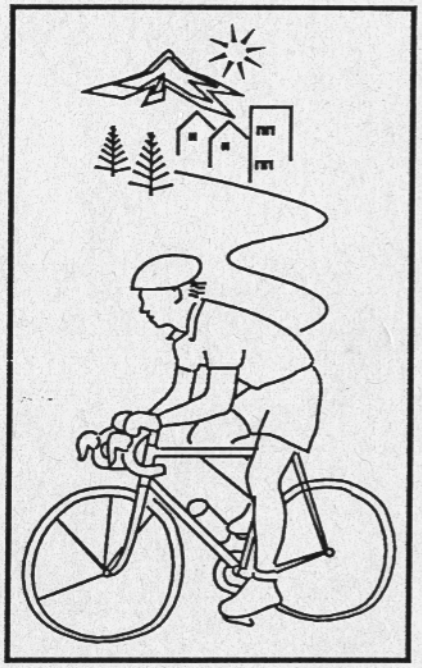

Draft 1995 Regional Bicycle Plan

August 1995

METRO

Draft 1995 Regional Bicycle Plan

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Chapter I
INTRODUCTION

The bicycle is a fuel-efficient, clean and healthy way to travel. Increased bicycle travel contributes to reducing air pollution and improves quality of life. Maintaining the region's quality of life over the next 20 years will require minimizing the impact of over 700,000 additional people in the Portland metropolitan area. The bicycle is an important component, along with walking, transit, freight and automobile use, in the region's strategy to provide a multi-modal transportation system to serve the region and maintain quality of life. While the cost of implementing this plan is significant, the cost of bicycle facilities is generally low compared to the cost of roadway and transit projects.

In 1994, Metro adopted the 2040 Growth Concept, which outlines a vision for the region's future, focusing growth in regional centers, transit corridors and along main streets. One way the region's quality of life will be maintained is by increased reliance on shorter distance trips.
Bicycle transportation is efficient, creates no operating noise, is ideal for short distance trips, and bicycles take less space to store. Metro estimates that the average auto trip in the Portland metropolitan area is approximately 5.1 miles, which is within the range of the bicycle. With proper facilities, and the complementary land use pattern envisioned in the 2040 Growth Concept, the bicycle may begin to replace the auto for a share of work and utility trips.

Increased population and the associated increase in traffic will affect the region's ability to maintain federal air quality standards. Air quality problems (hydrocarbon and carbon monoxide) occur in the warm summer months, the months that traditionally have the highest levels of bicycle use. Increased bicycle usage could help reduce emissions from autos and help improve the region's air quality.

The vision of this document is **Bicycles Everywhere**:

- Bicycles on bike lanes developed as part of the regional bicycle network and local bicycle plans.
- Bicycles on a fully integrated transit system accessed by bicycle lanes, storage facilities and transit vehicles that accommodate bicycles.
- Bicycles on paths and in parks that provide alternatives to the region's street system and offer new bicyclists a place to practice their skills.
- Bicycles incorporated in regional transportation strategies (such as the Regional Transportation Plan, transportation demand management strategies, and major regional projects like the South/North Transit Corridor Study, etc.) that emphasize a balanced transportation system accommodating all modes of travel.
- Bicycle projects included in regional funding packages.

PURPOSE OF THE PLAN

The Regional Bicycle Plan provides policy and planning direction for bicycle transportation planning in the Portland metropolitan area. Incorporation of the bicycle element into the Regional Transportation Plan (RTP) will comply with federal and state transportation policies requiring consideration of bicycles in planning the transportation system. The Regional Bicycle Plan will establish regional goals, objectives and policies for bicycle transportation. The goals, objectives and policies incorporated into the RTP will guide regional transportation policy-making. The Regional Bicycle Plan will provide guidance to local jurisdictions in developing local bicycle plans. The plan also continues Metro's long tradition of incorporating bicycles in planning.

SUMMARY BY CHAPTER

Chapter II describes the planning context, including past bicycle plans and transportation plans. The chapter discusses the Region 2040 Growth Concept and the important role the bicycle will play in implementing the Region 2040 goals. The final section discusses the integration of these planning efforts with the Regional Bicycle Plan and the steps necessary to comply with federal and state transportation planning regulations.

Chapter III discusses the goals, objectives and policies that will guide regional bicycle planning.

Chapter IV discusses specific information from Metro's travel activity behavior survey pertaining to travel characteristics of bicyclists. The chapter also discusses bicycle conditions in the region with more detailed discussion of existing conditions and connections to and from regional centers.

Chapter V discusses the organizing concept for constructing the regional bicycle network. The regional bicycle network combines several layers of bicycle networks into a comprehensive bicycle system. Multi-modal integration is an important element in bicycle transportation; this chapter discusses integration with the region's transit and freight systems.

Chapter VI provides a detailed discussion of the types of corridors that comprise the regional bicycle corridors. The central city corridors provide connections from the central city to each regional center. Regional center corridors connect the circumferential regional centers. The regional center connectors provide links between regional centers and other important destinations, providing connections in each direction from the regional center.

Chapter VII describes various funding resources and discusses evaluation criteria to guide future funding allocations.

Chapter VIII discusses the ongoing roles and responsibilities of the Regional Bicycle Program.

PUBLIC AND AGENCY INVOLVEMENT

Development of the Regional Bicycle Plan involved participation from a variety of planning professionals and citizens from throughout the region. The plan advisory team included representatives from Clackamas, Multnomah and Washington Counties, the cities of Portland and Milwaukie, the Oregon Department of Transportation, Tri-Met and a citizen from the Bicycle Transportation Alliance, a local activist group.

Citizens had opportunities to comment on bicycle-related issues at the Regional Transportation Fair, at bicycle advisory committees sponsored by local jurisdictions and at a series of bicycle and pedestrian open houses sponsored by the City of Portland. Examples of public and agency involvement are described below:

- Regional Trails and Greenspaces Working Group (July '94 - June '95) - Bi-monthly presentations on Regional Bicycle Program progress to a group of citizens, elected officials, and staff from local and regional park districts;

- ProBike/ProWalk '94 (September '94) - Metro information table at week-long international conference; information provided described the Regional Bicycle Program, Region 2040, Metropolitan Greenspaces Master Plan, and *Getting There by Bike* map;

- Ride on the Wildside (September and October '94) - A series of bike rides sponsored by Metro Regional Parks and Greenspaces and the Portland Parks Bureau that was oriented toward urban natural areas. Information on multi-use trail connections was presented and discussed;

- Bike Fest on the Burnside Bridge (October '94) - Display kiosk illustrating Regional Bicycle Program, Region 2040, South/North Light Rail, and general Metro information;

- Clackamas County Soft Transportation Open House (October '94) - same information as Bike Fest;

- Clackamas County Bicycle and Pedestrian CAC (December '94) - briefing on Metro Regional Bicycle Program;

- Public Comment on *Getting There by Bike Map* update (December '94 through March '95) - postcard comment forms to bicycle activist groups, bicycle shops, citizen advisory committee meetings, and attendees of the RTP public involvement "kick-off" meeting;

- City of Milwaukie TSP Update CAC (January '95) - briefing on the Regional Bicycle Program; discussed regional/local bicycle planning coordination;

- RTP Public Involvement Kick-Off Meeting "The Choices We Make" (January 95) - display table with Regional Bicycle Network, Bike Mode fact sheet, *Getting There by Bike* Map and postcard comment forms;

- Portland Bicycle Master Plan Steering Committee (Monthly) - coordination between city bicycle plan and regional bicycle plan;

- City of Portland Bicycle Master Plan Workshops (April and May at nine different locations) - Regional Bicycle Plan Map available for comment; handout materials on RTP, MTIP, and 2040 Framework;

- Washington County Bicycle Plan Kick-off Meeting (January '95) - presentation on Regional Bicycle Plan and assistance with county visioning process;

- 1995 Interim Federal RTP Update and $27 Million Regional Reserve Public Comment Meetings (April and May '95) - public comments on bicycle mode goals, objectives and policies in the federal RTP and bicycle projects competing in the Metropolitan Transportation Improvement Program process. Public comment meetings (*Priorities '95*) were held in the City of Portland and Clackamas, Multnomah and Washington Counties; and

- 2040 Framework Open Houses (five meetings in June and July '95) - public comments on multi-modal regional transportation issues.

Extensive public involvement and Metro Council consideration of the Regional Bicycle Plan will occur along with the development of the second phaseof the Regional Transportation Plan update through mid-1996.

Chapter II
PLANNING CONTEXT

Metro has planned for bicycles for over 20 years. Recent federal and state regulations require Metro to further integrate bicycle planning into regional transportation planning. Regional bicycle planning has progressed from broad scale identification of routes, to identifying general corridors for bicycle travel, to a full network of specific streets and multi-modal paths designated as regional bikeway corridors. Bicycle transportation is an important strategy in the Regional Transportation Plan (RTP) and is incorporated into the Regional Urban Growth Goals and Objectives and the Region 2040 Growth Concept. This chapter will explain and define the role of bicycle transportation in regional planning.

TRANSPORTATION PLANNING REGULATORY REQUIREMENTS

Recent federal and state legislation gives prominence to the importance of bicycle transportation as part of an integrated, multi-modal transportation system. Incorporation of this plan into the Regional Transportation Plan will meet the federal and state requirements.

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)

The recently adopted 1995 Interim Federal RTP fulfills the requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 with policy language emphasizing the importance of bicycle transportation and a list of bicycle projects. ISTEA requires Metropolitan Planning Organizations to consider bicycles and pedestrians in developing regional transportation plans. ISTEA restructured federal transportation funding into several new programs with increased flexibility for funding bicycle projects.

Oregon Land Conservation and Development Commission's Transportation Planning Rule

The Oregon Land Conservation and Development Commission's Transportation Planning Rule (TPR) requires Metro to develop a transportation plan that includes a full bicycle element. The TPR requires consideration of bicycles as one of several elements in a multi-modal transportation system. Transportation plans must include a network of bikeways connecting activity centers.

METRO TRANSPORTATION PLANNING FRAMEWORK

Metro is the region's directly elected government. It is responsible for a variety of regional services and planning and is the designated Metropolitan Planning Organization (MPO) for the Portland metropolitan area. As the MPO, Metro must complete a Regional

Transportation Plan and Metropolitan Transportation Improvement Program (MTIP) that conform with the 1990 Clean Air Act Amendments.

Regional Transportation Plan

The Regional Transportation Plan establishes transportation policy for the Portland metropolitan area. The RTP identifies a multi-modal transportation network and establishes priorities for regional transportation funding. Public involvement and council adoption of the Regional Bicycle Plan will be concurrent with updating the RTP.

Metropolitan Transportation Improvement Program (MTIP)

Metro is responsible for allocation of Surface Transportation, Congestion Management/Air Quality and Transportation Enhancement funding to jurisdictions and projects within the Portland metropolitan area. Projects constructed with federal and state transportation funds must be included in the MTIP. The MTIP must be consistent with the RTP and meet Air Quality Conformity requirements of the 1990 Clean Air Act Amendments.

Air Quality Conformity

Bicycle projects that potentially affect the traffic operations of a regionally significant roadway (major collector and above) need to prove minimal impact on traffic operations or be modeled for air quality compliance. Bicycle and pedestrian projects that do not affect traffic operations are exempted from Air Quality Conformity regulations.[1]

PAST BICYCLE PLANNING EFFORTS

Metro has completed two significant regional bicycle planning efforts. However, until recently, Metro was only peripherally involved with implementation of the bicycle plans. The plans provided voluntary guidance to local jurisdictions.

Bikeway Plan for the Columbia Willamette Region, 1974
Columbia Regional Association of Governments (CRAG)

The 1974 Bikeway Plan initiated bicycle planning in the region. It combined various existing streets and separated paths into over 70 bicycle routes, and established policies for regional bicycle planning. The most notable change in the last 20 years is the type and design of facilities. The 1974 plan emphasized separation of bicycles and autos and used several designs that have proven problematic in operation, such as shared sidewalks and narrow bike paths.

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[1]40 CFR 51.460.

Regional Transportation Plan for the Portland Metropolitan Area, 1982

This plan was Metro's first adopted RTP. Bicycles appear only twice; once in a discussion of bicycle access within land use decisions, and again in the transportation demand management section, where programs promoting bicycle marketing and employer incentives are described. The City of Portland Bicycle Program was cited as having a goal of 5 percent of all Portland work trips by bicycle by 1985, an ambitious goal that has not been attained 10 years later. Development of a regional bikeway plan to update the 1974 CRAG bikeway plan was determined to be a major outstanding issue to be resolved at a later date.

Regional Bicycle Plan, August 1983

The 1983 Regional Bicycle Plan defines regional policy with respect to bicycle facilities and programs, and provides guidelines for encouraging the use of bicycles as an alternate mode of transportation. The 1983 plan updated the 1974 Regional Bikeway Plan. The 1983 plan identified over 270 miles of regional bikeways and a new regional network based primarily on the regional arterial system. It established several regional goals for coordination of regional bicycle planning activities, and for encouraging jurisdictions to implement bicycle facilities. Implementation of the plan was left to local jurisdictions.

SIGNIFICANT REGIONAL PLANNING EFFORTS

Recently Metro has undertaken several regional planning efforts that include bicycling as an important strategy.

Regional Transportation Plan (1992 Revision of the 1989 Update)

The 1992 Regional Transportation Plan discusses bicycle use as one of several strategies to reduce transportation demand. The 1992 RTP stated that "the adoption of the Regional Bicycle Plan element of the RTP signifies the region's recognition of bicycling as a legitimate form of transportation." The 1992 RTP's policy goals for bicycling were similar to the goals in the 1983 Regional Bicycle Plan; the network included specific streets and several planning corridors.

Regional Urban Growth Goals and Objectives (RUGGO) 1991

The RUGGOs set general policy objectives and established a process for coordinating planning to guide regional growth and maintain livability in the region. Increasing bicycle transportation is discussed as an important strategy for reducing travel demand and providing a balanced transportation system. RUGGO Objective 14 states that: "A regional transportation system shall be developed which: reduces reliance on a single mode of transportation through development of a balanced transportation system which employs

highways, transit, bicycle and pedestrian improvements, and system and demand management."

Region 2040 Growth Concept, 1994

The Region 2040 Growth Concept establishes a framework for managing regional growth through the year 2040. It envisions more efficient land use and a diverse and balanced transportation system closely coordinated with land use plans. Bicycling is an important element of the transportation concept envisioned in Region 2040. This section discusses the importance of bicycle transportation in selected elements of the 2040 Growth Concept.

Regional and Town Centers. The Growth Concept transportation system provides multi-modal access to regional and town centers. Regional centers will become the focus of compact development, redevelopment and high quality transportation service. Town centers provide local shopping and employment opportunities within a local market area. These centers will provide a mixture of activities allowing residents access to most of their needs using shorter trips. The Regional Bikeway Network, described in Chapter VI, will assure bicycle access to regional and town centers.

Street Density: An important element of regional and town centers is an improved local street system including a network of local streets providing 8 to 20 street connections per mile. Bicycle and pedestrian connections should be made in new and existing areas where full street connections are not possible. Dense street networks allow bicyclists to access their destinations using local streets with minimal auto traffic. Results from past surveys of bicyclists, such as the 1982 *Attitude Survey for the Portland Metropolitan Bicycling Encouragement Program*, have shown some discomfort with large volumes of auto traffic. Scattered through streets and unconnected local street networks require bicyclists to use major streets to reach destinations. Most major streets with bike lanes are relatively safe and direct, but not aesthetically pleasing. Providing a dense street network will provide safe and convenient connections for bicycles. Arterials will continue to be an important element of the multi-modal circulation system. With careful design, arterial streets can carry heavy traffic volumes at reasonable speeds and provide safe and convenient bicycle and pedestrian access. The 1996 Regional Transportation Plan update will include an extensive discussion of street design issues.

Main Streets, Station Communities and Corridors: Main streets feature storefront style development primarily supported by surrounding neighborhoods. Station communities around light rail and other transit stations are envisioned as featuring a high quality pedestrian and bicycle environment. Corridors will not be as intensively planned but will have a similar emphasis on bicycle transportation.

Increased bicycle transportation opportunities will benefit station communities, corridors and main streets. Metro's Main Streets program has identified several attributes of thriving walk-up commercial areas including a streetscape that holds a pedestrian's interest. Surface parking lots break up the streetscape and deter pedestrians. The parking lots are

necessary because many patrons do not live within walking distance of retail uses. Providing bicycle parking could eliminate the need for some auto parking and begin to improve the pedestrian environment by removing auto parking lots from main street areas. Bicycle access to station communities will also help decrease the need for extensive auto parking at transit stations, providing valuable space for commercial and residential development. Providing adequate traffic capacity while maintaining a quality street life is a critical issue for regional transportation corridors. Bikeways can serve many trips along the corridors without the impacts associated with automobile transportation.

CURRENT PLANNING EFFORTS

Metro is currently involved in a major planning effort that will build on the 2040 Growth Concept to provide a regulatory framework for managing the region's use of land use and transportation system.

Regional Transportation Plan Update

The RTP is the region's 20-year transportation plan; the 1996 update will be an extensive revision to reflect the 2040 Growth Concept and comply with the Transportation Planning Rule. The first phase of the update was completed in May with adoption of the 1995 Interim Federal Regional Transportation Plan (federal RTP). The federal RTP is consistent with the 1991 ISTEA and includes a revised Regional Bicycle Network map, and goals, objectives and policies to guide implementation of the network.

The Federal Regional Transportation Plan has three guiding principles:

- Encourage and facilitate the economic growth of the Portland region through improved accessibility.
- Ensure that the allocation of increasingly limited fiscal resources is driven by both land use and transportation benefits.
- Place a priority on protecting the natural environment in all aspects of the transportation planning process.

2040 Framework

The Metro Charter, approved by the voters in 1992, requires Metro to adopt a regional framework plan to specify how the region and local communities will implement the Region 2040 Growth Concept. The regional framework plan, now known as "2040 Framework," will include the Regional Transportation Plan and plans discussing use of land, water resources, and natural areas. 2040 Framework will be developed and refined over the next two years. 2040 Framework will be considered for adoption by Metro Council in the fall of 1997.

- Policy: Ensure that the current level of funding for bicycle facilities will be maintained or increased in future regional allocations.
- Policy: Identify new sources of revenue for constructing regional bicycle facilities; aggressively pursue all opportunities for increased funding.

Objective 2: Provide planning guidance to local jurisdictions.

- Policy: Coordinate consistent planning and implementation of regionally significant bicycle facilities.
- Policy: Develop travel-demand forecasting for bicycles and integrate with regional transportation planning.
- Policy: Coordinate with jurisdictions on streamlining data collection and utilizing mapping resources.
- Policy: Continue the Regional Bicycle Program.

Objective 3: Promote increased bicycle use for all travel purposes.

- Policy: Participate in and cooperate with local efforts to promote bicycle transportation.
- Policy: Continue to update and publish a bicycle suitability map for the Portland metropolitan area.
- Policy: Establish modal share targets for work and non-work trips to activity centers identified in 2040.

GOAL 3: ENCOURAGE BICYCLISTS AND MOTORISTS TO SHARE THE ROAD SAFELY

Objective 1: Coordinate efforts by jurisdictions in the region to promote safe use of roadways by bicyclists and motorists.

- Policy: Act as a clearinghouse to distribute safety information to local jurisdictions, schools and community organizations.
- Policy: Act as a clearinghouse to distribute information that educates motorists and bicyclists on sharing the road to jurisdictions and community organizations.

The remainder of this document discusses the implementation of goals related to completing the regional bicycle network and increasing bicycle mode share. The safety/encouragement goal is an outstanding issue for the Regional Bicycle Program, and will be discussed in Chapter VIII.

Chapter IV
EXISTING CONDITIONS

This chapter will discuss characteristics of bicycle users, types and uses of bicycle facilities and the existing conditions in the region.

CHARACTERISTICS OF BICYCLISTS

Metro recently completed an extensive travel behavior survey designed to accurately measure transportation choices and activities. Compilation of the survey data is about 50 percent complete. The new information, while preliminary, provides the following information on bicycle use compared to other modes, described in Table 1 and summarized below:

- Approximately 68 percent of the region's bicyclists are male. Table 1 also indicates that the other travel modes experience more of a male/female balance. The mean age of 32 for bicyclists is five to seven years younger than other mode users.

- Bicyclists' household income is generally in the mid-range, $25,000 to $55,000. Transit riders and pedestrians generally have lower income than bicyclists, while motorists have higher incomes.

- About 28 percent of bicycle trips are to work or school; the remaining 72 percent are for non-work purposes. The work/school trip percentage is higher for bicyclists than pedestrians and motorists, but lower than transit riders.

- Table 1 indicates that places in the region with good street continuity, sidewalks, ease of street crossing, and gentle topography experience the highest percentage (3.3 percent) of bicycle trips. Along the MAX light rail corridor, the percentage of bicycle mode split is about 2.8 percent. The lowest bicycle use is in suburban areas.

To summarize, the "typical" bicyclist in the Portland metropolitan area is a 32-year old male, with a household income between $25,000 and $50,000, who bicycles in the urbanized areas of Multnomah County.

Table 1
Characteristics of Existing Bicyclists

	Walk	Bike	Transit	Auto	All Modes
Gender					
Percent Male	49	68	44	44	45
Percent Female	51	32	56	55	55
Trip Purpose					
Pct. Work/School	20	28	36	18	19
Pct. Non-Work	80	72	64	82	81
Mean Age	37 yrs.	32 yrs.	39 yrs.	39 yrs.	39 yrs.
Income					
Pct. over $25,000	29	19	39	17	19
Pct. $25 - 55,000	51	64	58	54	53
Pct. under $55,000	22	17	13	29	28
Sample Strata Mode Split					
Multnomah Co:					All add to
Inner Portland	14.6%	3.3%	6.2%	75.9%	100%
MAX Corridor	7.2%	2.8%	4.0%	86.0%	
Mult. Suburb.	10.1%	1.1%	3.7%	85.8%	
Wash. Co.	7.4%	0.6%	0.8%	91.2%	
Clack. Co.	5.2%	0.9%	0.1%	93.8%	

Source: 1994 Activity and Travel Behavior Survey (50 percent Complete - Raw Data)

BICYCLE FACILITIES

The existing and proposed regional bikeway network includes several types of facilities for bicycle transportation:

- Bicycle Lanes: Striped lanes dedicated for bicycle travel on curbed streets, a width of five to six feet is preferred; four feet is acceptable in rare circumstances. Use by autos is prohibited.
- Shoulder Bikeways: Five to six foot shoulders for bicycle travel and emergency parking.
- Multi-use Trails: Eight to twelve foot paths separate from the roadway open to non-motorized users.

Chapter III
GOALS, OBJECTIVES AND POLICIES

This chapter identifies the steps needed to complete development of the bicycle transportation system and fulfill the "Bicycles Everywhere" vision discussed in Chapter I. The goal statements identify large-scale activities to achieve the vision. Objectives identify actions necessary to achieve the goals, and policies lay out specific tasks to achieve the objectives. These statements were adopted by the Metro Council in May, 1995 as part of the Interim Federal RTP.

GOAL 1: PROVIDE A REGIONAL NETWORK OF SAFE AND CONVENIENT BIKEWAYS INTEGRATED WITH OTHER TRANSPORTATION MODES

Objective 1: Integrate the efforts of the state, counties, and cities in the Portland metropolitan area to develop the most safe, cost-effective, aesthetic and practical system of regional bikeways.

- Policy: Ensure that local bicycle projects are coordinated and connected with other jurisdictions when possible.
- Policy: Develop and update a system of regionally significant bikeways which connect activity centers identified in the 2040 Growth Concept.
- Policy: Assure that the regional bikeway system functions as part of the overall transportation system.
- Policy: Ensure that jurisdictions implement regionally significant bikeways in accordance with established standards. (i.e., the Oregon Bicycle and Pedestrian Master Plan.)
- Policy: Ensure bicycle access to existing and future LRT stations, transit centers and park and rides.
- Policy: Ensure integration of multi-use paths with on-street facilities when possible.

GOAL 2: INCREASE THE MODAL SHARE OF BICYCLE TRIPS TO REGIONAL CENTERS TO 10 PERCENT BY THE YEAR 2015

Objective 1: Secure additional funding sources to implement regional bicycle facilities.

- Policy: Ensure that all regionally funded transportation projects provide for bicycle accessibility using established standards.
- Policy: Develop a prioritization and selection process for regional bicycle facilities that will assure implementation of critical regional projects and effectively utilize limited funding resources.

- Bicycle Boulevards: Local streets with a variety of improvements to enhance bicycle traffic and limit or calm auto traffic.

CURRENT CONDITIONS FOR BICYCLING

General Characteristics

Urban design types in the Portland metropolitan area generally fall into two categories. Most of the City of Portland and small segments of several other communities have relatively dense networks of local residential streets, with 200-foot blocks. The dense local street network is punctuated with a pattern of arterial streets serving commercial uses. This design pattern works relatively well for most bicycle trips. The local street network provides connections for bicycles for recreational and local trips without having to encounter substantial volumes of auto traffic. However, frequent stop signs and difficult major street crossings limit the utility of these streets for commuting and utilitarian trips. Major streets tend to be narrow with on-street parking and limited room for bicycles. The lack of bicycle facilities on the major street system causes difficulties in accessing commercial destinations and crossing of barriers such as interstate freeways, principal arterials, and rivers.

Most of Washington County, Clackamas County, eastern Multnomah County and southwest Portland has a typical postwar suburban form. This is characterized by relatively few street connections, with some local streets ending in cul-de-sacs or unimproved streets. This type of urban form is more difficult for new and recreational bicyclists because they are forced to use major streets to make through connections.

Conditions for bicycles on the major street network vary substantially throughout the region. In eastern Multnomah County the arterial and collector street network follows a well-established grid. Most major streets have bicycle lanes and missing bicycle lane sections tend to have wide parking strips that are not heavily used. Bicyclists face some difficulties at major street intersections and driveways.

In Clackamas County, bicycle lanes provide north-south connections paralleling McLoughlin Boulevard and along the west side of the Willamette River on Highway 43. Major streets without bicycle lanes are often narrow with high traffic volumes, and provide limited bicycle access to commercial areas.

In Washington County, streets without bicycle lanes tend to be narrow with high traffic volumes. Although certain streets have been improved with bicycle lanes, the missing sections are very difficult for bicyclists and complicate bicycle transportation in this area.

Figure 1 describes existing and programmed bike lanes. Existing multi-use trails are shown on Figure 5 in Chapter 6. Table 2 indicates the estimated mileage of bicycle lanes and multi-use trails by county.

Figure 1
Existing and Programmed Bike Lanes

- Existing Regional Bike Lanes
- Existing Local Bike Lanes
- Programmed Bike Lanes
- Urban Growth Boundary
- County Boundaries

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Table 2
Estimated Miles of Existing Bicycle Lanes and Multi-Use Trails

Facility	Washington County	Multnomah County	Clackamas County	Total
Bicycle Lanes	95 miles	110 miles	55 miles	260 miles
Multi-Use Trails	13 miles	60 miles	13 miles	86 miles

Source: Metro *Bike There!* data base

Bicycle Conditions in Central City and Regional Centers

The Region 2040 Growth Concept focuses development in the central city and regional centers. Bicycle access to and from these areas is an important element in the transportation system for these areas. The quality of bicycle access varies throughout the region. Often there are relatively complete bicycle corridors that end with gaps near the activity center.

Central City. Bicycle access within the Central City is relatively good. The downtown street system regulates traffic speeds to a level comfortable for bicycle travel. Access from the west is complicated by the west hills and the I-405 freeway. The streets crossing these two barriers are generally narrow with very heavy traffic. To the south, bicycle lanes on Terwilliger provide a pleasant but hilly connection. Barbur Boulevard, with a gradual hill, is narrow with heavy traffic. Bicycle lane projects are planned for most of Barbur Boulevard over the next two years. Three Willamette River bridges provide adequate bicycle access, with several bridge approaches being striped with bicycle lanes this year.

Beaverton. Bicycle access into Beaverton is generally difficult. Most of the major streets into Beaverton, including Cedar Hills Boulevard and Beaverton Hillsdale Hwy., are narrow and heavily traveled. Local streets provide limited and circuitous access. Two bicycle projects funded through Congestion Mitigation/Air Quality funds (CMAQ), Hall Boulevard near Fanno Creek and Cedar Hills Boulevard north of the business district, will help provide better access in the Beaverton area.

Washington Square. The Washington Square area is currently dominated by several large shopping centers. Within the area, existing land uses and streets are very difficult for bicycles. Bicycle lanes on several major streets provide relatively good access to the area with bicycle lanes on Hall Boulevard and Scholls Ferry Road.

Hillsboro. Downtown Hillsboro is characterized by a relatively dense street network that provides alternatives for bicycles. Bicycle lanes on Tualatin Valley Highway connect west, with the only missing section on the edge of Hillsboro. Several other routes into Hillsboro will require extension of bicycle facilities.

Oregon City. Steep topography and the Willamette River limit access to Oregon City. The Oregon City bridge has a narrow sidewalk for bicycles with bicycle lanes on Highway 43 connecting to West Linn and Lake Oswego. Highway 99, the major north-south route, is narrow with high levels of traffic and geographic constraints.

Clackamas Town Center. This area is difficult for bicycles because of heavy traffic, large parking lots and complex street connections. The I-205 bicycle path provides north-south access. Harmony Road and Sunnyside Road have bicycle lanes on either side of Clackamas Town Center. Sunnyside Road adjacent to Clackamas Town Center does not have bike lanes; also, turning movements and traffic patterns in the area are complex, with double left-turn lanes and some eight to nine lane roadway cross-sections. Connections on or adjacent to Sunnyside Road will be critical to improving access to this area for bicyclists.

Milwaukie. Milwaukie is an older community with a developed local street system. From the south, there are several streets with bicycle lanes; from the north, River Road provides an alternative to McLoughlin Boulevard. Within Milwaukie, most collector streets do not have bicycle facilities. When surfaced, the Springwater Trail will run through Milwaukie connecting east with the I-205 bicycle path and eventually Gresham.

Gateway. Burnside provides east-west access and the I-205 bicycle path provides north-south connections. There is a need for more east-west access to the north, along Halsey Street, and more north-south access along 102nd Avenue.

Gresham. Gresham has the most complete bicycle network of the regional centers. Bicycle lanes connect the regional centers from the east, west and north. Bicycle facilities on several streets provide access within the regional center and the Springwater Trail provides a connection on the southern edge of the area.

CHAPTER V
REGIONAL BIKEWAY NETWORK CONCEPT

The Regional Bikeway Network identifies a system of bikeways throughout the region that provide major connections between the central city, regional centers and town centers. It will layer regional corridors, trails and local bikeways to provide a seamless network of bikeways.

SEAMLESS NETWORK

For the motorist, the region's roadway network provides complete connections between different types of facilities. The motorist moves from local streets, to arterial streets to highways without encountering gaps in the system. Jurisdictional ownership has minimal effect on the quality of facilities for motorists.

In contrast, bicycle connections are often not available. Bicycle lanes can be sporadic due to phased implementation of corridor improvement projects, and can vary dramatically between jurisdictions. Bicycle travel is complicated by the lack of clear connections and by significant barriers caused by major highways and rivers. Also, inconsistencies between jurisdictional design standards can be confusing to the bicyclist. The purpose of the regional bikeway network is to assure a connected network. Figure 2 describes the existing gaps in the regional bikeway network.

The regional bikeway network will address the lack of connectivity by emphasizing completion of missing connections. Bikeway projects are often constructed as part of roadway projects with the termini determined by the roadway needs. Often, these projects do not provide continuous bike lanes. The regional bikeway network will establish the importance of regional bikeways and assure that connections are made.

LAYERS CONCEPT

The regional bikeway network includes several types of bikeway networks integrated to form a comprehensive system. The network consists of the following layers of facilities. Corridors are described in more detail in Chapter VI.

- Central City Corridors: Corridors that provide bicycle access from the central city to regional centers. These corridors are intended to remove priority gaps in the regional system.
- Regional Center Corridors: Corridors that provide bicycle access to and from adjacent regional centers.
- Regional Center Connectors: Specific streets that provide multi-directional connections from the regional centers to town centers and other regional destinations.

Figure 2: Gaps in the Regional System

Proposed Bikeways

Urban Growth Boundary

County Boundaries

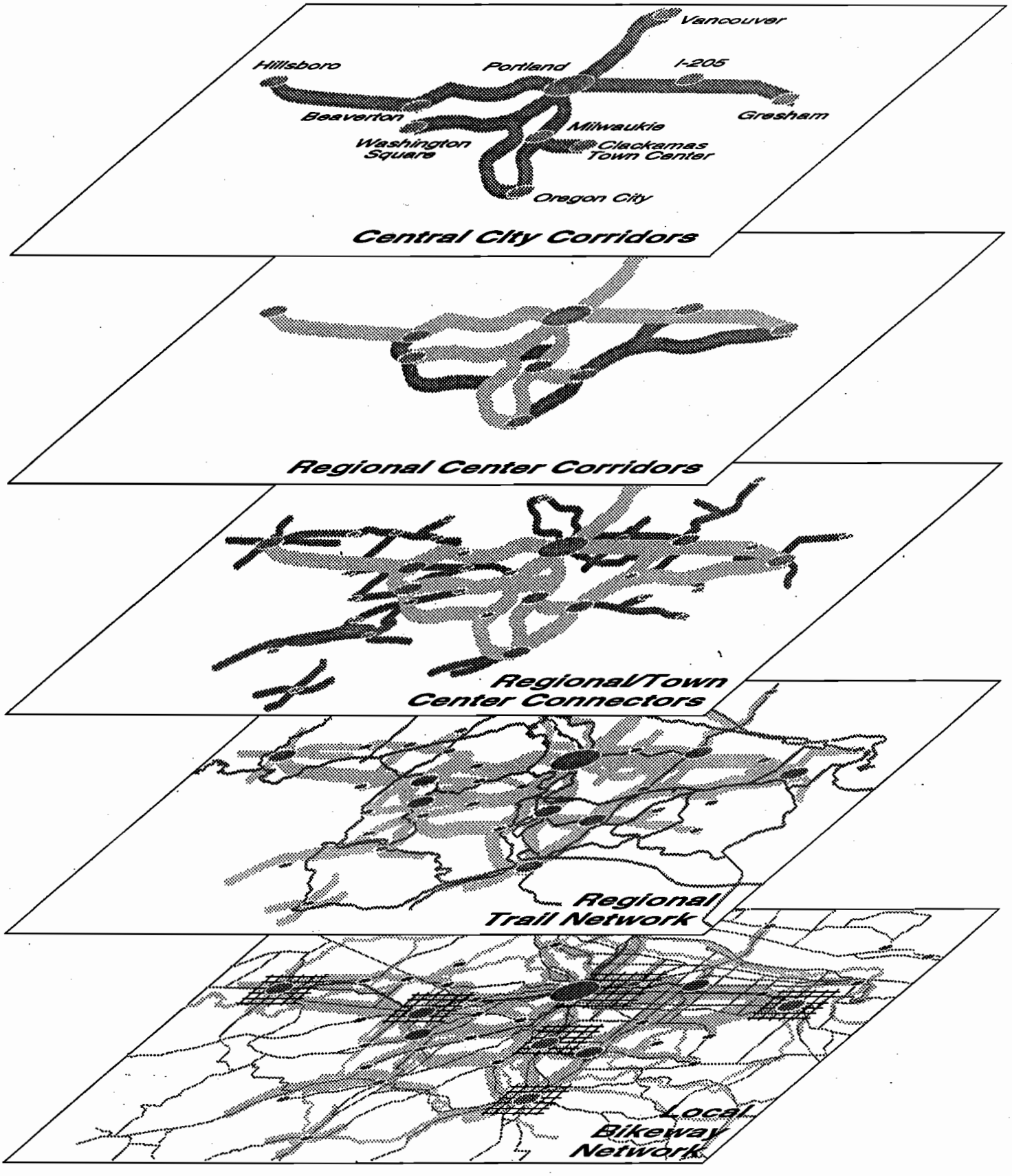
600 NE Grand Ave.
Portland, OR 97232-2736
(503) 797-1700

METRO

94397pltfig7.aml, plot date: June 14, 1995

Figure 3

Regional Bikeway Network Layers Concept



- Regional Trails Network: Identifies a system of off-street trails that fulfill a specific transportation function.
- Local Bikeway Network: Networks developed by local jurisdictions that provide access to town centers and other local destinations.
- Multi-Modal integration: While not specifically included in the network, connections to regional transit and freight facilities are important to the region.

The central city and regional center corridors will assure that most major transportation connections will have bicycle facilities. Regional center connectors will complete a fine web of facilities connecting regional centers and town centers. Local bikeway networks carry the system to the town center and local jurisdiction level. Figure 3 illustrates how this concept is constructed. Figure 4 describes the Proposed Regional Bikeway Network as adopted in the federal RTP.

REGIONAL BIKEWAY NETWORK COMPONENTS

Central city corridors, regional center corridors, and regional center connectors are described in detail in Chapter V1. The regional trails network, local bikeway network, and multi-modal integration are described below.

Regional Trails Network

Regional trails are off-road paths that connect to on-road bikeways forming a complete system of bikeways. There are several separated multi-use trails in the Portland area. These trails offer users both recreational and transportation opportunities. Recreational trails are important for bicycling, providing alternatives to busy streets and a pleasant environment for all levels of bicycle users.

Many cities have begun to build bicycle systems based on off-street trails. Eugene's Willamette River Greenway trail forms a critical east-west spine connection, and Seattle's Burke-Gilman trail, which connects the University of Washington with downtown, experience extremely heavy use. Both trails are important because they connect important destinations and significant neighborhoods with well-designed facilities.

Developing connections between the street system and trails is critical. Good street connections to multi-use trails should be an important local and regional priority. With good access, the trails system will be an asset to the region's transportation system. Portland has several off-street trails that present a variety of opportunities. The Waterfront Park promenade provides an off-street connection through downtown; however, its success sometimes leads to conflict between bicycles and other users. The I-205 bicycle path provides a separated path along the I-205 Freeway providing a north-south connection. Several intersections on the trail present potential safety problems for bicycles due to the volume of east/west auto traffic.

Figure 4
Proposed Regional Bicycle Network
August, 1995

LEGEND

- Existing regional system (bike lanes or shoulders)
- Existing local bike lanes
- Programmed or committed bike lanes
- Local system bike boulevards
- Existing multi-use trails
- Proposed multi-use trails
- Proposed bikeways/corridors (no funding identified)

Region 2040 Development Types

- Central City
- Proposed Regional Centers
- Town Centers
- County Boundary
- Urban Gowth Boundary

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PORTLAND, OREGON 97232 2736
TEL 503 797 1700

Figure 4
Proposed Regional Bikeway Network
(see attachment)

The Springwater Trail, currently open in Gresham and scheduled to open in Portland in 1995, will provide connections from Gresham to inner eastside Portland. The trail has great potential for transportation use particularly with a planned connection to the Hawthorne Bridge and downtown Portland.

Greenspaces Bond Measure. In May 1995, Metro area voters approved the Greenspaces bond measure that authorizes purchase of $136 million in general obligation bonds to preserve greenspaces and develop parks and trails. The measure will provide resources to complete two regional trails: extension of the Springwater Trail to OMSI and implementing the Peninsula Crossing Trail, which connects the Willamette and Columbia Rivers in North Portland.

The measure also provides funds for acquisition of several trail rights-of-way:

- Fanno Creek Greenway, a 12-mile corridor in Beaverton;
- Burlington-Northern Rails to Trails, a 7-mile trail connecting Sauvie Island to Northern Washington County;
- Beaver Creek Canyon Trail east of Troutdale; and
- Clackamas River Greenway near Oregon City.

Multi-Use Trails of Regional Significance. Figure 5 identifies the Regional Trails Network, including existing and planned multi-use trails in the regional bikeway network. The Regional Trails Network is included in the 1992 Metropolitan Greenspaces Master Plan. Completion of this plan would provide the region with an extensive recreational and transportation trails network. The following trails would provide significant bicycle transportation benefits:

- Willamette Greenway/PTC Trail: This system of trails will connect the Central City, several regional centers and residential areas along the length of the Willamette River. Particularly important is the Willamette Shoreline trail to Lake Oswego, the PTC trail adjacent to McLoughlin Boulevard and completion of the Springwater Trail to OMSI and the Hawthorne Bridge.
- Powerline Trail: This trail would connect the Beaverton and Tigard areas and provide bicycle connections to Westside LRT. No funding is currently available.
- Fanno Creek/Beaverton Creek Trail: This trail will provide connections through Beaverton and Tigard Regional Centers.
- Peninsula Crossing Trail: This trail will connect the Willamette and Columbia Rivers in North Portland, and serve a densely populated urban area.
- Sullivan's Gulch Trail: This trail will parallel I-84 providing access from the Central City to the Gateway regional center.
- Gresham/Fairview Trail: This trail provides a north/south link in east Multnomah County from the Springwater Trail to Blue Lake Park and Marine Drive.

Figure 5
Existing and Proposed Regional Trails

- Existing Trail Corridors
- Proposed Regional Trails
- Urban Growth Boundary
- County Boundaries

Source: Metropolitan Greenspaces Master Plan (July 1992)

600 NE Grand Ave.
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(503) 797-1700

METRO

94397plltrails.aml, plot date: July 29, 1995

Local Bikeway Network

The local bikeway network connects local streets and collectors with regional routes to form the distribution system for the bikeway network. Planning and developing local bikeway networks is the responsibility of local jurisdictions. Regional transportation funds may be used for a variety of improvements for bicycles and pedestrians in regional and town centers.

Multi-Modal Integration

Integration with Transit. Transit and bicycle integration offer great opportunity to increase travel for both modes. The bicycle works well for short and medium distance trips (two to five miles); however, longer utilitarian trips are generally not practical for most people. Transit can provide the missing link for longer bicycle trips. Bus and LRT require significant populations within walking distance or parking facilities for patrons to drive to the transit center or park-and-ride. The integration of bicycle use with transit can increase the catchment area of transit stations, particularly for bus stops with limited room for parking.

Integration with transit requires bicycle access to transit facilities. The regional bikeway network, when completed, will provide good bicycle connections to most of the region's transit system. The proposed network includes connections to several stations on LRT lines, all transit centers and access to most bus lines. Bikeway connections to park-and-rides and light rail stations are of primary regional interest. Local street connectivity to transit is of interest to local jurisdictions.

Transit facilities, particularly LRT stations and park-and-rides, should be designed or modified to provide direct and convenient bicycle access and secure bicycle parking. Park-and-rides, designed to handle heavy levels of traffic during peak hours, require careful consideration of bicycle safety and convenience.

Bicycle parking should be included at all park-and-rides and transit stations. Ideally, this parking should include a mix of short term and long term, weather-protected spaces, all located at least as close to boarding areas as the nearest auto parking space. They should be well-lit and visible from boarding areaas. Tri-Met currently offers lockers at some LRT stations and park-and-rides, which are moderately well used. Greater use of these lockers is probably necessary before this program can expand.

Tri-Met is well established as a national leader in the integration of bicycling and transit. The "Bikes on Tri-Met" program accommodates bicycles on most regular service routes through front-mounted bus racks and in-car storage on LRT vehicles. This program has successfully encouraged both transit patronage and bicycle use by allowing cyclists the option to carry their bicycle onto transit. Continuing and expanding this program will prove beneficial to bicyclists and Tri-Met. However, most locations with good bicycle

transit integration shift the focus to providing storage space for bicycles at the transit stop. The bicycle is not always needed on both ends of a transit trip.

Integration with Freight. Many of the region's freight facilities experience heavy levels of traffic congestion, often caused by non-freight traffic. Good bicycle access to freight facilities would allow workers to use an alternative transportation mode, and help to reduce private vehicle traffic in freight areas. Bicycle access to the Portland International Airport and Swan Island is particularly important. Portland International Airport does not currently have bicycle lane access.

CHAPTER VI
REGIONAL BIKEWAY CORRIDORS

The 1992 RTP included a regional bicycle route network that identified existing routes, routes programmed or under construction and proposed routes. The network was primarily based on the regional roadway system with several unspecified corridors. This chapter discusses regional bikeway corridors that consist of three elements: central city corridors, regional center corridors and regional center connectors. The discussion of regional center connectors identifies specific connections from regional centers to town centers and other regional activity locations, and describes recommended bicycle projects. The chapter closes with a discussion of available preliminary costs for the bicycle projects and the status of projects in the 1995 Interim Federal Regional Transportation Plan.

Regional bicycle corridors include a variety of existing and proposed facilities that serve a defined travel shed. A corridor travel shed for bicycles is an area approximately one-half mile adjacent to a bikeway. Bicyclists will usually not travel the entire length of a corridor on work or utility trips. The purpose of the corridors is to provide connectivity for bicyclists traveling to major regional destinations in coordination with bicycle facilities on local streets. Corridors will function like transit trunk routes, providing direct connections to regional destinations along with access for local trips.

CENTRAL CITY CORRIDORS

The following tables (Tables 3 through 9) describe central city to regional center corridors. The central city to regional center corridors are like spokes on a wheel, connecting the major suburban cities and activity centers with downtown Portland. The following tables indicate general termini, identify primary and secondary alternatives and describe recommended projects.

Table 3
North: Central City to Vancouver

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Willamette River Crossing	The Central City is accessed by the Broadway Bridge with relatively wide sidewalks and planned bicycle lanes on all bridge approaches.		Minor access improvements in Broadway Vicinity.
Broadway to Lombard St.	Bicycle Lanes on Vancouver/Williams Couplet.	Bicycle lanes on Hwy. 99/MLK Blvd.: This option would require extensive widening through an urban area with very high cost. Bike lanes on Greeley Ave. would provide an alternative west of I-5.	Bicycle lanes on Vancouver/Williams Couplet Bike lanes on Greeley Ave.
Lombard St. to Columbia River	Bicycle lanes on Hwy. 99 and bicycle facilities associated with I-5 are complete.		none
Columbia River Crossing	Narrow sidewalks on Interstate 5 bridge.		No projects identified. New river crossing under study as part of South/North Transit Corridor Study may provide opportunity for improved crossing.

Table 4
Willamette East: Central City to Oregon City

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Hawthorne Bridge to Milwaukie	MLK/Grand Couplet: Bicycle lanes would require widening and travel lane removal. OMSI to Springwater Trail, a Regional Trails and Greenspaces project, will provide an off-street connection for bicycles.	South of Powell Blvd. planned bicycle lanes on 17th Ave. may provide an alternative to McLoughlin Blvd., which has shoulders in sections, but also high traffic volumes. 17th Ave. also provides better access to the surrounding neighborhoods. 17th Ave. transitions to River Rd. which has bicycle lanes into Milwaukie.	Bicycle lanes on 17th Ave. OMSI to Springwater Trail Rails to Trails project.
Milwaukie to Oregon City	McLoughlin Blvd. provides a direct connection with access to the commercial area. Bicycle lanes would require selected widening. Sections of McLoughlin Blvd. will be striped with bicycle lanes this summer.	Bikeway on River Rd. provides an alternative but involves several hills and does not provide access to the commercial area. The Highway 99 bridge north of Oregon City is a significant constraint.	Bicycle lanes on McLoughlin Blvd./Hwy. 99 from Milwaukie to Oregon City. May require widening in selected areas.

Table 5
East Burnside: Central City/Gateway/Gresham

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Willamette River to E 28th Ave.	Bicycle lanes on the Burnside Bridge will end at 6th Ave. following implementation of planned lanes on E. Burnside. NE Couch and SE Ankeny Streets offer alternatives with selected local street improvements.	Bicycle lanes on Burnside from E 6th to 28th Ave. will be difficult to implement. Broadway/Weidler corridor from Lloyd District to Hollywood town center.	Improvements to local streets to provide bicycle boulevards.
E 28th Ave. to E. 74th Ave.	Recommended bicycle lanes on Burnside from E 28th to E 74th Avenues would provide the most direct connection.	Bike Lanes on Halsey St., or Tillamook St. bicycle boulevard.	Bicycle lanes on Burnside.
E 74th to SE 181 Ave.	Existing Bicycle lanes.	Bike lanes on Halsey St.	
E 181st to 196th Ave.	Installing bicycle lanes would require widening and possible right-of-way acquisition or removal of traffic capacity.	Bicyclists currently use a somewhat indirect local street/separated path connection.	Street improvements on Burnside to provide for bicycles.
SE 196th Ave. to Gresham	Existing bicycle lanes continue from SE 196th Ave. to US 26.		No projects

Table 6
Division/Powell: Central City to Clackamas Town Center

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Central City to SE 39th Ave.	The Hawthorne Bridge provides the most direct connection; the narrow sidewalks often become crowded during high use periods. Planned bicycle lanes and improved local streets provide connections to SE 39th Ave.		Widen existing sidewalks on the Hawthorne Bridge. Improvements to local streets.
SE 39th Ave. to 74th Ave.	Improved local street connections (Division and Holgate) are planned for development to 74th St	Bike lanes on Powell Blvd.	Improvements to local streets
SE 74th Ave. to I-205	Bicycle lanes on Powell from 74th Ave. to I-205 would require some widening.		Bicycle lanes on Powell Blvd.
I-205 to CTC	I-205 Bicycle path provides direct connection with intersection improvements	82nd/92nd Avenue	I-205 intersection improvements.

Table 7
West: Central City/Beaverton/Hillsboro

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Jefferson St. to Sylvan Hill	Improvements to Cornell Rd. or Burnside Rd. would require extensive widening and drainage improvements.	Terwilliger Blvd. to Beaverton Hillsdale Hwy. provides an existing alternative over the West Hills.	Bicycle lanes on Cornell Rd. or Burnside Rd.
Sylvan Hill to Cedar Hills Blvd.	Off-street path constructed with Westside LRT.	Beaverton Hillsdale Hwy. requires bike lanes west of the Wash. Co. line.	Bike lanes on Beaverton Hillsdale Hwy.
Cedar Hills Blvd. to Murray Blvd.	TV Hwy. provides the most direct connection; bicycle lanes will require extensive widening.	Walker Rd./Cornell Rd.	Bike lanes on TV Hwy. west of Beaverton.
Murray Blvd. to 10th Ave. (Hillsboro)	Existing bicycle lanes on TV Hwy.	Baseline Rd. could provide alternatives with extensive development planned as part of a locally funded project.	No projects.
10th Ave. to 1st Ave. (Hillsboro)	Bicycle lanes on TV Hwy. the most direct connection; will require some widening.	Hillsboro local steets provide an alternative connection.	Bikelanes on TV Hwy. within downtown Hillsboro.

Table 8
Willamette West: Central City to Oregon City

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Central City to Sellwood Bridge	Existing Willamette Greenway trail is somewhat indirect, requiring two or three local connections and convoluted routing. South of Willamette Park the trail is narrow and does not accommodate bicycle commuters well. Macadam Blvd. has heavy traffic and minimal room for bicycles.	Terwilliger Blvd., with bicycle lanes in several sections, provides a scenic and hilly alternative.	Improvements to the Willamette River Greenway Trail
Sellwood Bridge to Terwilliger Blvd.	The primary roadway, Hwy. 43, has heavy traffic and steep grades; cross-section widening would be difficult and expensive.	The Willamette Shore railroad ROW has potential as a mixed use trail to connect with the existing greenway trail.	Improvements to the Willamette Shore railroad ROW would require extensive study, as well as coordination with the Primary Transit Network.
Terwilliger Blvd. to Lake Oswego	Hwy. 43/A Avenue through Lake Oswego is narrow with high levels of traffic; widening would be difficult and expensive.	The Willamette Shore ROW provides an alternative into downtown Lake Oswego.	Improvements to the Willamette Shore railroad ROW (see above).
Lake Oswego to Oregon City	Hwy. 43 has bicycle lanes into West Linn. In West Linn the bicycle lanes along Hwy. 43 end at the A Street/Davenport intersection, and bicyclists are encouraged to use the bicycle lanes on A St. The Oregon City bridge provides a very narrow sidewalk, but the crossing distance is short.		Minor improvements to Hwy. 43 and local streets.

Table 9
Southwest: Central City to Washington Square

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Central City to Hillsdale	Barbur Blvd. is the most direct connection with the least elevation.	Terwilliger Blvd., with bicycle lanes, provides a scenic yet hilly alternative.	Bicycle lanes on Barbur Blvd.
Hillsdale to Garden Home	Existing Bicycle lanes on Multnomah St.	Beaverton Hillsdale Hwy. to Scholls Ferry Rd. is an existing alternative.	
Garden Home to Oleson Rd.	Bicycle lanes on Garden Home Rd. would require extensive widening	Scholls Ferry Rd. from Beaverton Hillsdale Hwy. to Hall Blvd. is an existing alternative.	Bicycle lanes on Garden Home Rd.
Garden Home to Washington Square	Bicycle lanes on Oleson Rd. would require extensive widening.		Bicycle lanes on Oleson Rd.

REGIONAL CENTER CORRIDORS

The following tables (10 through 14) describe connections between adjacent regional centers. The regional center corridors are generally circumferential, connecting the major suburban cities and activity centers.

Table 10
Gresham to Clackamas Town Center

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Gresham to I-205	Springwater Trail, a rails to trails project, which should be completed this year.	Powell Blvd. and Foster Rd. Other more direct alternatives involve significant hills.	None.
I-205 to Clackamas Town Center	I-205 Bicycle path provides a relatively direct connection.	Stevens Rd./92nd Ave. provides a surface street alternative.	Bicycle lanes on 92nd Ave. and intersection improvements for the I-205 bicycle path.

Table 11
Oregon City to Clackamas Town Center to Gateway

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Oregon City to Gateway	This corridor is served by the I-205 bicycle path which provides a separated, if circuitous, route. Several intersections along the I-205 corridor need safety improvements. The I-205 bicycle path is difficult to use for many utilitarian purposes; long-term planning in this corridor should explore other alternatives.	On-street alternatives to the I-205 path will require development. Several alternatives exist including 82nd and 92nd Ave.	Improvements to I-205 bicycle path intersections.

Table 12
Clackamas Town Center to Milwaukie

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Clackamas Town Center to Linwood Ave.	Bicycle lanes on Harmony Rd. begin west of 82nd Ave.	West of 82nd Ave., Monroe St. provides a local collector alternative.	Extension of Harmony Rd. bike lanes east on Sunnyside Rd.
Linwood Ave. to Downtown Milwaukie	Existing bicycle lanes on Lake Rd. to Oatfield Rd.	Bicycle lanes on Railroad Ave. or Monroe St.	Extension of bicycle lanes on Lake Rd. west from Oatfield Rd.

Table 13
Beaverton to Washington Square

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Beaverton to Washington Square	Existing bike lanes on Hall Blvd. from the edge of Washington Square to Beaverton	Sorrento Rd. and Erickson Ave. provide a secondary alternative	Extend Hall Blvd. bicycle lanes to Hwy. 217.

Table 14
Washington Square to Lake Oswego/Milwaukie

Segment	Primary Alternative	Secondary Alternative	Recommended Projects
Washington Square to Lake Oswego; Milwaukie to Lake Oswego	Existing bike lanes on portions of Hall Blvd. I-5/Hwy. 217 interchange is a major barrier to bike travel. Mix of multi-use trails, shared roadway and bike lanes on Kruse Way, Boones Ferry Rd., and Country Club Rd. serve Lake Oswego. Sellwood Bridge is nearest river crossing for Milwaukie to Lake Oswego.	A shared roadway route from Hall Blvd. to 72nd Ave. to Carman Dr. to Kruse Way provides a "bypass" of the I-5/Hwy. 217 Interchange barrier.	Serving the bicycle mode is a goal of the ongoing I-5/Hwy 217 Sub-area Transportation Plan. New bridge alternatives are under study in the South Willamette River Crossing study.

REGIONAL CENTER TO TOWN CENTER CONNECTIONS

Besides the regional corridors, directional access to each regional center and connections to the town centers are important for the regional network. Bicycle transportation projects that provide access to the regional center and regional destinations in proximity will be a priority of the regional bikeway system. This will provide connections to most town centers, transit centers and other important regional destinations. Figure 6 illustrates, in concept, the extensive connections made by providing connections to the north, south, east and west within each regional center travel shed. The regional center travel shed is an area within about two to three miles of each regional center. Because many utilitarian bicycle trips are about two to three miles in one direction, the regional center/town center connections, along with the local bikeway system, should serve most bicycle trips within the Portland metropolitan area. Figure 6 also describes the concept of regional center to town center connections. The following section describes multi-directional connections to and from regional centers. Proposed projects and their estimated cost are listed later in this chapter.

Gresham

North: Bicycle Lanes on Eastman Parkway and Halsey Street provide access to Troutdale and to regional park and Columbia Corridor industrial destinations. A local street connnection along Wallula provides access to the Burnside corridor and Rockwood town center.

South: Bicycle lanes on Eastman Parkway connect to residential areas. Connections along 174th and Jenne Road will be necessary to future town centers south of Gresham.

East: Bicycle lanes on Powell Boulevard provide connections to Highway 26 and out of the region.

West: Bicycle lanes on Powell Boulevard and the Springwater Trail provide east connections. Division Street, a major arterial serving Central Multnomah County, lacks bicycle lanes.

Gateway

North: The Interstate 205 bicycle path provides connections to the Washington State border. Connections to the Portland International Airport would require an extension of bike lanes on Airport Way.

South: The I-205 bicycle path provides access south to the Lents town center. The 102nd-112th local street connection provides access from local neighborhoods to the Gateway regional center.

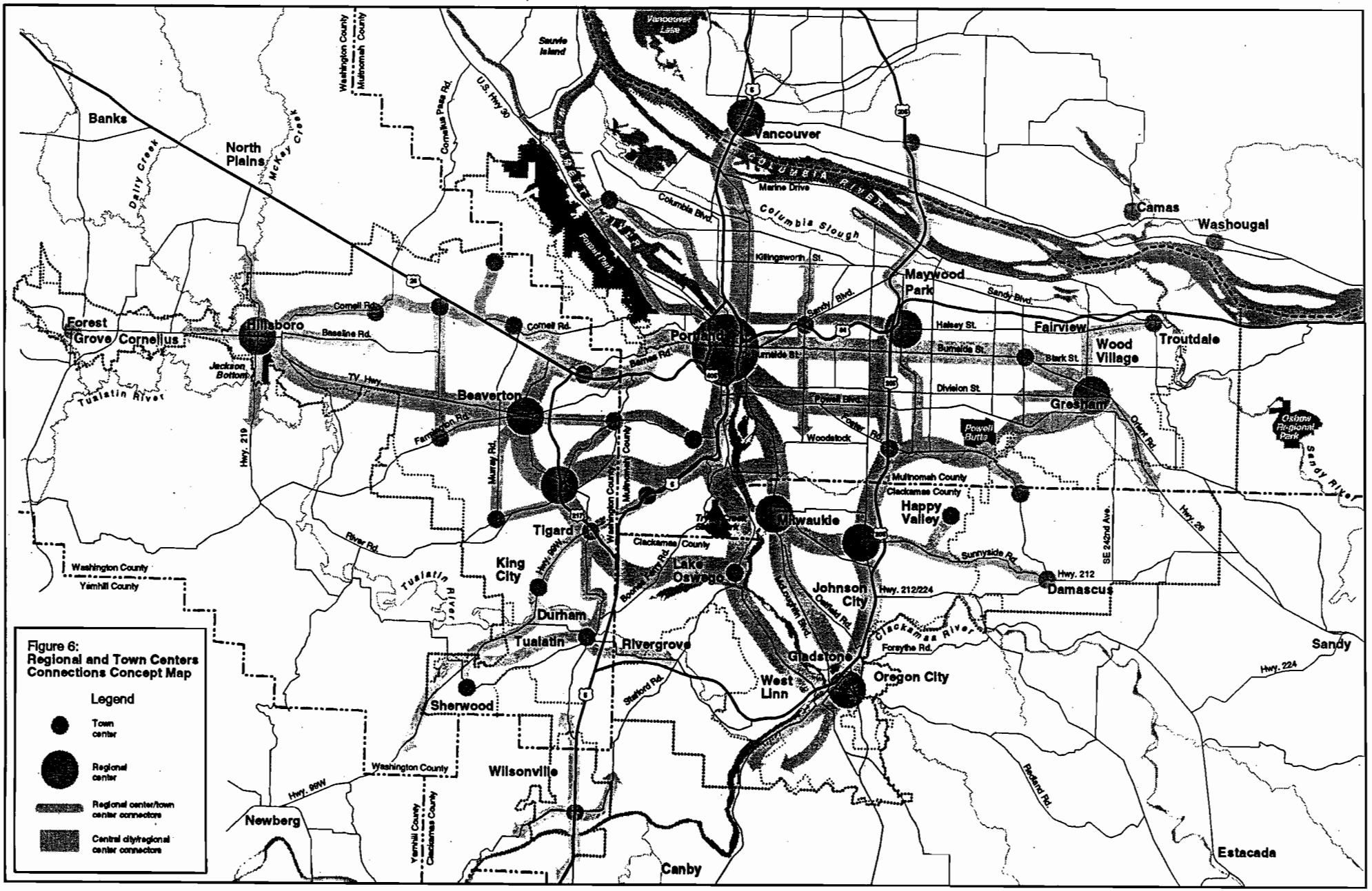
Figure 6:
Regional and Town Centers
Connections Concept Map
Legend
Town center
Regional center
Regional center/town center connectors
Central city/regional center connectors
Banks
North Plains
Forest Grove
Cornelius
Hillsboro
Beaverton
Tigard
Tualatin
Sherwood
Newberg
King City
Durham
Rivergrove
Lake Oswego
Wilsonville
Canby
Portland
Vancouver
Camas
Washougal
Maywood Park
Fairview
Troutdale
Wood Village
Gresham
Milwaukie
Happy Valley
Johnson City
Gladstone
Oregon City
West Linn
Damascus
Sandy
Estacada
Tualatin River
Columbia River
Columbia Slough
Clackamas River
Sandy River
Forest Park
Jackson Bottom
Powell Butte
Oxbow Regional Park
Marine Drive
Columbia Blvd.
Killingsworth St.
Sandy Blvd.
Halsey St.
Burnside St.
Division St.
Powell Blvd.
Foster Rd.
Woodstock
Barbur Blvd.
Beaverton-Hillsdale Hwy.
Baseline Rd.
Cornell Rd.
Farmington Rd.
Murray Rd.
Hwy. 219
River Rd.
Boones Ferry Rd.
Hwy. 99W
Stafford Rd.
Borland Rd.
Johnson Creek Blvd.
Oatfield Rd.
Forsythe Rd.
Sunnyside Rd.
SE 242nd Ave.
Orient Rd.
Hwy. 26
Hwy. 212
Hwy. 212/224
Hwy. 224
Washington County
Multnomah County
Clackamas County
Yamhill County
Cornelius Pass Rd.
U.S. Hwy 30
McKay Creek
Dairy Creek
Sauvie Island
Vancouver Lake

East: Proposed bike lanes on Halsey Street and existing bikeways on Burnside Street will provide connections to the east.

West: Bicycle lanes on Halsey Street or improvements to an alternative corridor would provide connections to the Hollywood town center. The Burnside corridor will also provide access to the west.

Clackamas Town Center

North: The I-205 bicycle path provides connections to the Gateway regional center. Improvements to 92nd Ave. would provide access to the Lents town center. 82nd Ave provides the most direct connection; however, it is a heavily traveled route with auto-oriented strip development, and addition of bike lanes would be challenging. Bicycle lanes on 82nd Ave. should be considered as a long-term project.

South: Bicycle lanes on 82nd Avenue connect to Highway 224; however, this is a difficult connection to the I-205 bicycle path and further south to Oregon City. Extension of the 82nd Ave. bicycle lanes will improve access to Clackamas Town Center.

East: Bicycle lanes on Sunnyside Road provide connections to the east. Extending bicycle lanes on Sunnyside Road will eventually connect to the Damascus town center. Improvements to 129th Avenue will be necessary to connect to the Happy Valley town center.

West: Bicycle lanes on Harmony connect Clackamas Town Center to the Milwaukie-CTC corridor.

Milwaukie

North: Bicycle lanes on River Road connect north terminating at the City of Portland. Connections to Sellwood and the Central City will require extension of bikeways along 17th Ave.

South: Bicycle lanes on River Road require climbing several hills. Bicycle lanes on McLoughlin Boulevard would provide a more direct route to Oregon City, and serve the commercial area.

East: This connection is discussed with the Milwaukie-Clackamas Town Center corridor.

West: The Willamette River obstructs access to west. The Sellwood Bridge, the only river crossing in the vicinity, is difficult for bicyclists. The South Willamette River Crossing Study (SWRX) will identify potential river crossings and discuss replacement of the Sellwood Bridge.

Oregon City

North: A local street, vacated street and separated path connect to the I-205 bicycle path and Clackamas Town Center. Completion of the McLoughlin corridor is necessary to provide a bikeway to Milwaukie.

South: Highway 99 is very narrow south of Oregon City; there is not room to install bike lanes without significant excavation. A bikeway on South End Road would provide an alternative.

East: Connections east of Oregon City are topographically constrained; however, there are limited regional destinations to the east.

West: The Oregon City bridge provides a sidewalk bikeway connection to bicycle lanes on West A Street in West Linn and Highway 43 connecting to Lake Oswego and the Willamette West regional corridor.

Washington Square

North: Bicycle lanes on Hall Boulevard connect to the Beaverton regional center.

South: Bicycle lanes on Cedar Hills Boulevard terminate at Cascade Street; extension of the bicycle lanes to Scholls Ferry Road would serve the regional center; with existing connections on Highway 99 to the southwest, and Hall Boulevard to the south, the cities of Tigard, Tualatin and Durham are served. Extension of bicycle lanes on Cedar Hills Boulevard to Scholls Ferry Road, and completion of Hall Boulevard bike lanes is necessary to serve this regional center.

East: Existing bicycle lanes on Hall Boulevard continue east to Highway 217, but do not extend to the regional center. Bicycle lanes on Taylors Ferry and Oleson Roads would serve town centers east of Washington Square.

West: A pathway and local street connection serve the adjacent residential areas. Existing bicycle lanes on Scholls Ferry Road serve the Murrayhill town center.

Beaverton

North: Extension of bicycle lanes on Cedar Hills Boulevard to Tualatin Valley Highway will serve the residential area and town center north of Beaverton. Construction of bike lanes on Canyon Road would provide a more direct connection to Washington Park and the Portland central city.

South: Bicycle lanes on Hall Boulevard connect to the Washington Square regional center.

East: Extension of bicycle lanes on Beaverton-Hillsdale Highway would connect to the Hillsdale town center.

West: Existing bicycle lanes on Tualatin Valley Highway end near Murray Boulevard. Extension of bicycle lanes on Tualatin Valley Highway is necessary to serve downtown Beaverton.

Hillsboro

North: Bike lanes or shoulder bikeway on Glencoe Road would provide a connection north to North Plains, a neighboring city.

South: A wide shoulder on Highway 219 accommodates bicycles.

East: An extension of existing bicycle lanes on Cornell Road would connect to several town centers. Bicycle lanes on Baseline Road would connect to future light rail transit station areas.

West: A wide shoulder on Tualatin Valley Highway accommodates bicycles.

Additional town center connections, including Hollywood and St. Johns within the city of Portland, and travel sheds surrounding the city of Wilsonvill are shown on the regional center/town center connections concept map (Figure 6).

COST TO COMPLETE THE REGIONAL SYSTEM

Table 15 describes the projects identified in the Regional Bikeway Network and provides project sketch cost estimates where they are known. The cost estimates were provided by local jurisdictions and agencies during the federal RTP update, as of May 18, 1995. The costs in Table 15 are sketch cost estimates and are subject to change as project details become more refined. The 1995 Interim Federal RTP included two project lists, a preferred list and a financially constrained list. The table reflects bicycle transportation project status (financially constrained and preferred) within the federal RTP.

Many of the bicycle projects listed in the federal RTP are part of roadway widening improvements. Unless otherwise noted, projects listed below are "stand-alone" bicycle facility improvements. The total known cost for completing the financially constrained regional bicycle network is estimated at $28,417,000. The total known cost of completing both the financially constrained and the preferred regional bicycle network is estimated at $42,274,300.

Table 15 (a)
Estimated Cost of Corridor and Connector Projects

Central City Corridors	Segment	Financially Constrained Network	Preferred Network
N. to Vancouver, WA			
Vancouver/Williams Couplet	Broadway to Lombard St.	$200,000	
Willamette East to O.C.			
PTC Multi-Use Trail	OMSI to Springwater Trail		funded
17th Ave.	Powell Blvd. to Ochoco St.		
17th Ave. Bike Lanes	Ochoco St. to Mil. CBD	multi-modal imp.	
McLoughlin Blvd. Ped. Improvements	Milwaukie to Oregon City	$2,500,000	
E. to Gateway/Gresham			
Burnside Bike Lanes	28th to 74th Ave.	$300,000	
Burnside Bike Lanes	181st to 196th Ave.		$344,000
SE to CTC Reg. Center			
Hawthorne Bridge Improvement	Hawthorne Bridge	$2,000,000	
Division Bikeway	39th to 92nd Ave.	$50,000	
Holgate Bikeway	39th to 92nd Ave.	$50,000	
Powell Blvd. Bike Lanes	74th Ave. to I-205		$2,000,000
West to Beav./Hillsboro			
Cornell Bikeway (North Altern.)	NW 30th to 53rd. Ave.	$295,000	
Cornell Rd. Bike Lanes (North)	NW 53rd to Cedar Hills Blvd.	Partial RE	
Walker Rd. Bike Lanes	173rd to 185th Ave.	$370,000	
Canyon Rd. Bike Lanes (Central)	US 26 to Canyon Dr.		$3,929,000
Canyon Rd. Bike Lanes (Central)	Canyon Dr. to 110th Ave.	$3,667,000	
Beav./Hillsboro Hwy. (South Alt.)	SW 65th Ave. to OR217	$6,075,500	
Tualatin Valley Hwy. Bike Lanes	SW 117th Ave. to Murray Blvd.		$2,367,000
Tualatin Valley Hwy. Bike Lanes	1st Ave. to 10th Ave. (Hillsboro)		$1,000,000
Willamette West to O.C.			
Willamette R. Greenway Trail	Ptld. CBD to Sellwood Bridge		
Willamette Shoreline ROW	Sellwood Br. to L. Oswego		
Boones Ferry Rd. Bikeway (SW Alt.)	Terwilliger Blvd. to Clack. Co.		multi-modal imp.
	Clack. Co. to Kruse Way		$1,000,000
Southwest to Wash. Square			
Barber Blvd. Bike Lanes	Front Ave. to Hamilton St.	$1,900,000	
Barber Blvd. Bike Lanes	Terwilliger Bl. to Multnomah	$3,300,000	
Berthe Blvd. Bike Lanes	Vermont St. to Capitol Hwy.	$367,500	
Garden Home Rd. Bikeway	Barbur Blvd. to Oleson Rd.	programmed	
Oleson Rd. Bike Lanes	Garden Home Rd. to Hall Blvd	funded MSTIP3	
Estimated Cost (Sub-Total)		$21,075,000	$10,640,000
Combined Constrained & Preferred			$31,715,000

Table 15 (b)
Estimated Cost of Corridor and Connector Projects

Regional Center Corridors	Segment	Financially Constrained Network	Preferred Network
CTC to Gresham			
174th/Jenne Rd. Bike Lanes	Division St. to Foster Rd. (vicinity of Foster/Powell intersection	Partial; Multi-modal improvement	
Division St. Bike Lanes	198th Ave. to Wallula Ave.	$210,000	
Or. City/CTC/Gateway			
I-205 Intersection Improvments	Various	$213,000	
Milwaukie to CTC			
CTC Connector	Clack. Reg. Park to Mather Rd.	$1,014,000	
Railroad Ave. Bike Lanes	Harrison St. Harmony Rd.		$1,000,000
Lake Rd. Bike Lanes	Oatfield Rd. to Milwaukie CBD		$780,000
Beaverton to Wash. Sq.			
Hall Blvd. Bike Lanes	Hwy. 217 to Oak St.	$1,000,000	
Wash Sq./LO/Milwaukie			
Carman Drive Bikeway	I-5 to Quarry Rd.		$675,000
Estimated Cost (Sub-Total)		$2,437,000	$2,455,000
Comb. Constrained & Preferred			$4,892,000

Table 15 (c)
Estimated Cost of Corridor and Connector Projects

Reg. Center to Town Ctr. Connections	Segment	Financially Constrained Network	Preferred Network
Gresham			
223rd Ave. Bike Lanes	Halsey St. to Marine Dr.		$162,300
Gateway Reg. Ctr.			
102nd/112th Ave. bicycle boulevard	Springwater Trail to Sandy Blvd.	$250,000	
Halsey St. Bikeway	Sandy Blvd. to 148th Ave.	$100,000	
Airport Way Bikeway	Ptld. Intl. Airport to I-205	roadway impr.	
CTC Regional Center			
82nd Ave. Bike Lanes	OR212 to Jennifer St.	$100,000	
Linwood Ave. Bike Lanes	King Rd. to Mult. Co. Line	$260,000	
Sunnyside Rd. Bike Lanes	Stevens Rd. to 152nd Ave.	roadway impr.	
122nd/129th Ave. Bikeway	Sunnyside Rd. to Happy Valley	roadway impr.	
Oregon City			
Warner-Milne Rd. Bike Lanes	Central Point Rd. to OR213		$350,000
South End Rd. Bikeway	Warner-Parrot Rd. to UGB		$250,000
Washington Square			
Tualatin Rd. Bike Lanes	OR99W to Boones Ferry Rd.	funded MSTIP3	
Beaverton			
Farmington Rd. Bike Lanes	OR217 to Murray Blvd.	$2,845,000	
Portland Central City			
Broadway/Weidler Couplet	I-5 to NE 28th Ave.	multi-modal imp.	
41st/42nd Bike Bl. (Hollywood TC)	Columbia Blvd. to Springwater Trail	$250,000	
Greeley/Interstate Bikeway	Broadway Bridge to Killingsworth St.	$1,100,000	
Estimated Cost (Sub-Total)		$4,905,000	$762,300
Combined Constrained & Preferred			$5,667,300

Chapter VII
PROJECT IDENTIFICATION AND PROJECT SELECTION

As MPO for the region, Metro is responsible for allocation of federal transportation funds. The 1991 passage of the Intermodal Surface Transportation Efficiency Act restructured transportation funding. Several funding programs allowed for expenditure of federal funds for bicycle projects. With the completion of the 1995 MTIP allocation of $27 million in STP funds, Metro will have allocated available revenue from the 1991 ISTEA. Future allocation of money is dependent on an extension or restructuring of the 1991 legislation by the Federal Government.

REGIONAL BICYCLE SYSTEM FUNDING SOURCES

The following section describes existing sources of funds available for bicycle projects. Implementation of the proposed bicycle network in this region is contingent primarily on the amount of funding available and the manner in which priority projects are determined. There is some uncertainty regarding the future funding sources available for bicycle projects.

Oregon Gasoline Tax Revenue. The largest source of state funding is gasoline tax revenue. ORS 366.514 mandates that some of these funds be used for bicycle facilities; in addition, all road improvement projects constructed with state gas tax funds must include provisions for bicycles. The Oregon Constitution mandates that gasoline tax revenue must be expended within highway right-of-way. The Attorney General has interpreted this mandate as disallowing expenditures on trail projects not adjacent to the highway.

The Oregon Department of Transportation administers the Local Assistance Grant Program that provides direct funding to local jursidictions for bicycle projects. Local Assistance funding is limited to $80,000 per project. In 1994, ODOT distributed over $400,000. The City of Portland and Multnomah County received $100,000 for several projects on the Willamette River bridges, and Clackamas County received $100,000 for two bikeway projects.

The Oregon Legislature has failed to increase the gas tax in its last two sessions. Rapidly increasing maintenance costs leave fewer financial resources available for bikeway system expansion.

Federal Highway Trust Funds. Federal Highway Trust funds include federal gasoline and weight/mile taxes. As discussed earlier, the 1991 ISTEA provided much more flexibility in the expenditure of federal funds. Metro has allocated all funds authorized by Congress as part of ISTEA programs. Congress must re-authorize a transportation bill by October 1996. It is difficult at this point to predict what will be included in the new legislation and how it will affect bicycles.

The following table identifies federal transportation funding sources for which bicycle transportation is eligible, and reflects the funds allocated to bicycle-related projects. Most roadway projects funded by regional funds included facilities for bicycles.

Table 16
Bicycle Project Funding

Fund	Purpose	Regional Allocation	Bicycle Projects
Surface Transportation Program (combined regional and state)	General transportation uses	$279,600,000	$2,570,000
Congestion Mitigation/Air Quality	Transportation projects that potentially reduce air pollution	$25,740,000	$2,420,000
Transportation Enhancement	Projects that enhance the multi-modal trans. system	$5,890,000	$4,730,000
Total		$311,230,000	$9,720,000

Source: Metropolitan Transportation Improvement Program

SELECTION PROCESS

Projects eligible for federal funds must be included in the project development process to receive federal funds. Each project must be included in the steps shown below. The first three steps are competitive processes. Projects included in the Metro TIP are automatically included in the State TIP. The following chart (Figure 7) describes the project selection process.

1995 Metropolitan Transportation Improvement Program

In the spring of 1995, Metro developed a project evaluation process for the allocation of $27 million in Surface Transportation Program funds. The funds were reserved from the last allocation to account for the policy changes associated with the adoption of the 2040 Growth Concept. The process was designed to evaluate projects based on their modal benefit. The Regional Bicycle Program, along with bicycle planners from local jurisdictions, established an evaluation process for bicycle projects. Table 17 illustrates the evaluation critieria used for the process. Projects with the primary purpose of bicycle transportation were evaluated using this system. The ridership numbers were obtained using a rudimentary trip distribution model. The evaluation criteria were used to narrow the list of projects for final recommendations by the region's transportation policy alternatives committees, TPAC and JPACT.

Figure 7

Transportation Planning and Programming Process

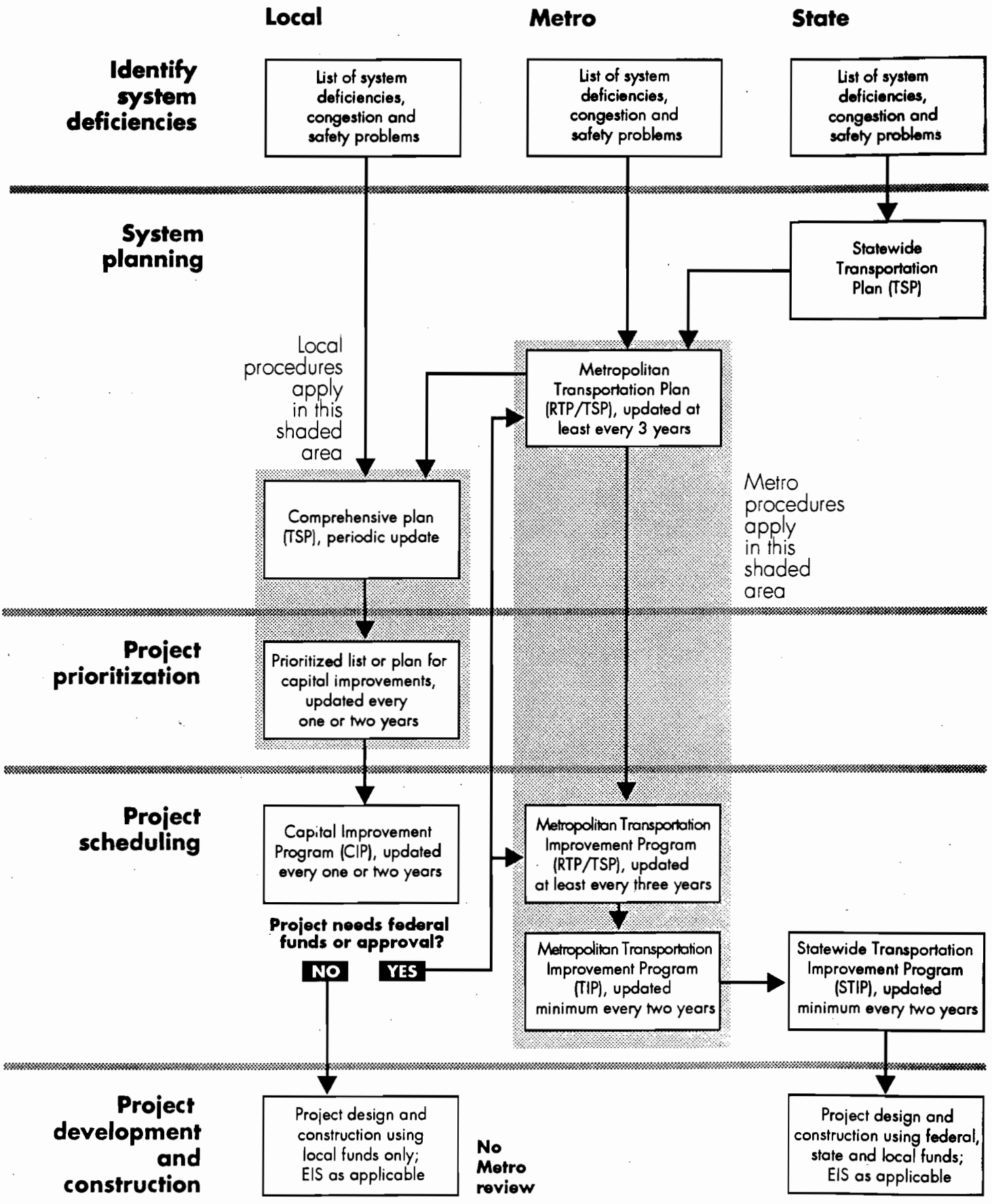

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Table 17
Bicycle Mode Evaluation Criteria

Increase Modal Share and Connectivity (35 points)
(relative to 2015 VMT reduction targets)

A. Modal Share (15 points)

What is the project's potential ridership based on travel shed, existing socioeconomic data and existing travel behavior survey data?

High = 15 points
Medium = 8 points
Low = 0 points

B. Connectivity (20 points)

Will the project be an important part of the regional bikeway system?

Regional Network Completion(High) = 20 points
Regional Network Extension (Medium) = 10 points
Project Isolated from Reg. Network (Low) =0 points

Safety (15 points)

Does the project address an existing deterrent to bicycling?

A. Target roadway a deterrent to bicycling.

High auto ADT and Narrow	10 points
High auto ADT and Wide	5 points
Low auto ADT; Narrow & curves	0 points

B. Other Safety Factors (blind curves, high truck volume, soft shoulders, high reported accident rate)

Yes = 5 points; No = 0 points

Addresses 2040 Land Use Objectives (25 points)

See regional and local bikeway rows on the *2040 Transportation Prioritization Criteria* Matrix (Table 18).

High = 25 points; Med. = 13 points; Low = 0 points

Cost Effectiveness (25 points)

What is the cost per user of VMT reduction?

High Cost/VMT Reduced: = 0 points
Medium Cost/VMT Reduced: = 13 points
Low Cost/VMT Reduced: = 25 points

SELECTION CRITERIA

When regional STP and other funding sources become available, Metro will initiate a process to allocate funds to local jurisdictions for construction of projects related to the regional bicycle network. These allocations will most likely take place in conjunction with regular updates of Metropolitan Transportation Improvement Program (MTIP). This section outlines several principles that will be translated into criteria for funding allocations. Performance standards are often attached to federal funds which require certain other criteria to be applied. For this reason, the criteria does not include point totals, but rather relative high, medium and low weightings.

Increase of Modal Share (high weighting, or possibly medium, depending on the reliabllity of ridership forecasts)

Appropriate analytical measures, preferably travel demand forecasting, will be used to estimate anticipated ridership. The ridership estimate will be used to calculate vehicle miles traveled reduction, air quality benefit and other performance measures that may be required for the allocation. The change in ridership will be calculated by comparing existing bicycle counts and estimates with plan year projections.

Connectivity (high weighting)

This criteria is the same as the Connectivity criteria in Table 17.

Removes Barriers (medium weighting)

Projects in areas with few connections should be given additional support. Projects in an area without acceptable bikeway connections serving the corridor within one and one-half miles would receive high points, one mile medium points, one-half mile low points. An acceptable bikeway connection is a street with bicycle lanes or a local street which serves the corridor with minimal detour.

Supports 2040 Land Use Objectives (medium weighting)

This criteria is based on the 2040 Growth Concept and will eventually be based on the regional framework plan as described in Chapter II. The premise is that regional transportation funding should be targeted toward investments that support development of the land use components of the growth concept which are of the highest regional significance, and are the most difficult to accomplish. For example, regional bikeway projects neeeded to serve the targeted level of bicycle usage to and within the 2040 land use designations would have higher priority placed on projects within higher priority locations. For local bikeways, projects needed to serve the targeted level of bicycle usage within the higher density land use designations are of higher priority, as shown in Table 18.

Table 18
2040 Transportation Prioritization Criteria for Bicycle Mode

Land Use Location Type	Priority within Local Circulation Street Bikeways	Priority to and within Regional Bikeways
Central City and Reg. Centers on LRT	High	High
Industrial Sanctuaries	Low	Medium
Main Streets, Town Centers, LRT Stations, Bus Corridors, Reg. Ctrs. not on LRT	Medium	Medium
Inner Neighborhoods	Medium	Medium
Outer Neighborhoods	Low	Low

Safety (medium weighting)

Projects would receive points for a variety of safety factors, including high average daily traffic, narrow roadway width, vertical and horizontal curves, high truck volume, and high bicycle/auto crash rate (if available).

Cost-effectiveness (high to medium weighting)

Refer to Table 17. Cost-effectiveness is a difficult measure to determine, because different projects have different intentions and/or serve different modes. Further difficulty lies in putting a value on those varied benefits. While determining a project cost is fairly straight-forward, there are major philosophical differences as to the true cost of transportation projects, particularly when environmental costs are included.

Implementation of Multi-Modal Elements (low weighting)

Projects would receive points if they include bicycle trip-end facilites such as storage and change facilities, bicycle accessibility to transit, and/or help enhance the pedestrian mode.

Chapter VIII
REGIONAL BICYCLE PROGRAM

The Metro Regional Bicycle Program coordinates regional transportation planning for bicycles. While cities and counties develop bicycle plans at the local level, the Regional Bicycle Program works with local planners to develop a comprehensive, linked regional system. As the regional transportation planning agency, Metro provides leadership in coordinating regional bicycle planning efforts described below. This chapter further describes outstanding regional bicycle planning issues to be addressed in the future.

ONGOING REGIONAL/LOCAL ROLES

One of the important tasks of the Regional Bicycle Program is to work with state and local bicycle planners to clearly define roles and responsibilities for public agencies involved in regional bicycle planning, programming and construction.

The Regional Bicycle Program provides staff assistance to major studies such as the South Willamette River Crossing Study, South/North Transit Corridor Study, and I-5/Highway 217 Interchange Subarea Transportation Plan. For example, the bicycle program works with the South/North Transit Corridor Study to assure that bicycle access is provided along and to the proposed light rail alignment alternatives. The bicycle program coordinates with transit station area planning staff to assure that bicycle access and adequate bicycle parking facilities are provided at all transit stations.

Also, the bicycle program coordinates with Metro Regional Parks and Greenspaces to assure that design of regional trails serves transportation as well as recreational purposes. At the policy level, the Regional Bicycle Program works to assure that TPAC and JPACT continue to strengthen the regional commitment to implementing bicycle projects and to assure that bicycle issues are considered in major regional decisions.

There are a number of local bicycle program roles that are at a level of detail too specific for the Regional Bicycle Program. These roles and responsibilities include local inventories, development, installation and maintenance of local bikeway networks, and local trip-end facilities such as bicycle rack and locker locations. Local safety data collection, such as identification of railroad crossings and compilation of accident data, is a local jurisdiction responsibility. Local jurisdictions develop their own capital improvement programs, coordinate utility installation and repair with utility companies, and are responsible for local code enforcement.

PLANNING AND DESIGN CLEARINGHOUSE

Some of the smaller jurisdictions have difficulty dedicating staff time to bicycle transportation planning, and have limited knowledge of bicycle and pedestrian issues. A future goal of the Regional Bicycle Program is to provide technical assistance to local jurisdictions that do not have on-staff bicycle planning resources. This may include mapping and data resource services, travel demand modeling for bicycles, and advice on bicycle planning and design issues.

Multi-Modal Design Criteria

A need exists to develop multi-modal design criteria for roadways. With the the multi-modal emphasis of federal and state law, roadways must be shared among competing modes, including autos, trucks, bicyclists, and pedestrians. Design criteria tied to land use characteristics should be developed. The criteria should recognize that a roadway function changes over its entire length, and that design criteria would also vary. Metro will coordinate with local jurisdictions to assure that the regional bicycle system is implemented using appropriate established standards. Over the next year, multi-modal design criteria will be discussed in more detail as the RTP is further refined to meet Oregon Transportation Planning Rule requirements.

Bicycle Travel Demand Model

Metro provides travel demand forecasting services for regional and local transportation planning. Travel demand forecasting combines detailed demographic information with sophisticated computer modeling techniques to estimate future travel demand. Travel forecasting information is vital to planning the location and size of transportation facilities and justifying transportation investments. While forecasting techniques for autos and transit are well refined and reasonably accurate, bicycle travel demand modeling is in its infancy because of limited user information and the difficulty of counting bicycle traffic.

Metro is currently aggregating travel behavior activity survey data to begin the process of building a travel demand model for bicycles. A preliminary model is anticipated to be available for use in completing the bicycle element of the Regional Transportation Plan. The survey information will help to provide the travel behavior information necessary to build a realistic bicycle travel demand model.

Modeling information is useful for bicycle planning, as it provides projections of future bicycle travel patterns, and will be useful in identifying location and demand for facilities and for establishing funding priorities.

Safety Education and Encouragement

Currently, the Regional Bicycle Program promotes bicycle safety and encouragement through the *Bike There!* user suitability map. The map is sold at area bicycle shops and book stores; it identifies the suitability of streets for bicycles, provides safety information, and lists local contacts. The map has been updated four times since its initial publication in 1983, with the most recent update in the summer of 1995.

Metro has an internal form of bicycle transportation encouragement within its employee alternative transportation program. The program offers incentives and conveniences to Metro employees who walk, bicycle, ride the bus, or carpool to work. Bicycle elements of the program include the following:

- Two bicycles (with helmets, baskets and locks) in the "motor pool."
- Bicycle parking located in a secure area near the entrance to showers and lockers.
- A $20 per month voucher, equivalent to the subsidy for transit riders, for employees who bicycle to work 80 percent of the time. The vouchers are redeemable at local bicycle shops.

As stated in Chapter III, one of the three goals of the Regional Bicycle Plan is to encourage bicyclists and motorists to share the road safely. Implementation of this goal is an outstanding issue that will be further refined by the Regional Bicycle Progam and the bicycle transportation work team during the 1995/96 fiscal year.

PROJECT PRIORITIZATION REFINEMENT

Bicycle projects, along with other transportation mode projects, were identified in a preferred network and a financially contrained network for the 1995 Interim Federal RTP . The federal RTP emphasizes transit and other alternative forms of travel as a key strategy to limiting future investments in automobile capacity. In the federal RTP, every roadway project on the preferred list and the financially constrained list includes bicycle and pedestrian improvements. An ongoing task for the Regional Bicycle Program is to develop a more specific prioritization of regional bicycle projects that will complete the regional network. Work on regional bicycle project prioritization refinement will continue concurrent with the Transportation System Plan phase of the RTP Update.