proposes that registration be required when purchased and that they be re-licensed annually. Fees should be used to finance the operation of the system.

Boulder, Colorado

Boulder proposes that reflective license plates containing the design of the standard "slow moving vehicle" sign be issued in its registration and licensing system. The city proposes that fees be used to meet administration needs only and not be used as a source of revenue.

Chicago, Illinois

Chicago requires bicycle registration at no cost to the bicyclist. Registration record contains date of registration, the make, serial number, model and description of the bike, name and address of owner, owner's age, name and address of the person from whom purchased and the date of purchase.

Concord California

Concord offers a lifetime license for $3.00. A bill of sale must be presented prior to registration and the bicycle is

inspected for safe mechanical condition and required equipment. A license sticker is affixed to the bicycle frame and the numbers or letters are stamped into the frame with a metal stamp. The licenses are filed under the owner's last name, the license number issued and the manufacturer's serial number. Licenses are issued at the elementary and junior high schools during the year by police cadet personnel in order to eliminate the need for youngsters to bring their bicycles to the police station. All local bicycle dealers are required to report each sale by using a form provided by the police department. The police department, upon receipt of report of sale, files it for ten days. The ten day filing is to allow the new bicycle owner an opportunity to license the bike. At the end of ten days a reminder letter is mailed to the new owner.

Lexington, Kentucky

Lexington is planning a compulsory registration system listing all bikes by frame number, owner and license number for a two year period at $1.50 per license. 89% of Lexington residents voted in favor of the proposed registration system.

Milwaukee, Wisconsin

Milwaukie is considering increasing bicycle license fees in order to raise funds for the purpose of providing bicycle parking facilities adjacent to public buildings.

State of Arizona

The State of Arizona is considering the establishment of a statewide registration and licensing system. Legislation has been suggested to require a special one time fee of $10 to generate funds for bikeway construction.

Phoenix, Arizona

Phoenix requires bicycles to be licensed, but the system is essentially voluntary. Each bicycle registered has an identification number embedded in the rear frame of the bicycle. The number is cross indexed in the registration files with other pertinent ownership information - name, bike description and serial number. The decal license provided is only required to be purchased once unless ownership changes. The license fee is fifty cents.

TABLE VII

CASE EXAMPLES OF BICYCLE REGISTRATION AND LICENSING

(1974)

State or City	Administering Agency	Registration Required	Licensing Required	Renewal Period	Cost	Type of License	Inspection Requirements	Use of Funds
California (bill not passed)	Department of Motor Vehicles	Yes	Yes	Change of ownership	$2.00	Decal	Meet equipment standards	10¢ for administration remainder for bike facilities
Bill passed	Dealer	Yes	No	---	---	---	---	---
San Francisco	License Bureau of Tax Collector's Office	Yes	Yes	Change of ownership	$0.50	Decal	---	---
Torrance	Police Department	Yes	Yes	4 years	$1.00 (duplicate $0.25)	Metal Plate	Safety inspection, signal audible for 100 feet (not siren or whistle)	City general fund
Colorado Boulder*	---	Yes	---	1 year	$3-5.00	---	---	---
Denver	Bicycle Bureau of Police Department	Yes	Yes	1 year 2 years*	$1.00 $5.00	Metal Tag	Safety inspection	Administration (if recommendations approved, up to $50,000 annually expected for bike facilities and administration)
Lakewood*	Public Safety	Yes	Yes	1 year	$2.00	Reflecting Sticker	Safety inspection	Licensing program, instruction program, bikeway fund
Georgia Decatur*	Police Department	Optional	Optional	---	"Modest fee"	Sticker	---	Cover printing costs
Forest Park (not enacted)	City Clerk-Treasurer	Yes	Yes	---	---	Metal tag	---	---
Marietta	Police Department	Optional	Optional	Change of ownership	---	Decal	---	---
Hawaii Honolulu	Motor Vehicle Registration	---	---	Change of ownership	---	---	---	---
Illinois Chicago	Streets and Sanitation Department	Yes	No	Change of ownership	None	None	---	---
Evanston	City Collector	Yes	No	Change of ownership	---	None	---	---
Michigan Ann Arbor	City Clerk	Yes	Yes	3 years	$0.50	Decal	---	Licensign program
Minnesota St. Paul	Police Department	Yes	Yes	Change of ownership	$1.00 ($1.25 if sold by dealers, PTA etc.)	---	---	Administration (Deputy salesmen get extra 25¢)
Oregon Portland	Chief of Police	Yes	No	1 year*	$1.00	None	May require safety inspection *Front lamp visible 200 feet ahead; rear reflector and bell audible 100 feet	50% for bikeway facilities; 50% for administration*

* Recommendations not yet enacted

Source: The Bicycle - Technical Appendix, Atlanta Metropolitan Region.

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