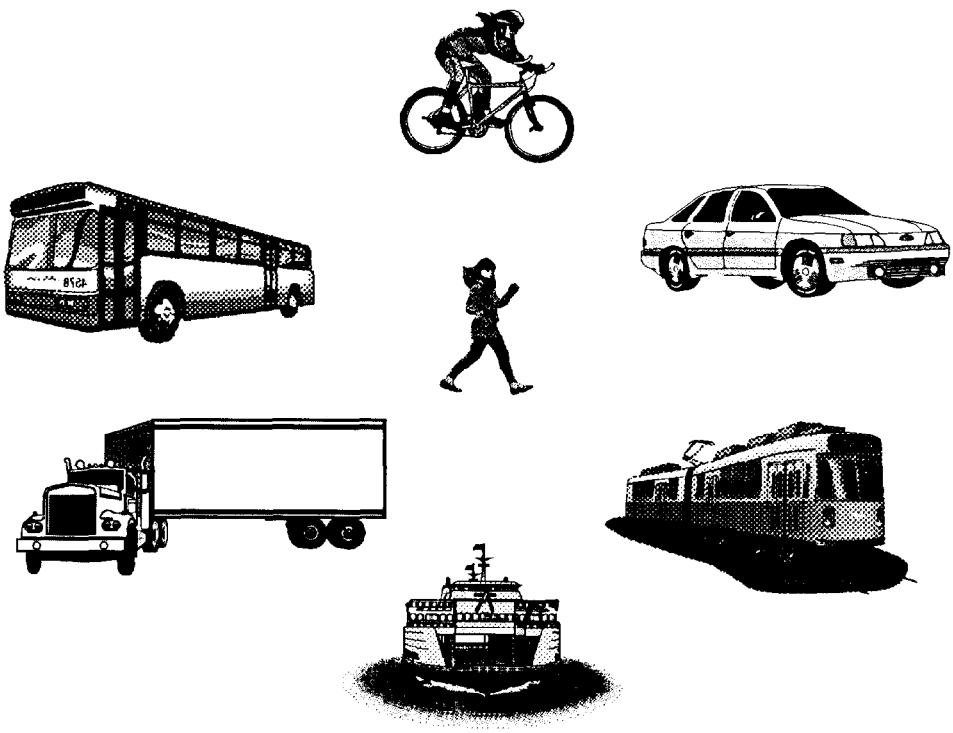
RSPA/VNTSC-SS-TM592-07

REVIEW OF THE TRANSPORTATION PLANNING PROCESS IN THE PORTLAND, OREGON, METROPOLITAN AREA

NOVEMBER 1994

prepared for:
U.S. Department of Transportation
Federal Transit Administration
Office of Planning
and
Federal Highway Administration
Office of Environment and Planning



prepared by:
U.S. Department of Transportation
Research and Special Programs Administration
John A. Volpe National Transportation Systems Center
Cambridge, MA 02142

REVIEW OF THE TRANSPORTATION PLANNING PROCESS IN THE PORTLAND, OREGON, METROPOLITAN AREA

November 1994

PROJECT STAFF

William Lyons
Volpe Center Project Manager

Paul Shadle
EG&G Dynatrend

Sheldon Edner
Federal Highway Administration

Ronald Jensen-Fisher
Federal Transit Administration

ACKNOWLEDGMENTS

This report is the seventh in a series produced for the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) by the Volpe National Transportation Systems Center (Volpe Center), Research and Special Programs Administration, U.S. Department of Transportation. Volpe Center staff were: William Lyons, Project Manager, and Paul Shadle (EG&G Dynatrend), Lead Analyst. Other contributors included Sheldon Edner of the FHWA and Ronald Jensen-Fisher of the FTA. Overall guidance for the planning review, including production of this report, was provided by the Program Manager, Deborah Burns, of the Office of Planning, FTA.

The federal review team -- consisting of staff from FTA Headquarters and Region X, FHWA Headquarters, Region 10, and the Oregon Division, and the Volpe Center -- participated in the site visit in the Portland metropolitan area and reviewed drafts of the report. A draft report was provided for comment to the Metropolitan Service District (Metro), the metropolitan planning organization (MPO) for the area. The assistance of staff from Metro, the Regional Transportation Council (the Vancouver, Washington, MPO), the Oregon Department of Transportation, the Tri-County Metropolitan Transit District, and the Clark County Public Transportation Benefit Area throughout the review is also gratefully acknowledged. Participating state, regional, and local staff are listed in Appendix 1.

Federal Review Team

Deborah Burns, FTA, HQ, Office of Planning, Planning Review Program Manager
Ronald Jensen-Fisher, FTA, HQ, Office of Planning, Senior Community Planner
Patricia Levine, FTA, Region X, Community Planner
Sheldon Edner, FHWA, HQ, Office of Environment and Planning, Community Planner
William Kappus, FHWA, Region 10, Air Quality/Urban Transportation Planner
Fred Patron, FHWA, Oregon Division, Division Transportation Planner
William Lyons, U.S. DOT/Volpe Center, Volpe Center Project Manager
Paul Shadle, U.S. DOT/Volpe Center (EG&G Dynatrend), Senior Technical Analyst

Table of Contents

Table of Contents (continued)

Glossary of Acronyms

ADA	Americans with Disabilities Act
3-C	Continuing, Cooperative, and Comprehensive
CAAA	Clean Air Act Amendments of 1990
CBD	Central Business District
CMAQ	Congestion Management/Air Quality
C-Tran	Clark County Public Transportation Benefit Area
FAUS	Federal Aid Urban System
FHWA	Federal Highway Administration, U.S. Department of Transportation
FTA	Federal Transit Administration, U.S. Department of Transportation
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
JPACT	Joint Policy Advisory Committee on Transportation
LCDC	Land Conservation and Development Commission
LRT	Light Rail Transit
LUTRAQ	Land Use, Transportation, and Air Quality
MAX	Portland Light Rail System
Metro	Metropolitan Service District
MPO	Metropolitan Planning Organization
MPAC	Metro Policy Advisory Committee
ODEQ	Oregon Department of Environmental Quality
ODOT	Oregon Department of Transportation
OTP	Oregon Transportation Plan
PSU	Portland State University
RTC	Southwest Washington Regional Transportation Council (Vancouver MPO)
RTP	1992 Regional Transportation Plan for Portland
RLIS	Regional Land Information System
RUGGO	Regional Urban Growth Goals and Objectives
SIP	State Implementation Plan
STP	Surface Transportation Program
TCM	Transportation Control Measure
TDP	Transit Development Plan
TIP	Transportation Improvement Program
TPC	RTC Transportation Policy Committee (Vancouver)
TPAC	Transportation Policy Alternatives Committee
Tri-Met	Tri-County Metropolitan Transit District of Oregon
TSM	Transportation Systems Management
UGB	Urban Growth Boundary
UPWP	Unified Planning Work Program
U.S. DOT	United States Department of Transportation
UTPP	Urban Transportation Planning Process
VHT	Vehicle-Hours Travelled
VMT	Vehicle-Miles Travelled
Volpe Center	Volpe National Transportation Systems Center, Research and Special Programs Administration, U.S. Department of Transportation
WSDOT	Washington State Department of Transportation

I. Summary of Findings and Suggestions

This formal, comprehensive review of the planning process in the Portland metropolitan area was conducted by Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) headquarters and regional staff, with the assistance of the U.S. Department of Transportation's (U.S. DOT) Volpe National Transportation Systems Center (Volpe Center). The federal review team met with representatives of the Metropolitan Service District (Metro) and the Southwest Washington Regional Transportation Council (RTC), which are the metropolitan planning organizations (MPOs) for the Portland/Vancouver metropolitan area; the Oregon Department of Transportation (ODOT); and the Tri-County Metropolitan Transit District of Oregon (Tri-Met) and Clark County Public Transportation Benefit Area (C-Tran), the regional transit operators. The meetings focused on the Oregon portion of the metropolitan area and addressed planning within the Washington State portion primarily with regard to issues of bi-state coordination.

The federal team concluded that Metro and other area agencies performing transportation planning conduct a competently managed and organized continuing, cooperative, and comprehensive (3-C) planning process, produce adequate planning products, and use acceptable planning tools. Efforts are being made to implement a multi-modal planning approach, and the transit operators are involved in the process.

Metro activities have been carried out in accordance with FHWA and FTA regulations, policies, and procedures in place prior to passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and the MPO is addressing requirements of the ISTEA Interim Guidance. In view of the changing requirements and policies of new law, particularly those of ISTEA and the Clean Air Act Amendments of 1990 (CAAA), the federal team developed a series of observations and suggestions to strengthen each aspect of the transportation planning process. ISTEA includes a requirement for federal certification of the planning process in metropolitan areas with a population over 200,000. This review will assist the Portland metropolitan area to prepare for future formal certification.

The findings of the federal team are summarized in this section. These suggestions are intended to improve a competent process and reinforce changes that have already been initiated to respond to the requirements of the new laws. Although the comments are specific to the Portland area, other large metropolitan areas are currently struggling with many of the same issues. Sections of the following report where each summary point is discussed in greater detail are noted in parentheses.

A. Organization and Management of the Portland Area Planning Process:

1. Metro and the RTC are commended for providing broad geographical and modal representation from their respective regions on the committees responsible for transportation planning (III.A.).

2. Coordination of transportation planning between the Oregon and Washington portions of the Portland metropolitan area would be improved if it were formalized and carried out through a single agency, authority, or planning group rather than by project-specific committees. Metro and RTC are urged to solidify the role of the Bi-State Policy Committee or to devise another means of developing a regional transportation vision and

coordinating planning efforts. Under ISTEA, it will be necessary for the plans and programs of the two MPOs to be coordinated (III.B.).

3. The Unified Planning Work Program (UPWP) should include all regionally significant transportation planning and management activities, regardless of funding source. Joint FTA and FHWA planning regulations require that all transportation planning activities be included in the UPWP. Because Portland's UPWP excludes activities funded solely by state and local sources, it provides an incomplete picture of regional planning (III.C.).

4. The projects within each functional area of the UPWP should be ranked or otherwise characterized to indicate priority. A clear description of planning priorities will demonstrate to readers the extent to which the UPWP addresses the critical planning needs that have been identified in other documents, such as the long-range plan and the transportation improvement program (TIP) (III.C.).

B. Products of the Planning Process:

1. The Regional Transportation Plan (RTP) should describe the range of alternatives considered in the adoption of a transportation vision and identification of goals and projects. Given the uncertainty of demographic trends in the Portland metropolitan area, as indicated by the results of past forecasts, alternatives could be based on a number of growth and financial scenarios (IV.A.).

2. Metro is urged to aggressively pursue the promising Region 2040 process. This initiative represents a first step toward the development of a long-term vision based on a broad analysis of alternative regional growth concepts and resulting transportation options (IV.A.).

3. Components of the plan should be constrained by funding expectations, and transportation system projects should be prioritized based on costs and available resources. A financially realistic plan is a requirement of interim ISTEA planning guidance, will encourage rigorous analysis and careful choice of current investment alternatives, and does not preclude an ambitious long-term regional transportation vision (IV.A.).

4. The review team encourages Metro to continue to pursue innovative funding strategies, such as that in the package developed by the MPO and public-private task forces, linking funding of highway and transit improvements with revenues from vehicle registration and gas taxes. Diverse financial resources will expand the range of project choices (IV.A.).

5. Metro and the RTC could improve their coordination; this might extend to developing a single metropolitan area transportation plan. A long-term vision based on bi-state consensus would provide a guide for choosing system improvements (IV.A.).

6. Metro has adopted a TIP that indicates regional priorities, lists all current transportation projects, and is financially constrained. The TIP should have an introduction that explains how projects are prioritized. Future TIPs should indicate how project justification and

criteria for including projects are established. Without such information, the initial impetus for project development is unclear. Allocation of Surface Transportation Program (STP) or Section 9 funds should also be based on the planning process; the Interim Guidance prohibits suballocation to jurisdictions unless based on the planning process (IV.B.).

7. Metro is making a commendable effort to develop criteria for future use in comparing and setting priorities for transportation projects that respond to new federal and state legislation (IV.B.).

8. Metro should work closely with the FHWA and FTA to assure that procedures to amend the TIP meet ISTEA and CAAA conformity requirements. According to the ISTEA Rule, in nonattainment areas such as Portland, if the TIP is amended by adding or deleting projects that contribute to or reduce transportation related emissions, new conformity determinations by the MPO and the FHWA and FTA will be necessary. Limited conditions for exempt projects are described in the Rule (IV.B.).

C. The 3-C Transportation Planning Process:

1. Metro and Tri-Met could evaluate major transportation investments in the Portland metropolitan area after implementation. Such an effort would determine the relative success of major investments and could improve future investment decisions (V.A.).

2. Metro competently monitors the transportation system in the Portland metropolitan area, and appears to regularly revise the information on which it bases assessments. The MPO is urged to maintain and continue upgrading central data sources, and to continue development of the Intermodal Management System, which is consistent with the ISTEA proposal for management and monitoring systems. The development of formal processes for reporting progress in implementing RTP components, and assessing their full impacts, will improve planning (V.B.).

3. Metro is generally engaging in professional, multi-modal regional and corridor planning. Goals are determined based on observed demographic trends, and a variety of strategies is examined in current corridor and subarea studies (V.C.).

4. Metro and its regional planning partners could expand efforts to consider modes and strategies in addition to new transit investment at all stages of planning, from corridor analysis through alternative analysis and project selection. System and congestion management alternatives, encouraged by ISTEA, should be given serious and consistent consideration in studies and investment analysis (V.C.).

5. Metro and its planning partners conduct thorough air quality planning. Metro has consistently met the expectations of clean air legislation, and has implemented all transportation control measures (TCMs) in the 1982 State Implementation Plan (SIP) and additional measures designed to bring the nonattainment area into compliance and maintain air quality. Metro is encouraged to aggressively pursue the recommendations of the

Governor's Task Force on Air Quality, and to seek funding for pilot congestion pricing projects (V.D.).

6. Metro and its partners are commended for their aggressive efforts to involve the public throughout the planning process. Creation of a Committee on Citizen Involvement and other efforts to develop plans and strategies for active public participation are particularly innovative, and consistent with the emphasis in ISTEA (V.E.).

D. Tools for Transportation Planning:

1. Characterized by frequent updates and sophisticated treatment of household characteristics, mode choice, traffic assignment, and a multitude of complex factors relating to transit demand, the Portland set of models is among the best in the country. Metro is also commended for innovative efforts to systematically link transportation and land-use factors through the Land Use, Transportation, and Air Quality (LUTRAQ) project (VI.A.).

2. Metro should thoroughly document the development and assumptions of the new demand estimation model, and the validation of all models (VI.A.).

3. Metro is encouraged to conduct its planned new household travel survey as soon as possible. Regional models are based on 1985 and 1988 data, which may not provide the current information needed for demand estimation in a rapidly changing metropolitan area (VI.A.).

4. Metro and the implementing agencies should maintain a process through which capital and operating costs will be regularly monitored and projected. As the regional planning agency, the MPO should maintain current and thorough cost data to use in analysis of transportation performance and needs (VI.B.).

E. Ongoing Transit Planning:

1. Tri-Met is commended for creating a broad Draft Strategic Plan for transit, pursuing multi-modal transit planning, coordinating policy objectives with Metro, and developing a comprehensive annual budget that links specific annual plans to the corresponding financial resources (VII.A.).

2. Tri-Met should complete and adopt a final multi-year transit development plan (TDP) that outlines specific anticipated programs and projects that will be included in TIPs. All regionally significant transit projects, with or without federal funding, should also be included in the UPWP and TIP. Tri-Met should either base planning on the same forecasting assumptions used by Metro, or explain in the Strategic Plan why it has adopted more aggressive ridership growth and financial objectives (VII.A.).

3. Tri-Met is commended for using a comprehensive and rigorous set of standards to establish objectives, measure progress toward achieving performance goals, and develop and adjust service (VII.B.).

4. Tri-Met carefully assesses its financial condition and, in both the budget and draft Strategic Plan, documents anticipated future financial costs and needs (VII.E.).

5. Tri-Met is working to comply with the Americans with Disabilities Act (ADA). The current transit system and paratransit service provide substantial accessibility (VII.F.).

6. Tri-Met conducts thorough capital planning and programming. Activities are well-documented in annual and five-year capital plans, and Tri-Met investment decisions appear to emerge from extensive cooperation with other metropolitan area agencies (VII.I.).

F. ISTEA Planning:

1. According to Metro, the next RTP will consider a range of alternative transportation systems and land-use scenarios. Metro is encouraged to develop such an RTP, and to clearly indicate how the metropolitan area will promote the efficient use of transportation facilities (VIII.A.).

2. The Portland area is commended for its efforts to integrate transit, highway, and other modes, including airport, rail, and water modes, as well as demand management programs, throughout the planning process (VIII.C.).

3. Consistent with the ISTEA emphasis on a substantial and proactive effort to significantly involve the public throughout the planning process, the Portland area has developed an innovative and strong public participation process, as noted in I.C.6.

4. Metro has an impressive tradition of incorporating land-use planning as a key factor in transportation planning (VII.E.).

5. Metro is encouraged to emphasize in the planning process how aggressive demand management and the ISTEA management systems will be employed to improve the use of existing transportation facilities (VII.E.).

6. Metro and ODOT appear to have a collaborative and cooperative approach to project selection (VII.E.).

II. Introduction

A. Background

On December 8-10, 1992, a team of representatives from Federal Highway Administration (FHWA) headquarters, division, and regional offices; Federal Transit Administration (FTA) headquarters and regional offices; and the U.S. Department of Transportation's (U.S. DOT) Volpe National Transportation Systems Center (Volpe Center) met with representatives of the Metropolitan Service District (Metro) and the Southwest Washington Regional Transportation Council (RTC), which are the metropolitan planning organizations (MPOs) for the Portland/Vancouver metropolitan area; the Oregon Department of Transportation (ODOT); and the Tri-County Metropolitan Transit District of Oregon (Tri-Met) and Clark County Public Transportation Benefit Area (C-Tran), the metropolitan area transit operators. The meetings focused on the Oregon portion of the metropolitan area and addressed planning within the Washington portion primarily as it relates to bi-state coordination.

Prior to the site visit, the federal team reviewed extensive documentation on the planning process in the area. The site visit consisted of structured meetings with staff from metropolitan area, local, and state agencies responsible for transportation planning and implementation. Participants in the review are listed in Appendix 1. The agenda for the site meetings is presented in Appendix 2. The team also conducted follow-up discussions after the meetings.

This report evaluates transportation planning in the Portland metropolitan area and summarizes the results of the review in a series of findings and suggestions on planning practices. Meetings and analysis focused on the Oregon portion of the metropolitan area; this text addresses Oregon unless otherwise indicated by references to Washington.

Under the regulations in place prior to passage of the Intermodal Surface Transportation and Efficiency Act of 1991 (ISTEA), the state of Oregon and the MPO had to self-certify that the urban transportation planning process (UTPP) conforms to joint regulations set forth in 23 CFR 450, which encompass transit, highway, and air quality planning. The federal regulations were designed to ensure that urban areas apply a 3-C transportation planning process to develop plans and programs that address identified transportation needs in the area, and that are consistent with the overall planned development of the metropolitan area.

Self-certification is intended to grant responsibility for transportation planning to states and MPOs, but does not relieve FHWA and FTA of oversight responsibilities and the obligation to review and evaluate the planning process. One means of satisfying these responsibilities is through periodic independent reviews.

The federal team evaluated whether transportation planning activities of Metro and other metropolitan area agencies are being carried out in accordance with FHWA and FTA regulations, policies, and procedures in place prior to passage of ISTEA, and whether the MPO is addressing requirements of the Interim Guidance on ISTEA metropolitan planning requirements, issued on April 6, 1992. In view of the changing requirements and policies of new law, particularly those of the CAAA and ISTEA, the review was undertaken to develop observations and suggestions to strengthen

major aspects of the transportation planning process. ISTEA includes a requirement for federal certification of the planning process in any metropolitan area with a population over 200,000. This review is intended to assist the Portland metropolitan area to prepare for future formal certification.

B. Scope of the Planning Review

A purpose of this review is to allow FHWA and FTA to determine how successfully the UTPP addresses broadly defined regional transportation needs, and whether the planning process meets joint planning regulations and the Interim Guidance on ISTEA metropolitan planning requirements. Another purpose of the review is to assess the ability of the planning process to address broader responsibilities described under the guidelines implementing ISTEA and the CAAA.

The team reviewed supporting documentation that included the UPWP; the 1992 long-range RTP; the TIP; the SIP for air quality planning; and other technical materials related to the UTPP. (Documents reviewed are listed in Appendix 3.)

The review also focused on the transportation and air quality planning activities of Metro, Tri-Met, and ODOT for the Portland metropolitan area, and briefly examined the working relationships between relevant planning agencies in Oregon and Washington.

C. Objectives of the Planning Review

In conducting the planning review, the objectives of FHWA and FTA are to determine if:

- planning activities of Metro are conducted in accordance with FHWA and FTA pre-ISTEA UTPP regulations, policies, and procedures and the Interim Guidance on ISTEA metropolitan planning requirements;

- the transportation planning process involves representation and input on transportation needs from all levels of government, transit operators, the public, the private sector, and other interest groups;

- the UPWP adequately addresses the elements of the UTPP and all transportation planning activities in the area;

- the transportation planning products, including the long-range transportation plan and TIP, reflect identified transportation needs, priorities, and funding sources;

- the transportation planning products are complete, interrelated, and based on the most recent information available;

- the transportation planning products have a multi-modal perspective; and

- requirements and objectives of the CAAA, ISTEA, and the ADA are incorporated into transportation planning and development activities.

D. Local Transportation Issues

To understand the regional context in which transportation planning is performed in the Portland metropolitan area, the following major transportation issues facing the area were identified through discussion with Metro staff and other area planning officials.

Issue 1: CAAA conformity regulations will require Metro and RTC to coordinate efforts to reduce travel-related pollution emissions.

Issue 2: Metro faces a substantial funding shortfall for transportation projects planned for the next ten- and twenty-year periods.

Issue 3: Suburban areas and central Portland do not agree on metropolitan area transportation planning needs and priorities.

Issue 4: Metro's 1992 RTP projects region-wide population growth of 36% between 1985 and 2005. Transportation planning must respond effectively to concerns about growth throughout the Portland area. Rural residents are increasingly concerned about the impact of planning on their areas.

Issue 5: Metro's RTP must promote certain required goals under the Oregon Land Conservation and Development Commission's Transportation Goal (Rule 12).

Issue 6: Portland area planners must develop and maintain means of coordinating responses to state requirements in Rule 12 and federal requirements such as in the CAAA and ISTEA.

Issue 7: Metro must lead the Region 2040 effort, which will include the sensitive task of defining the Urban Growth Boundary (UGB) and addressing decisions regarding such issues as levels of emphasis to place on new growth and in-fill development.

Issue 8: The city of Portland wants to double the designated "Central City Area" in which parking and traffic circulation are strictly regulated. This effort is important to meeting air quality goals, but will encounter opposition in currently unregulated areas.

III. Organization and Management of the Planning Process

A. Metropolitan Planning Organization Designation

Two MPOs conduct planning in the Portland metropolitan area. The Metropolitan Service District (Metro) is the designated MPO for the Oregon portion of the area, and the Southwest Washington Regional Transportation Council (RTC) is the designated MPO for the Washington portion, which consists primarily of Clark County. According to Metro, each agency conducts its transportation planning for its own geographic area under its respective state and federal authority. A new Metro Charter passed by Portland area voters on November 3, 1992, which went into effect on January 1, 1993, changes the number of regional representatives included in Metro Council from twelve to seven, and creates the Metro Policy Advisory Committee (MPAC), which must endorse all transportation planning initiatives. MPAC will have eighteen members, consisting of fourteen elected officials from Multnomah, Washington, and Clackamas counties and their largest cities, a single representative from Tri-Met, and three citizens appointed by Metro's executive officer who are not state, county or local government employees. MPAC includes no representatives from the state of Washington.

B. MPO Members - Roles and Responsibilities

The voting members of Metro Council -- which approves all final transportation planning and project recommendations -- are the elected representatives from Metro's twelve districts. As the designated MPO for most of the Oregon portion of the Portland metropolitan area, Metro is formally responsible for carrying out the UTPP and must develop both a long-range regional transportation plan that is endorsed annually and a TIP. The TIP specifies federally funded transportation projects to be implemented during a current three-to-five-year period. Projects included in the TIP must conform to the framework outlined in the RTP.

Metro's transportation planning is conducted primarily through the Joint Policy Advisory Committee on Transportation (JPACT), which is charged by its bylaws to "coordinate the development of plans defining required regional transportation improvements, to develop a consensus of governments on the prioritization of required improvements and to promote and facilitate the implementation of identified priorities." Under the new Charter, JPACT initiatives must be endorsed by the newly-created MPAC before submission to the Metro Council for final approval.

JPACT's seventeen members include representatives from counties in the Oregon portion of the area (Multnomah, Washington, and Clackamas - two members each), the city of Portland (one member), Metro Council (three members), the Washington portion of the metropolitan area (three members), the Tri-County Metropolitan Transit District of Oregon (Tri-Met, the regional transit operator), the Port of Portland, the Oregon Department of Transportation (ODOT), and the Oregon Department of Environmental Quality (ODEQ).

According to Metro, specific transportation policy recommendations are developed by JPACT, with technical assistance provided by the Transportation Policy Alternatives Committee (TPAC). TPAC's membership includes technical staff from the JPACT member agencies, and representatives of the FTA, FHWA, Federal Aviation Administration (FAA), and the RTC. Metro Council makes final

decisions on transportation project funding based on the recommendations of JPACT and TPAC. Under the Metro Charter, the Council must also seek the advice of MPAC, which endorses JPACT plans under consideration.

In the Washington portion of the Portland metropolitan area, the RTC's Transportation Policy Committee (TPC) and Board of Directors set transportation policy and make decisions and recommendations. These bodies jointly produce regional transportation plans and TIPs. The board of directors includes representatives of Clark, Skamania, and Klickitat Counties, the city of Vancouver, the Port, a small city, Washington State Department of Transportation (WSDOT), transit, and a private employer. The TPC includes ODOT and Metro representatives. RTC's Consolidated Transportation Advisory Committee, which also includes representatives from Oregon, provides technical advice and recommendations to the TPC. Final RTC decisions are made by its board of directors, which acts as the formal MPO and has powers roughly equivalent to those of Metro Council.

Transportation planning involving both Oregon and Washington portions of the metropolitan area, such as I-5 and I-205 improvements and research on high-capacity transit, is formally coordinated through a Bi-State Policy Advisory Committee, JPACT, and TPAC. The Bi-State Committee is composed of representatives from Metro, the RTC, the two principal area cities (Portland and Vancouver), and the two principal counties (Multnomah and Clark). There is some uncertainty among planners about the status and future viability of the Bi-State Committee. According to the RTC, most actual coordination between the two states occurs in "mini project committees," through which the agencies work together on specific tasks. However, RTC also indicates that few joint meetings of these project committees actually occur.

Metro and RTC are working cooperatively on a major north-south corridor study project between the two jurisdictions. WSDOT and C-Tran are providing approximately $3.1 million of the $8.5 million total cost.

Observations and Suggestions

1) **Regional representation** -- Metro and the RTC are commended for providing broad geographical and modal representation from their respective regions on the administrative bodies responsible for transportation planning.

2) **Bi-state coordination of planning** -- Coordination of transportation planning between the Oregon and Washington portions of the Portland metropolitan area would be improved if it were formalized and officially carried out through a single agency, authority, or planning group rather than project-specific "mini committees." Metro and RTC are encouraged to solidify the role of the Bi-State Committee or to develop another means to formally coordinate planning efforts and form a regional transportation vision. Under ISTEA, it will be necessary for the plans and programs of the two MPOs to be coordinated. Documentation of coordination should accompany future plans and TIPs.

C. Unified Planning Work Program

All planning work program elements for the Oregon and Washington portions of the Portland metropolitan area, except those locally funded and implemented, are included in the current joint UPWP, which was approved on March 26, 1992. Separate UPWP documents are prepared for Portland's Oregon and Washington areas and combined to form the joint product.

Metro's portion of the UPWP lists and describes twenty-three planning programs. It does not provide an introduction or explanation of goals, strategies, or the selection process for planning programs.

RTC's portion describes its UPWP as an effort to focus on the priorities of federal and state transportation agencies and to undertake tasks deemed necessary by local officials. The UPWP presents planning activities meeting the requirements of both ISTEA and the WSDOT transportation planning program for the Vancouver region. It lists eighteen planning projects in four categories: (1) regional transportation plans, (2) regional transportation planning studies, (3) plan refinement and data management, and (4) program management.

According to RTC, the UPWP is intended to serve as a guide for planners, citizens, and elected officials to track planning, and to provide a useful basis for improving regional coordination in the bi-state Portland area. Bi-state planning at the staff level occurs through technical committees, and mechanisms for regional coordination are formally established in a series of memoranda of understanding. The UPWP briefly mentions two specific linked planning activities in the Oregon and Washington portions of the Portland area. JPACT and TPC have agreed to undertake a Bi-State Transportation Study, and growing congestion on northern corridors of I-5 and I-205 has prompted a joint study of high capacity transit that may soon progress to pre-Alternatives Analysis.

Program descriptions for both Oregon and Washington are well-written, clearly organized, and include program definitions, explanations of relations to previous work, detailed objectives, and projected products and targets. Budgets for fiscal year 1993 include sources and uses of funds for each project and the UPWP as a whole, and anticipated activities appear to be fully funded. The UPWP does not describe the process of program development, prioritization, and funding allocation. It attempts to include all major regional transportation planning activities, but projects funded exclusively at the local or state level are not listed.

Observations and Suggestions

The following suggestions are made to improve an already competently developed UPWP:

1) **Non-federally funded UPWP activities** -- The UPWP should include all regionally significant transportation planning and management activities in the Portland metropolitan area, regardless of funding source, as required in joint FTA and FHWA planning regulations. Because Portland's UPWP excludes important activities funded solely by state and local sources, it provides an incomplete picture of regional planning.

   An inclusive UPWP would encourage an integrated and comprehensive understanding of area-wide highway and transit service planning, which is funded primarily with state and local funds.

It will improve the quality of the 3-C planning process, providing a more coordinated and informed mechanism for setting priorities, programming scarce resources, and making capital investment decisions that have a foundation in the planning process.

2) **Introduction** -- The UPWP should include an introduction that explains its context and overall purpose. For example, the Portland UPWP presents the development of short- and long-range plans and TIPs as primary planning activities, but does not define these projects as components of a larger planning agenda. The work program could present goals, outline a strategy for meeting them, and indicate how specific projects will promote stated objectives. In a bi-state metropolitan area, a formal description of how two different transportation planning programs will be coordinated to further regional objectives might also provide a helpful guide for local planners and a general audience.

3) **Setting priorities for planning activities** -- To furnish full information and provide planners with a guide for future planning cycles, the UPWP should clearly indicate how planning projects are developed and chosen for the work program. Projects within each functional area of the UPWP could be ranked or otherwise characterized to indicate priority. A clear description of planning priorities will demonstrate to readers the extent to which the UPWP addresses the critical planning needs identified in other documents, such as the long-range plan and TIP.

D. Self-Certification

Self-certification of the UTPP occurs through the adoption of a joint resolution by the Metro Council and the Oregon State Highway Engineer, and takes place in conjunction with the adoption of the UPWP. Conformance with applicable federal planning requirements is outlined in a detailed document provided to Metro Council that describes Metro's designation as MPO, various working agreements, jurisdiction, and planning efforts related to:

- the transportation plan;
- the TIP;
- issues of interstate significance;
- public involvement;
- air quality;
- civil rights;
- access for individuals with disabilities;
- disadvantaged business enterprises; and
- private sector participation.

The last certification resolution was adopted by Metro Council on March 26, 1992.

IV. Products of the Process

A. Transportation Plan

The federal team reviewed Metro's RTP, which was adopted in 1989 and revised in January 1992. An interim revision was scheduled for completion in October 1993. The plan was determined to be in compliance with the SIP for meeting ambient air quality standards in September 1992.

The plan for Washington State's Clark County was adopted by RTC (then named the Intergovernmental Resource Center) in 1992. Representatives from the two states interact through reciprocal membership on the committees that prepare plans, but Metro and RTC guide long-term plan development separately -- under respective state and federal authority -- for their own portions of the Portland metropolitan area.

The Portland RTP was prepared by Metro's Transportation Department with guidance from JPACT, which provided final approval. The plan provides a long-term "unified blueprint" for a regional transportation system, based on the assumptions that:

- anticipated population, employment, and travel growth in the metropolitan area will overload the existing transportation system, increase air pollution, and threaten mobility;
- regional coordination is essential to successful transportation system planning; and
- transportation planning must meet the requirements of the Oregon Land Conservation and Development Commission's (LCDC) Transportation Planning Goal (Rule 12), the CAAA, and the Regional Urban Growth Goals and Objectives (RUGGO).[1]

Based on these assumptions, the RTP's regional transportation vision is committed to the two principles of encouraging economic growth and preserving Portland's quality of life. Metro's broad goals for the plan are "to provide adequate mobility to a growing region at a reasonable cost and with as little environmental impact as practicable." The RTP should promote these goals by providing a long-term framework through which planners will choose cost-effective investment alternatives that provide an integrated program of improvements.

The RTP indicates that specific means to achieve these broad system-oriented ends include highway improvements, mass transit improvements and expansion, and transportation demand management programs such as ridesharing, flextime programs, and commuter bicycling. Investments in these three areas will focus on four elements of the transportation system, designed to serve the mobility needs of people and goods rather than promote specific modes:

[1] Regional Urban Growth Goals and Objectives (RUGGO) were adopted by Metro on September 26, 1991. RUGGO is divided into two sections, which define a regional planning process and a long-term vision for Portland's urban form. RUGGO is discussed further in Section V. Rule 12 is a state planning mandate described more fully later in this section.

- regional corridors, where both highway and transit investment is planned;
- the urban arterial system;
- bus service expansion; and
- system demand management.

For these four elements, the RTP describes a twenty-year vision combined with a set of high-priority system improvements scheduled for the next ten years. Project selection is intended to promote multi-modal means of providing mobility. Particular attention is given to the development of a regional light rail system based on the existing Portland Light Rail System (MAX) route that leads from downtown Portland through the eastern portion of the city to Gresham. A light rail line from downtown Portland west to 185th Avenue is already in the final design and construction phase, and an extension to Hillsboro is in the draft environmental impact statement/alternatives analysis phase. Metro also plans to continue participating in ODOT's Western Bypass study, which is exploring alternative corridors and modes for meeting rapidly growing travel demand in the western portion of the Portland metropolitan area.

A number of new and existing transportation demand management measures are proposed to manage travel demand throughout the metropolitan area. They include the free Areawide Carpool Matching Program, the Employer Contact Program (which assists employers trying to establish rideshare programs), the Downtown Portland Parking and Circulation Policy (designed to reduce auto use and the resulting congestion), the Portland Carpool Parking Program (a cooperative venture of the city of Portland and Tri-Met), and the city of Portland Bicycle and Pedestrian Program.

Regional needs identified in the plan are presented in the context of land use, urban development, and environmental concerns. A priority of the RTP is the coordination of transportation and land-use planning, consistent with RUGGO and Rule 12 of the LCDC Statewide Planning Goals (which mandate growth management in Oregon). Rule 12 seeks to "reduce reliance on the automobile and assure that the planned transportation system supports a pattern of travel and land use in urban areas which will avoid the air pollution, traffic and livability problems faced by other areas of the country." The rule stipulates that regional transportation plans be consistent with the statewide transportation system plan, and requires inclusion of a variety of measures such as bicycle and pedestrian plans, transportation system and demand management, and parking plans. Land-use alternatives must be considered along with transportation alternatives during plan development, and chosen projects must be designed to reduce per capita vehicle-miles travelled (VMT) by at least 20% within thirty years of adoption. The RTP itself does not indicate direct coordination between the Portland area and the state in the development of plans, but does note that Metro is working with ODOT to ensure consistency between the RTP and the state's transportation system plan, the 1992 Oregon Transportation Plan (OTP).

The planning document presents a regional vision, and lists and carefully describes transportation projects that have been chosen for eventual implementation. It does not indicate the process used to develop the general transportation vision for the metropolitan area or demonstrate that a range of specific alternative schemes was considered in the planning process. Without this background information, the bases for alternative choices are unclear.

The ambitious ten- and twenty-year scenarios for implementing the regional vision, described in the RTP, were neither prioritized nor financially constrained and faced large funding shortfalls. Metro estimated that the ten-year priority highway corridor improvements will cost $928 million, of which $446 million is committed or expected from existing revenue sources. This translates to a $482 million, or 52%, shortfall for the next ten years. The shortfall for the $539 million, ten-year urban arterial system projects is $322 million, or 60%. Seventy-five percent of needed funding for the current Westside light rail has been committed from the FTA, and additional financing will be needed.

Shortfalls for the twenty-year investment vision are even greater, and the RTP acknowledges that full implementation will require new funding sources. Metro officials observed that the record in Oregon of adopting incremental increases in its gasoline tax is expected to continue, and suggest that the RTP should be regarded as a vision for the Portland metropolitan area. Historic practice has been to identify a long-range vision, and then pursue required funding.

Metro is addressing this financial shortfall by aggressively pursuing additional revenue sources. In 1989, under the auspices of the Business Task Force on Regional Transportation, the Public-Private Task Force on Transit Finance, and JPACT, Metro developed a Regional Transportation Funding Proposal designed to produce new funding sources for transportation projects. The proposal seeks to link funding of highway and transit improvements and proposes a variety of new revenue sources. In addition to state and federal funds, incremental gas tax increases, value-based state vehicle registration, and a new Metro vehicle registration fee are suggested as sources of money for highways and roads. The plan also recommends that transit projects be eligible to use sources (gas tax and registration fees) previously restricted to roads, and proposes that a partnership between the state, local and private sectors be formed to develop a variety of mechanisms for funding light rail expansion and general transit capital and operating costs. Although the Oregon legislature failed to approve the funding initiative in the last session, similar proposals will be in the next session, according to Metro staff.

RTP growth expectations are based on a twenty-district population and employment forecast for the year 2005. The RTP projects twenty-district growth of 36% in population (from 1.3 to 1.7 million) and 48% in employment (from 614,301 to 909,987) between 1985 and 2005. According to Metro, actual growth trends of the last five years have exceeded rates predicted by models, which can tend to underestimate traffic forecasts. MPO planners expect growth to exceed that projected in the 1992 RTP.

In discussions after the site visit, Metro staff said that they were preparing a financially constrained update to the RTP that would be completed for federal review in November 1994. According to staff, a new RTP, to be completed in May 1995, will meet ISTEA requirements and additional state requirements, including a VMT per capita drop of 10%. According to staff, the 1994 updated RTP will reflect revised employment and population forecasts, and the 1995 new RTP will incorporate the complete set of current demographic forecasts.

Metro, ODOT, and Tri-Met are guiding development of a longer-term transportation vision for the Portland metropolitan area through a broad planning effort to manage growth by deciding how land and public services will develop during the next fifty years. The **Region 2040** process seeks to determine if current regional planning policies are acceptable, and to select development patterns that

will be pursued. The first phase of the project, completed in 1992, conducted interviews with hundreds of regional residents to determine a variety of development preferences, and identified three growth concepts that are feasible within the existing framework of legal regulations and policies, development patterns, and physical features of the metropolitan area. The second phase was scheduled to evaluate the three alternatives and lead to the selection of a preferred concept by the end of 1993. Implementation of the chosen growth pattern was to begin in 1994 through the revision of planning guidelines, documents, and projects. Each of the growth alternatives entails choices about how the area's transportation system will be developed and managed, and each depends substantially on transit expansion. The Region 2040 process is expected to lead to a long-term vision based on the preferences of a broad cross section of the Portland metropolitan area.

RTC's 1992 transportation plan for Clark County presents a twenty-year vision similar to Metro's: to facilitate economic development while maintaining a good quality of life. The specific goal of the plan is to provide optimal mobility "at the most cost-effective price and with the least environmental impact." The plan proposes a series of short- and long-range improvements to the regional transportation system, including highways, urban arterials, transit (with a focus on linking with Portland's light rail), and other management alternatives to meet travel demand. Emphasis is given to maximizing use of the existing system, developing circumferential corridors, expanding transit, increasing revenue, involving the private sector, and improving accessibility across the Columbia River.

The RTC plan goes beyond meeting pre-ISTEA federal requirements to anticipate the mandates of ISTEA. As in Oregon, Washington regional planners must meet rigorous state guidelines. Regional transportation plans are expected to be consistent with the policies and objectives of both the 1990 Transportation Policy Plan for Washington State and the 1990 Washington State Growth Management Act, which impose transportation planning and system regulations similar to those of Oregon's Rule 12. Given this mandate, the RTC plan presents a regional land-use and development strategy, designates a regional transportation system, and proposes improvements designed to manage the system's performance more effectively. RTC notes that current resources are not adequate to meet future transportation system needs, and assumes that the next plan must establish priorities and strategies for securing new revenue sources. According to staff, a revised plan is under development.

As described in the RTP for Clark County, RTC's plan development process is comprehensive. Based on legal requirements, a long-term vision, and demographic forecasts (i.e., population, employment, and land use), planners identify regional transportation system needs and a series of travel performance criteria. As encouraged in ISTEA, a number of investment alternatives are then analyzed and evaluated, leading to a series of system improvement recommendations. The next step is the development of plan implementation and monitoring provisions for the RTC Board of Directors, transportation committees, and member agencies. Although the plan was not financially constrained, the limitations of available revenues were considered during analysis of investments, and strategies for identifying revenues were a component of the adopted plan. The impacts of proposed projects on demographic patterns are examined during both the analysis and monitoring stages of the process.

Observations and Suggestions

Metro has produced an RTP that effectively describes a transportation vision and series of system investments for the Portland metropolitan area. The following observations suggest means of maintaining and improving the process of plan development and adoption:

1) **Comprehensive analysis of alternative regional scenarios** -- Metro's RTP should describe the range of alternatives considered in the adoption of a transportation vision and specific goals and projects. Given the uncertainty of demographic trends in the Portland metropolitan area, as indicated by the results of past forecasts, alternatives should be based on a number of growth and financial projections. A more comprehensive plan document would better inform the public officials who must make project investment decisions throughout the covered ten- and twenty-year periods, and would indicate the MPO's rationale for choosing solutions for regional transportation problems.

2) **Region 2040** -- Metro is encouraged to pursue the promising Region 2040 process. This initiative represents a first step toward development of a long-term vision based on analysis of alternative regional growth concepts and resulting transportation and funding options.

3) **Coordination with other plans** -- To meet the requirements of ISTEA and Rule 12, Metro should ensure that the RTP is consistent with the OTP. In addition to meeting legal requirements, consistency will enable and compel the metropolitan area to integrate its transportation planning and system with a statewide framework.

4) **Financial constraints and project priorities** -- The financially constrained update to the RTP, which was scheduled to be completed in November 1994, should be prioritized based on costs and available resources. The development of an optimistic target vision for Portland through the Region 2040 process should free the RTP to present feasible options for the regional transportation system. A financially realistic plan, as required by interim ISTEA planning guidance, will encourage rigorous analysis and careful choice of current investment alternatives.

5) **Regional Transportation Funding Proposal** -- The review team encourages Metro to continue to pursue innovative funding strategies. Diverse financial resources will expand the range of project choices available to planners.

6) **Multi-modalism** -- Metro is commended for proposing a long-term series of investments in the plan that reflect a commitment to multi-modal coordination.

7) **Bi-state coordination** -- Successful coordination appears to be demonstrated by the parallels between the Metro and RTC plans, interstate membership on planning committees, and the statement in the Metro RTP that changes in and adoption of the plan in either state require consultation. The two MPOs could make an effort to develop a single regional transportation plan. A long-term, comprehensive transportation vision based on bi-state consensus would provide a strong guide for rationally choosing system improvements. ISTEA requires coordination between the two MPOs; documentation must be submitted with plans and programs.

8) **RTP for Clark County** -- RTC is commended for producing a comprehensive transportation plan for Vancouver and Clark County. Given funding limitations and ISTEA requirements, RTC should produce a financially constrained plan with prioritized project components based on costs and expected resources.

B. Transportation Improvement Program

Metro's TIP for fiscal years 1993 through 1996, adopted November 4, 1992, describes how federal transportation funds for highway and transit projects in the Portland area are committed. The Annual Element covers the period between October 1, 1992, and September 30, 1993. The purpose of the TIP is to explain how the capital improvement component of the RTP will be implemented. According to Metro, the TIP also describes which projects will be given priority, and balances local and regional needs. It sets forth the anticipated investment actions for FY 1993 and subsequent years. While comprehensive, the organization of the TIP's introduction could be improved to summarize the remainder of the document more clearly for readers.

To ensure that the TIP reflects the area's transportation needs, a range of representatives with various priorities participates in its creation. Proposed projects are developed by ODOT, the cities and counties of the Portland metropolitan area, and special districts such as Tri-Met. Proposals go through technical review in TPAC and policy review in JPACT, and are approved by Metro Council. Highway, transit, and other projects are included in a single TIP.

The mechanics of choosing projects for entry in the TIP process varies, depending on the funding source. Implementing agencies are directly involved. Projects that qualify for Portland regional STP funds are selected by Metro. ODOT solicits projects from its Six-Year Plan that qualify for state STP, National Highway System (NHS) or other funds. All funded ODOT regional investments are included in the TIP, as well as in the RTP. The selection of transit investments financed by Section 9 follows Tri-Met's five-year process, reflected in its Service Plan, which is incomplete.[2] The final TIP document reflects this broad-ranging collection of separate projects; it does not indicate how projects are combined to support an integrated, multi-modal transportation system.

The TIP does not refer to any planning documents that justify which projects have been selected and relate them to a larger system. STP funds in the current TIP were allocated "off the top," before a general review of options: $20 million for the Hillsboro light rail extension and a lump sum for Metro planning. Other uses of these funds were apparently not considered.

JPACT, which does most project ranking, is trying to improve the TIP process by establishing formal priorities to guide funding decisions. The framework guiding the development of priorities is described in the TIP roughly as follows:

---

[2] The Tri-Met Service Plan is discussed in section VII.

1. Improvements that correct severe existing traffic problems will have top priority;

2. Improvements that correct anticipated future traffic problems and access capacity deficiencies will have the next priority;

3. Options that increase the mobility capacity of the existing system, such as ramp-metering, signal improvements, access control, and high-occupancy vehicle lanes, will be given higher priority than new construction;

4. Large projects will be broken into manageable parts that can be prioritized; and

5. Consideration will be given to maintaining a flexible reserve fund to enable implementation of transportation improvements that respond quickly to economic development opportunities.

While formal priorities have not been finalized, this framework of criteria was applied to highway and transit projects proposed for inclusion in the current TIP. Highway projects are also judged based on traditional criteria, such as VMT and potential to reduce congestion, and Metro will add measures of roadway impacts on bikeways and pedestrian facilities in response to Rule 12.

Metro is developing a point system, not described in the TIP, with which to evaluate projects being considered for funding under the Transportation Enhancement and Congestion Management/Air Quality (CMAQ) categories of ISTEA. Portland metropolitan area highway projects submitted for the ODOT Six-Year Plan are already ranked high, medium, or low, based on a point system, and a list has been adopted following public and Metro comment. According to Tri-Met, most transit projects are prioritized based on agency needs and consensus rather than formal criteria. Major Tri-Met capital investments generally emerge from Metro's regional planning process. ODOT and Metro do not now share a joint set of priority guidelines, which may impede the coordination of implementation of projects developed separately at the state and metropolitan area levels.

The TIP is not over-programmed; funds have been committed for the projects listed. During its development, the proposed program in the current TIP was determined to cost more than available funding allows. Metro worked with ODOT to adopt reductions that equalized costs and funding. Projects that are dropped from the TIP due to insufficient funds are maintained in the RTP for later funding consideration.

According to Metro, consistency of the TIP with the RTP was established in FY 1991 and FY 1992 updates of the regional transportation model. Proposed elements of the RTP are added to the model to simulate expected future transportation system performance. TIP projects are compared to this projection to determine consistency. Metro will also require that local and special districts provide statements confirming that their projects are consistent with the RTP.

The TIP is in conformity with the Oregon SIP for Air Quality adopted in 1982 and has been found to comply with the CAAA and its Phase I Interim Conformity Guidelines. An update to the ozone plan in 1985 projected attainment of air quality standards by the end of 1987, but the Portland area is still in moderate nonattainment. All projects specified in the SIP as necessary for attainment of

standards are included in the TIP. Metro has also reviewed the TIP to ensure that it does not include actions that would reduce the effectiveness of planned TCMs.[3]

Project development and implementation are tracked through a streamlined review process developed to allow Metro to react quickly to changed circumstances and maintain compliance with funding regulations. According to Metro staff, administrative procedures were developed prior to ISTEA primarily to manage state program projects. These projects are funded by federal and state revenues not directly allocated to the metropolitan area, and on local programming of revenues suballocated to the metropolitan area.

Local jurisdictions manage projects and request additional money when shortages occur. Metro staff may approve funding transfers between projects in a single jurisdiction, and adjust as much as 50% of funding for existing projects, "within previously approved funding allocations." New projects not exceeding $2 million and that do not significantly affect roadway capacity may be administratively added to the TIP. Notice is provided monthly to TPAC and quarterly to JPACT for administrative program changes greater than $100,000. Transfers between jurisdictions must be accompanied by a statement of the impact on the project relinquishing funds. A change in project designation or substitution resulting in a funding increase or decrease greater than 50% requires a TIP amendment through the normal voting process. The TIP and its fund balances are updated quarterly.

Metro staff acknowledges that the elimination, under ISTEA, of suballocated fund sources will require amendment of these procedures. Funds such as regional STP and CMAQ program dollars are now allocated to individual projects in conformity with adopted regional priorities. According to staff, current administrative procedures remain sufficient for management of state program modifications but require greater stringency for management of these "regional" fund balances. According to Metro, modifications to the procedures are being developed to:

- Assure that regionally approved priorities receive adequate funding relative to competing priorities of the jurisdiction managing project funding; and

- Provide incentives for efficient "local" management of "regional" funds. If local management of a project reduces funds required below those allocated, some agreement may be desirable to transfer residual funds to another priority project in that jurisdiction to discourage "gold-plating" of approved projects. The TIP Subcommittee of TPAC would have the authority to make adjustments that would not otherwise require full voting approval.

Information in the latest quarterly TIP is used to prepare the next year's Annual Element. Metro expects that tracking procedures may be revised to accommodate changes brought about by ISTEA.

According to Metro, regional policy is designed to consider the capability of the private sector to provide mass transportation and ensure fair resolution of disputes. Compliance with this policy is endorsed in Metro Council Resolution No. 92-1667. As the only major operator in the Portland area,

---

[3] Air quality planning is discussed thoroughly in section V.D.

Tri-Met is given principal responsibility of involving private enterprises. Private operators have been sent a mailing requesting general comments on projects, but in practice, no official policy or forum appears to be in place to gather private operator input. Metro staff observed that there are private sector representatives on the TPAC.

In the Washington portion of the Portland metropolitan area, RTC's 1993-1995 TIP for Clark County was adopted on September 29, 1992, and approved by the governor on November 12, 1992. As required in air quality nonattainment areas, it lists all projects, including those funded by state and local sources, for fiscal years 1993-1995. The TIP is the formal documentation of the process of implementing RTC's regional transportation plan, serving to describe, prioritize, schedule, and allocate resources for identified construction and service investments. According to RTC, included projects are drawn either directly from specific recommendations in the plan or designed to meet more general goals such as expanding the road system or improving traffic safety. Analysis and findings stated in the TIP indicate that it conforms to the Washington SIP, and the MPO certified that citizens were provided with reasonable opportunities to comment.

The Clark County TIP was developed through a three-step process, which begins with screening of proposed projects to confirm their regional significance and consistency with RTP goals. Acceptable proposals are evaluated on the basis of a set of technical criteria. After projects have been screened and technically evaluated by the MPO, they are prioritized and programmed with the cooperation of C-Tran and WSDOT. The TIP is financially constrained, and presents clear indications of funding sources by project. The TIP does not explain how project selection criteria are established.

TIP issues of bi-state significance have been resolved either informally or through RTC and Metro committees, including representatives from Washington and Oregon. As noted above, the future of the formal Bi-State Advisory Committee is uncertain.

Observations and Suggestions

Metro has adopted a TIP for Portland that indicates regional priorities, lists all current transportation projects, and is financially constrained. Metro and ODOT coordinate effectively to maintain investment levels within available funding levels. The TIP provides a complete and realistic description of the current transportation investment activity in the Portland metropolitan area, including projects funded by state and local sources. The following comments note particular strengths and suggest improvements:

1) **TIP document** -- The Metro TIP should have an introduction that clearly explains the basis for including projects, and summarizes each section listing specific investment projects. A clear introduction would ease interpretation of the document, improve efforts to ensure that the TIP performs all of its required functions, and clarify the planning process for other agencies and the public.

2) **Criteria for setting priorities** -- Metro is making a commendable effort to develop a framework for prioritizing transportation projects that responds to new legislation (state and federal - Rule 12 and ISTEA) and regional goals, such as pedestrian and bicycle access. The proposed point system for enhancement and CMAQ investments is especially promising and might be applied

usefully to other funding categories. Metro and Tri-Met are encouraged to develop joint prioritization guidelines that would encourage coordination between the two regional agencies.

3) **Project justification** -- The TIP should have strengthened explanations of how projects are justified and how criteria for including projects are established. Without such information, the initial impetus for project development is unclear. Program needs may be obvious to planners in some cases, but should nonetheless be described to establish regional significance for a broad readership. Allocation of STP or Section 9 funds should be based on the planning process; the Interim Guidance prohibits suballocation to jurisdictions unless based on the planning process.

4) **Consistency with RTP** -- Metro is encouraged to require project proposals to include a statement of conformity with the RTP. With this requirement, the new TIP development system will encourage planners to consider long-term regional goals during the early stages of project development.

5) **Quarterly project tracking** -- The quarterly funding update and administrative process for adjusting the TIP promote careful monitoring of sources, uses, and likely needs for financing, and improve flexibility for quick responses to changing circumstances.

6) **TIP amendment procedures** -- Metro should work closely with FHWA and FTA to assure that procedures to amend the TIP meet ISTEA and CAAA conformity requirements. According to the ISTEA Rule, in nonattainment areas, if the TIP is amended by adding or deleting projects that contribute to or reduce transportation related emissions, new conformity determinations by the MPO and the FHWA and FTA will be necessary. Limited conditions for exempt projects are described in the Rule.

7) **Tri-Met** -- Tri-Met should complete a five-year TDP, which the agency refers to as its Service Plan, and formal description of regional transit objectives and criteria for including projects in the TIP. Such a plan and standards will provide a basis for the prioritization of projects recommended for implementation through the TIP.[4]

8) **Private participation** -- Metro and Tri-Met should review their responsibilities under FTA private enterprise policy. Private providers should be given formal opportunities to participate in the TIP development process.

[4] Tri-Met planning is discussed in section VII.

V. Elements of the 3-C Transportation Planning Process and Related Activities

A. Evaluation of the Impacts of Major Investments

Few major transportation investments made in the last twenty years in Portland have been evaluated to determine their actual versus forecasted cost and impact; studies instead focus on anticipated projects. The post-project evaluation that does occur addresses impacts on corridor plans or areas. Metro examines the effects of projects on travel demand and ridership rather than overall economic performance, although the agency has compared expected versus actual general investment in targeted travel corridors. For the first MAX light rail line, in the Banfield corridor, forecasted and actual ridership were compared and demand models were then adjusted. Results from the analysis of the Banfield line are being used by Tri-Met in planning the extension to the West Side, though a final post-project study has not been completed.

The only formal "before and after" project evaluation was "The Portland Mall Impact Study," conducted in 1982 for Metro by Portland State University (PSU). PSU described the objectives and results of the downtown transit mall. Analysis focused on a number of project issues: implementation, transit and traffic effects, social impacts, travel behavior, noise and air quality changes, land values and development, and broad benefit and cost estimates. Metro plans to conduct more multi-modal studies and is considering a detailed evaluation of the first MAX line that goes beyond ridership assessment. In response to ISTEA, Metro and its planning partners are developing CMAQ and enhancement projects that include rigorous evaluation, and are encouraging an improved overall program to monitor transportation investments.

Observations and Suggestions

1) **Routine evaluations of major investments** -- Metro and Tri-Met should evaluate major transportation investments in the Portland metropolitan area, before and after implementation. The post-project report on the Banfield light rail transit (LRT) line, for example, should be completed and made available. Such an effort would allow assessment of the relative success of major investments and improve future investment decisions, particularly considering the increased authority for flexible multi-modal investment granted by ISTEA. Evaluation would also add a measure of accountability to the planning and implementation process.

   PSU's study of the downtown Portland transit mall is a good model. Evaluations of major investments could contrast actual and forecasted impacts of projects on: costs; transit ridership; automobile use and miles travelled; and other relevant impacts, including land use and air quality. These analyses would inject a degree of accountability into the planning process by allowing testing of both the assumptions made at the time of project approval related to land use, demographics, and pricing, and the analytical methods that produced these assumptions.

B. Monitoring, Surveillance, and Reporting

The Portland metropolitan area maintains a broad range of data for plan reappraisal. Surveillance activities include an ongoing traffic count program, gauging of automobile operating costs, and biennial jurisdiction counts and gathering of cut line data. Based on this data, Metro validates the travel demand model and monitors RTP progress. Data collection and monitoring are described in a 1992 Metro report titled "Transportation System Monitoring Activities." This report documents auto parking costs, auto traffic counts, auto ownership and operating costs, and transit patronage and costs. Data collection and maintenance are means of tracking and verifying trends in the regional transportation system. According to Metro, data is regularly updated and shared with other jurisdictions, developers, and consultants. Other than periodically published RTP updates, no formal process exists for reporting the status of plan implementation.

As other resources for plan monitoring, Metro maintains and supports the Regional Land Information System (RLIS) and the Data Resource Center. The RLIS is a computer mapping system that provides a comprehensive source of information on regional land uses and characteristics. It is expected to provide information products useful for the public and private sectors. The Data Resource Center is a cooperative data gathering and research program for local governments and businesses; work includes supporting short-, medium-, and long-range forecasting and simulation, and updating population, housing, and employment programs. Plans for 1993 call for upgrading both the RLIS and Data Resource Center.

Metro monitors growth in the metropolitan area on an ongoing basis, publishes a Regional Development Trends update twice a year, and annually adjusts regional base-year population and employment figures to reflect changes. Detailed population, household, and employment data and projections through 2010 are presented in appendices to the current RTP. The MPO conducted household travel behavior surveys in 1977, 1985, and 1988 that focused on the Banfield Corridor, and the UPWP calls for transportation travel pattern monitoring. The next household survey, scheduled for 1993, will query 5,000 households and gather information to be integrated with Tri-Met's on-board transit survey. The MPO also plans to implement a panel survey that will track a single sample of persons over time. The RTP notes that ongoing monitoring is important to ensuring that forecasts are adjusted to reflect actual trends. According to ODOT, the state is urging database coordination within and between regions.

As a means of giving attention to regional freight movement and responding to the multi-modal and management systems emphases of ISTEA, Metro has proposed an Intermodal Management System led by the Port of Portland. The goal of the proposal is to integrate information on freight movement with the remainder of traffic and origin and destination (O&D) data. The Port now collects air and water freight transport data, and intends to integrate this information with figures on other modes. According to Metro, work on the Intermodal Management System is underway.

Observations and Suggestions

Metro competently monitors the transportation system in the Portland metropolitan area, and appears to regularly revise the information on which it bases assessments. The agency appears to be in a strong position to meet related ISTEA management system requirements. The following suggestions are intended to strengthen an already effective process.

1) **RTP appraisal and implementation** -- Metro might improve the planning process by developing formal procedures for reporting progress in implementing RTP components and assessing their full impacts.

2) **Regional data sources** -- The MPO is commended for planned upgrades of the RLIS and the Data Resource Center, and is urged to continue these activities. These data banks provide centralized sources of information for planners from a number of jurisdictions working in different travel modes. Such comprehensive data collection sources strengthen coordination and sharing of information and promote intermodal, regional transportation planning.

3) **Household and panel surveys** -- Metro is encouraged to conduct the planned travel behavior survey of 5,000 households. Such a large sample is likely to enable reliable interpretations of travel patterns and preferences of the Portland regional population. If integrated with Metro's other data sources, household information will improve the assumptions underlying regional transportation planning. The MPO should also develop the planned panel survey, which will improve long-term monitoring and assessments.

4) **Intermodal Management System** -- The intermodal management system is an excellent initiative that supports multimodal planning and responds to the mandates of ISTEA. It will encourage planners to focus on the regional transportation system as a whole rather than concentrating on one or a few components that are regarded as independent and unrelated.

5) **Monitoring physical conditions** -- Metro might improve monitoring by completing periodic assessments of the condition of a sample of roadways and other physical components of the regional transportation system. An inventory describing capital facilities would enable planners to stay abreast of needed adjustments to current projects and future plans.

C. Ongoing Regional and Corridor Multi-Modal Planning Approach

Metro, the RTC, and transit operators in Washington and Oregon conduct separate planning for their portions of the metropolitan area, although there is coordination. The process produces two each of the following: UPWPs, regional transportation plans, TIPs, and transit strategies.

Regional goals and objectives were adopted by Metro through the RLIS process on September 26, 1991. This process was initiated as the core of a 1988 UGB Periodic Review Workplan. RUGGOs were designed to provide the framework needed to address land development issues raised by the growth of the area. Goals are divided into two sections:

1. An outline of the preferred regional planning process to identify activities of metropolitan significance, which should be cooperative rather than duplicative. The process calls for a Regional Citizen Involvement Coordinating Committee to advise Metro on citizen involvement, and a Regional Policy Advisory Committee to advise on regional planning. To foster regional cooperation while respecting local agency responsibilities, the process allows Metro to apply RUGGOs only through its functional plans and management of the UGB.

2. A description of the preferred urban form for the region to maintain and enhance the livability through initiatives which:

    - preserve environmental quality;
    - coordinate development of jobs, housing, and public services; and
    - account for the interaction of benefits and costs of growth in different local areas within the region.

Factors contributing to livability include informed use of the natural environment, maintenance of a balanced built environment, and careful management of growth and economic development on the urban land supply. Goal (2) endorses a regional transportation system that reduces reliance on single occupant vehicles, provides adequate mobility, encourages energy efficiency, recognizes financial constraints, and minimizes environmental impacts. RUGGOs are the first step in planning for future growth; they will guide UGB amendments and provide the policy framework for the Region 2040 process described in section IV.A.

All jurisdictions are required by Oregon State law to develop land-use plans that address the Statewide Land Use Planning Goals. Metro developed a regional composite land-use map for the Portland metropolitan area by combining individual comprehensive plans prepared by local cities and counties. The composite plan is accurate as of June 1990 and defines the UGB, which serves as the geographical limit (enforced by Metro) for "urban" development within the area. Prescribed land uses within the UGB are grouped into four general types:

1. single family residential;
2. multi-family residential/commercial;
3. industrial; and
4. public/open space.

Metro considers the different travel generation characteristics of these land-use categories while developing assumptions for transportation planning. Metro is responsible for ensuring that the RTP does not violate statewide planning goals, nor identify projects that may affect protected land resources. The RTP suggests that transit and other transportation investments, designed to serve travel demand produced by the existing development pattern, are expected to be useful tools for achieving locally adopted land-use and economic development goals.

Current demographic projections were carried out through a regional Growth Forum and Growth Allocation Workshops. The Growth Forum included representatives from business, government, and education, who are involved in economic and demographic forecasting; it forecasted the region's

short-term (1995) and long-term (2010) economic prospects, using an econometric model of the Pacific Northwest, disaggregated for Oregon.

The RTP was last evaluated at the system level in 1989. According to Metro, the 1992 RTP revision is consistent with RUGGOs and begins to incorporate the requirements of Oregon's Rule 12 and the CAAA. A full examination of alternative transportation and land-use scenarios called for in Rule 12 will occur through the Region 2040 process. The current plan update is a response to expected increases by 2005 in peak-hour travel delay, lanes of congestion, and fuel consumption, and substantial reductions in auto speed. The adopted RTP programs were developed to reduce peak-hour travel by 35%, lane-miles of congestion by nearly 40%, and fuel consumption by 6%, and increase peak-hour speeds by 17% system-wide.

Metro is responsible for conducting comprehensive transportation studies that raise regional or multi-jurisdictional issues. The Northwest Subarea Transportation Study is analyzing existing and forecasted travel demand in an area north of the Sunset Highway from Northwest 109th Street in Washington County to Northwest Westover in Portland. The study is focusing on methods to improve access and circulation within the study area, and to manage regional traffic using arterials and collectors. Alternatives analysis in the study is stressing non-single-occupant vehicle options including transit and travel demand management, and transportation system management. An evaluation of travel demand across the Willamette River south of the Marquam Bridge will begin soon.

Other major studies underway or recently completed include:

- **Hillsboro Corridor Alternatives Analysis** - evaluating the possible extension of the Westside light rail line from Southwest 185th Avenue to downtown Hillsboro. The study will describe alternatives, methodology, environmental impact results, and costs.

- **I-205/Milwaukie Preliminary Alternatives Analysis** - evaluating two transportation corridors in Southeast Portland and Clackamas County for possible selection as the region's next high-capacity transit priority corridor for advancement into alternatives analysis. For the chosen corridor, the study will develop a problem statement, alternatives, estimates of preliminary costs and effectiveness of alternatives, a financial plan, and a budget and work plan for alternatives analysis.

- **I-5/I-205 Portland/Vancouver Preliminary Alternatives Analysis** - evaluating two transportation corridors in North Portland and Clark County for possible selection as the region's next high-capacity transit priority corridor for advancement into alternatives analysis, concurrent with or following the Southeast corridor studied in the analysis described above. For the chosen corridor, the study will develop the same products and documentation as the study of the Southeast corridor.

- **Regional high-capacity transit study** - with two components: policy alternatives for the central business district (CBD), and system planning. The first will evaluate the Portland CBD and develop alternatives to include with the southeast and north corridor alternatives for advancement into alternatives analysis and environmental impact review. It will include the same

products and documentation as the studies described above. The second element will develop a high-capacity transit system plan based on the RTP, and designate priorities, preliminary costs and results, needs, and operating assumptions.

The Hillsboro Corridor Analysis considered four alternatives: no-build; transportation systems management (TSM); light rail to the Hillsboro CBD; and light rail to the Fairplex Short Terminus. The three other studies will evaluate all feasible modal and alignment alternatives, which will be narrowed to a small number of promising options. The screening process will adhere to FTA guidance requiring consideration of no-build, TSM, and build alternatives including multiple modal, alignment, and terminus options. It should be noted, however, that all of the studies cited by Metro assume efforts will focus on light rail or other means of high-capacity transit.

Travel demand projections used in corridor analyses are based on current economic, demographic, and land-use projections. Systems and demand management strategies are considered in all studies, but congestion management does not receive special attention. For all projects, estimated capital, operating, and maintenance costs are developed and alternatives are analyzed for cost effectiveness.

According to Metro staff, studies of corridors and project alternatives under consideration evaluate the social, economic, and environmental impacts of alternatives as required by federal planning and environmental regulations. This suggests anticipation of ISTEA planning requirements for major investment analysis. The Region 2040 process will examine interactions between land use and transportation, and the results will be used as a resource for corridor studies.

As noted in section IV.A., the current RTP is not financially constrained. The plan does describe all projected costs and expected revenue availability, noting that a substantial shortfall exists and must be funded. The TIP serves as the financially constrained planning tool, balancing dollars available with the costs of committed projects, and omitting items for which funding is unavailable.

Metro is pursuing financing strategies outlined in the Regional Transportation Funding Proposal (see section IV.A.), which was developed under the auspices of JPACT with the cooperation of planners, policymakers, and other regional leaders. The proposal targets investment areas needing funding, and states that financial planning for highways and transit should be linked. A number of funding strategies are defined for each investment area. For example, a vehicle registration fee that is value-based rather than flat is suggested as one method for improved financing of regional highways. Urban arterials would be funded primarily by a Metro-imposed vehicle registration fee that would be distributed by JPACT based on both a formula and predetermined criteria. Mirroring ISTEA, a state constitutional amendment allowing flexible use of restricted resources such as gas taxes and vehicle registration fees was recommended to ensure full consideration of transit projects.

These and other funding mechanisms were endorsed as goals by JPACT in 1989, and progress was documented in a status report conducted in June 1992. This status report thoroughly describes objectives and the extent to which they have been accomplished, and notes the requirements and opportunities for innovation created by the CAAA and ISTEA at the federal level, and by Rule 12 and the OTP at the state level. The report notes both failures and successes, describes current work to increase funding, and predicts efforts that will be necessary in the future.

Observations and Suggestions

Metro is generally engaging in professional, multi-modal, regional and corridor planning. Goals are determined based on observed demographic trends, and a variety of strategies is examined in current corridor and subarea studies. The following are observations and suggestions to improve the process and its products:

1) **Bi-state regional planning** -- If procedural agreements can be reached, the Oregon and Washington portions of the Portland metropolitan area could develop formal means of coordinating transportation planning through a process that maintains local prerogatives while producing a vision and functional framework for the entire area. This might improve the ability of the planning process to encourage an integrated regional transportation system.

2) **RUGGOs** -- RUGGOs development included the public and produced a recommended planning process and specific goals that will provide useful guidance during future efforts to update the RTP, choose TIP projects, and adopt the Region 2040 vision.

3) **Composite land-use map** -- Metro's land-use map represents an active and positive initiative to meet the requirements of Oregon State law and maintain the currency and relevance of the UGB. Coordination between land-use and transportation plans provides common reference points, facilitating identification of transportation needs and evaluation of project designs.

4) **Multi-modal approach** -- Metro and its regional planning partners could expand efforts to consider modes and strategies other than new transit investment at all stages of planning, from corridor analysis through alternative analysis and project selection. System and congestion management alternatives, encouraged by ISTEA, should be given serious and consistent consideration in studies and investment analysis.

5) **Funding strategy** -- Metro's funding strategy is commendable and should be aggressively pursued. The 1989 JPACT proposal described a careful and varied strategy for raising revenue, which was thoroughly evaluated in a 1992 progress report and was adjusted to respond to new state and federal mandates.

6) **Financially constrained plan** -- Future long-range plans should be financially constrained. As required by ISTEA, the long-range plan should include a financial plan that demonstrates the consistency of proposed transportation investments with already available and projected revenue sources.

D. Consideration of Air Quality

The Portland metropolitan area is in marginal nonattainment for ozone and moderate nonattainment for carbon monoxide under the CAAA. In contrast to cities with intense conformity problems such as Los Angeles, Houston, and Chicago, air quality is not driving the transportation planning process in Portland.

To demonstrate conformity of the RTP and TIP with the 1982 SIP, Metro estimated the emissions changes expected to result from implementation of programmed projects using the EMME/2 transportation software package and the Environmental Protection Agency's (EPA) MOBILE 4.1 Mobil Source Emission Factor Model. The base year "no-build" network was assumed to be that existing in 1990. RTP and TIP "build" networks reflect projected conditions in 1993, 1995, 1996, 2000, and 2010. Metro completes annual conformity statements in conjunction with adoption of the TIP. The U.S. DOT and EPA confirmed in October 1991 that Metro's RTP and TIP were in conformity with the SIP and met interim conformity requirements of the CAAA.

Current emission estimates are based on recent demographic and travel estimates. The major difference between analysis done in 1991 and 1992 is that later work relied on more detailed emissions factors from the MOBILE 4.1 model, which now distinguishes between hot and cold starts. These new factors produced substantially higher emission forecasts for both "build" and "no-build" conditions in all analysis years, particularly for winter carbon monoxide. The model also predicted lower emission levels resulting from the "build" than from the "no-build" scenarios in every year. Overall emissions are forecasted to decrease until 2010, after which they will increase. Metro is currently working with the 1000 Friends of Oregon to develop land-use variables that will be added to the regional travel demand model as a means of improving efforts to determine links between land use, travel, and air quality.

Metro's "Interim Conformity Determination for the RTP and FY 1992 TIP" notes that all eleven transportation control requirements of the 1982 SIP have been implemented, including inspection and maintenance, carpool programs, light rail, park and ride, a bicycle program, and others. In addition to these required commitments, twenty-three additional TCMs have been implemented to meet ozone and carbon monoxide regulations, including transit improvements, ramp metering, ridesharing, and a flexible working hour program. As one control measure, Metro and Portland officials have taken steps to improve the environmental quality of the city's CBD, where air quality problems are concentrated, through a Downtown Portland Air Quality Program to regulate a designated "Central City Area." This initiative maintains a strictly limited inventory of parking spaces, pursues improvements in area traffic circulation, promotes transit, and encourages flex-time, bicycle use, and ridesharing.

Existing policies are expected to bring about conformity with CAAA standards, but Portland must develop a maintenance program to prevent anticipated growth in population and VMT from pushing the area out of attainment over the next ten years. Portland is subject to additional VMT reduction requirements under Oregon's Rule 12.

The RTP "build" scenario includes contingency measures that have already been implemented. New contingency measures, to be developed in conjunction with development of the air quality maintenance plan required by the CAAA, will be included to minimize trip length, peak-hour travel, and single-occupant-vehicle travel, while encouraging use of other modes.

In response to an Oregon legislature mandate, the Governor's Task Force on Air Quality was convened in January 1992 to assess the magnitude of Portland's air quality problem and resulting needs over the next twenty years. Task force meetings organized by the Oregon Department of Environmental Quality (ODEQ) included elected officials, planners, and private interests. Discussions

of emission controls included market-based, regulatory, and technical measures. After substantial deliberation and negotiation, the task force recommended seven mechanisms for improving air quality with a strong emphasis on transportation regulation:

1. controls on lawn and garden equipment;
2. an enhanced vehicle inspection and maintenance program;
3. expansion of the vehicle inspection area to include the entire "tri-county area" of Multnomah, Clackamas, and Washington counties;
4. a 1974 cut-off date for "old car" inspection exemptions;
5. bicycle-, transit-, and pedestrian-"friendly" land-use requirements;
6. mandatory employee trip reduction programs for those employing more than fifty persons; and
7. a biennial vehicle emission fee collected at time of registration.

Contingency measures considered also included requiring reformulated gasoline by 2005, which would by itself move the area close to attainment. Metro is in the process of endorsing these recommendations, which must be approved by the legislature before they are implemented.

Observations and Suggestions

Metro and its planning partners conduct thorough air quality planning. Conformity assessment of plans and proposals occurs every two years to coincide with the time frame of the TIP, and estimates are updated in response to adjustments in population, employment, travel, and congestion forecasts. As required by the CAAA, Metro's RTP promotes "the expeditious implementation of TCMs." The Portland metropolitan area has also responded to ISTEA regulations by considering long-range measures that regulate land use and promote bicycle and pedestrian travel to reduce auto use and emissions.

1) **Air quality improvement efforts** -- Metro has consistently met the expectations of clean air legislation. Current efforts indicate a readiness to meet and take advantage of the requirements of both the CAAA and ISTEA.

2) **Task Force recommendations** -- The Governor's Task Force on Air Quality appears to have conducted a thorough and inclusive process. The CAAA requires that the SIP development process provide "a reasonable opportunity for public review and comment." Metro is encouraged to seek legislative approval of task force recommendations, and to aggressively implement them.

E. Outreach Efforts

Metro promotes citizen participation in the transportation planning process through a number of mechanisms, including press releases and advertisements to inform the public. Participation occurs through citizens advisory committees for all corridor studies, public meetings held early in the RTP update process, and citizen membership on TPAC. Metro Council also appoints six citizens as TPAC representatives. According to Metro, the general public is not easily attracted to planning activities, and citizen input came late in the last RTP update process, despite TPAC's inclusive membership.

Involvement is expected to increase during the next two years through the Region 2040 process and development of the 1994 and 1995 RTPs, which have included a number of public forums and publications soliciting public participation in the process of developing a vision for the Portland metropolitan area. The drafting and adopting of RUGGOs also included broad public input.

Metro developed formal plans and strategies to encourage active public participation, including creation of a Committee on Citizen Involvement to advise on participation, as required by the new Metro Charter. Public meetings were held to receive comments on selection criteria for the 1994-1996 TIP, with later meetings for comments on the draft TIP. Comments were received on the criteria and list of projects to be deleted for the TIP to respond to sizable state funding reductions. Metro also demonstrated public involvement in all corridor studies.

According to staff, some participants have commented that there are so many opportunities for involvement that it is difficult to determine what is the best use of their time.

Metro also encourages minority participation through committee membership. Local jurisdictions are urged to provide names of people who might participate in special projects. The twenty-eight member citizens advisory committee for the North-South Corridor Study was designed to represent its entire area and to be diverse geographically, racially, and by gender. The MPO does not maintain a list of private providers in the Portland area, but development of the Regional Transportation Funding Proposal included a Business Task Force and Public-Private Task Force on Transit Finance.

Observations and Suggestions

1) **Public involvement** -- Metro and its planning partners are commended for their aggressive efforts to involve the public throughout the planning process. Creation of a Committee on Citizen Involvement and other efforts to develop formal plans and strategies for public involvement are particularly innovative, and consistent with the emphasis in ISTEA. Metro is urged to continue these efforts in the development and selection of long-range plan alternatives.

VI. Tools, Skills, and Database for Transportation Planning

A. Travel Demand Forecasting

Portland's regional travel demand model is based on a 1985 regional weekday travel survey of about 5000 households. The model structure is fairly disaggregate, using six trip purposes (home-based-work, home-based-school, home-based-college, home-based-other, non-home-based-work, and non-home-based-non-work), and stratification of households by size, and by income, sex, and age of the head of the household.

The Portland model uses EMME/2 software and derives information on cars per worker at the household level to estimate trip distribution, mode choice, and assignment. Unlike traditional models, trip generation produces all trips, and a pre-mode choice model separates non-vehicular (pedestrian/bicycle vs. vehicular) and vehicular (auto vs. transit) trips. The mode choice model for vehicular trips deals with four modes: drive alone, shared ride, transit with walk access, and transit with auto access. Mode of access to transit is treated in a more sophisticated, detailed way than is common practice. The model is iterated to obtain equilibrium between transportation supply and demand characteristics.

Metro's Technical Systems Group performs travel demand forecasting for trip generation, distribution, and mode split. Trip tables based on forecasts are given to other agencies, which use them to assign trips for their areas. ODOT, Washington and Clackamas Counties, and Tri-Met are currently capable of conducting this analysis. Forecasting packages and data are shared and are relatively consistent across agencies, including the RTC of Clark County, Washington.

In the current regional econometric model, growth estimates are linked to accessibility. Land-use allocations are used to forecast travel demand, which is analyzed separately. According to Metro, efforts now underway to integrate the Dram/Empal programs will allow interaction between land use and travel demand forecasting.

In cooperation with the 1000 Friends of Oregon, Metro is conducting a project to identify the links between land use, travel, and air quality, known as the LUTRAQ project. As a component of a study of transportation alternatives for the Westside corridor, which lies in Washington County, LUTRAQ will incorporate a number of land-use variables (such as household heterogeneity and presence of pedestrian environments) into Portland's travel demand model and develop methodologies for creating land-use patterns and standards designed to reduce auto dependence and improve air quality. LUTRAQ is intended to assess the impact of a general shift away from standard suburban development, and Metro intends to apply it to areas other than the Westside corridor.

Metro describes its forecasting tools as state-of-the-art, and a new household survey is planned for 1993 to update models, which were last recalibrated in 1990. The new survey will include a request for stated travel preferences, which should improve the assessment of different elasticities of demand. The demand model has been reviewed by outside consultants through the LUTRAQ project and the Westside Light Rail Alternatives Analysis, and by an expert review panel during the North/South High-Capacity Transit Pre-Alternatives Analysis.

Observations and Suggestions

Characterized by frequent updates and sophisticated treatment of household characteristics, mode choice, traffic assignment, and a multitude of complex factors relating to transit demand, the Portland set of models is among the best in the country. Metro is commended for innovative efforts to link transportation and land-use factors systematically through the LUTRAQ project. The following recommendations are intended to further improve travel demand forecasting tools:

1) **Documentation of model integration** -- Because the integration of land use and travel is new and innovative, and is likely to be complex, Metro should thoroughly document the development and assumptions of the new demand estimation model. Such an effort will aid model updates, inform future users, and be of value to a national audience.

2) **Validation of all models** -- Validation of all models should be carefully documented. This documentation is important as evidence that the models adequately duplicate existing conditions.

3) **Updating data for re-calibration of regional models** -- Metro is encouraged to conduct its planned new household travel survey as soon as possible. Regional models are based on 1985 and 1988 data, which may not provide the current information needed for demand estimation in a rapidly changing metropolitan area.

4) **Uniformity of forecasting packages and data** -- Metro and its planning partners are urged to continue using common forecasting models and data. Consistency should reduce the need for multiple data sources and prevent conflicts between agencies' figures.

B. Costing Methodologies

Metro indicates that it does not have its own costing methodologies, but instead relies on implementing agencies to develop and maintain this information. Tri-Met and ODOT do their own costing, for both operating and maintenance, and capital projects. Pre-alternatives analysis is currently being conducted for several high-capacity transit corridors in the Portland area. An extension of the MAX LRT system is being implemented. Transit costing is addressed in more detail in section VII.

Observations and Suggestions -- Metro and the implementing agencies should develop and maintain a process through which costs (capital and operating) will be regularly projected, monitored, and reported to Metro. As the regional planning agency, the MPO should maintain current and thorough cost data to support ongoing observation and analysis of transportation performance and needs.

VII. Ongoing Transit Planning

A. Organizational Issues

Tri-Met is the primary transit planner and operator in the Portland metropolitan area. C-Tran is the transit operator for the Washington State portion of the area.

Tri-Met's draft Strategic Plan, which was scheduled to be adopted by May 1993, describes the agency's mission and current set of strategic goals, and seeks to build public consensus on a regional vision for Portland. The stated agency mission is to maintain "overall mobility in the region" rather than concentrate on bus and rail service alone. The six specific long-term goals include:

- improving customer service;
- increasing transit ridership;
- obtaining additional funding and increasing efficiency;
- diversifying service;
- expanding the transit system; and
- advocating land use that supports greater mobility.

The inclusion of land-use regulation as a transit goal is controversial, but Tri-Met claims that increased ridership can be achieved only if transit-oriented land use is actively promoted. According to the agency, land-use regulation changes and higher levels of transit service are currently receiving substantial attention through Metro's Region 2040 process.

Tri-Met's regional perspective is consistent with Metro's broad vision for mobility as expressed in the RTP. The draft effectiveness of the Strategic Plan, however, is reduced because it does not thoroughly document its planning, a weakness shared with the RTP. The broad vision of a comprehensive transit and travel management system, serving a population living and working according to carefully-planned land-use patterns, is presented without a clear explanation of how such an alternative was chosen as the preferred goal for the Portland area.

As described, Tri-Met's planning and policies reflect an unusually broad, multi-modal approach to meeting regional transportation needs. The agency operates a substantial network of standard buses, the MAX light rail line, special needs transportation service, and park and ride lots. Proposed measures to improve service and promote transit ridership combine transportation demand and supply management with expanded transit service. Systems management techniques designed to facilitate effective bus service include signal and intersection improvements, and emergency incident management. Congestion management strategies will play a role in mitigation efforts surrounding construction of the new Westside light rail line from downtown Portland to 185th Avenue; specific measures include expanding park and ride capacity and implementing express bus service in congested corridors. Tri-Met will also pursue initiatives such as carpooling, pedestrian and bicycle services, and promotion of transit-oriented land use, all of which are consistent with ISTEA emphasis areas. The agency is responding to ISTEA by seeking CMAQ funds to provide TSM improvements in Portland and to improve bus movement and efficiency. New general funding sources will be sought to support implementation of the regional transit vision.

According to Tri-Met, the Strategic Plan will become a "component of the regional concept" endorsed through the Region 2040 process. It should be regarded as a statement of Tri-Met's own regional vision. Broad transit goals described in the draft Strategic Plan are consistent with Metro policy objectives outlined in the RTP. The RTP is successful as an advocacy document, presenting a coherent vision of the metropolitan area after major transit investment. Both documents emphasize expanded, and more efficient, transit, increased reliance on TSM and demand measures, and promotion of regional land uses that are coordinated with the transportation system and encourage alternatives to automobile travel. However, certain planning assumptions are different. For example, Tri-Met projects a substantially greater service level (87,000 weekly platform hours) for 2005 than Metro (48,000 weekly platform hours), and a much smaller funding shortfall based on a wide range of new revenues. According to Tri-Met, this discrepancy reflects its approach to ridership forecasts as aggressive targets intended to promote the agency's strategic vision. Despite these different assumptions, Tri-Met appears to work closely with Metro on initiatives such as the Westside light rail extension, Region 2040, and corridor alternatives analyses.

The regional UPWP does not provide a complete description of Tri-Met transit planning. The agency has decided to use most of the scarce federal Section 9 funds for operations, and the bulk of financing for planning is drawn from local sources. This shift occurred during the last eighteen months, and Tri-Met chooses to omit non-federally funded activities from the UPWP, resulting in a limited picture of regional transit planning.

Tri-Met intends to develop a five-year TDP that will outline specific means of achieving specific goals, but this effort awaits the adoption of a final Strategic Plan. Annual transit programs are described in the FY 1992-1993 Tri-Met Budget, prepared by the agency's board with the assistance of the Citizens Advisory Committee on the Budget. In addition to summarizing anticipated overall finances, resources and requirements, and administrative costs, the budget provides specific FY 1992-1993 operating and capital project costs, and includes a separate section describing financial plans for light rail construction. The budget also asserts that current financial and programming plans should be viewed as meeting both past commitments and the challenge presented by the draft Strategic Plan. The Strategic Plan is described in the introduction to the budget as the guiding force behind budgeting. Projects receiving federal funding are included in Metro's annual TIP. The updated 1994 TIP includes transit and other projects funded from non-federal sources.

According to Metro staff, coordination with Tri-Met has been strengthened since the federal site visit. Tri-Met has adjusted its goals and assumptions to share the MPO's planning perspective, including adoption of the RTP's 2005 transit goals, such as ridership and mode split, although Tri-Met has set for itself the challenge of meeting these targets by 1998. Tri-Met has been a major participant in the 2040 process, and intends to revise its plan to be consistent with directions in the 2040 plan, according to Metro staff.

Tri-Met coordinates some service with C-Tran, the transit operator in the Washington State portion of the Portland metropolitan area. For example, C-Tran runs buses to the Gateway MAX station (at I-205), where passengers may board light rail. During peak hours, MAX is unable to meet demand with existing capacity, and the C-Tran buses carry the excess load on parallel service. The two operators have reciprocal fares, which allow travel between the two systems.

Observations and Suggestions

Tri-Met is commended for drafting a broad Strategic Plan, pursuing system-oriented multi-modal transit planning as mandated by ISTEA, coordinating policy objectives with Metro, and developing a comprehensive annual budget that describes specific annual plans and the corresponding financial resources and requirements. The following suggestions are intended to improve the organization of the transit planning process:

1) **Transit Development Plan** -- Tri-Met should complete a multi-year TDP that outlines specific anticipated programs and projects. A comprehensive development plan would describe measures designed to implement the vision presented in the Strategic Plan, and thereby provide guidance for drafting the UPWP and choosing projects for the regional TIP. Development of Tri-Met's plan should also be closely coordinated with development of the RTP for the Portland area.

2) **Reporting of transit projects** -- Non-federally funded, regionally significant transit projects should be included in the UPWP and the TIP, as required by ISTEA. Also, the current CAAA guidelines indicate that the collective impact of non-federally funded projects will be considered in determining the conformity of transportation plans and TIPs with respect to emissions milestones. Non-federal transit projects are likely to have a positive impact on overall air quality attainment, suggesting that they should be reported in the TIP as a practical strategic measure.

3) **Consistency between Tri-Met and Metro** -- The transit operator and MPO should either base planning on consistent forecasting assumptions, or Tri-Met should explain in the Strategic Plan that it has adopted more aggressive ridership growth and financial objectives than Metro as a means of presenting an optimistic vision and challenging targets. Without a clear explanation, inconsistent assumptions suggest incomplete coordination between the two agencies, and reduce the credibility of strong processes.

B. Performance of Existing Service and Development of New Service

Tri-Met's primary measures of transit effectiveness are the number of boardings per vehicle-hour, and the cost per boarding. The authority does not compute boardings, or cost, per vehicle-mile. For the measures calculated, the authority maintains service standards for route types and time of day that are used to assess performance. Performance data are obtained through on-board surveys, cordon counts, and O&D surveys. The last full-scale O&D survey was conducted in 1988. A corridor-level O&D survey was conducted on the MAX light rail line in 1991. Regional demographic data are provided by Metro, and Tri-Met uses a consultant to conduct a rider "Attitude and Awareness" survey every two-to-three years. Additional economic and fiscal forecasts are conducted for Tri-Met by a consultant. The compilation of both system-wide and route-level data supports both broad and specific planning projects.

Standards governing the design, evaluation and adjustment of transit service were adopted in May 1989. According to Tri-Met, design standards are based on a "multi-destinational service concept," and emphasis is placed on regional trunk lines (buses and light rail) during peak travel times and service to a broad area during the off-peak. Densely populated urban areas are served by a grid route structure, and a timed transfer system is employed in low-density suburban areas. High-frequency

trunk lines and feeder routes intersect at transit centers, providing both intra-suburban and urban access. Level-of-service guidelines control the hours and frequency of service operated on a line, and the acceptable maximum number of passengers on a transit vehicle. Numeric values of standards are updated during the annual budget process, and strict application of guidelines is overridden only in unique circumstances. General plans call for substantial increases in bus service and maintenance of current light rail service.

Productivity standards guide the planning and operation of daily transit service, and balance social benefits and equity against fiscal constraints. All existing transit lines are reviewed to determine if they meet standards for vehicle passenger loading and on-time performance, and to evaluate the potential for increased patronage. Routes are ranked on the basis of boardings per hour, and those that fall below a set fare recovery ratio are considered poor performers. Routes that perform poorly are reviewed for remedial action; if the changes necessary to produce satisfactory performance cannot be made, the service is referred for comparative evaluation. Proposals for service changes are analyzed concurrently with existing services; changes that violate design standards are discarded, and the remainder enter comparative evaluation. During comparative evaluation, poorly performing services may be cancelled and their resources reallocated. All compared services undergo market analysis to assess relative rider characteristics, attitudes and awareness, social benefits, political issues, and effectiveness. Existing service is then adjusted, and new service may be implemented until available service hours have been expended. If a proposed new service is ranked above an existing service, the latter may be eliminated.

Overall Tri-Met operation is tracked in monthly performance reports that summarize important system-wide data and provide detailed financial, ridership, service, and labor productivity figures. For example, the October 1992 performance report summarizes average total weekday originating rides, MAX ridership, passenger revenues, system costs per ride and vehicle-hour, and vehicle-miles per maintenance call. October figures for 1991 and 1992 are compared for ridership, revenue and cost efficiency, labor productivity, and service supplied. Detailed data on ridership, costs, service level and quality, and maintenance are also reported separately for the bus and light rail systems. The report includes an appendix that graphically presents a series of performance measures, such as boardings per revenue hour, operating cost per ride, rides per employee, and the ratio of passenger revenue to system cost.

The Tri-Met cost model is fully allocated and bases estimates on vehicle-hours, vehicle-miles, and peak number of vehicles for each route. Cost assessments of service do not rely on this model. The model is used to compare costs of service between different providers and is validated every three years. The last validation occurred in 1992.

Observations and Suggestions

1) **Rigorous performance evaluation** -- Tri-Met is commended for using a comprehensive and rigorous set of standards to design service, set objectives, measure progress toward achieving performance goals, and adjust service. Monthly performance monitoring is thorough and provides a good means of gauging the quality of existing transit and the need for new or different service. The acquisition of demographic data from Metro suggests reliance on a regional data source, which should enhance coordination between agencies.

2) **Additional measures** -- Monitoring might be improved if boardings were calculated per vehicle-mile as well as per vehicle-hour. Such a measure would better indicate the effectiveness of units of service output. Tri-Met could also add a measure of passenger miles to improve comparisons between services and modes with different average trip lengths. These measures may be useful for comparisons of costs and benefits of highway and transit projects competing for ISTEA flexible funds.

C. Transit Structure, Vehicle, and Equipment Planning

The condition of vehicles, equipment, and other facilities is assessed annually through the Tri-Met board's budget process. Revenue vehicles, non-revenue vehicles, stops, and shelters are evaluated for ongoing effectiveness based on the adopted service standards described in the previous section. Evaluation results form the basis for service equipment budget planning.

Equipment replacement planning for both fixed assets and rolling stock considers maximum and minimum acceptable life cycles. The FY 1992-93 Tri-Met budget addresses capital needs and calls for a "continued, sizeable" commitment of resources for system capital rehabilitation and replacement. The capital budget includes a General Fund and a special Light Rail Construction Fund. In addition to the Westside light rail line, significant recent and current capital projects include large-scale bus, paratransit vehicle, and light rail car purchases, bus shelter procurement, expansion of park and ride lots, double-tracking on the existing light rail line, extension of the downtown transit mall, and completion of a number of transit centers. The current budget balances capital resources and requirements and estimates future needs.

Observations and Suggestions -- Tri-Met thoroughly monitors and plans for capital assets and needs. Equipment condition is evaluated using consistent service performance standards. Annual capital budgets and needs assessments provide a sound basis for planning.

D. Transit Management Analysis

The service standards are used to judge and improve efficiency, and address such factors as route design, deviations and frequencies, on-time performance, ridership, bus capacities, and span of service. Cordon counts, on-board surveys, and spot checks reflect performance and identify needed improvements. The monthly performance reports provide an ongoing means of monitoring performance trends.

Tri-Met regularly updates its personnel system to reflect training objectives. The agency recently established a Human Resources Department and hired a recruiter and a training specialist. Absenteeism, worker compensation, and management-labor confrontations have recently been reduced, and a six-month human resources plan is now underway. Employee health screening is conducted once or twice each year. A critical personnel needs assessment was also recently completed.

Written report forms are completed and recorded for every accident, and drivers must also telephone a dispatcher to submit a verbal report. A computer data base tracks incident histories and trends. Safety training is conducted for drivers, and all facilities are periodically inspected for potential

hazards. New transit construction projects are reviewed for compliance with safety criteria established by Tri-Met.

Observations and Suggestions -- Tri-Met appears to be effectively monitoring service efficiency and productivity, and results are used to adjust transit routes and schedules. Incident reporting and training procedures described by Tri-Met indicate that the agency actively conducts safety planning.

E. Financial Planning

Tri-Met conducts annual financial forecasts that estimate costs of needed service, capital revenue, and payroll revenue. The agency develops its own cost forecasting models. Current labor agreements are incorporated into these forecasts. Revenues and expenditures are compared over a five-year period.

Tri-Met is financially stable and has demonstrated the financial capacity to maintain current service levels and fund light rail expansion. According to the introduction to the 1992-1993 Budget, the federal government has issued a letter of no prejudice against the Westside light rail line. A Full Funding Grant Agreement was completed in September 1992. Local funds have been secured to match the federal commitment.

Total revenue is projected in the Strategic Plan to grow from $143 million in FY 1992 to $583 million in FY 2005. Total expenditures are forecasted to grow from $136 million to $595 million during the same period, indicating an overall shortfall of $12 million. If the sizable revenue increase is not realized, Tri-Met will face a larger shortfall and be unable to finance its ambitious plans for service expansion. Planners acknowledge that future commitments will require additional continuing revenue sources and state an intent to take aggressive steps to secure additional funding.

Observations and Suggestions -- Tri-Met carefully assesses its financial condition and, in both the budget and draft Strategic Plan, documents anticipated future financial costs and needs. However, projected expenditure and revenue growth is quite optimistic. If ambitious plans are to be pursued, the agency must develop new funding sources.

F. Planning for the Americans with Disabilities Act

In November 1991, Tri-Met and the Molalla Transportation District, a small operator in the metropolitan area, completed a proposed Americans with Disabilities Act (ADA) Joint Complementary Paratransit Plan. Metro confirmed that the plan meets federal requirements and is consistent with the RTP in January 1992. Groups representing persons with disabilities participated in public discussions of preliminary and revised versions. The needs of disabled persons who can ride accessible fixed-route buses and those who depend on paratransit are fully addressed in the plan report, which summarizes eligibility, demand estimates, service area size, acceptable response times, fares, trip purpose restrictions, and capacity constraints. C-Tran also adopted a comprehensive ADA Paratransit Service Plan in January 1992.

Sixty-one percent of Tri-Met's total bus fleet is equipped with working chair lifts. The entire light rail line is accessible, and 48 of 74 weekday bus routes are equipped with lifts. All weekend service

is accessible. Both vehicles and routes are expected to be fully accessible by FY 1998. The LIFT paratransit program described in the Complementary Plan provides door to door demand-responsive transport service for metropolitan area residents (throughout Multnomah, Clackamas, and Washington Counties) unable to use regular bus and rail service because of a disability. Tri-Met supports coordination with other transport services for disabled persons, many of which are facilitated by Volunteer Transportation Programs, Inc. The transit agency is planning to respond to an expected 35% increase in disabled ridership demand (resulting from ADA) by purchasing and operating an additional 20 to 40 LIFT vehicles.

Observations and Suggestions

1) **ADA compliance** -- Tri-Met is working to comply with the ADA. The current transit system and paratransit service provide substantial accessibility. Current efforts to achieve complete transit accessibility and expand paratransit service to meet growing demand should be aggressively pursued.

G. Outreach Activities

Tri-Met holds open board of directors meetings every month in downtown Portland. The board is appointed by the governor, and the public is given access to planning through broadly representative standing advisory committees for finance, and transportation for the elderly and those with special needs.

Any changes to existing bus and rail service, other than minor schedule adjustments, undergo public scrutiny in hearings held at different regional locations. These public forums provide input that is considered when service changes are implemented in September and April of each year. Citizen complaint forms are also available on each Tri-Met vehicle; completed forms are referred to appropriate departments for verbal or written reply. Tri-Met publishes a guide to riding transit that is printed in eleven languages and is provided on vehicles. The agency also conducts public media events, workshops, and regional transit fairs.

Special needs transportation has been provided by private contractors since 1975, but the current labor contract does not allow contracting for standard service. A portion of maintenance and janitorial work is performed by private firms.

Observations and Suggestions

1) **Encourage public/private partnerships** -- Tri-Met could develop a formal plan to encourage public/private partnerships in the development, operation, and maintenance of transit projects. Private funds or efforts to develop transit facilities could be particularly important, given the ambitious plans and likely financial shortfalls for new services.

H. Planning Activities for a Drug-Free Workplace

Tri-Met conducts regular drug testing of persons in sensitive positions, such as bus and rail car operators, and provides ongoing drug education and counseling services. If proposed federal

guidelines are finalized, the agency would implement random testing. The extensive drug program has been approved by the local transit workers union.

I. Capital and Operating Plans

Capital and operating planning is an ongoing process. Operating planning is addressed above in sections VII.B. and VII.D.

According to Tri-Met staff, the agency maintains a five-year Capital Plan, which is developed by the Capital Committee. The plan serves as a guide for the annual capital budget developed by the Capital Committee for each fiscal year. The plan is also the foundation document for the TDP, which is an operating "blueprint." Capital requirements are assessed based on three needs: maintenance or replacement to continue existing service levels; improving or expanding service; and other or additional needed equipment. The five-year document is updated every year.

According to Tri-Met, transit capital plans reflect both regional priorities and Tri-Met's own goals. Metro participates in identifying capital needs as a member of the TDP committee and through the collaborative TIP development process. ODOT is included through the formal consultation required to design the transit portion of the six-year OTP. In the Portland area, transit capital and operating plans and programs also appear to be influenced by informal interaction between Tri-Met, C-Tran, Metro, and ODOT.

Transit planners use both quantitative and qualitative criteria to assess capital projects. Highest priority for capital investment is given to the rehabilitation and replacement of existing capital necessary to maintain current service; objective measures such as optimum replacement cycles and standard condition reports are used to determine needs. Second priority is given to new capital projects, which are judged by more qualitative and reactive factors. For example, repeated park and ride lot overflows or reports from constituent communities of excessive street parking might lead to plans for expansion of parking facilities at or near transit stops. New capital itself is divided into two separately evaluated categories, service expansion needs (transit centers, park and ride, etc.) and customer service improvement (i.e., new projects to improve current service). The annual budget also includes capital spending mandated by safety and other requirements for items such as drug testing, training, ADA compliance, and paratransit.

The Capital Committee decides which projects are most urgent. Criteria and analyses used are documented in evaluation sheets and financial projections that are prepared by Tri-Met for each project. Other documented sources are committee minutes and documents, which reflect internal debate and interaction with local jurisdictions.

The Metro TIP includes only federally funded transit capital plans and programs. Tri-Met does not submit locally funded or strictly operating projects during TIP development.

Observations and Suggestions -- Tri-Met conducts thorough capital planning and programming. Activities are well-documented in annual and five-year capital plans, and Tri-Met investment decisions appear to emerge from extensive interaction and cooperation with other regional agencies. The

transit agency has also established clear criteria for assessing proposals. The following suggestions are intended to improve capital planning.

1) **Project analysis** -- The Capital Committee should clearly indicate how overall priorities are determined. The existing combination of objective analysis and informal agency interaction appears to be constructive, but should be documented.

2) **Transit projects in the TIP** -- All regionally significant transit projects should be included in the TIP, regardless of funding sources. This ensures that the TIP provides a comprehensive report of regional transportation planning and programming activity, and encourages better coordination and cooperation among area planners.

3) **Transit Development Plan** -- Given the important role of the TDP in the development of plans and programs, Tri-Met should expeditiously develop and adopt a current TDP.

VIII. ISTEA Planning

ISTEA provides for a number of new initiatives related to metropolitan transportation planning, and also requires the U.S. DOT to certify the metropolitan planning process. Although guidance on certification and implementation of ISTEA planning requirements was not finalized at the time of the Portland area review, FHWA and FTA had distributed interim planning guidance.

One objective of the federal planning review was to assist Metro, ODOT, and other planning agencies, to anticipate ISTEA changes and to prepare for future formal federal certification. The FHWA and FTA were also interested in problems encountered responding to ISTEA provisions, and how these problems are resolved.

This section focuses on planning related to ISTEA, as observed at the time of the review, and summarizes relevant observations made in earlier sections of this report.

A. General Observations

The Portland metropolitan area is in a strong position to meet the planning requirements of ISTEA, and analysis in earlier sections indicates that the metropolitan area is already doing a number of things required by the new law. Metro, which is broadly representative, plays an assertive role as the leader of metropolitan transportation planning activities. Extensive coordination between the MPO and both ODOT and Tri-Met is apparent throughout the area-wide planning process. The MPO has also responded to environmental mandates by implementing measures to improve air quality in addition to the TCMs required by the state SIP, and by effectively administering the UGB.

Oregon's Rule 12, discussed in section IV, further encourages metropolitan coordination by mandating a process through which a regional systems plan directs decisions about mobility needs, modes, and corridors, based on consideration of a range of alternatives. Rule 12 shares many of its emphases with ISTEA, including requirements for consistency between state and regional transportation systems plans, reliance on a variety of modes to promote mobility, development of transportation system management and demand management, assessment of environmental impacts, land-use regulation, goods movement services, parking management, and intergovernmental project development that includes extensive citizen involvement.

The current RTP presents a single regional vision and describes proposed transportation projects, most of which focus on transit. According to Metro, the next RTP will consider a range of alternative transportation systems and land-use scenarios. Metro is encouraged to develop such an RTP that considers alternative investments, and to clearly indicate how the metropolitan area will promote the efficient use of existing transportation facilities.

Metro, RTC, and other planning authorities in the Portland area may need to reevaluate the boundaries defining MPO jurisdictions. Section 134(c) of ISTEA requires that MPO boundaries include the entire area designated as nonattainment for ozone and carbon monoxide unless the MPO and the governor jointly decide otherwise. The Portland nonattainment area includes portions of southwest Washington. The boundaries must include the entire nonattainment area unless the MPOs and the governors of Oregon and Washington take joint action to reduce it. The planning process,

plan, and TIP must cover the entire metropolitan area by October 1, 1993. If the adopted MPO boundary does not enclose the entire nonattainment area, the states and MPOs will be required to indicate in an agreement how air quality conformity will be assured.

B. Funding Flexibility

Before the passage of ISTEA, Metro had made an effort to use funds flexibly based on regional mobility needs. To partially finance construction of the first MAX LRT line in the late 1970s, the Portland area pursued and was granted a withdrawal (i.e., a transfer) of a $203 million federal grant for an interstate highway extension to the east of downtown (the Mt. Hood Freeway). A portion of this interstate transfer money was used along with Federal Aid Urban System (FAUS) and state and local funds for both MAX and other transit alternatives to highway construction. The MPO now seeks to use the remainder of that interstate withdrawal account and new STP funding (which replaces FAUS under ISTEA) to support the Westside MAX line and its extension to Hillsboro. Metro has also sought to use federal funds to support non-highway and non-transit projects such as bicycle and pedestrian facilities. Flexible utilization of funds is reflected in the broad goals of the RTP and specific projects described in the TIP.

Metro uses its regional federal STP funding allocation to promote mobility, and commits these funds flexibly to key projects, such as MAX and the Westside corridor project, rather than by formula to modal agencies or its member county and local governments. Metro advocates assignment of statewide STP funds based on population concentration, while ODOT sets priorities based on statewide needs for mobility (with an emphasis on rural roads) unlikely to be funded in proportion to population. Despite this debate, STP funds generally appear to be assigned based on planning priorities rather than predetermined formulas.

Metro's new funding strategy (see section V.C.) asserts that financial planning for highways and transit should be linked, and recommends a state constitutional amendment to allow the flexible use of currently restricted state resources such as gas taxes and vehicle registration fees. According to Metro and ODOT, most federal funds are now used flexibly. Transit projects have been given high priority in part because of land-use planning and VMT reduction requirements.

C. Multi-Modal Integration

ISTEA identifies multi-modal integration as an important feature of a metropolitan transportation system. While much of the focus of recent planning has been on transit, Metro and its planning partners have explored a number of efforts to integrate modes, including extension of the downtown transit mall, linkage of the airport to the MAX light rail system, coordination of truck routes with the Port of Portland, and numerous highway/transit links.

The current RTP endorses a transportation system concept incorporating interconnected highway facilities, transit service, and demand management programs such as rideshare, parking regulation, pedestrian services, and bicycle routes. Metro is also leading the Region 2040 strategic planning process (see section IV.A.), which is developing a long-term transportation vision for the Portland metropolitan area that will promote careful land-use management and multi-modal mobility. The

LUTRAQ project (see section VI.A.) also includes measures to promote multi-modal integration as a means to reduce single-occupant-vehicle use and improve air quality.

Although endorsed in the RTP, carpool and vanpool strategies have not been used comprehensively in the Portland metropolitan area. A downtown parking limit, and bicycling and pedestrian strategies have supported the emphasis on transit noted above. Systemic integration between airport, rail, water, and other freight transport modes has occurred primarily through the Port of Portland, which has been a voting member of JPACT for more than a decade. The Port operates both the marine and airport facilities, which are closely linked to rail and truck traffic. While a number of modes are represented and accommodated separately in the Portland area, Metro and its partners could substantively enhance intermodal integration by implementing multi-modal measures identified through transportation system planning.

D. Public Participation

ISTEA directs MPOs to "provide citizens, affected public agencies, representatives of transportation agency employees, private providers of transportation, and other interested parties with a reasonable opportunity to comment" during the development of transportation plans and TIPs. Participants should be adequately informed and given access to official information, and allowed opportunities to influence plans and TIPs in the early stages of their development.

As noted above (section V.E.), Metro and its partners have made strong efforts to involve other agencies and the public in the planning process at both the broad RTP and more focused corridor levels. Creation of the Committee on Citizen Involvement, and other efforts to develop and apply formal plans and strategies to encourage broad and active public participation, are innovative, and consistent with the emphasis in ISTEA on proactive efforts to involve the broad public. Tri-Met has been a voting member of JPACT for more than a decade. C-Tran (Vancouver) participates as an observer in the process and has provided extensive input to the development of plans and TIPs.

It should be noted that the state of Oregon has a long tradition of citizen involvement in public affairs. The state "sunshine law" provides a fundamental requirement for public notification of official meetings. Experience with a successful effort in the development of the Banfield MAX light rail line reinforced Metro's commitment to early and extensive public involvement in project development. The Region 2040 process is promoting and relying on extensive public involvement in the crafting of a regional transportation vision.

E. Emphasis Areas

ISTEA identifies fifteen areas of emphasis that should be considered in metropolitan transportation planning. Planning in Portland addresses a number of these areas.

Land-use planning has been a key factor in the transportation planning process since the 1973 passage of the landmark Oregon Land Use Act, which created the LCDC. As noted above (sections IV.A. and V.C.), the coordination of transportation and land-use planning is required in Oregon and is a top priority of Metro, demonstrated by: the LUTRAQ project; MPO involvement in ongoing management of the UGB; and the development of a composite land-use map, which serves as a tool for assessing

transportation demand and planning needs. Both stringent land-use options and a congestion pricing experiment are intended to encourage alternatives to single-occupant-vehicle use, as a means to meet the Rule 12 requirement that the Portland metropolitan area substantially reduce VMT during the next twenty years.

The planning review did not indicate a clear emphasis by Metro on preservation of existing transportation facilities and their efficient use; the primary emphasis appeared to be on expanding transit service. It should be noted that the Portland area is growing rapidly, and therefore must plan for some expansion of transportation facilities. However, Metro might add a further emphasis on the use of existing facilities through aggressive demand management and development of management systems required by ISTEA. The MPO and ODOT have initiated discussions and efforts to develop a congestion management system. These plans, which were not yet developed to the degree necessary for evaluation, should be pursued to completion and implementation.

The Portland metropolitan area has made significant progress toward moving from nonattainment to maintenance area status for air quality.

Project identification and selection has been a collaborative, cooperative effort of Metro and ODOT for twenty years. The two agencies disagree on some issues and must negotiate, but appear to be able to reach the agreements necessary to produce plans and TIPs.

APPENDIX 1

Participants in Portland Area Planning Review

Federal Transit Administration (FTA)

Headquarters:
Deborah Burns, Project Manager
Ronald Jensen-Fisher, Senior Community Planner

Region X:
Patricia Levine, Community Planner

Federal Highway Administration (FHWA)

Headquarters:
Sheldon Edner, Community Planner

Region 10:
William Kappus, Air Quality/Urban Transportation Planner

Oregon Division:
Fred Patron, Division Transportation Planner

U.S. Department of Transportation/Volpe National Transportation Systems Center

William Lyons, Volpe Center Project Manager
Paul Shadle, Senior Technical Analyst

Metropolitan Service District (Metro)

Andrew Cotugno, Planning Director
Richard Brandman, Assistant Director, Planning Department
Michael Hoglund, Transportation Planning Supervisor
T. Keith Lawton, Technical Manager
Richard Ledbetter, Senior Transportation Planner
Richard Walker, Transportation Planning Supervisor

Tri-County Metropolitan Transit District of Oregon (Tri-Met)

Robert Post, Deputy General Manager
G. B. Arrington, Director of Strategic Planning
Kim Manley, Grants Capital Project Administrator
Joseph Walsh, Manager, Transit Development Department
Ken Zatarain, Manager, Service Planning

APPENDIX 1 (continued)

Oregon Department of Transportation (ODOT)

Marty Andersen, Manager, Federal Aid Unit
Robin McArthur-Phillips, Manager, State Agency Council for Growth Issues
Dave Williams, Manager, Transportation Analysis Unit

Regional Transportation Council (RTC)

Dean Lookingbill, Executive Director

Clark County Public Transportation Benefit Area (C-Tran)

Kim Chin, Director of Development

APPENDIX 2

Agenda for Urban Transportation Planning Review Meeting

December 8-10, 1992

Metropolitan Service District
2000 S.W. First Avenue
Portland, Oregon 97201
(503) 221-1646

Tuesday, December 8

9:00 - 10:30		Federal Review Team meeting
10:30 - 11:00	Patricia Levine FTA, Region X	Welcome and introductory remarks
	William Kappus FHWA, Region 10	
	Deborah Burns FTA, Headquarters	Objectives for planning review
	Andrew Cotugno, Metro	Introductory remarks
11:00 - 11:15	William Lyons, U.S. DOT, Volpe Center	Overview of meeting and schedule
		Format for all sessions - Discussion of urban transportation planning process
		Each session begins with a topic overview from regional agencies, building on written responses, with discussion led by review team members. (Roman numerals following topics below refer to questionnaire, which provides discussion questions.)

APPENDIX 2 (continued)

Tuesday, December 8 (continued)

How the planning process works in the Portland Region

Local Transportation Issues (I.B.)

11:15 - 11:45	Andrew Cotugno, Metro	Presentation
11:45 - 12:30	Patricia Levine, FTA, Region X Sheldon Edner, FHWA, Headquarters	Discussion
12:30 - 1:30	Lunch	

Organization and management of the process -- Agencies' roles and responsibilities (II)

1:30 - 2:00	Andrew Cotugno, Metro David Williams, ODOT Dean Lookingbill, RTC	Presentations
2:00 - 3:00	Fred Patron, FHWA, OR Region William Lyons, Volpe Center	Discussion

Approach to air quality (Clean Air Act) (IV.D. and supplemental questions in enclosure 1b.)

3:00 - 3:30	Andrew Cotugno, Metro Howard Harris, Oregon Department of Environmental Quality	Presentations
3:30 - 4:30	William Kappus, FHWA, Region 10 Patricia Levine, FTA, Region X	Discussion

Wednesday, December 9

Products of the process (III)

8:00 - 8:30	Andrew Cotugno, Metro	Presentation
8:30 - 9:30	Patricia Levine, FTA, Region X Fred Patron, FHWA, OR Region	Discussion

APPENDIX 2 (continued)

Wednesday, December 9 (continued)

		How the planning process works in the Portland Region (continued)
		Elements of 3-C process (multi-modal dimension) (IV)
9:30 - 10:30	Andrew Cotugno, Metro	Presentation
10:30 - 12:00	William Kappus, FHWA, Region 10 Sheldon Edner, FHWA, Headquarters	Discussion
12:00 - 1:00	Lunch	
		Transportation planning techniques (V)
1:00 - 1:30		Travel demand forecasting methodologies (V.A.)
	Keith Lawton, Metro	Presentation
1:30 - 2:00		Costing methodologies (V.B.)
	Andrew Cotugno, Metro	Presentation
	William Kappus, FHWA, Region 10 William Lyons, Volpe Center	Discussion
2:00 - 4:30		Ongoing transit planning (VI)
	Bob Post, Tri-Met	Introductory remarks
	Patricia Levine, FTA, Region X William Lyons, Volpe Center	Discussion
		Organizational issues - strategic and multi-modal planning, and coordination with MPO (VI.A.)
		Other topics

APPENDIX 2 (continued)

Thursday, December 10

8:00 - 9:30	Federal Review Team	Meeting -- Prepare Draft Findings
		ISTEA Planning (VII)
9:30 - 10:00	Andrew Cotugno, Metro	Presentation
10:00 - 11:30	Sheldon Edner, FHWA, HQ William Lyons, Volpe Center	Discussion
		Flexible funding (VII.A.)
		Multi-modal integration (VII.B.)
		Congestion Management System (VII.E.)
		Project selection (VII.J.)
		Other topics
11:30 - 12:30	Federal Review Team	Lunch meeting -- complete draft findings
12:30 - 2:00	Patricia Levine, FTA, Region X William Kappus, FHWA, Region 10	Meeting summary -- findings and follow-up actions (VII)
		Regional concerns
		Next steps

APPENDIX 3

Documentation Provided by Portland Regional Agencies

Metropolitan Service District

Unified Planning Work Program - "FY '93 Unified Work Program, Transportation Planning in the Portland-Vancouver Metropolitan Area"

Transportation Improvement Program - "Transportation Improvement Program, Proposed Program for Fiscal Years 1993 to Post 1996"

Long-Range Transportation Plan - "Regional Transportation Plan, 1992 Revision of the 1989 Update, Adopted January 23, 1992"

Emissions Inventory - "Interim Conformity Determination, Portland Metropolitan Area RTP and FY92 TIP"

"Control Strategy for Portland-Vancouver Interstate Air Quality Maintenance Area (AQMA), Oregon Portion, State Implementation Plan for Carbon Monoxide, July 1982"

"Control Strategy for Portland-Vancouver Interstate Air Quality Maintenance Area (AQMA), Oregon Portion, State Implementation Plan Revision for Ozone, July 1982"

"Eight Zone Squeeze Travel Matrix Definitions/Calculations for 1990 Base, 2010 Committed Base, 2010 RTP Base, 2010 Committed Base plus Safety Margin"

"Travel Forecasting Methodology Report, Westside Corridor Project and Hillsboro Alternatives Analysis, January 1991"

"Region 2040: Shaping the Choices for Growth, 1992"

"1992 Metro Charter," approved November 3, 1992

"Metro Organization Structure"

"Metro Planning Fund"

"Metro Council Resolution 90-1189A, Joint Policy Advisory Committee on Transportation Bylaws"

"Proposed Americans with Disabilities Act Joint Complementary Paratransit Plan of the Tri-County Metropolitan Transportation District of Oregon and the Metropolitan Service District, November 1991"

APPENDIX 3 (continued)

"Transportation Planning Rule, OAR Chapter 660, Division 12" (State of Oregon Rule 12)

"Metro Council Resolution 92-1582, Certifying that the Portland Metropolitan Area is in Compliance with Federal Transportation Planning Requirements"

"Metro Council Resolution 89-1035, Adopting a Regional Transportation Funding Proposal"

"Staff Report: Consideration of Resolution 92-1718 for the Purpose of Endorsing the Recommendations of the Governor's Task Force on Motor Vehicle Emissions Reduction in the Portland Metropolitan Area

Southwest Washington Regional Transportation Council (Vancouver, WA MPO)

"1993-1995 Transportation Improvement Plan"

"1992-1997 Transportation Development Plan"

"1992 Americans with Disabilities Plan"

"Commute Trip Reduction Plan"

"Draft Regional Transportation Plan for Clark County (Interim Update)"

"Growth Management Act"

Tri-County Metropolitan Transportation District of Oregon

"Tri-Met Strategic Plan: Pursuing a Shared Vision, Discussion Draft Two, December 1992"

"Tri-Met Strategic Plan: Pursuing a Shared Vision, Discussion Draft, April 1992"

"1992-1993 Budget, Tri-County Metropolitan Transportation District of Oregon"

"Tri-Met Service Standards, May 1989"

"October 1992 Monthly Performance Report"

*U.S. GOVERNMENT PRINTING OFFICE:1995-600-772/00056