Regional Transportation Plan

1989 Update

Adopted by the
Council of the
Metropolitan Service
District March 9, 1989

Ordinance No. 89-282

METRO

The Metropolitan Service District, your regional government, handles regionwide concerns in the urban areas of Clackamas, Multnomah and Washington counties. Metro is responsible for solid waste management, operation of the Metro Washington Park Zoo and the Oregon Convention Center, transportation and land-use planning, urban growth boundary management and technical services to local governments.

Executive officer
Rena Cusma

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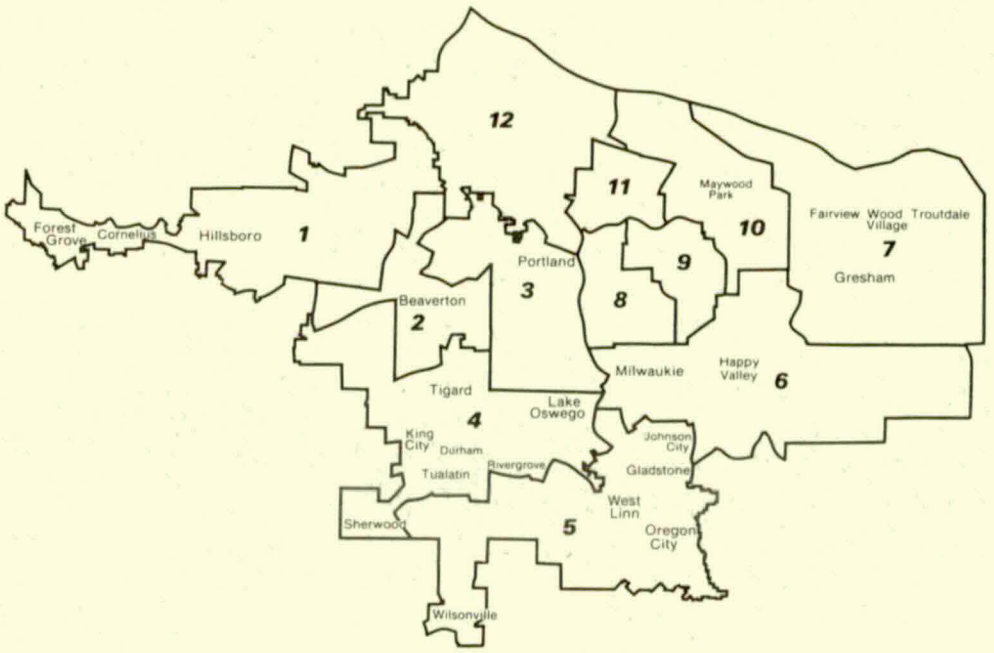

The preparation of this report has been financed in part by funds from the U.S. Department of Transportation, Urban Mass Transportation Administration, under the Mass Transportation Act of 1964 as amended; and by funds from the Federal Highway Administration, U.S. Department of Transportation.

BEFORE THE COUNCIL OF THE
METROPOLITAN SERVICE DISTRICT

FOR THE PURPOSE OF UPDATING) THE REGIONAL TRANSPORTATION) PLAN (RTP))	ORDINANCE NO. 89-282 Introduced by Mike Ragsdale, Presiding Officer

THE COUNCIL OF THE METROPOLITAN SERVICE DISTRICT HEREBY ORDAINS:

1. The 1989 update of the Metropolitan Service District Regional Transportation Plan, a functional plan, copies of which are on file with the Clerk of the Council, is hereby adopted.

2. The 1989 RTP Update amends the existing Regional Transportation Plan as adopted in 1982 and updated in 1983 and is attached hereto as Attachment A and includes the proposed amendments as referred to in Attachment A-1.

3. In support of the above plan update, the Findings attached hereto as Attachment B are hereby adopted.

4. As per Council direction as part of the resolution adopting the Southwest Corridor Study Final Report (Resolution No. 87-763), the interagency agreement between the Metropolitan Service District and Washington County addressing the process to resolve outstanding land use issues related to the proposed facility in the Tualatin-Hillsboro Corridor is attached hereto as Attachment C.

ADOPTED by the Council of the Metropolitan Service District this 9th day of March, 1989.

Mike Ragsdale
Mike Ragsdale, Presiding Officer

ATTEST:

A. Marie Nelson
Clerk of the Council

I certify this ordinance was not vetoed by the Executive Officer.

A. Marie Nelson 3/21/89
Clerk of the Council Date

JAG:lmk
89-282.ORD
2-13-89

REGIONAL TRANSPORTATION PLAN

UPDATED BY ORDINANCE NO. 89-282

MARCH 9, 1989

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This update is dedicated to the memory of Trish Leighton.

The assistance provided by Metro's member jurisdictions and local agencies are acknowledged with gratitude. The following individuals provided valuable guidance and assistance in the development of this draft:

Frank Angelo, Washington County
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Fred Patron, FHWA
Nancy Ponzi, Citizen
Ronald Roberts, Citizen
Richard Ross, Cities of Multnomah County
Bebe Rucker, Port of Portland

Also to be acknowledged are the members of the Joint Policy Advisory Committee on Transportation (JPACT) whose input and advice were greatly appreciated:

Richard Waker	Metro Councilor
Mike Ragsdale	Metro Presiding Officer
Jim Gardner	Metro Councilor
George Van Bergen	Metro Councilor
Commissioner Pauline Anderson	Multnomah County
Commissioner Earl Blumenauer	City of Portland
Robert Bothman	ODOT
Mayor Tom Brian	Cities in Washington County
Mayor Wade Byers, Jr.	Cities in Clackamas County
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James Cowen	Tri-Met
Gary Demich	WSDOT
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Commissioner Ed Lindquist	Clackamas County
Councilor Marge Schmunk	Cities in Multnomah County
Commissioner Vern Veysey	Clark County
Robert Woodell	Port of Portland

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Summary

RTP SUMMARY

A. WHY WE HAVE A REGIONAL TRANSPORTATION PLAN

Oregonians have long prided themselves in their ability to meet the challenges posed by growth by effectively planning for the future. This characteristic is embodied in the Regional Transportation Plan (RTP).

After extensive public review and comment, the RTP was adopted by the Metro Council in 1982 and last updated in 1983. The Plan and the current (1989) update give the Portland metropolitan region a much needed direction for meeting our transportation needs over the next two decades. The Plan clearly lays out the problems we face as a region in serving the growth contained in the adopted local comprehensive plans. Population in our area is expected to increase by more than 40 percent by the year 2005 to 1.7 million people. If orderly growth is to occur as planned, our ability to provide transportation services is critical. Without major transportation improvements, this growth will overload a system already at capacity in some areas. We also would face higher levels of air pollution, more difficult access to our jobs and shopping opportunities, and a significant worsening of neighborhood traffic problems.

The complexity of developing and operating an efficient transportation system makes regional coordination essential. An intricate mixture of jurisdictions own and operate our transportation system. Involved are 24 cities, three counties, Metro, Tri-Met, the Oregon Department of Transportation, the Port of Portland, the Federal Highway Administration and the Urban Mass Transportation Administration. Funding for transportation-related activities also comes from a variety of sources including federal, state and local taxes.

With the RTP, our region has a unified blueprint to ensure that the efforts of all affected jurisdictions are coordinated and that the individual parts of our overall transportation system function properly as a whole. The Plan also gives city and county officials a regional guide to help implement their local comprehensive plans. They have at hand a long range transportation framework in which to make decisions that lay the groundwork for access to shopping centers, office and industrial development, new housing and recreation opportunities.

B. WHAT THE PLAN IS

Any plan attempting to meet the transportation needs of the entire Portland metropolitan area must have a compelling

vision. Through the Plan, Metro and the cities and counties of the region have defined that vision and will guide the Plan as it is implemented in the coming years. There are two principles inherent in this Plan:

- Encourage and facilitate the economic growth of the region

  Economic growth is necessary for the viability of the region and the state. Coordinated investment in transportation improvements is needed to facilitate and promote the economic growth planned for in the adopted local comprehensive plans.

- Protect the quality of life for residents of the region

  The region enjoys a special quality of life and the Plan should provide a means to avoid excessive traffic problems and the degradation of livability too often found in major growth areas.

  The goals of the Plan are to provide adequate mobility to a growing region at a reasonable cost and with as little environmental impact as practicable. Developing sections of the region will need new streets, freeway access and mass transit service. Streets in areas already developed will require continued maintenance and periodic reconstruction to accommodate changing traffic patterns.

  Providing an efficient transportation system, however, carries a large price tag. The Plan gives us a method of controlling costs through an integrated approach to moving people. It combines improvements in our highway network with improved mass transit (bus and light rail) service. Through the wider use of ridersharing and flextime programs, it reduces the need for high cost capital improvements to ease rush hour traffic.

  The RTP provides us with a 20-year framework by which to select the most cost-efficient alternatives and gauge the level of investments required to meet our future needs. Just an any long range plan requires periodic revision, the RTP is designed to be updated. The flexibility of the Plan allows us to respond in a timely manner to new development trends and changes in public desires, in addition to taking advantage of technological breakthroughs.

C. AN INTEGRATED PLAN OF IMPROVEMENTS

Pursuing the vision of the Plan will mean both improving the existing transportation system and constructing new facilities. In addition, the goals of the Plan cannot be met by relying exclusively on one form of transportation. Construction costs and the disruption associated with highway improvements as the only solution are enormous. Relying totally on expansion of the mass transit system would place a heavy burden on taxpayers. Further, neither alternative alone serves all the population of our region. As a result, the basic strategy of the Plan is to provide an integrated program of improvements. These include a combination of:

1. Highway improvements where cost-effective and necessary.

2. Mass transit system expansion and improvements in efficiency.

3. Increased use of ridesharing, flextime programs and commuter bicycling.

By effectively combining these three elements, we can achieve adequate mobility at the lowest possible cost. A higher percentage of people participating in ridesharing and flextime programs, for example, will substantially reduce the amount of tax money needed to widen highways and expand the mass transit system.

Four major elements have been identified where investment in our transportation system needs to occur:

- Regional Corridors -- Regional transportation corridors should be improved to make it convenient to move through the region. Development of a light rail system throughout the region should be pursued to minimize highway construction and encourage development.

  - Highway corridors -- Major regional highways require improvements which include the construction of several new links to serve traffic movement across and through the region.

  - Transit corridors -- Quality transit service is essential in a number of corridors to complement highway facilities and provide access to major destinations. Light rail and high quality bus service in these corridors provide an attractive alternative to the automobile and reduce the impacts of major highway widening.

- Urban Arterial System -- Urban arterials, such as Powell Boulevard, Sunnyside Road, Tualatin-Sherwood Road and Murray Boulevard, should be improved to support the regional corridors, provide access from those corridors to developing areas and accommodate travel within the region.

- Bus Service Expansion -- Bus service should be extended to areas as they become more urban and more densely populated in order to serve local access and support light rail corridors.

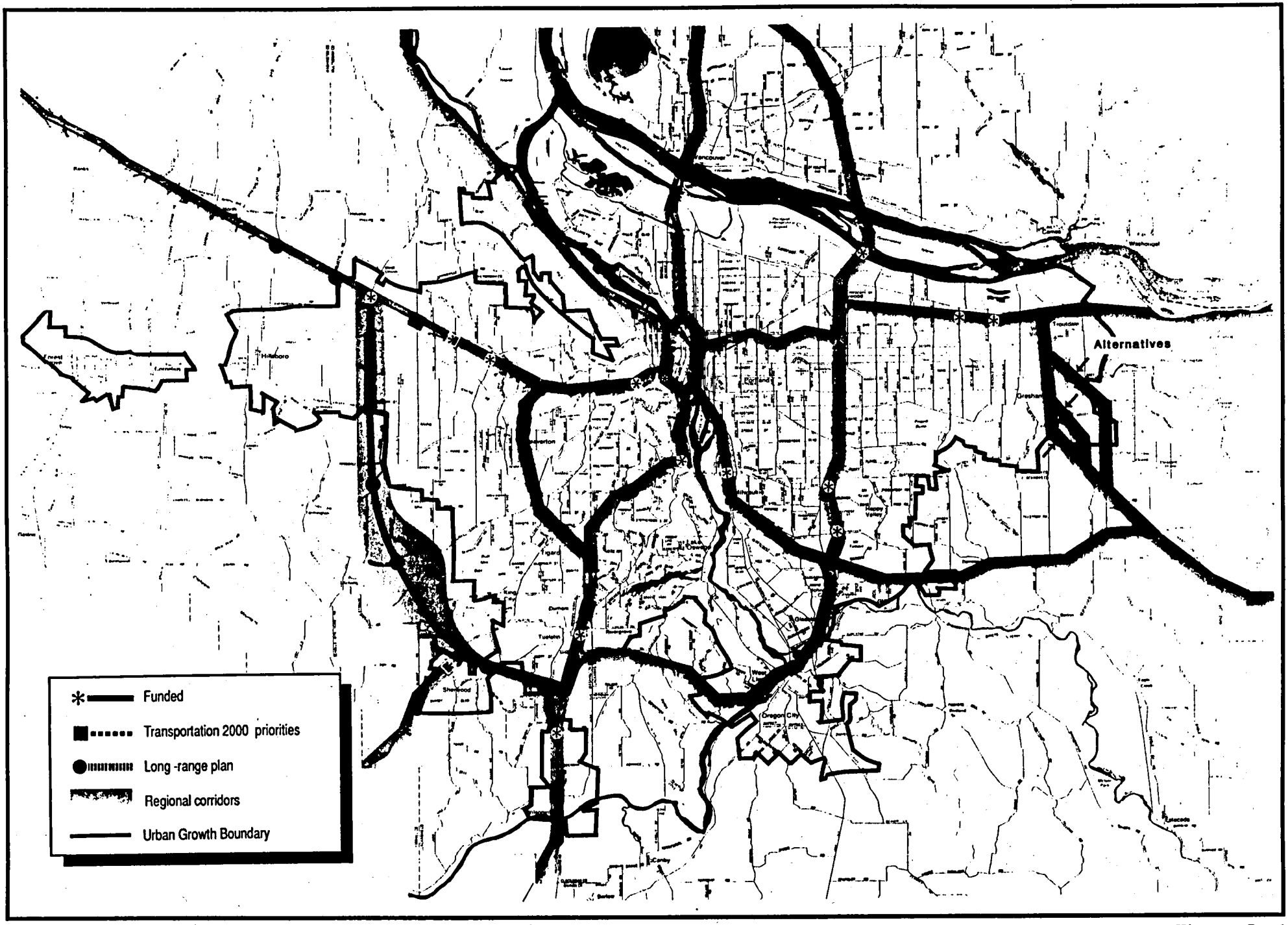
- Demand Management -- Programs should be maintained and implemented to encourage ridesharing, flextime, bicycling, parking management and other activities that reduce the number of single occupant vehicle trips on the region's transportation system, especially during the peak hour.

Without the improvements called for in this Plan beyond those already committed, conditions on the regional transportation system can be expected to worsen considerably by the year 2005. Compared to current (1987) conditions, peak-hour vehicle delay would increase by 240 percent, the number of lane miles of congestion would increase three-fold, fuel consumption would increase by 53 percent, and peak-hour auto speeds would decrease by an average of 19 percent overall and by 25 percent on the region's freeway system. Compared to the committed system, implementing the RTP would reduce peak-hour vehicle delay by 35 percent, lane miles of congestion by nearly 40 percent, fuel consumption by 6 percent and improve peak-hour auto speeds by 17 percent overall and 21 percent on the freeway system.

Below is an outline of the improvements contained in the Plan and the ones adopted by Metro's Joint Policy Advisory Committee on Transportation (JPACT) as priorities during the next 10 years in the regional highway and transit corridors. As ongoing analyses identify additional improvements as necessary in the next decade, they will be added to the 10-year priorities.

1. Regional Highway Corridors (Figure S-1)

   - Sunset Highway -- Widen to six lanes (Canyon Road to Cornell Road); add a climbing lane to Sylvan and upgrade interchanges as a 10-year priority. Design changes in conjunction with Westside light rail.



RTP Regional Highway Corridor Improvements

Figure S – 1

- I-5/I-84 to the Fremont Bridge -- Widen from four to six lanes and significantly modify interchanges. (Construct first two phases as a 10-year priority.)

- Tualatin-Hillsboro Corridor -- Construct a new four-lane facility from I-5 to Tualatin Valley Highway and a five-lane arterial from Tualatin Valley Highway to U.S. 26. (Proceed with I-5 to the Highway 99W segment and arterial segment from Tualatin Valley Highway to U.S. 26 as a 10-year priority.)

- Sunrise Corridor -- Upgrade to a four- to six-lane facility from McLoughlin Boulevard to U.S. 26 with a new route east of I-205. (Proceed with Phase I: McLoughlin to 135th and at Damascus and Boring, as a 10-year priority.)

- I-84 -- Continue six-lane widening from 181st Avenue to Troutdale as a 10-year priority. Widening of the segment from I-205 to 181st Avenue is already planned and funded.

- I-84/U.S. 26 Connector -- Construct a new four-lane principal arterial in the vicinity of Gresham as a 10-year priority.

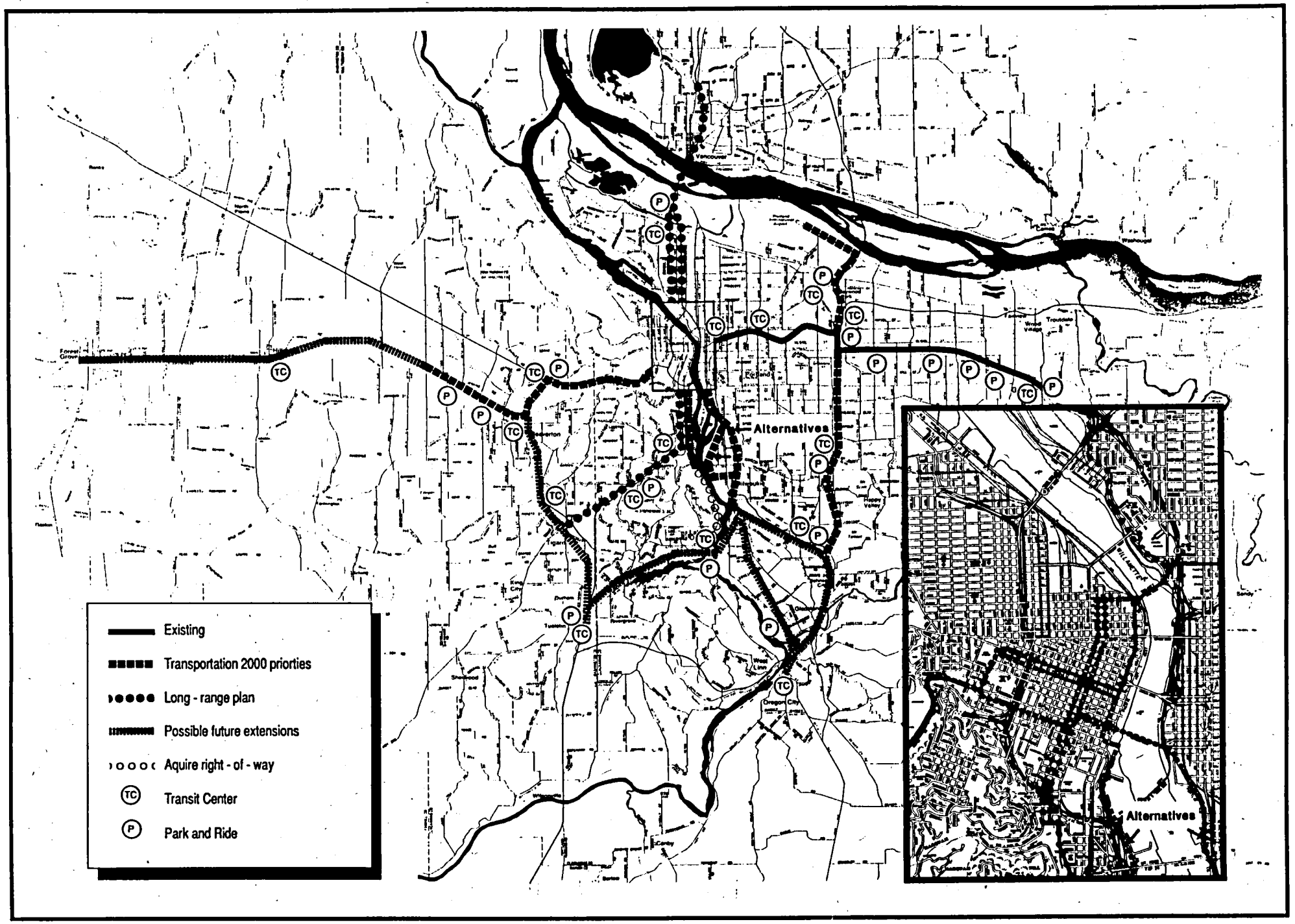
- Highway 217 -- Upgrade to six lanes and upgrade interchanges. (Proceed with Phase 1: auxiliary lanes between interchanges and a reconstructed interchange at Highway 99W, as a 10-year priority.)

- I-5/Highway 217 -- Upgrade interchange to remove traffic signals on Highway 217.

- Regional Corridor Interchanges -- Various other interchanges will be required to carry higher traffic volumes and improve access into surrounding developing areas.

2. Light Rail Transit (Figure S-2)

- Priority 1: Westside Light Rail -- Begin the preliminary engineering work and pursue discretionary funding for the project from the federal Urban Mass Transportation Administration (UMTA).



RTP Transit Capital Improvements

Figure S – 2

- I-205 Light Rail -- Begin preliminary engineering work using funds from bus lanes withdrawn from the interstate system.

- Milwaukie Light Rail -- Begin preliminary engineering as soon as allowable after Westside light rail. Pursue funding from UMTA after receiving funding for the Westside light rail.

- Other Rights-of-Way -- Acquire or protect right-of-way necessary for long range development of other corridors and extensions.

3. Urban Arterial System (Figure S-3)

Urban arterials are those roads which move people and goods in and around the region and connect to regional corridors for access across and out of the region. Urban arterials usually have four lanes, turn lanes at intersections, traffic lights and shoulders or sidewalks. Examples are Murray Boulevard, Sunnyside Road or Powell Boulevard. The 10-year priorities are contained in Chapter 5 of the RTP document.

4. Bus Service Expansion

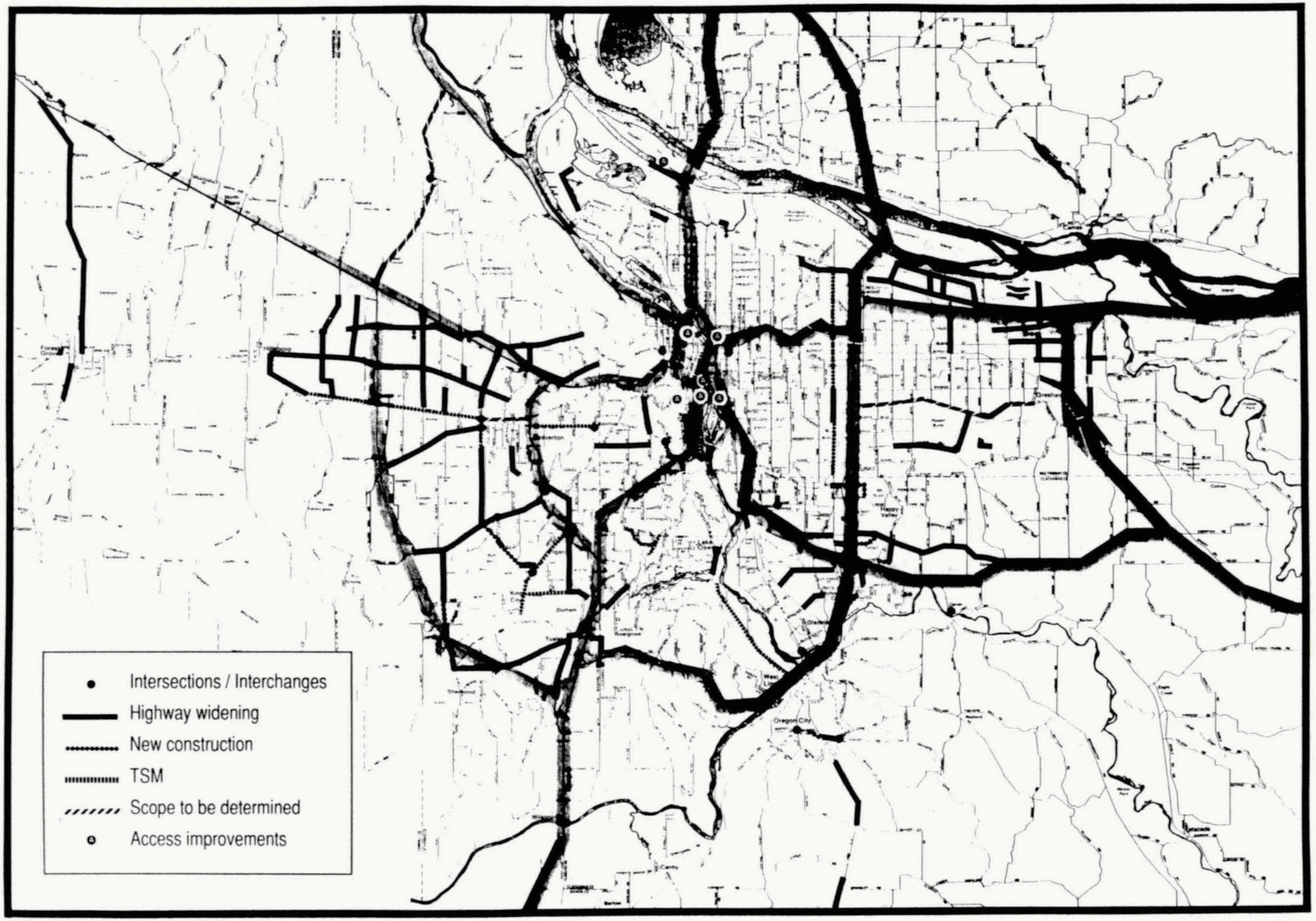
The Plan envisions expansion of transit services to developing areas of the region. This expansion is crucial to the success of the overall Plan. Bus service will be needed to serve local access and act as feeder routes to the light rail investments to ensure the other parts of the transportation system function adequately.

D. FUNDING NEEDS

Great care has been taken in the development of the Plan to hold down the overall cost of highway and transit improvements. Despite this effort, new financing resources will need to be developed to fully implement the RTP.

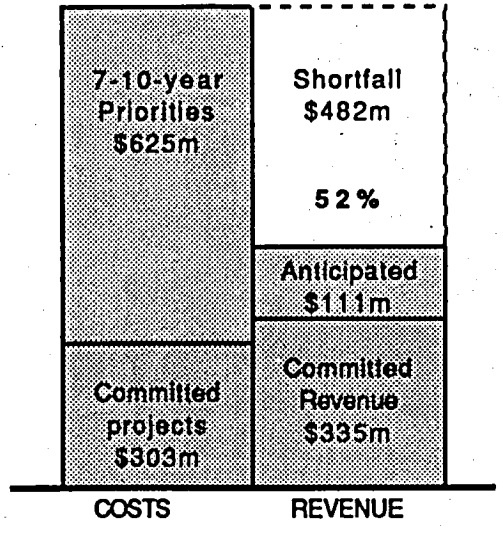
1. Regional Highway Corridors (Figure S-4)

The estimated cost for the 10-year priority improvements identified in the regional highway corridors is $928 million, of which 48 percent ($446 million) is committed or anticipated to come from existing revenue sources. This leaves us with a $482 million shortfall for the next decade. For the 20-year plan period, the total cost of $1.634 billion can be expected to be offset by $723 million in committed and anticipated

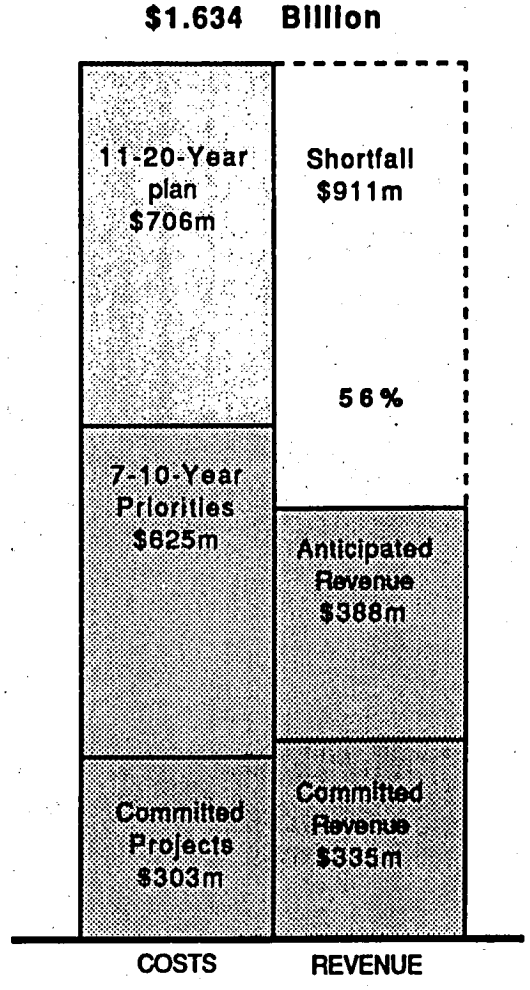


METRO *RTP Regional Arterial System Improvements*

Figure S – 3



Total Regional Highway Corridors
10 Year Priorities



Total Regional Highway Corridors
20 Year Plan

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Regional Highway Corridor Capital Cost/Revenue Summary

RTP Figure S – 4

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revenue, leaving a $911 million shortfall -- or 56 percent of the total need.

2. Light Rail Transit

The Metropolitan Area Express (MAX) between Gresham and downtown Portland was funded through a unique combination of sources -- $90 million from the Mt. Hood Freeway funds were matched by $90 million from an UMTA discretionary fund made available on a project-by-project basis for mass transit. In addition, $25 million came from the state and $14 million was contributed from the region via Tri-Met.

This same type of funding package will be difficult to put together again because there is no money left from the Mt. Hood Freeway.

Funding for 50 to 75 percent of Westside and Milwaukie light rail can be sought from UMTA through a national competitive process. However, local matching funds must be obtained first.

A unique opportunity exists to fund the initial stages of work toward an I-205 light rail line. Through the Federal-Aid Interstate program, $16.6 million is available for bus lane construction. However, this money can and would be shifted to light rail construction.

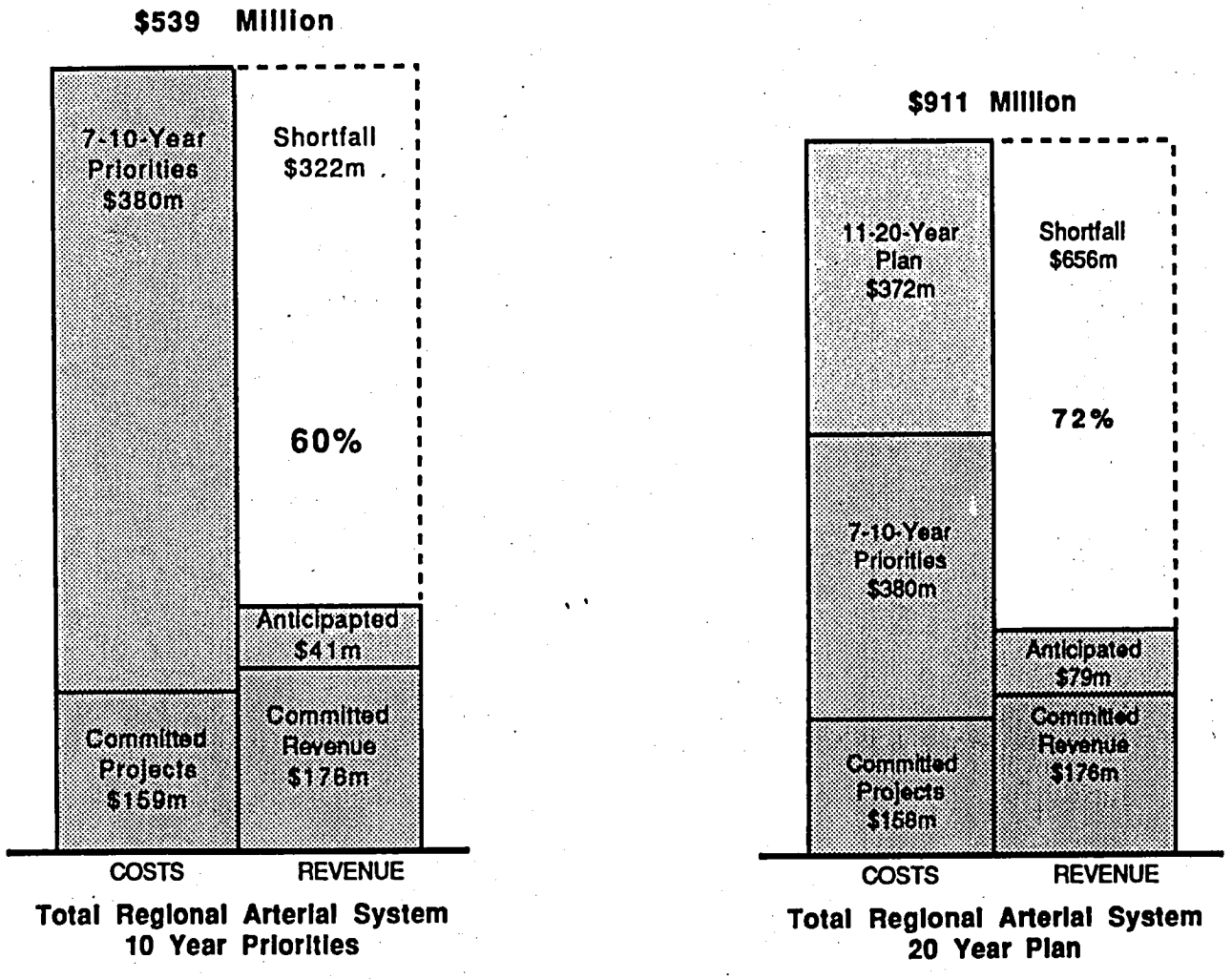
In order to successfully implement the 10-year priority light rail corridors, the region must develop additional revenues for both capital and operations.

3. Urban Arterial System (Figure S-5)

The estimated cost for the identified 10-year priorities on the urban arterial system is $539 million, of which $217 million can reasonably be expected from committed and anticipated resources. This leaves a shortfall of $322 million, or 60 percent of the total need, to be made up over the next decade. For the 20-year plan period, the total need is $911 million, of which $255 million can be expected from existing resources. This means a shortfall of $656 million, or 72 percent of the total program.

4. Bus Service Expansion

Transit operations are funded primarily by fares and a payroll tax paid by area employers. Additional funds are received from the state for programs for the elderly and the handicapped, as well as for new equipment.



METRO

Regional Urban Arterial System Capital Cost/Revenue Summary

RTP Figure S–5

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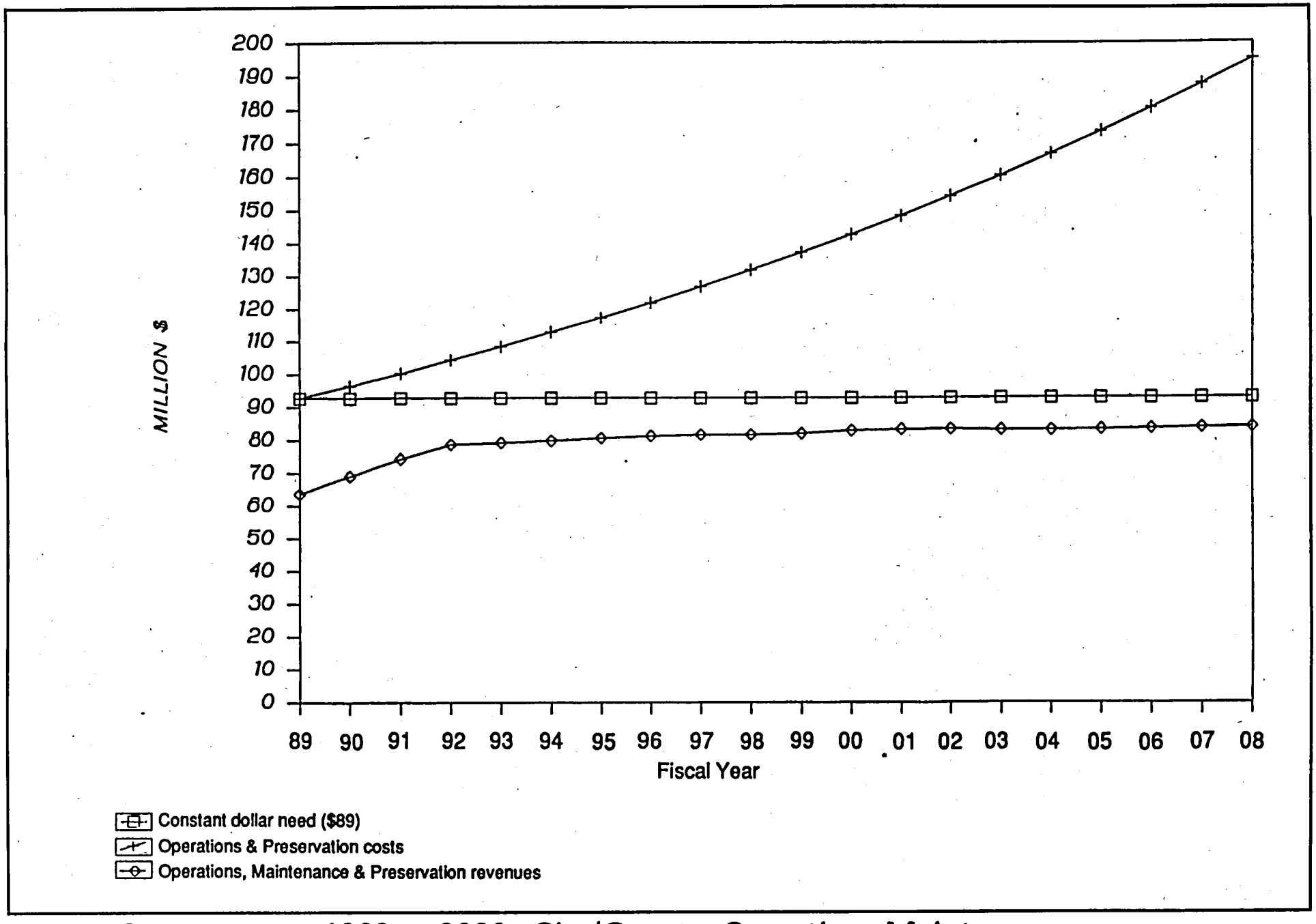
To achieve the level of bus service needed for the rest of the transportation system to operate adequately, new funds will have to be raised from both the state and the region.

5. Highway Maintenance (Figure S-6)

1988 dollar needs for operations, maintenance and reconstruction activities on the highway system in the region to protect our past investment are approximately $92.6 million. Without the development of new or elastic funding sources, however, inflation and deferred maintenance will produce an ever widening gap between our ability to perform these activities and the need required by an aging roadway system. The shortfall will nearly double in 10 years -- from $29 million annually today to $33 million annually in five years -- and to $55 million annually in 10 years.



METRO

1989 – 2008: City/County Operation, Maintenance and Preservation Revenue Comparison

RTP Figure S - 6

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Introduction

INTRODUCTION

A. THE CONTEXT OF THE PLAN

The adopted Regional Transportation Plan (RTP) provides a benchmark document for the region's decision-makers that:

- provides a comprehensive assessment of the overall effect of past regional transportation and land use decisions to ensure individual parts of the system function properly as a whole;
- serves as a regional framework for the coordination of the transportation and land use elements of local comprehensive plans;
- provides the region with a program of transportation improvements consistent with a unified policy direction for transit and highway investments and demand management programs; and
- presents an order-of-magnitude estimate of the region's transportation funding needs.

The development of the RTP has been a joint effort of the different cities, counties and agencies (Oregon Department of Transportation (ODOT), Tri-Met, the Port of Portland and the Metropolitan Service District (Metro)) in the region. Adoption of this Plan represented:

- completion of a federal requirement as a condition for receipt of federal transportation funding;
- endorsement of the overall level of transportation investments needed to adequately serve the expected growth in the region over the next 20 years and a commitment to seek necessary financing;
- endorsement of a set of 10-year regional priority improvements to the transportation system;
- endorsement of the interrelated roles of highway and transit investments and demand management programs;
- endorsement of the regional elements of the transportation system and definition of the extent of Metro interest in the subregional system;
- endorsement of the land use aspects of the RTP and a definition of local comprehensive plan consistency;

- endorsement of a 20-district population and employment forecast for the year 2005 as the basis for determining needed transportation investments; and

- completion of the process to achieve regional consensus and a unified direction on transportation policy issues.

B. WHY A REGIONAL TRANSPORTATION PLAN?

The daily movement of people and commerce on the region's transportation system crosses city and county boundaries, producing transportation problems which extend beyond individual jurisdictional authorities and create the need for cooperative governmental action. In addition, the transportation system intended to facilitate this movement of people and goods is owned and operated by an intricate mixture of different jurisdictions. The highway system is owned and maintained by the different cities and counties as well as ODOT and the Port of Portland. Tri-Met owns and operates the transit system but is generally dependent on the aforementioned jurisdictions for the roads on which to operate. Demand for new transit services is influenced by both: 1) the type of new development that occurs (which is controlled by local comprehensive plans); and 2) the availability and convenience of auto travel. Demand for new highway facilities or highway widening is influenced by the extent to which alternative modes of travel such as transit and ridesharing can be used. The cost, convenience and availability of parking, which is controlled by local jurisdictions and individual property owners, has a great deal of influence on the mode of travel of an individual.

Financing for transportation facilities and services is also a complex mechanism, consisting of a number of single purpose sources of local funds (such as local improvement districts), dedicated state and local highway and transit taxes, and a number of federal highway and transit funding programs.

The RTP provides guidance and coordination to the combined efforts of jurisdictions and agencies responsible for the region's highway and transit facilities. These entities include the Metro region's 24 cities and three counties, Tri-Met, ODOT, the Federal Highway Administration (FHWA), the Urban Mass Transportation Administration (UMTA) and the Port of Portland.

Four general areas of regional coordination are ensured by adoption of the Plan:

1. Geographic Consistency -- continuity between the plans of jurisdictions in the function of components of the transportation system.

2. Multi-Modal Coordination -- developing transportation improvement projects and programs which produce the greatest people-moving capability with the most cost-effective combination of investments for the auto, transit and demand management components of the system.

3. Land Use Interrelationships -- developing consistency between the land use plans of cities and counties and the transportation system.

4. Financing -- managing the expenditure of funds to produce cost-effective transportation investments which best serve the growing travel demand in the region.

Since the start of this region's cooperative transportation planning efforts in 1959, coordinating activities have grown in complexity. The initial emphasis was on developing a highway system to serve the rapidly growing demand for auto travel.

The majority of coordination occurred between cities, counties, ODOT and FHWA to determine the location of freeways to serve intraregional and interstate auto and truck travel. However, during the decade of the 1970s, a multi-modal improvement policy was developed to encourage the most cost-effective combination of highway and transit improvements.

C. TRANSPORTATION PROBLEMS ADDRESSED BY THE PLAN

Many of the region's transportation problems can be directly attributed to one cause -- rapid growth. The Portland metropolitan area is a fast growing area with a diverse, improving economy. Over the next two decades, this long-term trend in expected to continue, with the population increasing from the current 1.28 million to 1.74 million by the year 2005. Without major transportation improvements, the travel demand associated with this growth will overload a system that is already at or over capacity in some areas.

Suburban and urban areas within the Urban Growth Boundary (UGB) are impacted differently by growth. The development of vacant suburban land increases the travel demand on a transportation system trying to emerge from its rural origins. The intensification of development in urban areas, plus the impact of increased intraregional trips, will produce congestion on the existing system of streets and highways where space is at a premium and improvement costs high. Therefore, newly developing parts of the region are in need

of an entirely new highway and transit system while already urbanized areas require improvements which maximize efficiency of the sizable transportation investments which have already been made.

Growth is also a potential problem for the region's air quality. While attainment of federal and state clean air standards was generally met by the 1987 deadline (primarily due to improved auto emission technology), rapid growth in automobile travel could push the region back over the standard by placing too many additional vehicles on the road.

Uncertain future trends in the price of gasoline and the possibility of future supply problems create the need for greater energy efficiency, the flexibility to cope with temporary shortages and the need to provide the public with alternative modes of travel.

The primary constraint upon meeting the region's transportation needs over the next two decades is cost. Recently, construction costs have risen faster than the general rate of inflation while gas tax revenues have declined in terms of real dollars. In fact, projecting revenue sources to the year 2005 shows a decline in purchasing power to the point that the cost of merely maintaining today's system will exceed the total expected revenues from existing transportation-related sources. The situation is similar for transit. While farebox revenues and the payroll tax are expected to keep pace with inflation, existing resources are insufficient to allow significant expansion in the size of the transit system.

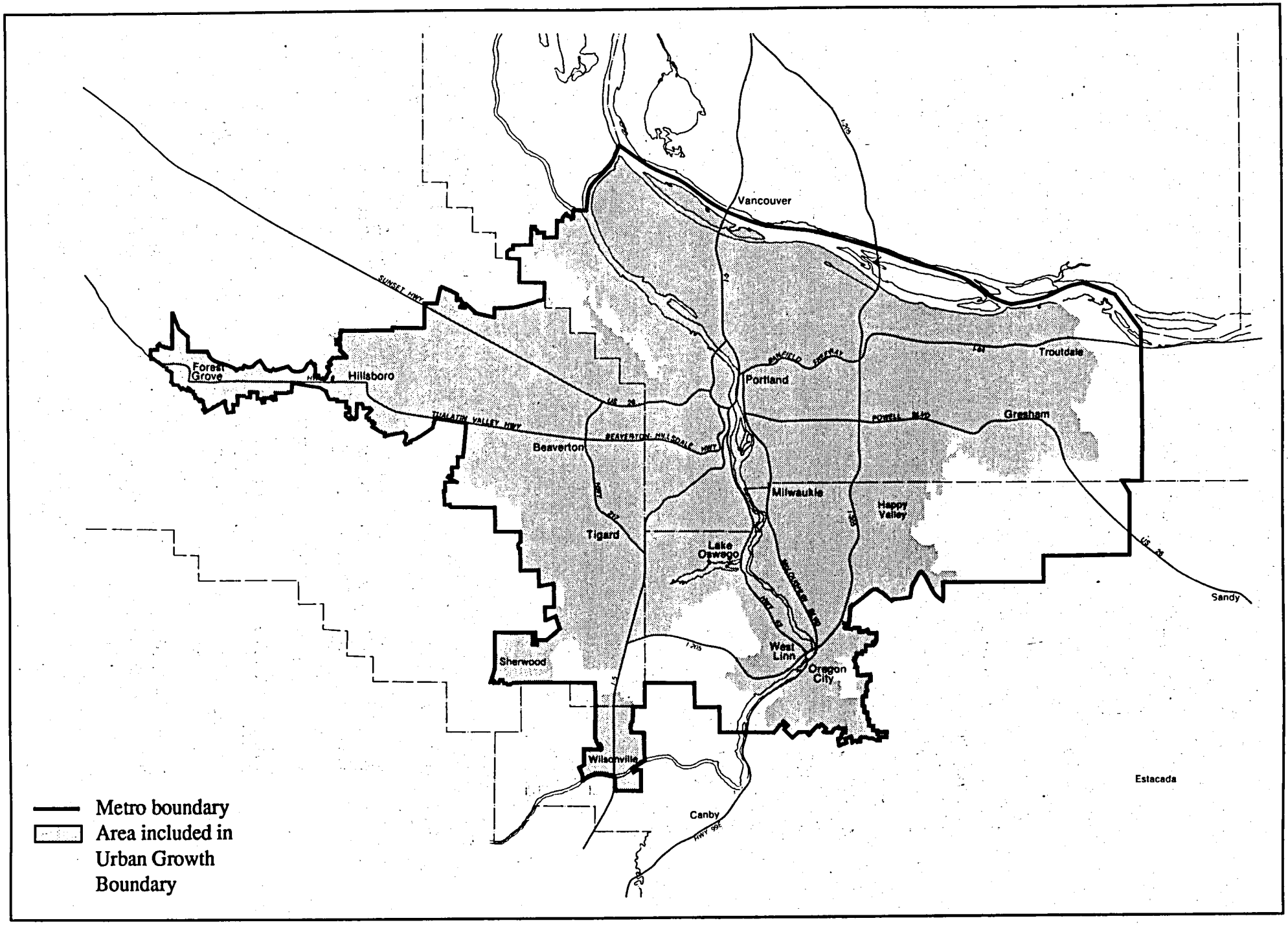
D. METRO'S ROLE IN TRANSPORTATION PLANNING

Metro is responsible for urban transportation planning within the Oregon portion of the Portland-Vancouver metropolitan area. The area expected to be urban and in need of urban transportation investments is defined by the UGB adopted by Metro as shown in Figure I-1.

The following subsections of the Plan describe the legislative authority under which Metro has developed and adopted this RTP, the decision-making structure used by Metro to ensure adequate representation by the various agencies responsible for implementation of the Plan and areas of interjurisdictional coordination on particular aspects of the Plan.

Metro Legislative Authority

Metro's authority for urban transportation planning is derived from two primary sources:



METRO

Urban Growth Boundary

RTP Figure I – 1

82434

- Title 23 (Highways) and Title 49 (Transportation) Code of Federal Regulations

- Oregon Revised Statutes -- Chapter 268

The federal requirements for transportation planning are primarily directed at proposed transportation investments using federal funds while the state requirements deal with the transportation elements of local comprehensive plans. There is, however, a great deal of overlap between the two requirements since federally funded transportation investments comprise a significant portion of the full transportation system identified in comprehensive plans.

Federal Planning Requirements

FHWA and UMTA have jointly required that each urbanized area, as a condition to the receipt of federal capital and operating assistance, have a transportation plan process that results in a transportation plan consistent with the planned development for the area. Metro is the agency, in cooperation with ODOT and Tri-Met, that is designated by the Governor as the "metropolitan planning organization" to carry out the federal transportation planning requirements.

In accordance with these requirements, Metro must annually endorse a transportation plan and a Transportation Improvement Program (TIP). The TIP must specify federally funded transportation projects to be implemented during the next three- to five-year period based upon realistic estimates of available revenues. Furthermore, projects included for funding in the TIP must be consistent with the adopted RTP.

Also in accordance with regulations, the RTP must consist of a short and long range element and provide for the transportation needs of persons and goods in the metropolitan area. The planning process leading to adoption of the RTP must:

- consider the social, economic and environmental effects of transportation in accordance with the National Environmental Policy Act and Clean Air Act;

- ensure involvement of the public;

- ensure there is no discrimination on the grounds of race, color, sex, national origin or physical handicap in the planning process or under any program receiving federal assistance;

- include special efforts to plan public mass transportation facilities and services for the handicapped;

- consider energy conservation goals and objectives;

- include technical analysis as needed and to the degree appropriate, including:

  - an analysis of existing conditions of travel, transportation facilities and fuel consumption;

  - projections of economic and land use activities and their potential transportation demand;

  - an evaluation of alternative transportation improvements to meet short- and long-term needs;

  - corridor or subarea studies; transit technology studies; legislative, fiscal, functional classification and institutional studies; and

  - an evaluation of alternative measures to respond to short-term energy disruptions.

In addition to the requirements of FHWA and UMTA, the Clean Air Act (carried out by the Environmental Protection Agency (EPA)) requires each urbanized area to meet federal standards for clean air. Metro is responsible for examining alternative transportation strategies to reduce air pollution that, in combination with stationary controls (i.e., point source) adopted by the Department of Environmental Quality (DEQ), meet the standards.

State Planning Requirements

The state of Oregon has adopted 19 statewide planning goals which are required to be implemented through a comprehensive plan for each city and county throughout the state. These comprehensive plans specify the manner in which the land, air and water resources of the jurisdictions will be used and determine the need for improved public facilities. In accordance with state law, Metro must adopt a functional plan for transportation and must review the local comprehensive plans of the cities and counties within the district and recommend or require changes to ensure conformity (see Chapter 8).

Regional Transportation Decision-Making Process

Every metropolitan area must have a Metropolitan Planning Organization (MPO) designated by the Governor to receive and disburse federal funds for transportation projects. Metro (the Metropolitan Service District) is the MPO for the Portand metropolitan area and, therefore, approves the expendi-

ture of all federal transportation funds in this region. To assure a well-balanced regional transportation system, the following decision-making process has been established for these important funding allocations.

1. Metro Council

   Metro is our directly elected regional government, with responsibility for garbage disposal, development assistance and management of the Metro Washington Park Zoo, as well as transportation. The Metro Council is composed of 12 members elected from districts. The Joint Policy Advisory Committee on Transportation (JPACT) recommends transportation projects and programs for Council approval.

2. Joint Policy Advisory Committee on Transportation

   JPACT provides a forum for elected officials and representatives of agencies involved in transportation projects to evaluate all the transportation needs in this region and to make recommendations for funding to the Metro Council. The 17-member Committee includes elected officials from local governments within the region, three Metro councilors, representatives of the agencies involved in regional transportation, plus representatives from governments and agencies of Clark County, Washington and the State of Washington.

   Agencies represented on JPACT include ODOT, Tri-Met, the Port of Portland, DEQ and the Washington Department of Transportation (WDOT).

   A finance subcommittee of JPACT has been formed to develop and recommend financing strategies to implement the region's transportation agenda.

3. Transportation Policy Alternatives Committee (TPAC)

   While JPACT provides a forum for recommendations on transportation issues at the policy level, TPAC provides input from the technical level.

   TPAC's membership includes technical staff from the same governments and agencies in JPACT plus representatives of FHWA, Federal Aviation Administration (FAA), UMTA and the Intergovernmental Resource Center (IRC) of Clark County. There are also six citizen representatives appointed to TPAC by the Metro Council.

   TPAC has one standing subcommittee:

- Transportation Improvement Program (TIP) Subcommittee:

  Comprised of staff from the three counties, Portland, ODOT, Tri-Met and Metro, this subcommittee monitors progress on implementing projects and recommends changes in the TIP to JPACT.

Interstate Coordination

Planning for the Portland-Vancouver metropolitan area is carried out by two regional planning agencies, Metro and the Intergovernmental Resource Center (IRC) of Clark County. Each agency conducts its transportation planning under its respective state and federal authority for its own geographic area. However, since this is a single urbanized area, it is essential that the two agencies coordinate plans to adequately address problems of interstate significance. This coordination is assured through the mechanisms described below:

- Bi-State Policy Advisory Committee -- A Bi-State Policy Committee exists to provide a forum for elected officials from Oregon and Washington to discuss problems of mutual concern and make recommendations to the Metro Council and IRC of Clark County. This Committee includes representation from the two regional agencies, the two principal cities and the two principal counties. In addition, the Committee can establish ad hoc committees to deal with transportation problems. Transportation recommendations from the Committee are made to the Metro Council through TPAC and JPACT in accordance with Metro's decision-making process.

- Metro/Clark County IRC Committees -- In order to ensure a voice in transportation decisions of interstate significance, JPACT includes representation from WDOT, Clark County and Vancouver, and TPAC includes representatives from WDOT, Clark County, Vancouver and Clark County IRC. Similarly, Clark County's "Consolidated Transportation Advisory Committee" includes representation from ODOT and Metro.

- Transportation Plan and Improvement Program Coordination -- Before adoption of the RTP or an amendment to the Plan having interstate significance, Metro and Clark County IRC must consult with the other party and consider any comments of the other party before adoption.

E. THE ORGANIZATION OF THE REGIONAL TRANSPORTATION PLAN DOCUMENT

The Introduction has provided the planning, statutory and decision-making context of the RTP, and outlined the overall intent of the Plan. The remaining chapters in this document are organized as follows:

- Chapter 1 presents the overall policy framework and direction for the Plan and an overview of past transportation-related decisions affecting that policy framework. In addition, the goals, objectives and criteria against which the Plan was measured are established.

- Chapter 2 describes the anticipated year 2005 land use pattern and population and employment growth associated with the development called for in the local comprehensive plans, as well as the travel characteristics expected as a result of that growth. The resulting travel demand is what the recommended transportation system is expected to serve.

- Chapter 3 examines the impacts on the region of attempting to serve the anticipated year 2005 travel demand without additional transportation investments beyond those highway and transit projects with "committed" construction funding as of 1988.

- Chapter 4 applies the policy direction established in Chapter 1 to the region's transportation system and discusses the long range system concepts embodied in the recommended Plan improvements.

- Chapter 5 details, on a sector-by-sector basis, the transportation improvements and programs recommended in the Plan to achieve the major goals and objectives established in Chapter 1 and consistent with the policy direction as applied in Chapter 4.

- Chapter 6 evaluates the year 2005 performance of the regional transportation system recommended in the Plan against the objectives and criteria established in Chapter 1.

- Chapter 7 presents an order-of-magnitude estimate of the costs associated with the improvements recommended in the Plan as of early 1988, as well as an analysis of the ability of the region to pay for the recommended improvements.

- Chapter 8 examines the processes necessary to implement the recommended Plan, defines statewide goal and local comprehensive plan compliance procedures, establishes a process to update, refine and amend the RTP and details outstanding issues that remain to be resolved.

Chapters 1, 4 and 8 are the key sections of the Plan that describe what the transportation system is to consist of, who has implementation responsibilities, and what coordination mechanisms are required. The remaining chapters contain supplemental information describing the costs and benefits of the proposed investments and the land uses that the transportation system is designed to serve.

Chapter One

Regional
Transportation Policy

CHAPTER 1

REGIONAL TRANSPORTATION POLICY

A. INTRODUCTION

This chapter presents the overall policy framework within which the specific transportation goals, objectives and actions contained in the adopted Regional Transportation Plan (RTP) were formulated. It also provides the basis for future planning and decision-making by the Metro Council and the implementing agencies, counties and cities. The remainder of this chapter is organized as follows:

- History: Identifies past regional transportation decisions and describes the evolution of the policy direction recommended in the RTP for the region's future transportation needs.
- Regional Transportation Plan Goals and Objectives: Describes the policy direction of the Plan and establishes in measurable terms what level of mobility the transportation system is expected to provide.
- Transportation System Design: Provides objectives regarding the performance and function of each element of the transportation system: Highways, Transit and Demand Management Programs.

B. HISTORY

The adopted RTP is built upon the structure of transportation-related decisions and policies developed over the past two decades. The most significant of these benchmarks include:

1959 The Portland/Vancouver Metropolitan Area Transportation Study (PVMATS) was initiated as an ongoing regional transportation planning process and resulted in a proposal for an extensive system of new freeways and streets. In total, 50 new freeway projects were proposed to be constructed by 1990.

1969 The State Legislature provided for public takeover of the faltering privately-owned mass transit system. Tri-Met was formed.

1973 The first transit plan for the region was published.

1973 A Governor's Task Force was formed to clarify the transportation decision-making process in the region. This Task Force made landmark recommendations for

restructuring transportation decision-making in the region, with some far-reaching implications:

- Fiscal and environmental realities made it impractical to rely solely upon new freeways as the solution for urban travel needs.
- Improvements of existing state and regional highways on an incremental, more cost-effective basis was essential.
- Transit and highway planning should be done together, with shared rights-of-way and preferential treatment for transit in the major travel corridors.
- Better management of traffic was required, including support of carpooling, parking and transit policy coordination, and traffic engineering improvements to get more service from existing highways.

As a result of the recommendations, regional leaders decided to make better use of existing transportation corridors rather than building new ones; limit the growth of traffic on the region's highway system; and assign most of the new commuter growth to transit and carpooling.

1973 The Land Conservation and Development Commission (LCDC) was established. Cities and counties were required by LCDC to prepare comprehensive plans in compliance with state planning goals.

1975 A consensus was reached to withdraw the Mt. Hood Freeway from the Interstate System. These funds were later earmarked for various regional transit and highway projects including major corridor transitways.

1978 The decision was made to build light rail transit (LRT) in the Banfield corridor and to widen the freeway to improve auto travel.

1978 The I-505 Freeway was withdrawn from the Interstate System and the decision was made to replace it with lower cost improvements which upgrade Yeon Avenue to connect I-405 and U.S. 30.

1979 The Metro Council adopted a Regional Transportation Corridor Improvement Strategy designed to guide in-depth analysis of corridor problems and potential solutions.

1982 This RTP was adopted by Metro after thorough public review and consensus among the local jurisdictions in the region, providing a framework for transportation planning and cost-effective investments over the next two decades.

1982 Regional air quality control plans to meet standards for ozone and carbon monoxide by the federal Clean Air Act deadline (December 31, 1987) were adopted by Metro and the Environmental Quality Commission after extensive public review and comment. These plans were approved by the Environmental Protection Agency (EPA) in the fall of 1982.

1983 The Regional Bicycle Plan element of the RTP was adopted by Metro to define regional policy with respect to bicycle facilities and programs and to provide guidelines for encouraging the use of bicycles as an alternate mode of transportation. This system element is updated concurrently with the rest of the Plan.

1983 The Sunset LRT was selected by the region as the preferred alternative to connect downtown Portland and Beaverton (to 185th) as the result of the Westside Corridor Project alternatives analysis and extensive public review and comment. The decision to proceed to construction will not be made until after the completion of an FEIS on the project and an evaluation of operation of the Banfield LRT.

1987 JPACT adopted regional priority transportation improvements for the next 10 years. These improvements consist of a balanced program of regional transportation investments in: a) the regional highway corridors; b) urban arterials; c) regional LRT corridors; and d) transit bus service expansion.

1988 An updated version of the Special Needs Transportation (SNT) Plan (originally adopted by Metro in 1985) that defines policies and transit service with regard to the elderly and handicapped population was adopted by Tri-Met. The full text of the adopted SNT Plan is included in the RTP as Appendix B.

C. REGIONAL TRANSPORTATION PLAN GOALS AND OBJECTIVES

Any plan of this scope must have a guiding vision. The preceding decisions clearly illustrate an evolving regional transportation policy direction that recognizes the interrelationship among the values inherent in: 1) providing adequate levels of mobility; 2) allocating finite fiscal

resources; and 3) protecting the region's environmental quality. As a result, the vision defined in this Plan has two major principles:

- Encourage and facilitate the economic growth of the Portland region; and

- Protect the quality of life for the residents of the region.

Economic growth is necessary for the viability of the region and the state. Local comprehensive plans are in place providing development capacity for a 90 percent increase in employment and a 72 percent increase in population. Investment in transportation improvements is needed to both promote and facilitate economic growth.

At the same time, however, the region should act to avoid the excessive traffic problems and associated degradation of livability common to major growth areas. Loss of accessibility, intrusion of traffic into neighborhoods, increased air pollution, and other detrimental impacts should be avoided.

An effective plan to serve a growing metropolitan area must address these concerns and provide an adequate balance among mobility, cost and environmental impact.

Mobility

Mobility for personal travel and goods movement throughout the urban metropolitan area is the principal objective of the transportation plan. An adequate level of mobility is needed for access to jobs, shopping and other personal business, social and recreational pursuits, commerce and statewide and interstate travel. Without mobility, the economic prosperity of the region will diminish as development is curtailed by lack of adequate access.

Cost

A cost-effective transportation system will provide adequate levels of mobility to the users while minimizing the overall cost of the system and therefore reducing the need for public investment. Certain situations require increased investments in one element in order to save a greater amount of capital cost in another element. The cost-effectiveness of the transportation system as a whole, therefore, is dependent on solutions that provide adequate capacity at the lowest total cost.

Environmental Impact

A basic assumption in the development of a regional transportation plan is that transportation systems do more than meet travel demand. Transportation systems have a significant effect on the physical and socioeconomic characteristics of the areas they serve. Transportation planning must be viewed in terms of other fundamental regional and community goals and values, such as protection and enhancement of a pleasant and healthy environment and the maintenance of desirable social and economic structures. Because of the multiple values which must be considered, objectives will sometimes be in conflict. There are no rigid priorities which can be applied to all situations.

Each program must be evaluated in terms of the extent to which it best achieves an overall balance between conflicting goals.

Systemwide Goals and Objectives

The overall goal of the RTP is to develop a transportation system that provides adequate levels of mobility to a growing region at the same time recognizing the financial constraints and environmental impacts associated with that system. The remainder of this section: 1) presents the systemwide goals and objectives of the Plan; 2) defines adequate mobility and the types of fiscal and environmental constraints that must be addressed; and 3) details the criteria against which the performance of the system will be measured.

Goal No. 1: TO PROVIDE ADEQUATE LEVELS OF MOBILITY ON THE TRANSPORTATION SYSTEM.

1. Objective: To maintain accessibility to jobs for residents of the region.

   Performance Criterion: The number of job opportunities available within 30 minutes from major residential sectors by the fastest mode during peak hours should be equal to or greater than today.

2. Objective: To provide a public transit system which maintains accessibility to jobs for the transportation-disadvantaged.

   Performance Criterion: The number of jobs accessible by transit within 30 minutes from those subareas having a higher than average concentration of transportation-disadvantaged persons should be equal to or greater than today.

3. Objective: To maintain accessibility to shopping opportunities for residents of the region.

   Performance Criterion: The percentage of total regional population having access to a regional shopping area within 15 minutes by fastest mode during off-peak hours should be equal to or greater than today.

4. Objective: To maintain accessibility to markets for major shopping center investments.

   Performance Criterion: The population within 15 minutes travel time of selected major regional shopping locations, by fastest mode during off-peak hours, should be equal to or greater than today.

5. Objective: To maintain accessibility to major freight distribution centers.

   Performance Criterion: The off-peak travel time from major freight distribution centers to the nearest freeway interchange using a route compatible with surrounding land uses should be equal to or faster than today.

Goal No. 2: TO PROVIDE ADEQUATE MOBILITY AT A REASONABLE TOTAL COST.

1. Objective: To minimize the total public cost associated with the transportation system including cost of improvements and cost for operation and maintenance of the system.

2. Objective: To consider the financial relationship between private sector development and the resulting need for improvements to the publicly financed transportation system and pursue public/private funding partnerships as appropriate.

Goal No. 3: TO PROVIDE ADEQUATE MOBILITY WITH MINIMAL ENVIRONMENTAL IMPACT AND ENERGY CONSUMPTION.

1. Objective: To ensure consideration of applicable environmental impact analyses and practicable mitigation measures in the RTP decision-making process.

2. Objective: To minimize, as much as practical, the region's transportation-related energy consumption through improved auto efficiencies and increased use of transit, carpools, vanpools, bicycles and walking.

3. Objective: To maintain the region's air quality.

   Performance Criteria: Hydrocarbon emissions by transportation-related sources, in combination with stationary source emissions, should not result in the federal ozone standard of .12 ppm (parts per million) being exceeded.

   Areas which experience concentrations of carbon monoxide emissions resulting from transportation-related sources (i.e., downtown Portland) should not exceed the federal standard of 9 ppm.

   The Annual Element of the region's Transportation Improvement Program (TIP) should be consistent with the State Implementation Plan (SIP) for air quality.

4. Objective: To minimize disruption associated with capital improvement projects.

5. Objective: To remove through traffic from neighborhood streets which results from congestion on adjacent facilities.

D. TRANSPORTATION SYSTEM DESIGN

Additional public investments in the highway and transit systems are needed to provide the region with an adequate level of mobility. However, demand management programs can be used to minimize peak period travel, thereby lessening the magnitude of the required public investment. This section specifies the quality of service expected on the highway and transit systems and establishes "system design criteria" by which the various components of the system must be delineated (i.e., where major arterials and regional transit trunk routes should be located). In addition, this section establishes a policy direction for demand management programs to support the highway and transit objectives. This section does not prescribe standard capacities for each type of highway facility or transit service. These decisions are based upon forecasts of traffic volumes and transit ridership and a policy determination on tolerable levels of traffic congestion and transit crowding.

Highway Objectives and Performance Criteria

1. Objective: To maintain a system of principal routes for long distance, high speed, statewide travel.

   Performance Criterion: The off-peak travel time for statewide trips within the region, from each entry point into the region to each exit point should be

equal to today and the off-peak travel time for statewide trips within the region from each entry point to the I-405 loop should be equal to today.

2. Objective: To maintain a reasonable level of speed on the regional freeway and arterial routes during the peak hours.

   Performance Criterion: The acceptable level of service on these facilities is defined as the maximum service volume at level-of-service D. Deficiencies are deemed to exist at level-of-service E (exceeding the D-E boundary). Improvements to these facilities should be designed to provide operating characteristics within the level-of-service D range with cost-effectiveness and impacts dictating what level of service within the D range the design achieves. It should be noted that, in some instances (policy, impact, cost or other constraints), decisions will be made to accept a lower level of service on segments of particular facilities.

3. Objective: To maintain a reasonable level of speed on the regional freeway and arterial routes during the off-peak periods.

   Performance Criterion: These facilities should operate at level-of-service C during the off-peak.

Highway Functional Classification Criteria

Metro's adopted functional classification system establishes the Principal Routes, the Major Arterials and the Minor Arterials of regional significance and serves as the framework for consistency among the comprehensive plans of local jurisdictions.

Metro's adopted functional classification system within the urban area consists of the Principal, Major Arterial and Minor Arterial routes of regional significance designated in this Plan (Figures 4-1 and 4-2). Local comprehensive plans also include additional minor arterials, collectors and local streets. The regional Principal, Major and Minor Arterials, the minor arterial and collector systems and streets designated in local plans for transit service in the local comprehensive plans constitute the Federal-Aid Urban system and, as such, are eligible for federal funding.

1. Principal Routes - This system provides the backbone for the roadway network. It serves through trips entering and leaving the urban area, as well as the majority of movements bypassing the central city. This

system includes interstates, freeways, expressways and other principal arterials.

System Design Criteria

- The principal arterials should provide an integrated system which is continuous throughout the urbanized area and also provide for statewide continuity of the rural arterial system.

- A principal arterial or freeway route should provide direct service: 1) from each entry point to each exit point; or 2) from each entry point to the I-405 loop (i.e., downtown). If more than one road is available, the most direct route will be designated as the principal arterial unless through traffic is incompatible with surrounding properties. Off-peak travel times should not be significantly increased through use of indirect routes.

- Freeways should be grade separated and other principal routes should provide a minimum of direct property access (driveways) to avoid conflicts between higher speed through travel and local access movements. Existing and proposed driveways should be consolidated on access frontage roads or side streets to the greatest extent possible.

- The principal route system inside the I-205/Highway 217 loop should be upgraded to freeway standards where cost-effective, with the exception of the McLoughlin Boulevard and I-505 alternative routes, where adjacent land uses are not compatible with this treatment.

- In general, freeways should not connect to collectors or local streets.

- The principal system should serve the major centers of activity (trip generators), the highest traffic volume corridors and the longest trip desires.

- There should be no restrictions on truck traffic.

2. Major Arterials -- These facilities are the supporting elements of both the principal routes and collector systems. Major arterials, in combination with principal routes, are intended to provide a high level of mobility for travel within the region. All trips from

one subarea through an adjacent subarea traveling to other points in the region should occur on a major arterial or principal route. Access to major port facilities should be provided by major arterials.

System Design Criteria

- The major arterial system should provide linkages with principal arterials, collectors and other major arterials.
- Land access should be restricted to major traffic generators to the greatest extent possible; minor driveways should be consolidated on access frontage roads or side streets.
- Signalized intersections should maintain high capacity for the major arterial with grade separations as needed.
- A major arterial or principal route should provide direct service from one subarea through another to reach the next subarea. If more than one route is available, the more direct route will be designated unless through traffic is incompatible with surrounding properties. Peak travel times should not be significantly increased through use of indirect routes.
- Generally, major arterials should be appropriate as a truck route.
- The principal routes and major arterial systems in total should comprise 5-10 percent of the total mileage and carry 40-65 percent of the total vehicle miles traveled.

3. Minor Arterials -- The minor arterial system complements and supports the principal and major systems, but is primarily oriented toward travel within and between adjacent subareas. An adequate minor arterial system is needed to ensure that these more localized movements do not occur on principal routes or major arterials. Minor arterials provide connections to major activity centers and provide access from the principal and major arterial systems into each subarea.

System Design Criteria

- Any land access should be oriented to public streets and major traffic generators; access to single family dwellings should be discouraged.

- Minor arterials should generally not be continuous across two or more subareas.

- The minor arterial system should provide linkages with collectors and major arterials.

- The full freeway and arterial system (principal, major and minor) should comprise 15-25 percent of the total mileage and carry 65-80 percent of the total vehicle miles traveled.

4. Collectors -- The collector system is generally contained entirely within subregions to provide mobility between communities and neighborhoods or from neighborhoods to the minor and major arterial systems. An adequate collector system is needed to ensure these highly localized movements do not occur on principal routes or major arterials. Land is directly accessible with emphasis on collection and distribution of trips within an arterial grid.

   System Design Criteria

   - The collector system should provide access to minor and major arterials and other collectors, as well as local streets.

   - Intersections of collectors and above should consist of stop sign control and signalization, where warranted.

   - Parking should be generally unrestricted on the collectors.

   - Access to freeways and principal arterials should generally not be provided from collectors.

   - The collector system should comprise 5-10 percent of the total mileage and carry 5-10 percent of the total vehicle miles traveled.

5. Local Streets -- The local street system is used throughout developed areas to provide for local circulation and direct land access. It provides mobility within neighborhoods and other homogeneous land uses, and comprises the largest percentage of total street mileage. In general, local traffic movements should not occur on Major Arterials and Principal Routes.

System Design Criteria

- The local street system should provide linkages to collectors and other local streets.
- Unrestricted parking is usually allowed on local streets.
- Local street trips are short and at low speeds.
- Local street service is almost exclusively direct property access.
- Access should not be provided to freeways and generally not to major arterials from local streets.
- Local streets should comprise 65-80 percent of the total mileage and carry 10-30 percent of the total vehicle miles traveled.

Transit Service Objectives and Performance Criteria

Transit service objectives and criteria are established to define the extent to which transit service will be provided, the convenience with which travel can be accomplished by transit and the cost of traveling by transit. In addition, similar to highway functional classification criteria, criteria are established for different types of routes according to the type of travel served. In general, the transit system should be designed to be a competitive and viable alternative to the automobile. It should be designed to serve a wide variety of trip destinations, purposes and times of day. In particular, the system should more effectively serve travel needs beyond 1) peak-hour travel to downtown Portland, and 2) work trips in general. The overall system concept that will be provided calls for a system of trunk routes providing direct, high quality service between major activity centers with connections to neighborhood areas by feeder, crosstown and local routes. In areas with sufficient density, the service will be provided through a grid system. In areas with lower density, the service will be provided through establishment of timed-transfer stations providing a focus for transfer between a large number of local routes and the trunk routes.

1. Objective: To provide transit service throughout the urbanized portions of the metropolitan area.

   Performance Criterion: The percent of the regional population residing within one-quarter mile of transit service should be equal to or greater than today.

2. Objective: To provide a quality of transit service that is a reasonable alternative to other modes of travel.

   Performance Criterion: The travel time for each trip by transit should be no longer than twice the trip time by auto (peak and off-peak) including walk, wait and transfer time.

   Performance Criteria: Transit vehicles should be no more crowded than four standees per square meter averaged during the peak hour; during off-peak hours, transit passengers will be predominantly seated, with an average of no more than one standee per square meter. Applied to current and planned equipment, these criteria provide the following vehicle capacities:

		Average Standees Per Vehicle		Average Total Capacity Per Vehicle	
	Seats	Off-Peak	Peak Hour	Off-Peak	Peak Hour
Small Bus	25	2	8	27	33
Standard Bus	44	5	20	49	64
Articulated Bus	64	12	47	76	111
Articulated Light Rail Vehicle	76	22	90	98	166

Transit System Design Criteria

Metro's adopted transit system (Figure 4-4) establishes the Regional Trunk Routes. Local comprehensive plans should recognize these routes and identify streets that are suitable for subregional trunk routes and/or local transit service.

1. Regional Trunk Routes -- A regional trunk system will be provided to directly and conveniently serve long distance trips from each major subarea through adjacent subareas to other parts of the region in each major travel corridor. The level of transit service provided on a regional trunk route is dependent upon the level of patronage demand in the corridor served. If demand is great enough, it may be deemed necessary to construct a regional transitway (i.e., light rail or exclusive busway). The characteristics of regional trunk routes are described as follows:

   - Radial regional trunk routes will serve each major travel corridor connecting central Portland with suburban activity centers of regional significance. In addition to other purposes, these

routes will be expected to carry the increase in work trips to downtown Portland due to new development.

- Circumferential regional trunk routes will interconnect major suburban activity centers. These routes will be designed to provide access to major trip attractors without transfer through downtown Portland.

- Regional trunk routes should provide high speed service. Preferential treatment for buses, limited stop service and/or express service during peak hours will be considered as needed to maintain a peak period transit travel time no longer than one-and-a-half times highway travel time.

- Regional trunk routes should provide the following minimum service frequency to serve urban development:

Peak	10 minutes
Day Base	15 minutes
Night	30 minutes

2. Subregional Trunk Routes -- These subregional transit routes should serve intermediate length trips within subareas to provide connection between major activity centers and from points within the subarea to nearby regional trunk routes and transit stations.

3. Transfers -- Trunk and local routes should be designed with convenient transfer opportunities to allow travel between downtown Portland and all residential areas with no more than one transfer, between other major origins and destinations with no more than two transfers and within local areas with no more than one transfer.

4. Park-and-Ride -- Park-and-ride lots should be established to provide convenient auto access to regional trunk route service for areas not directly served by transit.

5. Fare Rate Structure -- The fare structure will meet the following objectives:

   - Fares should keep pace with inflation.

   - The fare should be commensurate with the length of the ride.

- Special discounts should be provided to facilitate elderly and youth ridership.

- Innovative fare programs should be used to promote increased ridership, including special promotions, off-peak fares, special zones, etc.

- The fare collection system should be convenient for the user.

6. Elderly and Handicapped Service -- Based on the Special Needs Transportation Plan adopted by Tri-Met, the transit system will:

   - Continue to provide accessible service at all LRT stations.

   - Continue to specify lifts on all new buses until at least 50 percent of the bus fleet is accessible.

   - Continue to work with local jurisdictions to make as many transit stops as possible accessible.

   - Continue to provide door-to-door demand-responsive service to individuals who are unable to use Tri-Met buses due to physical or mental disabilities.

7. Line Productivity -- Tri-Met is currently in the process of developing service standards relating to line productivity for transit trunk and bus feeder lines, to ensure some means of evaluating the productivity of lines within the system and developing alternative service options as appropriate.

8. Regional Transitway Policies -- Regional transitways (light rail transit or exclusive busways) provide an attractive method of providing regional trunk route service. With a partially separated right-of-way and larger vehicles, greater capacity and higher speed service can be provided while concurrently minimizing operating cost. Regional transitways have additional benefits of providing efficient, high capacity service to adjacent station-area land uses, thereby providing a logical tool for targeting locations for high density developments. Regional transitways are, however, a very high cost public investment. As such, they are warranted in only the most heavily traveled corridors if they are to be a cost-effective investment. In

addition, transitways require acquisition of right-of-way that may otherwise be developed.

Due to the high cost of transitways and the length of time to implement such a facility, development of this region's transitway system will be pursued in an incremental fashion. The guidelines for implementation of the transitway system (Figure 4-5) are as follows:

- Regional transitways will be considered for individual regional trunk route corridors as appropriate to economically provide required high speed and/or high capacity service.

- Potential transitway routes will be identified in each corridor as appropriate to ensure consistent phasing from bus trunk operation in public streets to transitway operation.

- Right-of-way will be protected from encroachment to the greatest extent feasible for each of the transitway routes.

- Detailed cost and environmental impact studies will be pursued in each corridor before implementation of a transitway to ensure the most cost-effective public investment is implemented.

Demand Management Program Objectives and Criteria

The purpose of demand management is to reduce the number of automobile and person trips being made during the peak travel periods throughout the region. The primary objectives of managing travel demand are to reduce the necessity of building new highways or adding lanes to existing highways and to optimize the use of transit service. Managing travel demand also helps the region meet its overall goals of reducing air pollution and conserving energy in a relatively low cost manner. In addition, demand management measures are particularly attractive because of their potential to help solve localized or corridor-oriented problems. For example, a rideshare program can be oriented toward a specific corridor with congestion problems; a flex-time program can be targeted at a central business district or a major employment center where traffic demands are concentrated.

Presented here are objectives defining the most appropriate types of travel demand programs to pursue and guidelines on the application of these programs. An important consideration involving demand management measures is to combine those that are mutually supportive. While one measure may

be somewhat effective on its own, it may be much more successful in conjunction with another measure. For example, an employer program to increase ridesharing may be moderately effective; the same program coupled with a reduced carpool parking fee program may be very effective. Similarly, land use policies can be formulated which, on their own, may have little impact on reducing vehicle trips, but in concert with other actions can be very successful in promoting the use of transit, or bicycle and pedestrian travel. Therefore, local jurisdictions are urged to examine demand management measures as a whole and implement those combinations of measures which will best satisfy local needs.

1. Objective: Minimize travel by single occupant automobile; maximize travel by alternate modes.

2. Objective: Minimize travel during peak hours.

3. Objective: Minimize trip length.

Program Design Criteria

1. Parking Management -- The mode of travel used to make a trip is directly influenced by the convenience and cost of parking. As parking in densely developed areas becomes less convenient and more costly, alternative modes of travel become more attractive. In addition, as alternative modes of travel are increasingly used for work trips, scarce parking spaces are released for shopping trips. Parking management is particularly important in areas that are currently developed at high densities and in areas planned for new high density development. This is especially true for downtown Portland, for without the effective management of parking, the transit ridership levels that this Plan is predicated upon will not occur. This, in turn, would require a major reexamination of the improvements called for in the major radial corridors (Chapter 5) as well as severe impacts on air quality and mobility within the CBD.

   In addition, parking management programs can be targeted at increasing both ridesharing and transit use depending upon the circumstances. The overall guidelines for implementation of parking management programs are as follows:

   - Local jurisdictions are encouraged to limit the number of parking spaces in high density areas with direct service to regional transit trunk routes. The limit should be based upon the type and density of development and can be accomplished

through a parking management program covering a general area or specific parking requirements for individual developments.

- Local jurisdictions should consider maximum limits on the number of parking spaces associated with development within walking distance of transit centers.

- Local jurisdictions are encouraged to manage the price and location of parking to favor the rideshare and transit traveler and shopping trips rather than work trips by single occupant autos.

- Park-and-pool lots should be provided to aid in formation of carpools.

2. Rideshare Programs -- An attractive way to lessen peak period vehicle travel is to increase the percentage of commuters that rideshare. This serves to increase person-carrying capacity without increasing vehicle demand on the highways. Because of the relatively constant and repetitive nature of work trips, individuals can make shared ride arrangements in advance. Other trip purposes, such as shopping and recreational trips, have proven much less responsive to instituted rideshare programs and are, therefore, not specifically addressed.

   Currently, approximately 23 percent of those traveling to work by auto rideshare in groups of two or more on any given day. A few large firms in the region with aggressive rideshare programs have upwards of 30 percent of their employees ridesharing. Looking at the rideshare goals of some large firms in the region and at experiences in other cities, it is reasonable to affirm that encouragement of ridesharing efforts that have proved effective is an important component of the overall demand management portion of this Plan.

   Local jurisdictions are encouraged to adopt policies consistent with the overall guidelines for supporting effective ridesharing activities, such as:

   - Concentrate rideshare efforts on work trips to large employers or employment centers and in congested traffic corridors.

   - Encourage ridesharing through incentives (such as preferential parking locations and price and preferential traffic lanes) and through marketing

programs to advertise the benefits of ridesharing and to increase the convenience of ridesharing.

3. Land Use -- Local comprehensive plans guide new development and provide the means to ensure that future development and future transportation investments are compatible. Local plans which provide for increased suburban employment, together with the Urban Growth Boundary (UGB) adopted by Metro, ensure a greater mix of land uses, thereby minimizing trip length. Local plans specifying locations for high density developments should seek to complement planned regional transit trunk routes and transit stations.

   Local jurisdictions are encouraged to initiate the following land use actions to support demand management programs:

   - New development should achieve a balance of employment, shopping and housing to reduce the need for long trips and to make bicycle and pedestrian travel more attractive.

   - Employment opportunities should be developed throughout the metropolitan area in both urban and suburban locations. This development should be concentrated and located to maximize the feasibility of being served by transit or located along regional transit trunk routes. Employment, commercial and residential densities should be maximized around planned transit stations and regional transit trunk route stops compatible with other local objectives. Compatible increases in density should also be considered along subregional and local transit routes. Locations farther from transit trunk routes should be considered for lower density uses.

   - Adjacent to transit trunk routes, local jurisdictions should consider allowing higher densities than would otherwise be the case if the development is designed to be positively oriented toward transit and pedestrian access.

   - Pedestrian movements should be encouraged within major activity centers by clustering hotel, entertainment, residential, retail and office services to utilize common parking areas.

   - Land development patterns, site standards and densities which make transit, bicycle and pedestrian travel more attractive should be promoted.

- Local jurisdictions should seek to improve the streetside environment affecting the transit user, bicyclist and pedestrian.

4. Flextime/Staggered Work Hours/Four-Day Work Week -- Flexible work schedules imply individual choice as to when an employee begins and ends his work day. This is an important travel demand measure, as several studies have found that existing transportation systems would function more effectively if workers were given more latitude in the design of their commute trip. Flextime programs would also help Tri-Met, because spreading peak transit ridership over a longer time period would result in a need for fewer buses and drivers, while providing more seats for riders during the peak period. Flexible work schedules and the associated reduction in peak-hour travel lessen the need for both transit and highway capacity. Guidelines for implementation of flexible work schedules which local jurisdictions are encouraged to support are as follows:

   - Flexible work schedules are encouraged at all places of employment where such programs would not interfere with the productivity or effectiveness of the employee.

   - Flexible work schedules are particularly encouraged at large employment centers, in central business districts and in areas experiencing traffic and circulation problems.

5. Bicycling -- The adoption of the Regional Bicycle Plan element of the RTP signifies the region's recognition of bicycling as a legitimate form of transportation. In Portland, for example, bicycle commuting has doubled in volume since 1974, and now accounts for almost 4 percent of all work trips -- more than double the national average.

   The implementation of the bicycle plan element will provide safe and convenient routes for existing bicyclists between jurisdictions and to major attractions throughout the region and encourage more bicycle use. In addition to the provision of safe bike routes, guidelines for increasing the use of bicycles as an alternative mode of transportation which local jurisdictions are encouraged to support are as follows:

   - Long term bicycle parking facilities should be provided at employment centers, transit stations,

park-and-ride lots, schools and multi-family dwellings.

- Short term bicycle parking facilities should be provided at shopping centers, libraries, recreation areas and post offices, among others.

- Where practicable, bicycle parking should be secure and weather-protected.

- Local voluntary bicycle-marking programs should be initiated to deter theft and aid in returning stolen bicycles to their owners. The licensing of bicycle operators is <u>not</u> recommended for the region.

- Police programs for consistent enforcement of all rules of the road pertaining to bicyclists should be supported.

- The development of guidelines and programs for safety education and awareness should be encouraged.

Chapter Two

Land Use, Growth and Travel Demand

CHAPTER 2

LAND USE, GROWTH AND TRAVEL DEMAND

A. OVERVIEW

In order to plan effectively for the urbanized area transportation needs of the region to the year 2005, it is necessary to define the location, size, and characteristics of the travel demand the transportation system will be expected to serve. This chapter of the Plan describes these basic elements which, in combination, will determine the future demand for transportation services in the region:

- the regional land use pattern defined by the local jurisdictional comprehensive plans developed under the LCDC Statewide Planning Goals that will determine in large part the location of future development in the region;
- the levels of population and employment growth that are expected to occur in the region by the year 2005; and
- the regional travel patterns that can be expected as a result of the location and extent of anticipated growth.

B. LAND USE AND YEAR 2005 GROWTH FORECAST

Highway and transit facilities are functionally related to the development pattern they are intended to serve, providing for movement of people and goods among employment, housing and shopping opportunities. The location, intensity and timing of future land development in the region will be directly related to two primary factors: 1) the land use designations of local comprehensive plans that establish where various land use types will be allowed; and 2) the complex set of economic and social forces that determine market demand for new development. This section describes the regional land use framework represented by the full development of local comprehensive plans, followed by an examination of market demand and the resultant level of growth expected by the year 2005. This relationship is significant because the capacity for development in the local comprehensive plans is greater than the amount of development expected by the year 2005.

1. Regional Land Use Pattern

A regional composite land use map for the urbanized area was developed by combining the individual com-

prehensive plans prepared by the cities and counties within the region. This composite plan (Figure 2-1) is accurate as of June 1986, and aggregates the more detailed local plans into four generalized land use groupings which represent areas of greatest regional interest within the Urban Growth Boundary (UGB): 1) single family residential, 2) multi-family residential/ commercial, 3) industrial and 4) public/open space. These categories of land use, due to their travel generation characteristics, are considered most important for transportation planning purposes.

The development pattern evidenced in the figure has been strongly influenced by opportunities and constraints afforded by the regional topography. The obvious opportunity is the confluence of the Columbia and Willamette Rivers, which has encouraged the region to become a major shipping and distribution center for a large portion of the Pacific Northwest. As a result, there are significant concentrations of industrial land uses along the Oregon portion of both rivers. The major constraint imposed by the topography is the location of the West Hills between downtown Portland and the Tualatin Valley. This physical barrier to easy access has encouraged the development of a more autonomous suburban area in Washington County than has historically developed in suburban Clackamas or Multnomah Counties.

The implications of this overall development pattern on the form of the region's transportation system are evident. The high density developments along the radial routes east of the Willamette and to the southwest offer significant opportunities for cost-effective transit service provided by transit trunk routes. Concentrations of employment activity in suburban locations such as Beaverton, Gresham and the Clackamas Town Center area provide a focus for suburban development easily served by transit stations. In effect, the successful development of many of the higher density areas/nodes specified in the local comprehensive plans depends on adequate levels of transit service. New industrial developments, dependent upon adequate highway access for the movement of goods, have been planned to expand near major regional highway facilities such as I-5, I-84, I-205, Highway 212/224 (the Sunrise Corridor), Highway 217 and the Sunset Highway. The remaining areas of residential development require a more balanced combination of urban highway infrastructure and local transit service.

Fig. 2-1

Generalized Regional Land Use Plan

Regional Transportation Plan, 1987

- Single Family
- Multi-Family & Commercial
- Industrial
- Public, Parks & Open Space
- Airport
- Urban Growth Boundary

0 1 2
Miles

METRO

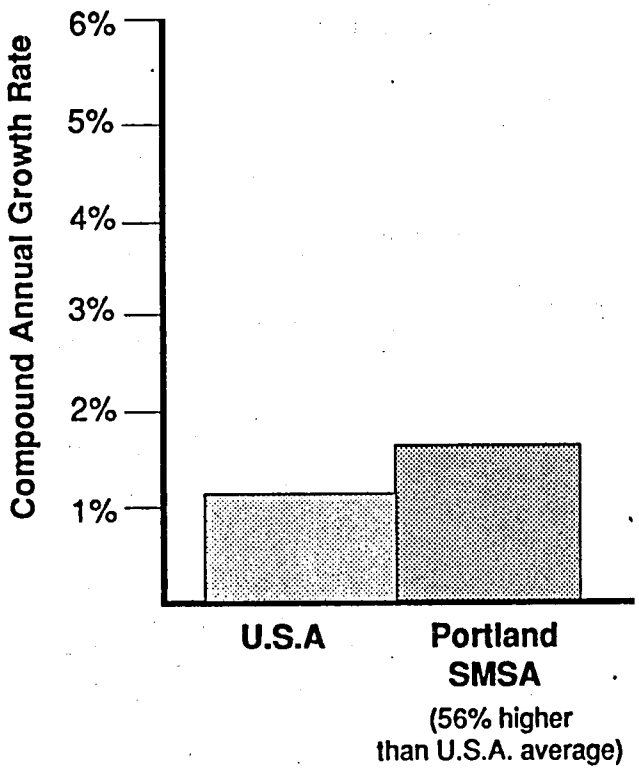
Obviously, transit and other transportation investments, while necessary to serve the travel demand associated with a particular development pattern, can also be used as tools to achieve locally adopted land use and economic development goals.

2. Market Demand

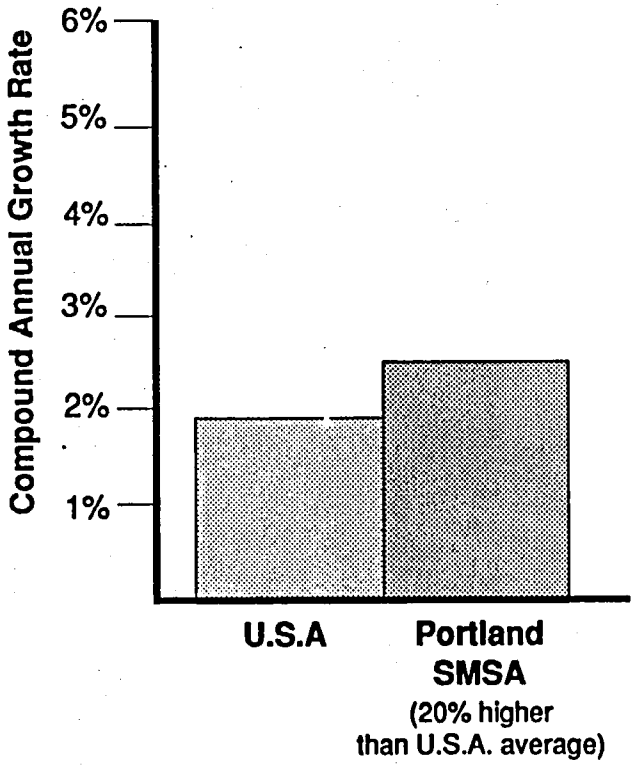
In recent years, the demand for development in the region's economic system has greatly outpaced that exhibited by the national economy. Figure 2-2 illustrates the 1970-1985 annual population and employment growth rates of the nation and the Portland SMSA. Using the 2.35 percent compound annual rate of employment growth from 1970 to 1985 as an indicator for the demand for economic development, the Portland region is experiencing a market demand that is 20 percent per year greater than the national average of 1.96 percent. The residential demand in the region, represented by the 1.62 percent compound annual growth rate over the last 15 years, is 56 percent greater than that of the nation as a whole (1.04 percent). Employment is expected to continue to grow at a faster rate than population due to the anticipated increase in the average number of workers per household.

While the regional economy has expanded, it has also diversified significantly. Historically, the Portland area has constituted the center of urban services for one of the nation's major timber producing regions. In recent years, however, the regional (SMSA) economy (Figure 2-3) has complemented continued growth in the durable manufacturing sector (+18,400 jobs in the last 15 years) with significant increases in employment in the finance, insurance, real estate, trade and service sectors (+124,000 jobs). In addition, the composition of employment in the manufacturing sector has shifted toward the electrical and instrument manufacturing industry (+16,500 jobs -- 90 percent of the new growth in durable manufacturing employment).

Although a major portion of the region's residential growth in the last 15 years has occurred in the suburban areas, extensive suburban development of employment has begun only relatively recently. An important feature of the regional economy is the fact that this suburban development of employment is expected to occur <u>in addition to</u> (not at the expense of) the growing employment base in the downtown Portland sector. The demand for downtown development is anticipated to remain strong compared to the overall level of economic development in the region. Downtown employment levels have



Population Growth Rate



Employment Growth Rate

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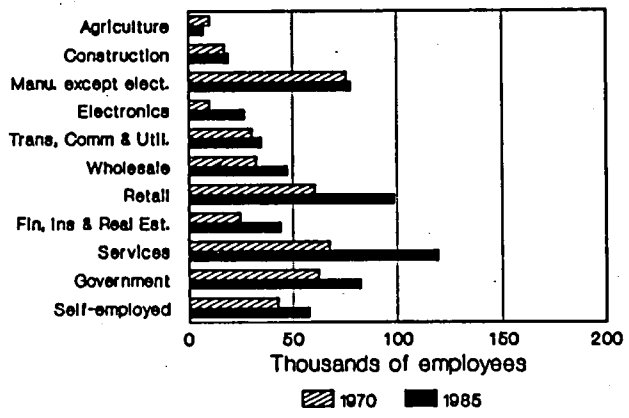
Comparison of Growth Rates: 1970-1985

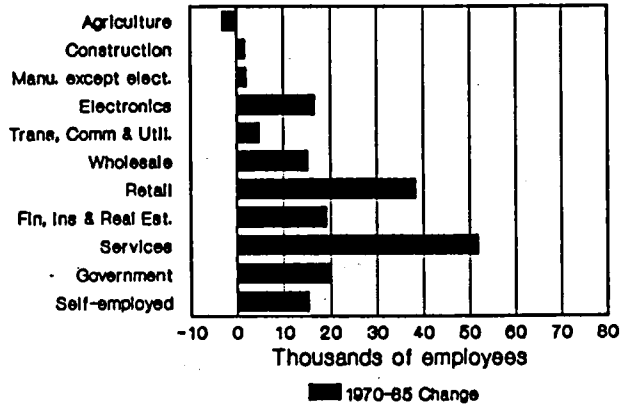
Fig. 2-2

THE PAST

Employment Comparison, 1970 and 1985

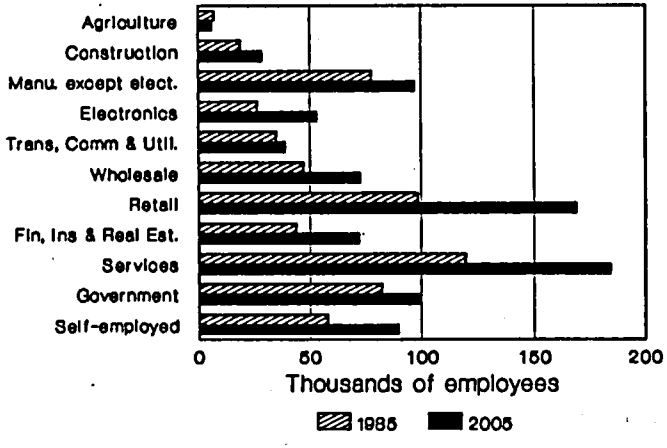


Employment Change, 1970 to 1985

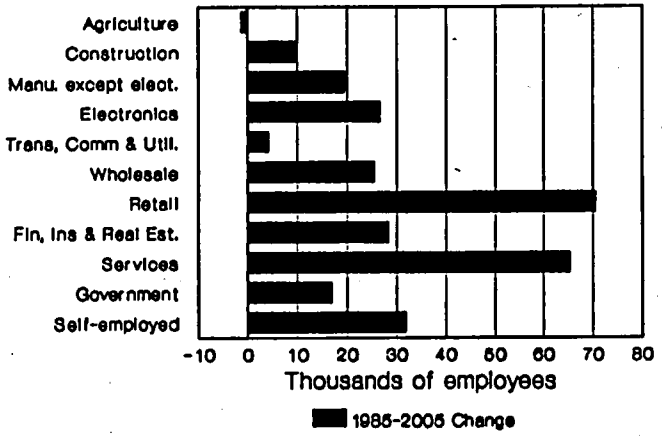


THE FUTURE

Employment Comparison, 1985 and 2005



Employment Change, 1985 to 2005



increased nearly 50 percent in the last 15 years, a slightly higher rate than the 42 percent growth in the SMSA employment as a whole.

3. Population and Employment Growth Forecasts

The RTP focuses transportation investment decisions on a year 2005 travel demand. As such, it is necessary to determine the extent to which the long range regional land use pattern within the urban area discussed previously will be developed within the next two decades. This section of the Plan summarizes a year 2005 population and employment forecast developed through a series of workshops attended by representatives from the region's cities, counties, other interested public agencies and private sector groups. Detailed descriptions of the forecast, allocation process and methodology are documented in A Regional Population and Employment Forecast to 1990 and 2005 (and subsequent updates) which represents Appendix A of the RTP and is available under separate cover.

The key components in the development of the year 2005 forecast were regional control totals for population and employment. These 20-year control totals are defined every five years by the Regional Growth Forum, consisting of public and private sector professionals involved in forecasting economic growth, employment, population and housing. These control totals were then reviewed by representatives of the various governmental jurisdictions in the region who attended workshops to disaggregate the overall forecasts to subareas and districts within the metropolitan region. The method employed was to use the output of a long range forecasting model as a starting point and to develop a consensus on future employment by sector through discussion and modification of that output. (The most recent model output was from a BPA Northwest Region model developed by Wharton Econometric Forecasting Associates in 1984, disaggregated to the SMSA by Metro.) This 20-year employment forecast (909,987 jobs regionwide in 2005) represents the best knowledge, experience and judgment of the individual members of the group developed over time through the analysis of the various economic components of the region. It is stressed that this is a likely forecast; events external to this region and actions taken within the region could change the totals represented here.

A related population forecast was developed by estimating the ratio of the level of job participation (employment) to population. This ratio produces a year

2005 regional population estimate of approximately 1,740,000 people.

Metro monitors the growth in the region on an ongoing basis: publishing a Regional Development Trends update twice a year; annually updating the base year population and employment figures to reflect actual growth (and extending the 20-year forecast one year further out).; and conducting a major update of the 20-year forecast through the Regional Growth Forum process every five years.

4. Population and Employment Growth to 2005

The growth pattern illustrated in Figures 2-4 and 2-5 represents a regional distribution of nearly half a million new people (+36 percent over 1985) and 300,000 (+48 percent over 1985) new jobs over the next 20 years. Combined with the regional land use pattern (Figure 2-1), they depict the shape and degree of development expected to occur within the region by the year 2005.

This growth pattern was projected from past growth trends for the different parts of the region subject to an understanding of those circumstances present in each community likely to slow, accelerate or maintain past levels of development. Among these considerations are the availability of vacant land and the existing or planned public services such as sewer and water. Each district has a theoretical growth limit represented by the local comprehensive plan density limits on developable or redevelopable land.

Because the factors affecting the growth rate in a given community are complex and varied, they are subject to change over time. As a result, the growth projections used as a basis for the development of this Plan are also subject to change. In particular, as the projections for growth become more detailed, their relationship to actual development becomes more uncertain. For example, we can say with great certainty that employment in the region as a whole will grow by 50 percent over the next 20 years and that a certain portion will locate in Washington County. However, trying to specify which parts of the County will grow is largely subject to specific development proposals. It is Metro's intent, therefore, that growth trends in each community be monitored and updates to the year 2005 growth allocation be made as necessary to reflect actual conditions as closely as possible. This process, together with a biannual update of travel

projections (both for the base and future horizon years), ensures timely assessments of the transportation improvements recommended in this Plan (Chapter 5) to reflect the changing nature of the transportation needs to serve the urbanized area of the region over time.

For the purpose of allocating population and employment growth, it was necessary to make a number of general assumptions regarding existing and future conditions:

- The composite of all city and county comprehensive plans comprise the regional land use plan. Future land development will be consistent with these local plans and the LCDC Statewide Planning Goals.

- Currently adopted policies of jurisdictions influencing regional growth and development will not change significantly in the future.

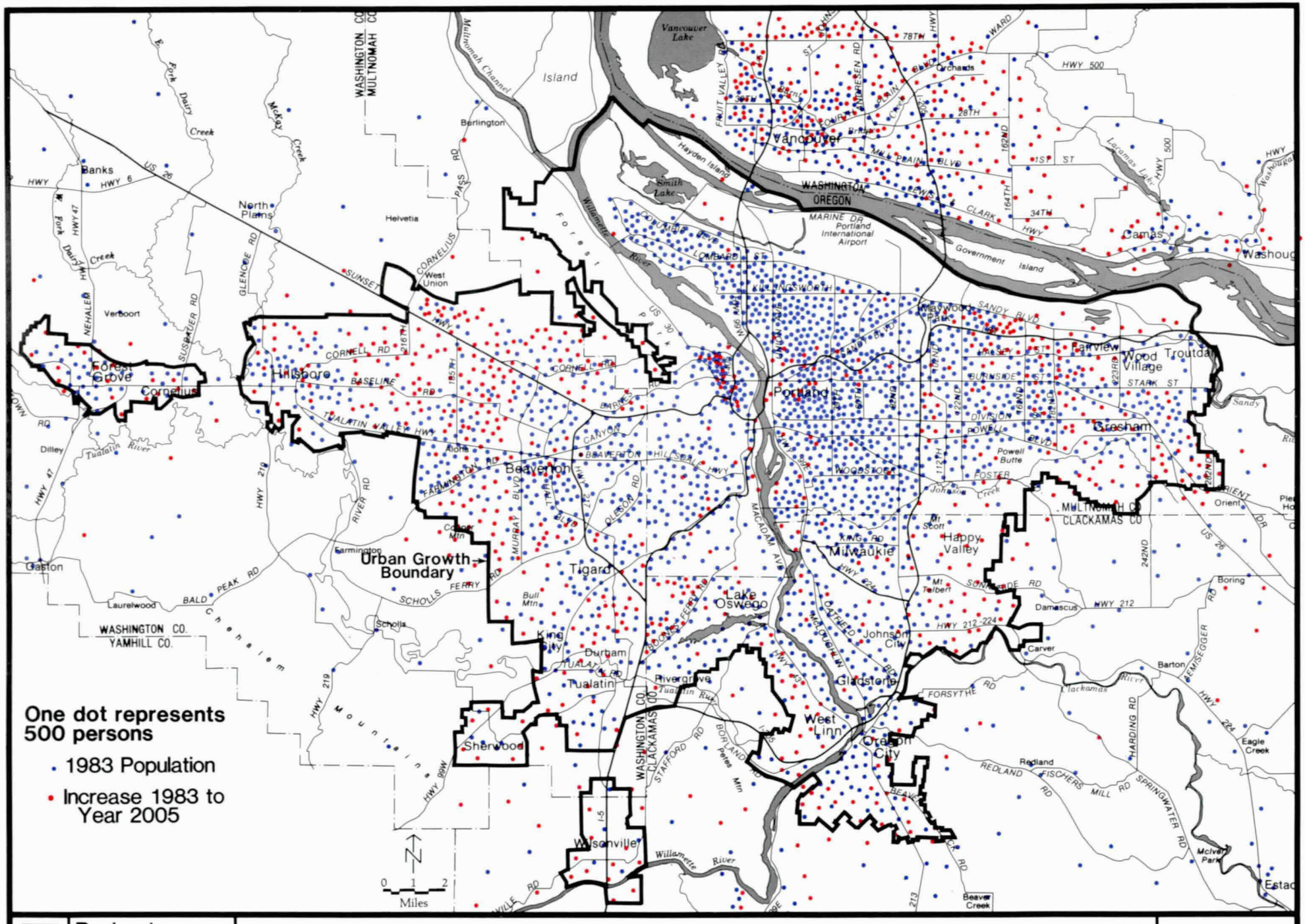
- Current or projected transportation deficiencies were not considered as a constraint on the future land development pattern.

- The growth trends of the past decade are a significant indicator of how and where the next two decades' growth will occur.

a. Population Growth

The population growth forecast illustrated in Figure 2-4 clearly shows the continuation of the recent trend toward rapid residential development in the suburban areas of Washington, Clackamas, East Multnomah and Clark Counties. Older, established areas such as much of the cities of Portland and Vancouver, Washington, are already nearly fully developed and have only moderate amounts of infill and redevelopment potential available. In addition, the aggregate average family size is expected to decrease from 2.6 in 1980 to 2.45 persons per household by 2005 on a regional basis, thereby resulting in less population in built-up urban areas.

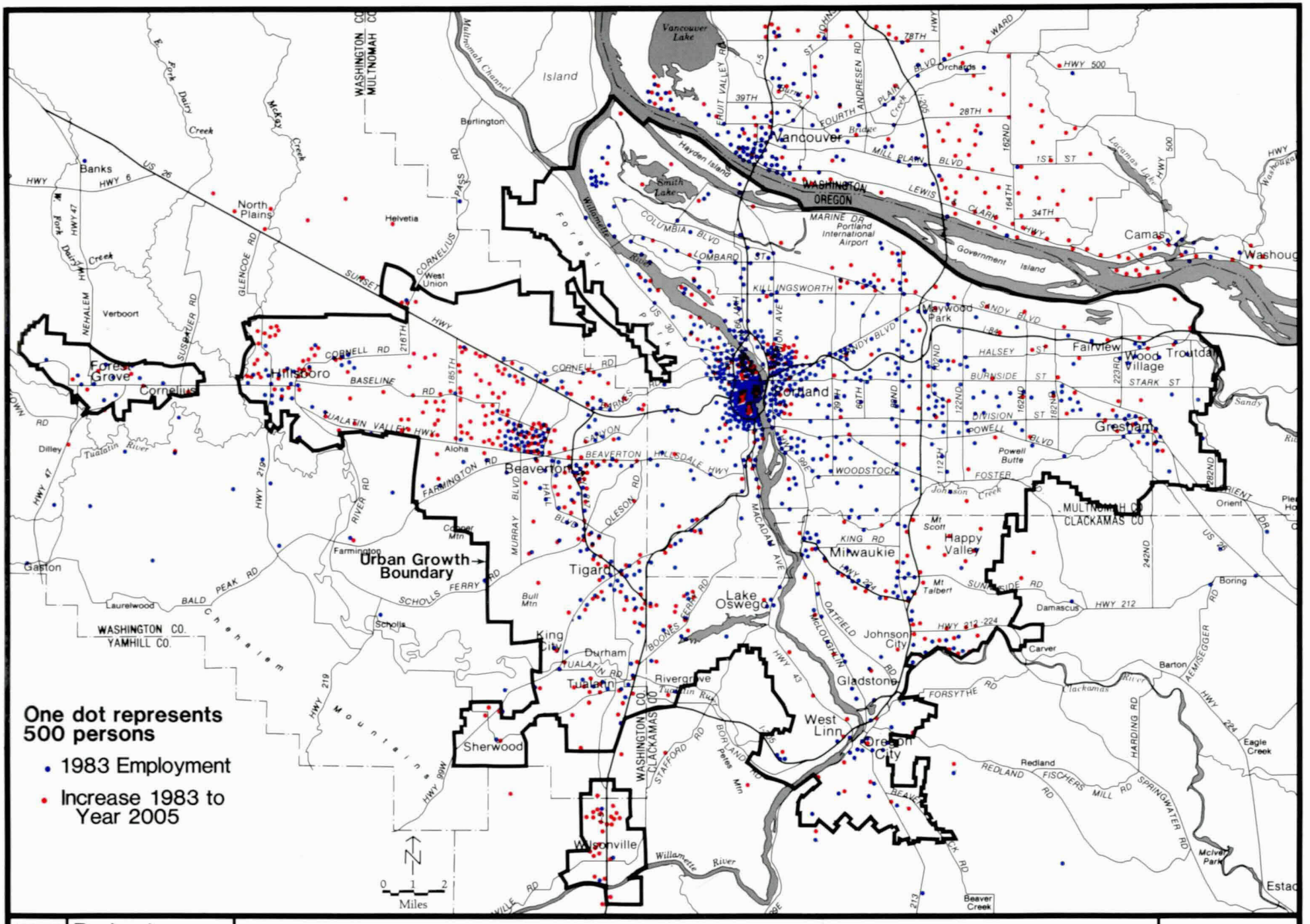
The suburban jurisdictions, on the other hand, offer large areas of residentially zoned available land which is expected to be developed by the year 2005. As a result, approximately 90 percent of the new population forecast for the region will likely locate in the suburban jurisdictions. Because of existing housing stock, however, the



METRO Regional Transportation Plan

1983 TOTAL POPULATION & INCREASE TO YEAR 2005

FIG. 2-4


One dot represents 500 persons
1983 Employment
Increase 1983 to Year 2005
Urban Growth Boundary
Portland
Vancouver
Beaverton
Hillsboro
Forest Grove
Cornelius
Tigard
Lake Oswego
Tualatin
Sherwood
Wilsonville
King City
Durham
Rivergrove
West Linn
Oregon City
Gladstone
Milwaukie
Happy Valley
Johnson City
Damascus
Gresham
Fairview
Wood Village
Troutdale
Maywood Park
Camas
Washougal
Banks
North Plains
Helvetia
Verboort
West Union
Aloha
Farmington
Scholls
Laurelwood
Gaston
Dilley
Cooper Mtn
Bull Mtn
Mt Scott
Mt Talbert
Powell Butte
Orient
Boring
Carver
Barton
Eagle Creek
Redland
Beaver Creek
Mclver Park
Estacada
Berlington
Island
Hayden Island
Smith Lake
Vancouver Lake
Government Island
Portland International Airport
Multnomah Channel
Willamette River
Tualatin River
Clackamas River
Sandy River
Johnson Creek
Peters Mtn
Coast Range Mountains
WASHINGTON CO.
MULTNOMAH CO.
CLACKAMAS CO.
YAMHILL CO.
WASHINGTON
OREGON
0 1 2
Miles
Regional Transportation Plan
1983 TOTAL EMPLOYMENT & INCREASE TO YEAR 2005
FIG. 2-5

established urban areas will still retain over 35 percent of the total regional population in the year 2005.

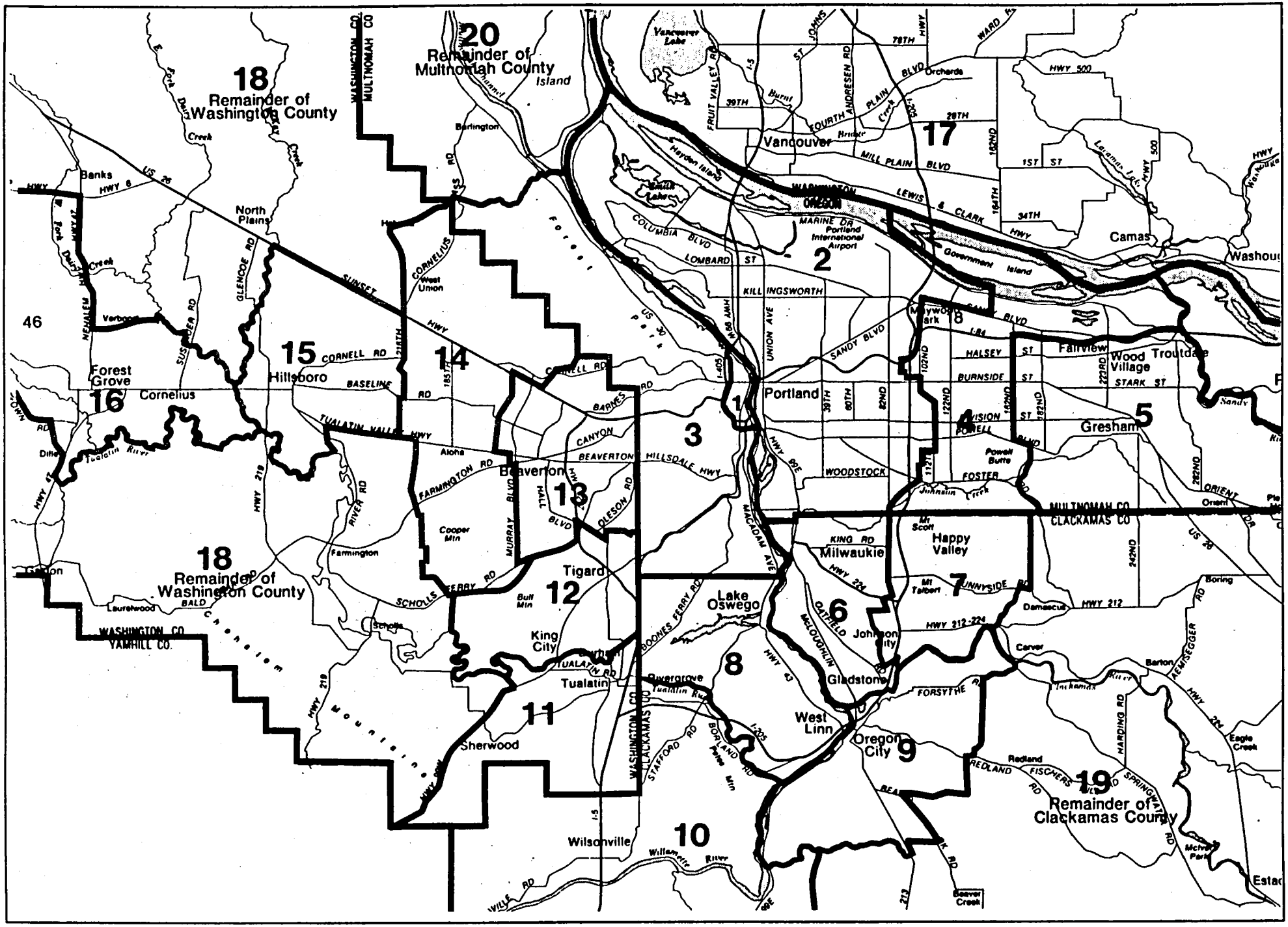
Washington County is expected to attract the largest share of the population growth -- 145,000 people -- and will house 24 percent of the regional population, up 4 percent from its share in 1985. Clackamas County is expected to increase by 113,000 going from 19 percent to 21 percent of the regional population. Clark County is expected to add 110,000 people, also increasing its share of regional population by 2 percent. Another fast growing community is the greater Gresham area, which gains 43,000 new residents.

b. Employment Growth

The distribution of employment growth, presented in Figure 2-5, shows the most rapid employment growth occurring in the suburban districts. Outside of the downtown Portland area, major commercial centers are developing in the suburban areas. These employment concentrations in the Gresham, I-5/Kruse Way, Clackamas Town Center, Sunrise Center, I-5 Corridor, Beaverton, Sunset Corridor, Hillsboro and Tanasbourne areas will provide an expanding focus for suburban residents to both work and shop within their subarea, thus reducing the overall need for long distance trip-making (see Chapter 2; Section C -- Travel Patterns). As a result, the Portland/Multnomah County share of the region's employment is likely to decrease from 56 percent in 1985 to 48 percent in 2005. The largest absolute increase in employment occurs in Washington County, which is expected to gain 104,000 new jobs by 2005. However, in spite of a reduced share of all employment, the established areas are still expected to experience a large absolute increase of 93,500 new jobs. In addition, the downtown Portland sector is expected to remain strong and increase by 33,000 new jobs (to 120,000) by the year 2005.

c. 20-District Allocation Summaries

Once the regionwide and major subarea control totals were established, the population and employment growth was allocated to 20 geographic districts within the region (Figure 2-6). These districts follow census tract and county boundaries and represent areas having similar growth-



METRO *Regional Transportation Plan: 20 Districts* Fig. 2-6

related characteristics (developing areas, stable areas, transition areas, etc.). The specific year 2005 20-district population and employment allocations are contained in Table 2-1.

Table 2-1

1985-2005 20-DISTRICT
POPULATION AND EMPLOYMENT GROWTH

	Population			Employment		
	1985	2005	Change	1985	2005	Change
District 1	8,713	9,920	1,207	87,432	120,335	32,903
District 2	307,866	318,731	10,865	159,316	187,658	28,342
District 3	80,369	91,147	10,778	60,048	74,151	14,103
District 4	77,320	99,608	22,288	19,289	25,358	6,069
District 5	83,771	126,731	42,960	20,965	32,865	11,900
District 20	5,957	6,370	413	603	712	109
Total Mult. Co.	563,996	652,507	88,511	347,653	441,079	93,426
District 6	63,529	72,255	8,726	23,898	29,805	5,907
District 7	18,405	37,956	19,551	12,041	26,808	14,767
District 8	46,150	68,074	21,924	13,166	18,387	5,221
District 9	24,769	40,299	15,530	9,452	15,515	6,063
District 10	20,428	39,116	18,688	13,840	19,564	5,724
District 19	75,706	104,774	29,068	12,672	17,672	5,000
Total Clack. Co.	248,987	362,474	113,487	85,069	127,751	42,682
District 11	15,041	27,861	12,769	7,666	17,268	9,602
District 12	32,180	47,279	15,099	22,192	32,631	10,439
District 13	75,956	86,332	10,376	51,231	77,524	26,293
District 14	64,752	123,540	58,788	14,773	44,161	29,388
District 15	33,143	62,434	29,291	15,146	31,598	16,452
District 16	20,800	33,980	13,180	4,685	9,941	5,256
District 18	22,115	27,850	5,735	5,523	12,426	6,903
Total Wash. Co.	263,987	409,276	145,238	121,216	225,549	104,333
Total Ore. Port.	1,076,970	1,424,257	347,236	553,938	794,379	240,441
Clark. Co.	205,000	315,309	110,309	60,363	115,608	55,245
Total Region	1,281,970	1,739,566	457,545	614,301	909,987	295,686

(Rev. 9/87)

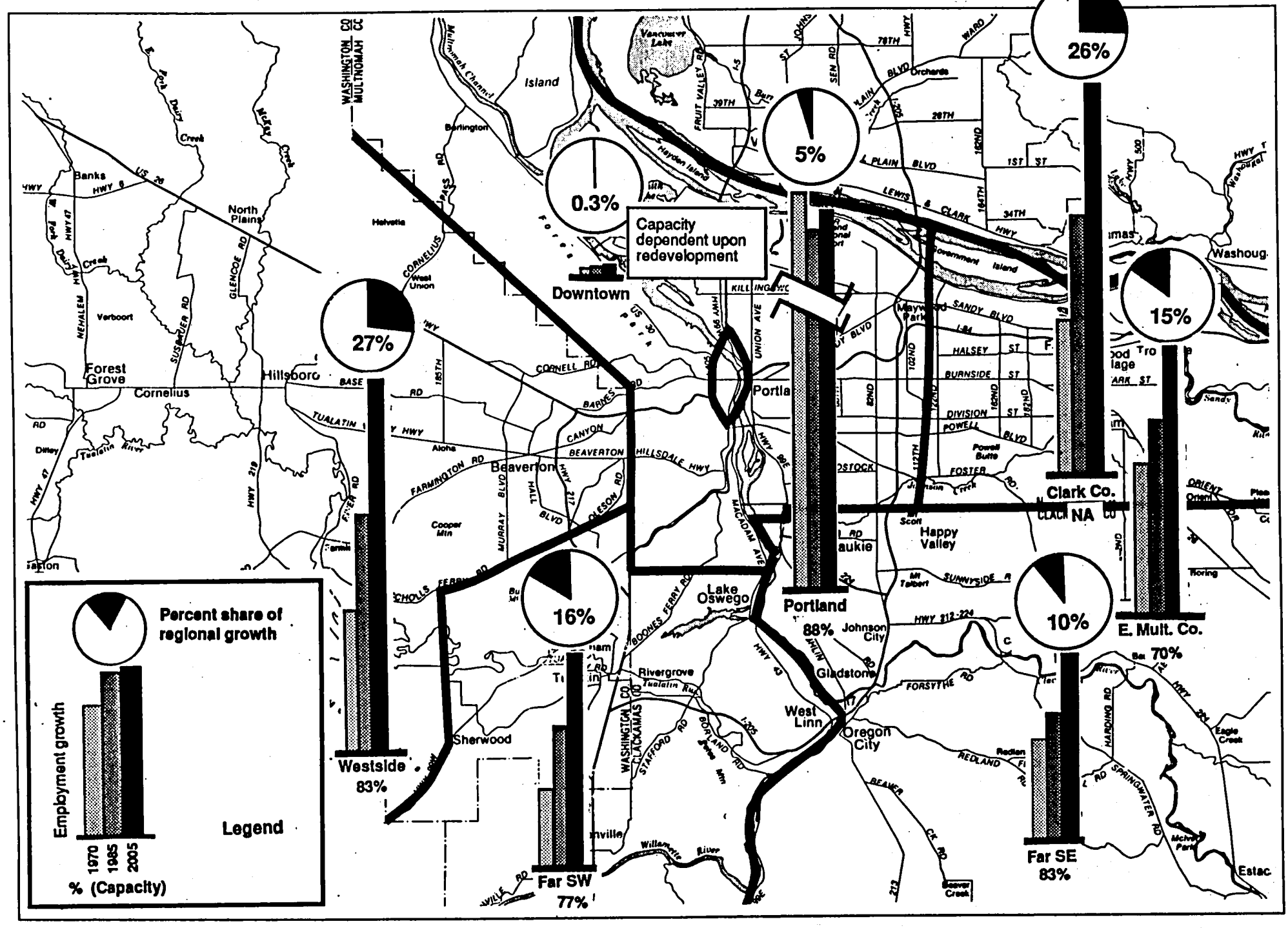
The RTP is based on the expectation that local comprehensive plans will provide sufficient land capacity and transportation services and facilities to accommodate at least the level of growth specified for each of these 20 districts. It is understood that on the census tract level, growth rates and land use patterns will vary, depending on market demand and specific development proposals. The 20 district allocations, however, are considered reasonable and allow for fluctuations in specific census tract forecasts without major alterations to the district total. As a result, the regional travel demand forecast, based on the 20-district allocation, represents the combination of land use patterns and growth expectations developed at that level of detail and is adequate to define future travel demands on the regional transportation facilities (major arterials and above and the regional transit trunk routes) covered by this Plan.

d. Relationship to Local Comprehensive Plan Holding Capacity

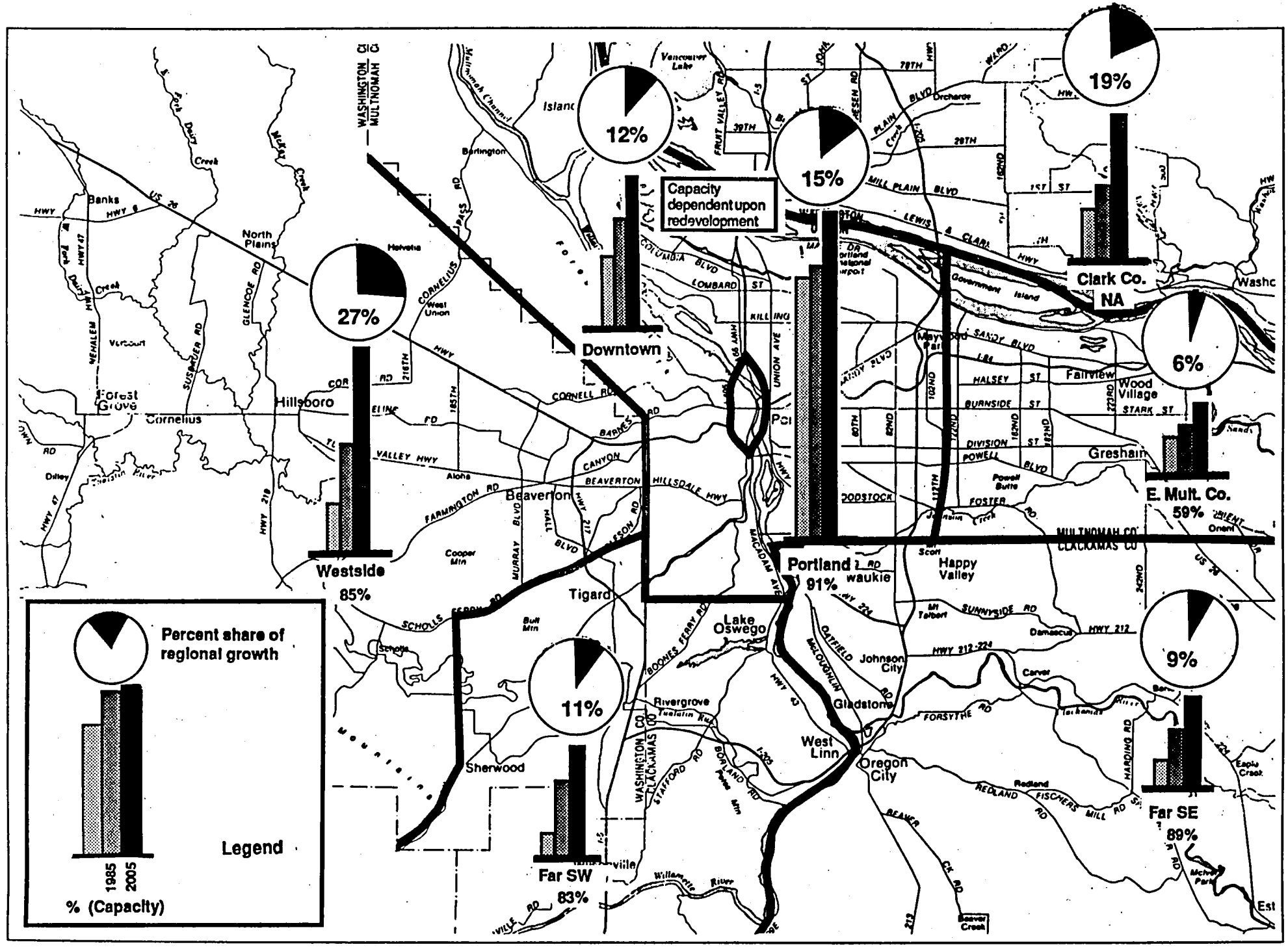
Based on a generalized relationship between land uses specified in the local comprehensive plans and densities of development that tend to occur on those land uses, an approximate estimate of the 2005 population and employment forecast can be developed. Subarea summary data depicted in Figures 2-7 and 2-8 indicates that the RTP year 2005 forecast represents about 80 percent of the overall regional holding capacity for population and about 84 percent of the overall regional holding capacity for employment (Urban Oregon portion -- outside Portland CBD). It should be noted that these figures represent general order-of-magnitude estimates, and do not attempt to scientifically define precise amounts of vacant land development potential available inside the UGB.

C. YEAR 2005 TRAVEL PATTERNS

The following sections examine the impact of the land use plans and forecast population and employment growth on the year 2005 travel demand in the region. The first section focuses on increases in overall travel demand in the region and the second discusses changes in travel patterns that will occur as a result of planned land use and expected population and employment growth.



METRO *Urban Area: Regional Population Growth* Fig. 2-7



METRO *Regional Employment Growth* Fig. 2-8

1. Growth in Travel Demand

The significant increase in population (+ 32 percent) and employment (+ 43 percent) in the Oregon portion of the metropolitan area between 1985 and 2005 will result in a corresponding increase in the travel demand to be served by the region's transportation system. Between 1985 and 2005, the number of person trips produced in the Oregon portion of the region will increase by nearly 40 percent, to more than 5.3 million trips per day (Table 2-2). Since employment is expected to increase faster than population, the number of trips devoted to work will increase faster than trips for non-work purposes such as shopping and recreation. The number of work trips will grow by nearly 45 percent over 1985 levels, while non-work trips (excluding commercial and external trips) will increase by 36 percent. This significant increase in the number of work trips can seriously affect transportation system performance, since these additional work trips will tend to compete for capacity on the highway and transit systems when it is least available -- during the morning and evening peak hours. Also related to the increase in employment is the increase in commercial traffic (e.g., truck traffic and delivery vehicles) -- which is increasing at a rate consistent with the overall growth in travel (43 percent increase for commercial trips vs. 40 percent for all trips).

On a subarea basis (Table 2-3), the largest absolute increase in the number of daily trips in the Oregon portion of the region is expected to occur in the Westside subarea (+412,000 trips), representing a 66 percent increase over 1985. Travel demand in the Southwestern subarea is expected to increase by 63 percent over 1985 levels to a total of 550,000 trips per day.

Both the East Multnomah County and South/Southeast subareas will experience a doubling of trip-making activity by 2005, to 257,000 and 264,000 trips per day, respectively. The City of Portland will experience a moderate increase in trip-making (+11 percent or 159,000 trips), but will still account for over a third of the total Oregon-based travel demand in the year 2005.

2. Changes in Travel Patterns

The land use pattern and year 2005 growth forecasts previously discussed will have a significant impact on the distribution of travel demand in the region.

Table 2-2

TOTAL DAILY PERSON TRIPS BY PURPOSE
(Oregon Productions)
1985-2005

	1985	% Total	2005	% Total	Net Change	% Change	% Total
Work Trips	690,000	18.0	998,000	18.7	+308,000	+44.6	20.4
Non-Work Trips	(2,732,000)	(71.4)	(3,726,000)	69.9	(+994,000)	(+36.4)	(66.0)
Home Based Other	1,707,000	44.6	2,196,000	41.2	+489,000	+28.6	32.4
Non-Home Based	1,024,000	26.8	1,530,000	28.7	+506,000	+49.4	33.6
Commercial Trips	157,000	4.1	225,000	4.2	+68,000	+43.3	4.5
External Trips	249,000	6.5	386,000	7.2	+137,000	+55.0	9.1
Total	3,827,000	100.0	5,335,000	100.0	1,508,000	+39.4	100.0

Table 2-3

GROWTH IN PERSON TRIPS PER DAY
(EXCLUDING COMMERCIAL AND EXTERNAL TRIPS)
BY SUBAREA 1985-2005

	1985	Percent Total	2005	Percent Total	Change	Percent Change
Oregon Portion	(3,422,000)	(86)	(4,717,000)	(83)	(+1,295,000)	(+38)
Westside	626,000	16	1,038,000	18	+412,000	+66
Southwest	338,000	9	550,000	10	+212,000	+63
South/Southeast	550,000	14	814,000	14	+264,000	+48
East Multnomah Co.	497,000	12	754,000	13	+257,000	+52
City of Portland	1,409,000	35	1,568,000	28	+159,000	+11
Washington Portion	(578,000)	(14)	(958,000)	(17)	(+380,000)	(+66)
Clark County	578,000	14	958,000	17	+380,000	+66
Total	4,000,000	100.0	5,682,000	100.0	+1,682,000	+42

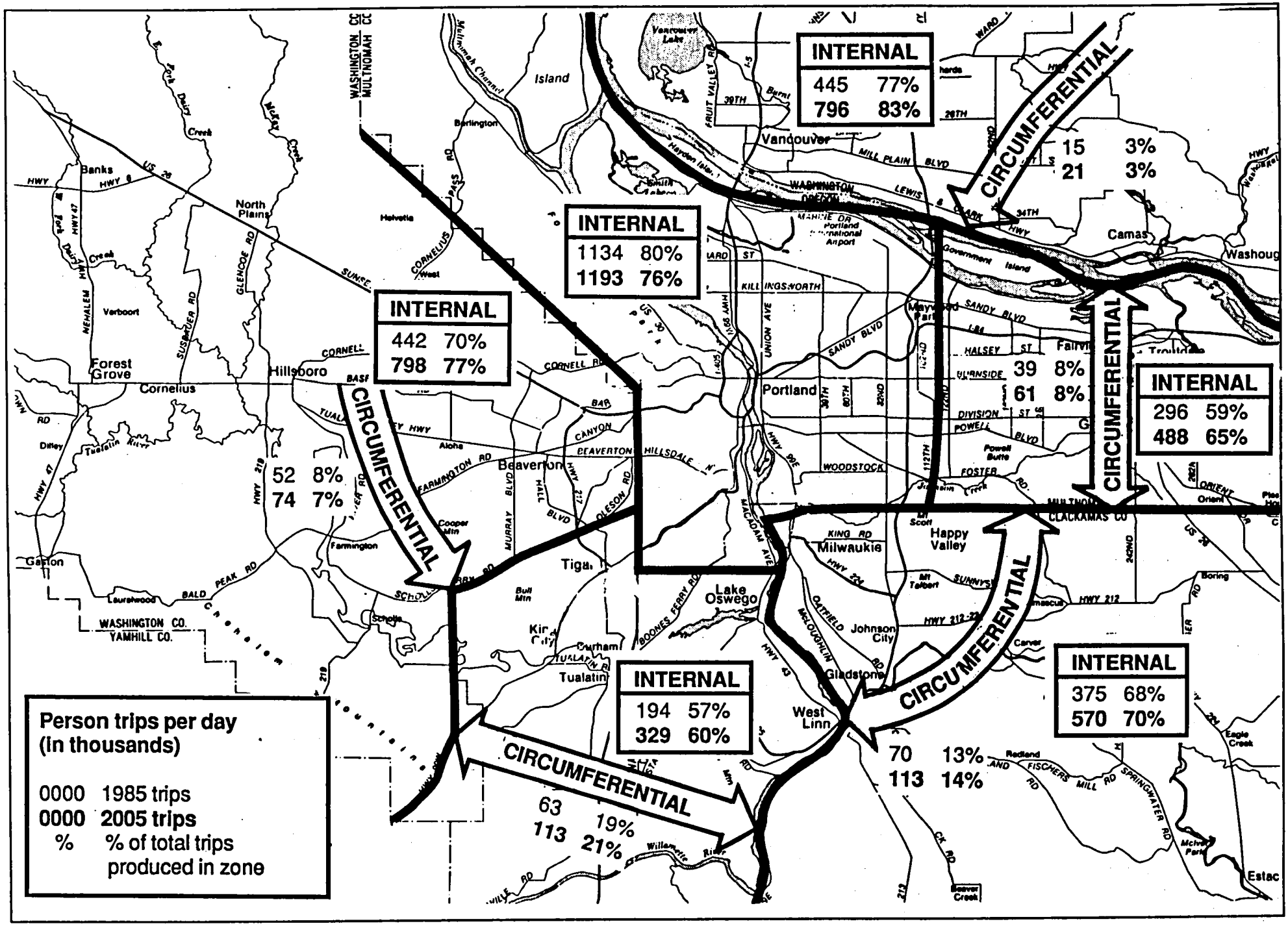
Combined with the continued development in the central Portland employment base, the strong trend toward the suburbanization of employment and residential development will produce substantial increases in all the major travel orientations -- trip-making that occurs within each subarea (internal travel), trip-making in the radial corridors to and from the City of Portland, and trip-making in the circumferential corridors.

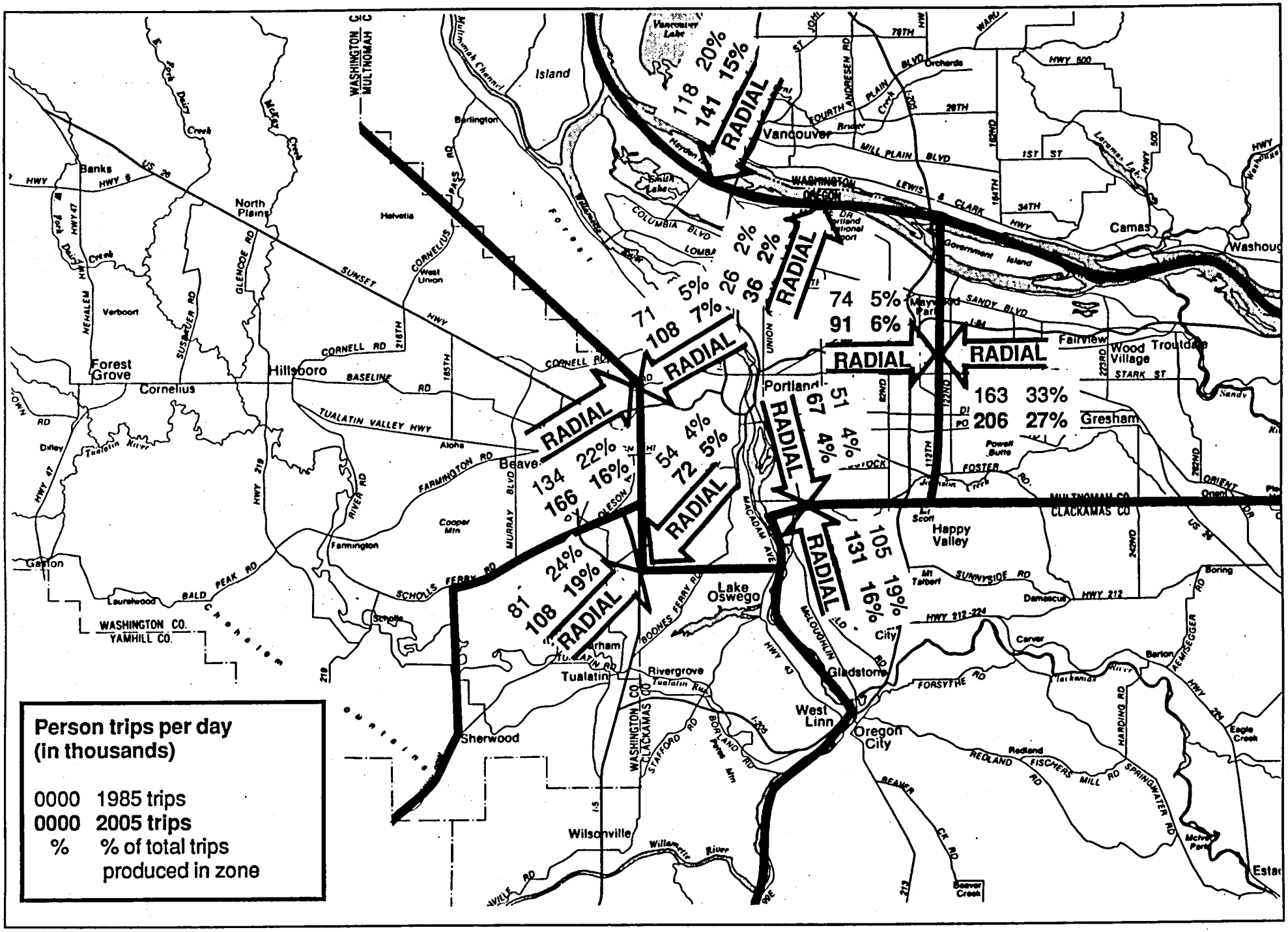
a. Internal Subarea Trips

Figures 2-9 and 2-10 illustrate the orientation of the year 2005 travel demand in the region by subarea. Clearly, the growing trend toward the suburbanization of residential and employment development discussed previously will have significant impacts on the year 2005 trip distribution and a large majority of the overall travel demand associated with any given subarea will remain within that subarea as internal travel. Regionwide, internal trips are expected to grow by 45 percent over today's levels (to 4.2 million person trips per day) and make up nearly three-quarters of the total daily year 2005 travel demand (Figure 2-9). The growth in this type of trip-making is most pronounced in the suburban subareas, increasing by 81 percent in the Western subarea to 798,000 trips per day (77 percent of the subarea total), by 79 percent in Clark County to 796,000 trips per day (83 percent of the County total), by 70 percent in the Southwest to 329,000 trips per day (60 percent of the subarea total), by 65 percent in the East Multnomah County subarea to 488,000 daily trips (65 percent of the subarea total), and by 52 percent in the South/Southeast to 570,000 trips per day (70 percent of the subarea total). Although the rate of increase for internal trips in the City of Portland subarea is expected to be small (+5 percent) the magnitude of this travel demand will be significant -- nearly 1.2 million trips per day -- nearly 50 percent more trips of this type than any other subarea.

b. Radial Corridor Trips

Radial corridor trips are defined as those trips with one end in suburban residential areas and the other in the City of Portland. Overall, the continued employment strength of the downtown Portland area will attract a 30 percent increase in radial corridor travel demand into the city (to 1.1 million trips per day) by the year 2005


INTERNAL
445 77%
796 83%
INTERNAL
1134 80%
1193 76%
INTERNAL
442 70%
798 77%
INTERNAL
296 59%
488 65%
INTERNAL
194 57%
329 60%
INTERNAL
375 68%
570 70%
CIRCUMFERENTIAL
CIRCUMFERENTIAL
CIRCUMFERENTIAL
CIRCUMFERENTIAL
15 3%
21 3%
39 8%
61 8%
52 8%
74 7%
70 13%
113 14%
63 19%
113 21%
Person trips per day
(in thousands)
0000 1985 trips
0000 2005 trips
% % of total trips
produced in zone
Vancouver
Portland
Beaverton
Hillsboro
Tigard
Lake Oswego
Tualatin
West Linn
Milwaukie
Happy Valley
Gladstone
Johnson City
Oatfield
Forest Grove
Cornelius
North Plains
Banks
Camas
Washougal
Gaston
Sherwood
Scholls
Farmington
Cooper Mtn
Bull Mtn
Kinsman Rd
Durham
Boones Ferry Rd
Willamette River
Columbia River
Multnomah Channel
Sauvie Island
Vancouver Lake
Government Island
Mayfield Park
Powell Butte
Mt Scott
Mt Talbert
Sunnyside
Redland
Eagle Creek
Estacada
Boring
Orient
WASHINGTON CO.
YAMHILL CO.
WASHINGTON CO.
MULTNOMAH CO.
CLACKAMAS CO.



METRO *Regional Travel Patterns* Fig. 2-10

(Figure 2-10), and significantly impact the ability of the transportation system to provide adequate capacity in these corridors. The largest increases in radial corridor travel demand into Portland are expected from the Western subarea (+32,000 daily trips), the Southwest (+27,000), and East Multnomah County (+43,000) subareas. Trips from western Clark County, Washington to the Portland area will also increase substantially (+40 percent) over 1985 levels. In addition, radial trips produced within the City of Portland traveling to the other subareas (reverse flow) are expected to increase at a faster rate (+36 percent to 375,000 trips per day) than those coming into the City (+30 percent).

Although the radial corridor travel demand is expected to grow at a slower overall rate (+30 percent) than total trip-making in the region (+42 percent), the magnitude of this type of travel demand (1.13 million trips per day) is significant and will account for over 20 percent of the total daily trips and three-quarters of the region's non-internal travel demand.

c. Circumferential Corridor Trips

Circumferential corridor trips (Figure 2-9) are defined as those trips crossing a subarea boundary both originating and ending in the suburban areas of the region. As a result of forecast suburban development patterns, this type of travel demand is expected to increase by nearly 60 percent from 1985 to 2005, the highest growth rate by far of the three major types of trip movement. The Southwestern subarea (+79 percent to 113,000 trips per day), the South/Southeastern subarea (+61 percent to 113,000 trips per day) and the East Multnomah County subarea (+56 percent to 61,000 trips per day) show significant growth in this movement.

3. Effects on the Transportation System

As a result of the 42 percent increase in total trip-making activity associated with the local comprehensive plan land use development expected by 2005 (to 5.68 million person trips per day), significant improvement is necessary to both the highway and transit elements of the region's transportation system. In order to accommodate this general growth in travel demand, as well as expected growth in movements through and into

the region from areas outside the region, improvements to the regional freeways and principal and major arterials will be required. Within the region itself, the growth in each individual type of travel demand (internal, radial and circumferential) is expected to place a different type of burden on the overall transportation system by 2005.

The anticipated 45 percent increase (to 4.17 million trips per day) in internal travel demand will require substantial investments to provide an adequate local subarea network of collectors and arterials to facilitate these movements within a subarea and connect these trips to the regional system. The adequacy and financing of this subarea network is a significant problem in the newly developing suburban areas.

The anticipated 30 percent increase in radial trip-making demand, and the large number of trips associated with it (1.13 million trips per day by 2005) will require expanded transit trunk (including LRT) and feeder systems to complement improvements to the radial highway facilities to maximize the effective operation of existing capacity.

The significant increase in circumferential travel demand (+60 percent from 1985 to 2005) will require additional highway capacity to link the growing suburban activity centers to each other and the existing regional system, as well as improvements in suburban transit service where such improvements are cost-effective.

Chapter Three

Impact of Growth on the Committed Transportation System

CHAPTER 3

IMPACT OF GROWTH ON THE COMMITTED TRANSPORTATION SYSTEM

A. INTRODUCTION

This chapter of the Plan presents the impact of expected growth as called for in local comprehensive plans assuming limited transportation investments. For the sake of this assessment, the level of mobility provided by the "committed" transportation system assumes all transit and highway projects with construction funds obligated or authorized as of 1987 are completed.

Description of the Committed System

For the purposes of this analysis, the year 2005 "committed" transportation system was defined as the currently existing highway and transit systems and demand management programs plus additional facility and transit service improvements that had full funding obligations and/or were begun in 1987. Major highway investments that were considered part of the committed system include: the Banfield freeway widening from I-205 to 181st, the I-84/181st Avenue interchange reconstruction, Airport Way (east of I-205), improvements to the I-205/Airport Way interchange, the new Lester Road/I-205 interchange, the Fremont Bridge connection to Yeon, the completion of the I-5 widening near the Columbia Slough, the Water Avenue and McLoughlin Boulevard access ramps to I-5, the reconstruction of Murray Boulevard and Cornelius Pass Road interchanges with the Sunset Highway and McLoughlin Boulevard improvements. Committed transit investments include: transit stations at Tigard, Oregon City, Milwaukie (Phase I), Sunset (Peterkort), Beaverton and Hillsboro; park-and-ride lots at Beaverton, Sunset (Peterkort), Hillsboro, Tigard and Oregon City. The transit service characteristics of the committed system consist of operating today's system (including the Banfield LRT) with a slight increase in capacity over current levels as a result of the larger vehicles (articulated buses).

Although it is understood that additional transportation system investments beyond those included in the committed system would undoubtedly be made prior to the year 2005, the nature and location of those specific investments is uncertain and would wholly depend on the availability of funding and the timing of actual development. Using a committed system that is conservatively defined, however, does provide a meaningful base from which to portray the general impacts on the region associated with limited transportation investment.

B. YEAR 2005 TRAVEL CHARACTERISTICS OF THE COMMITTED SYSTEM

Modal Shares

The travel demand expected as a result of the land uses contained in the local comprehensive plans and the anticipated growth in population and employment in the region will increase by nearly 40 percent over the 20-year period, growing from slightly over 3.8 million daily person trips in 1985 to 5.3 million person trips per day by the year 2005. Slightly less than 94 percent of the peak-hour person trips produced and attracted in the Oregon portion of the region in 1985 occurred in automobiles; transit trips made up slightly over 6 percent of the total. With a minimum of investment in new transportation services (represented by the committed system), little change from current modal shares can be expected. Lack of capacity on the committed transit system will enable transit ridership to increase at an annual growth rate only slightly greater than the overall increase in travel. The automobile will remain the predominant travel mode, continuing to account for nearly 93 percent of the peak-hour travel.

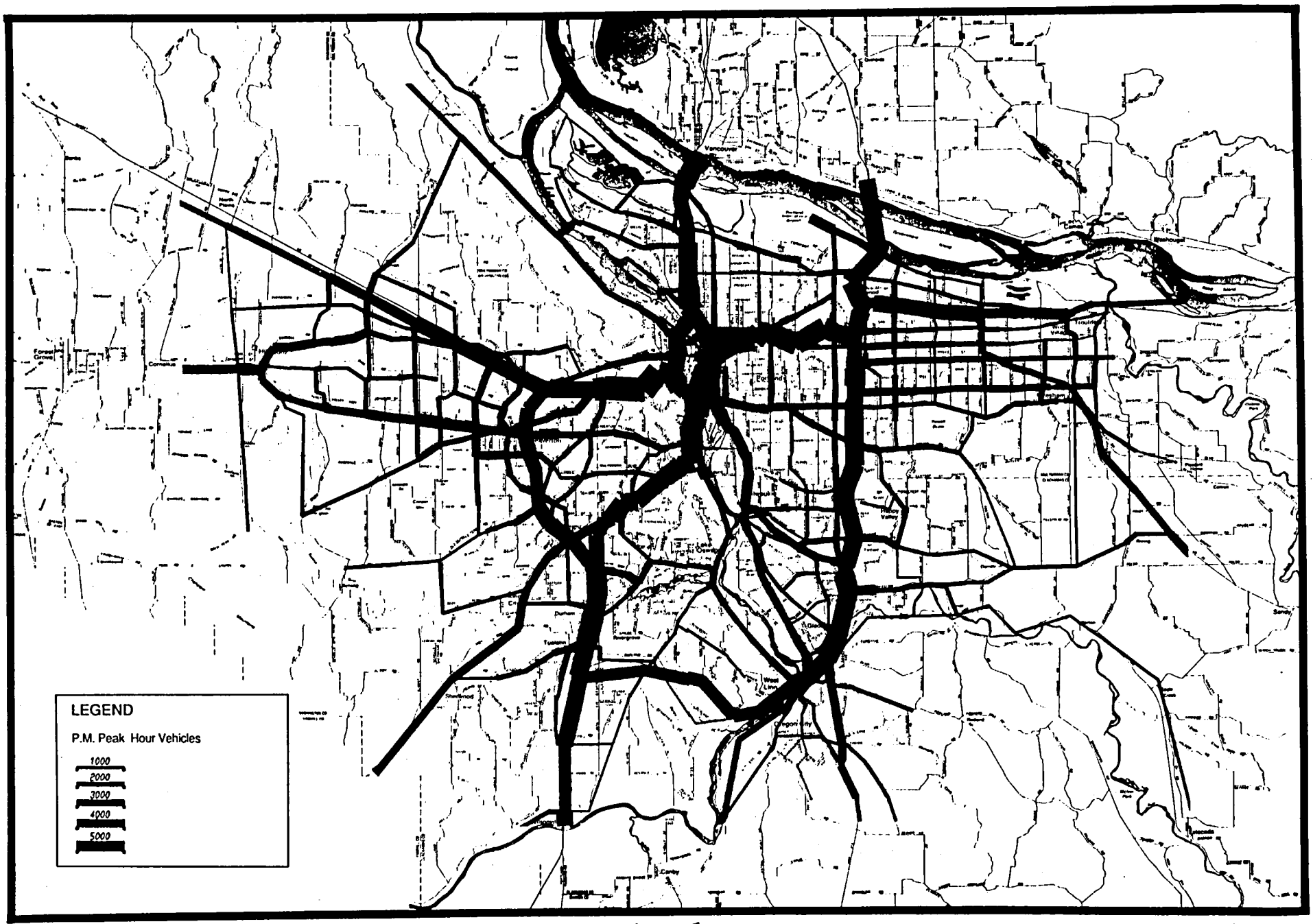
Travel Volumes on the Regional Highway System

Illustrated in Figure 3-1 are year 2005 p.m. peak-hour highway volumes expected on the regional highway system (principal and major arterials) for the committed transportation system. Figure 3-2 illustrates the difference in volumes from current levels. As can be seen from the figure, all future year volumes are higher than at present. The highway travel volumes represent conditions anticipated without the significant investments required to provide increased transit coverage, adequate transit capacity, or realize a shift from single occupant automobiles to shared ride vehicles. Particularly large traffic volume increases may be seen in the Western and Southwestern travel corridors since these are the major growth areas.

Level of Service of the Regional Transportation System

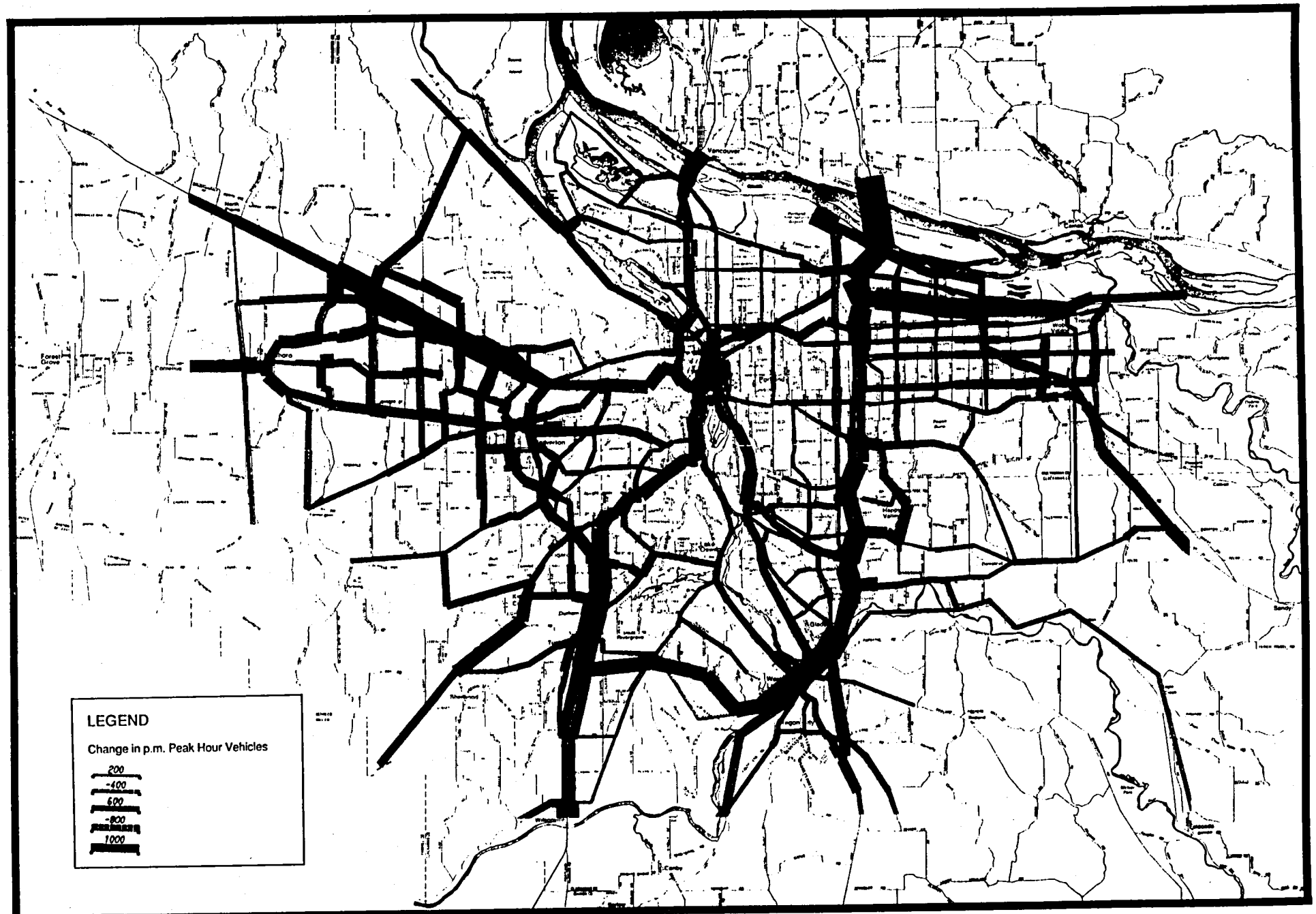
1. Highway System

The level of congestion in the year 2005 committed regional highway system (principal and major arterials) during the p.m. peak hour is illustrated in Figure 3-3. Unacceptable levels of service associated with severe congestion are expected in the Western radial (Sunset Highway to 158th, Tualatin Valley Highway, 185th Avenue, Murray Boulevard, Farmington Road, Beaverton-Hillsdale Highway, Barnes Road, and 216th/219th/



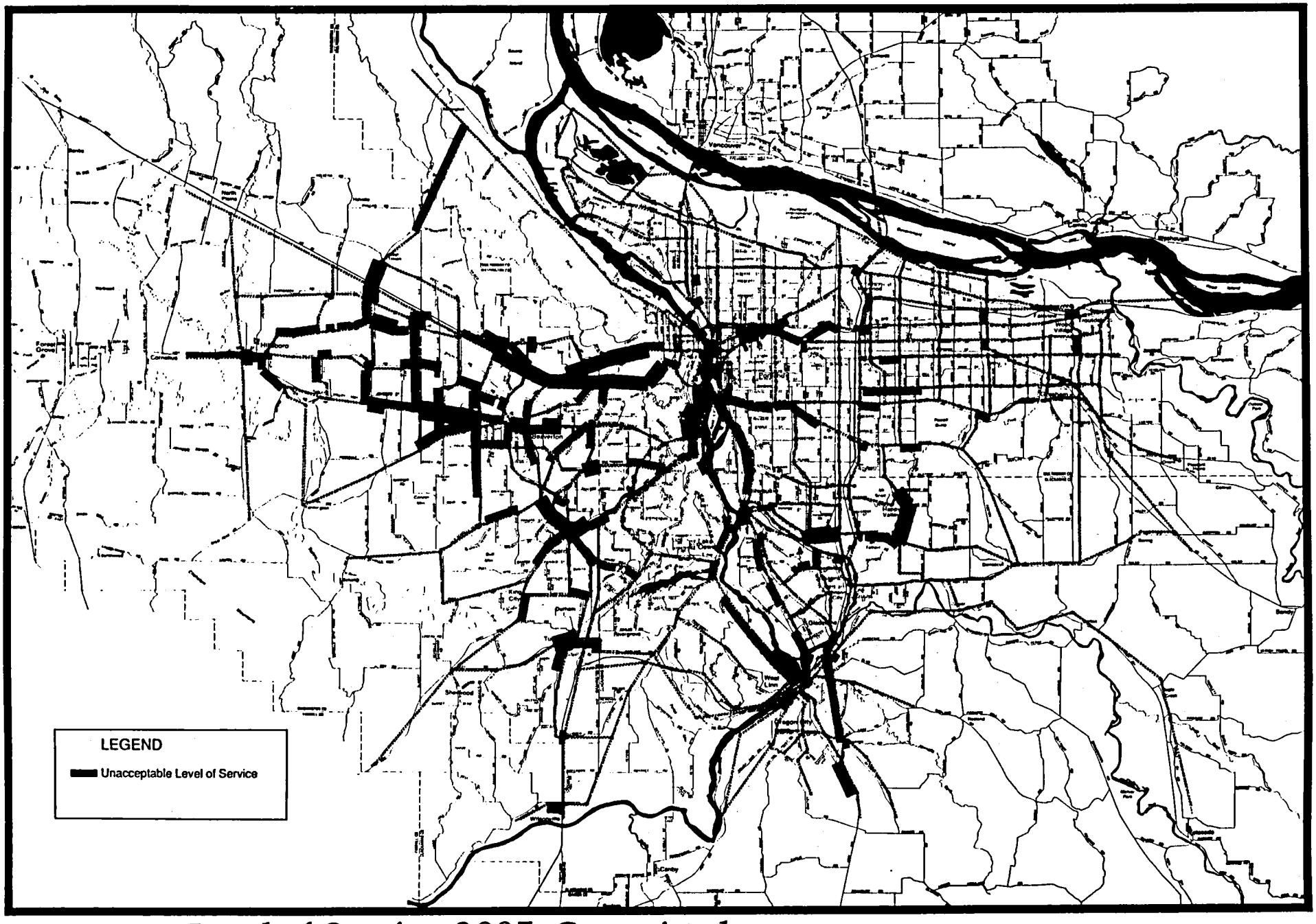
METRO *Auto Volumes: 2005 Committed*

Figure 3-1



METRO *Auto Volumes: 2005 Committed vs 1987*

Figure 3-2



METRO *Level of Service: 2005 Committed*

Figure 3-3

Cornelius Pass) and Southwestern radial (I-5 South to Multnomah Boulevard, Highway 99W in Tigard, Barbur Boulevard, Kruse Way, Highway 217, Highway 43 and Tualatin-Sherwood Road) corridors.

On the Eastside, unacceptable service levels are expected along McLoughlin Boulevard, Powell Boulevard, I-84, Sandy Boulevard, the Slough Bridge on I-5 North, I-5 from the Marquam Bridge to the Fremont Bridge, several east/west arterials east of I-205, I-205 at Sunnyside Road, the Oregon City Bypass, Highway 213 and Harmony Road.

2. Transit System

The year 2005 levels of service for the committed regional transit trunk route system during the p.m. peak hour are illustrated in Figure 3-4. On the Eastside, only the Banfield LRT meets the established performance criteria of travel times equal to or better than one and one-half times the off-peak highway time. All other Eastside trunk routes fail to meet the standard and exhibit slower travel times than current (1985) levels.

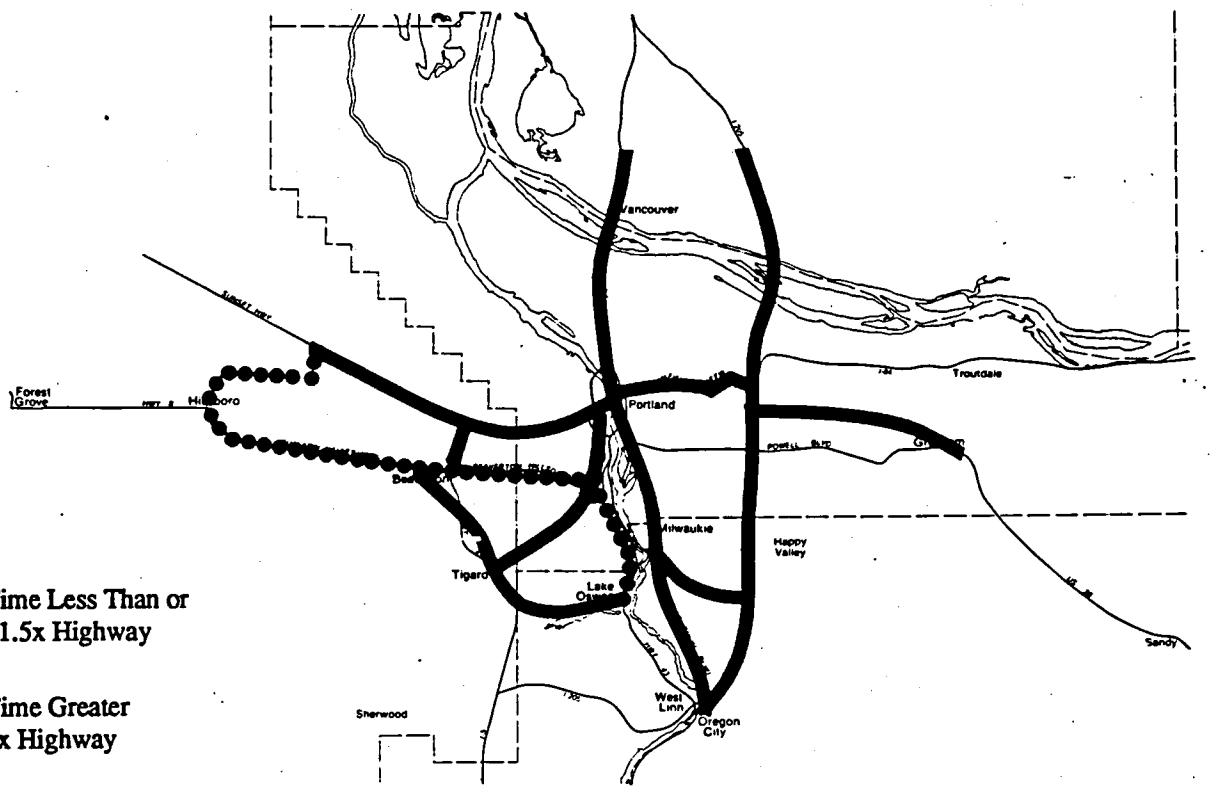
On the Westside, segments of several transit trunk routes meet the standard, but no continuous route between the Portland CBD and a major transit center equals the established performance criteria. In addition, the year 2005 committed transit system would:

- provide no significant difference in geographic coverage over today's levels and would, therefore, not be available to the entire urbanized area (UGB);
- would generally exceed established crowding criteria; and
- be significantly over capacity on the major transit routes.

Vehicle Hours of Delay

Vehicle hours of delay on the region's highway system during the p.m. peak hour can be expected to increase by nearly two and one-half times over current (1987) levels by 2005 with only the committed improvements in place (Table 3-1). Of particular note is the dramatic four-fold increase in vehicle hours of delay on the principal and major arterials as the supportive links in the highway system begin to break down.

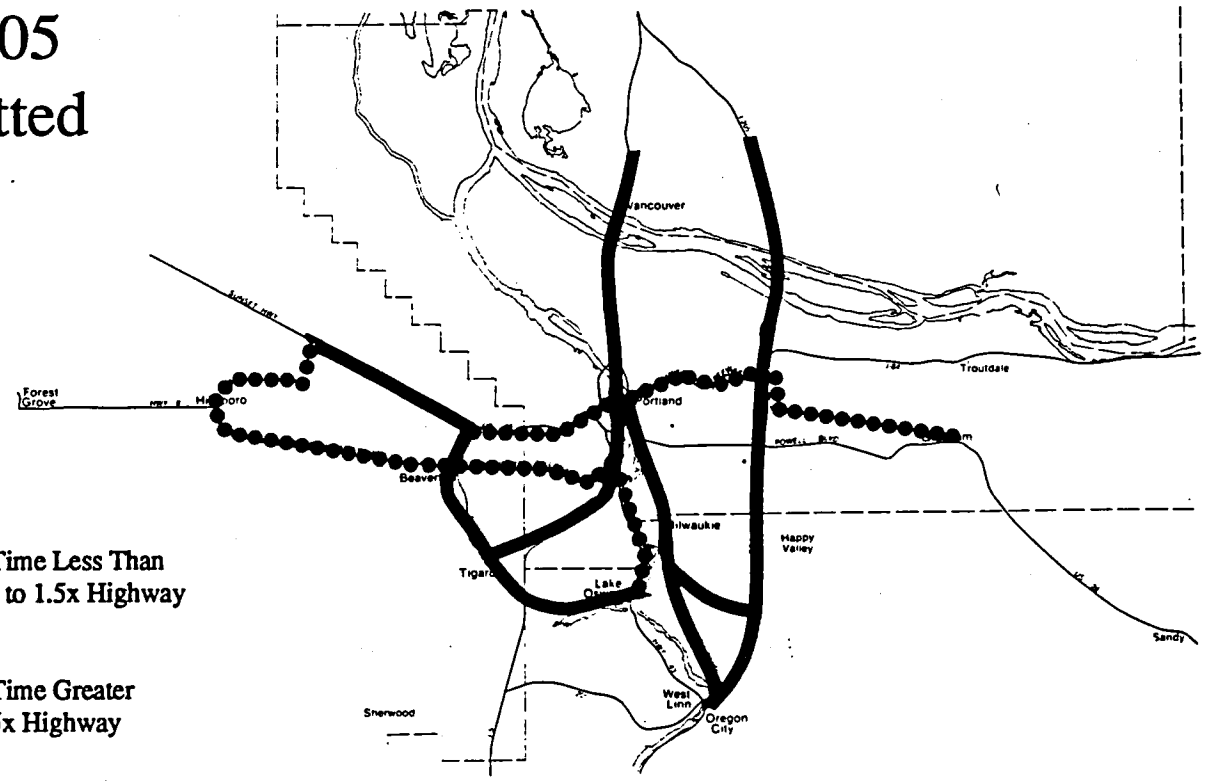
1985



Transit Time Less Than or Equal to 1.5x Highway Time

Transit Time Greater Than 1.5x Highway Time

Year 2005 Committed System



Transit Time Less Than or Equal to 1.5x Highway Time.

Transit Time Greater Than 1.5x Highway Time

METRO

Performance of Regional Transit Trunk Routes

RTP Figure 3-4

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TABLE 3-1

VEHICLE HOURS OF DELAY

(P.M. Peak hour -- 1987 vs. 2005 Committed System)

	1987	2005 Committed	Net Diff.	Percent Diff.
Freeways	2,050	5,300	+3,650	+187%
Principal Arterials	300	1,500	+1,200	+400
Major Arterials	600	3,450	+2,850	+475%
Minor Arterials	300	800	+500	+167%
Regional System	3,250	11,050	+7,800	+240%

Lane Miles of Congestion

The number of lane miles on the regional highway system that will be congested during the p.m. peak hour will triple by 2005 if no improvements beyond those already committed are implemented on the region's transportation system (Table 3-2). Fully 11 percent of the total regional lane miles can be expected to be congested in 2005, as opposed to 3 percent in 1987. The largest percentage increase will occur on the freeway system, where the number of congested peak-hour lane miles will rise from 12 in 1987 to 73 in 2005 -- a five-fold increase.

TABLE 3-2

LANE MILES OF CONGESTION ON THE REGIONAL SYSTEM

(1987 vs. 2005 committed)

	1987	% of Total Miles	2005 Committed	% of Total Miles	% Change
Freeways	12	2	73	12	+508%
Principal and Major Arterials	47	4	152	13	+223%
Minor Arterials	15	2	68	9	+353%
Regional System	74	3	293	11	+296%

Average Speed

As can be seen from Table 3-2, the average peak-hour speed in the regional highway system is anticipated to decrease by nearly 20 percent (from 36 mph to 29 mph) by 2005 if no transportation improvements beyond those already committed are undertaken. This worsening of congestion will occur on all classifications of facilities, with the freeway system experiencing the largest decrease in average speed -- slowing down by 25 percent, from an average of 44 mph today to only 33 mph by 2005. Principal (-17 percent) and major (-19 percent) arterials are also expected to experience a significant speed decrease as a result of increased congestion.

TABLE 3-3

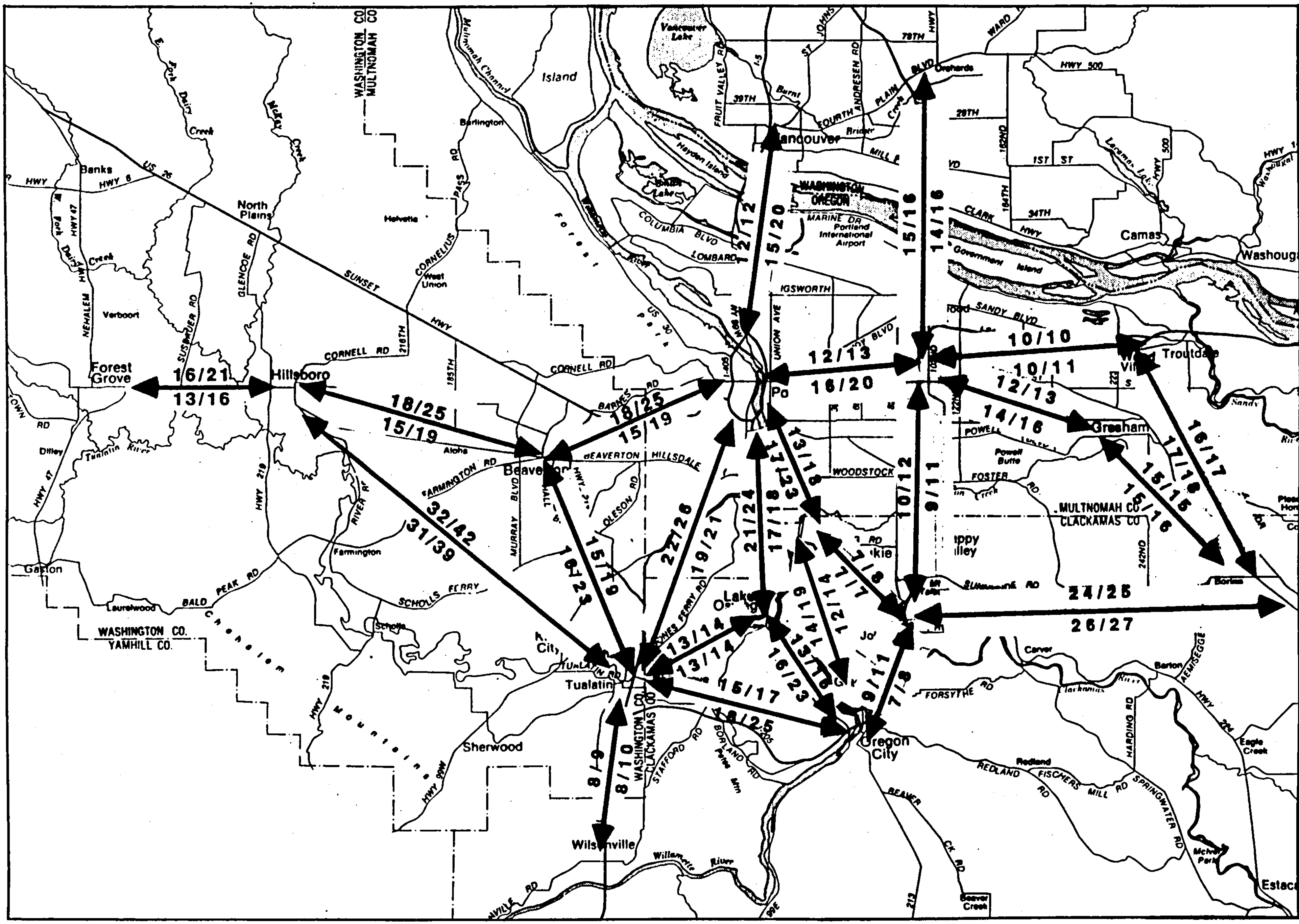
AVERAGE PEAK-HOUR HIGHWAY SPEED ON THE REGIONAL SYSTEM

(1986 vs. 2005 Committed)

	1987	2005 Committed	% 1987
Freeways	44	33	-25%
Principal Arterials	36	30	-17%
Major Arterials	32	26	-19%
Minor Arterials	29	26	-10%
Regional System	36	29	-19%

Travel Times on the Regional Highway System

Year 2005 p.m. peak-hour travel times will increase significantly as the result of growth in travel demand and associated congested conditions (Figure 3-5). The largest increases in travel times are expected to occur in the Western radial corridor between the Portland CBD and Beaverton and Hillsboro (over 40 percent longer), in the Lake Oswego to Oregon City radial corridor (+42 percent), in the circumferential corridors between Tualatin and Oregon City (+45 percent) and between Beaverton and Tualatin (+44 percent) in the Southwestern sector. In addition, travel times in the Northern (I-5) radial corridor (Portland CBD to Vancouver) will increase by 34 percent over current (1987) levels, in the Southern radial corridor between the Portland CBD and Milwaukie and Oregon City (over 32 percent) and in the Tualatin-Hillsboro corridor (+31 percent).



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Comparison of Highway System Travel Times
1987–2005 Committed

RTP Figure 3-5

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Energy (Fuel) Consumption

The total p.m. peak-hour vehicle-related energy consumption on the regional highway system was estimated at 39,600 gallons in 1987 (Table 3-4). Without any transportation improvements beyond those which are currently committed, by 2005 this usage will increase by over 52 percent to 60,500 gallons per p.m. peak hour. This increase in energy consumption is associated with only a 43 percent increase in vehicle miles of travel (VMT) for the peak hour in the 2005 com-mitted system, and results from a nearly 20 percent decrease in average speed attributable to congestion on the regional system.

TABLE 3-4

P.M. PEAK-HOUR FUEL CONSUMPTION ON REGIONAL SYSTEM

(1987 vs. 2005 Committed)

Speed Range (mph)	1987 VMT	Gallons	2005 Committed VMT	Gallons	% Change
0-5	0	0	3,612	623	N/A
5-10	1,197	101	11,089	939	+829%
10-15	4,288	244	45,322	2,574	+955%
15-20	20,091	874	105,868	4,605	+427%
20-25	74,073	2,711	231,168	8,461	+212%
25-30	135,723	4,452	244,699	8,026	+80%
30-35	224,707	6,899	358,818	11,016	+59%
35-40	152,121	4,503	177,033	5,240	+16%
40-45	147,745	4,373	188,761	5,587	+28%
45-50	139,519	4,227	168,797	5,115	+21%
50-55	352,004	11,194	259,795	8,261	-26%
TOTAL	1,251,468	39,578	1,794,962	60,447	+53%

C. YEAR 2005 IMPACT OF GROWTH ON THE COMMITTED SYSTEM

Job Accessibility

Congested conditions expected on the committed transportation system by the year 2005 will have significant impacts on the mobility of residents in the region. Access to job opportunities (defined as jobs within 30 minutes by the fastest mode during the peak hour from residential areas) will decrease for many of these areas, even with expected employment growth (Table 3-5). Major losses of job accessibility with the committed system are expected in the Southeastern sector, especially Oregon City (-42 percent)

and Gladstone (-37 percent). In addition, the suburban communities of Gresham (-14 percent), Tualatin (-29 percent), Rock Creek (-30 percent) and Hillsboro (-20 percent) all lose substantial job accessibility. Of those areas which show accessibility gains, the level of job accessibility does not approach the potential number of jobs that would be available if current (1987) travel times could be maintained.

TABLE 3-5

TOTAL NUMBER OF JOBS ACCESSIBLE IN PEAK HOUR BY FASTEST MODE WITHIN 30 MINUTES FROM SELECTED RESIDENTIAL AREAS

(1987 vs. 2005 Committed System)

Residential Area	1987	2005 Committed	Net Diff.	Percent Diff.	Potential Opportunities
St. Johns	550,450	657,050	+106,600	+19%	807,000
N.E. Portland	572,000	752,300	+180,200	+31%	841,650
Mt. Tabor	559,950	702,450	+142,200	+25%	812,450
Burlingame	552,600	704,100	+151,500	+27%	803,800
Gresham	297,400	254,550	-42,850	-14%	425,900
Gladstone	457,650	288,250	-169,400	-37%	645,250
Lake Oswego	449,500	419,100	-30,400	-7%	607,850
Tigard	450,150	475,300	+25,150	+6%	644,200
Tualatin	449,650	317,200	-132,450	-29%	642,750
S. Beaverton	459,150	452,800	-6,350	-1%	652,550
Hillsboro	220,050	176,450	-43,600	-20%	359,350
Oregon City	216,100	124,450	-91,650	-42%	297,400
Milwaukie	514,750	612,050	+97,300	+19%	724,900
Rock Creek	431,700	304,050	-127,650	-30%	609,150

Retail Market Accessibility

Retail markets (defined as the population within 15 minutes of regional shopping centers by the fastest mode in the off-peak) are expected to increase in size by the year 2005 as the result of growth occurring at a faster rate than congestion on the off-peak committed transportation system (Table 3-6). With the exception of Mall 205/Gateway, all the major retail areas experience a market increase comparable to the available potential (the year 2005 population accessible assuming 1987 travel times).

Labor Force Accessibility

The labor force (population) accessible to major employment centers within 30 minutes during the peak hour can be expected to decline in almost all cases by 2005 if no improvements beyond those currently committed are made to the region's transportation system (Table 3-7) -- despite the significant increase in regional population forecast for the period. Significant accessibility losses over current (1987) levels can be expected by employment centers in Wilsonville (-36 percent), Rivergate (-25 percent), Tualatin (-24 percent) and central Beaverton (-20 percent).

TABLE 3-6

RETAIL MARKET (POPULATION) WITHIN 15 MINUTES
BY FASTEST MODE IN THE OFF PEAK
FROM MAJOR REGIONAL RETAIL CENTERS

(1987 vs. 2005 Committed System)

Retail Center	1987	2005 Committed	Net Diff.	Percent Diff.	Potential Market
Portland CBD	599,550	666,700	+67,150	+11%	666,700
Mall 205/Gateway	571,550	639,800	+68,250	+12%	716,650
Lloyd Center	651,500	751,350	+99,850	+15%	745,650
Gresham	177,550	249,350	+71,800	+40%	249,350
Beaverton	373,000	520,350	+147,350	+40%	512,000
Washington Square	297,300	425,750	+128,450	+43%	425,750
Clackamas Town Ctr.	408,400	482,850	+74,450	+18%	488,650
Jantzen Beach	421,000	522,600	+101,600	+24%	511,600
Tanasbourne	186,900	290,950	+104,050	+56%	290,950
Tualatin	209,150	294,750	+85,600	+41%	294,750
Oregon City	115,200	166,550	+51,350	+45%	166,550

TABLE 3-7

EMPLOYMENT MARKET (POPULATION) ACCESSIBLE WITHIN 30 MINUTES IN THE A.M. PEAK HOUR BY FASTEST MODE FROM REGIONAL EMPLOYMENT CENTERS

(1987 vs. 2005 Committed System)

Employment Center	1987	2005 Committed System	Net Diff.	Percent Diff.	Potential Opportunities
Portland CBD	1,036,100	1,001,400	-34,700	-3%	1,368,800
Swan Island	979,050	942,500	-36,550	-4%	1,279,150
Columbia S. Shore	944,400	1,056,050	+111,650	+12%	1,214,300
Rivergate	651,750	486,400	-165,350	-25%	842,150
Macadam Corridor	1,044,800	1,020,400	-24,400	-2%	1,391,950
Sunrise Corridor	1,044,650	1,075,550	+30,900	+8%	1,307,850
Hillsboro	522,700	444,050	-78,650	-15%	690,150
Lloyd Center	1,046,750	1,078,700	+31,950	+3%	1,386,400
Wilsonville	660,250	424,700	-235,550	-36%	859,900
Beaverton	620,000	497,400	-122,600	-20%	810,900
Washington Square	774,300	685,800	-88,500	-11%	996,700
I-5/Kruse Way	891,000	803,250	-87,750	-10%	1,148,800
Tualatin	759,300	574,350	-184,950	-24%	978,300
Northwest Portland	988,500	856,400	-132,100	-13%	296,350
Portland International Airport	907,250	959,050	+51,800	+6%	1,159,650
Gresham	798,900	910,050	+111,150	+14%	1,024,050

Economic Development Impacts

The preceding analysis assumed a year 2005 growth pattern that is not constrained by transportation capacity. This is obviously a contrived situation but useful for a comparative analysis of investing vs. not investing in transportation. The actual conditions that would occur would be quite different as growth shifted in conflict with comprehensive plans due to the constrained transportation system.

A summary examination of the foregoing performance evaluation reveals a regional transportation system unable to provide the highway or transit capacity necessary to adequately serve the land use and activity patterns developed in local comprehensive plans. Clearly, a lack of transportation investment will not actually result in the specific congestion conditions pictured previously because the limitations of committed transportation capacity will not allow the levels of residential and employment development called for in the local plans. Travel volumes, therefore, would not reach the proportions portrayed. While it is not feas-

ible to determine a precise estimate of the subsequent economic impacts, it is possible to ascertain general conclusions regarding the development of the region.

Areas of Significant Economic Development Impact

1. Portland CBD

The limitations on transportation capacity into and within the Portland CBD with the committed system are significant. There is insufficient highway capacity to handle the vehicle demand (+35 percent over 1987 -- Table 3-8) created by a capacity-constrained transit system without: a) increasing bridge access; b) rebuilding the inner loop freeway and other radial routes; and c) providing numerous additional all day parking spaces in or adjacent to downtown. In addition, this vehicle trip demand would cause the Downtown Parking and Circulation Plan policies to lose effectiveness and unacceptable congestion would result on the downtown street system. Under these conditions, it is clear that the ability of the downtown sector to achieve its assumed development levels would be negatively impacted.

TABLE 3-8

VEHICLES EXITING PORTLAND CBD P.M. PEAK HOUR

(1987 vs. Committed System)

Purpose	1987	2005 Committed	Net Diff.	% Diff.
Home-Based Work	8,710	11,195	+2,485	+29%
Home-Based Other	3,070	3,490	+420	+14%
Non-Home-Based	4,310	6,785	+2,475	+57%
Commercial and External	835	1,375	+540	+65%
Total	16,925	22,845	+5,920	+35%

2. Other Developments in the City of Portland

Failure to make significant transportation investments in transit capacity and the removal of specific freeway and major arterial bottlenecks will likely reduce the ability of the City to attract economic development to

the inner Eastside, Swan Island, Rivergate, the Northwest industrial area and the John's Landing area.

3. Southwest Sector

Regional access between the Southwest and the Portland CBD, the Beaverton area and the Southern sector (via I-205) will be seriously degraded (in both peak and off-peak periods) without increased transportation investments. In addition, significant circulation problems are anticipated within the Tigard-Tualatin-Lake Oswego-Sherwood area. Combined, these conditions would interfere with the anticipated development of a sector with a large potential for economic growth.

4. Western Sector

Access between Washington County and the rest of the region is significantly reduced with the Sunset Highway, Highway 217, Highway 99W/Barbur and I-5 South all congested and in serious trouble. This lack of adequate mobility will likely preclude the levels of residential development forecast for central Washington County due to lack of adequate access to regional employment opportunities, although a more balanced jobs-to-population ratio might result. At the same time, the lack of investment in the regional system would divert more longer distance trips onto county and city facilities, leading to higher local infrastructure investments to carry the travel demand.

5. Southern Sector

Access between the Southern sector communities (Milwaukie, Gladstone and Oregon City) and the Portland CBD and the Southwest area will be seriously impacted by committed system congestion. Losses in this sector will be associated with quality of life as well as economic opportunity, with potential growth in the Clackamas and Oregon City/South areas affected. Traffic infiltration in residential neighborhoods along McLoughlin Boulevard would continue to increase and local shopping access would be reduced.

6. I-205 Corridor (Clark County -- Clackamas County)

Development opportunities along I-205 would be impacted from worsening transportation deficiencies in the corridor. Clark County, Washington, the Columbia South Shore area of Multnomah County (if sewer service can be provided) and the Clackamas Town Center/Sunnyside Road/Highway 212 area would suffer decreased accessibility

to the rapid residential and employment development now occurring. This situation could increase pressure to expand the urban growth boundary to allow more residential development east of I-205 in Clackamas County.

7. Regional Impacts

The region as a whole would likely lose some of its "quality of life" attractiveness with the committed transportation system. A large metropolitan area tends to be viewed as an entity from outside its borders. If significant parts of the region are plagued by poor access, infrastructure problems, neighborhood infiltration, major delays on the regional system, and inadequate local circulation, this situation would clearly impact location or relocation decisions of industries, developers and prospective residents. This region is dependent on a healthy economic relationship between the Portland CBD and the suburban jurisdictions. This interdependence indicates that severe impacts in several areas, including the central city, would ultimately be shared by all the jurisdictions in the region.

Chapter Four

Policy Implications and the System Concept

CHAPTER 4

POLICY IMPLICATIONS AND THE SYSTEM CONCEPT

A. OVERVIEW

The comprehensive land use plans adopted by the local jurisdictions in the region accommodate a significant amount of growth to the year 2005. The forecast population and employment levels and the land use patterns associated with these plans are described in Chapter 2.

The actual new growth and economic development that will occur in the next 20 years will depend upon the following essential elements:

- market demand;
- an absence of legal and political barriers to growth;
- an adequate supply of vacant developable or redevelopable land at a reasonable price; and
- sufficient public services such as water, sewers, schools and transportation capacity to accommodate new growth.

Development trends over the past 10 years indicate the presence of a strong market demand for residential, commercial and industrial development in the region (see Chapter 2), as well as a shift toward higher density residential development. In addition, currently identified development proposals representing hundreds of millions of dollars are slated to occur in the next few years.

The region has taken a strong policy position to promote orderly urban development. Metro adopted and administers a regional Urban Growth Boundary (UGB) that clearly identifies the extent of the area in which urban development will occur in the Oregon portion of the region over the next 20 years. Furthermore, state law requires that the UGB contain sufficient land to accommodate growth for 20 years and that an adequate supply of developable land exists in each use category to ensure market choice. Although a precise calculation of this objective is clearly not possible, a binding determination based on forecast needs has been made through a lengthy technical, political and legal process.

A lack of urban services has historically been an effective constraint on past development in specific areas of the re-

gion. Problems exist with government's ability to fund necessary transportation, sewer, water, school and other public services to support future development. The RTP is intended to establish the transportation investments and transportation funding levels required in both the near (10-year) and long (20-year) terms to support the development anticipated in the adopted local comprehensive plans.

B. TRANSPORTATION CAPACITY AND THE POLICY FRAMEWORK

Additional transportation capacity beyond that provided by currently committed transportation investments is clearly necessary in order to adequately serve expected growth to the year 2005 and to allow the continued economic development of the region (Chapter 3). The transportation system developed through the RTP to provide this needed capacity must be consistent with the following established regional transportation policies (Chapter 1):

- to provide adequate levels of mobility and accessibility to the region;
- to develop cost-effective solutions to the region's transportation problems recognizing the financial constraints of federal, state and local funding sources; and
- to minimize adverse environmental impacts and preserve the livability of the region.

As a result, the transportation investments presented in the Plan were chosen after vigorous local and regional review of possible alternatives and represent a conservative and prudent use of public funds. Efforts were taken to minimize the need for high cost improvements through the improved use of existing capacity, signal modifications, spot improvements, demand management techniques and other lower cost options. Highway projects have been scaled down to include only the most essential elements. The significant increase in transit service recommended in the Plan is based on a much more productive (more riders per service hour) transit operation than today.

The following paragraphs examine the options available to provide the necessary transportation capacity in light of the adopted policies: 1) in the major radial travel corridors; 2) in the major circumferential travel corridors; 3) in the suburban subareas; 4) in the close-in subareas; and 5) in downtown Portland.

Radial Travel Corridors

The continued economic vitality of the region is predicated on significant employment growth in both the suburban subareas and downtown Portland. In addition, residential development in the suburban subareas is required to house the population attracted by the new jobs. Additional transportation capacity in the radial travel corridors connecting central Portland with the suburban subareas is essential if that growth is to occur. Improvements can be made on the existing major highway facilities in the radial corridors to balance the system, i.e., remove bottlenecks and provide a consistent level of capacity. Widening of any of the major radial freeways beyond the level proposed in the Plan, however, would require reconstruction of major parts of the inner freeway loop (including the Marquam Bridge) to accommodate the added traffic volumes entering the loop from the widened radial freeways. This alternative would require funding levels beyond those which ODOT can realistically bear (Chapter 7), as well as produce severe environmental impacts and neighborhood disruption. As such, constructing major new highway facilities in the close-in radial corridors and/or adding significant highway capacity to existing major radial routes beyond the improvements recommended in this Plan would violate two of the established regional policies and are not feasible. Therefore, adequate transportation capacity to meet the expected growth in travel demand in the central area radial corridors must be provided by selective highway improvements to remove bottlenecks and "balance" the capacity of the overall highway system together with a major expansion in transit service and demand management programs.

Circumferential and Suburban Radial Travel Corridors

The circumferential and suburban radial corridors provide the capacity for statewide travel through the region and for travel among developing suburban subareas without the need to enter the downtown Portland sector. Sufficient highway capacity to serve the level of growth contained in the adopted local comprehensive plans in these corridors cannot be adequately provided through improvements to the existing system and additional facilities are required. Additional transit service in these corridors, however, must also be provided in an appropriate manner to ensure: 1) connectivity to a wider variety of suburban destinations; and 2) that transit remains a viable alternative to the automobile.

Suburban Subareas

If residential and employment growth is to occur within the suburban subareas of the region as expected, adequate trans-

portation capacity will be necessary to connect the new developments to the established areas of the region and provide movement of goods and services. Clearly, this growth cannot occur unless an adequate urban highway infrastructure exists. As a result, timely provision of the needed highway capacity to serve new suburban development is an important component of the region's economic health. In addition, as concentrated suburban centers of employment and residential development arise, the transit system should be extended into those areas to provide: 1) additional capacity beyond the basic highway infrastructure into the concentrated suburban employment centers; and 2) linkage to the radial trunk routes to facilitate a high level of transit ridership between the developing suburban subareas and Portland.

Close-In Subareas

The close-in subareas are generally more fully developed. An adequate highway infrastructure already exists in most cases, and major improvements to these highway facilities would likely result in unacceptable environmental and neighborhood impacts. Major increases in close-in transportation capacity, therefore, should be provided by expanded transit service and connectivity and an emphasis on demand management programs. However, minor capacity increases and ongoing operations improvements to the highway system are needed to react to evolving shifts in traffic patterns.

Downtown Portland

Transportation capacity within and into downtown is a constraint on the level of development that can actually occur. As elsewhere described in this Plan, additional transportation capacity is required to accommodate the significant increases in employment forecast to the year 2005.

For highways, the available capacity is controlled by the capacity of the major radial routes and bridges entering downtown. Feasible increases in this capacity are limited to those proposed in this Plan (see Radial Corridors) and additional transportation capacity within and into the downtown area must be provided by increases in transit capacity and continued demand management efforts.

C. THE REGIONAL TRANSPORTATION SYSTEM CONCEPT

The underlying concept embodied in the adopted RTP is based on the following principles:

- The fundamental interdependence of the three major elements of a cost-effective transportation system: highway facilities, transit service and demand man-

agement programs (rideshare, carpool, parking, bicycle and pedestrian incentives);

- The need to provide alternative modes of travel to the individual; and

- The interconnected nature of each of the major travel corridors within the region.

The adopted Plan provides adequate levels of transportation service in each of the major regional travel corridors through a balanced combination of strategic investments in all three major elements. Each element and each corridor is expected to provide a significant portion of the total transportation capacity needed by the year 2005. This balance of elements and corridors is such that a lack of investment in any individual element or corridor will seriously affect the ability of the remainder of the system to provide adequate levels of transportation service.

Regional Overview of System Elements

Described here are the basic regional components of the recommended long range transportation system. Specific improvements to be implemented over the next 20 years are presented on a sector-by-sector basis in Chapter 5. The regional highway, transit and demand management elements are, in general, intended to provide the necessary transportation capacity to carry long trips across or through the region. The service provided on the regional system is intended to facilitate high speed and high capacity movements and to accommodate the largest volumes of travelers. Improvements identified in this Plan ensure that sufficient travel speed and capacity are maintained on the regional system within given financial and environmental constraints. These investments include a number of improvements to balance the capacity of the regional highway system, significant increases in the quality, quantity and connectivity of the transit system, and a major emphasis on areawide demand management programs to reduce the number of vehicle trips, especially during the peak hour.

The transportation capacity required in each of the major radial travel corridors is provided through a balanced combination of:

- a freeway or principal arterial highway route and supportive major and minor arterials;

- a regional transit trunk route and the necessary feeder route system; and

- demand management techniques and programs in the corridor itself and/or at the major destination zones.

Due to the widespread origin-destination patterns associated with circumferential travel demand, the highway system generally provides the bulk of the capacity required. However, regional transit trunk route service in the circumferential corridors will improve the convenience of suburban subarea-to-subarea transit travel and eliminate the need to travel through the downtown sector.

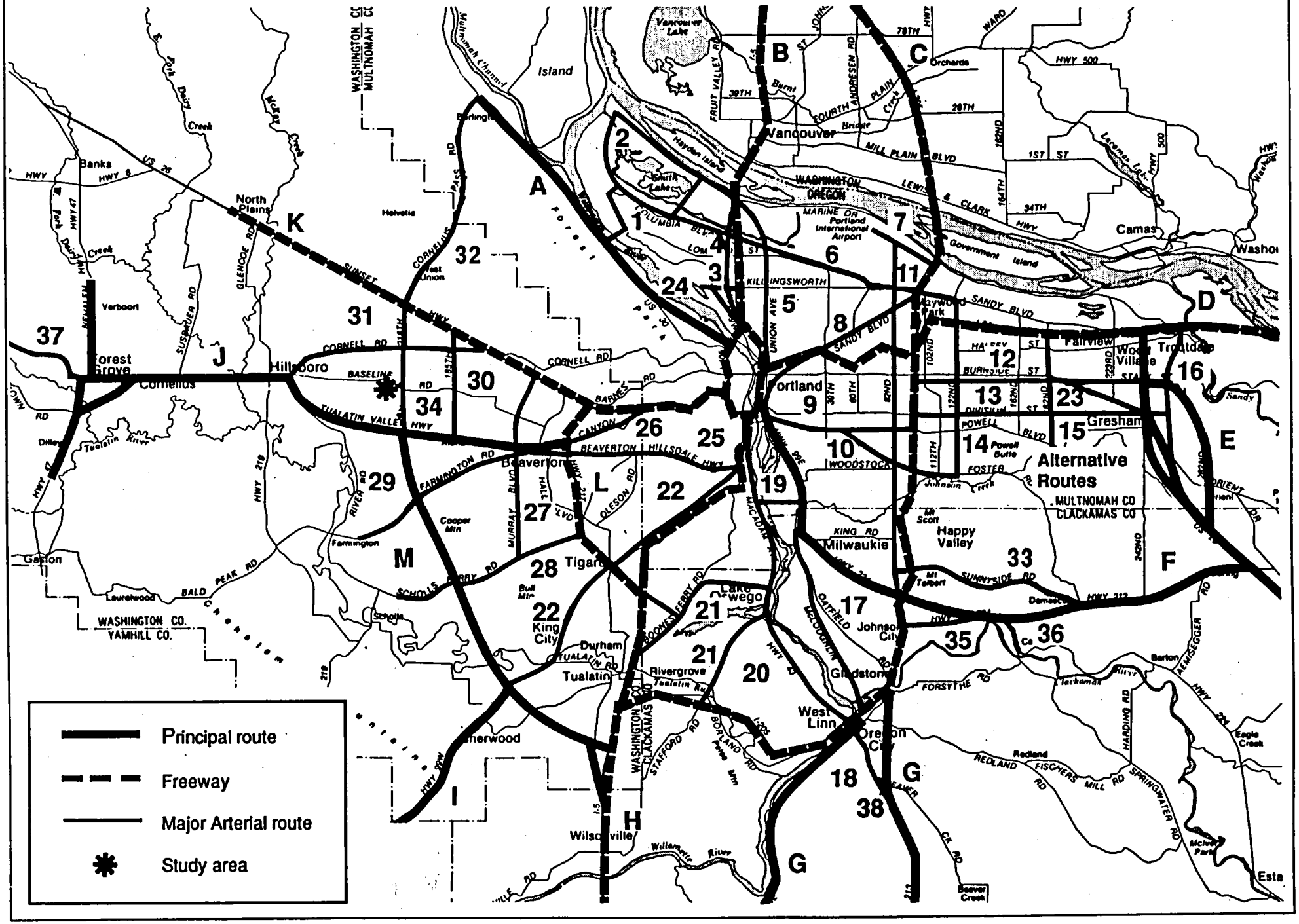
In the suburban subareas, an urban highway infrastructure is provided, with transit service increases to concentrated employment areas. In the close-in subareas, transit service improvements will provide improved connectivity, greater coverage and more convenient access to a wider variety of destinations. A grid system and transit transfer project will be instituted in the older, more densely developed areas of the City of Portland. Timed-transfer service and transit centers will be provided in the less densely developed areas.

1. The Regional Highway System

The regional principal and major arterial system (Figure 4-1) depicts the location of the major highway facilities planned for the region up to and beyond the year 2005. The minor arterial system of regional significance required to support the principal and major arterial system is depicted in Figure 4-2. This regional highway system defines the framework within which the facility improvements, land use design activities and protection of rights-of-way recommended in this Plan will be used to increase the effectiveness of the highway element of the regional transportation system. Significant features of the long range highway system include:

- freeways radiating from an inner freeway loop through the Northern, Southwestern, Eastern and Western travel corridors;
- beltways connecting these freeway routes through the suburban areas and bypassing the downtown core;
- principal arterial routes in the Southern and Northwestern corridors; and
- a supportive feeder system of major and minor arterial routes throughout the region.

Specific details of each principal and major arterial facility are described in Tables 4-1 and 4-2.



METRO *Principal Routes and Major Arterials* Fig. 4-1

TABLE 4-1

PRINCIPAL ARTERIAL SYSTEM

Overall Function: Carry Statewide Traffic and Cross-Regional Traffic

	Route	Principal Arterial Function
A.	Yeon Avenue/St. Helens Road	Carry trips to and from Scappoose/Astoria.
B.	I-5 North	Carry trips to and from Seattle; carry trips between Vancouver, Washington, and the Portland Central City area and other regional facilities.
C.	I-205	Carry trips from Seattle to Salem through the region, carry trips from I-5 to I-84, U.S. 26 (Multnomah County), 99E (Clackamas County) and Highway 213.
D.	I-84	Carry trips to and from the Columbia Gorge, carry trips between Eastern Multnomah County and the Portland Central City area and other regional facilities.
E.	I-84/U.S. 26 Connector	Carry trips from Central Oregon and Sandy/Mt. Hood to I-405, I-5 North and I-205 via I-84 and to I-84 and the Columbia Gorge.
F.	Highway 212/224	Carry trips from Central Oregon and Sandy/Mt. Hood to I-5 South and Highway 99E via I-205 and to Tigard, Beaverton and Hillsboro via Highway 217.

TABLE 4-1
(Continued)

Route		Principal Arterial Function
G.	Oregon City Bypass/Highway 213 and Highway 99E	Carry trips from rural Clackamas County to I-405 via I-205, Highway 224 and McLoughlin Boulevard.
H.	I-5 South	Carry trips to and from Salem, carry trips between the Southern suburban area and the Portland Central City area and other regional facilities.
I.	Highway 99W (South of Western Bypass)	Carry trips to and from the Willamette Valley and the central Oregon Coast.
J.	T.V. Highway (west of Highway 217)	Carry trips to and from Forest Grove and rural Washington County.
K.	Sunset Highway	Carry trips to and from the Oregon Coast, carry trips between Western Washington County and the Portland Central City area and other regional facilities.
L.	Highway 217	Carry trips between the Sunset Highway, T.V. Highway, 99W and I-5 South.
M.	Western Bypass	Carry trips between I-5 and T.V. Highway in the Tualatin-Hillsboro Corridor.

TABLE 4-2

MAJOR ARTERIAL SYSTEM

Overall Function: Carry Regional Traffic from One Subarea Through an Adjacent Subarea to Points Beyond

	Route	Major Arterial Function	Comments and Outstanding Issues
1.	Argyle Way/Columbia Boulevard/St. Johns Bridge	Carry traffic from I-5 and Northeast to Rivergate and Northwest.	
2.	N. Marine Drive Loop (west of I-5)	Carry traffic from I-5 to Rivergate.	
3.	Going Street/Greeley Avenue	Carry traffic from I-5 to Swan Island.	
4.	Interstate/Denver Avenue	Carry traffic from North Portland to CBD and Jantzen Beach.	
5.	Union Avenue	Carry traffic from N.E. Portland to CBD and Jantzen Beach.	
6.	Lombard/Columbia	Carry traffic from I-5 and I-205 to industrial areas.	Note: Dependent on Lombard connection to Columbia at 60th.
7.	Airport Way	Carry traffic to Portland International Airport.	

TABLE 4-2 (continued)

Route	Major Arterial Function	Comments and Outstanding Issues
8. Sandy Boulevard	Carry traffic from N.E. Portland to CBD.	Note: Traffic from Maywood Park area to CBD expected to use the Banfield freeway.
9. Powell Boulevard (via Morrison Bridge and Ross Island Bridge)	Carry traffic from S.E. Portland to CBD, I-5 South, Macadam and McLoughlin.	Note: Traffic from East Multnomah County to CBD expected to use I-205 and the Banfield freeway.
10. Foster Road	Carry traffic from Powell Butte, Happy Valley and rural Clackamas and Multnomah Counties to I-205 and S.E. Portland.	
11. 82nd Avenue	Carry traffic from N.E. and S.E. Portland to 82nd Avenue shopping areas.	
12. Stark Street 13. Division Street	Carry traffic from I-205 to Gresham.	
14. 122nd Avenue 15. 182nd/181st Avenues 16. 257th Avenue 23. Burnside (east of 181st)	Carry traffic through East Multnomah County and Gresham to I-84 and I-84/U.S. 26 connector.	

TABLE 4-2 (continued)

Route	Major Arterial Function	Comments and Outstanding Issues
17. McLoughlin Boulevard (S. of Highway 224 to I-205)	Carry traffic between Oregon City, Oak Grove, Gladstone and Milwaukie.	
18. Molalla Avenue	Carry traffic from Highway 43 (West Linn) and McLoughlin Boulevard to Highway 213.	
19. Sellwood Bridge/Tacoma	Carry traffic from S.W. Portland/Lake Oswego to S.E. Portland/Milwaukie.	
20. Macadam Avenue/ Highway 43	Carry traffic from Lake Oswego/West Linn to CBD.	
21. Kruse Way/Country Club Road/Lower Boones Ferry Road/Stafford Road	Carry traffic from I-5 and points west and I-205 and points south to Lake Oswego.	
22. Barbur Boulevard/ Pacific Highway	Carry traffic from King City/Tigard to Highway 217 and I-5; and from S.W. Portland to CBD.	
24. Yeon Overcrossing/Front Avenue	Carry N.W. Industrial District traffic to Yeon Avenue/St. Helens Road.	

TABLE 4-2 (continued)

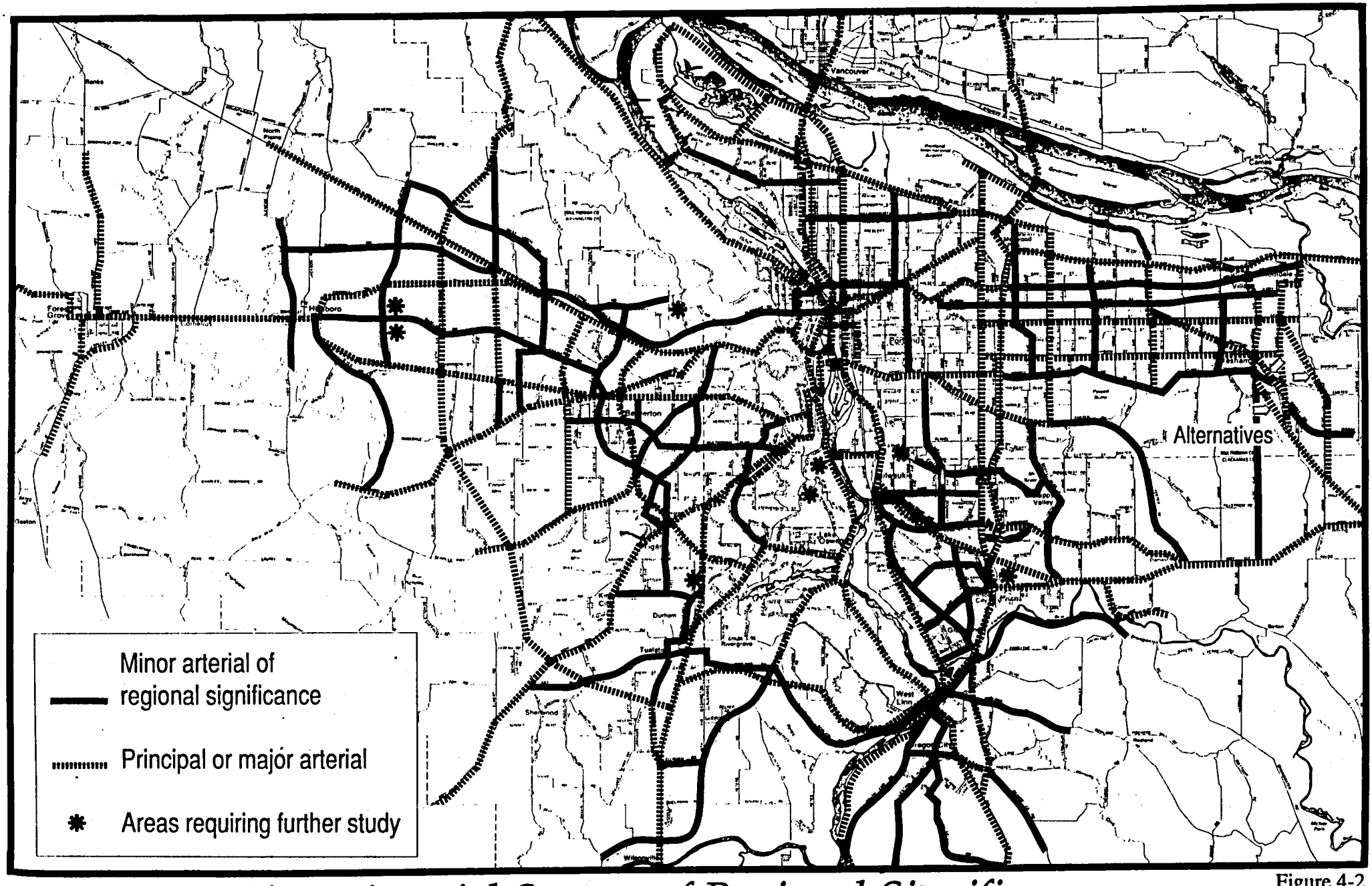
Route	Major Arterial Function	Comments and Outstanding Issues
25. Beaverton-Hillsdale Highway	Carry traffic from S.W. Portland to Barbur Boulevard and between S.W. Portland and Beaverton, possible rerouting via Bertha with connection to I-5.	Note: Traffic from T.V. Highway in Beaverton to Portland to take Canyon Road or Highway 217 to access Sunset depending upon capacity analysis; traffic from south Beaverton to Portland expected to take Highway 217 and Sunset Highway rather than Beaverton-Hillsdale Highway or Scholls Ferry Road.
26. Canyon Road (Highway 217 to Sunset Highway)	Carry traffic from Beaverton to CBD.	
27. Murray Boulevard	Carry through traffic around Beaverton.	
28. Scholls Ferry Road (west of Highway 217)	Carry through traffic around Beaverton, carry rural Washington County traffic to Highway 217.	
29. Farmington Road	Carry traffic from south Farmington area to Highway 217.	

TABLE 4-2 (continued)

Route	Major Arterial Function	Comments and Outstanding Issues
30. 185th Avenue	Carry traffic from Aloha/ Farmington/T.V. Highway to Sunset Highway; carry traffic from north of the Sunset Highway to T.V. Highway.	
31. Cornell Road	Carry traffic between Hillsboro and Sunset Highway.	
32. Cornelius Pass Road (north of Sunset Highway)	Carry Washington County traffic leaving the region towards Scappoose; carry Washington County farm truck traffic to port facilities.	Note: Under study to determine eventual need for a facility in this corridor to serve as a Principal Arterial, perhaps connecting to another Columbia River Bridge.
33. Sunnyside Road	Carry North Clackamas County rural and urban traffic to I-205.	
34. 216th/219th/Cornelius Pass Road (south of Sunset Highway)	Carry Western Bypass and east Hillsboro traffic to Sunset Highway.	Under study as a possible principal route depending on design.
35. Highway 212 (I-205 to 135th)	Carry Clackamas Industrial Area traffic to Sunrise Corridor and I-205.	

TABLE 4-2 (continued)

Route	Major Arterial Function	Comments and Outstanding Issues
36. Highway 224 (east of Rock Creek Junction)	Carry rural Clackamas County traffic to Sunrise Corridor.	
37. Highway 8 (east of Highway 47)	Carry rural Washington County traffic to Highway 47 and the Tualatin Valley Highway.	
38. Beavercreek Road (Highway 213 - Molalla Avenue)	Carry Oregon City Bypass traffic to Hilltop area.	



METRO *Minor Arterial System of Regional Significance*

Figure 4-2
September 1988

2. The Regional Transit System

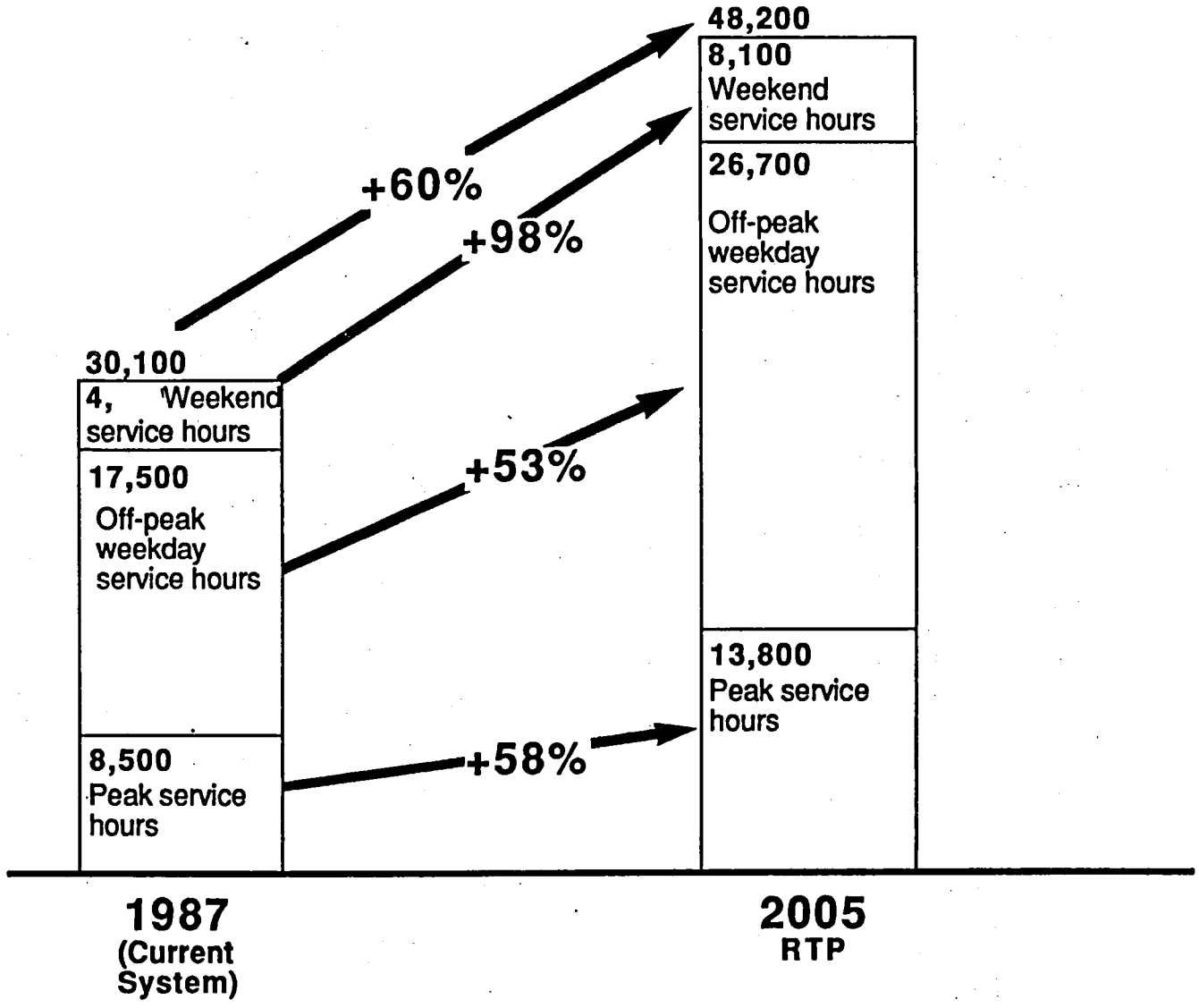
The adopted Plan emphasizes improved transit service throughout the region. The transit component of the Plan seeks to optimize use of the existing transit system, to provide more convenient service between more locations and to increase transit capacity. Compared to the existing (1987) transit system, this Plan recommends a 60 percent increase in peak-hour service (weekly platform hours of vehicle operation -- Figure 4-3) and would result in a 171 percent increase in peak-hour transit ridership by the year 2005 (see Chapter 6). This service expansion will, however, require additional sources of transit revenue (see Chapter 7).

The overall transit system concept consists of a system of regional trunk routes providing direct, high quality service between major activity centers with convenient connections at timed-transfer transit centers to neighborhood areas by feeder, crosstown, and local routes.

As illustrated in Figure 4-4, each of the region's major travel corridors (with the exception of the Northwest) will be served by a major transit trunk route. These trunk routes provide the backbone of the transit system (much like freeways do for the highway system) and are intended to provide the highest quality service (i.e., speed, frequency) and carry the highest passenger volumes. The transportation capacity needs along the Northwest Corridor are more directly related to the movement of goods and services than the movement of large volumes of people.

As also depicted in Figure 4-4, connection of the regional trunk routes to neighborhood areas will be made at transit stations located at major activity centers. The transit centers will form the focus of the transit system and will be designed to provide convenient transfers to feeder and local routes serving communities around the transit centers as well as providing the connection to additional crosstown transit routes. Transit vehicles on routes converging at the transit centers will also provide timed-transfer opportunities between routes with a minimum waiting time.

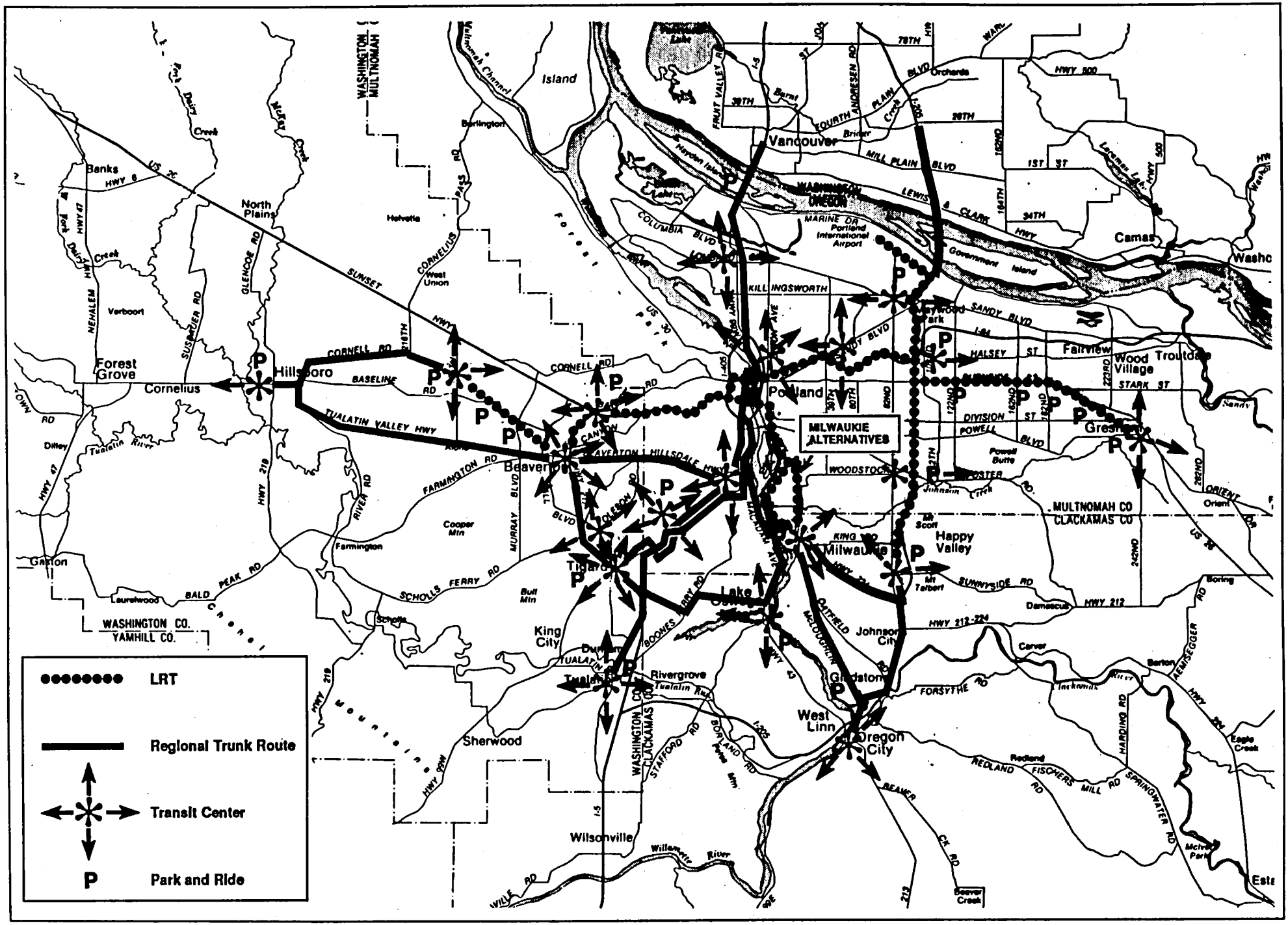
Another facet of the transit system proposed in the adopted Plan is service to local areas composed of feeder, crosstown and local routes. In areas of higher density (such as the Eastside of the City of Portland), this service will be provided through a grid system and transit transfer projects. In areas of lower density, timed-transfer opportunities will be provided. This localized network will ensure improved transit connectivity and provide the opportunity for transit travel



METRO

Comparison of Weekly Transit Service Hours (Platform): 1987 – 2005 RTP

Fig. 4 – 3



METRO

RTP Regional Transit Trunk Routes

Fig. 4 – 4

to a wider variety of destinations throughout the region.

It is estimated that there are currently 50,000 transit handicapped people in the region -- 40,000 of whom can use the regular transit system with varying degrees of difficulty. Of the remaining 10,000, 7,200 need door-to-door service for a variety of reasons.

Special transportation for the elderly and handicapped and community transit services will be included as an integral part of the overall transit system, with the intent to provide parity of transit service between transit handicapped and non-transit handicapped people within realistic costs and federal guidelines. The transit system will include both accessible fixed route service (at least 50 percent of the bus fleet, all LRT vehicles and stops and as many other bus route stops as possible) and door-to-door demand-responsive service.

Transitways - The Long Range Transit System

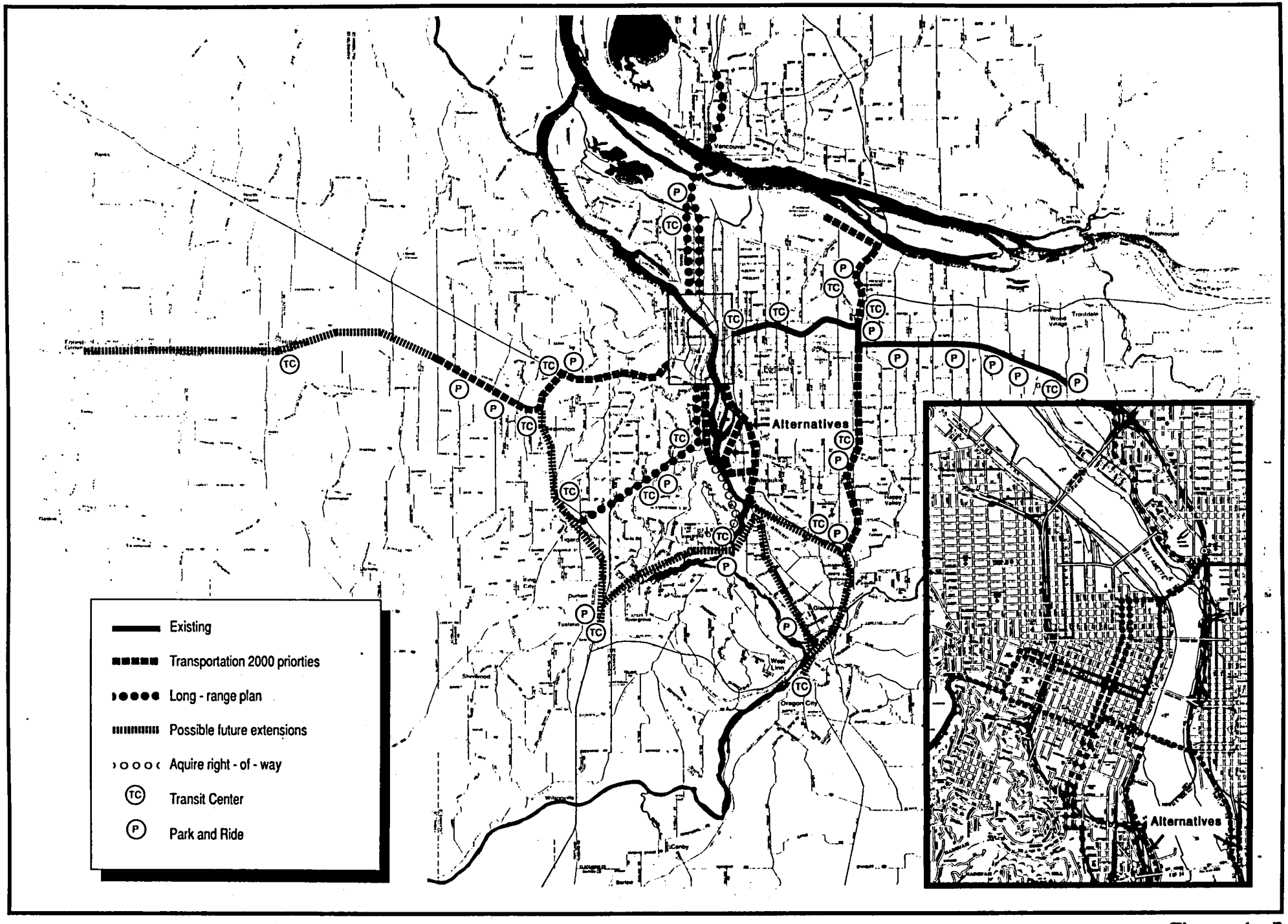
Regional transitways (light rail or exclusive busways) offer an attractive method for providing regional trunk route service on heavily traveled routes. Transitways, with an exclusive right-of-way and larger vehicles, provide greater capacity and higher speed service at a lower operating cost to the public than normal bus operations in mixed traffic. In addition, transitways have the additional benefit of promoting transit-supportive economic development around stations.

Figure 4-5 shows existing, planned and potential routes for regional transitways in each of the regional transit trunk route travel corridors. In the Eastern Corridor, the Banfield LRT (MAX) connecting downtown Portland and Gresham is in place.

Three additional LRT corridors have been identified by JPACT as 10-year priorities and are included in this Plan:

- In the Western Corridor, the Sunset LRT has been selected as the preferred alternative to connect downtown Portland and Beaverton. The LRT corridor west of Beaverton would follow the 185th east/west alignment. The Sunset LRT is the top regional priority for LRT implementation (see Chapter 8).

- In the Southern Corridor, an LRT line connecting downtown Portland to Milwaukie via the Portland Traction Company or McLoughlin alignments is called for in this Plan.



Long-Range Regional Transitway System

Figure 4 – 5

- In the I-205 Circumferential Corridor, an LRT line connecting Portland International Airport (PIA) and the Clackamas Town Center (CTC) is called for in the RTP.

Beyond these four corridors, the long term (beyond 2005) regional transitway system includes two additional LRT corridors:

- In the Northern Corridor, an LRT line connecting downtown Portland and Vancouver via either I-5 or Interstate Avenue; and

- In the Southwestern Corridor, an LRT line connecting downtown Portland with Tigard via Barbur Boulevard.

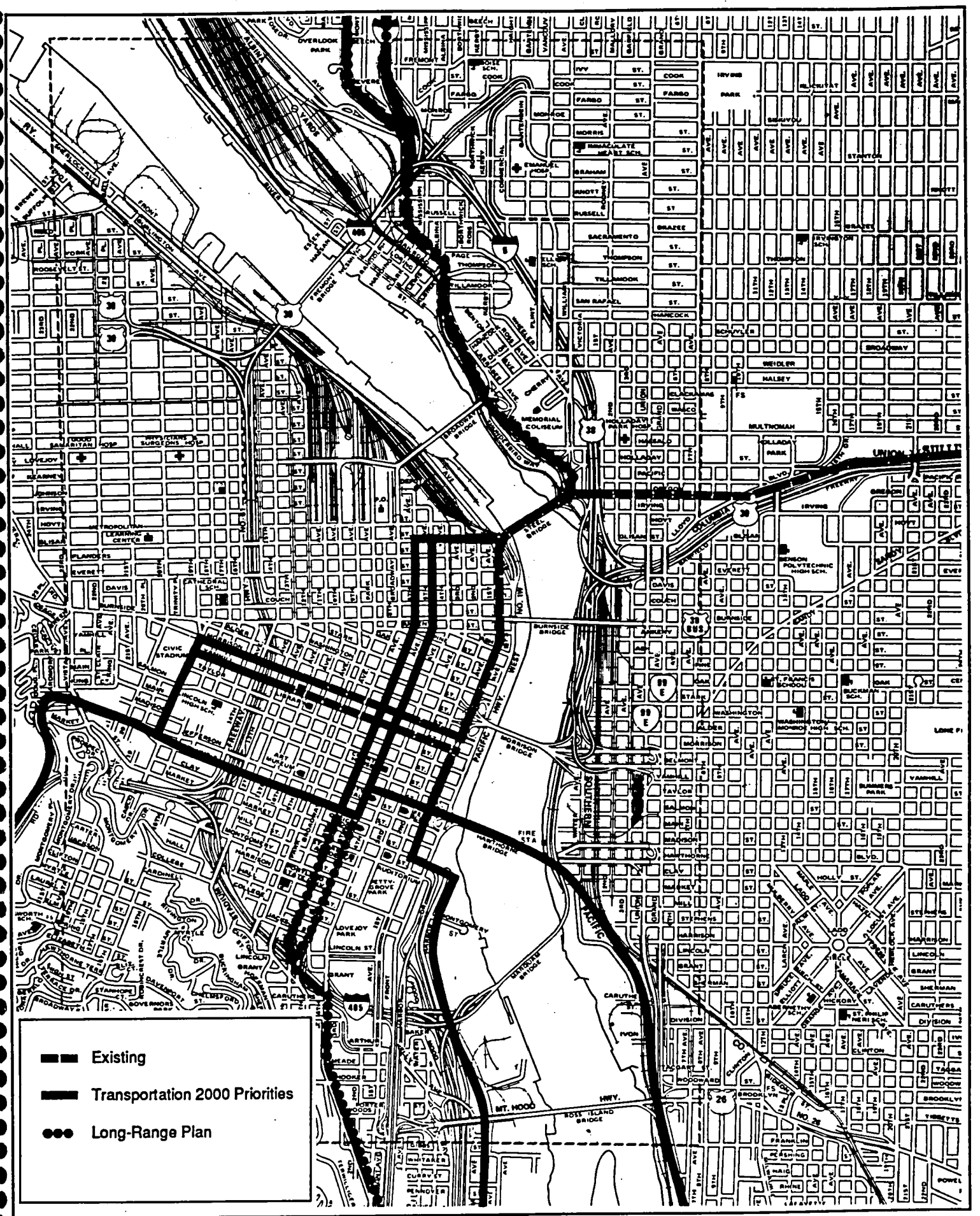
Possible extensions and future branches of the identified LRT corridors include those to Hillsboro (via Sunset or 185th extension), Oregon City (via Milwaukie/Highway 224 or I-205 extension), and Tualatin (via Milwaukie extension through Lake Oswego, Barbur extension, or Highway 217 Circumferential extension through Tigard).

The adopted RTP also recommends acquiring the abandoned SPRR right-of-way connecting downtown Portland and Lake Oswego to protect the resource and allow future consideration of this alignment for rail transit in the Macadam/Lake Oswego radial corridor.

Figure 4-6 illustrates the long range LRT alignments developed for downtown Portland. Initial service for the Banfield LRT will be provided via the cross-mall alignment on Morrison and Yamhill streets. As capacity on the cross-mall alignment is needed, a mall alignment using Fifth and Sixth Avenues will be implemented. This north/south corridor would form the backbone of the downtown transit system, serving as the major mode of access to and through downtown. The secondary LRT streets would provide alternative LRT connections as additional LRT corridors are implemented and provide regional transit service to the South Waterfront, RX Zone, Historic Districts and other downtown destinations. As the mall reaches its transit capacity, bus routes currently using the mall will be rerouted to other streets consistent with the Downtown Plan and the Downtown Parking and Circulation Policy (such as 1st and 2nd and 10th and 11th Avenues).

Transition

As the long range transitway system is developed on a corridor-by-corridor basis, bus trunk route transit service will be provided in the remaining corridors by



METRO *Long-range LRT alignments in downtown Portland* Fig. 4-6

providing high grade bus service on existing streets. In addition, the transit stations previously identified would also be compatible with the upgrading of service from a trunk route to a transitway. Although further study is needed in each corridor to determine the most cost-effective location and technology, steps should be taken now to protect rights-of-way from encroachment.

3. Demand Management Programs

The policy framework for demand management programs calls for continued emphasis on ridesharing programs, parking policies and programs in high density areas to encourage transit and ridesharing, development of land use patterns that are conducive to shorter trips and greater use of transit, flexible working hours, and encouragement of the use of bicycles as an alternative form of transportation. These programs are essential in the heavily traveled corridors and at concentrated employment centers. Outside of these areas, gradual development of higher densities and suburban employment concentrations will occur over time. Parking and ride-share programs will therefore be developed as and where they are needed to alleviate capacity limitations. In addition, the option of flexible working schedules will develop gradually as individuals seek to avoid excessive travel delays during normal peak hours.

Identified in Chapter 5 are specific demand management programs that are in place or are committed for implementation. These programs, however, do not constitute the full extent of the demand management programs that will be needed by the year 2005 to meet the policy guidelines set out in Chapter 1. Additional programs will be developed to target particular problem areas and will be incorporated into the Plan incrementally. Since the overall intent of demand management programs is to minimize the need for costly investments in peak-hour highway capacity, these programs have been taken into consideration in forecasting travel demand and determining the quality of transportation service provided by the adopted RTP. As such, the extent of highway and transit investments recommended in the Plan take into consideration some level of capital cost savings due to demand management programs. If the region fails to achieve an adequate rate of ridesharing or flextime, for example, additional capital investments beyond those recommended in the Plan could be required. Presented here are the changes in travel demand that have been factored into the evaluation of the transportation plan and the types of programs that are recommended to be implemented incrementally when and where they are needed.

a. Rideshare

The performance of the year 2005 highway system (see Chapter 6) recommended in the Plan is based upon a forecast of traffic volumes that incorporate a 23 percent regionwide average rideshare rate for auto work trips.

This overall rideshare rate reflected in the adopted Plan is conservative in that it reflects current levels of ridesharing and is achievable without mandatory controls. Rideshare programs recommended to sustain and increase this level are as follows:

- better carpool matching services for carpoolers can be organized between multiple employers;
- additional priority lanes for carpoolers in selected areas;
- more employee benefits for ridesharing; and
- increased rideshare marketing information and park-and-pool lots in specific corridors.

b. Parking Programs

Parking programs which limit parking around regional transit trunk route stops and transit centers or provide preferential locations and prices for individuals that rideshare can be an important technique to increase ridesharing and maximize transit ridership. The RTP forecast of travel demand to downtown Portland is consistent with the expected supply of parking in the downtown by the year 2005 as well as the emphasis on shifting the use of parking to short term trips.

Among the parking programs that should be considered by local jurisdictions are:

- provide preferential parking locations and prices for carpools and vanpools at public parking lots, curbside parking areas and in private employee parking lots;
- establish maximum parking requirements for new development within 1/4 mile of regional transit trunk route stops and transit stations according to the land use type and quality of transit service; and

- develop areawide parking management plans in existing and planned high density areas.

c. Land Use Decisions

The pattern of development contained in the local comprehensive plans is the major determinant of the travel demands that the RTP is expected to serve. As a result, the travel flows described in the RTP reflect a major expansion in suburban employment, particularly noticeable in the major radial corridors.

In addition, local plans call for specific locations of higher density development and a clear delineation of urban vs. rural development that is reflected in the design of the transit system and expected transit ridership.

Additional land use controls and incentives that jurisdictions should consider include:

- requirements dealing with parking, rideshare programs and curb cuts on arterials;
- greater densities focused around planned regional transit trunk route stops and transit stations and along subregional and local transit routes;
- encouragement of mixed use developments; and
- site plans designed to emphasize convenient pedestrian access to transit and local pedestrian and bicycle paths.

d. Flexible Working Hours

Flexible working hours can help to shift travel out of the normal peak hours and therefore lessen the need for additional highway and transit investments by spreading demand away from the congested peak usage hours on both highway and transit systems. This reduces the need for more highway capacity and transit equipment and minimizes the transit operating cost associated with a very high, but relatively short duration, peak load.

e. Bicycling

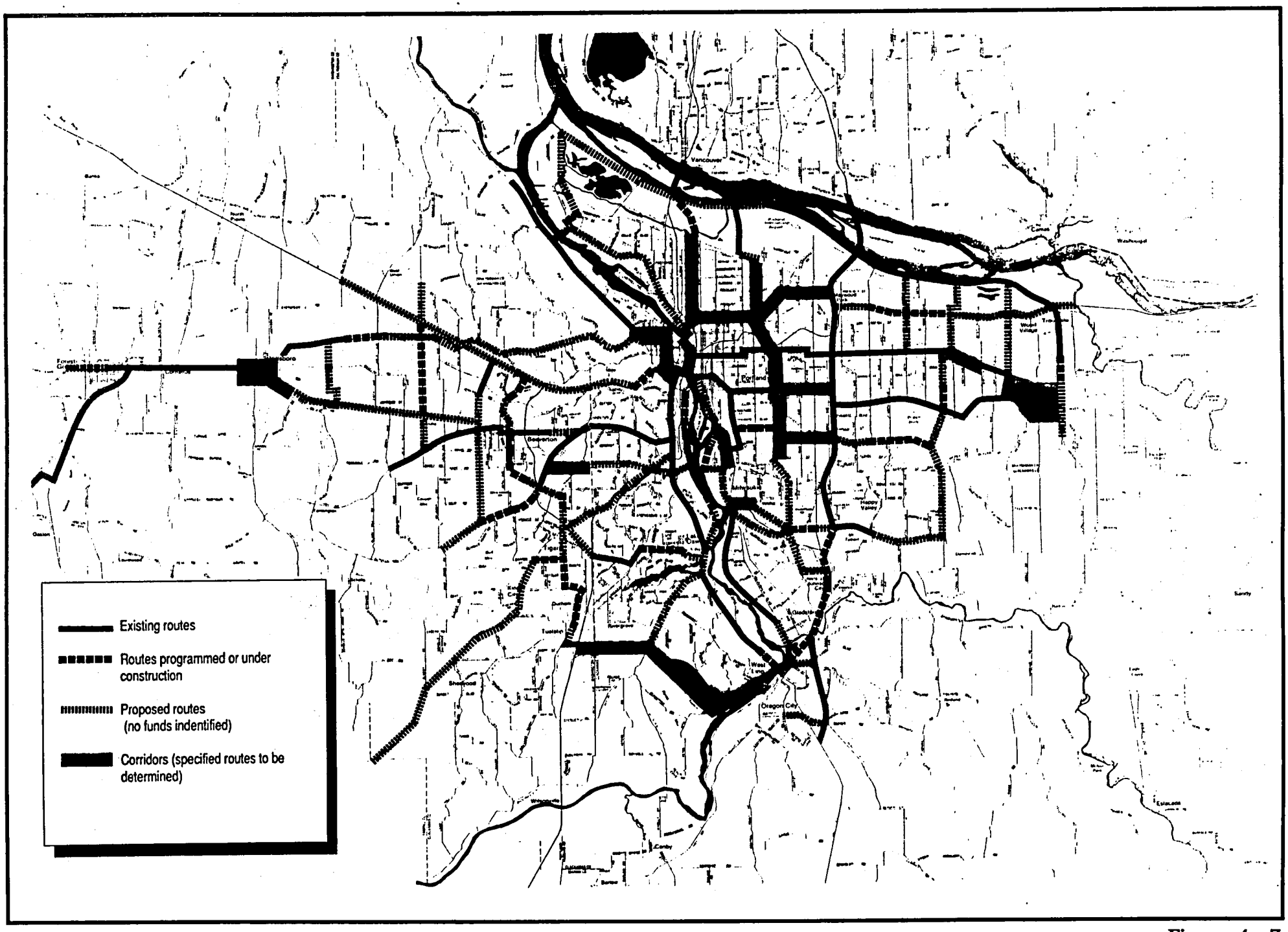
The use of the bicycle as an alternate mode of transportation to work, shopping, schools and recreational opportunities, as well as to access the transit system, can reduce the number of vehicle trips on the region's highway system and

lessen the need for vehicle parking investments. The adopted Regional Bicycle Plan designates approximately 270 miles of regional bicycle routes within the region (Figure 4-7) and identifies a series of regional priority bike corridors that tie together major activity centers across the region. This bicycling network will afford the opportunity for safe and convenient travel by bicycle between jurisdictions and to major trip attractions throughout the region.

In addition, high security bicycle racks are planned at major transit stations (Hollywood, Gateway, Gresham, Milwaukie, Beaverton, Tigard, Tualatin, Sunset, Clackamas Town Center, Oregon City, Lake Oswego, Burlingame and Vancouver) and major park-and-ride lots (Columbia/Sandy, Lents, Clackamas Town Center, Oregon City, Milwaukie, Tigard, Tualatin, Washington Square, Beaverton, 170th Avenue, 185th Avenue and Hillsboro. The installation of these bicycle racks is subject to funding availability and local jurisdictional approval. Exceptions to this provision must be sought as an amendment to the RTP.

Among the actions that should be considered by local jurisdictions are:

- provision of secure bicycle parking facilities at employment centers, minor transit stations, minor park-and-ride lots, schools, high density residential developments, shopping centers, libraries, etc.;
- establishment of voluntary bicycle marking programs;
- development of safety education and awareness materials and programs; and
- support for consistent enforcement of all rules of the road pertaining to bicyclists.



RTP Regional Bike Route Network

Figure 4 – 7

Chapter Five

Recommended Transportation Improvements to the Year 2005

CHAPTER 5

RECOMMENDED TRANSPORTATION IMPROVEMENTS TO THE YEAR 2005

A. OVERVIEW

The following sections of this chapter detail, on both a regionwide and sector-by-sector basis, the major transportation improvements and programs included in the Regional Transportation Plan (RTP) to achieve the major goals outlined in Chapter 1: to provide adequate mobility on, and access to, the region's transportation system within recognized financial and environmental constraints. The transportation improvements included in the Plan represent a set of investments that have been chosen after vigorous local and regional review of possible alternatives, and are considered to be the most prudent and cost-effective use of public funds to solve the region's transportation problems. It should be noted that the RTP divides highway investments into two main categories:

Modernization Improvements: facility widenings that significantly (by 50 percent or more) affect capacity, such as adding travel lanes, new facility construction, etc., major intersection or interchange construction, and/or coordinated Transportation System Management (TSM) projects over one mile in length;

Operations, Maintenance and Safety Improvements: those facility widenings that increase capacity by less than 50 percent, signalization projects not part of a coordinated TSM investment, minor intersection projects, bridge replacements (within existing right-of-way) and general maintenance (restriping, repaving, etc.) and operations (signal controllers, channelization, etc.) activities.

The RTP includes all planned modernization improvements (regardless of funding source) located on or directly affecting the capacity of the regional highway, transit and bicycle systems identified in Chapter 4 that are consistent with RTP goals and policies. Operations, maintenance and safety improvements, while not itemized in this Plan, are deemed consistent with the policy intent of the RTP if they meet the following criteria:

- they must be of appropriate scope to adequately serve the local travel demands expected from the level of development associated with Metro's year 2005 population and employment forecasts so as not to overburden the regional system with local traffic; and

- they must be consistent with the comprehensive plan of any adjacent or affected jurisdiction or agency.

Improvements to local streets and improvements on the local minor/collector systems that do not affect capacity of the regional system are not addressed by the RTP and are subject to local comprehensive plan provisions of the affected jurisdiction(s). A detailed list of the capital improvements included in the RTP is available under separate cover.

This chapter of the RTP details the first category of investments which are defined as included in the RTP, although both types of improvements are eligible for federal funding if they are located on the federal aid system.

In addition to the highway, transit and demand management investments specifically related to each sector, the following regionwide demand management programs are currently in existence and are recommended to continue:

- Areawide Carpool Matching Program: A free service which matches potential carpoolers with other carpoolers.

- Employer Contact Program: A program which responds to inquiries from employers and offers assistance in establishing rideshare programs.

Other current demand management programs in force at the city level recommended to continue are:

- City of Portland Downtown Parking Program: A cooperative program between Tri-Met and the City of Portland whereby carpools of three or more can purchase parking permits for $25/month and receive unlimited parking at any of 1,400 six-hour meters in downtown Portland. The City of Portland has also designated approximately 200 parking meters in Portland as "carpool only" before 9:00 a.m. on weekdays.

- Downtown Portland Parking and Circulation Policy: This plan is designed to reduce downtown traffic congestion and improve downtown air quality and encourages trips to and within downtown Portland in shared vehicles, on transit, on bicycles and by walking. This is primarily accomplished by managing parking. There is a limit on the total number of allowable parking spaces in the downtown, and there are also management measures to encourage short term parking and to allocate parking by sector, using maximum parking space ratios that vary according to transit accessibility.

- Carpool Parking Incentives: Ninety spaces in two downtown Portland garages are available to carpool vehicles at reduced rates, and the Lloyd Center and the Inner Southeast areas have 150 on-street spaces reserved for carpool vehicles.

- City of Portland Bicycle and Pedestrian Program: A program to increase the percentage of persons bicycling and walking in the City of Portland. It targets as a goal 5 percent of all Portland work trips on bicycle by 1995.

The traffic operations improvements contained in the TIP, transit system improvements, High Occupancy Vehicle (HOV) lanes at metered freeway ramps, bicycle and pedestrian system improvements and programs, and the demand management programs and strategies contained and encouraged in this Plan constitute the overall transportation systems management element of the RTP.

B. REGIONAL OVERVIEW

The transportation capital improvements called for in the RTP are depicted on a regionwide basis in three figures: 1) Regional Highway Corridor Improvements (Figure 5-1); 2) Regional Arterial System Highway Improvements (Figure 5-2); and 3) Regional Transit System Capital Improvements (Figure 5-3). The remaining sections of this chapter present these capital improvements on a sector basis, grouped into Committed, 10-Year Priority and 10-20 Year Need categories.

C. NORTHERN SECTOR

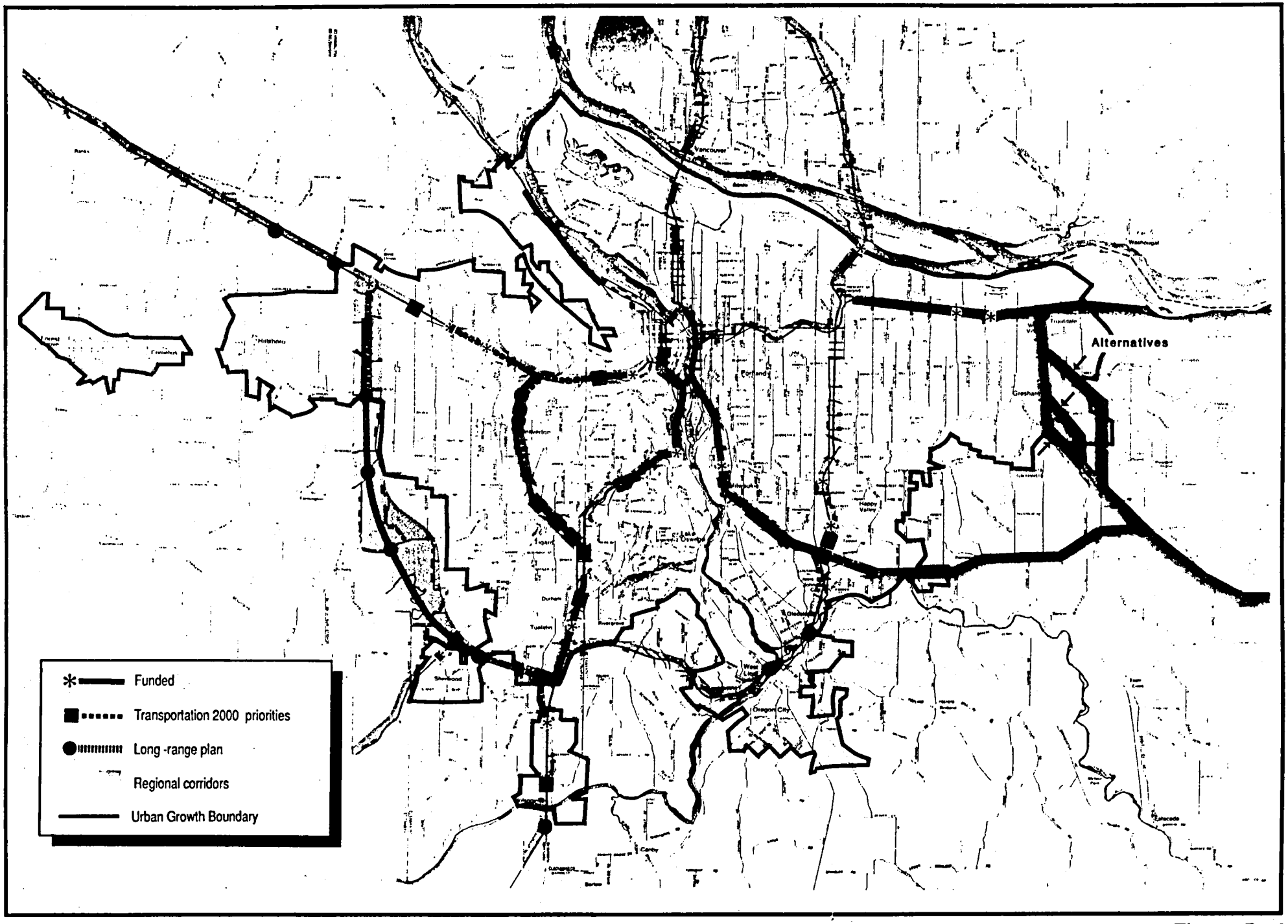
The investment strategy for the Northern Sector (Figure 5-4) combines several highway, transit and demand management improvements designed to:

- reduce congestion in the major radial interstate corridor by:

  Committed Projects

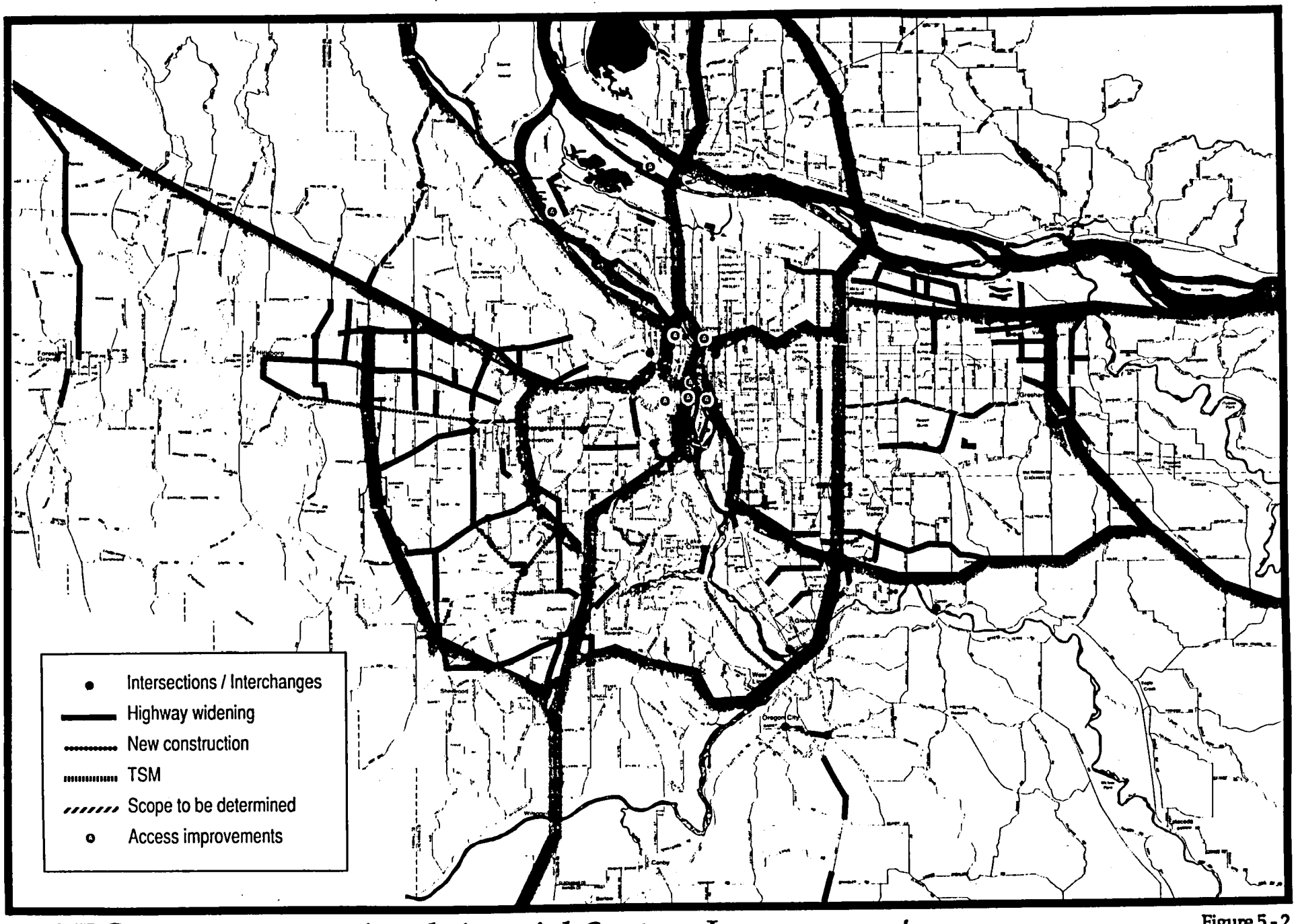
  - completing the widening of I-5 in the vicinity of the Delta Park/Jantzen Beach interchange (12)

  - widening I-5 to six lanes from Portland Boulevard to Columbia Boulevard (4)



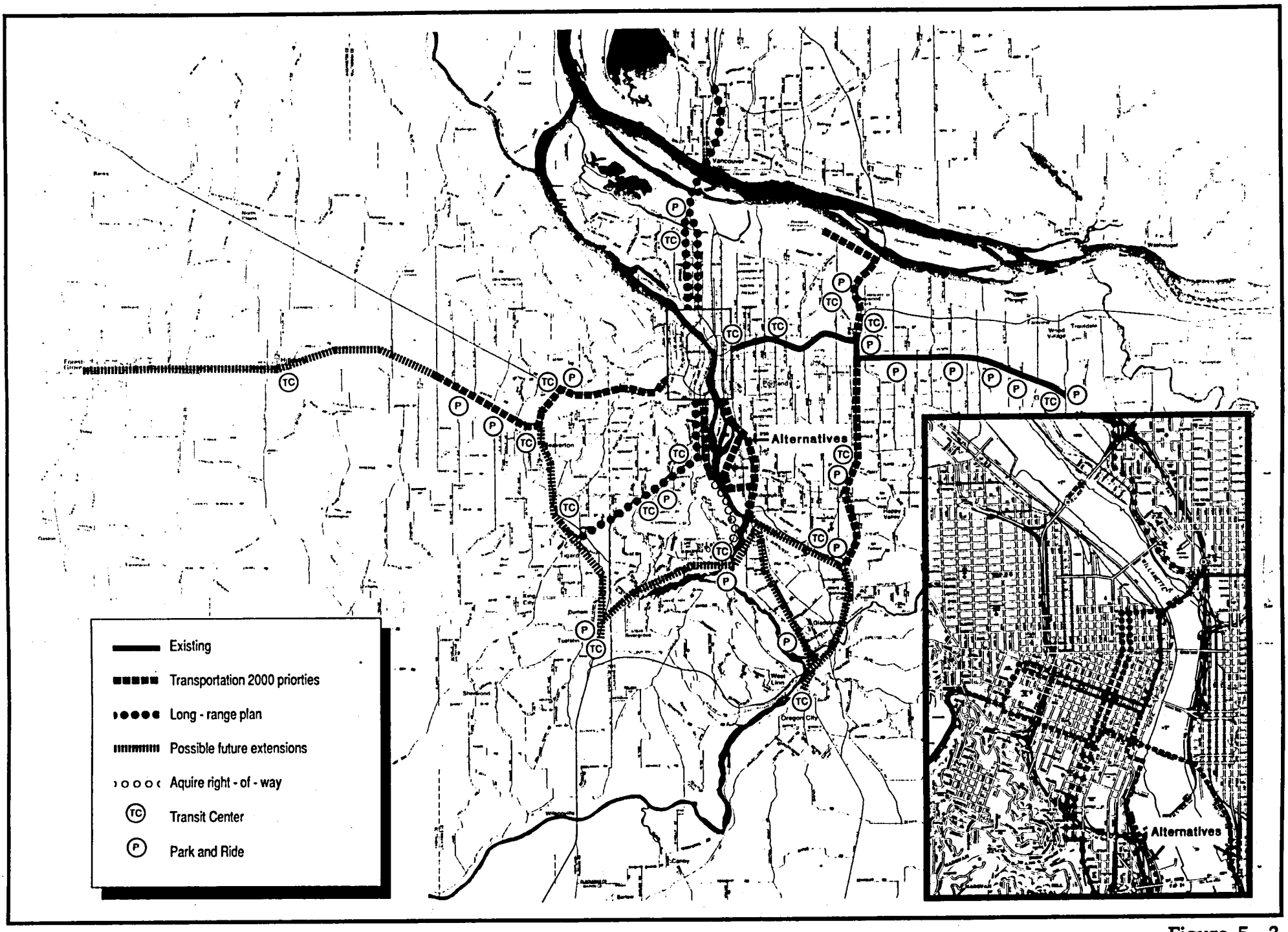
RTP Regional Highway Corridor Improvements

Figure 5 – 1



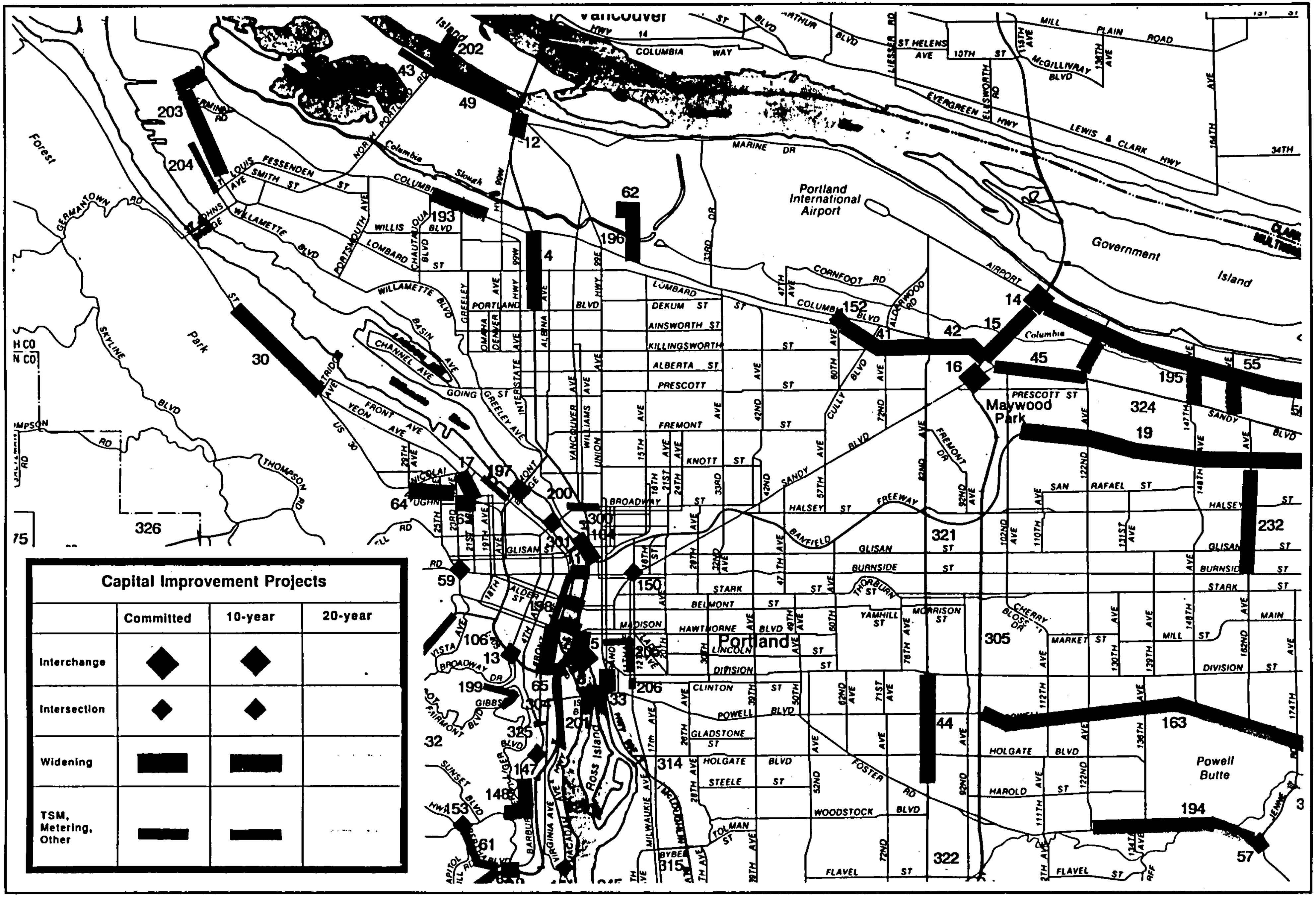
METRO *RTP Regional Arterial System Improvements*

Figure 5 - 2



RTP Transit Capital Improvements

Figure 5 – 3



METRO *Regional Transportation Plan*

Northern Sector
Figure 5-4

- constructing the first phase of a widening and ramp modification improvement to I-5 in the vicinity of the Memorial Coliseum/Oregon Convention Center (11)

10-Year Priority Project

- constructing the second phase of a widening, ramp modification and local street access improvement to I-5 in the vicinity of the Coliseum/Convention Center (104)

10-20 Year Project

- constructing the third and fourth phases of the I-5 project between the N. Banfield and Greeley ramps to braid southbound ramps and construct a southbound frontage road (300, 301)

reduce congestion in the major circumferential interstate corridor by:

10-20 Year Project

- improving the operating efficiency of I-205 through ramp metering (305)

increase access to the major industrial centers in the sector by:

Committed Projects

- widening U.S. 30B from 60th to I-205 (41, 42)
- widening Marine Drive west of I-5 (43)
- improving the northbound to westbound Sandy Boulevard/I-205 connection (16)
- constructing the first phase of a connection to Columbia Boulevard via 13th/Gertz (62)

10-Year Priority Projects

- widening Lombard/Burgaard from the St. Johns Bridge to Rivergate (203)
- widening Columbia Boulevard west of I-5 (193)
- reconstructing the connection of Columbia Boulevard and Lombard at N.E. 60th (152)

- improving access in the Terminal 4 area (204) as warranted by development

10-20 Year Project

- completing the connection from N. Vancouver Way to Columbia Boulevard via Gertz/13th as warranted by actual development (196)

- improve access from the I-205 freeway to the Portland Airport and Columbia South Shore area by:

Committed Projects

- improving the I-205/Airport Way interchange (14)

- constructing a southbound auxiliary lane on I-205 from Airport Way to N. Columbia Boulevard (15)

- provide adequate street access in developing areas by:

10-Year Priority Project

- improving access and circulation in the vicinity of the convention center (200)

- performing a privately funded preliminary engineering study and conducting an environmental impact statement process to assess the need, feasibility, impact on traffic operations (freeway and surface streets), and consistency with the Oregon Transportation Commission's interchange policy as it relates to a possible new off-ramp connection between I-5 North and N. Kerby Avenue.

10-20 Year Project

- constructing a bridge to West Hayden Island (202) as warranted by development

- improve transit service in the sector by:

10-Year Priority Projects

- providing high-quality transit trunk service in the I-5 Corridor (Figure 4-4)

- pursuing the implementation of LRT in the I-205 Corridor from Portland International Airport (PIA) to Clackamas Town Center (CTC) via Gateway (Figure 5-3). The decision to proceed to construction of LRT, however, is subject to: 1) an assessment of

impacts associated with the project and selection of a preferred alternative and alignment; and 2) the development of a funding strategy for the project.

- improve transit transfer opportunities by:

  10-Year Priority Project

  - providing transit stations near the Coliseum, on N. Interstate Avenue, and Sandy/Columbia Boulevards (Figure 5-3), as well as in downtown Vancouver and at Vancouver Mall in Clark County

- provide park-and-ride opportunities at Jantzen Beach

- complete the programmed regional bicycle facilities in the sector (Figure 4-7)

D. EASTERN SECTOR

The adopted plan for the Eastern Sector (Figure 5-5) combines significant levels of highway, transit and demand management investments to:

- improve connectivity and access in East County by:

  Committed Project

  - widening I-84 to six lanes from I-205 to 223rd, including a new interchange in the vicinity of 207th (19, 21)

  10-Year Priority Projects

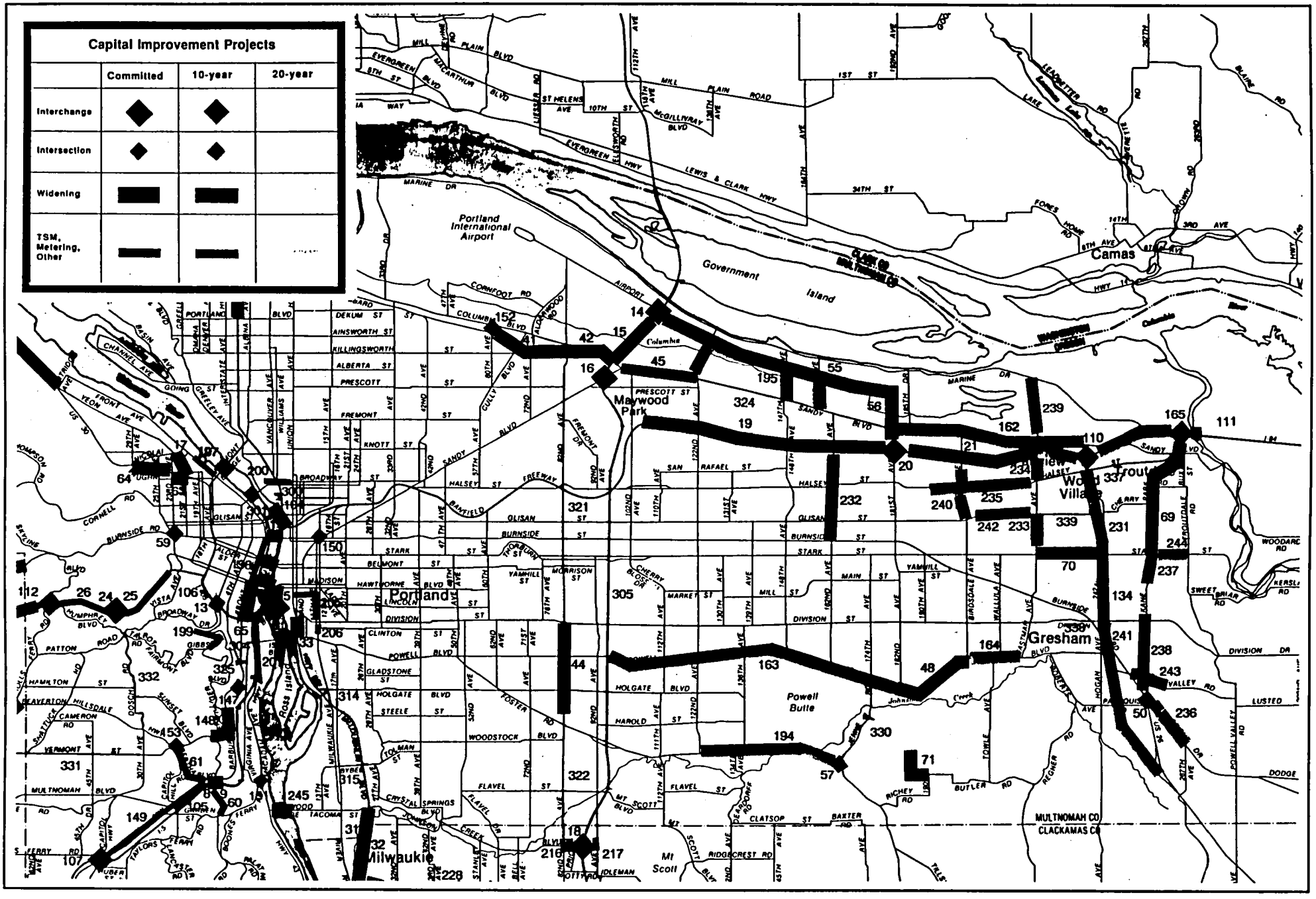
  - widening I-84 to six lanes from 181st to at least 257th, including upgrading and/or constructing interchange and connecting arterials as required at 238th/244th (110)

  - constructing all or part of a new principal arterial connection between I-84 and U.S. 26 (134)

  10-20 Year Project

  - widening I-84 from the east end of the Troutdale Interchange to the Jordan Road Interchange (111)

- improve operating efficiency in the major circumferential interstate corridor by:



METRO *Regional Transportation Plan*

Eastern Sector
Figure 5-5

10-20 Year Project

- ramp metering I-205 (305)

remove through traffic from local streets and increase north/south grid connectivity by:

Committed Project

- widening 257th from the Columbia Scenic Highway to Stark (69)

10-Year Priorities

- widening 162nd from Burnside to I-84 (232)
- widening 223rd from I-84 to Marine Drive, from Sandy to Halsey, and from Glisan to Stark (233, 234, 239)
- widening 242nd from I-84 to Powell (241)
- widening 257th from Division to Palmquist (238)
- widening 257th from Stark to Cochran (237)

increase access to the major retail and industrial activity centers in the corridor by:

Committed Projects

- improving the I-84/181st interchange (20)
- constructing Airport Way from 122nd to Sandy (55) and widening 181st from Sandy to I-84 (56)
- constructing the Water Avenue ramp connection from I-5 to the Central Eastside industrial district (5)
- improving Sandy Boulevard from 99th to 122nd (45)

10-Year Priorities

- widening Sandy Boulevard from 181st to 244th (162)
- widening the Graham Road Structure (165)

10-20 Year Project

- widening Sandy Boulevard from 122nd to 181st (324)
- improving arterials serving the Columbia South Shore area as warranted by development (195)

increase supportive arterial function by:

Committed Projects

- widening Powell Boulevard at 190th (48)
- upgrading 82nd Avenue from Division to Schiller (44)
- improving the intersection of Foster Road and Jenne Road (57)
- widening Stark Street from 221st to 242nd (70)

10-Year Priority Projects

- widening Stark Street from 257th to Troutdale Road (244)
- completing a TSM improvement on Powell Boulevard from I-205 to 181st (163) and widening Powell from Birdsdale to Eastman (164)
- widening Glisan from 201st to 223rd (242)
- widening Foster Road from 122nd to Jenne (194)

10-20 Year Projects

- further improvements to Powell Boulevard from I-205 to 181st (to be determined) (163)
- completing a TSM improvement to Burnside from 233rd to U.S. 26 (338)
- widening Glisan from 223rd to 242nd (339)
- widening Halsey from 190th to Columbia Highway (337)
- upgrading 82nd Avenue from Killingsworth to Division (321)
- upgrading Jenne Road from Foster to Powell Road (330)

- facilitate traffic flows and circulation by:

  Committed Projects

  - improving the connectivity of 182nd/190th (71)
  - improving the U.S. 26/Palmquist/Orient Road intersection (50)

  10-Year Priority Projects

  - realigning the 12th/Sandy/Burnside intersection (150)
  - improving circulation in the 11th/12th/SPRR area north of Powell (206)
  - widening Orient Drive from U.S. 26 to 267th (236)
  - improving circulation on Division/Clinton/Harrison
  - widening Powell Valley Road from Burnside to 257th (243)

- improve transit transfer opportunities within the next 10 years by providing transit centers at Lents, Gateway, Gresham, Hollywood, Coliseum area and Sandy/Columbia (Figure 5-3)

- improve access to transit within the next 10 years by providing park-and-ride facilities at Sandy/Columbia, Gateway, Lents, 122nd, 162nd, 181st, Gresham City Hall and the Banfield line terminus (Figure 5-3)

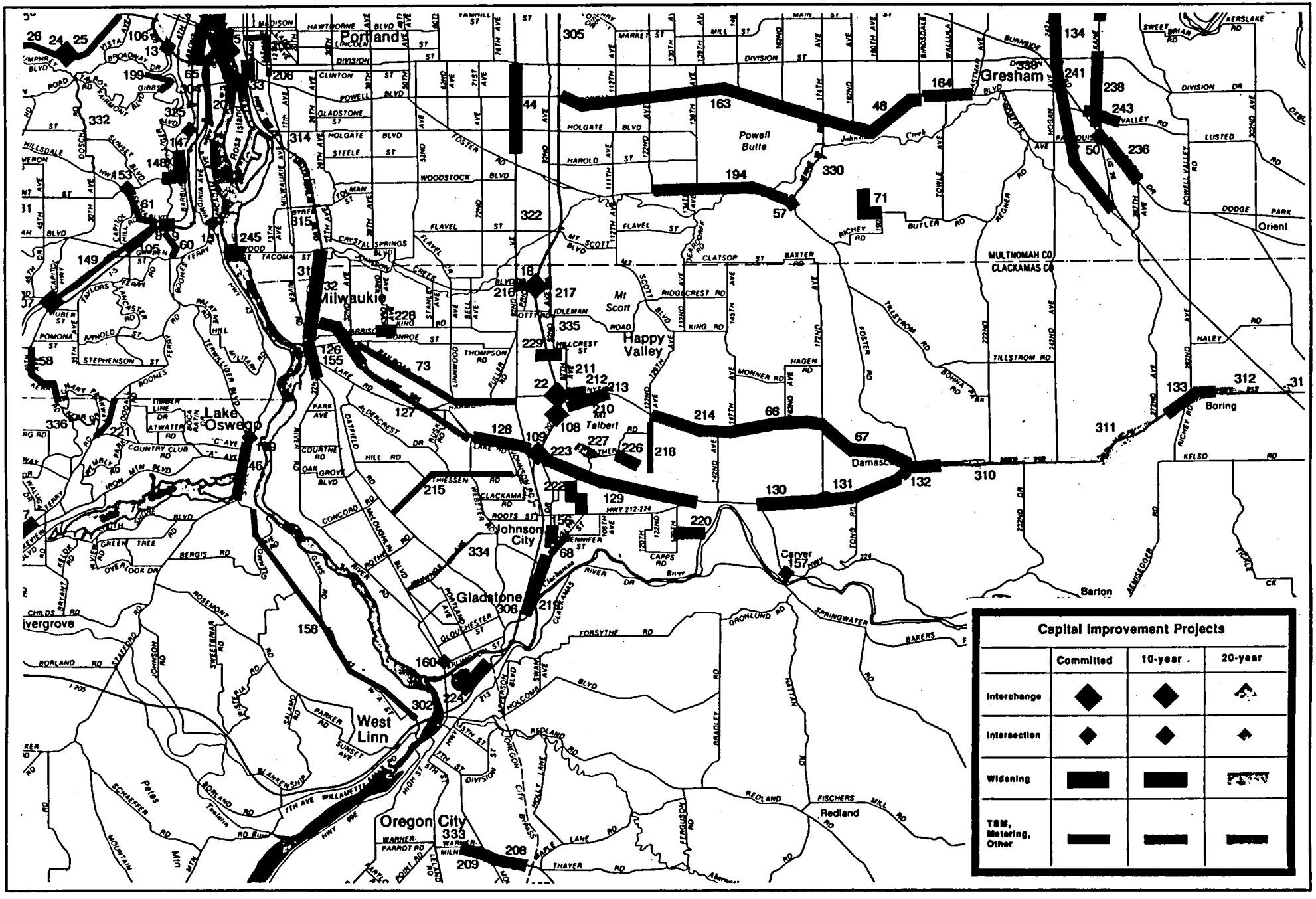
- reduce the number of single occupant automobile trips in the corridor through the Lloyd Center Carpool Program and special carpool lanes on the metered freeway ramps

- construct the programmed regional bicycle facilities in the sector (Figure 4-7)

E. SOUTHERN SECTOR

The improvements recommended in the Southern Sector (Figure 5-6) combine highway, transit and demand management investments to:

- reduce congestion in the major radial corridor by:



METRO

Regional Transportation Plan

Southern Sector
Figure 5-6

Committed Projects

- a phased widening of McLoughlin Boulevard from Milwaukie north which consists of:

  Phase I: construction of an overpass at Tacoma Street and signal intertie including a realignment of the McLoughlin/River Road/Harrison Street intersection (31)

  Phase II: widening of McLoughlin to six lanes from Tacoma to Highway 224 (32)

  Phase IIIA: widening of McLoughlin to six lanes from the Union/Grand Viaduct to the proposed I-5 Marquam Bridge ramps (33)

- constructing new ramp connections from McLoughlin Boulevard to I-5 (6)

  Phases I, II and IIIA are recommended to proceed to construction (with Phase II subject to the completion of Metro's Southeast Corridor Study -- see Outstanding Issues, Chapter 8).

10-Year Priority Projects

- pursuing the implementation of LRT in the McLoughlin Corridor from downtown Portland to Milwaukie (Figure 5-3). The decision to proceed to construction, however, is subject to: 1) a final assessment of impacts associated with the facility and a selection of a preferred alternative and alignment; and 2) the development of a funding strategy for the project

- improving McLoughlin through Milwaukie (Harrison-RR Crossing) (155)

- improving the McLoughlin/Arlington Road intersection (160)

10-20 Year Projects

- completing additional phases of McLoughlin widening north of Milwaukie:

Phase IIIB: widening of McLoughlin to six lanes plus a reversible mixed vehicle lane from the Ross Island Bridge to Harold Street (314)

Phase IV: widening of McLoughlin to six lanes from Harold to Tacoma Street (315)

Phases IIIB and IV are deferred into the latter half of the 20-year program due to the planned development of LRT in the corridor.

- improve the operating efficiency of I-205 by:

10-20 Year Project

- ramp metering from Airport Way to Sunnyside Road (305)

- remove through traffic from local streets by:

Committed Project

- taking actions in the Sellwood area to divert through traffic

10-Year Priority Project

- implementing improvements recommended as a result of an examination of east/west traffic problems east of McLoughlin (Metro's Southeast Corridor Study)

- increase east/west access in the sector by:

10-Year Priority Project

- improving Thiessen Road (215) between Oatfield Road and Johnson Road

10-20 Year Project

- improving Jennings Road/Roots Road (334) between McLoughlin and I-205

- increase access to major developments along I-205 by:

Committed Projects

- improving the I-205 interchange at Sunnyside Road (22)

- constructing a new interchange at Lester Road (18)

- widening Johnson Creek Boulevard from 82nd to I-205 (216)

10-Year Priority Projects

- improving the arterial connections to I-205/Lester Road by extending Lester/Idleman east of 92nd (217)

- constructing a split diamond interchange at I-205/ Sunnybrook (108) and constructing an arterial to 92nd

- improving Sunnyside Road to Stevens (211, 212)

- improving the I-205/Highway 212/82nd Drive intersection east and west of I-205 (156) and widening 82nd Drive (219)

- constructing a Sunnybrook Road arterial from 92nd to 108th or Valley View Road at Sunnyside Road (108)

10-20 Year Project

- improving the I-205/Gladstone interchange as warranted by development (306)

improve the flow of traffic on the Milwaukie Expressway (Highway 224) portion of the Sunrise Corridor from McLoughlin Boulevard to I-205 by:

10-Year Priority Projects

- widening the facility to six lanes from McLoughlin to 37th/Edison (126), and from Webster to Johnson (128)

- reconstructing 37th/Edison and constructing a signal intertie from Harrison to Johnson (127)

- reconstructing the I-205/Highway 224 interchange (109)

10-20 Year Project

- widening Highway 224 to six lanes from 37th/Edison to Webster (127)

improve through-movement capacity and industrial

access, and reduce congestion in the Highway 212/224 portion of the Sunrise Corridor from I-205 to Rock Creek junction by:

Committed Project

- constructing the Evelyn Street railroad overpass (68)

10-Year Priority Projects

- constructing a new limited access facility from I-205 to Highway 212 at approximately 135th (129)
- constructing connecting arterials in the area north of Highway 212/224 such as 122nd from Sunnyside to Hubbard (218), Industrial Avenue/ Clackamas/102nd (222), Mather/122nd (226) and Mather/97th (227)
- constructing the Jennifer extension from Evelyn Street to 135th (220)

- improve the Highway 212 portion of the Sunrise Corridor from Rock Creek Junction to U.S. 26 by:

10-Year Priority Projects

- constructing a climbing lane on Highway 212 east of Rock Creek Junction (130)
- widening Highway 212 from Rock Creek Junction to Chitwood (131)
- widening Highway 212 through Damascus (132) and Boring (133)
- completing other operations and safety improvements in this section

10-20 Year Projects

- widening and realignment of Highway 212 from Royer to School Road (310, 311) and from Lani Lane to U.S. 26 (312)
- improving the intersection of Highway 212 with U.S. 26 (313)

- improve regional access into developing areas in Clackamas County by:

Committed Project

- widening Sunnyside Road from 172nd to Damascus (66, 67)

10-Year Priority Project

- widening Sunnyside Road from 122nd to 172nd (214)

10-20 Year Projects

- widening Sunnyside Road from Stevens to 122nd (213)
- constructing an interchange at Beavercreek Road and the Oregon City Bypass (323)

improve supportive arterial access and safety by:

Committed Project

- constructing a climbing lane on OR 213 from Spangler Hill to Mulino (47)

10-Year Priority Projects

- improving the Harrison/King/Monroe/43rd intersections (228)
- improving the Highway 224 at Springwater intersection (157)
- widening OR 213 south of Clackamas Community College to Leland (161)
- improving Beavercreek Road from OR 213 to Mollala Avenue (208)
- improving Agnes Street (224)
- constructing a continuous east/west route over I-205 north of the CTC using Monterey Road (229)
- upgrading 92nd Avenue south of the Multnomah County line or constructing another alternative such as a frontage road from Lester to Sunnyside on the east side of I-205 (335)

10-20 Year Projects

- extending Beavercreek Road into the Red Soils area or improving Warner-Milne Road (209)

- upgrading 82nd Avenue from Crystal Springs to Schiller (322)

- improving the Warner-Milne/Linn/Warner-Parrot alignment (333)

- develop street access to regional activity centers by:

10-20 Year Project

- improving local streets in the vicinity of the new OMSI site at Station L and the surrounding area west of S.E. 11th Avenue as warranted by development (205)

- support transit-dependent high density development nodes and improve transit service through implementation of a timed-transfer system and by:

10-Year Priority Projects

- pursuing the implementation of LRT in the I-205 Corridor (Figure 5-3) from the Clackamas Town Center to Portland International Airport. The decision to proceed to construction, however, is subject to: 1) a final assessment of impacts associated with the facility and a selection of a preferred alternative and alignment; and 2) the development of a funding strategy for the project

- providing transit trunk routes from Oregon City to Milwaukie on McLoughlin Boulevard; Oregon City to Clackamas Town Center on 82nd Drive and Clackamas Town Center to Milwaukie on Railroad/Harmony (Figure 4-4)

- improve transit transfer opportunities within the next 10 years by providing transit centers at Oregon City, Milwaukie and Clackamas Town Center (Figure 5-3)

- improve transit service for the Milwaukie-Clackamas Town Center trunk route through committed improvements to Railroad/Harmony (73)

- elsewhere in the Southern Corridor, protect options for a transitway from Portland to Oregon City via the McLoughlin Corridor and Highway 224/I-205 Corridor

- improve access to transit by providing park-and-ride facilities at Clackamas Town Center, Milwaukie, Oregon City, and Foster Road at I-205 (Figure 5-3)

- construct the programmed regional bicycle facilities in the sector (Figure 4-7)

F. SOUTHWESTERN SECTOR

The improvement strategy for the Southwestern Sector (Figure 5-7) combines highway and transit investments to:

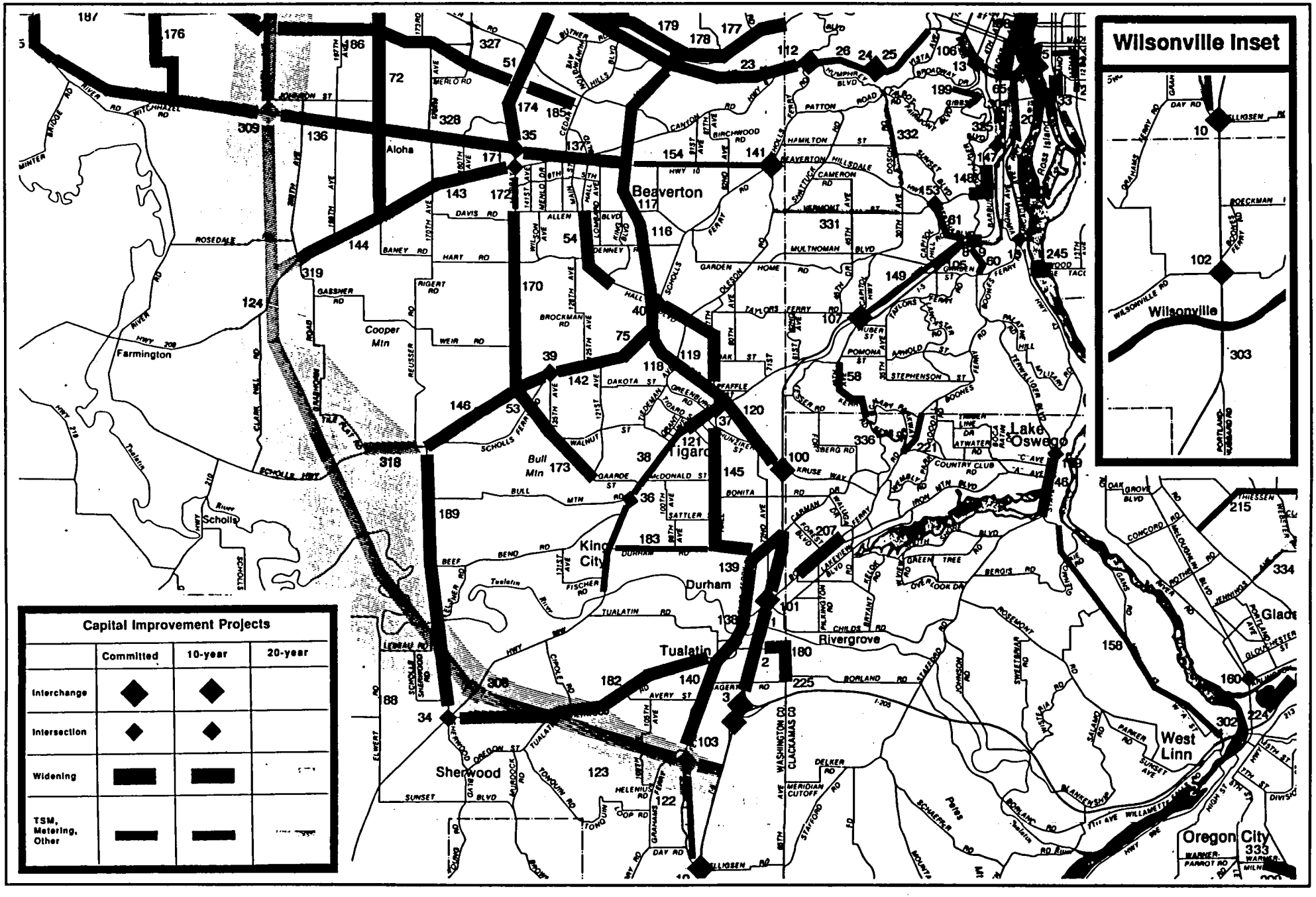
- reduce congestion in the two radial corridors by:

  Committed Projects

  - adding auxiliary lanes on I-5 between Carman Drive and I-205 (1, 2) and modifying the northbound I-205 to I-5 ramp (3)
  - widening State Street in Lake Oswego (46)
  - improving the intersections of Highway 99W with Hall Boulevard (37) and Bull Mountain/Canterbury Lane (36) and implementing TSM improvements on Highway 99W from Greenburg to the Tualatin River (38)
  - reconstructing the Highway 99W/Six Corners intersection (34)

  10-Year Priority Projects

  - improving the northbound weave-and-curve condition on I-5 from Multnomah to Terwilliger Boulevards (105)
  - adding a southbound climbing lane on Barbur Boulevard from Hamilton to Capitol Highway (148)
  - improving the I-5/Capitol/Taylors Ferry/49th interchange (107)
  - implementing TSM improvements on Barbur from S.W. Third to S.W. 49th (149)
  - improving the Barbur/Hamilton intersection (147)
  - implementing TSM improvements on Highway 43 south to Laurel Street (158) and improving the Highway 43/Terwilliger extension intersection (159)
  - improving the intersection of Macadam Avenue with Taylors Ferry Road (151)



METRO *Regional Transportation Plan*

Southwestern Sector
Figure 5 – 7

- constructing the first phase of the limited access facility in the Tualatin-Hillsboro corridor from I-5 to Highway 99W including the interchanges at I-205 and Boones Ferry Road (123) and a three-lane widening of Boones Ferry Road to I-5/Stafford (122)

- addressing the Ross Island Bridge/I-5/U.S. 26/ Highway 43/I-405 access and traffic flow issues through a project development reconnaissance effort (106)

- widening Highway 99W to six lanes from I-5 to Main Street (121)

10-20 Year Projects

- widening Boones Ferry Road to five lanes between the bypass facility and I-5/Stafford (122)

- adding a southbound climbing lane on I-5 from Hood Avenue to Terwilliger (304)

- constructing interchanges on the bypass facility at Highway 99W and Tualatin-Sherwood/Edy Roads

- adding an additional southbound lane on Barbur Boulevard over Front Avenue (325)

- improving operations and traffic flow on Macadam Avenue south of Bancroft (320)

- improving the I-205/Highway 43 interchange (302)

- constructing the preferred alternative for the Ross Island Bridge/I-5/U.S. 26/Highway 43 area (106)

reduce congestion and improve accessibility in the circumferential corridors by:

10-Year Priority Projects

- constructing the first phase of a widening of Highway 217 to include auxiliary lanes from the Hall Boulevard Overcrossing to the Sunset Highway (117, 119) and six lanes from the Hall Boulevard Overcrossing to I-5 (120)

- improving the Highway 217 interchanges with I-5 (100), 72nd Avenue (120), and Highway 99W (121)

- conducting Preliminary Engineering on the second phase of the Tualatin-Hillsboro corridor facility from Highway 99W to the Sunset Highway (124)

10-20 Year Projects

- constructing the second phase of a limited access bypass facility in the Tualatin-Hillsboro corridor from Highway 99W to Tualatin Valley Highway (124). Actual construction of this portion of the Western Bypass is subject to: 1) determination that the facility is consistent with local comprehensive plans and state land use policies; and 2) a detailed assessment of the impacts associated with such a facility provided through the Environmental Impact Statement (EIS) process. If, at the conclusion of either of these processes, a decision is made to not build this portion of the Western Bypass, a planning study will be initiated to address the circumferential travel problems in some other manner.

- as warranted, constructing the second phase of a widening of Highway 217 to include six lanes from the Sunset Highway to the Hall Boulevard Overcrossing (117,119)

provide improved arterial connectivity and access by:

Committed Projects

- improving the intersection of Scholls Ferry Road at Hall and widening Scholls Ferry to the Highway 217 on-ramp (40)

- improving the Scholls Ferry/Old Scholls/135th intersection (39)

10-Year Priority Projects

- widening Boones Ferry Road from Lower Boones Ferry/I-5 to the bypass facility (138, 139, 140)

- initiating the first phase TSM improvements to Hall Boulevard from Scholls Ferry Road to Durham Road (145)

- widening Durham Road to three lanes from Hall Boulevard to 72nd Avenue (145)

- widening Scholls Ferry Road from Highway 217 to the Beef Bend extension (142, 146)

- widening the Greenburg Road structure over Highway 217 (118)

- widening Tualatin-Sherwood/Edy Road (182)

- extending Beef Bend Road from Scholls Ferry Road to Highway 99W (188, 189)

10-20 Year Project

- widening Hall Boulevard to three lanes from Scholls Ferry Road to Durham Road (145)

improve local circulation and arterial operations by:

Committed Projects

- upgrading Bertha Boulevard (61) and Terwilliger Boulevard (60) in the vicinity of the reconstructed I-5 interchange

- upgrading S.W. 49th (58)

- extending Murray Boulevard from Scholls Ferry to 135th (53)

10-Year Priority Projects

- initiating TSM improvements on Durham Road from Hall Boulevard to Highway 99W (183)

- upgrading Nyberg/S.W. 65th east of I-5 (180)

- initiating TSM improvements on Boones Ferry Road from Country Club Road to the Multnomah County line (221)

- extending Murray Boulevard from 135th to Highway 99W via Gaarde (173) after the Highway 217 and Beef Bend Road extension improvements

10-20 Year Projects

- widening Scholls Ferry Road from Beef Bend to the bypass facility (318)

- initiating TSM improvements on Kerr Road from the Portland city limits to Boones Ferry Road (336)

remove through traffic from local streets and improve freeway access by:

Committed Projects

- reconstructing I-5/Terwilliger interchange (89)
- improving the ramp connections at the I-5/Nyberg Road interchange (1)
- improving interchange at I-5/Stafford Road (10)

10-Year Priority Projects

- improving the interchanges of I-5 with Lower Boones Ferry Road (101) and Wilsonville Road (102)
- constructing an interchange at I-5/I-205 and the bypass facility (103)

10-20 Year Project

- improving the interchange of I-5 at Charbonneau (303)

- improve major arterial access from I-5 to Lake Oswego by:

10-Year Priority Project

- completing the widening of Boones Ferry Road from Jean to Madrona (207)

- improve street access and safety in the vicinity of the Oregon Health Sciences Complex by:

10-Year Priority Project

- initiating circulation and TSM improvements to local streets (199)

- improve transit service in the corridor by providing a new trunk from the Portland CBD to Tualatin via I-5, extending service into the South Waterfront and North Macadam areas as warranted by transit service extension criteria, as well as maintaining the Barbur Boulevard and Macadam/Highway 43 trunk routes (Figure 4-4)

- protect options for bus priority treatment on Barbur Boulevard from Beaverton-Hillsdale to the Tigard Transfer Station

- improve transit opportunities by providing transit centers at Tualatin, Tigard, Washington Square, Lake

Oswego and Burlingame. The existing Barbur Boulevard Bus Transfer Station will be maintained as an integral part of the system (Figure 5-3)

- improve access to the transit system by providing park-and-ride facilities in Lake Oswego, Tualatin and Tigard (Figure 5-3)

- construct the programmed regional bicycle facilities in the sector (Figure 4-7)

G. WESTERN SECTOR

The adopted plan for the Western Sector (Figure 5-8) combines significant levels of highway and transit investment to:

- reduce congestion in the major radial corridor by:

  Committed Projects

  - modifying the ramp terminal at the existing Zoo interchange (phase I) with the Sunset (24)

  - adding a westbound on-ramp at the Sunset/Zoo interchange (25)

  - reconstructing the interchanges of the Sunset Highway with Murray Boulevard (28) and Cornelius Pass Road (29)

  - ramp metering the Sunset Highway from Jefferson Street to Cornelius Pass Road (23)

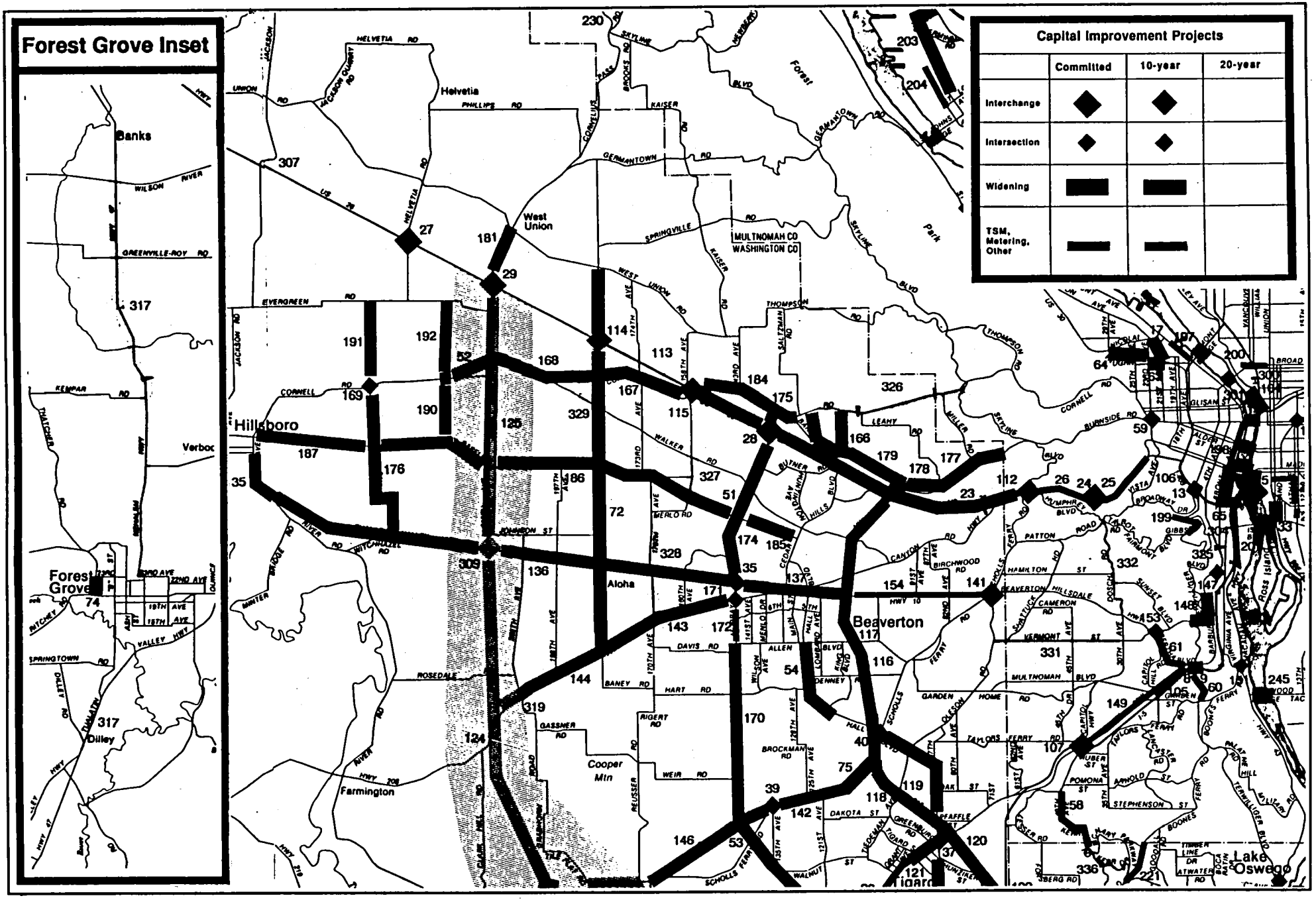
  - improving the interchange of the Sunset with Helvetia Road (27)

  10-Year Priority Projects

  - completing construction of the westbound climbing lane (from the Zoo exit to Sylvan) on the Sunset Highway (26)

  - widening the Sunset Highway to six lanes from Sylvan to Cornell/158th (112, 113)

  - reconstructing the interchanges of the Sunset Highway with Sylvan Road (112), 158th/Cornell (115), and 185th Avenue (114)



METRO *Regional Transportation Plan*

Western Sector
Figure 5-8

10-20 Year Project

- improving the interchanges of the Sunset Highway with Jackson Road (307)

reduce congestion in the circumferential corridors by:

10-Year Priority Projects

- constructing the first phase of a Highway 217 widening to include auxiliary lanes from the Sunset to the Hall Boulevard overcrossing (117, 119)

- ramp metering Highway 217 from the Sunset to Scholls Ferry Road (116)

- conducting Preliminary Engineering on the second (Highway 99W to Tualatin Valley Highway - 124) and third (Tualatin Valley Highway to Sunset - 125) phases of the Tualatin-Hillsboro corridor bypass facility

10-20 Year Projects

- constructing the second (Highway 99W to Tualatin Valley Highway - 124) and third (Tualatin Valley Highway to Sunset - 125) phases of the bypass facility in the Tualatin-Hillsboro corridor. Actual construction of Phase II of the Western Bypass is subject to: 1) a determination that the facility is consistent with local comprehensive plans and state land use policies; and 2) a detailed assessment of the impacts associated with such a facility provided through the Environmental Impact Statement (EIS) process. If, at the conclusion of either of these processes, a decision is made to not build this portion of the Western Bypass, a planning study will be initiated to address the circumferential travel problem in some other manner.

- as traffic demand warrants, upgrading the intersections to interchanges on the bypass facility

- as warranted, constructing the second phase of a Highway 217 widening to include six lanes from the Sunset Highway to the Hall Boulevard Overcrossing (117, 119)

improve east/west arterial capacity by:

Committed Projects

- improving the Tualatin Valley Highway/Murray Boulevard intersection (35)
- improving the Scholls Ferry/Old Scholls/135th intersection (39)
- widening Cornell Road to five lanes from Cornelius Pass Road to Ray Circle (52)

10-Year Priority Projects

- completing the widening of Tualatin Valley Highway from 21st to Oak (135)
- initiating TSM improvements on Tualatin Valley Highway from Highway 217 to 21st (136) and conducting a detailed reconnaissance or Preliminary Engineering study to determine the full extent of improvements required in this section
- constructing some portion of a to-be-designed improvement to Tualatin Valley Highway and parallel facilities in the central Beaverton area (137)
- improving the intersection of Beaverton-Hillsdale Highway/Scholls Ferry Road/Oleson Road (141)
- widening Farmington Road from Murray to 209th (143, 144)
- initiating TSM improvements on Beaverton-Hillsdale Highway from Scholls Ferry Road to Highway 217 (154) and improving the Bertha/Capitol/Beaverton-Hillsdale Highway intersection (153)
- widening Cornell Road from 158th to Cornelius Pass Road (167, 168) and improving the Cornell/Brookwood intersection
- widening Baseline/Jenkins from Cedar Hills Boulevard to Main Street in Hillsboro (185, 186, 187)

10-20 Year Project

- widening Farmington Road from 209th to the bypass (319)

increase access into the existing and planned residential, commercial and industrial developments in the sector by:

Committed Projects

- widening Murray Boulevard from the Sunset Highway to Jenkins Road (35)
- widening Hall Boulevard from Allen to Greenway (54)
- widening 185th from Rock Creek to Tualatin Valley Highway (72)
- widening E Street in Forest Grove (174)

10-Year Priority Project

- constructing the first phase of a 216th/219th widening from the Sunset to Tualatin Valley Highway (125)

10-20 Year Projects

- constructing a 112th arterial (166)
- initiating TSM improvements on Murray Boulevard from Tualatin Valley Highway to Allen (172) and improving the intersection with Farmington Road (171)
- widening Murray Boulevard to five lanes from Allen to Scholls Ferry Road (170) and from the Sunset Highway to Cornell (175)
- improving Murray Boulevard over the BNRR overpass (174)
- upgrading Brookwood from Evergreen to Tualatin Valley Highway (176)
- widening Cornell Road from Sunset to the Barnes Road extension (184)
- upgrading Barnes Road from Leahy to the Multnomah County line (177) and from Highway 217 to Cedar Hills Boulevard (178) and constructing the Barnes Road extension from Cedar Hills Boulevard to Cornell Road (179)

- widening Cornelius Pass Road from Wagon Way to the Sunset Highway (181), providing short term safety and restoration improvements north of West Union and at Skyline (230), and assessing its function in the regional system to determine the long term need associated with the facility

- upgrading facilities in the Hillsboro area such as 229th/231st from Baseline-Evergreen (190, 192)

- widening Cornelius Pass Road from Wagon Way to West Union (181)

10-20 Year Projects

- upgrading Highway 47 to suburban standards (317) north and south of Forest Grove

- widening Cornell Road to three lanes from the Barnes extension to Skyline (326)

- widening 158th to five lanes from Walker to Jenkins (327)

- upgrading 170th from Farmington to Merlo (328)

- realigning Walker Road from 185th to Cornell (329)

improve safety in the area by:

10-Year Priority Project

- upgrading Vermont (331) and Dosch (332) Roads to urban standards

proceed with preliminary engineering on the region's next priority LRT corridor -- the Sunset LRT (Figure 5-3) -- to provide the major transit trunk service connecting downtown Portland with central Washington County and Beaverton (to 185th). The decision to proceed to construction, however, is subject to: 1) an analysis of the facility in relation to updated population and employment forecasts and changes in travel patterns; 2) a final assessment of impacts associated with the facility; 3) an evaluation of the operation of the Banfield LRT; and 4) the development of a funding strategy for the project

provide transit service in the Westside Corridor by trunk routes on Beaverton-Hillsdale Highway/Tualatin Valley Highway, Cornell Road and Highway 217 (Figure 4-4) and an expanded timed-transfer system con-

sisting of major transit stations at Beaverton, Washington Square, Tanasbourne/185th, Sunset/217, Hillsboro, and Burlingame (Figure 5-3)

- phase in the planned transit service with development in the sector and implement the service in such a manner as to be compatible with the potential implementation of the Sunset LRT

- improve access to the transit system by providing park-and-ride facilities in Hillsboro, west of Beaverton, at Sunset/Highway 217, Murray Boulevard, 170th and 185th (Figure 5-3)

- construct the programmed regional bicycle facilities in the sector (Figure 4-7)

H. NORTHWEST SECTOR

The investment strategy for the Northwest Sector (Figure 5-9) is composed of highway and transit improvements to:

- reduce congestion in the radial corridor by:

  Committed Project

  - providing direct connections from U.S. 30/Yeon Avenue to the Fremont Bridge (17)

- remove through traffic from the northwest residential areas by diverting these trips along Yeon Avenue/ St. Helens Road and by:

  Committed Project

  - improving the N.W. 23rd and Burnside intersection and other northwest neighborhood streets (59)

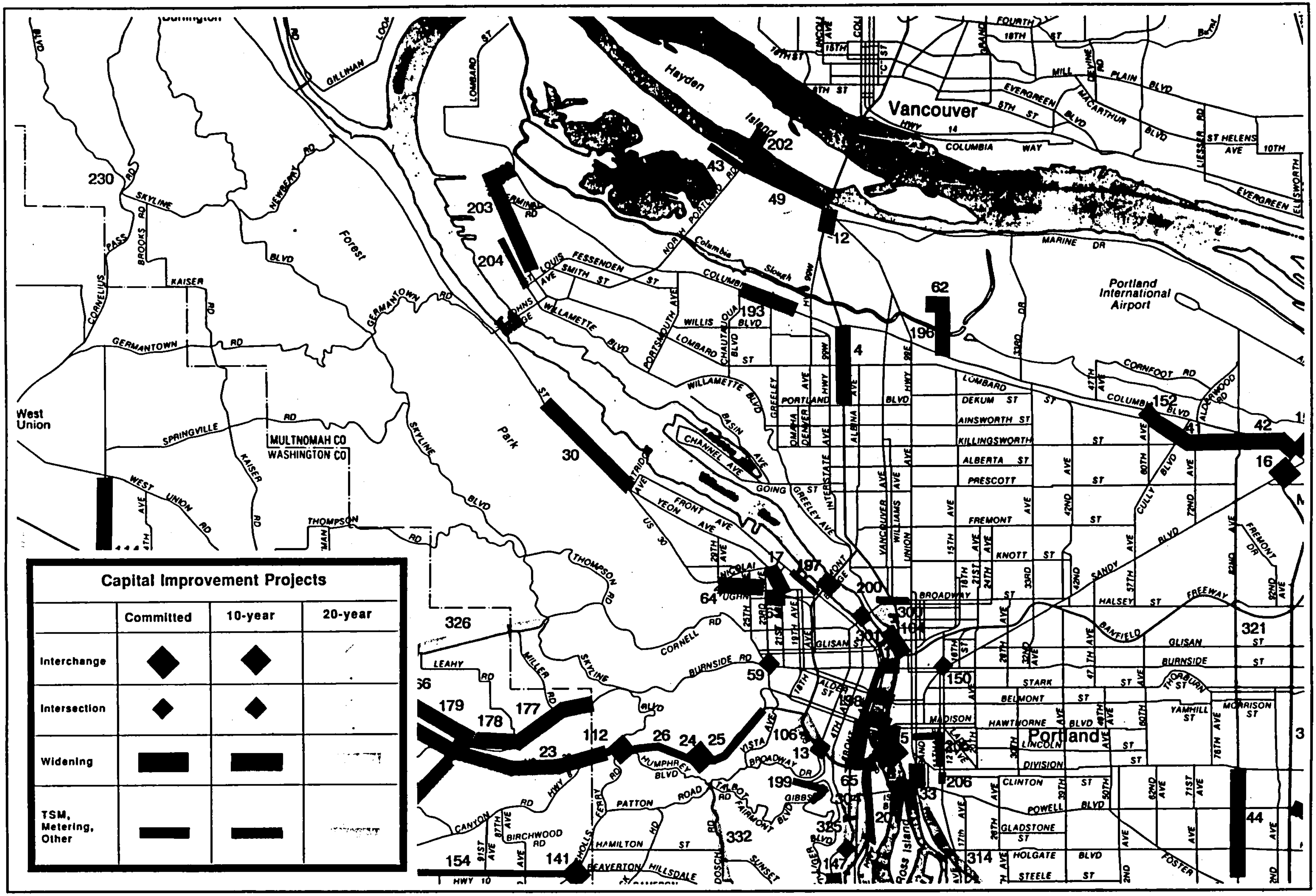
  10-Year Priority Project

  - completing the programmed analysis in the Cornell/ Burnside vicinity and developing recommendations for improvements

- improve circulation and increase access to employment centers in the area by completing the Fremont Bridge connection to U.S. 30 and by:

  Committed Project

  - improving U.S. 30 (30) and other streets in the area (63, 64)



METRO

Regional Transportation Plan

Northwestern Sector
Figure 5-9

- improve safety in the area by:

  Committed Project

  - reconstructing several bridges on N.W. Cornell Road

I. DOWNTOWN PORTLAND SECTOR

The adopted plan improvements for the downtown Portland sector (Figure 5-10) are to:

- maintain access to downtown Portland by providing increased radial transit service to absorb additional travel associated with future development; and by

  10-Year Priority Projects

  - completing phase I of electrical, mechanical and structural repairs to the Hawthorne, Burnside, Broadway, Morrison and Sellwood Bridges over the Willamette River (245)

  10-20 Year Priority Project

  - completing phase II of the Willamette River bridge projects (245)

- maintain freeway efficiency through:

  Committed Project

  - improving the I-405/S.W. Sixth Avenue ramp (13)

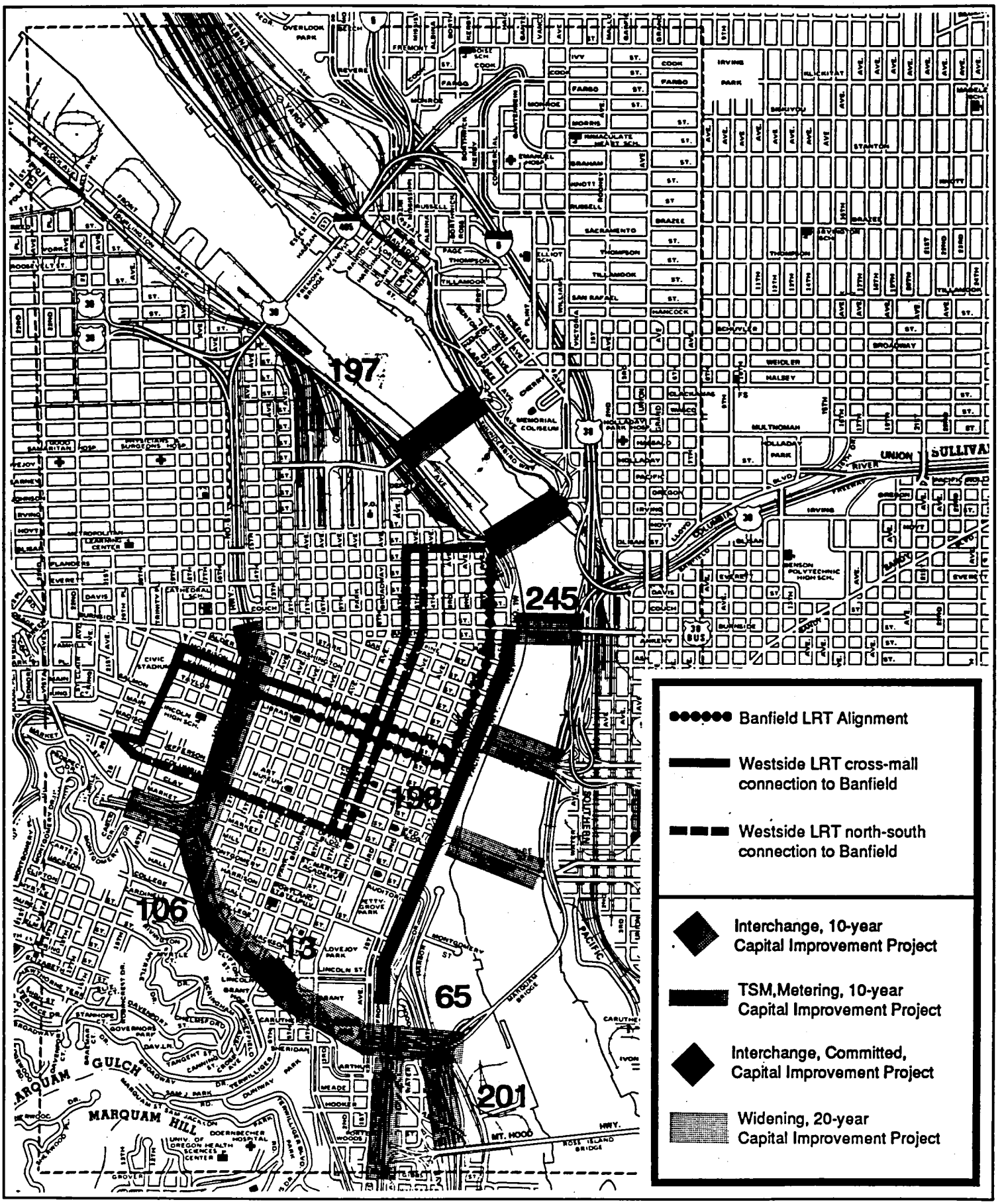
  10-Year Priority

  - performing a reconnaissance to determine the extent and feasibility of improvements to I-405, the CBD ramps and the U.S. 26 and Highway 43 connections (106)

  10-20 Year Project

  - implementing the improvements identified in the I-405 reconnaissance (106)

- minimize conflicts between pedestrians, automobiles and transit vehicles by providing for preferential transit and pedestrian treatment



METRO *Regional Transportation Plan*

Downtown Portland Sector
Figure 5-10

- modify Fourth, Fifth and/or Sixth Avenues for light rail to accommodate the Banfield (and other) LRT line capacity requirements beyond that provided by the cross-mall alignment

  10-Year Priority

  - constructing LRT on the Mall

- extend the Fifth and Sixth Avenues Transit Mall both for increased bus and/or LRT transit operations

  10-Year Priority

  - North Mall Extension

  10-20 Year Project

  - South Mall Extension

- reroute some bus routes off the transit mall as the mall reaches its transit capacity and designate additional transit streets in compliance with the downtown plan and functional street classification

- reduce the number of single occupant automobile trips into the CBD through the carpool meter permits, the RX Parking Program and the Downtown Portland Parking and Circulation Policy

- improve traffic flow by updating signalization management and increase access:

  Committed Project

  - into the South Waterfront development area (65)

  10-Year Priority Projects

  - into the northwest Triangle area (197)

  - by initiating TSM improvements on S.W. Front Avenue (198)

  - by North Downtown Circulation Improvements

  10-20 Year Project

  - into the north Macadam area (201) as warranted by development

- transit service in downtown should maximize electric vehicles to minimize environmental impact

- various TSM improvements in downtown Portland to increase transit operating capacity, maintain existing traffic volumes, provide increased transit connectivity and reduce conflicts between transit vehicles, automobiles and pedestrians. (Specific projects will be determined as part of the Westside transitway decision process.)

Chapter Six

Evaluation of the Performance of the Adopted Plan

CHAPTER 6

EVALUATION OF THE PERFORMANCE OF THE ADOPTED PLAN

A. INTRODUCTION

This chapter of the Plan evaluates the year 2005 performance of the regional transportation system recommended in the Plan based upon the mobility objectives established in Chapter 1. The recommended plan consists of the transportation systems and strategies described in Chapter 4 plus the capital investments presented in Chapter 5.

B. YEAR 2005 PERFORMANCE OF THE ADOPTED PLAN

Modal Shares

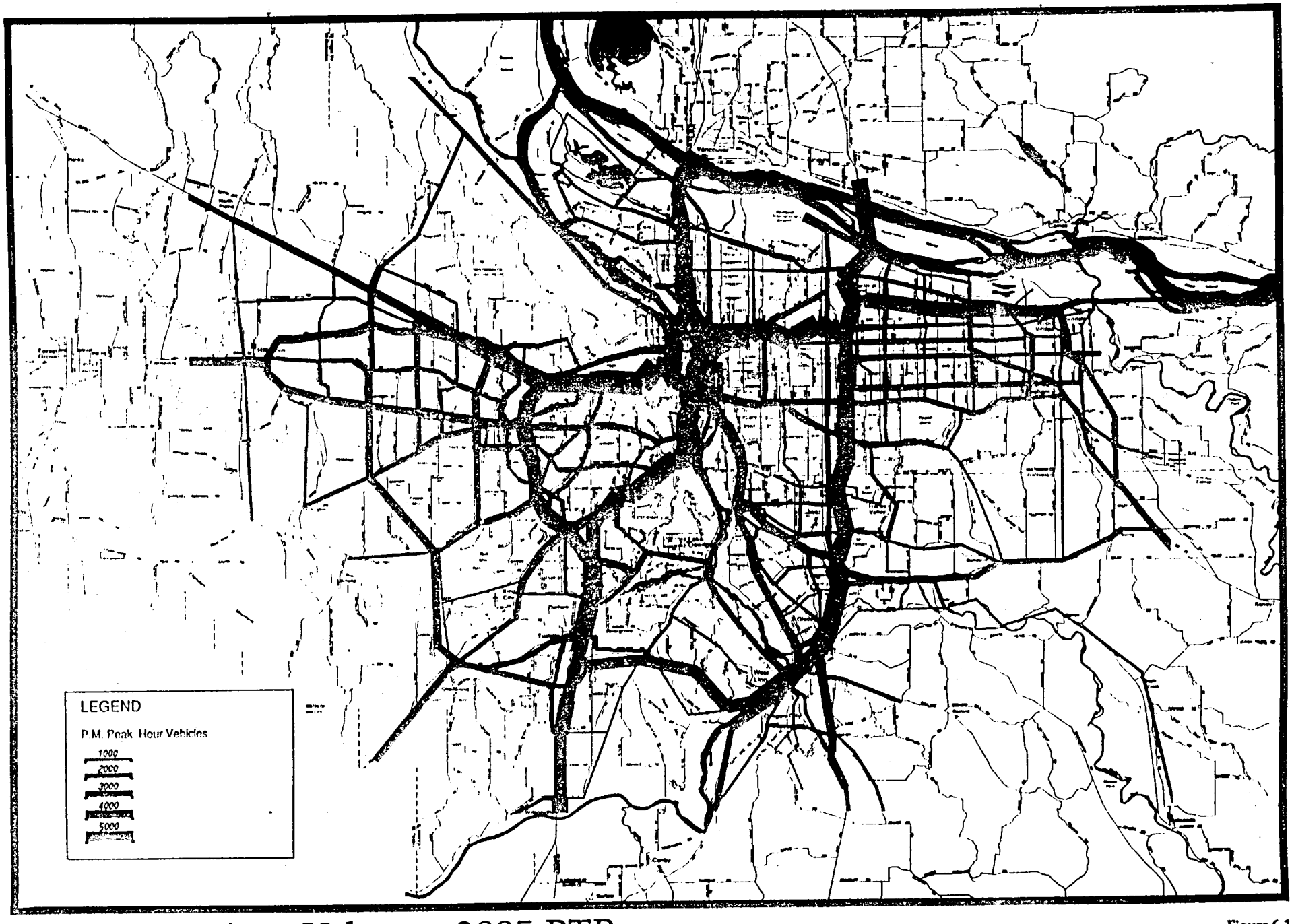
As with the committed system, total daily person trips on the transportation system recommended in the Plan are expected to grow from slightly over 3.5 million trips in 1985 to nearly five million trips by the year 2005. (This travel includes auto, transit, motorcycle, walking and bicycle person trips produced in the Oregon portion of the metropolitan area. Excluded are commercial travel and trips with an origin outside the Oregon portion of the region.) Compared to the modal shares predicted for the committed system, the additional investments recommended in the Plan for increased transit service and demand management programs will produce a significant shift in travel to these modes, with transit's share of the travel market increasing from 6 percent in 1985 to 9 percent by the year 2005.

Transit ridership increases are most significant for work trips and, therefore, have the greatest impact on peak period travel. Transit ridership for work trips is expected to increase from the current 11 percent to nearly 18 percent of peak-hour work trips. For peak-hour work trips to the Portland CBD, the transit share is expected to be nearly two-thirds by 2005 with the RTP. This is a 45 percent increase in market share over current levels.

Travel Volumes

1. Highway System

Illustrated in Figure 6-1 are year 2005 volumes on principal and major arterials for the highway system recommended in the Plan. Shown are p.m. peak-hour volumes by travel direction. As can be seen, the highway volumes associated with the adopted Plan are



METRO *Auto Volumes: 2005 RTP*

Figure 6-1

lower than committed system volumes (Figure 6-2). This decrease in highway volumes reflects a system-wide 5 percent decrease in p.m. peak-hour vehicle work trips attributable to a significant increase in peak-hour work trip transit ridership (over 140 percent) produced by transit capacity investments and demand management strategies. Even with these investments, however, increased travel demand resulting from growth will produce highway volumes higher than current levels. These increased vehicle volumes are generally accommodated by the increased highway capacity provided through the highway improvements recommended in the Plan.

Level of Service of the Regional Transportation System

1. Highway System

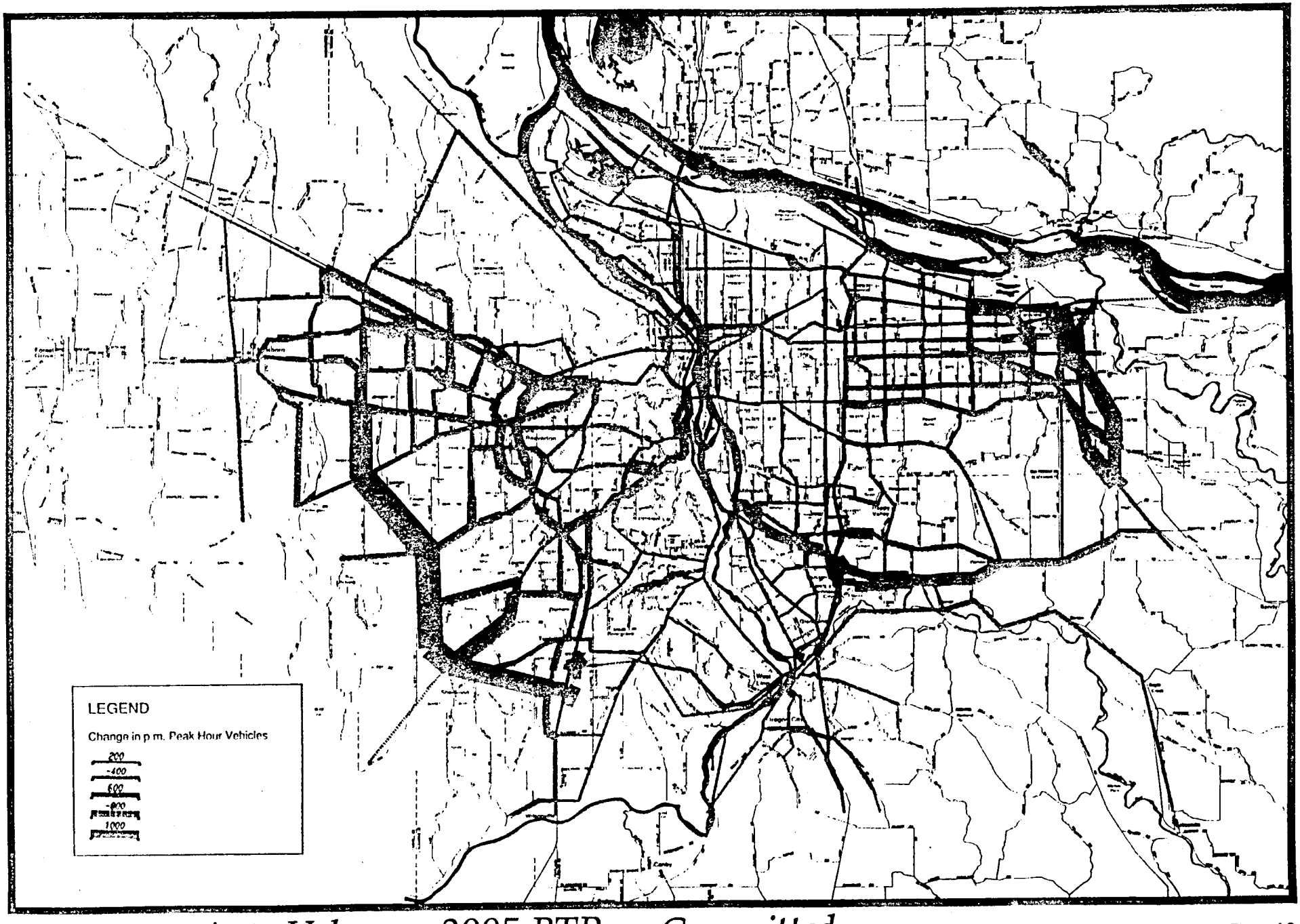
The year 2005 p.m. peak-hour level of service of the regional highway system (principal and major arterials) would be significantly improved over conditions associated with the committed system through the investments recommended in the Plan (Figure 6-3). Instances of unacceptable levels of service are anticipated for sections of the Sunset Highway, the Banfield Freeway, McLoughlin Boulevard, Ross Island Bridge, Powell Boulevard, Barbur Boulevard, Central Beaverton, along Highway 99W through Tigard, Tualatin Valley Highway west of Hillsboro, Highway 213, the Oregon City Bypass, and Highway 99E south of Oregon City.

2. Transit System

Significant improvement in p.m. peak-hour regional transit trunk route travel times from the committed system is achieved with the transit service and facility improvements recommended in the Plan (Figure 6-4). In addition to the Banfield LRT, the I-205 LRT (to the Clackamas Town Center), McLoughlin Boulevard LRT (to Milwaukie), Sunset LRT to Beaverton and Beaverton to Hillsboro trunk route would meet the established performance criteria of equal to or less than one and one-half times the off-peak highway travel time. Additional transit improvements beyond those identified in the Plan will be required to achieve the performance standard in the Southern (south of Milwaukie) and Southwestern (Barbur/99W) sectors.

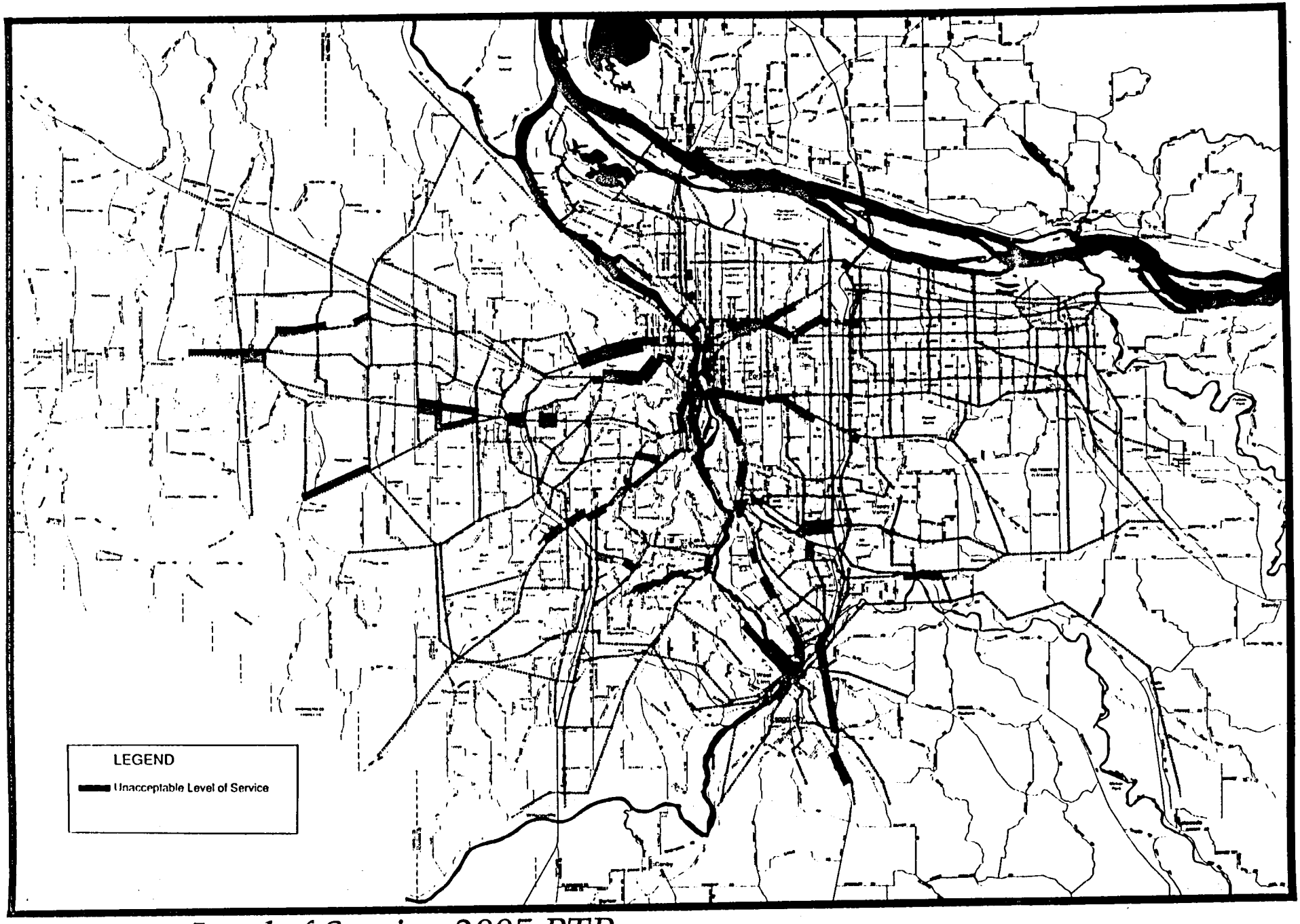
Travel Times on the Regional Highway System

The investments recommended in the Plan will reduce year 2005 p.m. peak-hour highway travel times in all major regional corridors from those associated with the committed



METRO *Auto Volumes: 2005 RTP vs. Committed*

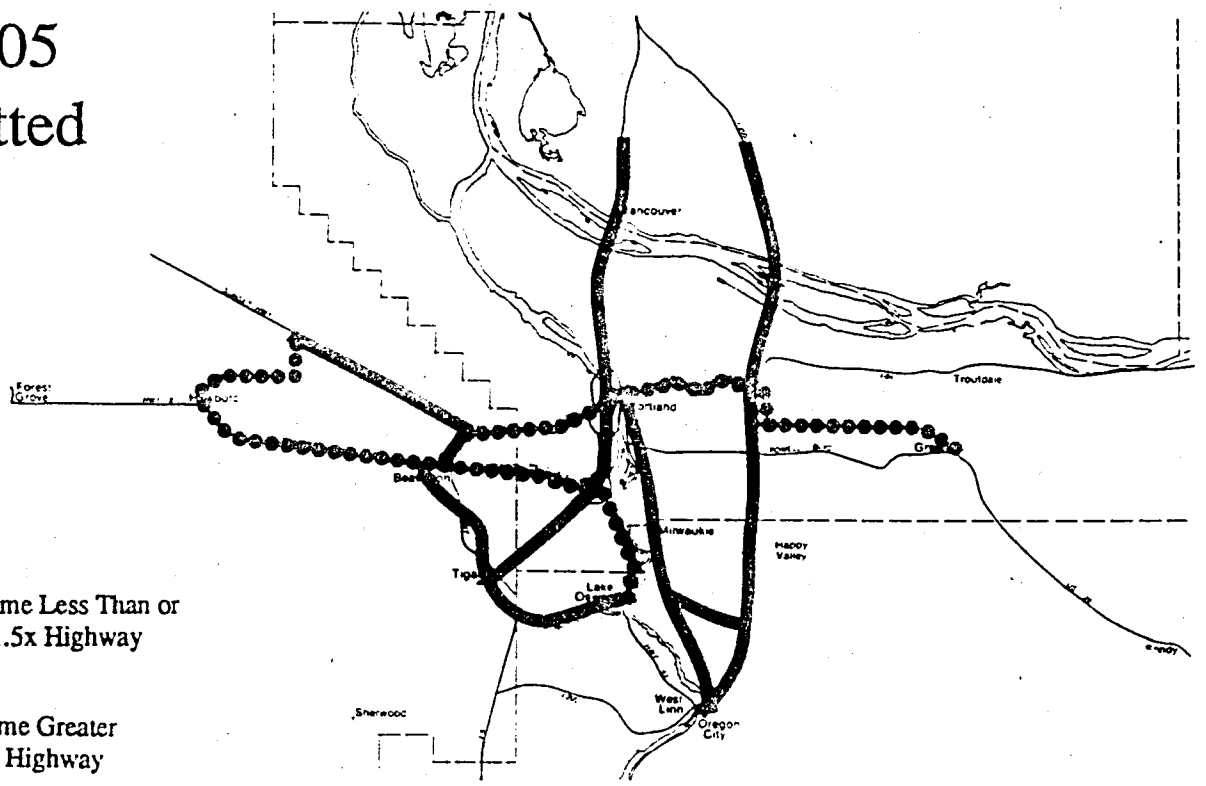
Figure 6-2



METRO *Level of Service: 2005 RTP*

Figure 6-3

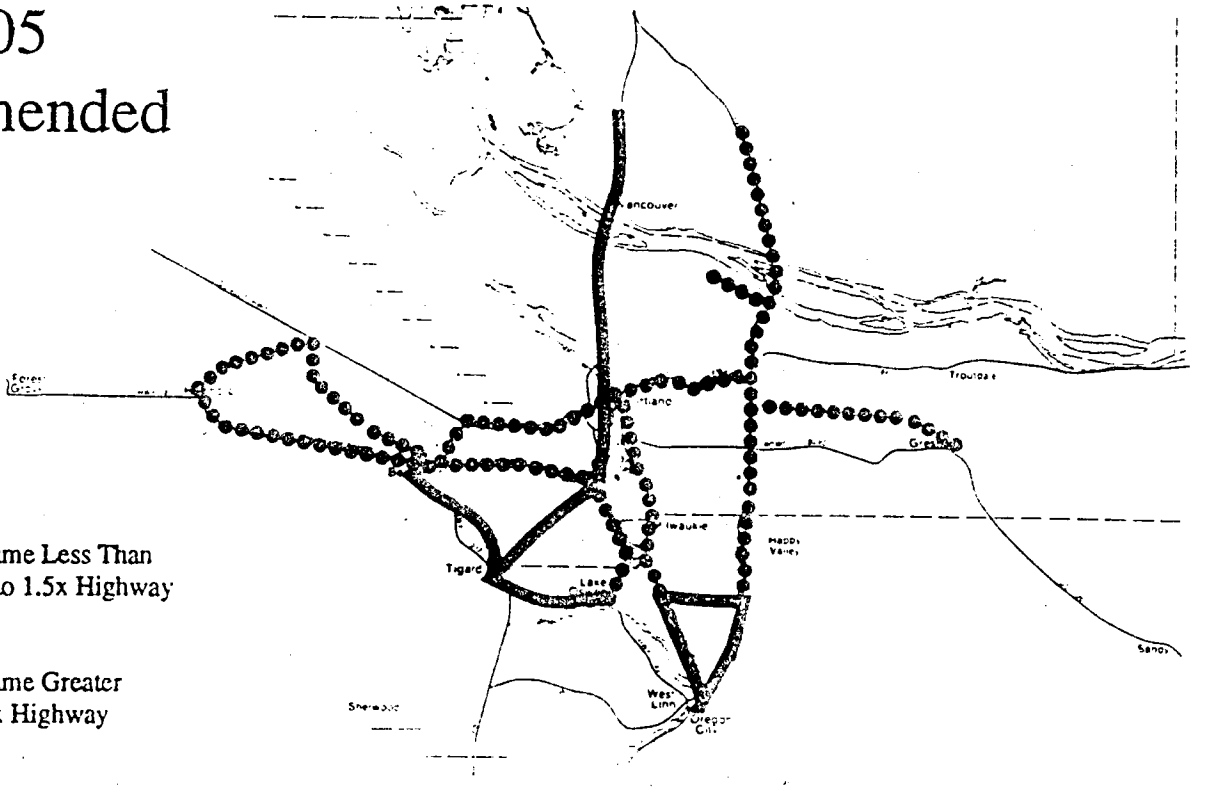
Year 2005 Committed System



Transit Time Less Than or Equal to 1.5x Highway Time

Transit Time Greater Than 1.5x Highway Time

Year 2005 Recommended Plan



Transit Time Less Than or Equal to 1.5x Highway Time.

Transit Time Greater Than 1.5x Highway Time

METRO

Performance of Regional Transit Trunk Routes

RTP Figure 6-4

88484

system (Figure 6-5). The greatest improvement will occur in the Southwestern circumferential corridor, where travel times from Tualatin to Hillsboro will be reduced by upwards of 30 percent. Other travel time reductions of around 25 percent from the committed system occur in the Beaverton-Hillsboro (-27 percent), Beaverton-Tualatin (-26 percent), Eastern I-84 (-25 percent), and the Eastern Sunrise (-23 percent) corridors.

Travel time improvements over 1987 levels can be expected in the Eastern circumferential (Gresham Parkway) and Sunrise (Clackamas Expressway) Corridors.

Lane Miles of Congestion

The improvements called for in the RTP will reduce the number of congested lane miles on the year 2005 regional highway system by nearly 40 percent when compared to the committed system (Table 6-1). The largest improvement can be expected on the region's freeways, with a two-thirds reduction in the number of congested lane miles over committed levels.

TABLE 6-1

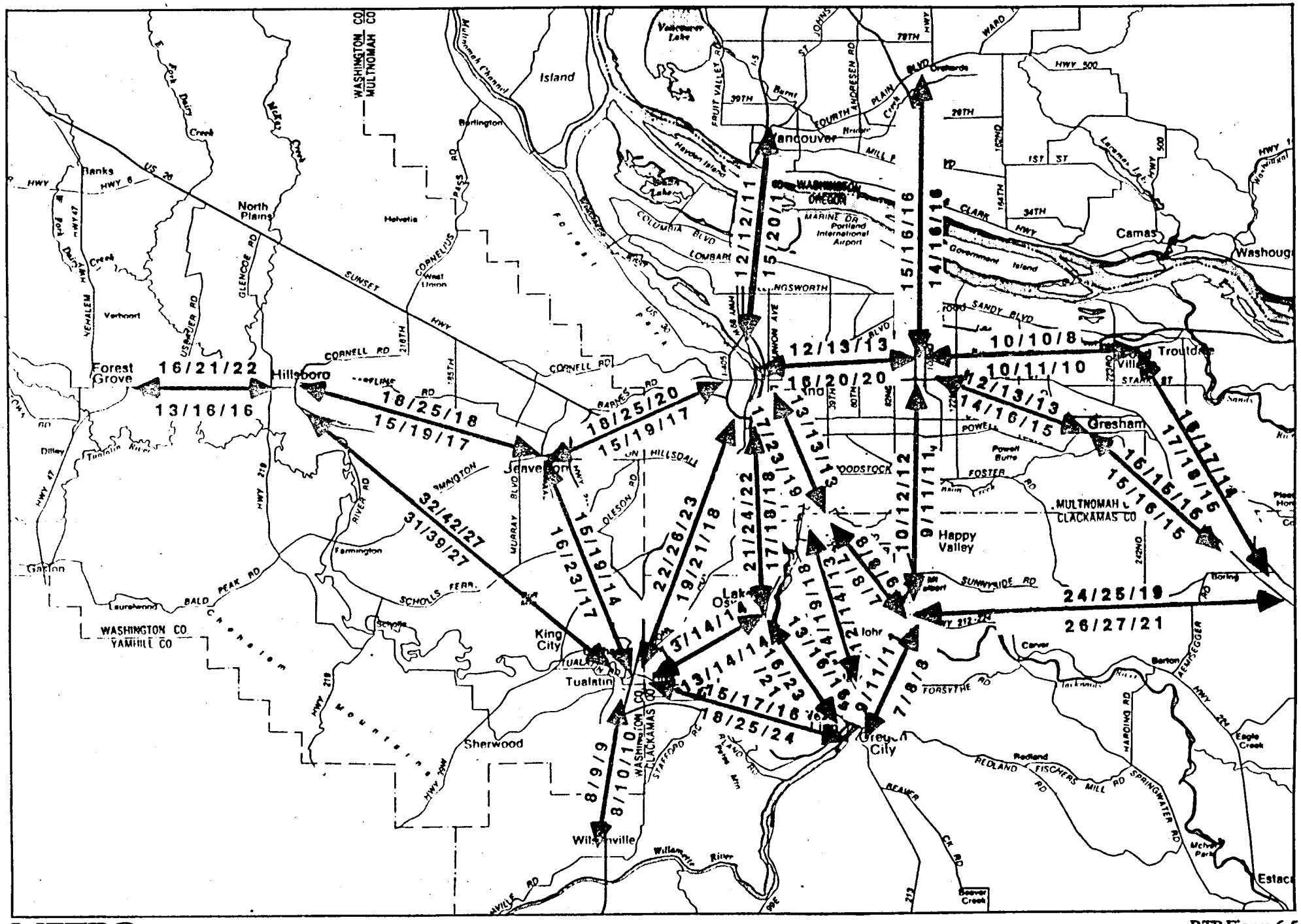
LANE MILES OF CONGESTION ON THE REGIONAL SYSTEM

(2005 RTP vs. Committed System)

	1987	%	2005 Comm.	%	Diff. 1987	2005 RTP	%	Diff. 2005 Comm.	1987
Freeways	12	2	73	12	+508%	24	4	-67%	+100%
Principal and Major Arterials	47	4	152	13	+223%	127	9	-16%	+170%
Minor Arterials	15	2	68	9	+353%	31	4	-54%	+107%
Regional System	74	3	293	11	+296%	182	6	-38%	+146%

Vehicle Hours of Delay

Year 2005 p.m. peak-hour vehicle hours of delay on the regional highway system are reduced by 35 percent (to 7,150) from the committed system (11,000) with the improvements called for in the RTP (Table 6-2). The most significant reduction is expected to occur on the major arterial system as increased capacity on the freeway and principal arterials will absorb some of the longer distance through trips back onto those facilities. In addition, the addition of significant transit capacity in the radial corridors with the



METRO

Comparison of Highway System Travel Times 2005
Committed – 2005 RTP

RTP Figure 6-5

89494

Sunset and McLoughlin LRT will remove vehicle trips from corridor facilities.

TABLE 6-2

VEHICLE HOURS OF DELAY ON THE REGIONAL HIGHWAY SYSTEM

(2005 RTP vs. Committed System)

Facility Type	2005 Committed	2005 RTP	Net Diff.	Percent Diff.	Percent Diff. 87
Freeways	5,300-	3,900	-1,400	-26%	+95%
Principal Arterials	1,450	1,150	-300	-21%	+283%
Major Arterials	3,450	1,500	-1,900	-57%	+150%
Minor Arterials	800	600	-200	-25%	+200%
Regional System	11,000	7,150	-3,850	-35%	+244%

Average Peak-Hour Speed

The improvements called for in the RTP provide a 17 percent increase in peak-hour speed on the regional highway system when compared to the year 2005 committed system (Table 6-3). This 34 mph average speed represents only a 6 percent decrease from 1987. The greatest degree of improvement provided by the RTP will occur on the freeway system which will be speeded up by 21 percent to an average of 40 mph during the peak hour. The principal and major arterial flows will improve by 10 percent and 12 percent, respectively, with the RTP improvements.

TABLE 6-3

AVERAGE PEAK-HOUR HIGHWAY SPEED ON THE REGIONAL SYSTEM

(2005 RTP vs. Committed System)

	1987	2005 Comm.	Diff. 1987	2005 RTP	Diff. Comm.	Diff. 1987
Freeways	44	33	-25%	40	+21%	-9%
Principal Arterials	36	30	-17%	33	+10%	-8%
Major Arterials	32	26	-19%	29	+12%	-9%
Minor Arterials	29	26	-10%	28	+8%	-3%
Regional System	36	29	-19%	34	+17%	-6%

Air Quality and Energy

The improvements to the transportation system recommended in the Plan will be consistent with the adopted ozone and carbon monoxide State Implementation Plans and reduce hydrocarbon and carbon-monoxide emissions over levels associated with the committed system. In addition, p.m. peak-hour energy consumption on the regional system will be reduced by 6 percent from committed levels (Table 6-4), although this still represents an increase over 1987 levels.

C. IMPACT OF THE ADOPTED PLAN ON EXPECTED YEAR 2005 GROWTH

Job Accessibility

The transportation system recommended in the Plan provides significantly greater job accessibility to the residents of the region than the committed system (Table 6-5). Substantial improvements in the number of jobs accessible within 30 minutes during the peak hour by the fastest mode are found in the Gresham (+65 percent), Gladstone (+73 percent), Hillsboro (+55 percent), Tualatin (+97 percent) and Rock Creek areas (+74 percent). In fact, with the exception of the Oregon City area (which experiences a 36 percent reduction), all the residential areas evaluated are expected to have greater job accessibility in the year 2005 than they have today, despite the enormous growth in travel demand on the transportation system.

The adopted Plan improvements provide a greater number of jobs accessible by transit to zones with high concentrations of low income households than either the committed system or current service levels.

Retail Market Accessibility

The size of the retail market available to the major regional retail centers by the year 2005 (Table 6-6) will be significantly increased by the adopted Plan investments when compared to the committed system. Substantial market-size improvements are expected to occur over current levels for all the centers, with a 60 percent increase for Tanasbourne, a 52 percent increase for Tualatin, and at least a 40 percent increase for the Oregon City, Washington Square, Beaverton and Gresham centers over today's markets.

Labor Force Accessibility

All regional employment centers can be expected to have improved labor force accessibility in 2005 with the RTP system compared to the committed system (Table 6-7).

TABLE 6-4

P.M. PEAK-HOUR FUEL CONSUMPTION ON REGIONAL SYSTEM

(2005 RTP vs. Committed System)

Speed Range (mph)	1987 VMT	Gal.	2005 Comm. VMT	Gal.	% Change	2005 RTP VMT	Gal.	% Change Comm.	% Change 1987
0-5	0	0	3,612	623		557	96	-548.9%	
5-10	1,197	101	11,089	939	+829%	3,770	319	-194.3%	+215.8
10-15	4,288	244	45,322	2,574	+955%	9,363	532	-383.8%	+118.0
15-20	20,091	874	105,868	4,605	+427%	52,251	2,273	-102.5%	+160.0
20-25	74,073	2,711	231,168	8,461	+212%	128,248	4,964	-70.4%	+83.1
25-30	135,723	4,452	244,699	8,026	+80%	212,646	6,975	-15.1%	+56.6
30-35	224,707	6,899	358,818	11,016	+59%	353,033	10,838	-1.6%	+57.0
35-40	152,121	4,503	177,033	5,240	+16%	265,848	7,869	33.4%	+74.7
40-45	147,745	4,373	188,761	5,587	+28%	242,822	7,188	22.2%	+64.3
45-50	139,519	4,227	168,797	5,115	+21%	158,518	4,803	-6.4%	+13.6
50-55	352,004	11,194	259,795	8,261	-26%	359,231	11,424	27.6%	+2.0
TOTAL	1,251,468	39,578	1,794,962	60,447	+53%	1,786,287	57,281	-6.0%	+44.7

TABLE 6-5

TOTAL NUMBER OF JOBS ACCESSIBLE IN PEAK HOUR
BY FASTEST MODE WITHIN 30 MINUTES
FROM SELECTED RESIDENTIAL AREAS - YEAR 2005

(Committed System vs. Recommended Plan)

Residential Center	2005 Committed	2005 Recommended Plan	Net Diff.	Percent Diff.	Percent Diff. 1987
St. Johns	657,050	744,550	+87,500	+13%	+35%
Northeast Portland	752,300	809,850	+57,550	+8%	+42%
Mt. Tabor	702,450	780,150	+77,700	+11%	+39%
Burlingame	704,100	774,550	+70,450	+10%	+40%
Gresham	254,550	418,950	+164,400	+65%	+41%
Gladstone	288,250	498,650	+210,400	+73%	+9%
Lake Oswego	419,100	550,150	+131,050	+31%	+22%
Tigard	475,300	605,950	+130,650	+77%	+35%
Tualatin	317,200	624,150	+306,950	+97%	+39%
South Beaverton	452,800	590,250	+137,450	+30%	+29%
Hillsboro	176,450	273,600	+97,150	+55%	+44%
Oregon City	124,450	138,300	+13,800	+11%	-36%
Milwaukie	612,050	661,700	+49,650	+8%	+29%
Rock Creek	304,050	536,050	+232,000	+76%	+24%

TABLE 6-6

RETAIL MARKET (POPULATION) WITHIN 15 MINUTES
BY FASTEST MODE IN THE OFF-PEAK
FROM MAJOR REGIONAL RETAIL CENTERS - YEAR 2005

(Committed System vs. Recommended Plan)

Retail Center	2005 Committed	2005 Recommended Plan	Net Diff.	Percent Diff.	Percent Diff. 1987
Portland CBD	666,700	673,300	+6,600	+1%	+12%
Mall 205/Gateway	639,800	718,550	+78,750	+12%	+26%
Lloyd Center	751,350	751,350	N/C	N/C	+15%
Gresham	249,350	249,450	+100	N/C	+40%
Beaverton	520,350	520,350	N/C	N/C	+40%
Washington Square	425,750	429,300	+3,550	+1%	+44%
Clackamas Town Center	482,850	489,700	+6,850	+1%	+20%
Jantzen Beach	522,600	522,600	N/C	N/C	+24%
Tanasbourne	290,950	298,550	+7,600	+3%	+60%
Tualatin	294,750	316,900	+22,150	+8%	+52%
Oregon City	166,550	166,550	N/C	N/C	+45%

TABLE 6-7

LABOR FORCE (POPULATION) ACCESSIBLE WITHIN
30 MINUTES BY FASTEST MODE IN THE A.M. PEAK HOUR
FROM REGIONAL EMPLOYMENT CENTERS

Employment Center	2005 Committed	2005 RTP	Net Diff.	Percent Diff.	Percent Diff. 87
Portland CBD	1,001,400	1,343,800	+342,400	+34%	+30%
Swan Island	942,500	1,224,550	+292,050	+30%	+25%
Columbia S. Shore	1,056,050	1,086,450	+30,450	+3%	+15%
Rivergate	486,400	632,700	+146,300	+30%	-3%
Macadam Corridor	1,020,400	1,233,450	+213,100	+21%	+18%
Sunrise Corridor	1,075,550	1,182,700	+107,150	+10%	+18%
Hillsboro	444,050	594,450	+150,400	+34%	+14%
Lloyd Center	1,078,700	1,344,650	+265,950	+25%	+28%
Wilsonville	424,700	625,650	+200,950	+47%	-5%
Beaverton	497,400	733,700	+236,300	+48%	+18%
Washington Square	685,800	854,750	+168,950	+25%	+10%
I-5/Kruse Way	803,250	969,150	+165,900	+21%	+9%
Tualatin	574,350	889,650	+315,300	+55%	+17%
Northwest Portland	856,400	1,152,150	+295,750	+35%	+17%
Portland International Airport	959,050	993,450	+34,400	+4%	+10%
Gresham	910,050	941,600	+31,550	+3%	+18%

Significant benefits occur for employees in Tualatin (+55 percent), Central Beaverton (+48 percent), Wilsonville (+47 percent), Northwest Portland (+35 percent), Hillsboro (+34 percent) and the Portland CBD (+34 percent).

Economic Development Benefits

Continued economic development in the region is expected to progress at a substantial rate in the long term (Chapter 2). Clearly, the ability of the region to fully realize the economic opportunities potentially available will depend, in large part, on the degree and convenience of access provided to these sites by the transportation system. The capacity constraints associated with the committed system (Chapter 3) could seriously limit the degree to which economic opportunities included in local comprehensive plans will develop by the year 2005. However, with the implementation of the improvements recommended in the Plan (Chapter 5), it is expected that adequate transportation capacity can be provided to allow the expanded development called for in local comprehensive plans to the year 2005, as well as maintain the attractiveness of the region for continued investment, residential location, and general "quality of life."

The remainder of this section examines the economic development benefits associated with specific transportation improvements on a sector-by-sector basis.

Northern Sector

Implementation of the transportation improvements recommended in the Plan will improve access and transit service to major industrial developments in the Northern Sector. The I-5 improvements will facilitate access to the Port of Portland's Swan Island industrial complex, the Mock's Bottom development and the Oregon Convention Center. In addition, highway investments to improve arterial facilities in the Northern Sector will supply sufficient transportation services to enhance full development of over 1,400 acres in the Rivergate industrial district.

Eastern Sector

Significant economic developments will benefit from access improvements provided by the recommended highway and transit investments in the Eastern Sector. Included among these are:

- the Central Eastside/Produce Row developments, representing over 10,000 jobs, which will have improved access resulting from the Water Avenue ramp connection to I-5 and other I-5 improvements;

- the Union/Grand Eastside core area, which will experience reduced congestion through the McLoughlin Boulevard ramp connections to I-5 and improved transit service;

- increased access from transit service improvements and the Banfield LRT, as well as the I-5 improvements, which will enhance developments in the Oregon Convention Center/ Coliseum/Lloyd Center area;

- the construction of Airport Way, which will significantly improve access to the Columbia South Shore industrial area; and

- improvements to I-84 and the Gresham Parkway in Gresham, which are essential to provide adequate access to several major developments in the area.

Southern Sector

Economic development opportunities in the Southern Sector that will directly benefit from the recommended transportation improvements are:

- Clackamas Town Center (CTC) area, which will experience improved access as a result of major transit service improvements (McLoughlin LRT, I-205 LRT, and a transit center and park-and-ride lot at the CTC), highway investments on McLoughlin Boulevard, 82nd Avenue, Sunnyside Road and two new I-205 interchanges; and

- increased access to the Clackamas industrial area through improvements to the Sunrise Corridor, the construction of an industrial access road south of the development; and improvements to 82nd Drive and Evelyn Street connecting the area to the Gladstone/I-205 interchange.

Southwestern Sector

Several recommended transportation investments directly affect economic developments in the Southwestern Sector:

- improvements to I-5 South, Boones Ferry Road and Nyberg Road will increase access to 700 industrial acres and two major industrial parks in Tualatin, as well as relieve congestion in the downtown core and improve freeway access to jobs in the Tigard industrial area;

- transit improvements such as trunk routes along I-5 South and Highway 217/Kruse Way and transit centers in

Tigard and Lake Oswego will provide increased service levels and connectivity to commercial/office developments in Tigard, Tualatin, Kruse Way and Lake Oswego; and

- the new Tualatin-Hillsboro Corridor facility and improvements to Highway 217 will provide increased access between rapidly growing portions of Washington County.

Western Sector

Significant economic development opportunities can be realized in the Western Sector as a result of the recommended transportation investments:

- the provision of an urban highway infrastructure in Central Washington County will allow the development contained in the comprehensive plan to occur in an orderly and timely manner;

- improvements to the Beaverton-Hillsdale Highway, Farmington Road and Highway 217 will ease congestion throughout downtown Beaverton, allowing improved access to core area developments;

- improvements to the Tualatin Valley Highway and Cornell Road will provide increased access to the region's second largest airport (Hillsboro);

- major LRT investments in the corridor and transit stations in the Peterkort, Beaverton, Sylvan, Raleigh Hills and Tanasbourne areas will provide increased transit access to concentrated suburban employment/commercial activities, and, in conjunction with highway projects on the Sunset Highway and the Beaverton-Hillsdale Highway, provide increased radial access between Portland and Washington County; and

- the new facility in the Tualatin-Hillsboro corridor and improvements to Highway 217 will provide greater north/south mobility connecting developing areas in the Southwestern and Western sectors.

Northwestern Sector

The extension of the Transit Mall will provide increased access to development north of Burnside and the completion of arterial improvements will provide increased access to the base of existing jobs and other employment developments planned for the area.

Downtown Portland Sector

With no constraints on development due to inadequate transportation capacity, employment in the downtown Portland sector is expected to grow by 56 percent (+46,000 jobs) by the year 2005 (Chapter 2). The recommended transportation investments in: 1) the radial highway corridors (Sunset Highway widening, freeway ramp metering, McLoughlin Boulevard improvements, Barbur and I-5 improvements, I-5 North improvements); 2) increased transit capacity (Banfield LRT, Sunset LRT, McLoughlin LRT, Mall LRT, transit mall extension); and 3) demand management programs will provide the needed balance of capacity to allow the downtown to develop to forecast levels -- reducing the number of peak-hour vehicles into and out of the CBD by 24 percent over committed system levels -- and not choke the core area with automobile congestion (Table 6-8).

TABLE 6-8

VEHICLES EXITING PORTLAND CBD P.M. PEAK HOUR

(2005 RTP vs. Committed)

Trip Type	2005 Committed	2005 RTP	% Diff. Committed	% Diff. 1987
Home-Based Work	11,200	8,500	-24%	-2%
Home-Based Other	3,500	2,650	-24%	-13%
Non-Home-Based	6,800	5,150	-24%	+20%
Commercial and External	1,400	1,050	-25%	+23%
Total	22,900	17,350	-24%	+3%

Chapter Seven

Cost and Financial Analysis

CHAPTER 7

COST AND FINANCIAL ANALYSIS

A. REGIONAL HIGHWAY SYSTEM CAPITAL COSTS/REVENUES

1. Overview

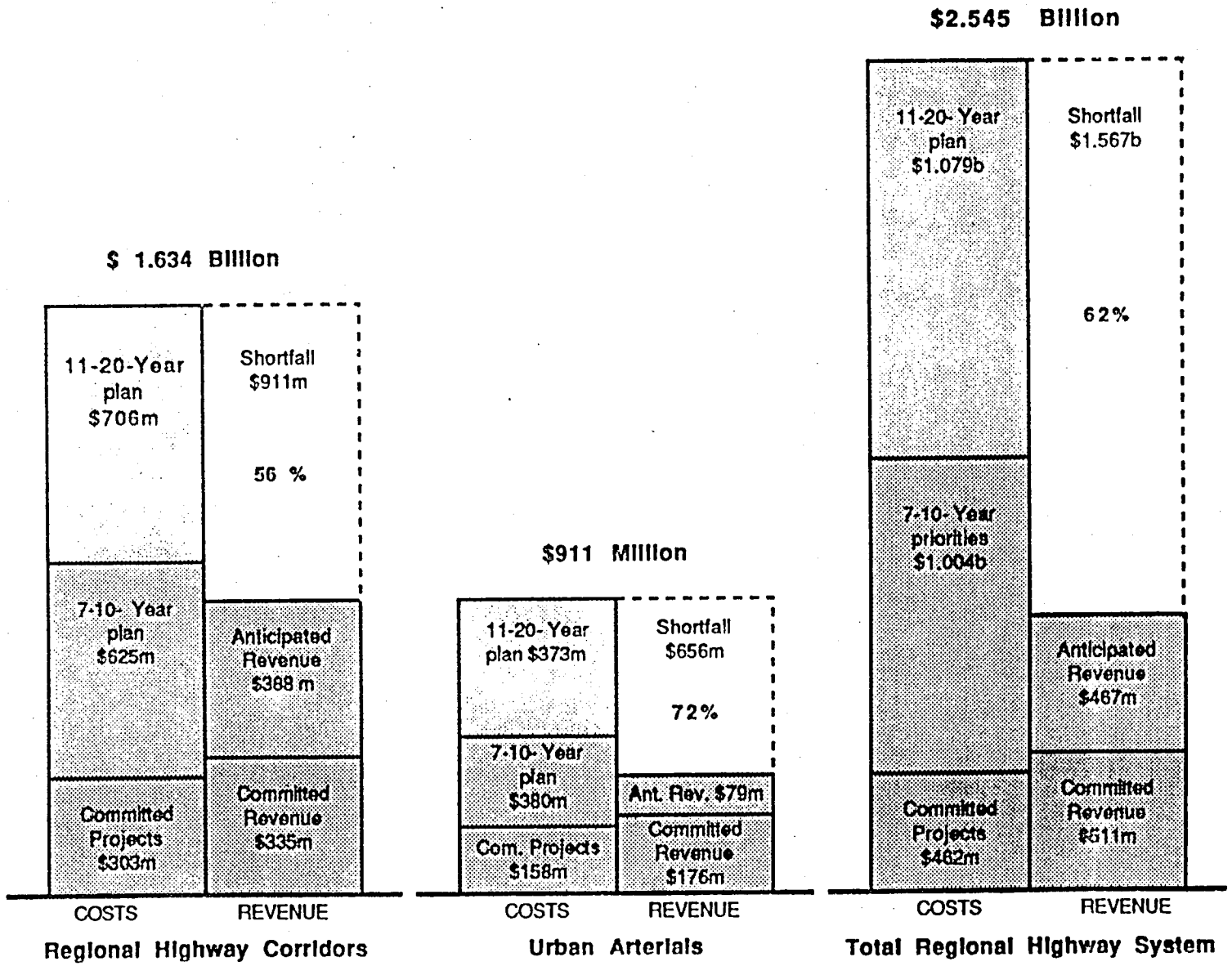
The highway projects recommended in this Plan have been developed within the policy framework of making the most efficient use of the existing highway system. This policy of developing cost-effective highway projects combined with a commitment to significant increases in transit service and demand management programs embodied in this Plan:

- provides adequate service levels on the region's major arterial system;
- protects the significant past investments in the regional highway system; and
- reduces as much as practical the amount of new capital investment necessary to meet the region's travel needs.

A major portion of the new capital costs associated with the highway improvements recommended in the Plan (Chapter 5) are a result of the need to provide an infrastructure in the rapidly developing growth areas of the region. The remaining portion is required to accommodate the continued growth of travel in the built-up portions of the region and to alleviate currently congested conditions on major facilities.

The 20-Year Plan

The Regional Transportation Plan identifies over $2.545 billion (assuming a 4 percent annual inflation rate) in capital improvements necessary on the region's highway system over the next 20 years (Figure 7-1). Of this total, nearly two-thirds, or $1.634 billion, is needed for improvements in the major regional highway corridors (see Chapter 5), and $911 million (36 percent) on the region's urban arterial system. Committed and anticipated capital funding that the region can reasonably expect from existing resources will amount to $978 million, leaving a shortfall of $1.567 billion, or over 60 percent of the 20-year highway capital improvement program. By category, 58 percent



METRO

Highway Capital Cost/Revenue Summary: 20-Year Plan

RTP Figure 7-1

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($911 million) of the shortfall is attributable to projects needed in the major regional highway corridors (based on a 20-year revenue estimate of $723 million) and $656 million (42 percent of the total shortfall) is associated with the region's urban arterials (based on a revenue estimate of $255 million for the next 20 years).

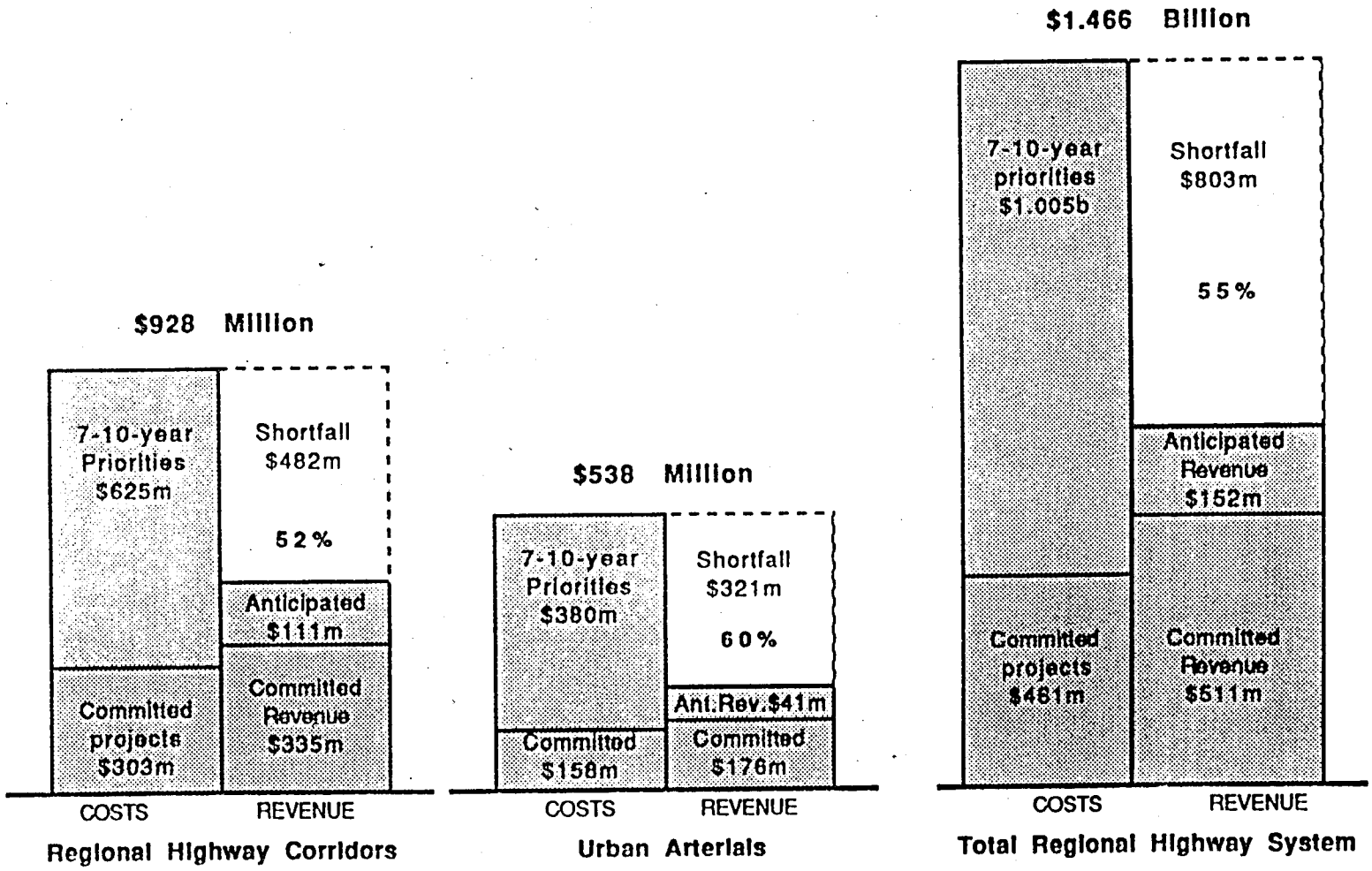
10-Year Priorities

In order to effectively focus the significant challenge facing the region in terms of the enormity of the financial resources needed to implement the capital improvements called for in this Plan, JPACT has adopted a package of capital improvements for both the major regional corridors and urban arterial systems as priorities for construction in the next 10 years (see Chapter 5). This 10-year priority program calls for a total of $1.466 billion in investments in the region's highway system over the next decade (Figure 7-2). Of this total, $928 million (63 percent) is required for projects in the major regional highway corridors and $538 million (47 percent) for improvements to the urban arterials in the region. Toward this need, the region can reasonably expect about $663 million in committed and anticipated capital revenues from existing sources. This revenue stream leaves a shortfall of $803 million, or 55 percent of the 10-year priority program, to be developed through increases in existing funding source levels or the establishment of new revenue mechanisms. Of the total shortfall, $482 million (60 percent) is attributable to projects needed in the major regional highway corridors (based on a revenue projection of $446 million), and $321 million (40 percent) on the region's urban arterial system (based on committed and expected revenues of $217 million).

2. Regional Highway Corridors

20-Year Plan

The total 20-year capital costs associated with the Plan improvements recommended for the Regional Highway Corridors (Figure 7-3) are expected to amount to over $1.6 billion. Of this total, about 58 percent ($940 million) will be for improvements to the region's Interstate system. The remaining 42 percent ($694 million) will be needed for projects on the other major corridors of regional significance (Sunset Highway, Highway 217, Sunrise Corridor, Tualatin-Hillsboro Corridor, U.S. 26, McLoughlin Boulevard, and Highway 99W). Of this overall need, the region can



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Highway Capital Cost/Revenue Summary: 10 - Year Plan

RTP Figure 7-2

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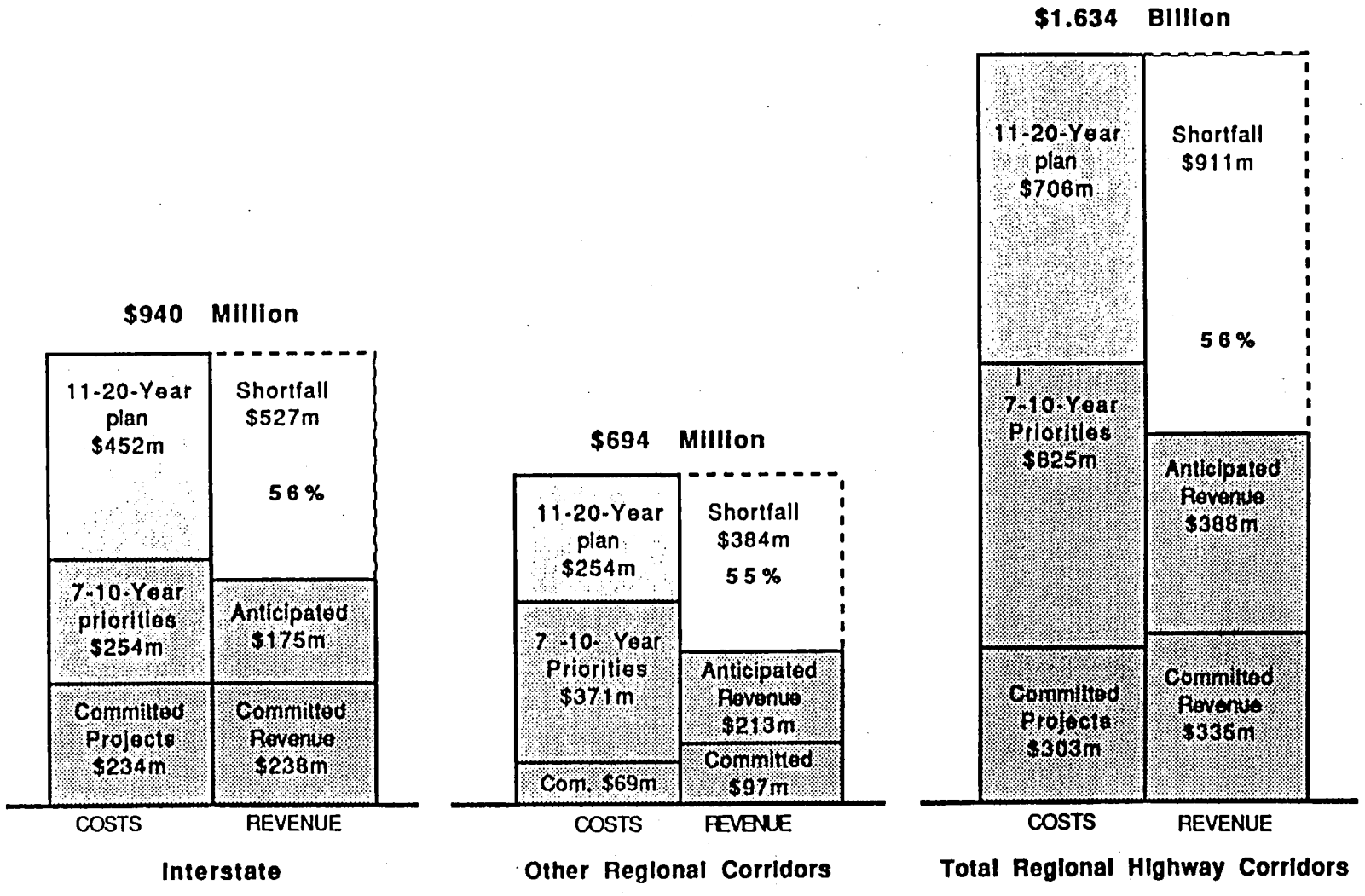

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Regional Highway Corridor
Capital Cost/Revenue Summary: 20-Year Plan

RTP Figure 7-3

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reasonably expect to be able to pay for about 44 percent ($723 million) of the total from existing and anticipated capital resources. The unfunded portion of the 20-year Regional Highway Corridor program (56 percent or $911 million) will have to be developed from either increased levels of funding from existing resources or new sources of revenue. Of this shortfall, about 58 percent (or $526 million) is attributable to improvements needed on the region's Interstate Freeway system (based on a 20-year revenue estimate of $414 million) and $385 million, or 42 percent (based on revenues of $309 million), is associated with projects required in the other major corridors of regional significance.

10-Year Priorities

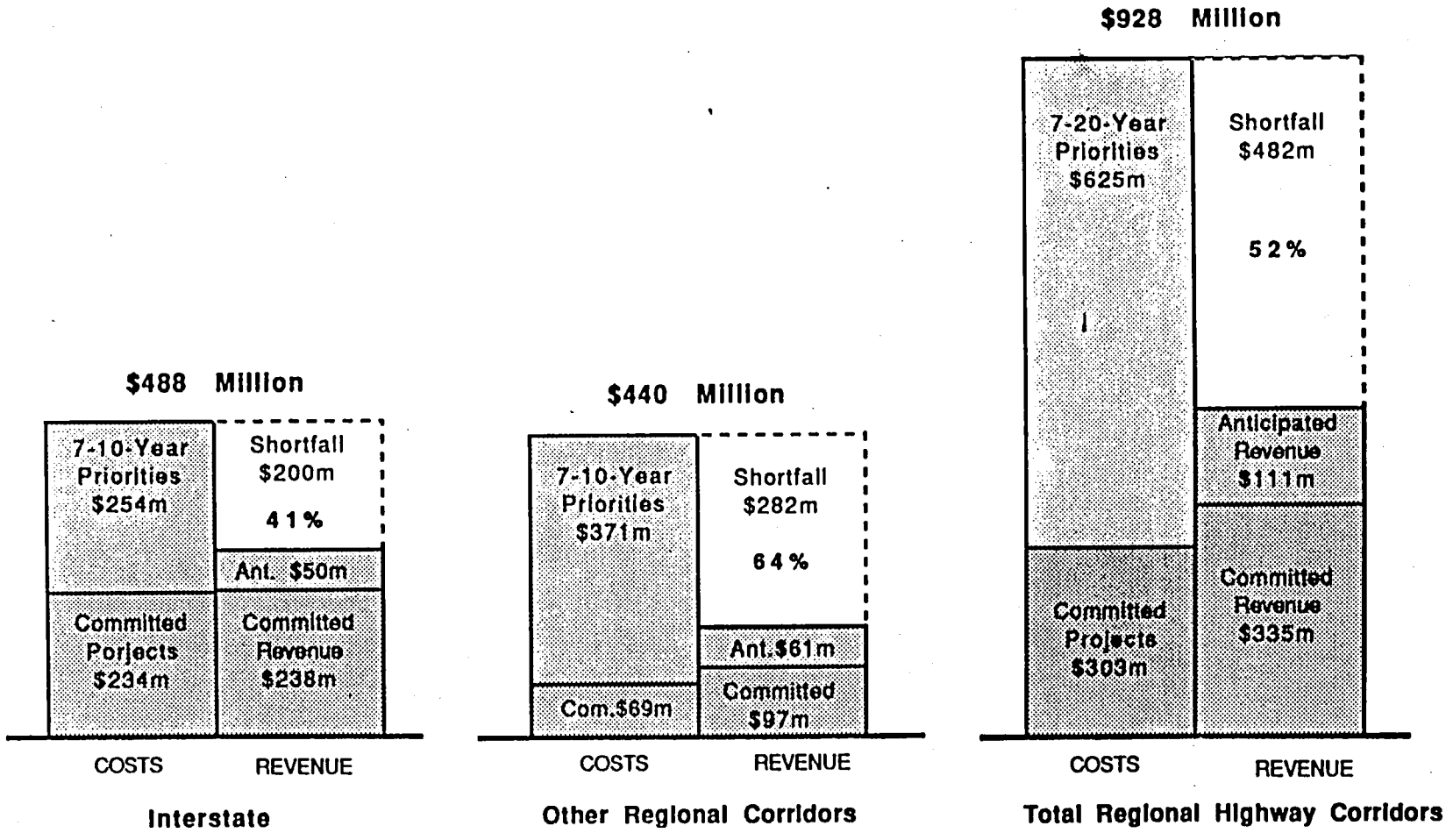
JPACT has adopted a package of capital improvements in the major regional highway corridors as being priorities for implementation in the next 10 years (see Chapter 5). The total cost associated with these projects is estimated to be $928 million (Figure 7-4). Of this total, nearly 53 percent ($489 million) will be required to improve the region's Interstate Freeway system, and $439 million (47 percent) will be needed for projects in the other major highway corridors of regional significance.

To address these combined needs, the region can reasonably expect a total of $446 million (48 percent of the required funds) to come from currently committed and anticipated transportation-related capital revenue sources. This level of funding would leave the region with a $482 million (53 percent) shortfall in the Regional Highway Corridor 10-Year Priority program. This shortfall is comprised of slightly over $200 million in unfunded Interstate needs (based on $288 million in committed and anticipated revenue) and $282 million in unfunded improvements (based on a $156 million revenue estimate) in the other major highway corridors of regional significance.

3. Urban Arterials

20-Year Plan

The total 20-year capital costs associated with the Plan improvements recommended for the region's urban arterial system (Figure 7-5) are expected to amount to approximately $911 million (assuming an annual inflation rate of 4 percent). Of this total, about 43 percent, or $388 million is needed for improvements to



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Regional Highway Corridor Capital Cost/ Revenue Summary : 10 - Year Priorities

RTP Figure 7-4

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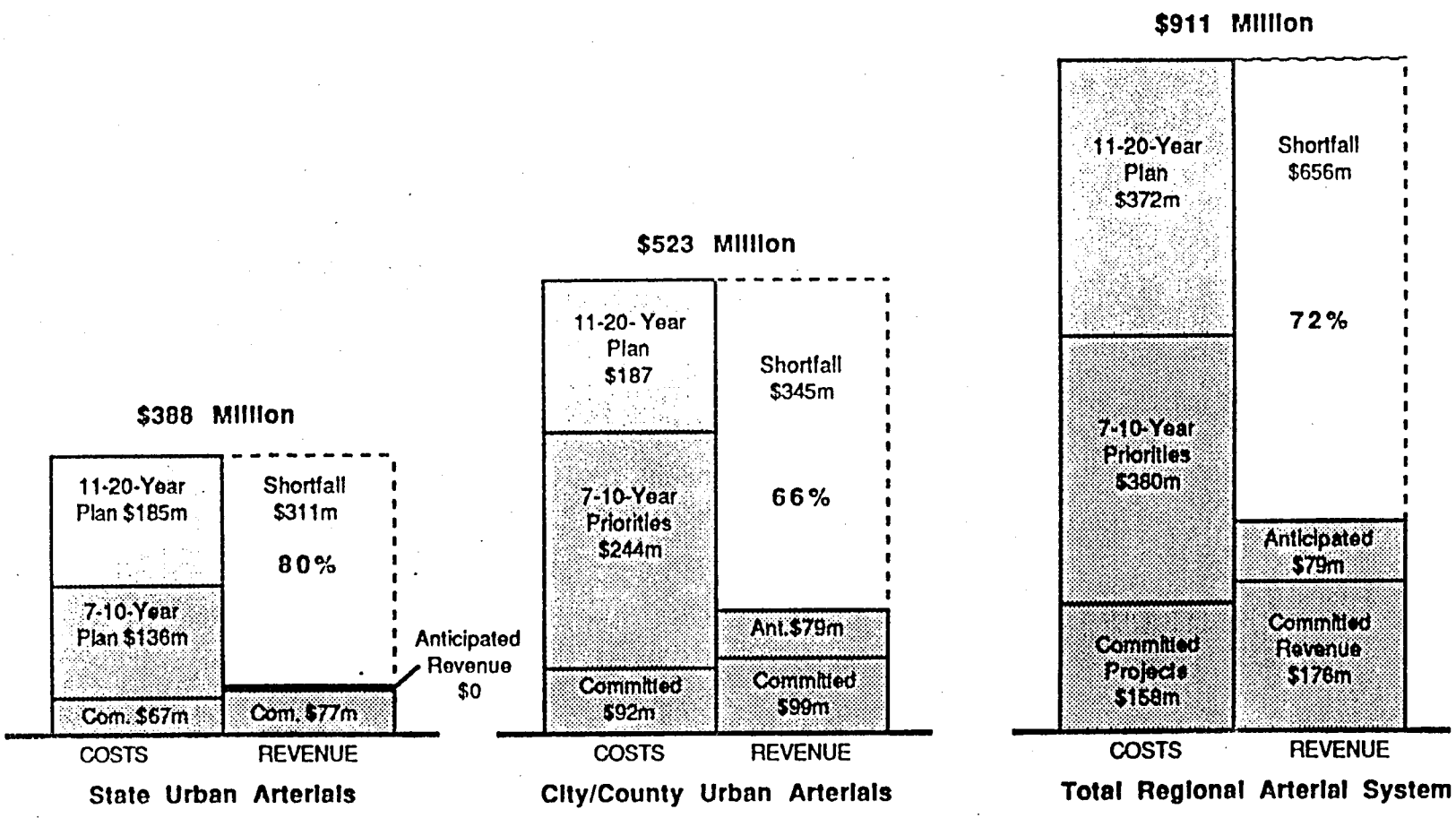

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Regional Urban Arterial System Capital Cost/ Revenue Summary : 20 - Year Plan

RTP Figure 7-5

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state-owned urban arterials within the region, and $523 million (57 percent) is required to improve arterials under the jurisdictions of the cities and counties. Of this total need, the region can reasonably expect to fund only about 28 percent of the necessary improvements, based on a 20-year revenue estimate for urban arterials of $255 million. This committed and anticipated revenue stream leaves a funding shortfall of $656 million (72 percent of the 20-year urban arterial program) to be made up from increases in revenues from existing resources or the development of new funding sources. Forty-seven percent ($311 million) of the 20-year shortfall is attributable to needed improvements on state-owned arterials.

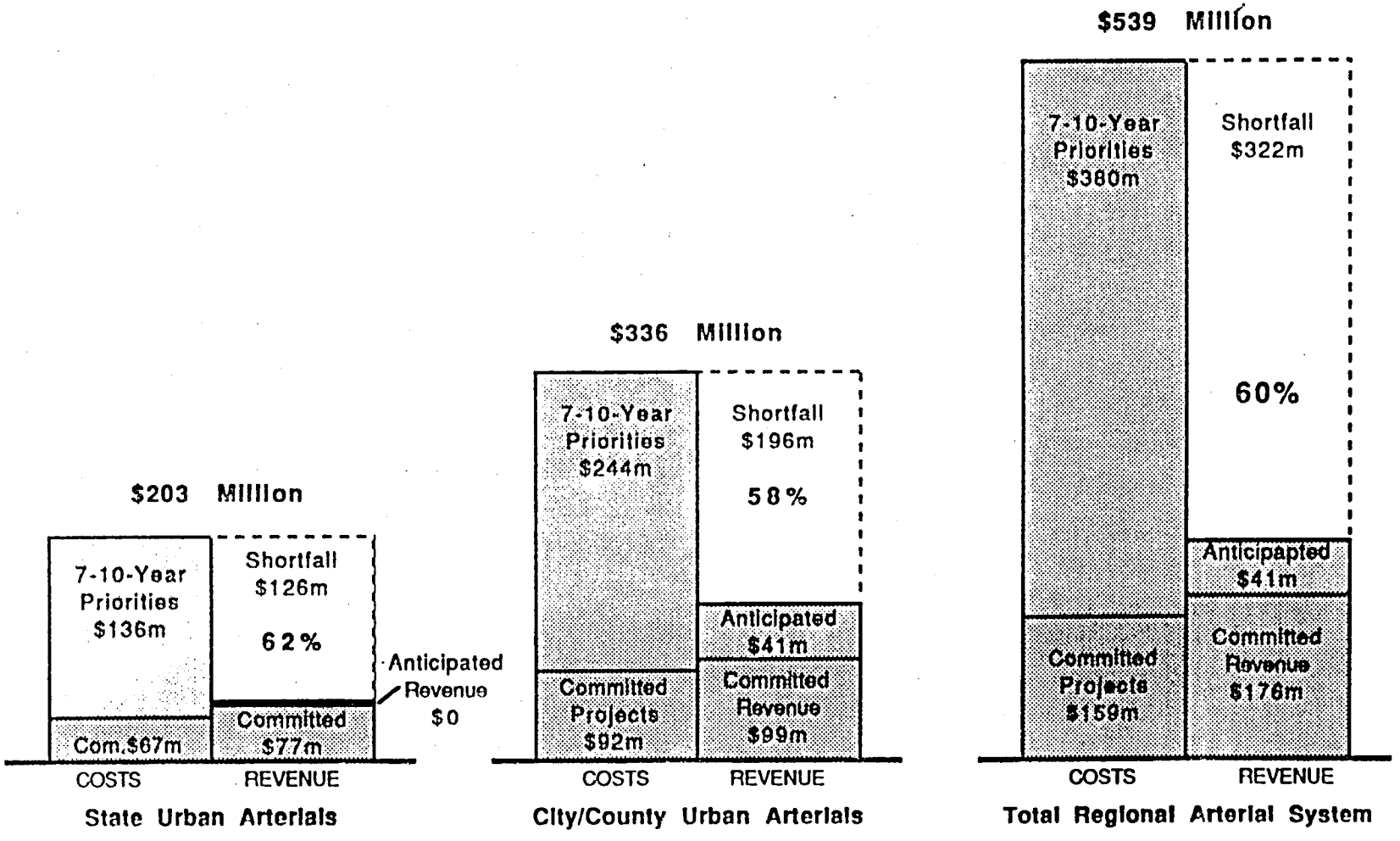
The remaining $345 million (53 percent) shortfall is associated with city- and county-owned arterials in the urban areas.

10-Year Priorities

JPACT has adopted a package of improvements to the region's urban arterial system as being priorities for implementation in the next 10 years (see Chapter 5). The total capital cost associated with these priorities is estimated at approximately $539 million (Figure 7-6). Of this amount, 38 percent or $203 million is for improvements to state-owned arterials and $336 million (62 percent) is for projects on urban arterials under the jurisdiction of the region's cities and counties. In the 10-year period, the region can reasonably expect a total of $217 million in committed and anticipated funding for urban arterial improvements. This leaves a shortfall of $322 million, or nearly 60 percent of the revenue required to implement the 10-year priorities, to be generated from increases in existing resources or the development of new funding mechanisms. Of this total shortfall, $126 million (39 percent) is attributable to state-owned urban arterials and $196 million (61 percent) to arterials in the urban areas of the region's cities and counties.

4. Conclusion

If the region is to implement the improvements called for in this Plan, it is obvious that steps to increase revenues must be taken. First, the region must aggressively seek congressional action to increase federal funding availability. Second, the region should seek increases in the state funding available for regional highway corridors. Finally, the region should pursue a



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Regional Urban Arterial System Capital Cost/ Revenue Summary; 10-Year Priorities

Figure 7-6

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program to increase the amount of local funds available for arterial improvements.

B. HIGHWAY SYSTEM OPERATIONS, MAINTENANCE AND PRESERVATION COSTS/REVENUES

1. Overview

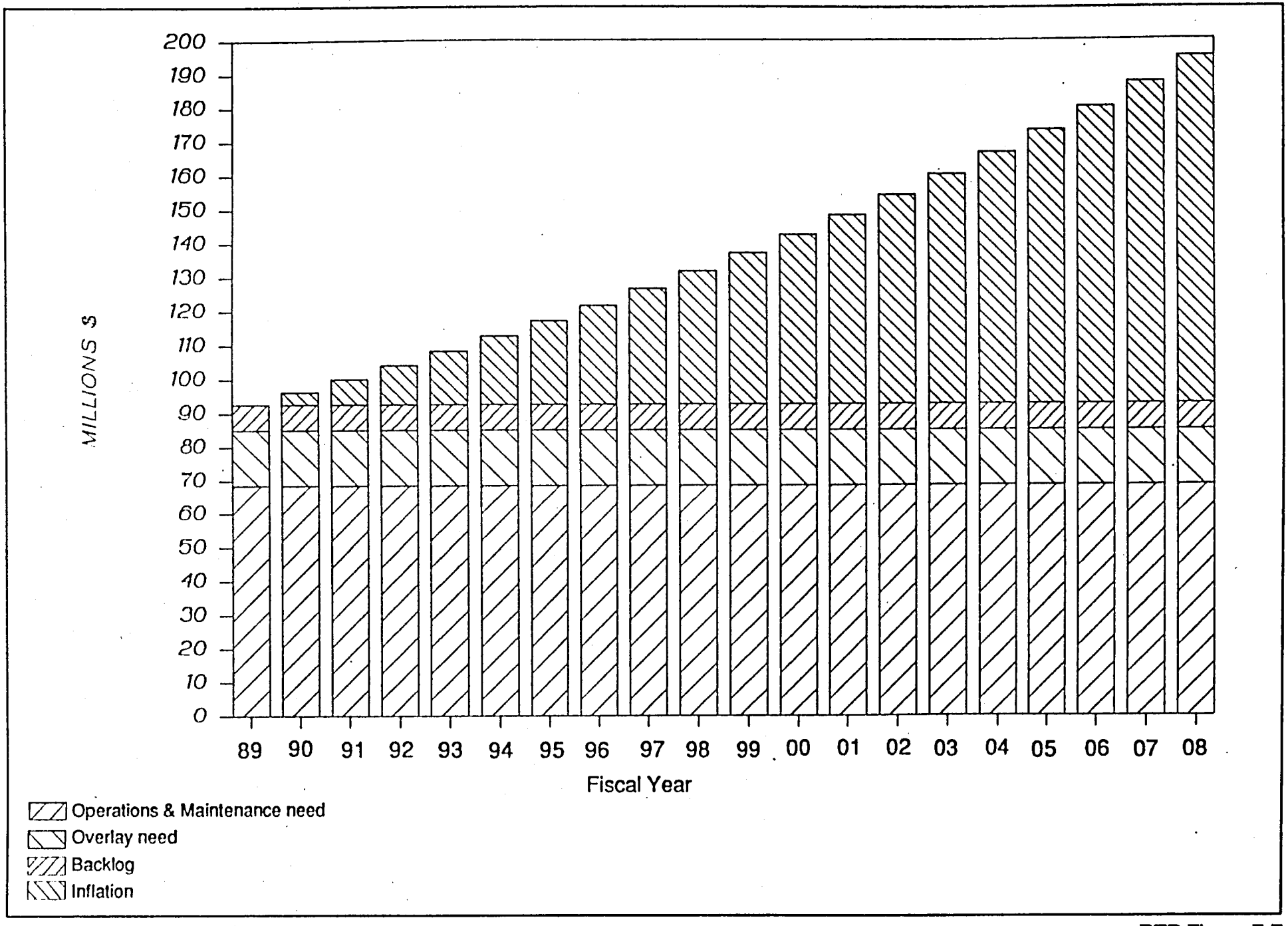
In addition to the capital costs described in the preceding section, the region must protect the enormous past investments in the highway system with an ongoing program of maintenance and preservation of the existing facilities. If the activities do not occur on a timely basis, the facilities deteriorate and then require a much more costly capital investment to bring them up to acceptable service standards. An adequate maintenance and preservation program is a prudent investment to prolong the life of facilities already in place and paid for, thereby minimizing the need for capital-intensive reconstruction expenditures.

2. Costs

Cost estimates (Figure 7-7) were derived from a variety of sources including the Oregon Roads Finance Study (1986) and individual city and county reportage. They include a 4 percent per annum inflation rate based on a 1986 base of $92.6 million per year. This amount represents the estimated costs associated with operations and maintenance activities, "backlog" repairs to bring the facilities suffering from deferred maintenance up to acceptable service standards over the 20-year period, and an annual overlay program. It should be noted that these estimates reflect only those costs associated with facilities owned by the three counties (Washington, Multnomah, and Clackamas) and the cities within Metro's Urban Growth Boundary (UGB). State-owned facilities under the jurisdiction of the Oregon Department of Transportation (ODOT) are not included in the analysis.

3. Revenues

Revenue estimates of funds available for city/county operations, maintenance and preservation activities for the 20-year period are depicted in Figure 7-8. These estimates include city/county shares of the statewide gas tax, local county gas taxes in Washington (1¢) and Multnomah (3¢) counties, and other local sources of funds, such as forestry receipts, parking meter revenue, etc. As can be seen in the figure, annual revenue available in the current year totals about $65 million.



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1989 - 2008: City/County Operation, Maintenance and Preservation Costs

RTP Figure 7-7

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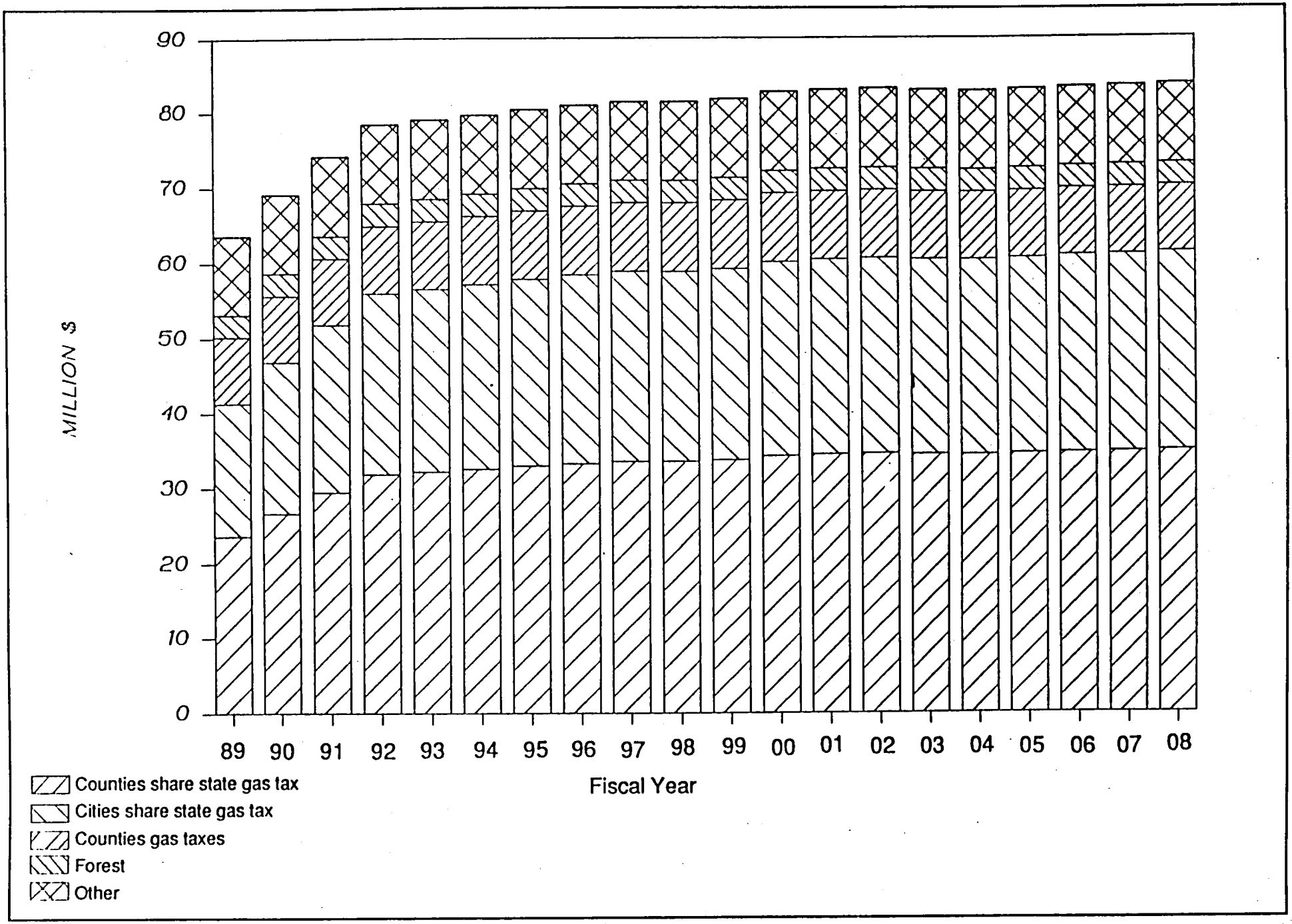

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1989 - 2008: City/County Operation, Maintenance and Preservation Revenues

RTP Figure 7-8

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This rises to about $80 million per year in 1991 as a result of the continued phase-in of the adopted state gas tax increases. Beyond that year, revenues will tend to level off as gasoline consumption is not anticipated to rise (more mileage traveled, but in more fuel-efficient vehicles).

4. Shortfall

A summary of the operations, maintenance and preservation costs/revenues (Figure 7-9) shows that, region-wide, revenues over time begin to approach the constant dollar (FY 1989) need of $92.6 million. Without the development of new or more elastic funding sources, however, inflation (at whatever rate) will produce a continually widening gap between the ability of the region to perform these activities and the need required by an aging facility system. As shown in the following table, the shortfall will nearly double over the near (10-year) term, from $29 million annually today, to $33 million annually in five years and to $55 million annually by 10 years.

Table 7-1

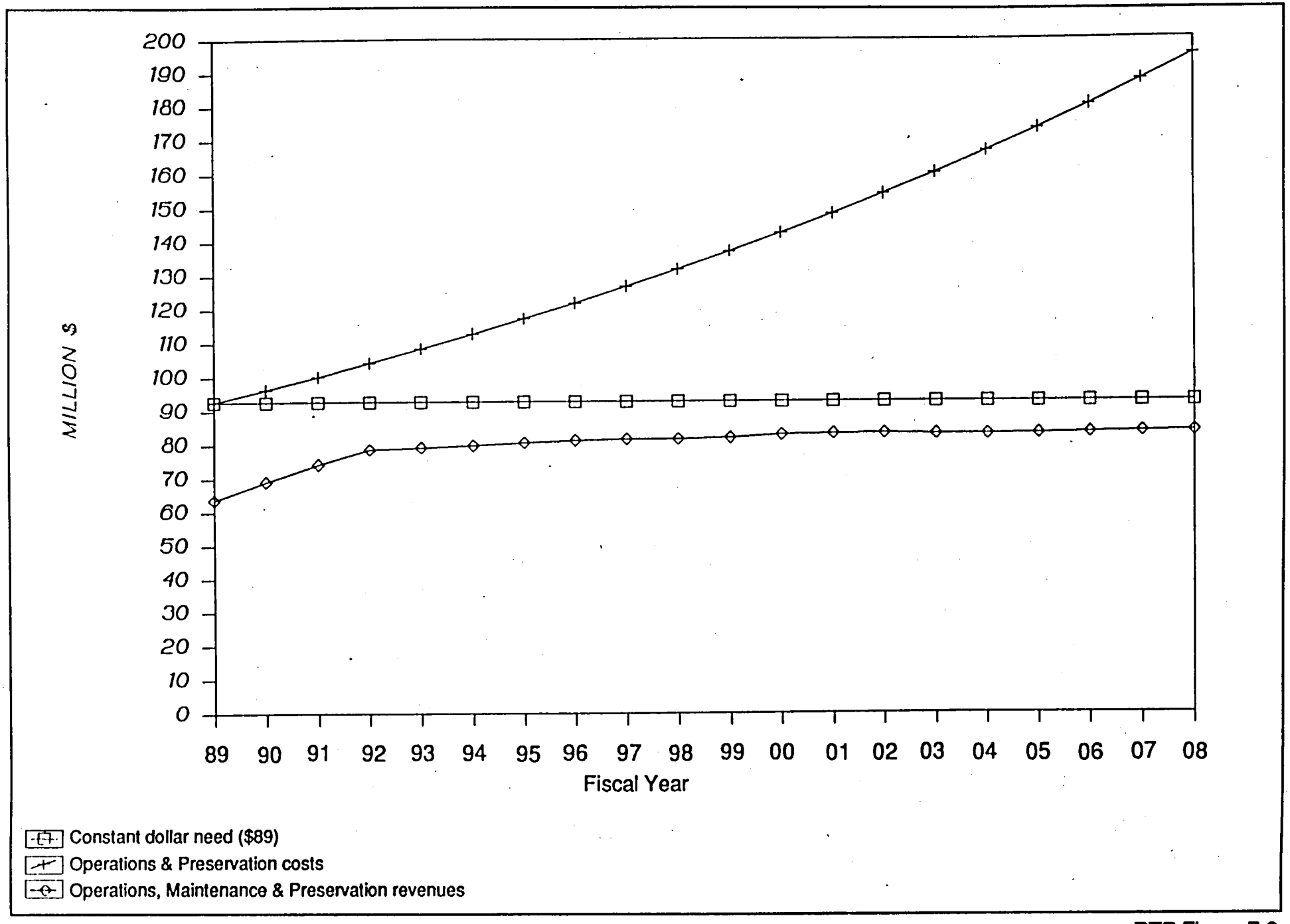
OPERATIONS, MAINTENANCE AND PRESERVATION
COST/REVENUE COMPARISON

City/County Annual Needs	$92.6 m.	$112.6 m.	$137 m.
Funds Available	63.6	79.7	81.8
Shortfall	$29 m./yr.	$ 33 m./yr.	$ 55 m./yr.

C. TRANSIT SYSTEM COSTS/REVENUES

1. Overview

The primary objectives for transit in the RTP are to provide transit service throughout the urbanized portion of the metropolitan area and to provide a quality of transit service that is reasonably comparable to alternative modes of travel. Increased reliance on transit is an important aspect of the adopted Plan and allows the region to achieve identified accessibility and mobility goals within the identified cost and environmental constraints. This increased transit role will require new capital investments in transit facilities as well as assurances that the region will be financially capable of operating a more extensive transit system.



METRO

1989 - 2008: City/County Operation, Maintenance and Preservation Revenue Comparison

RTP Figure 7-9

88484

Cost/revenue projections for the transit system are shown in Figure 7-10. Tri-Met currently operates 29,300 weekly platform hours of transit service in the region at a cost of $72.5 million. In 1987 $8.5 million was required for capital expenditures (bus replacements, transit centers, parts, etc.), combining to produce a total annual cost of $81 million for the transit system. In order to implement the transit system identified in this Plan, Tri-Met would provide 48,000 weekly platform hours of service by 2005. This 64 percent increase in service will produce an increase in operations costs to $123.6 million-$130.2 million per year (depending on the number of LRT lines). Local funds required for capital needs (including annualized local LRT match) are expected to be $8.7 million in 2005, about the same as today.

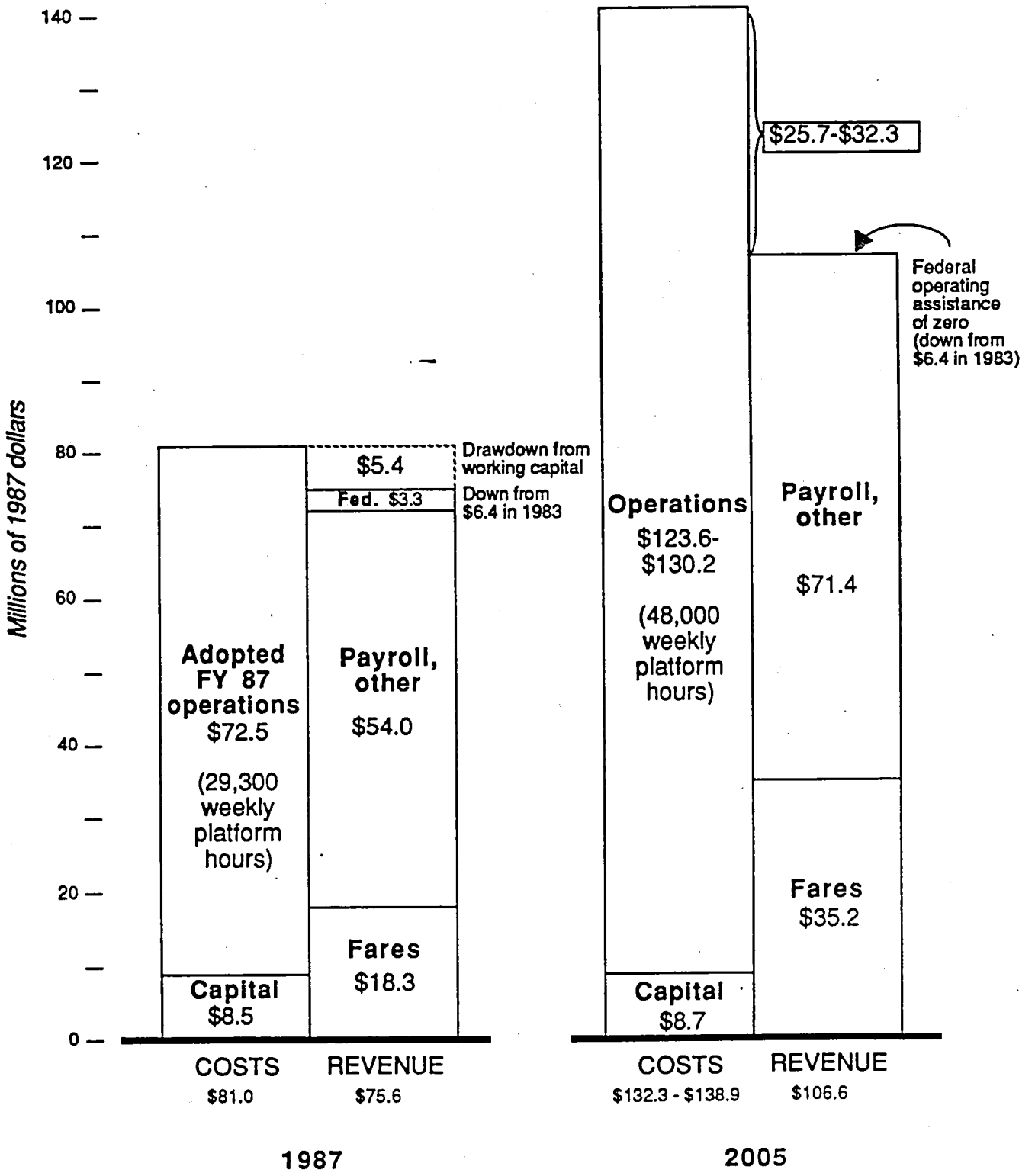
Revenues for the transit system are expected to rise by over 40 percent from 1987 to 2005, from a total of $75.6 million to $106.6 million. Fare revenues are expected to nearly double, however, from $18.3 million in 1987 to $35.2 million in 2005 as a result of increases in ridership.

A lesser rate of increase in income from the payroll tax (+32 percent) and a complete phase-out of federal operating assistance will produce a shortfall of $25.7-$32.3 million in 2005 -- a three-fold increase from the 1987 level of $5.4 million (which was covered by a drawdown from Tri-Met's working capital).

2. Evaluation

Present analysis indicates that the region should be able to increase the present level of transit service by approximately 15 percent into the future without requiring a new revenue source for transit operations. However, the small service base of the minimal growth system would result in severe impacts on mobility and accessibility, which potentially could hinder the region's economic development objectives and would change the magnitude of highway improvements required to achieve the goals of the Plan.

The adopted Plan calls for a significant expansion of the transit system's role in serving travel demand in the region. Transit ridership is projected to increase by 90 percent over today's levels, while overall travel demand increases by only 40 percent. Although a major increase in transit service is necessary to accommodate the increased ridership, productivity gains are anticipated to account for much of the improvement in service. Through a much greater reliance on articulated buses and light rail vehicles, the 90 percent increase in transit patronage will be served with only a 40 percent increase in the size of the fleet and at an operating cost



METRO *1987-2005: Transit Cost/Revenue Projections* RTP Figure 7-10

Millions of 1987 dollars

increase of 60-70 percent, depending on the amount of off-peak and weekend service provided.

As a result, farebox revenue will provide approximately one-half of the transit system's operating cost in the year 2005, rather than only one-quarter as is currently the case. However, even with these significant productivity and farebox revenue gains, additional revenues will be necessary to build and operate the recommended system expansion.

If the region intends to implement the recommended transportation plan, it is apparent that several steps must be taken to increase transit funding. First, the region must aggressively seek congressional action to assure the continuance of federal capital grants, argue against the phasing out of federal operating assistance and ensure a continuance of state matching funds for federal capital grants. Secondly, the region must be prepared to accept an increased reliance on local funding sources in order to construct and operate the recommended transit system. Failure to secure the necessary funding to expand the transit system would require a reexamination of the RTP to expand the recommended highway system or a reexamination of land use plans to reduce planned levels of development.

D. REGIONAL BICYCLE SYSTEM COSTS/REVENUES

1. Overview

Implementation of proposed bicycle routes in this region is contingent primarily on the amount of funding available and the manner in which priority projects are determined. The predominant funding source for the construction of bicycle facilities in the Portland region is revenue derived from the 1 percent of state gas tax receipts which are allocated to a statewide bicycle fund. The region then competes with other communities from throughout the state for funding for specific projects.

Since 1983, when the Regional Bicycle Plan was adopted, cities and counties in the Metropolitan Service District have worked cooperatively to seek funding from the state bicycle fund. This process has worked well and has enabled the region to move significantly forward towards meeting its bicycling objectives.

This chapter describes all the existing sources of funds available for bicycle projects, describes the methodology used for allocating these funds in an efficient and equitable manner, and discusses the importance of securing additional funds to hasten facilities development.

2. Background

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

Concerned citizens felt this issue to be important enough to warrant legislative action. As a result, the Oregon Legislature enacted what became known as the "Bicycle Bill." This 1971 legislation mandated the expenditure of not less than 1 percent of the State Highway Fund (gasoline tax revenues) received each year by the state or by any city or county for the establishment of bicycle trails and footpaths.

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

The success of that legislation, together with the comprehensive bicycling development effort that emerged from it, resulted in the completion of over 70 miles of bicycle routes throughout the region, representing an investment of over $6.5 million from 1973 to 1983. Since Metro's Regional Bicycle Plan was adopted, another 70 miles of bicycle routes have been constructed.

3. Funding Sources

There are presently two major sources of funds available for bicycle projects in this region: Federal Highway Trust Funds and Oregon Gasoline Tax Revenues, which are described below. In addition to these major sources, local jurisdictions often supplement them with resources from their own general fund.

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

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

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

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

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

1) Cities and Counties Portion

Cities and counties are required to spend not less than 1 percent of their State Highway Fund monies for the establishment of footpaths and bikeways.

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

- Administrative and personnel costs of bicycle programs
- Preliminary engineering costs of bikeways
- Construction and right-of-way costs for bikeway/footpath facilities within highway right-of-way
- Auxiliary facilities such as signs, curb cuts, ramps and parking
- Maintenance of existing bikeways/footpaths
- Development and printing of bicycle route maps and brochures

2) State's Portion

The state is required to spend not less than 1 percent of total gasoline tax revenues on bicycle and pedestrian projects under the following system of priorities:

Priority One

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

Priority Two

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

Priority Three

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

Priority Four

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

4. Cost of Building the Regional System

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

Each link of the regional bicycle route system yet to be constructed was briefly examined for needed improvements. Rough cost per mile estimates were then applied. The total cost estimate to complete the regional bicycle route system currently ranges from $8 to $12 million dollars.

It must be emphasized that this estimate is very general and is only intended to put into context the amount of money required to build approximately 130 miles of proposed bicycle facilities needed to complete the network. A more definitive cost estimate for completion of these routes would necessitate a formal preliminary engineering process for each route.

Of the 130 miles of proposed bicycle routes, approximately 35 miles are under construction or are programmed for construction. Funds from the state bicycle fund will be sought for many of the remaining routes as streets are reconstructed, or through the Priority 3 and Priority 4 programs. In addition, jurisdictions will use general funds and their allocated state bicycle funds to construct other routes.

In most cases, cities and counties have had to accumulate their annual 1 percent money over several years in order to construct even a one-mile segment of bikeway. This procedure will most likely continue because construction costs continue to increase while revenues are decreasing.

5. Conclusions

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

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

b. Supporting continuation of the state 1 percent gas tax fund for construction of local and regional bicycle routes in the Portland metropolitan area.

c. Limiting expenditure of the state's 1 percent bicycle fund monies for bicycle projects constructed independently of a highway project (Priority 3) primarily to bicycle routes designated on the regional bicycle network.

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

e. Allowing the use of state 1 percent funds for financial assistance to local government bikeway projects (Priority

4) on either local or regional bicycle routes (at the discretion of local jurisdictions.)

f. Supporting current ODOT policy which establishes an annual target amount of local discretionary grant (Priority 4) money and working to establish an equitable distribution policy for this money that is not biased against areas of highest bicycling use.

g. Continuation of the regional funding committee which annually prioritizes bicycle projects in this region to submit to the state for funding. This applies to projects eligible for Priority 3 and 4 funds only.

Chapter Eight

Implementation

CHAPTER 8

IMPLEMENTATION

A. OVERVIEW

Implementation of the adopted Plan involves a cooperative effort of all jurisdictions responsible for the various components. First and foremost, it involves a concerted effort to secure sufficient funding over the next 20 years to build new or improved transportation facilities and maintain and operate an expanded transit and highway system; it involves the construction and operation of the improvements recommended to serve expected growth; it involves an ongoing process of monitoring actual development and the associated changes in travel demand to update or refine the Plan and to resolve a number of outstanding transportation issues; and finally, it involves the establishment of a framework for consistency among the Regional Transportation Plan, local comprehensive plans, statewide planning goals and other implementing agency plans (ODOT's Six-Year Program; Tri-Met's Transit Development Plan).

B. TRANSPORTATION SYSTEM IMPLEMENTATION

The RTP identifies the parts of the transportation system most important for regional travel and includes investments to ensure that the regional system can effectively serve expected growth over the next 20 years. Projects that must be included in the RTP are those modernization improvements that are on, or significantly affect, the capacity of the regional highway, transit or bicycle systems (see Chapters 4 and 5). The Transportation Improvement Program (TIP) is the five-year incremental capital improvement program for the region to implement planned improvement projects and includes all transportation projects proposed to use federal funds to implement. As such, the TIP contains modernization projects that are depicted in Chapter 5 of the RTP as well as preservation and smaller scale modernization activities that are consistent with the policies and objectives of the RTP but are not of sufficient scope to warrant inclusion in the RTP. It is the responsibility of the cities, counties, ODOT and Tri-Met to implement necessary improvements to the regional system as well as those needed for local travel. Because of the interrelationship between different improvements by different jurisdictions, it is important that these improvements be implemented in a manner consistent with the adopted RTP.

The comprehensive plans adopted by the cities and counties within the Metro area are the mechanisms by which local

jurisdictions implement the elements of the RTP. These local plans identify future development patterns that must be served by the transportation system. In addition, the local comprehensive plans define the configuration of the highway system and identify needed investments.

Local comprehensive plans and future amendments to local plans should be consistent with all adopted RTP policies and guidelines for highway and transit system improvements and demand management programs as described in detail in Section C. Specific items in the RTP that require local comprehensive plan compliance are as follows:

- Highway System Design criteria;
- Highway Capacity and Project criteria;
- Transit System Designation criteria;
- Transitway Implementation criteria; and
- Regional Bicycle Route designation.

Activities described in the RTP that local jurisdictions are encouraged to pursue are:

- Policies supporting ridesharing for work trips;
- Demand Management Program Design criteria described in Chapter 1;
- The rideshare, parking, land use controls and related activities described in Chapter 4; and
- The protection of transitway right-of-way opportunities as described in Chapter 8, Section C-6.

C. ELEMENTS OF CONSISTENCY WITH THE RTP

1. Highway System Design -- It is essential for Metro and the local jurisdictions to designate the full arterial and collector system necessary to serve development of local comprehensive plans anticipated to the year 2005. The RTP includes criteria for a highway classification system (Chapter 1, Section D.) and adopts maps delineating the principal and major arterial (Figure 4-1) and minor arterial (Figure 4-2) components of such a system. In accordance with this, local jurisdictions are required to adopt maps delineating the various regional highways in their jurisdiction and in so doing, it is recommended they adopt Metro's classification categories and definitions. If, however, local jurisdictions

elect to retain their own classification categories, they must provide for Metro's adopted principal routes and major arterials as shown in Figure 4-1, and minor arterials of regional significance as shown in Figure 4-2. In addition, local jurisdictions are required to designate an adequate Local Minor Arterial and Collector system to meet two objectives of regional interest:

- the local minor arterial/collector system must adequately serve the local travel demands expected from development of the land use plan to the year 2005 to ensure that the Principal, Major and Minor Arterial system is not overburdened with local traffic; and

- the system should provide continuity between adjacent and affected jurisdictions (i.e., consistency between neighboring jurisdictions, consistency between city and county plans for county facilities within city boundaries and consistency between local jurisdiction and ODOT plans).

Metro's Classified Highway System map will consist of the Regional Principal, Major and Minor Arterials defined in Chapter 4 of the adopted RTP.

2. Highway Projects -- The RTP divides highway investments into two main categories:

- Modernization Improvements: facility widenings that significantly (by 50 percent or more) affect capacity, such as adding travel lanes, new facility construction, etc., major intersection or interchange construction, and/or coordinated Transportation System Management projects over one mile in length;

- Operations, Maintenance and Safety Improvements: those facility widenings that increase capacity by less than 50 percent, signalization projects not part of a coordinated TSM investment, minor intersection projects, bridge replacements (within existing right-of-way) and general maintenance (restriping, repaving, etc.) and operations (signal controllers, channelization, etc.) activities.

All modernization improvements (regardless of funding source) contained in local comprehensive plans located on or directly affecting the capacity of the regional highway, transit and bicycle system plan elements identified in Chapter 4 must be consistent with the RTP

goals and policies and included in the RTP (Chapter 8, Section F.2.).

In addition to the regional system improvements included in this Plan, local jurisdictions must ensure that their designated local minor arterial and collector system provides the desired level of traffic service. Toward this purpose, local jurisdictions must identify in their comprehensive plan (or the appropriate implementation program) sufficient investments in transportation capacity to ensure its arterial/collector system can adequately serve at least the travel demand associated with Metro's year 2005 population and employment forecast (Table 2-1) and subsequent updates. Project objectives for these investments should include at least the arterial level of service defined as the minimum desired in the RTP (Chapter 1, Section D.). Further improvements in transportation capacity consistent with the policies of the RTP that serve more than Metro's year 2005 population and employment forecast and/or to provide a higher level of traffic service than that identified in this Plan can be designed and/or provided at the option of the implementing jurisdiction. This identification of transportation capacity must, however, be consistent with the level of transit ridership and ridesharing delineated in the RTP for the particular area, but may include actions to further expand the use of these modes, thereby reducing the need for additional highway capacity. These improvements should be designed to serve the designated function for the street and should first consider low cost actions (such as additional transit expansion, ridesharing, flextime, signal modifications, channelization, etc.) before consideration of a major widening investment. Identified widening projects that provide more capacity than specified in this Plan will be considered consistent with the RTP if: a) a longer range evaluation of travel demand indicates a probable need for right-of-way preservation beyond that necessary for the 20-year project design; or b) the additional service provided by the higher level design is the result of a design characteristic necessary to achieve the minimum RTP service levels. In either case, the higher level of service must be deemed cost-effective.

All operations, maintenance and safety improvements are considered consistent with the policy intent of the RTP if: a) they are needed to serve the travel demand associated with Metro's population and employment forecasts; and b) they are consistent with affected local plans.

3. Transit System Designation -- The delineation of the transit system must be coordinated between Metro, Tri-Met and the local jurisdictions. Metro's adopted regional transit trunk route system (Figure 4-4) provides direction to Tri-Met on where to target high speed, high capacity service for long distance travel and provides direction to local jurisdictions on where to target high density land uses. In addition to these routes, Tri-Met is expected to adopt a system of subregional trunk routes and local routes. Local jurisdictions are required to include Metro's regional trunk routes, transit centers and park-and-ride lots (Figure 4-4) in their comprehensive plans and identify other streets suitable for subregional trunk routes and local transit service as a guide to Tri-Met. In addition to these bus route designations, Metro, Tri-Met and the local jurisdictions must agree on specific alignments for the potential transitways identified in Figure 4-5 to be protected from encroachment from development. Local jurisdictions are required to identify these alignments in their local comprehensive plans for future consideration.

4. Transit Service Implementation -- The Portland metropolitan area is dependent upon a significant expansion in transit use to accommodate expected growth in travel demand. Expansion in service, however, is very costly and beyond the current financial ability of Tri-Met. As such, Tri-Met must incrementally implement new transit service as growth in ridership demands and financial resources allow. Additional increments of transit service should be phased in consistent with the following criteria:

   - new routes should be cost-effective in terms of ridership return on the operating subsidy as defined by Tri-Met service standards;
   - service expansion should be consistent with growth in travel demand in the regional corridors where highway, transit and rideshare improvement programs are interdependent;
   - service improvements should be implemented consistent with new development, particularly in cases where high density developments are dependent on transit capacity; and
   - service improvements should be consistent with the local jurisdiction's designation of transit streets.

5. Transit Service Planning -- In accordance with UMTA Circular 7005.1, recipients of UMTA funding are required to develop a process for considering the capability of private providers to perform mass transportation and related support services. They are also required to provide periodic documentation on the results of implementation of the policy. This requirement falls both on Metro as the Metropolitan Planning Organization and Tri-Met as the principal provider of transit services and UMTA grant recipient. Specifically, Metro is required to adopt a policy which provides for consideration of private enterprises in local transit service planning, ensure a fair resolution of disputes and certify at the time of submission of the annual Transportation Improvement Program that the local process is being followed. The following policies are intended to respond to these requirements while recognizing that the principal responsibility for involving the private sector should rest with Tri-Met since it is the only operator in the Portland region.

   a. Transit Service Planning

      1) Tri-Met should ensure private enterprise involvement in transit service planning and development of transit capital improvements, to include:

         a) Notice to and early consultation with private providers in plans involving new or restructured service as well as the periodic reexamination of existing service.

         b) Periodic examination, at least every three years, of each route to determine if it could be more efficiently operated by a private enterprise.

         c) Description of how new and restructured services will be evaluated to determine if they could be more effectively provided by private sector operation pursuant to a competitive bid process.

         d) The use of costs as a factor in the private/public decision.

      2) Metro will review the results of these analyses and provide TPAC and JPACT an opportunity for review and comments.

3) In transit service studies where Metro has lead responsibility, Metro will provide notice to and ensure early consultation with private providers.

b. Dispute Resolution

Tri-Met should establish a dispute resolution process that provides a clear opportunity for interested parties to object to a decision. The process should also include the opportunity for final appeal to UMTA.

c. Documentation

1) In conjunction with submittal of projects to Metro for inclusion in the Transportation Improvement Program, Tri-Met shall submit documentation that this private enterprise policy has been followed, including:

a) a description of the involvement of the private sector in the development of the specific projects. The determination of whether service or support functions reflected in the Annual Element are to be provided by a public or private provider can be arrived at through use of requests for proposals, requests for bids, or other means in the local planning process;

b) a description of the proposals received from the private sector and how they were evaluated;

c) a description of impediments to holding service out for competition and the measures taken to address the impact of such impediments; and

d) a copy of the Tri-Met dispute resolution procedure and a description and status of private sector complaints.

This documentation shall be provided no later than the time of submission of projects for the annual update to the Transportation Improvement Program (June 1). In addition, supplemental documentation should be submitted at the time of submittal of any additions to the Transportation Improvement Program, if necessary.

2) Metro will include this documentation as part of the certification to UMTA that the region is in compliance with federal requirements.

6. Transitway Implementation -- Transitways have been identified as the long range method to provide regional trunk route service in the radial travel corridors (Figure 4-5). Local jurisdictions are required to identify these alignments in their comprehensive plans for future consideration. However, due to the high construction cost, incremental implementation is necessary, as growth in transit ridership warrants implementation and as funding is available. The next priority for transitway construction is the Westside Corridor, where the Sunset LRT alignment has been selected as the preferred alternative to connect downtown Portland and Beaverton (to 185th). The decision to proceed to construction of the Sunset LRT, however, will not be made until after the preparation of an FEIS on the project and an evaluation of the operation of the Banfield LRT. JPACT has identified the Milwaukie LRT as the next priority after Sunset for UMTA Section 3 funding, and I-205 LRT for development concurrent with the Westside LRT with non-Section 3 funds. Implementation of a transitway in the remaining radial corridors (and potential extensions and branches) will be pursued in a phased manner, as follows:

- Phase I studies will be initiated to identify the next priority corridor that warrants consideration of a transitway investment and identify a set of alternatives to be examined in more detail. The Phase I study will consider the short and long term ridership potential, capital and operating costs, existing or planned transit supportive land uses and right-of-way availability.

- Phase II will be initiated to examine alternatives in detail and select the one that is most cost-effective. The Phase II study will conclude with an Environmental Impact Statement presenting costs, benefits and impacts of the alternatives and identifying the preferred alternative for implementation.

Due to limited staff resources, it is impractical to pursue the preparation of "Draft" Environmental Impact Statements on several transitway corridors simultaneously.

7. Transitway Right-of-Way Reservation -- Until such time as a definite decision to construct a transitway is made as a result of the EIS decision process described above, local jurisdictions are encouraged to work with developers to protect logical right-of-way opportunities from encroachment. Parcels that cannot be protected in this manner should be identified to Tri-Met for acquisition on a case-by-case basis in accordance with adopted regional priorities.

8. Handicapped Transit Service -- Tri-Met is responsible for providing handicapped transit accessibility including coordination of special transit services provided by social service agencies. In addition, Tri-Met conducts the detailed special handicapped transit planning necessary to identify required service improvements and adopt a plan for meeting federal requirements for handicapped accessibility. Metro must endorse Tri-Met's plan for handicapped accessibility (Appendix B) and include expected uses of federal funding in the TIP. In addition to Tri-Met's handicapped service, private, non-profit agencies provide handicapped services and may apply for federal funding for equipment (through the UMTA Section 16(b)(2) program). Use of this equipment must be consistent with Tri-Met's plan, be included in Metro's TIP and be endorsed by the ODOT-Transit Division to be funded. (Note: The currently adopted plan for handicapped accessibility may be revised due to changes in federal regulations.)

9. Rideshare Promotion -- The overall responsibility for promoting ridesharing as an alternative mode of transportation rests with Tri-Met. As described in Chapter 5, this includes regional services for matching prospective carpoolers, assistance to employers and several targeted programs to deal with ridesharing in particular corridors or subareas. However, the full scope of implementing potential rideshare strategies is too diverse to characterize as being the responsibility of a single agency. In addition to Tri-Met, local jurisdictions have responsibility to incorporate into their comprehensive plan rideshare techniques identified in Chapters 1 and 4 of the RTP that are suitable for their area. Similarly, employers are vital to the implementation of rideshare programs. Metro's Rideshare Advisory Subcommittee provides a forum for public and private sector individuals to provide direction for implementing potential programs throughout the region.

10. Regional Bicycle Plan -- The implementation of the provisions of the bicycle element of the RTP is a

shared responsibility of the state, local jurisdictions and Tri-Met. The actual construction of the bicycle facilities identified in Chapter 4 of the RTP (Figure 4-7) is the responsibility of the state and local jurisdictions. Local jurisdictions are required to identify this network in their local comprehensive plans, and any jurisdiction planning street improvements covered under ORS 366.514 that are proposed to not include bicycle facilities on roadways designated as regional bicycle routes must consult with Metro and other affected jurisdictions. Tri-Met is responsible for the installation of bike racks at the designated major transit stations and major park-and-ride lots specified in Chapter 4 of the RTP. Tri-Met and local jurisdictions are encouraged to install bicycle parking facilities at minor transit stations. In addition, local jurisdictions are encouraged to incorporate into their local comprehensive plans the supportive techniques identified in Chapters 1 and 4 of the RTP. Metro's regional bicycle funding committee will provide a forum to provide direction for designating projects for State Priority 3 and 4 bicycle funds used in the region.

D. FUNDING

As described in Chapter 7, the funding for implementation of the transportation plan is approaching a crisis situation. Federal funding availability is projected to fall short of capital needs for highway improvements and may be subject to further federal budget cuts. Current state and local sources are generally insufficient to adequately maintain the existing highway system (as a result of past and expected losses of buying power from inflation) and are clearly inadequate for needed major capital improvements. Local funding is inadequate to operate the significant expansion in transit service called for in the Plan and federal funding for transit capital improvements is uncertain. The amount of funding required to complete the identified Regional Bicycle Route System is nearly double the amount spent on bicycle facilities in the past 10 years. To correct these funding problems, the following activities are necessary:

1. Federal Funding -- Metro, ODOT, Tri-Met and the local jurisdictions must present a united front to its congressional delegation and the federal government to ensure past federal funding commitments are fulfilled in a timely manner. In particular, federal legislation is necessary to rectify "Interstate," "Interstate Transfer" and "UMTA-Capital Assistance" funding shortfalls. In addition, loss of federal transit operating

assistance would worsen the expected transit funding shortfall.

2. Local Priority Setting -- Regardless of how successful this region is in acquiring federal funds, it is clear that priorities must be set to phase implementation of the RTP over a longer than optimal time frame. JPACT has already undertaken such a process and set priorities for guiding the region's funding decisions. The applied general guidelines for ranking improvements for funding is as follows:

   Priority 1: Improvements that correct severe existing traffic problems will have top priority.

   Priority 2: 10-year priority improvements identified in Chapter 5 and any additional improvements that can be demonstrated as necessary to correct traffic problems anticipated in the next decade or correct access capacity deficiencies that constrain development areas during the next decade will have next priority.

   Priority 3: Those improvements identified in Chapter 5 as needed beyond 10 years.

   To ensure cost-effectiveness whenever possible, regional corridor improvements will give priority to options which reduce costs by increasing people-moving capacity. Those options include ramp metering, signal improvements, access control and high-occupancy vehicle lanes. In addition, large projects will be broken into manageable parts so that the most critical part is given priority for construction.

   Should additional resources become available, consideration should be given to the region "reserving" a portion of available funds in order to be able to provide needed transportation improvements which quickly respond to economic development opportunities. As part of the decision to establish such an "opportunity fund," specific criteria for its allocation will be adopted by JPACT.

   In addition, since Interstate and Federal-Aid Primary (FAP) funding is allocated to the entire state, the Oregon Transportation Commission must set priorities between competing projects in the Portland area and elsewhere in the state. The region's priorities for projects to be funded from these statewide allocations are also based on the above criteria.

3. State and Local Funding -- All of the state, regional and local agencies must establish a coordinated effort to correct state and local funding shortfalls. Adequate funding sources must be secured for both capital expansion projects and ongoing maintenance and operation programs. This could be accomplished through development of a variety of special purpose funding sources in each jurisdiction or through one or more larger state or local funding programs. The alternative techniques should be explored and a complete funding strategy adopted (see Chapter 8, Section G, Outstanding Issue No. 1).

E. STATEWIDE PLANNING GOAL CONSISTENCY

1. Overview

This section of the RTP provides a framework for the relationship of planned transportation improvements to the overall functional planning process to assure consistency among statewide planning goals, the RTP and local comprehensive plans.

As such, this section identifies the planning context for transportation improvements and identifies the timing and nature of applicable land use decisions associated with those improvements to establish clear and appropriate opportunities for public comment and appeal.

2. RTP Relationship to Statewide Planning Goals

a. Context

OAR 660 Division 11 (Public Facilities Planning) requires jurisdictions to adopt Public Facility Plans (PFPs) that identify the nature and location of significant transportation projects needed to serve planned land uses. The list and map of projects included in these PFPs must be adopted as part of the local comprehensive plan, along with a statement identifying the service provider for each improvement.

ORS 197.015(10)(a)(A) defines any amendment to a comprehensive plan or land use regulation as a land use decision. ORS 197.175(2) requires such decisions to comply with the statewide planning goals and ORS 197.825 provides for the appeal of these decisions to LUBA. Thus, the action to amend a local comprehensive plan to include projects listed in the PFP is a land use decision and

should be accompanied by findings that demonstrate compliance with all applicable land use regulations.

Since all land use decisions are subject to appeal, no decision to build a significant transportation project may be considered final until the appeal period on the local comprehensive plan amendment has lapsed, or the amendment has been appealed and upheld.

In addition, OAR 660-18-022(1) allows local governments to make a determination that the goals do not apply to a particular land use decision. Such a decision is considered a land use decision and is itself appealable and, as such, must still demonstrate compliance with any applicable comprehensive plan policies and with RTP requirements.

b. Transportation Improvements as Land Use Decisions

Regardless of the scope of a project, when protected resources or hazards are affected, detailed goal findings for these impacts will likely be needed. In many cases, for projects with a small, well-defined scope affecting clearly delineated resources in direct and obvious ways, all relevant goal issues should be addressed at the time the comprehensive plan amendment is first adopted.

Complete goal findings for some projects, however, will require detailed impact information not typically available until the preparation of an Environmental Impact Statement (EIS). In these cases, jurisdictions should adopt as full a set of findings as can be made based upon the information available at the time the project is included in the PFP and to identify at the time the PFP is adopted whether additional goal findings will be made when the EIS is prepared, what issues these findings will address, and what form and when this latter decision will be made.

Local comprehensive plans and the RTP are intended to identify projects needed to serve development over the long term. ODOT will select projects to be scheduled in its six-year improvement program from among the improvements identified in local PFPs.

Although a project does not need to be placed in the RTP before it is included in ODOT's six-year improvement plan, it cannot actually be funded for right-of-way acquisition and construction until this is done.

c. RTP Consistency: Principles

The following principles of consistency with the RTP are embodied in this Plan:

1) All projects in PFPs must be consistent with the RTP and those modernization improvements directly affecting the regional system as defined in Chapter 4 must be included in the RTP.

2) All RTP projects must satisfy all applicable state planning goal requirements.

3) All projects must demonstrate consistency with the RTP before inclusion in the Transportation Improvement Program (TIP).

4) RTP decisions require local action to include the project in its comprehensive plan, in conjunction with adoption of appropriate goal findings, before the decision becomes final. The local jurisdiction is thus responsible for local (i.e., site-specific) goal requirements.

5) Local jurisdictions must plan their internal transportation system to be consistent with RTP compliance requirements identified elsewhere in this chapter and make efficient use of the regional system.

6) The RTP consists of policies contained in Chapters 1, 4 and 8; system plan elements, mapped in Chapter 4, that are designed to support and implement plan policies; criteria for determining RTP consistency in Chapter 8; and a list of improvements, contained in Chapter 5, designed to implement the system plan. As Metro develops land use policy (in the form of land use goals and objectives; functional plans for solid waste, air and water quality, and other activities of regional significance) and policies for Urban Growth Boundary (UGB) management, the RTP policies, system plan elements, consistency

criteria and project list should be reviewed and amended as necessary to ensure that the transportation system plan supports adopted land use policy.

7) All projects will be reviewed for consistency with RTP local plan compliance requirements as previously stated in Section D. This review assures state goal compliance at the generalized regional level except as noted immediately below.

8) In general, compliance of the RTP with all applicable state planning goals is achieved through the procedures described in this chapter. These procedures assure that RTP policies comply directly with the goals, and that RTP projects are in turn consistent with RTP policies, as well as with the local comprehensive plan(s) and local findings of goal compliance when needed. Exceptions to this occur when:

   a) a project in the RTP located outside the UGB has a Goal 14 impact which Metro is responsible for addressing; or

   b) Metro orders a change in the local comprehensive plan(s) to achieve consistency with the RTP, in which case Metro is responsible for assuring compliance with all applicable goals; or

   c) LCDC adopts new goal or administrative rule language that assigns direct responsibility for goal compliance to the RTP.

9) Metro will make every effort to coordinate with, and resolve conflicts among, jurisdictions prior to RTP amendment. When all other efforts fail, however, Metro will order a local plan change when necessary to maintain the efficiency of the regional transportation system and assure regional goal compliance.

F. RTP CONSISTENCY: PROCESS

1. RTP Policy, System Plan and Consistency Criteria Amendments

When Metro amends RTP policies (Chapters 1, 4 and 8), system plan elements (Figures 4-1, 4-4, 4-5 and 4-7) or

compliance criteria (Chapter 8), it will evaluate and adopt findings regarding broad regional compliance with all applicable state planning goals. There may be local (site-specific) goal issues or Goal 14 issues associated with a policy decision at this level -- as, for example, when a major new facility is added to the system. No system decision made at this level can be considered a final land use decision, since at least one subsequent decision on project specifics will be needed before anything can be built. However, a system decision should not foreclose or appear to foreclose full and fair consideration of all relevant goal issues at the time the project specifics are adopted by the local jurisdiction.

In addition, in those cases where an RTP goal, policy or system plan element amendment implies a particular improvement to such an extent that the goal, policy or system plan element would change as the result of a "no-build" project decision later in the process due to goal compliance issues, Metro will prepare findings to address the broad regional interest in the statewide planning goals based on the information used in the RTP consistency review (Chapter 8, Section F.2.) and will identify as part of its goal findings related to the RTP amendment any and all goals it believes must be addressed by the local jurisdictions before a project decision to implement the system plan can be finalized. If the local jurisdiction determines that the project cannot comply with the statewide planning goals, the RTP will be amended as needed to eliminate reliance on such a project and initiate a cooperative analysis to develop an alternative solution.

Whenever RTP policies, system plan elements or consistency criteria are amended, Metro shall specify: a) which elements it requires local jurisdictions to adopt, which it recommends, and which it simply encourages or suggests; and b) a date by which local action on these elements must occur. The date identified shall not be sooner than the next regularly scheduled plan amendment process for the affected jurisdiction, nor later than the affected jurisdiction's next periodic review.

Proposed amendments to the RTP policies, system plan elements or consistency criteria will be circulated for review to the Department of Land Conservation and Development (DLCD) and parties who request it prior to the action by the Joint Policy Advisory Committee on Transportation (JPACT).

At least two weeks before the date of the hearing on any RTP amendment, Metro shall notify by mail all cities and counties affected whenever the proposed amendments (to policy, system, or projects) would require local plan changes for compliance.

Within two weeks of adoption of an RTP amendment with local plan compliance elements, Metro shall notify by mail each jurisdiction subject to specific recommendations or requirements by that action. This notice shall identify: a) the plan changes recommended or required; b) the date by which the plan change is required; c) the circumstances under which the jurisdiction can deny the plan change; and d) the process for resolution when a plan change that Metro has requested or required is denied by the local jurisdiction.

If the proposed amendment requires Metro action on a UGB issue (amendment or exception), the RTP amendment should identify when and how Metro will address the UGB issues for which it is responsible.

The affected jurisdiction is responsible for preparing the specific local plan amendments recommended or required, along with findings of compliance with all applicable goals, and scheduling them for hearing before the governing body in time for action by that body by the time required.

2. RTP Project Amendments

The RTP establishes a unified policy direction for the transportation system and recommends a balanced program of highway, transit and demand management programs to implement that policy direction. The actions recommended, however, do not solve all the transportation problems and are not intended to be the definitive capital improvement program on the local Minor Arterial/Collector system for the next 20 years. Rather, the RTP is intended to emphasize the projects necessary on the regional and local systems required to make the regional system work. Major developments located on the local minor arterial and collector system may require additional analysis and additional improvements to provide an acceptable level of service. Furthermore, since many of the recommendations are designed to serve expected year 2005 travel demands, an ongoing monitoring and update process is necessary to identify the actual occurrence of a problem. As such, Metro will formally update the plan annually. This consideration by the Metro Council will take place prior to

the annual update of the TIP. Since the TIP schedules the expenditure of federal funding in the next five-year period and must be consistent with the adopted RTP, it is essential that the RTP be reaffirmed or amended prior to updating the TIP.

The type of changes that are expected to be incorporated into the annual update of the RTP include the following:

- As the findings of major studies are produced, they will be recommended by a resolution of JPACT and the Metro Council. Annually, they will be incorporated into the Plan.

- During the period between updates, Metro and local staffs will conduct studies resulting in the identification of new highway, transit, bikeway, pedestrian and demand management improvements necessary to meet the objectives of the Plan. The modernization project additions to the RTP will be accompanied by an evaluation of RTP consistency based on the following issues:

  1) Are the objectives to be met by the proposed improvement consistent with the RTP goals, policies and objectives (Chapter 1)?

  2) The degree to which the proposed action meets the identified objectives;

  3) The impact of the proposed improvement on the balance of the system;

  4) The impact of the proposed action on other RTP objectives, such as accessibility, air quality, energy consumption, etc.;

  5) Functional Classification: Is the proposed action consistent with the function of the facility identified in: a) Chapter 4 of the RTP (for minor arterials of regional significance and above); or b) the local comprehensive plan (for the minor arterials and below);

  6) Performance Criteria: Is the proposed action needed to achieve the performance criteria identified in the RTP as follows:

a) Minor Arterials of Regional Significance and Above

Deficiencies are deemed to exist at level-of-service E (exceeding the D-E boundary). Improvements should be designed to provide operating characteristics within the level-of-service D range, with cost-effectiveness and impacts dictating what level of service within the D range the design achieves. It should be noted that, in some instances (as a result of policy, impact, cost or other constraints), decisions will be made to accept a lower level of service on segments of particular facilities.

Improvements that are designed to provide a higher level of service than D can be designed and/or provided at the option of the implementing jurisdiction. Such actions must be found consistent with the RTP as outlined in this section and either a) a longer range evaluation of travel demand indicates a probable need for right-of-way preservation beyond that necessary for the 20-year project design; or b) the additional service provided by the higher level design is the result of a design characteristic necessary to achieve the minimum RTP service levels.

b) Local Minor Arterials and Collectors

The proposed action must be consistent with the following principles:

- the local minor arterial/collector system must adequately serve the local travel demands expected from development of the land use plan to the year 2005 to ensure that the Principal, Major and Minor Arterial system is not overburdened with local traffic; and

- the system should provide continuity between adjacent and affected jurisdictions (i.e., consistency between neighboring

jurisdictions, consistency between city and county plans for facilities within city boundaries and consistency between local jurisdictions and ODOT plans).

7) Population and Employment Projections: Is the need for the proposed action based on Metro's adopted population and employment projections?

8) Balanced Modal System: Is the proposed action consistent with the mode split and rideshare assumptions identified in the adopted RTP?

9) Cost-Effectiveness: Is the proposed action the lowest cost system alternative solution acceptable? If not, why not?

10) Are there unacceptable environmental impacts or other considerations that would significantly affect or possibly prohibit construction?

11) Would a goal, policy or system plan element in the RTP change as the result of a "no-build" project decision later in the process?

12) Is the project in the local jurisdiction's RFP, and has final local land use action occurred? (The decision to include the project in the RTP would then be a final RTP decision.)

13) Is the project contained in or consistent with the PFP, adopted comprehensive plan, or implementation plan(s) of any affected jurisdictions/agencies? Do affected jurisdictions/agencies concur with this project request?

14) What public involvement/information activities have occurred to date regarding the proposed improvement?

The amount of information required to answer these questions should be commensurate with the scope of the project. These additions will be amended into the RTP as part of the project update process.

Operations, maintenance and safety improvements are deemed consistent with the policy intent of the RTP if: a) they are needed to serve the travel demand associated with Metro's adopted population and employment forecasts; and b) they are consistent with affected jurisdictional plans.

After a project has been incorporated in the RTP, it is the responsibility of the local sponsoring jurisdiction to determine the details of the project (design, operations, etc.) and reach a decision on whether or not to build the improvement based upon detailed environmental impact analysis and goal findings demonstrating consistency with all applicable goals and the local comprehensive plan.

If this process results in a decision not to build the project, the RTP will be amended to delete the recommended improvement and an alternative must be identified to correct the problem.

3. Local Comprehensive Plan Amendments

All local plans must demonstrate consistency with the RTP as part of their normal process of completing their plan or during the next regularly scheduled update. It is Metro's practice to work closely with jurisdictions to obtain consistency in a cooperative manner. A local plan shall be considered in compliance with the adopted RTP if the following criteria are met:

a. It contains the specific items listed in Chapter 8, Section C. as required for compliance; and

b. It does not contain any policies that directly conflict with those adopted in the RTP; and

c. It contains either:

   1) policies which support, encourage or implement one or more of the activities listed above that local jurisdictions are encouraged to pursue; or

   2) the local plan or the background materials adopted to support it contain an explanation of why none of the listed activities were considered feasible or appropriate for that jurisdiction.

Metro will review local plans and plan amendments for RTP consistency. Whenever a local jurisdiction is considering plan amendments which are subject to RTP local plan compliance requirements, the jurisdiction shall forward the proposed amendments to Metro and to parties who participated in Metro hearings (if applicable) at least four weeks before the final hearing on that amendment, longer if possible. The jurisdiction's staff report shall be provided as soon as available.

Within three weeks of receipt of notice, the Transportation Director shall provide the jurisdiction with a letter certifying that the amendment complies with RTP requirements, or denying certification for reasons indicated. The jurisdiction may appeal a letter denying certification first to JPACT and then to the Metro Council.

When a proposed local plan amendment directly affects a specific facility, any jurisdiction (ODOT, Tri-Met or local jurisdiction) who owns, is responsible for maintaining or has land use jurisdiction over any portion of that facility, also has standing to appeal to JPACT and the Council a letter granting or denying certification of RTP compliance.

A jurisdiction shall notify Metro of its decision within two weeks of its final action on a proposed amendment. JPACT shall hold a hearing and forward a recommendation to Metro Council in cases where a jurisdiction has refused to adopt a plan change recommended or required by Metro, or has adopted a proposed amendment which was denied certification. The Metro Council may decide to: 1) amend the RTP; 2) initiate proceedings to order a plan change; or 3) tolerate the inconsistency.

A decision to amend the RTP to eliminate or modify the requirement or otherwise achieve consistency might be made on functional grounds, or because the Metro Council accepts the local jurisdiction's justification for its action (in terms of state planning goal or local plan requirements or other issues) as sufficient reason to accept a functionally inferior solution.

A decision to initiate proceedings to order a plan change would be made when the local justification does not appear to warrant such RTP changes as deemed necessary to achieve consistency, but it does not at this stage in the proceedings represent a decision that the goals can be complied with -- only that the need to achieve consistency by means of a local plan change is

sufficiently compelling to warrant ordering that change if the goals can be complied with. The decision to initiate proceedings to order a plan change should specify the specific changes to be ordered.

A decision to tolerate the inconsistency might reflect either the recognition of a process that will lead to eventual resolution of the problem or a judgment that the nature or impact of the inconsistency is insignificant. Where eventual resolution is expected, the Metro Council action should specify when and how the inconsistency should be eliminated and what action is appropriate if resolution does not occur.

If the Metro Council decides to initiate proceedings to order a plan change, those proceedings shall be conducted before a Hearings Officer following the contested case procedures. If a jurisdiction has refused to make a required plan amendment on the grounds that it violates the goals, the Hearings Officer will prepare recommended findings on the goal issues for Council action. Inconsistency of the required plan change with other local plan policies shall be considered a goal issue only if the order proposed by the Metro Council would not eliminate the inconsistency.

If the Metro Council finds that a required plan amendment does meet goal requirements, it will adopt goal findings to support the amendment and an order requiring a jurisdiction to change its plan to adopt that amendment. A date by which the plan must be changed shall be specified in the order.

At the time of each RTP update, the project list in the RTP will be amended to note which projects have received final approval from the local jurisdiction, and to delete any projects rejected by local jurisdictions as a result of its goal analysis or for other reasons.

Those projects that do not require goal findings or inclusion in the local plan or the RTP must nonetheless be found to be consistent with the RTP before they may be included in the TIP. If such projects require local approval prior to TIP amendment, the Transportation Director will evaluate them and prepare a letter of certification prior to local action if so requested at least a month beforehand.

4. Plan Maintenance

These changes will be incorporated in the RTP as part of the update process. In particular, development

throughout the region will be monitored to determine whether growth (and the associated travel demand) occurs as forecasted. Metro will review its population and employment forecasts annually and update them at least every five years for the following conditions:

- national or regional growth rates differ substantially from those previously assumed;
- significant changes in growth rate or pattern develop within jurisdictions;
- a jurisdiction changes its land use plan (and, therefore, its "holding capacity" for new development), thereby increasing or decreasing the maximum allowable level of development in their jurisdiction.

New information gathered during the course of the year on such issues as energy price and supply, population and employment growth, inflation and new state and federal laws may result in different conditions to be addressed by the Plan. These modifications will be incorporated as part of the annual update.

G. OUTSTANDING ISSUES

Major outstanding issues to be resolved at a later date and included as amendments to the Plan are as follows:

1. Funding -- Alternative financing techniques and a comprehensive funding strategy to implement the highway, transit and demand management improvements called for in the Plan are currently being developed by various regional bodies composed of both public and private officials. This effort will recommend coordinated mechanisms to address funding shortfalls in the following major categories of system improvements:

   Regional Highway Corridors
   LRT Corridors
   Urban Arterials
   Transit Operations and Routine Capital

   The funding strategies will include mechanisms utilizing many sources of funding, such as federal, state, regional, and public/private partnerships.

2. Westside Corridor Project -- The process to complete preliminary engineering, develop a final EIS and alignment selection, and prepare a financial plan are currently underway. The engineering of the Westside

LRT is being undertaken in a manner designed to complement the Sunset Highway improvements recommended in this Plan.

3. Bi-State Transportation Study -- In conjunction with the Bi-State Policy Advisory Committee, Metro may participate in a study designed to address the long range land use plans and the associated concerns that have been raised regarding future capacity deficiencies across the Columbia River between Portland and Clark County, Washington.

4. I-205 LRT/Milwaukie LRT -- These, in addition to the Westside Corridor (discussed above), have been identified by JPACT as the region's priority corridors for the next 10 years. For the I-205 LRT, the region may withdraw the federal Interstate Funds for the I-205 Buslanes and initiate the preliminary engineering/EIS effort on the I-205 LRT (with the specific process subject to UMTA approval). The Milwaukie LRT will require an alternatives analysis (see also No. 5) and DEIS process and will consider alignments east and west of the Willamette River. This analysis will be coordinated with the river crossing aspects of the Southeast Corridor Study (see No. 5).

5. Build-Out Analysis -- The local comprehensive plans are designed to accommodate more growth than will be realized by the year 2005 (the scope of the RTP). As such, it is necessary for long range planning purposes to identify the travel demand associated with the full build-out of the local plans and examine the effects of this level of development on the transportation system beyond the year 2005.

6. Southeast Corridor Study -- Several outstanding transportation issues exist in the Southeast Corridor extending from the I-5/I-405 loop to U.S. 26 in Boring. Among the issues being addressed in this corridor are: a) an analysis of transportation alternatives to minimize excessive traffic impacts on Johnson Creek Boulevard; b) an evaluation of the adequacy of Willamette River crossing capacity needs; and c) the engineering and definition of improvements to Highways 224 and 212 in the Sunrise Corridor from McLoughlin Boulevard to U.S. 26 (including the alternative designs of expressway or freeway). Portions of the Sunrise Corridor improvement as currently defined may impact resources protected by Statewide Land Use Planning Goals (see also Land Use Issues).

7. Tualatin-Hillsboro Corridor -- The alignment for the proposed highway improvement in the Tualatin-Hillsboro Corridor must be determined through preliminary engineering and the EIS process. This process will need to address the nature and scope of the 216th/219th corridor improvement north of T.V. Highway (arterial or limited access facility) and land use issues related to resources protected by Statewide Land Use Planning Goals (see also Land Use Issues).

8. I-84 to U.S. 26 Connector -- There exists a need to develop a principal arterial connection in this corridor and perform engineering and the EIS evaluation process to determine the scope and alignment of the improvement. Certain alternatives identified to date may impact resources protected by Statewide Land Use Planning Goals (see also Land Use Issues).

9. East Bank Freeway Relocation -- Options for relocating the I-5 Freeway on the east bank of the Willamette River are currently being examined. If a decision is reached to significantly alter the nature and scope of improvements to this section of the facility from those previously adopted in the RTP, the RTP must be amended to delete the existing improvements and include the revised project. Relocating the freeway may impact resources protected by the Statewide Land Use Planning Goals (see also Land Use Issues).

10. T.V. Highway Corridor -- The adopted RTP recognizes the need for improvements in the T.V. Highway Corridor west of Highway 217. Two study efforts are currently underway in the corridor to determine the nature and scope of required improvements: the City of Beaverton's Central Beaverton Study (Highway 217-Murray) and ODOT's T.V. Highway Reconnaissance (Murray-Hillsboro). Some of the alternatives being evaluated in the Beaverton Study would necessitate a change to the RTP Principal Arterial System and would probably impact resources protected by Statewide Land Use Planning Goals (see also Land Use Issues).

11. Land Use Issues -- The RTP contains three new proposed improvements on the regional highway system that would likely impact resources protected under the Statewide Land Use Planning Goals:

    - Tualatin-Hillsboro Corridor (Western Bypass) in Washington County;
    - Highway 224 Extension (I-205 to 135th) in Clackamas County; and

. I-84 to U.S. 26 Connector (Gresham Parkway) in Multnomah County.

As a result, consistency with the Statewide Land Use Planning Goals must be demonstrated prior to a "build" decision and a final RTP decision. Metro and Washington County have ratified a working agreement and scope of work to provide the information necessary to address the land use issues associated with the proposed facility in the Tualatin-Hillsboro Corridor (as required by the adoption of the Southwest Corridor Study recommendations). Similar efforts may be required in the other two corridors.

In addition, several planning studies currently underway to address outstanding transportation issues are evaluating alternatives that would likely impact Goal-protected resources.

12. Goods Movement -- Recognizing that freight movement is equally as important as people movement in an effective transportation system, Metro will examine access constraints to industrial development and existing truck travel constraints as a tool for setting priorities for needed highway improvements.

13. Five-Year Transit Development Plan -- Consistent with the RTP, Tri-Met will develop detailed transit service improvements and update their five-year plan annually. This will be submitted to Metro for endorsement and the key features will be incorporated into the RTP. In addition, studies will be undertaken to examine the feasibility and cost-effectiveness of alternative transit strategies for suburban areas.

14. Demand Management Planning -- The Rideshare Advisory Subcommittee will examine the candidate demand management strategies identified in the Policy Framework and develop recommendations on which are the most promising to pursue.

15. Access Control Plans -- ODOT and Metro will examine existing access control plans on the principal arterial system and develop specific techniques to minimize direct property access. Major and minor arterials will be examined by Metro or the local jurisdiction as resources are available. Additional policy development for access control is required.

16. Light Rail Analyses -- It is necessary to specifically identify alignments for the alternative LRT routes

specified in the adopted Long Range Transitway System component of the RTP to provide local jurisdictions sufficient information to protect the right-of-way from encroachment. In addition, the process and priorities for the transition from bus trunk routes to transitways should be developed through an examination of factors relating to ridership, economy, densities and compatibility of adjacent land uses, and the staging of initial increments as opposed to future branches and extensions.

Studies should be undertaken in the future to determine if an appropriate corridor or level of demand exists to provide a loop extension of the MAX LRT line in East Multnomah County. If such a corridor can be found, subsequent studies should be undertaken to determine the feasibility of such an extension or alternative suburban transit strategies.

17. Development Impacts -- As development plans for specific sites are developed, conflicts between transportation and neighborhood objectives will arise. Localized impacts of development on the transportation system should be assessed and measures undertaken to resolve these conflicts.

18. U.S. 26/I-405/I-5 Connection -- Alternative connections to provide improved access and traffic flows will be developed and evaluated.

19. Cornell and W. Burnside -- Issues surrounding the functional classification and sizing of these facilities require resolution.

20. Urban Growth Boundary (UGB) -- Periodic Review -- The modification of the UGB as a result of the periodic review process would require the development of a new series of population and employment projections to reflect such amendments.

21. 2010 RTP Update -- After the completion of a regional 2010 population and employment forecast, the travel demand associated with this level of growth will be developed and used as the basis for a 2010 RTP Update.

22. I-5 North/N. Kerby Avenue Off-Ramp -- Based on the results of the privately funded studies called for in Chapter 5 of the Plan, determine if sufficient justification exists for the project to pursue further planning and public involvement efforts (such as an EIS).

Several remaining projects have been identified in the planning process but require further review and consensus-building prior to inclusion in the RTP. It is anticipated that additional analysis of these projects will commence at a point after the adoption of the RTP or be included in the efforts to resolve the outstanding issues mentioned above.

- Boeckman Road/I-5 Interchange
- Gladstone Bridge
- Cornelius Pass Road (function and scope of improvement)

From:

Gwen Ware-Barrett
Council Committee Clerk

March 22, 1989

ORDINANCE NO. 89-282 Note to the File:

Everything contained in the two file folders is considered the official record. It consists of:

PACKET #1: 1. The signed ordinance.

A. Attachment A-1 "Proposed Amendments to December 1988 Regional Transportation Plan"

B. Attachment B - "Findings"

C. Attachment C - "Washington County/Metropolitan Service District Memorandum of Understanding/Agreement Relating to Southwest Corridor Study & Tualatin-Hillsboro Corridor 99W to T.V. Highway Segment"

D. Committee Report (dated 2/28/89)

E. Memo from Jessica Marlitt dated March 1, 1989

F. Staff Report by Andrew Cotugno dated 1/27/89

THIS IS WHAT WE WOULD SEND TO PEOPLE REQUESTING THE ORDINANCE.

(OVER)

METRO

2000 S.W. First Avenue
Portland, OR 97201-5398
503/221-1646

2. Packet #2 is for office files and documentation and consists of:

REQUESTS FOR THESE DOCUMENTS SHOULD BE DIRECTED TO TRANS.

A. "Regional Transportation Plan Update - Citizen Involvement" (document listing events and meetings)

B. "Regional Transportation Plan" document (blue cover)

C. "Regional Transportation Plan Summary" document dated 12/88

D. A group of rubber banded papers called attachment A-3 which is the "line-item deletions" from the previous plan.