National Cooperative Highway Research Program

NCHRP Synthesis 217

Consideration of the 15 Factors in the Metropolitan Planning Process

A Synthesis of Highway Practice

Transportation Research Board
National Research Council

National Cooperative Highway Research Program

Synthesis of Highway Practice 217

Consideration of the 15 Factors in the Metropolitan Planning Process

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PREFACE

A vast storehouse of information exists on nearly every subject of concern to highway administrators and engineers. Much of this information has resulted from both research and the successful application of solutions to the problems faced by practitioners in their daily work. Because previously there has been no systematic means for compiling such useful information and making it available to the entire community, the American Association of State Highway and Transportation Officials has, through the mechanism of the National Cooperative Highway Research Program, authorized the Transportation Research Board to undertake a continuing project to search out and synthesize useful knowledge from all available sources and to prepare documented reports on current practices in the subject areas of concern.

This synthesis series reports on various practices, making specific recommendations where appropriate but without the detailed directions usually found in handbooks or design manuals. Nonetheless, these documents can serve similar purposes, for each is a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems. The extent to which these reports are useful will be tempered by the user's knowledge and experience in the particular problem area.

FOREWORD

By Staff
Transportation
Research Board

This synthesis will be of immediate interest to land use and transportation planning officials, with special interest to state, regional, and local planners and administrators who must respond to the requirements of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). While many of the "15 factors" contained in ISTEA that must be considered in regional planning have been an integral part of the planning practice, others have been added, and all must be included for metropolitan planning organizations (MPOs) to respond to federal requirements. The "23 factors" required for statewide planning under ISTEA are also addressed in this synthesis. In addition, requirements for reductions in air pollutants under the Clean Air Act Amendments of 1990 (CAAA) have influenced the planning and implementation process in those areas that are not in attainment of the air quality standards. All of these are discussed in this synthesis, which presents the state of the practice during the *early* implementation of ISTEA.

Administrators, engineers, and researchers are continually faced with highway problems on which much information exists, either in the form of reports or in terms of undocumented experience and practice. Unfortunately, this information often is scattered and unevaluated and, as a consequence, in seeking solutions, full information on what has been learned about a problem frequently is not assembled. Costly research findings may go unused, valuable experience may be overlooked, and full consideration may not be given to available practices for solving or alleviating the problem. In an effort to correct this situation, a continuing NCHRP project, carried out by the Transportation Research Board as the research agency, has the objective of reporting on common highway problems and synthesizing available information. The synthesis reports from this endeavor constitute an NCHRP publication series in which various forms of relevant information are assembled into single, concise documents pertaining to specific highway problems or sets of closely related problems.

The process for incorporating the 15 factors into the comprehensive land use and transportation plans by MPOs and the 23 factors into statewide plans by state planning agencies is described in this synthesis. Because the planning process is in a constant state of flux and many deadlines have been shifted, this report of the Transportation Research Board represents practice during mid 1994, and includes several case study examples of MPO approaches to addressing the 15 factors in their region. This synthesis provides information on how some agencies have succeeded in incorporating the 15 factors in the early stages of ISTEA implementation; however, it is not intended to be a guideline. Specific issues and concerns, both now and in the future, are highlighted, as are the elements that need to be considered throughout the complex process of responding to ISTEA and the 1990 CAAA requirements.

To develop this synthesis in a comprehensive manner and to ensure inclusion of significant knowledge, the Board analyzed available information assembled from numerous sources, including a large number of state highway and transportation departments. A topic panel of experts in the subject area was established to guide the researcher in organizing and evaluating the collected data, and to review the final synthesis report.

This synthesis is an immediately useful document that records practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As the processes of advancement continue, new knowledge can be expected to be added to that now at hand.

CONTENTS

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Valuable assistance in the preparation of this synthesis was provided by the Topic Panel, consisting of Patricia A. Berry, Director of the TIP, Chicago Area Transportation Study; Alan C. Clark, MPO Director, Houston-Galveston Area Council; Sheldon M. Edner, Community Planner, Metropolitan Planning, Federal Highway Administration; Michael G. Hoglund, Manager, Regional Transportation Planning Section, Tri-County Metropolitan Transportation District of Oregon; Gloria J. Jeff, Associate Administrator for Policy, Federal Highway Administration; Janet P. Oakley, Director of Transportation, National Association of Regional Councils/Association of Metropolitan Planning Organizations; Michael F. Oman, Director of Transportation Planning, Chittenden County Regional Planning Commission; Marion R. Poole, Manager, Statewide Planning Branch, North Carolina Department of Transportation; James A. Scott, Transportation Planner, Transportation Research Board; and F. Dee Spann, Community Planner, Statewide Planning, Federal Highway Administration.

The Principal Investigators responsible for the conduct of this synthesis were Sally D. Liff, Manager, Synthesis Studies, and Stephen F. Maher, Senior Program Officer. They were assisted by Donna L. Vlasak, Senior Program Officer.

Scott A. Sabol, Senior Program Officer, National Cooperative Highway Research Program, assisted the NCHRP 20-5 staff and the Topic Panel. This synthesis was edited by Linda S. Mason, assisted by Rebecca B. Heaton.

Information on current practice was provided by many highway and transportation agencies. Their cooperation and assistance were most helpful.

CONSIDERATION OF THE 15 FACTORS IN THE METROPOLITAN PLANNING PROCESS

SUMMARY

Even before its final enactment, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) generated both excitement and concern. The legislation was seen as generating new opportunities, but also as requiring changes in the way that federally funded highway and transit projects would be planned and programmed.

A major focus of ISTEA concerns the role of metropolitan planning organizations (MPOs). Throughout the United States there are more than 300 designated MPOs that encompass urban areas with 50,000 or more population. Both supporters and detractors of MPOs expressed concerns about the role of those organizations in ISTEA. The MPOs themselves expressed concerns about their ability to meet all the requirements imposed by ISTEA and to fulfill the expectations that were raised. State departments of transportation (DOTs) frequently expressed concerns that the MPOs were given too much authority and were often viewed as a new layer of local or regional government imposed by the federal government.

Shortly after ISTEA's final enactment, many conferences and meetings were held by interest groups representing a broad array of involvement in unified transportation programs. A number of federal deadlines were established for submitting various plans and program documents, and the process required to fulfill these requirements raised the expectations of many. Now, more than 3 years later, is an appropriate time to take a look at how MPOs are dealing with the requirements imposed by ISTEA. This synthesis describes how several MPOs have begun to deal with and are planning to deal with the 15 factors required by ISTEA. The experiences described in this document are based on personal interviews, conducted during the spring, summer, and early fall of 1994, with a number of individuals who are actively involved in this process. This synthesis, therefore, reflects the perspective of a particular group at a particular point in time and should not be viewed as representing a typical sample or used as a set of guidelines. Other more in-depth research projects are underway that will provide greater detail and more extensive data.

MPOs were first established in the mid 1970s as a result of the 1973 Federal-Aid Highway Act, which required that MPOs be responsible for comprehensive transportation planning in urbanized areas. In fact, many of those MPOs were successors to organizations that initially established the continuing, comprehensive, and cooperative (3C) transportation planning process required by the 1962 Federal-Aid Highway Act. Information gathered for this project shows that in many urbanized areas, the MPOs were already engaged in many of the activities required by ISTEA; but in no case were they doing so as extensively as now required. However, ISTEA provided not only a legislative mandate but also additional funding to expand and substantially enhance those planning activities. This is especially the case in dealing with air quality considerations, land use planning, citizen participation, and freight planning. Further, ISTEA required the states, working cooperatively with MPOs and

other partners, to undertake the critical actions needed to develop a series of six management systems that will eventually result in more realistic approaches for preserving existing transportation systems as well as operating and managing those systems more effectively.

To undertake this synthesis, 16 candidate MPOs were contacted to obtain information concerning the impacts made by ISTEA. In-depth case studies are described in this document for MPOs in Albany, New York; Boston, Massachusetts; Charlotte, North Carolina; and Pittsburgh, Pennsylvania.

The overall observations and conclusions in this document provide a view from the MPO perspective. The material presented in this document is based on interviews with many individuals and the review of an extensive set of documents. Those observations and conclusions are summarized in six categories: process issues, institutional issues, technical issues, current concerns, future concerns, and the differences made by ISTEA.

CHAPTER ONE

INTRODUCTION

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (Section 1024) requires metropolitan planning organizations (MPOs) to consider 15 factors in developing transportation plans and programs under Section 134(f), Title 23, Metropolitan Planning and Section 8 of the Federal Transit Act (*1*). Many of these factors reflect good planning practice and have been included in planning activities since the formation of MPOs in the mid 1970s. However, those 15 factors now represent the fundamental elements of metropolitan planning as required by federal law.

Since December 18, 1991 when ISTEA was officially enacted, a number of federal deadlines have past or are still to be met (as of the summer of 1994 when the research summarized in this document was completed) for MPOs to meet all those requirements. Some critical questions have been posed in this regard:

- How effectively are the 15 factors established by federal requirements being addressed, and are they improving the quality of decision making?
- What is being done differently since the passage of ISTEA, relative to its enactment?
- How are the requirements of the 1990 Clean Air Act Amendments (CAAA) being incorporated into the new planning requirements?
- How are MPO and statewide planning requirements (which must address 23 factors as required by ISTEA) being coordinated?
- How are various other related federal planning requirements, such as those from the various U.S. Department of Transportation (USDOT) Modal Administrations, the Environmental Protection Agency (EPA), and the Department of Energy, being addressed by the MPOs?

This synthesis presents the activities underway in mid 1994 of selected MPOs in the United States and reflects their perspectives on a situation that changes literally on a daily basis. Many of the federal deadlines for producing various planning documents are still to be met, as of the completion of the research for this synthesis. To provide an appropriate context for this synthesis, Appendix A summarizes some of the most relevant studies and research projects that have been completed or are underway. The reader may want to consult that work to gain more insight into the issues described in this document.

NEW DIRECTIONS ESTABLISHED BY ISTEA

Since 1992, numerous conferences have been held on how ISTEA is changing the planning process, and the products that are emanating from that process (*2–8*). Numerous research projects have also been initiated to gain a better understanding of the legislative impacts on society in general and on transportation investments in particular. ISTEA has been characterized in a variety of ways, including a "sea-change" and a "paradigm shift." Even in the latter part of 1994, nearly 3 years after enactment of ISTEA, the industry still does not fully appreciate or understand its impacts. But because new federal legislation is already being considered to refine, expand, and reauthorize federal transportation programs, it is important to understand what changes have occurred and those that may occur as a direct consequence of ISTEA, and to know if the right questions are being asked.

THE 15 MPO PLANNING REQUIREMENTS

The 15 MPO planning requirements are now well known throughout the industry. They are listed in Table 1 as they appear in the ISTEA legislation (Public Law 102–240: December 18, 1991). (Please note that the interpretation of the law by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) appears in the *Federal Register* (*1*, pp. 58072–58073), and that there is a difference in the wording between the law and the interpretation by FHWA and FTA.)

THE 23 STATEWIDE PLANNING REQUIREMENTS

As in the case of the 15 MPO planning requirements, the 23 factors required to develop statewide plans and programs are also well known. They are summarized in Table 2 from the ISTEA legislation. (Please note that the interpretation of the law by FHWA and FTA appears in the *Federal Register* (*1*, p. 58060) and that there is a difference in the wording between the law and the interpretation by FHWA and FTA.)

SCHEDULES FOR MEETING THE MPO AND STATEWIDE PLANNING REQUIREMENTS AND RELATED 1990 CAAA REQUIREMENTS

ISTEA and its interpretation by FHWA and FTA have resulted in a required schedule for submitting various documents that describe MPO and statewide plans and programs. The plan and program submissions by FHWA and FTA also reflect the need to meet the conformity requirements of the 1990 CAAA as interpreted by EPA to achieve the schedules required under the conformity regulations. A significant concern of many planning agencies not in compliance with the 1990 CAAA is the need to reduce regional emissions by 15 percent between 1990 and 1996. Furthermore, after 1996 in nonattainment areas classified as serious and above, those

TABLE 1

THE 15 MPO PLANNING FACTORS

1. Preservation of existing transportation facilities and, where practical, ways to meet transportation needs by using existing transportation facilities more efficiently.
2. The consistency of transportation planning with applicable federal, state, and local energy conservation programs, goals, and objectives.
3. The need to relieve congestion and prevent congestion from occurring where it does not ever occur.
4. The likely effect of transportation policy decisions on land use and development and the consistency of transportation plans and programs with the provisions of all applicable short- and long-term land use and development plans.
5. The programming of expenditures on transportation enhancement activities as required in section 133.
6. The effects of all transportation projects to be undertaken in the metropolitan area, with regard to whether such projects are publicly funded.
7. International border crossings and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation areas, monuments, historic sites, and military installations.
8. The need for connectivity of roads within the metropolitan area with roads outside the metropolitan area.
9. The transportation needs identified through use of the management systems required by section 303 of this title.
10. Preservation of rights-of-way for construction of future transportation projects, including identification of unused rights-of-way which may be needed for future transportation corridors and identification of those corridors for which action is most needed to prevent destruction or loss.
11. Methods to enhance the efficient movement of freight.
12. The use of life-cycle costs in the design and engineering of bridges, tunnels, or pavement.
13. The overall social, economic, energy, and environmental effects of transportation decisions.
14. Methods to expand and enhance transit services and to increase the use of such services.
15. Capital investments that would result in increased security in transit systems.

TABLE 2

THE 23 STATEWIDE PLANNING FACTORS

1. The results of the management systems required pursuant to subsection (b).
2. Any federal, state, or local energy use goals, objectives, programs, or requirements.
3. Strategies for incorporating bicycle transportation facilities and pedestrian walkways in projects where appropriate throughout the state.
4. International border crossings and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation and scenic areas, monuments and historic sites, and military installations.
5. The transportation needs of nonmetropolitan areas through a process that includes consultation with local elected officials with jurisdiction over transportation.
6. Any metropolitan area plan developed pursuant to section 134.
7. Connectivity between metropolitan areas within the state and with metropolitan areas in other states.
8. Recreational travel and tourism.
9. Any state plan developed pursuant to the Federal Water Pollution Control Act.
10. Transportation system management and investment strategies designed to make the most efficient use of existing transportation facilities.
11. The overall social, economic, energy, and environmental effects of transportation decisions.
12. Methods to reduce traffic congestion and to prevent traffic congestion from developing in areas where it does not yet occur, including methods which reduce motor vehicle travel, particularly single-occupant motor vehicle travel.
13. Methods to expand and enhance transit services and to increase the use of such services.
14. The effect of transportation decisions on land use and land development, including the need for consistency between transportation decision making and the provisions of all applicable short-range and long-range land use and development plans.
15. The transportation needs identified through use of the management systems required by section 303 of this title.
16. Where appropriate, the use of innovative mechanisms for financing projects, including value capture pricing, tolls, and congestion pricing.
17. Preservation of rights-of-way for construction of future transportation projects, including identification of unused rights-of-way which may be needed for future transportation corridors, and identify those corridors for which action is most needed to prevent destruction or loss.
18. Long-range needs of the state transportation system.
19. Methods to enhance the efficient movement of commercial motor vehicles.
20. The use of life-cycle costs in the design and engineering of bridges, tunnels, or pavement.
21. The coordination of transportation plans and programs developed for metropolitan areas of the state under section 134 with the state transportation plans and programs developed under this section and the reconciliation of such plans and programs as necessary to ensure connectivity within transportation systems.
22. Investment strategies to improve adjoining state and local roads that support rural economic growth and tourism development, federal agency renewable resources management, and multipurpose land management practices, including recreational development.
23. The concerns of Indian tribal governments having jurisdiction over lands within the boundaries of the state.

TABLE 3

KEY GENERIC DATES REQUIRED FOR SUBMISSIONS OF TRANSPORTATION PLANS AND PROGRAMS FOR FY 1995–1997

1. October 1, 1993
   - MPO approved transportation plan for FY 95–97 submitted to USDOT
2. November 15, 1993
   - Submission of state implementation plan (SIP) to state environmental agencies
   - Submission of statewide transportation improvement program (STIP) to state environmental agencies and to FHWA
3. May 1, 1994
   - Regional models fully operational
   - Menu of NOx strategies available
   - Draft regional transportation improvement program (TIP)
   - Start conformity analysis for regional transportation plan (RTP) and TIP
4. May 31, 1994
   - Final draft TIP submitted
   - Required 30-day public review begins
   - Draft RTP revision if NOx strategies needed
   - Conformity determination for RTP and TIP
5. June 15, 1994
   - Final draft TIPs completed
   - Air quality conformity demonstration completed
   - Required 30-day public review processes begin
6. July 15, 1994
   - Responses to public comments begin
   - Local approval of TIPs begin
7. August 1, 1994
   - Responses to public comments ends
   - Final TIPs with local approval delivered to the state
   - TIPs with air quality conformity demonstrations sent to state environmental agency for review and concurrence.
   - State agency endorsements of TIPs begin.
   - Begin process by governor (or state designee) to TIPs
8. August 15, 1994
   - State environmental agency review of air quality determinations completed and concurrence issued
   - MPO approved TIPs delivered to FHWA/FTA
   - Federal air quality conformity review of TIPs begins
   - STIP delivered to FHWA/FTA for review and approval
9. September 15, 1994
   - EPA completes air quality review of TIPS and provides comments to FHWA/FTA
10. October 1, 1994 to September 30, 1995
    Begin implementation of six management systems by state DOT in cooperation with MPOs:
    - Congestion management
    - Pavement management
    - Intermodal management
    - Bridges management
    - Public transportation management
    - Safety management
11. October 1, 1994
    - Air quality conformity determinations on TIPs issued by FHWA/FTA
    - STIP fully approved by FHWA/FTA
12. December 1, 1994
    - Demonstration of attainment under the control strategies of the SIP
13. January 1, 1995
    - Officially recognized state plan to FHWA/FTA
14. February 1, 1995
    - Revision of MPO transportation plan
    - Submittal of statewide transportation plan to US DOT
    - Certify the implementation of six transportation management systems
15. October 1, 1995
    - STIP based on state plan approved by FHWA/FTA
16. January 1, 1996
    - Attainment date for carbon monoxide (CO) National Ambient Air Quality Standards (NAAQS)
17. November 1, 1996
    - Conformity review and endorsement of FY97–99 MPO TIP
18. December 1, 1996
    - Demonstrate consistency with ozone attainment goals in NAAQS
19. October 1, 1997
    - Expiration of funding authorization of ISTEA
20. February 1, 1998
    - Revision to MPO plans

emissions must be reduced by an additional 3 percent per year until 1999.

The submission dates vary depending on a number of factors related to whether or not urban areas are in compliance with air quality standards, and according to the population of the area. Consequently, only a generic set of dates is presented in Table 3. The sample schedule is based on an actual MPO schedule, but should not be interpreted as a guideline nor be viewed as a standard to be achieved. It is included here only to illustrate the complexities involved in scheduling the required activities.

METHODOLOGY

The purpose of this synthesis is to summarize the approaches being used to meet the requirements of ISTEA by MPOs in a small, unscientifically selected sample of urban transportation planning processes around the country. In selecting MPOs for that purpose, an attempt was made to include a range of sizes (by population), located in various geographic attainment and nonattainment areas of the country.

Table 4 provides a description of the 16 MPOs that were considered for inclusion in this project. Table 5 provides a listing of those eight areas selected as case studies for this synthesis.

The MPOs included in this synthesis were selected primarily because they appeared to have made early progress in dealing with ISTEA. Consequently, it was concluded that by summarizing those early experiences it would be possible to help other MPOs that were still dealing with that challenge. A summary of how one state department of transportation addressed the 23 statewide factors is presented in Appendix B.

TABLE 4

THE MPOS CONTACTED AND CONSIDERED FOR THIS SYNTHESIS

MPO Attainment Location	TMA Designated*	Ozone Status**
Albany, NY	Yes	Marginal
Boston, MA	Yes	Serious
Burlington, VT	No	In compliance
Charlotte, NC	Yes	Moderate
Cheyenne, WY	No	In compliance
Chicago, IL	Yes	Severe
Houston-Galveston , TX	Yes	Severe
Iowa City, IA	No	In compliance
Los Angeles, CA	Yes	Extreme
New York, NY	Yes	Severe
Oakland-San Francisco, CA	Yes	Moderate
Pittsburgh, PA	Yes	Moderate
Portland, OR	Yes	Marginal
St. Louis, MO	Yes	Moderate
Washington, DC	Yes	Serious
Wichita, KS	Yes	In compliance

*Urbanized areas above 200,000 in population.
**Designation for ozone status: 1. Extreme, 2. Severe, 3. Serious, 4. Moderate, 5. Marginal, 6. Submarginal, 7. In compliance.

TABLE 5

THE MPOS INCLUDED IN THIS SYNTHESIS

In-Depth Case Studies	15 Factors Only
Albany, NY	Chicago, IL
Boston, MA	Houston, TX
Charlotte, NC	Portland, OR
Pittsburgh, PA	San-Francisco–Oakland, CA

Since the passage of ISTEA (and even prior to but in anticipation of its enactment), MPOs have been subjected to intense study and surveys by a number of organizations. Given all the surveys and studies that have been undertaken or are underway, it was decided that the information needed for this synthesis could be obtained through personal interviews with MPO directors or key staff members and from written documentation available from each selected MPO. The interview guide used to obtain information and to prepare the case studies is provided in Appendix C. That information, together with the other available resources, provided the desired material.

In addition, an extensive literature search was undertaken involving a TRIS (Transportation Research Information Systems) search, and inquiries were made to key FHWA and FTA personnel and to individuals throughout the country who are actively engaged in related activities, including state officials, consultants, and academics.

Because of a continuing flow of federal time deadlines, guidelines, and agency updates, the situation is changing very rapidly; consequently, this material represents only a brief period in time as of the summer and early fall of 1994. The federal certification process underway at the time of this research will provide an analysis of all MPOs having a population of 200,000 or more by early 1996; consequently, another series of in-depth reports will be available in the near future to cover this topic in greater detail. The material presented here represents the perspective of the MPO. In the same urbanized area, the viewpoint may be different depending on the agency viewing the situation.

The significance of this synthesis lies in its summary of the early struggles and successes by several MPOs in meeting the new federal requirements imposed by ISTEA and the 1990 CAAA. This synthesis documents some of those evolving experiences provided by many MPO directors and their staffs in transforming the urban transportation planning process to meet the new challenges of the 21st century. It should not be viewed as guidelines on how to meet the requirements of ISTEA, nor should it be viewed as a model to be achieved.

CHAPTER TWO

SUMMARY OF MPO EXPERIENCES IN DEVELOPING PLANS AND PROGRAMS

INTRODUCTION

This chapter summarizes what has been learned with regard to the experiences of a limited number of MPOs in meeting the early requirements of ISTEA. The information is presented under the following six categories:

- Process issues
- Institutional and organizational issues
- Technical issues
- Current concerns
- Future concerns
- The difference made by ISTEA.

The observations are based on the analysis of an extensive set of materials and information that go beyond the information obtained from the four case studies. Chapter 4 documents the manner in which those urbanized areas are dealing with the mechanical MPO planning requirements of ISTEA. However, analysis of the extensive interviews and literature search and their reviews provided additional information that is not only interesting but also instructive at this stage in the development of the required ISTEA planning activities.

As an overall observation, when the research for this project was completed (i.e., summer/fall of 1994), MPOs were addressing the 15 factors in a qualitative way, as shown in Chapter 4. The more advanced work needed to do so in a more quantitative and comprehensive way is still under development, and this process is being expanded and modified in most cases.

Following is a summary of observations for each of the six categories identified above.

PROCESS ISSUES

- The schedule requirements for submitting plans and programs are being met, except in a few instances where unusual circumstances may have existed but where FHWA and FTA have agreed to time extensions.
- MPOs are still in the process of marshaling resources to deal with ISTEA and the 1990 CAAA. Most agencies have had to refocus their efforts to meet the established deadlines.
- Expectations have been raised beyond reasonable levels concerning how ISTEA would affect the planning process and funding redistribution.
- There appears to be more concern with meeting the bureaucratic specifics of the 15 MPO factors (or the 23 statewide factors) than in meeting the spirit of the ISTEA legislation. This results from the deadlines imposed for addressing the 15 factors and from the potential impacts of losing eligibility for some federal funding.
- There is still an overriding concern among many transit and local officials that their expectations for increased funding will not be met because of the strong highway influence in the planning process.
- Some MPOs have expressed the concern that schedules being fueled by ISTEA and the 1990 CAAA are unreasonable. MPOs are being asked to do analyses with tools that must often go beyond their intended uses. Their work must also fit these into a local political process that often pays little or no attention to the federal planning requirements imposed by ISTEA.
- The need to establish more extensive and inclusive citizen participation in the process is still problematic, except in those areas that have traditionally and successfully engaged in such activities. Providing opportunities for more citizen participation is an area, however, in which many MPOs are investing substantial efforts.
- The MPO is viewed as providing the major focus for getting all the participants involved to discuss and analyze options for major investment studies. This must incorporate project environmental analysis as well. The MPOs are struggling with how to accomplish this.

INSTITUTIONAL ISSUES

- To a large extent the culture of the MPO organization prior to ISTEA has not changed appreciably. MPOs were established in the mid 1970s as required by the 1973 Federal-Aid Highway Act. Many of those MPOs created comprehensive and cooperative programs that met the spirit and the intent of law in the 1970s, and that reflect the new requirements of ISTEA. Other MPOs, however, and are still experiencing difficulties in the mid 1990s.
- Concern exists that ISTEA establishes too much federal control over the local planning process. Federal agencies have attempted to minimize such influence, but what is frequently viewed as an overwhelming amount of federal paperwork (e.g., in the form of *Federal Register* documents) does provide a continuing concern to the MPOs.
- In the 27 nonattainment areas that are classified by EPA as extreme (1), severe (8), and serious (18), there is concern that more extensive political cooperation is needed to develop plans and programs that will effectively address air quality issues.
- Local officials must be willing to deal with difficult investment trade-offs, including the desire for system expansion by suburban communities versus the need for system preservation within center city and inner-city areas.

• MPOs must provide significant assistance to transit agencies in identifying and providing opportunities to use the flexibility of ISTEA to put more money into transit expansion where that is appropriate. The issue is complicated by competing priorities among highway and transit projects.

• Many MPOs are experiencing great difficulty in coordinating and communicating with federal, state, and sometimes regional agencies dealing with transportation and air quality planning. For example, several MPOs are concerned that meeting the conformity requirements is viewed as an afterthought rather than an important action that must be taken in advance of establishing plans and programs.

• There are three publics to deal with, each with different needs: "average" citizens, special interest groups, and people in the community with technical expertise who like to delve into these topics. The MPOs must develop different methods for satisfying each, but they must do so with limited resources and limited authority to take action (often resulting in public criticism).

• The statewide planning process (the 23 factors) required by ISTEA established another complication for MPOs to address, because of the need for more extensive coordination.

• The requirement for developing major investment studies will provide an opportunity to establish a more rational approach for creating long-range plans that requires the cooperation of all parties in the process. Highway agencies, local elected officials, transit agencies, federal agencies, and citizens must all be part of it. But, given its complexity, there is a concern that staff assistance from any agency will not be adequate to deal with the issues.

TECHNICAL ISSUES

• Except in some isolated instances, there is relatively little comprehensive planning underway that takes a top-down approach. This is because there is still a great deal of short-term project planning that must be undertaken, often at the expense of longer-range comprehensive planning.

• Plans being developed in many areas are still dealing with the many projects and problems that have been in the pipeline sometimes for a decade or more.

• The requirement to update plans every 3 years will be difficult if not impossible to achieve in many nonattainment areas because of the time, data, and analysis needed for such an effort.

• Technical planning models developed a decade or more before ISTEA are often being used to meet the requirements of the 1990 CAAA. New planning requirements have sometimes stretched their ability to measure transportation changes required to reduce transportation generated emissions. However, a number of MPOs are spending considerable funds in efforts to update data and models.

• Many federal, state, and local participants have expressed the need for developing expanded technical training programs. Both FHWA and FTA are currently developing a variety of courses to meet that need. They are anticipated to cover:

— Emissions analysis
— Travel demand analysis
— Public participation methods and incentives
— Major investment analysis
— Financial analysis (for financially constrained transportation improvement programs (TIPs))
— How to deal with the 15 factors
— Planning and programming emphasis areas
— Management systems.

• Smaller MPOs need different guidelines than larger MPOs.

• Development, analysis, and integration of management systems will be difficult for MPOs to accomplish because of limited resources.

• Some MPOs have developed effective technical procedures (even given the limitation of available tools). Thus, ISTEA has provided some motivation for incorporating project, corridor, subregional, and regional planning into the development of comprehensive plans and programs.

• Some advocacy groups insist on using the technical modeling results as the primary method for judging the adequacy of plans and programs, without fully understanding the inherent limitations associated with those tools.

• Technical assistance is needed from the federal government for developing major investment studies.

• Although some MPOs have had the resources to obtain and analyze reliable data, many others do not have such resources. In addition, given the absence of reliable data, their analysis tools suffer from lack of credibility.

• More serious attention is being given to freight transportation issues than has previously been the case.

• More attention is being given to land use planning as an integral part of transportation planning.

CURRENT CONCERNS

• Some MPOs have expressed concerns about coordination with state DOTs that are developing statewide plans to meet the requirements of ISTEA. Their goal is to provide more substantive input by MPOs to statewide decision making.

• Public officials must be made aware of the inherent limitations of available analytical tools.

• State and local officials are concerned about the ability of MPOs to meet the Clean Air Act conformity requirements, and the potential financial penalties that will be imposed if they do not do so.

• The expectation of increased funding for nonhighway projects (e.g., transit, ridesharing, enhancements) cannot be met under existing circumstances. A major reason is that the ISTEA appropriations have been significantly less than the original authorizations. Consequently, the total available to fund all programs is less than desired, and all projects suffer. The conclusion is that more sources of funds must be found.

• There are relatively few visionary plans being developed, because there are too many immediate concerns that must be addressed to maintain funding eligibility.

• When conformity plans are being evaluated, two possible courses of action could be taken by the approving agencies: 1) acceptance, based on showing a good-faith planning effort to develop and implement transportation control measures and with a continuing effort to improve the actions taken; or 2) decisions based on the answers provided by modeling procedures resulting in a "go" or "no go" decision.

Unless some reasonable and consistent approach is agreed on, there will be significant controversy regardless of which approach is taken.

- ISTEA has raised the expectations of citizen groups and local activists beyond reasonable levels of possible results.
- The trade-offs between transportation investments and social and environmental objectives need a more analytical basis for decision making.

FUTURE CONCERNS

- A movement to establish dedicated funds for specific activities could effectively destroy the intent within ISTEA of providing flexibility in funding transportation needs.
- Earmarking for projects is the antithesis of ISTEA flexibility.
- More innovative and secure sources of federal, state, and local funds must be established. Otherwise, continuing battles over shrinking revenues for all transportation programs will become increasingly counterproductive.
- Incentives and methods must be established for doing long-range, visionary, comprehensive planning that includes land use, quality of life, financial considerations, and all the issues identified by ISTEA.
- Serious consideration and adequate resources must be given to developing more effective analytical tools that deal with today's problems and issues.

THE DIFFERENCES MADE BY ISTEA

- The requirements to develop fiscally constrained plans and programs represent one of the most powerful tools in the MPO battery of requirements. If highway and transit agencies take these requirements seriously, then more effective planning will be possible.
- Preservation of the existing highway and transit systems is a significant requirement. This has the potential to focus energy and resources on immediate needs rather than adding new projects to the list of those already planned.
- A more serious consideration of citizen input is emerging in many areas, but it must be integrated with political realities.
- In the past many (though not all) MPO activities were dominated by state and federal funding availability; now, many MPOs are experiencing more cooperative input by those agencies. This is because of the more specific requirements for MPO approval of plans and programs, and the more active participation by MPO staffs.
- The requirement to undertake major investment studies provides the motivation for all participants to establish a new and innovative planning process that could eventually meet many of the expectations created by ISTEA.
- ISTEA and the 1990 CAAA have required that new and serious attention be given to the urban transportation planning process in all metropolitan areas throughout the nation. In particular, the requirements and schedule deadlines imposed by both federal mandates have resulted in a renewed and reinvigorated planning process in all areas. But, there is a difference in the nature of activities in nonattainment and in smaller areas characterized by the following.

In Nonattainment Areas

- Comprehensive plans are being updated, sometimes for the first time in a decade or so. But, the planning tools are still based on the original models developed in the 1960s and 1970s. MPOs are spending substantial funds to enhance and update those tools.
- Most (perhaps all) MPOs have addressed the 15 factors specified by ISTEA in one way or another over the past years prior to ISTEA. Each plan can provide an initial response to meeting those requirements, but a comprehensive response will require more work.
- The technical problems that must be addressed are resolvable if adequate financial resources are made available.
- The institutional, organizational, and political issues will remain the most challenging to deal with.

In Smaller Urban Areas

In the smaller urban areas and in those not in violation of the 1990 CAAA air quality attainment requirements, the following observations are made:

- The task of meeting the requirements of ISTEA is still difficult, but not as challenging as in the larger and the nonattainment areas.
- In most cases, limited staff resources constrain the smaller MPOs' ability to pursue the more comprehensive approaches required by ISTEA.
- Smaller MPOs are often located within a county or city government structure, which provides a solid institutional base for operations.

CHAPTER THREE

INTEGRATION OF MPO PLANNING AND STATEWIDE PLANNING REQUIRED BY ISTEA

The new ISTEA planning requirements and the requirements of the 1990 CAAA are closely intertwined, and cannot be done independent of the other. Consequently, the purpose of this chapter is to briefly describe the ISTEA requirements for the integration of statewide and MPO plans and programs and their relationships to the 1990 CAAA. A summary developed by FHWA and FTA of the key features of the 15 MPO factors and the 23 statewide factors that are to be incorporated is provided.

COMMON ISSUES FOR METROPOLITAN AND STATEWIDE PLANNING

The ISTEA planning regulations were published in the *Federal Register* on October 28, 1993 and were effective on November 29, 1993. Issues common to both metropolitan and statewide planning, and how they relate to conformity with the 1990 CAAA, are summarized below.

Flexible Funding

Characteristics of flexible funding include the following:

- At least 65 percent of ISTEA authorization is flexible.
- This type of funding levels the playing field; planning is the vehicle for making decisions, and the programming process implements those decisions.
- The focus is on effective state/local decisions.
- Intermodal solutions for mobility are emphasized.

Environmental Linkage

With regard to environmental issues, commonalities for metropolitan and statewide planning include the following:

- Conformity to the 1990 CAAA ;
- Stronger linkage between transportation and environmental planning; and
- Earlier environmental consideration.

Roles and Responsibilities

Under the issue of roles and responsibilities are the following elements:

- A definition of cooperation—working together to achieve a common goal or objective, *not concurrence*;
- An emphasis on a level playing field;
- A federal role to support state and MPO decision making;
- The fact that states must inform local agencies when state decisions on plans or transportation improvement programs (TIPs) impact them; and
- Revised definitions of governor or "governor's designee"; but the governor may still delegate actions assigned to the governor, e.g., approval of TIPs; state no longer defined as "State DOT," which allows governor to delegate responsibility for state actions to another agency.

Public Involvement

Public involvement includes:

- Significant changes concerning the required public involvement for statewide and metropolitan planning;
- Open process with free exchange of information and opportunities for input at all stages;
- Performance based criteria (outcomes, not prescribed process);
- Emphasis on state/local design of process; must have 45-day comment period on proposed public involvement process; and
- In metropolitan nonattainment areas classified as serious and above, at least 30-day review for plan, TIP, and major amendments must be provided. In nonattainment areas, transportation management areas (TMAs) must provide the opportunity for at least one annual meeting on plan development process and an opportunity for a public meeting during the TIP development process (a single meeting may satisfy both requirements).

Financial Constraint

The following must be considered under the issue of financial constraint:

- The metropolitan plan, TIP, and statewide transportation improvement program (STIP) must be consistent with reasonably available resources and with strategies for ensuring availability of new sources. The statewide transportation plan does not have to be financially constrained, but financial discussions and considerations related to the STIP should be documented.
- Funding in the first 2 years of the TIP in metropolitan nonattainment and maintenance areas is limited to available and committed funds; available funds are existing funding sources dedicated to or historically used for transportation purposes, and committed funds are general purpose funds

committed to in the TIP by the appropriate official. New sources can be included for outyears of the TIP if strategy for obtaining them is included.

- New sources can be included for subsequent years of the TIP in attainment areas if strategy for obtaining them is included.
- The STIP is constrained in a similar fashion.
- State and transit operator must provide MPOs with estimate of funds expected to be available for TIP development.
- The surface transportation program (STP) and FTA Section 9 funds allocated to TMAs are not to be further suballocated to individual jurisdictions or modes unless based on considerations required to be addressed as part of the planning process.

Planning Factors

Planning factors include the following:

- Explicit consideration and appropriate analysis in planning and programming based on complexity of transportation problems and other issues: in metro areas basically a cooperative MPO/state/transit operator decision;
- Nonregulatory guidance to be provided by FHWA and FTA; and
- Concerning the 23 statewide and the 15 MPO factors, some of the more important items include:
  - — Increased emphasis on preservation and more efficient use of existing system, and
  - — Increased emphasis on consideration of effects on land use, and economic, social, and environmental effects.

STATEWIDE PLANNING

Following are specific requirements that must be met in developing statewide plans and programs.

Statewide Plan

Characteristics of statewide plans include the following:

- They are a new requirement; with regard to plans developed by January 1, 1995, the STIP is based on an interim plan prior to this date.
- They incorporate the 23 factors.
- A policy plan is an option; corridors are encouraged.
- They are not financially constrained (but financial issues should be considered and documented).
- They are linked to metropolitan plans.
- Public involvement is requisite (see earlier discussion under "Common Issues").

Statewide Transportation Improvement Program (STIP)

The following are elements under the STIP:

- Metropolitan TIP included verbatim after governor's approval;
- STIP is financially constrained by year (see earlier discussion under "Common Issues");
- Can only include projects from conformity TIP—conformity determination prior to inclusion on metro TIP or separate process for rural nonattainment areas;
- Consistent with statewide plan;
- Public involvement is requisite (see earlier discussion under "Common Issues")
- Includes all Title 23 Act projects; and
- Must be updated at least every 2 years; self-certification and FHWA/FTA finding of planning process adequacy provide basis for approval by FHWA and FTA.

Statewide Project Selection

The selection process for statewide projects must consider the following:

- Projects are to be implemented from the approved STIP;
- Projects are those deemed selected in the first year of the STIP;
- In metropolitan areas, selection is through the metropolitan process;
- Outside metropolitan areas:
  - — National highway system (NHS), bridge, and interstate maintenance (IM) funds selected by state in consultation with affected local officials;
  - — Other FHWA-funded projects selected by state in cooperation with affected local officials;
  - — Public lands highways program projects selected in accordance with 23 USC 204;
  - — FTA-funded projects selected by state in cooperation with affected local officials and transit operators;
- Project selection procedures must be followed to advance from subsequent years of STIP; and
- Expedited selection procedures permitted if agreed to by all parties.

METROPOLITAN PLANNING

Following are specific requirements that must be met in developing metropolitan plans and programs.

Major Investment Study (MIS)

With regard to a major investment study (MIS), the following must be considered:

- Requirements apply where need for a major metropolitan transportation investment (generally alternatives on the scale of freeways, expressways, high-occupancy vehicle (HOV), and fixed guideway facilities) is identified and federal funds are potentially involved.
- The purpose is to develop or refine the transportation plan and lead to decisions by the MPO, in cooperation with participating agencies, on design concept and scope of investment.
- The intent is to make FHWA and FTA planning processes the same to facilitate consideration of modal alternatives and flexible funding provisions.

- Responsibility rests jointly with the MPO, the state, and the transit operator; roles and responsibilities for a particular study are determined through an initial collaborative meeting where an appropriate range of alternatives is agreed to.
- FHWA and FTA as well as federal, state, and local environmental resource/permit agencies are to be actively involved.
- An evaluation of alternatives must be documented, including environmental effects, in a report that provides input into the environmental process. A draft environmental document may be produced as part of the MIS.
- Where the environmental process has not been initiated, federal capital funds cannot be used for the project-level work until the MIS is completed and the results are reflected in the transportation plan and the TIP.
- Where the environmental process has been initiated but not completed, FHWA and FTA must be consulted to determine if additional work is required (this is a case-by-case decision depending on how close the environmental document is to completion, and the adequacy of range of alternatives evaluated).
- Where the record of decision or FONSI on environmental documents was completed before the effective date of the regulations (November 29, 1993), the MIS requirements do not apply.

Single-Occupant Vehicle (SOV) Restriction in Transportation Management Areas (TMAs) That Are Nonattainment for Carbon Monoxide (CO) and/or Ozone

Under this restriction, the following apply:

- Projects that significantly increase SOV capacity (adding general purpose lanes to existing highways, except safety improvement or traffic bottleneck elimination) or building new general purpose highways must result from a congestion management system (CMS) if the project had not advanced beyond the National Environmental Policy Act (NEPA) stage prior to April 6, 1992 (date of USDOT interim guidance on metropolitan planning).
- Phase-in provisions that apply prior to full implementation of the CMS are included in the metropolitan planning regulations. Analysis of all reasonable travel demand management and operational strategies must demonstrate that such measures cannot satisfy the need for additional capacity in the corridor in which the SOV project is proposed.
- If this test is met, the SOV project can proceed, but all reasonable strategies to manage it or facilitate its management in the future must be incorporated into the project. Other travel demand management and operation strategies appropriate for the corridor, but not the SOV project itself, must be committed for implementation in the same time period as the project.

Transportation Plan

The transportation plan must serve the following:

- Have at least a 20-year horizon and be a financially constrained facilities plan;
- Be updated at least triennially in nonattainment and maintenance areas, and every 5 years elsewhere;
- Be approved by the MPO;
- Assess the cost for preserving and making efficient use of the existing system;
- Include design concept and scope of facilities sufficient for conformity and/or financial constraint purposes;
- Include a financial plan demonstrating that the resources necessary to implement the plan (and operate and maintain the transportation system) are reasonably available; and
- Under the phase-in provisions, nonattainment areas needing transportation control measures (TCMs) for their attainment demonstration statewide implementation plans (SIPs) (due November 1994) are to have their transportation plans updated by October 1, 1994; other areas are to have their plans updated by December 18, 1994.

Metropolitan TIP

The metropolitan TIP must serve the following:

- Be developed cooperatively by the MPO with the state and the transit operator;
- Be updated at least every 2 years and approved by the MPO and the governor;
- Cover at least 3 years;
- Determine conformity in nonattainment and maintenance areas;
- Receive public comment (see earlier discussion under "Common Issues");
- Be financially constrained by year (see earlier discussion under "Common Issues");
- Prioritize projects to include all Title 23 Act projects and all regionally significant projects requiring FHWA/FTA approval. For nonattainment and maintenance areas, all regionally significant projects are to be funded with nonfederal funds whether or not they require FHWA/FTA approval, which must be included; and
- Be found by FHWA and FTA to be based on an adequate planning process, using self-certification by the MPO and state, plus other appropriate review.

Metropolitan Project Selection

The selection process for metropolitan projects must consider the following:

- Projects are to be implemented from the approved TIP;
- Projects are those deemed selected in the first year of the TIP;
- To implement a project in the second or third year of the TIP, the following project selection procedures must be used:
  - — For a non-TMA: state and transit operator are in cooperation with MPO;
  - — For a TMA: MPO is in consultation with state and transit operator. NHS, bridge, and interstate maintenance are by state in cooperation with MPO;
- Separate project selection procedures are to be followed for federal lands highways programs projects;

- Priority is to be given to TCMs in nonattainment and maintenance areas; and
- Expedited selection procedures permitted if agreed to by all parties.

Certification

Certification includes the following:

- In TMAs, FHWA and FTA must jointly certify the planning process at least every 3 years.
- The first round of certifications must be completed by October 1, 1996 to avoid mandatory sanctions.
- It is not to be viewed as a pass/fail test.
- Options for certification are to certify, to certify subject to corrective action being taken, to certify as basis for permitting certain program categories to continue while specified corrective actions are being taken, and to not certify.
- It encourages performance improvement.
- The process supports state/local partners.
- The process is to be handled through guidance rather than regulation.
- Certification is only one of several oversight responsibilities of FHWA and FTA; others are approval of unified planning work programs, planning findings on TIPs, and conformity determinations. The certification process will use and build on these and other oversight activities.
- Any funds that are withheld are restored when the area is certified if the availability period for the funds has not lapsed.

Appendix B provides an example of how one state addressed the 23 ISTEA factors in its statewide planning process.

CHAPTER FOUR

CURRENT MPO PLANNING PRACTICES IN SELECTED URBANIZED AREAS

In-depth case study material is presented on MPOs for each of the following four urbanized areas. The MPOs in each are transportation management areas:

- Albany, New York
- Boston, Massachusetts
- Charlotte, North Carolina
- Pittsburgh, Pennsylvania.

In addition to the above case studies, the responses given by the MPOs in the following four areas addressing the 15 ISTEA factors are provided:

- Chicago, Illinois
- Houston, Texas
- Portland, Oregon
- San Francisco–Oakland, California.

The information provided for each case study was the most recent available in the summer and fall of 1994. A bibliography of sources for each of the case studies follows the reference list at the end of this synthesis. During the publication period, this information will no doubt have been revised and expanded.

To provide a context for each of the case studies, population and transportation statistics for each are presented in Tables 6 and 7.

CASE STUDY ONE: THE CAPITAL DISTRICT TRANSPORTATION COMMITTEE (CDTC), ALBANY, NEW YORK

CDTC is the designated MPO for the Albany urbanized area. The jurisdictions covered by CDTC include Albany, Rensselaer, Saratoga, and Schenectady Counties, New York. With regard to status of air quality attainment, EPA has designated the Albany urbanized area as being in marginal violation of the national ozone standard.

Agencies Included in MPO

Agency representation includes the Capital District Transit Authority (CDTA); the Capital District Regional Planning Commission (CDRPC); numerous local elected officials; the New York State Department of Transportation (NYSDOT) and the Thruway Authority; and FHWA and FTA as ex officio members. The mayor of a local community is the CDTC Chairman, and the regional director of NYSDOT is the CDTC Secretary. Following is a listing of the agencies included in the MPO:

County	Albany County Executive Chairperson, Albany County Legislature Rensselaer County Executive Chairperson, Rensselaer County Executive Chairperson, Saratoga County Board of Supervisors Member-at-Large, named by the Saratoga County Board of Supervisors Chairperson, Schenectady County Board of Representatives Member-at-Large, named by the Schenectady County Board of Representatives
City	Mayor of Albany Mayor of Cohoes Mayor of Mechanicsville Mayor of Rensselaer Mayor of Saratoga Springs Mayor of Schenectady Mayor of Troy Mayor of Watervliet
Regional and State	Designated Representative of the Capital District Transportation Authority Designated Representative of the Capital District Regional Planning Commission Designated Director, New York State Department of Transportation*
Town and Village	Two at-large town representatives chosen annually by CDTC
Federal	FHWA* FTA*

*Advisory Members

Transportation Planning and Programming Prior to ISTEA

Introduction

Since its establishment in the mid 1970s as an MPO, CDTC has worked effectively in developing plans and programs for the region. Under the direction of the Policy Committee, CDTC staff was delegated as the lead group to develop the following:

- A unified planning work program
- The regional transportation plan
- Subregional studies
- All federal documents
- All staff work for CDTC.

TABLE 6

SELECTED POPULATION AND TRANSPORTATION STATISTICS FOR THE FOUR IN-DEPTH CASE STUDIES

For Base Year	Albany (1990)	Boston (1990)	Charlotte (1990)	Pittsburgh (1990)
Population	775,000	2,921,708	511,400	2,320,000
Employment	371,000	1,715,037	358,000	1,200,000
Average Daily Trips:				
Transit Persons	55,000	650,438	32,000	230,000
Auto Persons	2,700,000	8,298,738	3,901,500	5,800,000
Highway Vehicles	2,160,000	7,260,463	2,545,400	5,009,991
For Forecast Year	Albany (2015)	Boston (2020)	Charlotte (2015)	Pittsburgh (2015)
Population	850,000	2,906,361	814,600	2,700,000
Employment	416,000	1,979,892	607,600	1,530,000
Average Daily Trips:				
Transit Persons	50,000	721,554	88,700	295,000
Auto Persons	3,700,000	9,207,435	6,592,000	7,370,000
Highway Vehicles	3,000,000	8,524,050	4,225,500	6,144,375

TABLE 7

SELECTED POPULATION AND TRANSPORTATION STATISTICS FOR THE FOUR OTHER CASE STUDIES

For Base Year	Chicago (1990)	Houston (1990)	Portland (1990)	S.F./Oakland (1990)
Population	7,365,366	3,731,132	1,412,344	6,024,000
Employment	3,915,647	1,874,752	855,907	3,113,000
Average Daily Trips:				
Transit Persons	2,347,730	198,000	162,581	1,236,000
Auto Persons	14,185,389	9,555,000	5,296,036	16,685,000
Highway Vehicles	NA	2,975,000	4,903,863	15,464,000
For Forecast Year	Chicago (2010)	Houston (2010)	Portland (2015)	S.F./Oakland (2010)
Population	8,362,286	5,072,521	2,210,800	7,509,000
Employment	4,597,061	2,766,395	1,483,600	4,128,000
Average Daily Trips:				
Transit Persons	2,469,726	255,000	357,123	1,434,000
Auto Persons	17,133,148	12,070,000	7,771,212	22,012,000
Highway Vehicles	NA	14,875,000	7,200,120	20,887,000

Note: NA = not applicable.

The December 1990 prospectus (for the period 1990–1995) contains tasks to be undertaken in five categories:

1. Program coordination, including all the tasks necessary to administer and continue the MPO process;
2. Surveillance, including the tasks to collect regional and local travel and demand data and information including simulation model development, updating, and maintenance;
3. Plan appraisal, including the refinement of long-range regional and subregional plans and policies;
4. Implementation of planning and programming, which leads to the direct implementation of projects through the transportation improvement program (TIP); and
5. Provision of services, which includes the direct technical and community services such as ridesharing support activities.

Summary of Methods Used to Develop Plans and Programs Prior to ISTEA

CDTC had established a very effective and cooperative planning and programming process prior to ISTEA. A collegial atmosphere was established with a relatively high degree of trust among the many agencies involved. A solid analytical base had been established and used effectively in developing plans and programs. The last plan adopted prior to the 1991 ISTEA legislation was in 1990, covering a 10-year period. Upon passage of ISTEA, the 1990 plan was expanded, widely circulated, and revised. Formal adoption was completed in December 1993. (Details of this plan are provided later.)

Methods to Achieve Coordination Prior to ISTEA

The MPO structure and activities prior to ISTEA included the tasks needed to undertake air quality and energy related planning activities. The NYSDOT developed a battery of computer programs during the 1970s for use with its mainframe simulation process. CDTC has worked cooperatively with NYSDOT in the work undertaken by the state agencies.

The Extent to Which the 15 ISTEA Factors Were Incorporated Prior to ISTEA

CDTC did incorporate those factors into its process, but not to the same extent those factors are now being included. (Further detail is provided later.)

Influence of the MPO Recommendations on State Plans and Programs

The MPO influence has been significant because of the cooperative nature of the process and the close working relationship with the state agencies.

The Impact of ISTEA—Current Status of Plans and Programs

Plan development in the Albany region is considered to be a work in progress.

The regional plan, which was formally adopted in December 1993, focuses on committed actions over the next 10 years. It acknowledges that the actions are largely incremental (i.e., transit park-and-ride lots, traffic management actions, demand management actions, limited highway widening) and will be insufficient alone to meet the transportation needs of the area over a 25-year horizon. The plan states that the current 10-year vision for the region is in terms of 13 commitments, as follows:

1. Pavement and bridge infrastructure rehabilitation
2. Public transportation infrastructure
3. Intermodal facilities
4. System management
5. Congestion management
6. Transit initiatives and demand management
7. Bicycle and pedestrian accommodation
8. Integration of land use and transportation decisions
9. Strategic system improvements
10. ADA accessibility
11. Public safety
12. Clean air and protection of natural resources
13. New paradigms, new technologies, new visions.

Significant commitments of the 10-year plan include a regional incident detection and freeway and arterial management system for congestion management. Among the strategic system improvements are commitments to eliminate five 1- to 2-mi bottlenecks, construct 2,000 park-and-ride spaces, and conduct major access improvements to the Albany County Airport.

The plan uses performance measures such as projected energy consumption, the number of congested corridors, and ridership on transit to demonstrate that a bigger vision and more significant commitments are required to meet long-range needs. As a result, even prior to completion of the plan, CDTC launched a major effort to produce a long-range plan.

The long-range plan, entitled New Visions, is explicitly designated to fit a structure that embraces the concept of outreach at the beginning of the process. CDTC has established contact with over 500 stakeholders and has launched nine task forces composed of over 100 individuals, including business leaders, environmental advocates, freight operators and users, state and local government leaders, and other stakeholders. The task forces cover the following areas:

- Urban issues
- Transit futures
- Expressway management
- Arterial corridor management
- Highway and bridge infrastructure
- Bicycle and pedestrian travel
- Goods movement
- Demographics and land use futures
- Special transportation needs.

These task forces, which meet monthly or bimonthly, capture the subjects of the management systems regulations, but further address the broad range of subjects cited under the ISTEA metropolitan planning regulations. The effort began in June 1993 and is expected to produce a draft plan for broad public review by May 1995.

A key feature of New Visions is that each task force is required to address public safety, land use, environmental impact, resource efficiency, equity, and justice in its deliberations. The task forces spent 6 months identifying current and projected (year 2015) conditions, policy issues, and candidate actions. One hundred thirty individuals attended a full-day conference held in December 1993 to review position papers produced by the task forces and provide direction to phase two (currently underway).

Over a period of 12 to 18 months, CDTC plans to undertake technical work to support the task force discussions and continue the consensus-building process. The ultimate product will be a clear statement of vision, explicit presentation of principles, a refinement of the commitments made in the 10-year plan, and a statement of specific intentions. An initial statement of congestion management principles has been developed and incorporated into the plan and also into early versions of the congestion management system (CMS).

The goal of New Visions is to integrate all subjects into a single vision for the region. This integration is best represented by the core performance measures that are being developed and refined in conjunction with each of the nine task forces. These performance measures consciously focus attention on those measures that are most relevant to the community as a whole. Through the broad dialogue, a set of brief yet comprehensive measures is emerging.

Response to Incorporation of the 15 Factors

Section 134(f) of ISTEA established 15 factors that were required to be considered in the development of the Regional Transportation Plan (RTP). CDTC has addressed these factors as follows:

1. *Preservation of existing facilities.*

Infrastructure projects, which focus on preserving the existing transportation system, make up 71 percent of the total 1993–1998 TIP, demonstrating a strong commitment to a preservation strategy. In addition, a demand management focus and a commitment to transit initiatives and system management is an application of the philosophy that increasing the efficiency of the existing transportation system is a cost-effective method of addressing mobility needs.

2. *Energy conservation.*

Energy conservation is an explicit consideration in the CDTC transportation improvement program (TIP) project merit evaluation, and one of the key factors in the benefit/cost analysis. Energy conservation was emphasized for mobility projects, in particular in the merit evaluation of candidate projects.

CDTC's traffic counting and traffic systems management planning effort and commuter register services are a direct result of joint efforts between CDTC and the New York State Energy Office (NYSEO). These efforts are continuing even though the NYSEO contracts have expired.

Energy conservation is an integral evaluation criterion for each subregional study and will be a major consideration in CDTC's exploration of fixed guideway transit options.

3. *Congestion relief.*

Congestion mitigation is related to the RTP goals concerning mobility. The implementation of this goal was a key consideration in the formation of the 1993–1998 TIP. Mobility projects comprise 19 percent of the TIP, including both capacity increasing projects and the implementation of demand management strategies. The programming principles used to develop the TIP built on CDTC's past work, which found that a mixed strategy is most effective in maintaining and improving current levels of mobility. In addition, CDTC required all fixed capacity improvements to be linked to local land use management prior to consideration for programming. This essential link is key to a policy that seeks to prevent future congestion. Only those mobility projects that address existing congestion (Level of Service E or below) were considered for programming.

This RTP includes a preliminary CMS for the Capital District. Other aspects of long-range plan development, including subregional studies, the fixed guideway transit option exploration, the arterial management study, suburban mobility transit planning effort, and the development of a site impact handbook, contribute to congestion management.

4. *Land use.*

As stated above, CDTC applied a screening criterion that required all fixed capacity improvements to be linked to local land use management in the 1993–1998 TIP. This reverse linkage seeks to maintain the benefits of performing a transportation improvement over a longer time period.

Furthermore, the TIP programming exercise had several key linkages to the RTP and the regional plan adopted by the CDRPC. First, consistency with the RTP is a basic screening criterion. Furthermore, the implementation of RTP social, economic, and environmental goals was a major consideration in the formation of the program. The RTP subarea studies deal explicitly with land use and development in major congested corridors. CDTC recognizes, however, that there is a considerable amount of potential work to do in this area. In an effort to spur this activity by local governments, the 1993–1998 TIP contains a project to fund additional land use management plans in corridors of critical importance to the metropolitan transportation system.

CDTC's unified work program also includes a task to develop a site impact handbook, which focuses on coordination of land use planning and transportation investment.

5. *Enhancement activities.*

Transportation enhancement activities are specifically eligible projects for the STP, and several project types are also eligible for a congestion management and air quality (CMAQ)

program. CDTC's evaluation framework can accommodate enhancement activities. However, because the state-level surface transportation program (STP) set-aside for these activities had not been programmed nor the guidelines regarding project selection established at the time of TIP development, programming decisions of enhancement projects were deferred until the 1994 TIP cycle. The guidelines are now available and the first funding cycle is underway. CDTC is actively participating in reviewing proposals.

Efforts to identify transportation enhancement opportunities are included in regional planning efforts and the integrated transportation/land use planning efforts. The bikeway and pedestrian planning efforts specifically address enhancement opportunities related to pedestrian and bicycle travel.

6. *Effects of all projects.*

The 1993–1998 TIP contains all significant transportation projects, most of which are receiving at least partial public funding. CDTC has been instrumental in establishing transportation development districts (TDDs) in key transportation corridors, such as near the Albany County Airport. This increase in private financing to the metropolitan transportation system can be expected to greatly improve the region's overall mobility.

The air quality impacts of the projects contained in the TIP and the *Analysis of Year 2000 Congestion Levels in Critical Corridors of the Capital District* were analyzed as per 1990 CAAA requirements. Both the TIP and the RTP are exempt from a full National Environmental Policy Act (NEPA) analysis. Therefore, the analysis of the effects of the projects programmed in the 1993–1998 TIP was limited to the relationship between programmed projects and the implementation of RTP goals. The RTP is focused on the metropolitan transportation system. Project-specific NEPA analyses will examine the effects of a given project in other areas.

CDTC also includes non-CDTA transit development work in its unified work program, which focuses on private operator transit services, similar to CDTC's past efforts on upstate transit services in Saratoga County.

The STEP model used by the CDTC in most of its planning activities includes regionally significant facilities.

7. *Intermodal access.*

There are no international border crossings, national recreation areas, or monuments in the Capital District. The Saratoga National Historic Park is the only national park/historic site, and transportation access via automobile is well served. The Waterview Arsenal, the Kesserling nuclear submarine testing site, and the Knolls Atomic Laboratory are the major military installations in the Capital District. No projects were proposed to serve these facilities, nor has access to these facilities been identified as a problem according to CDTC.

CDTC has taken recent initiatives to incorporate the Port of Albany, the Albany County Airport, and major freight entities (such as Conrail) into the planning and programming process. Further, CDTA has contracted for consultant services to analyze the intermodal opportunities in the vicinity of the Amtrak station in Rensselaer. Access to the Albany County Airport has been a major subject of discussion in regional plans, the TIP, projects, and several unified planning work program (UPWP) tasks, including the Wolf Road Travel Demand Management and Transportation Development District. The results of the airport area environmental impact statement (EIS) were strongly considered in the formulation of the TIP and major improvements, both publicly and privately financed, are planned for the area as a result.

8. *Connectivity of roads.*

CDTC requires all TIP candidates to be consistent/complementary with the facility (or proposed facility) in the adjacent jurisdiction if the project was near or crossed a jurisdictional boundary as a basic screening requirement. This requirement applied regardless of whether or not the boundary was with the defined metropolitan border.

The CDTC metropolitan area boundary, adopted in 1993, extends far beyond the 20-year projected urbanized area. Regional data collection and modeling efforts extend to the limits of the broad boundary. Informal arrangements with the Glens Falls Transportation Council, a neighboring MPO, resulted in consistent TIP evaluation procedures between these adjacent metropolitan areas. Also, participation of NYSDOT and the New York State Thruway Authority in CDTC's structure encourages consideration of connectivity.

9. *Use of management systems.*

CDTC has many years of experience with the pavement management systems (PMS) approach to prioritizing pavement infrastructure projects, and used that expertise in its TIP merit evaluation procedure and screening criteria for pavement projects. The results of CDTC's highway condition survey have been directly incorporated into the financial planning section of this RTP.

NYSDOT uses a bridge management system whose basic tenets are incorporated into the TIP screening and merit evaluation criteria. NYSDOT also has primary responsibility for the safety and traffic monitoring management systems. These systems were used in developing the NYSDOT portion of the 1993–1998 TIP.

CDTC is acting as a pilot agency in the formation of the CMS for upstate New York. Much of CDTC's past modeling work and development of excess hours of delay data is reflected in the preliminary CMS included in this document. The CMS is a significant tool for identifying and managing mobility in the Capital District.

The public transportation management system (PTMS) and intermodal management system (IMS) are still too early in the development stages to inform the development of this RTP. The New Visions Freight Task Force includes participation by the NYSDOT employees responsible for the development of the IMS, however. CDTC expects that work in this area will inform, and be informed by, the development of the New York State IMS. The PTMS, according to draft regulations, is envisioned to encompass capital asset management primarily. CDTA's capital program needs have been fully integrated into both the TIP and RTP processes.

10. *Preservation of rights-of-way.*

CDTC allowed right-of-way preservation projects to be considered for TIP programming where a compelling case for

early acquisition could be made. These projects were, for the most part, the results of the long-range transportation plan process that identified critical corridors for preservation. However, this was balanced in the programming principles by the financial requirements of ISTEA that state that a phase of a project could only be included if full funding can reasonably be expected to be available for the project within the time period contemplated for completion of the project (Section 134(h)(5)). The identification of additional corridors for which action is most needed to prevent destruction or loss was referred to the New Visions long-range planning effort for further analysis.

CDTC did participate in the state DOT February 1993 survey on corridor preservation pursuant to 23 USC Section 1017(c) to identify corridor preservation opportunities in the Capital District.

11. *Efficient movement of freight.*

A special effort to bring ports and other freight providers into the CDTC process was made during the development of the 1993-1998 TIP. Sponsors of individual projects that involved freight movement were asked to justify their projects in terms of improved efficiency. CDTC has explicit TIP evaluation criteria focusing on economic impacts, modal integration, and system linkages.

Freight movement, in general, is one of the major topics being explored in New Visions. Local goods movement and delivery are not as critical issues in the Capital District as they are in larger metropolitan areas. As a result, consideration of such concerns is generally folded into treatment of larger issues of accessibility and congestion in the context of regional and corridor planning. Increased participation of inter-regional freight transportation providers and users in New Visions will identify the need for further analysis.

12. *Use of life-cycle costs.*

Life-cycle costs are a key criterion used by CDTC in evaluating project merit for TIP bridge and pavement projects, as embodied in the "Life-Cycle Cost Savings" criteria. Life-cycle cost considerations at the system level are incorporated into regional estimates of pavement needs and into CDTC's non-state Highway Condition Prediction Model. Detailed consideration of design is appropriately deferred to the project development and engineering process.

13. *Effects of transportation decisions.*

The CDTC TIP programming principles focus on the implementation of the RTP social, economic, and environmental goals as a key criterion. This strong linkage between the plan and program satisfies the consideration of the factor. CDTC follows an adopted set of goals and objectives that recognize the transportation system's role in attaining or preventing attainment of broader social, economic, and environmental goals. Parallel goals and objectives are established for subregional studies and integrated transportation/land use planning efforts. CDTC's TIP evaluation process includes explicit calculation of total and annualized cost; safety, travel time, energy, and user cost savings; congestion relief; emissions reductions; noise impacts, residential traffic impacts, and community and ecological disruption; access to public transportation and provision of alternative modes; modal integration and system linkage; and economic development impacts.

The state implementation plan (SIP) and air quality conformity are specific considerations in the development of the RTP and the TIP.

14. *Transit improvement.*

CDTC followed a principle that a mixed strategy is the most effective to enhance mobility in the Capital District. As such, demand management strategies, enhanced transit services, and expanded transit services were evaluated and considered for both CMAQ and STP funds in light of the attainment of stated mobility goals in the development of the 1993–1998 TIP. Innovative thinking was encouraged and, as a result, $103 million or 11 percent of the 1993–1998 TIP focuses on demand management and transit services.

Among CDTC's activities are publishing the *Commuter Register*, which includes transit information and park-and-ride lot maps, the fixed guideway transit options effort, suburban mobility transit planning effort, the regional and Wolf Road demand management planning efforts, a non-CDTA transit development effort, CDTA's ongoing transit service planning efforts, and CDTC's support of transit planning.

15. *Transit security.*

Transit security has not been identified as a major issue in the Capital District. CDTA was an active participant in the 1993–1998 TIP development process, and did not propose any projects to address security issues. If security does become an issue, CDTC will fairly consider these projects in light of other identified transportation needs.

The advanced traffic management system (ATMS) project for both arterial and transit system management and incident detection will provide significant opportunities to incorporate advanced vehicle detection and reporting features to enhance transit security and passenger safety.

Planned Modifications in Process and Coordination of Activities

As noted above, the plan is under development.

Challenges and Next Steps

CDTC had established a cooperative and effective program in the mid 1970s, which has improved progressively over the years. The ISTEA requirements provided additional motivation and funding to improve the MPO's activities in the following areas:

- Public outreach and participation with the several constituencies in the region—Although the region's participation with public agencies and elected officials was viewed as being very effective, the public, defined as citizens and various

interest groups, were not active participants. The new program activities are designed to fill that gap.

- Freight issues—Some freight planning had occurred, but the focus was on commodity flows and not on integrating freight transportation needs. The private sector will now be more actively involved in the process.
- The use of flexible funding—The state DOT has provided more extensive opportunities for input by the MPO on CMAQ funds as well as the national highway system (NHS) and STP funds.
- Intermodal programming—The MPO has made a commitment to programming intermodal projects. The MPO is now in the process of developing strategic mobility plans for the next 10 years that will incorporate intermodal activities for freight and passengers.
- Land use planning—Cooperative programs have been established with several municipalities to fund the development of transportation/land use priorities. But, although several key decisions have been made on possible actions, there is still a gap between when plans are developed and when actions can be taken.
- A technical process for developing a congestion management system—Technical studies are currently underway for this purpose.
- Performance measures—Technical methods are being developed to measure the benefits expected from various segments of the transportation system.

Lessons Learned

In the Albany urbanized area, ISTEA broadened the perspective of all the participants in dealing with the issues of more global land use, transportation, and development that must be addressed as the region develops. ISTEA established expectations in the region that are being pursued because the funding has been made available to do so. As more diverse interest groups are brought into the process and issues are discussed, regional groups are beginning to establish a common set of priorities in many areas. The transit levels that existed prior to ISTEA have been positively enforced, and now the region is actively engaged in a New Visions process aimed at developing a vision of the future that will meet a set of diverse goals.

CASE STUDY TWO: THE BOSTON METROPOLITAN PLANNING ORGANIZATION (MPO), BOSTON, MASSACHUSETTS

The Boston MPO is the designated MPO for the Boston urbanized area. The jurisdictions covered by this MPO are Eastern Massachusetts, including Boston and 100 cities and towns. EPA has designated the Boston, Massachusetts urbanized area as being in serious violation of the national ozone standard.

Agencies Included in MPO

1. Executive Office Of Transportation and Construction (EOTC), Secretary, Chairman
2. Massachusetts Bay Transportation Authority (MBTA), General Manager
3. MBTA Advisory Board, Chairperson (who is a local elected official)
4. Massachusetts Highway Department (MHD), Commissioner
5. Massachusetts Port Authority (MPA), Chairperson
6. Metropolitan Area Planning Council (MAPC), President.

Transportation Planning and Programming Prior to ISTEA

Introduction

The agencies that comprise the Boston MPO have a long history of interaction that preceded the formal requirements of the 1974 Federal-Aid Highway Act.

In January 1973, a framework for regional transportation planning in the Boston area was institutionalized through a Memorandum of Understanding signed by representatives from the EOTC, Massachusetts Department of Public Works, MBTA, and MAPC. These four agencies agreed that they would work together on the federally required transportation planning process and to ensure compliance with federally mandated planning documents. The agencies also agreed to establish a joint regional transportation committee (JRTC) to ensure citizen participation in regional transportation planning and a joint technical staff (central transportation planning staff (CTPS)) to support decision making.

In 1974, the MBTA Advisory Board joined the original four agencies and, in 1976, MPA joined the group of signatories. This group of six agencies was designated the MPO in 1975 and redesignated in 1980 as properly constituted with adequate representation of local elected officials through MAPC and the MBTA Advisory Board.

The Massachusetts EOTC is a cabinet level agency that oversees the planning, design, construction, and maintenance of public transit services, general aviation programs, and the state and local highway network in the Boston metropolitan region and throughout the Commonwealth.

MHD is responsible for the planning, design, construction, and maintenance of state highways and bridges.

MBTA provides mass transit service by commuter rail, rapid transit, trolleys, buses, and boats to the 78 cities and towns that comprise the MBTA district service area.

MAPC is the regional comprehensive planning agency for the Boston metropolitan area, which consists of 101 cities and towns. It was established in 1963 by the legislature as an autonomous public agency comprised of municipal officials, state agency representatives, and independent gubernatorial appointees.

The advisory board to the MBTA was created by the legislature in 1964 as part of the legislation creating MBTA and consists of representatives of the 78 cities and towns that comprise the MBTA service district. The advisory board has specific powers related to MBTA budget and fare review, appointment of three board members, appointment of the general manager, and approval of the program for mass transportation.

MPA was created by the legislature as an independent authority in 1956. MPA operates and develops major

commercial maritime and aviation facilities and promotes the economic development of the entire region. It is a primary mover of people and products to and through New England.

JRTC is composed of representatives of municipalities, community groups, subregions, and various state and regional agencies and is responsible for providing overall policy advice on regional transportation issues. Specifically, JRTC advises the six signatory agencies and the MPO on policy issues and reviews certification documents, such as the transportation plan, the transportation improvement program (TIP), and the unified planning work program (UPWP). JRTC plays a key role in providing for citizen involvement in the MPO urban transportation planning process.

Although not members of the MPO, several agencies are also closely involved in transportation issues, including the Massachusetts Turnpike Authority (MTA), the Massachusetts Aeronautics Commission (MAC), and the Metropolitan District Commission (MDC).

MAPC initiated a major planning effort in 1988 to develop a comprehensive land use plan for the region. The effort resulted in a set of recommendations in 1990 that identified several alternative growth scenarios and transportation and land use strategies for dealing with those scenarios.

Prior to ISTEA, the last comprehensive plan was adopted in 1983. TIPs were adopted annually since 1986 (except in 1991), in accordance with federal requirements. However, the TIPs were more of a wish list than a firm program, as now required by ISTEA.

Until early 1993, transportation and land use planning were not integrated and the state, regional, and local units of government were not fully integrated with transportation planning and programming decisions made by the MPOs. However, the 1991 ISTEA changed this picture dramatically as described below.

Summary of Methods Used to Develop Plans and Programs Prior to ISTEA

The initial requirements of the 1962 Federal-Aid Highway Act calling for the formation of the continuing, comprehensive, and cooperative (3C) process resulted in the collection of data, the development of a land use model, and the development of traditional transportation planning models for the urbanized area. The resulting transportation plan published in 1969 was met with opposition because of its reliance on highways to deal with future transportation demand. This led to the creation of the Boston Transportation Planning Review (BTPR) in 1970, and the eventual development of a transportation plan in 1972, which set the course for transportation programs for the next 20 years.

In 1975, the Boston MPO created the CTPS, and MAPC was eventually funded to undertake complementary, comprehensive land use planning.

As federal regulations were modified through subsequent reauthorizations of highway and transit legislation, plans and capital programs were developed cooperatively by the MPO and MAPC. Several plans and programs developed prior to ISTEA include "Metro Plan 2000: A Plan For Future Growth," 1990 (a regional development plan for the Boston metropolitan areas by MAPC); "Transportation Plan for the Boston Region," 1983, by the Boston MPO; and "Transportation Improvement Program," annual, as noted above.

Methods to Achieve Coordination Prior to ISTEA

Until the early 1990s, the cooperative process established by the MPO worked relatively well. However, the state agencies assumed a more predominant role because of the enormous pressures brought about by the need to plan and fund the $7 billion Central Artery-Tunnel Project. This state predominance resulted in a serious difference of opinion among the state and the regional/local representatives on the MPO in the mid to latter part of 1993. Consequently, the MPO requested on September 30, 1993 that FHWA and FTA grant a 90-day extension for the submission of the Boston MPO's regional transportation plan (RTP), which would allow the time needed to reach a consensus on the plan and avoid the need to submit a plan with a divisive vote by the MPO.

FHWA and FTA did grant a 45-day extension, and an agreed upon plan was submitted by the MPO on November 15, 1993.

The Extent to Which the 15 ISTEA Factors Were Incorporated Prior to ISTEA

The agencies that comprise the Boston MPO did incorporate virtually all the factors now required by ISTEA, prior to the federal legislation. However, the coordination of those factors was limited and plans and programs were not financially constrained.

Influence of the MPO Recommendations on State Plans and Programs

Because the state operating agencies were part of the MPO, and in fact dominated the organization, features of the adopted plan and programs were eventually implemented. However, as was true in many urbanized areas, prior to ISTEA those plans and programs were not financially constrained.

The Impact of ISTEA—Current Status of Plans and Programs

Introduction

A mild crisis occurred during the summer and early fall of 1993. Because of the manner in which the Boston MPO had operated since its formation in the mid 1970s, and because of the relative urgency of submitting an MPO endorsed transportation plan before October 1, 1993, the state agencies did not fully consult and reach agreement with the local elected officials and MAPC to the extent the latter felt appropriate. Consequently, at a meeting of the MPO in the spring of 1994, a vote on plan adoption was taken; the plan was approved by a margin of 4 to 2. MAPC and the MBTA Advisory Board voted against approval, because they felt the plan did not provide for the selection of projects by local officials and did not

adequately consider the land use impacts of the projects included.

This was the first time that an action was not approved unanimously at the Boston MPO. This incident was historic for a number of reasons. First, the empowerment given to local elected officials by ISTEA was real. The disagreement between local officials and the state agencies had been developing for some time, and the time had come for resolution. This was not unexpected and was viewed by many observers as being an inevitable development.

A second historic event occurred as state officials recognized that in their haste to meet new federal requirements, they had not paid adequate attention to the pleas of local officials (or their representatives) to rethink this process. The state agencies voted to establish a revised method and process for resolving this situation, which is described next.

Organizational and Institutional Changes due to ISTEA

The MPO structure remained the same, but the process was changed. As indicated earlier, the MPO agreed unanimously to request a 90-day extension to the deadline for submitting an adopted transportation plan. FHWA and FTA approved a 45-day extension, which was met. "The Transportation Plan for the Boston Region" was published and submitted to the U.S. Department of Transportation (USDOT) on November 15, 1993. The plan, which was adopted unanimously by all MPO members, was successful for the following reasons:

- The flexible funding provided by ISTEA was established by the Boston MPO (and to the other MPOs throughout the state) as follows:
  - — NHS funds—to be allocated by the state
  - — Bridge funds—to be allocated by the state
  - — STP funds—to be allocated by the MPO, with local input
  - — CMAQ funds—to be allocated by the MPO, with local input.
- Of significance is that local elected officials will make the recommendations for the use of STP and CMAQ funds. This is particularly relevant in Boston because the following levels of federal allocations for STP funds are expected: FY 1995—$10 million; FY 1996—$250 million; and FY 1997—$250 million.
- The state agencies have agreed to assist in updating a regional land use plan that will affect how transportation investments are made. Current land use and transportation models have verified that land use development directly affects transportation demand.
- City and town representatives have agreed to take a more realistic view of the transportation-land use interaction in their local decision making.

Methods Used to Develop the First Plan Under ISTEA

The major changes in philosophy and approach described above resulted in the formulation of the first plan developed under ISTEA. However, this is still a work in progress, because many details must still be worked out in the development of the TIP.

The plan submitted on November 15, 1993 did specifically address the 15 requirements of ISTEA, as summarized below.

Methods Used to Develop the First TIP Under ISTEA (due on October 1, 1994)

The TIP is currently being revised (as of the completion of this research). MAPC and the MBTA Advisory Board, both of which had voted against the original plan, have begun obtaining recommendations for transit, highway, and enhancement projects from the cities and towns in the region to be funded by STP and CMAQ funds.

Methods Used to Provide Input to and Approval for the State Implementation Plan (SIP) Required by CAAA

The SIP is tied directly to the MPO and state transportation plans and programs. The consistency determination required by EPA on November 15, 1994 will provide another test of this entire process.

Plans to Develop Six ISTEA Management Systems

These systems are currently under development. The following responsibilities have been assigned for the member agencies of the Boston MPO:

Management Systems	Responsibility
Pavement	MHD and MAPC
Bridge	MHD
Safety	MHD
Intermodal	All
Congestion	MHD/MAPC/MBTA
Public transportation	MBTA

Summary of Issues and Achieving the Above and How They Were Resolved

The urgency of time imposed by the federal requirements resulted in a disagreement concerning the first plan, a primary reason of which was based on the absence of acceptable local input. However, when the approval process was significantly modified, the results were positive and the MPO accomplished the following:

- Agreement was unanimously achieved among all parties to cooperate;
- The interim plan was improved to the satisfaction of all parties;
- The TIP is being developed;
- The state agencies agreed to assign funding decisions on CMAQ and STP funds to the communities;

- Agreement was achieved to integrate land use and transportation planning;
- Significant compromise was made by state agencies to provide for more local decision making;
- The need to develop significantly improved analytical methods was recognized;
- The need for cooperation to meet the requirements of the 1990 CAAA was fully recognized;
- Movement in the direction of full compliance with both the spirit and legality of ISTEA was significant; and
- All agreed that cooperative funding decisions are the key to success.

Response to Incorporation of the 15 Factors

The following material is taken from the MPO endorsed plan.

1. *Preservation of existing facilities.*

The Boston region transportation plan places a high priority on the full and efficient use of existing transportation facilities. The programming process seeks to emphasize system preservation.

2. *Energy conservation.*

The transportation plan recommends programs that support ridesharing, nonmotorized transportation, and transit.

3. *Congestion relief.*

The Boston 3C process includes regional-level quantitative analysis of the highway and transit systems, using the CTPS travel demand model. This model, currently being updated, is used to identify existing congestion, as well as to forecast it. The MPO also has congestion management and intelligent vehicle highway systems (IVHS) studies underway to address this factor.

4. *Land use.*

The MPO is preparing tools to evaluate the transportation-land use relationship, including an enhanced travel demand model and a land use model. The plan contains goals and objectives reflecting the regional land use plan, MetroPlan 2000.

5. *Enhancement activities.*

The products of current bikeway and pedestrian planning efforts will be incorporated into a transportation enhancements section of the transportation plan. The CTPS, at the request of MHD and affected towns, is preparing a MetroWest bikeway study.

6. *Effects of all projects.*

The transportation plan considers all significant projects whether funded with federal, state, local, or private resources.

7. *Intermodal access.*

The transportation plan includes policies and data regarding this element. This will be coordinated with the intermodal management systems work. The plan explicitly addresses highway and transit access to airports.

8. *Connectivity of roads.*

As a member of the MPO, MHD works to coordinate highway planning and functional classification between the Boston area and adjacent regions. The recent functional classification work will contribute to this element.

9. *Use of management systems.*

The transportation plan will be updated to incorporate recommendations from the pavement, bridge, safety, intermodal, congestion, and public transportation management systems. Proposed federal guidelines have recently been published for these systems.

10. *Preservation of rights-of-way.*

The transportation plan update identifies potential future transportation corridors and the associated right-of-way needs.

11. *Efficient movement of freight.*

The transportation plan includes policies and recommendations for integrating regional and interregional freight movement.

12. *Use of life-cycle costs.*

Where appropriate, the transportation plan recommends an evaluation of life-cycle costs when comparing facility or program alternatives.

13. *Effects of transportation decisions.*

The transportation plan includes a systems and subregional assessment of environmental implications, particularly air quality.

14. *Transit improvement.*

The transit section of the plan includes a comprehensive analysis of transit options.

15. *Transit security.*

A site has been identified and funding approved for the new MBTA police headquarters.

Planned Modifications in Process and Coordination of Activities

The Boston MPO intends to use this long-range planning process to carry out a new mission for transportation in the Boston region. The role of the transportation plan is to identify policies and investments to support a balanced multimodal system. The plan will be used to help evaluate proposed projects and programs and to identify areas (substantive and geographic) requiring further and more detailed analyses.

The current transportation systems evolved in response to many factors: changes in economic conditions, relocation of jobs and housing to the suburbs, environmental constraints, demographic changes, and advances in technology. It is a mature transportation system that requires ongoing investment to preserve its capabilities.

The transportation plan must also evolve in response to changes in the economy, financial resources, land use patterns, and legislative mandates. The process used to develop the 1993 plan will provide a good basis for future updates. It is still a work in progress and, as it develops, it will include the following elements. First, as in the case of the interim plan, the updated plan will specify the goals and policies for the regional transportation system. Second, the plan will describe the process and institutions that will be key to ensuring significant public involvement. Third, the plan will assess how each mode functions individually and then how each fits into the overall transportation system. Fourth, the plan will estimate future transportation needs and fiscal resources.

Finally, the plan will present recommendations to improve the transportation system and to address the multiple requirements enumerated by federal and state laws and regulations. The recommendations will consider the environment, economic development, and intermodal needs within a financially feasible program. This acknowledges that transportation systems are not designed for a single function but for many parallel ones including commuting, freight movement, economic development, emergency services, recreation, and tourism.

Challenges and Next Steps

The current plan is the first transportation plan developed for the Boston region since 1983. It is also the MPO's first plan since the adoption of ISTEA. It contains new and updated policies for the region and begins to examine the effects of transportation and land use; it is intermodal and outlines a long-range financial approach.

These are all significant accomplishments for the MPO. However, not every policy and technical issue could be addressed and not each of the ISTEA factors could be treated to the extent desired. Therefore, it is important to identify outstanding issues with candor, and commit to examine them further in the next plan.

The first plan endorsed by the MPO represents only a first response to recent federal legislation. The MPO recognizes that there is a need for more in-depth study and evaluation of the region's transportation needs. The short time span between the promulgation of regulations requiring the transportation plan and the due date restricted the ability of the region to do as detailed needs assessment of existing and future conditions as desired.

As part of the update to the transportation plan, many tasks still need to be accomplished. A large number of tasks are related to improving the MPO's technical tools; others are related to expanding the public outreach process and implementing the management systems required by ISTEA.

The November submission is the first plan to deal with intermodal issues that influence the seaport, airport, freight movement, intercity rail, and bicycle and pedestrian movements. Because of the need to expand the view of transportation to include intermodal connections for people and goods, each of these modes needs additional work in gathering data on existing conditions. A number of proposed studies deal with improving the database for and identifying and evaluating appropriate candidate projects, particularly those which will increase bicycle and pedestrian usage.

To address unmet needs, the Boston MPO is committed to updating the transportation plan by January 1995. This update provides the opportunity to allow the MPO to do the following:

- Expand the public outreach process to help further refine the stated vision of this plan;
- Incorporate runs of the improved travel demand/land use model;
- Incorporate the products of significant current transportation studies and public forums dealing with transportation;
- Undertake a needs analysis by corridor and/or sector, and identify corridors of concern;
- Incorporate and analyze proposed future studies and ideas gathered during the public comment period;
- Incorporate the funding principles established by the interagency Capital Finance Review Committee;
- Incorporate the results of Major Metropolitan Transportation Investment Studies;
- Reflect the 1993 SIP for air quality as well as final regulations for determining conformity; and
- Coordinate with the statewide transportation plan and incorporate the products of the required six management systems.

Lessons Learned

The Boston metropolitan area has a very complex organizational and institutional structure. But, the methods of operation and the products emanating from the process clearly recognize that ISTEA has made a change in the program. Although significant challenges lie ahead, the degree of cooperation among state, regional, and local officials has improved significantly.

CASE STUDY THREE: THE MECKLENBURG-UNION METROPOLITAN PLANNING ORGANIZATION (MUMPO), CHARLOTTE, NORTH CAROLINA

MUMPO is made up of 10 municipalities, Mecklenburg County, Union County, and the State of North Carolina.

MUMPO was established in 1993, replacing the Charlotte-Mecklenburg MPO as urbanization spread into Union County. EPA has designated the Charlotte, North Carolina urbanized area as being in moderate violation of the national ozone standard.

Agencies Included in MPO

MUMPO consists of the Chief Elected Official or a single representative appointed by the Chief Elected Official from the following Boards of General Purpose Local Government and a member of the North Carolina Department of Transportation:

	MPO Representative Voting
Charlotte City Council	9
Cornelius Town Council	1
Davidson Town Council	1
Huntersville Town Council	1
Matthews Town Council	1
Mint Hill Town Council	1
Pineville Town Council	1
Indian Trail Town Council	1
Stallings Town Council	1
Weddington Town Council	1
Union City Board of Commissioners	1
Mecklenburg County Board of Commissioners	3
North Carolina Department of Transportation	1
Total	23

One representative from each of the following bodies serves as a non-voting member:

- Charlotte-Mecklenburg Planning Commission (CMPC)
- Union County Planning Board
- U.S. Department of Transportation (USDOT)
- Other local, state, or federal agencies impacting transportation in the planning area at the invitation of MUMPO.

MUMPO elects a Chairman and Vice-Chairman and meets as often as it deems appropriate. A simple majority (weighted) vote determines all issues, except as provided below:

- When any project is on a road that does not carry an Interstate, U.S., or N.C. route designation, and is totally contained within a single municipality's corporate limits or sphere of influence, its location shall be determined only with the consent of that municipality.
- MUMPO cannot override the decision of any individual, local municipality on a project for a road that does not carry an Interstate, U.S., or N.C. route designation when any portion of the project is within that municipality's corporate limits or sphere of influence, except by three-quarters majority vote of all votes eligible to be cast.

Transportation Planning and Programming Prior to ISTEA

Introduction

The original MPO for the Charlotte urbanized area was established in a Memorandum of Understanding (MOU) dated June 24, 1965, which established the first 3C transportation planning process. That MOU was revised and updated on April 8, 1975 and again on December 21, 1981 to comply with federal planning requirements. The current MOU was signed by the participating organizations in October (on various dates) 1992.

Summary of Methods Used to Develop Plan and Program Prior to ISTEA

The major difference in the planning process established in the most recent MOU was the addition of several new participants. However, the process was basically the same before 1992 as it was after the enactment of ISTEA. The traditional transportation planning models were developed and used effectively by the North Carolina Department of Transportation (NCDOT), the City of Charlotte Department of Transportation, and the CMPC.

Methods to Achieve Coordination Prior to ISTEA

The planning process has included all the key agencies required to coordinate plans and programs. Consequently, coordination has occurred routinely.

The Extent to Which the 15 ISTEA Factors Were Incorporated Prior to ISTEA

Since the 15 factors are considered to be good planning practice, to a large extent many were included in the process prior to ISTEA. However, as shown below, substantial work is required to consider all the factors in as comprehensive a fashion as required by ISTEA.

Influence of the MPO Recommendations on State Plans and Programs

According to interviews with state and local officials, the cooperative nature of the program has effectively provided for substantive MPO input to the process.

The Impact of ISTEA—Current Status of Plans and Programs

Introduction

The new MOU established a specific outline of methods and responsibilities for developing plans and programs. MUMPO was not able to submit a transportation plan for the region in 1993, but the MPO did obtain permission from FHWA and FTA to delay its submission to the fall of 1994. A TIP for FY 1994–2000 was developed and adopted on September 15, 1993.

Organizational and Institutional Changes due to ISTEA

The same basic organizational structure and methods were continued after ISTEA.

Methods Used to Provide Input to and Approval for the Statewide Implementation Plan (SIP) Required by CAAA

The following procedures as outlined in the MOU are being used. MUMPO does the following:

- In cooperation with the state and with publicly owned operators of mass transportation services, is responsible for carrying out the urban transportation planning process and developing the planning work programs, transportation plan, and transportation improvement program;
- Is the forum for cooperative decision making by elected officials of General Purpose Local Government and therefore shall function as a Transportation Advisory Committee in conformance with the North Carolina Highway Action Plan;
- Does not set policy for the planning area but will establish goals and objectives for the transportation planning process reflective of and responsive to comprehensive plans for growth and development in the plan area adopted by the Boards of General Purpose Local Government;
- Reviews and approves related air quality planning in conformance with federal regulations;
- Reviews and approves energy conservation planning and energy contingency planning for the transportation system in conformance with federal regulations;
- Is responsible for the distribution of planning funds distributed by the state to MPOs under the provisions of ISTEA; and
- Also has the primary responsibility for citizen input in the continuing transportation planning process.

A technical coordinating committee (TCC) was also established with the responsibility for general review, guidance, and coordination of the transportation planning process for the planning area. The TCC also has the responsibility for making recommendations to the respective local and state governmental agencies and MUMPO regarding any necessary actions related to the continuing transportation planning process. The TCC is responsible for development, review, and recommendations for approval of the prospectus, UPWP, TIP, Federal-Aid urban system and boundary, revisions to the transportation plan, planning citizen participation, and documentation reports on the transportation study. TCC members include technical representation from all local and state governmental agencies directly related to and concerned with the transportation planning process for the planning area.

Administrative coordination for MUMPO and the TCC is performed by the Coordinator for Transportation Planning, who reports to the Director of CMPC. The Coordinator serves as the secretary for MUMPO and the TCC with the following responsibilities:

- Arranging meetings and agendas;
- Maintaining minutes and records;
- Preparing a prospectus and unified planning work program;
- Assembling and publishing the transportation improvement program;
- Serving as custodian of the transportation plan;
- Collecting certifications from local governments;
- Monitoring the transportation planning process to ensure its execution is in accordance with goals and objectives;
- Performing other coordinating functions as assigned by MUMPO occasionally;
- Taking lead responsibility for structuring public involvement in the transportation planning process; and
- Preparing the annual expenditure report.

The Coordinator for Transportation Planning is hired by the Director of CMPC and reports at its regular monthly meeting on the administrative coordination activities.

Plans to Develop Six ISTEA Management Systems

NCDOT is committed to developing and integrating the six management systems mandated by ISTEA into the statewide and MPO planning and funding process. Highway congestion and safety have long been important criteria that have been used to determine funding needs.

As regulations are issued by FHWA and FTA for the development, establishment, and implementation of the six management systems, NCDOT will work towards the development of a process to ensure that project needs identified by these systems will be given consideration for funding.

Summary of Issues Faced to Achieve the Above and How They Were Resolved

NCDOT has a long and successful history in urban transportation planning. A 1959 North Carolina General Statute has required all municipalities to have a long-range comprehensive transportation plan. The urban travel modeling procedures are generally employed by the DOT's statewide planning when developing a thoroughfare plan in any urban area with 10,000 population. Consequently, the 15 factors required by ISTEA have, by and large, been a routine part of the state's planning program. The statewide planning branch has attempted to individually address each of the 15 planning factors to explain how they are now being applied in the planning programs.

NCDOT has traditionally taken a lead role in the urban transportation planning process because the state assumes the major responsibility for city, town, and county highway planning, programming, operations, and maintenance. Consequently, the local jurisdictions in the MPOs have not been predominant in developing plans and programs.

Response to Incorporation of the 15 Factors

Following is how MUMPO has responded to the 15 ISTEA factors.

1. *Preservation of existing facilities.*

Through local zoning and subdivision ordinances, the urban area is continually attempting to protect the existing

transportation system. In addition, the MPO, as the coordinating body for the local jurisdictions, is developing policies and plans for access management along roadways to control driveways and median openings that might otherwise jeopardize the efficiency of these facilities. A plan has been developed for the Harris Boulevard Circumferential, which will serve as the prototype for other facilities.

2. *Energy conservation.*

The prospectus for transportation planning provides for an opportunity to develop an energy contingency plan for the urban area. However, since the energy crisis of the 1970s, no serious planning effort has been made by the MPO to develop a separate energy plan.

Planning and implementation of projects to improve air quality have been an ongoing effort of the local urban area since its designation as a nonattainment area. These plans and projects result in energy conservation since there is a direct relationship between air quality and energy conservation. Local efforts have included numerous intersection improvements, carpool and vanpool programs, an inspection/maintenance program, and a continuing commitment to transit.

3. *Congestion relief.*

The MPO continually updates its thoroughfare plan for the urban area as necessary based on traffic projections developed by local staff in cooperation with NCDOT. Coordination between land use and transportation plans has long been a priority locally since the adoption of the transportation and land development policy in the early 1980s.

MPO staff annually reviews transportation needs for the urban area as part of the TIP process and recommends projects that respond to current and projected needs. The MPO works with NCDOT to target the appropriate projects for funding.

4. *Land use.*

The lead planning agency (LPA) for the urban area is the Charlotte-Mecklenburg Planning Commission (CMPC). CMPC is primarily responsible for land use planning for Mecklenburg County, which ensures a strong emphasis on the relationship between transportation and land use in all plans for the area.

The 2005 generalized land use plan called for the development of the 2005 transportation plan and a subsequent review of the land use policies based on the outcome of the transportation plan. This has become an ongoing process in the development of any long-range plan in the area.

Short-range development plans are always reviewed in light of their transportation impacts by local staff, as are transportation projects or policies on land use goals and objectives.

5. *Enhancement activities.*

Thus far, enhancement projects have been selected by NCDOT with little input from the local MPO. In the next submittal of TIP candidate projects, NCDOT is requesting a list of potential enhancement projects from the local MPOs. Staff is currently preparing the candidate projects list for the MPO to consider.

6. *Effects of all projects.*

The list of candidate projects is developed based on several criteria, including congestion ratios, accident history, land use goals, connectivity, and impact on air quality. How the project will be funded is not considered in determining need.

The MPO looks to the state to construct the major transportation improvements in the area, although many projects are funded either locally, privately, or through a public-private venture. In many cases, major developments are required to build facilities as part of their projects per the requirements of the subdivision and zoning ordinances.

7. *Intermodal access.*

The MPO includes in its list of priority projects improvements that enhance access to some of the applicable facilities outlined above. Particular attention is given to the Charlotte-Douglas International Airport and major freight routes in the area. The airport is the area's international border crossing and global port. A light rail transit system is currently being studied for the area with its focus being access to the airport and uptown Charlotte.

8. *Connectivity of roads.*

The MPO recognizes the importance of regional connectivity and has worked with jurisdictions outside of the urban area for years. Since the origin of the MPO, the towns of Huntersville, Cornelius, and Davidson have been members of the MPO even though they were outside of the urban area.

MUMPO has also worked cooperatively with the Gaston Area MPO on roadway and transit projects. Light rail transit, commuter bus service, and the US 74 Bypass are some of the major projects that have been worked on cooperatively.

9. *Use of management systems.*

The MPO identifies its transportation needs based on inventories maintained by MPO staff related to traffic volumes, roadway conditions, and traffic accidents, as well as adopted plans and policies for land development. This process is included as part of the TIP development where a list of candidate projects are prepared.

10. *Preservation of rights-of-way.*

The MPO maintains a current thoroughfare plan for the entire urban area, which is used primarily for right-of-way protection. Local zoning and subdivision ordinances based on the adopted thoroughfare plan are used to enforce setbacks, dedication, and reservation of rights-of-way.

The 2005 transportation plan adopted by the MPO recommends the protection and preservation of existing rail corridors as well. The MPO has worked with NCDOT to purchase rail corridors as they become available.

11. *Efficient movement of freight.*

The MPO remains committed to the efficient movement of freight by maintaining an efficient highway system with the various methods mentioned above. Access to major employment and production areas is one criterion by which transportation projects are ranked in priority. The Freedom Drive widening project is a very high priority project primarily because of its benefit to the movement of goods from the Paw Creek industrial area.

12. *Use of life-cycle costs.*

The use of life-cycle costs in the design of transportation projects is completed by NCDOT's design staff.

13. *Effects of transportation decisions.*

In the evaluation of alternative corridors, the MPO spends considerable time and effort on impacts to the human and natural environments before reaching decisions. The MPO staff reviews and comments on all planning documents for transportation projects in the urban area.

NCDOT submits the results of its air quality analysis to the MPO for review and approval on an annual basis.

14. *Transit improvement.*

Marketing efforts have been ongoing for some time for the Charlotte Transit System using radio, television, billboard, and the print media to inform and attract new riders to the system. Pick-up areas for several routes have also recently been expanded coupled with the elimination of nonproductive express routes.

Beginning in 1994, Charlotte Transit will begin two neighborhood circular routes using vans to access locations within the neighborhoods and give access to transfer to the regular routes. A new loop route around the uptown area is also scheduled to begin in 1994.

As part of the 2005 transportation plan currently underway, an in-depth look at the existing transit service is being done as well as planning for future systems, including the possibility of fixed guideway transit.

15. *Transit security.*

Very little crime has occurred on the Charlotte Transit System. As a result, no capital investments have been made in this area. For a few evening routes that have experienced some problems, Charlotte Transit is cooperating with Charlotte police officers to monitor and ride those routes frequently.

Planned Modifications in Process and Coordination

NCDOT has established guidelines for consideration by all MPOs statewide. In the state guidelines, a projection of future considerations is included.

Challenges and Next Steps

MUMPO and NCDOT are still in the process of developing the transportation plan for the region. The key challenges to be faced concern the need to make difficult decisions on pipeline projects that must fit into a constrained plan and program. Also, decisions on the development of the six management systems are still underway.

Lessons Learned

NCDOT and the MPOs in that state have a long history of cooperation and good planning practice. NCDOT has relatively extensive responsibility for all roads, streets, and highways outside municipalities. Consequently, process changes as a result of ISTEA may be minor.

CASE STUDY FOUR: THE SOUTHWESTERN PENNSYLVANIA REGIONAL PLANNING COMMISSION (SPRPC), PITTSBURGH, PENNSYLVANIA

SPRPC serves the Pittsburgh urbanized area. The jurisdictions covered under this MPO include the city of Pittsburgh and the six counties of Allegheny, Armstrong, Beaver, Butler, Washington, and Westmoreland. EPA has designated the Pittsburgh urbanized area as being in moderate violation of the national ozone standard.

Agencies Included in MPO

Allegheny County (Chair)
Armstrong County
Beaver County (Vice Chair)
Butler County
Washington County (Secretary-Treasurer)
Westmoreland County
City of Pittsburgh
Pennsylvania Department of Transportation
Pennsylvania Department of Environmental Resources
Governor's Office
Port Authority of Allegheny County (the Transit Agency)
Transit Operator
Pennsylvania Department of Community Affairs*
U.S. Department of Housing and Urban Development*
Federal Highway Administration*
Federal Transit Administration*
U.S. Environmental Protection Agency*

*Non-voting members

Transportation Planning and Programming Prior to ISTEA

Introduction

SPRPC was formed in 1962 as a forum to reach consensus on common transportation issues. In 1974, it was certified as the MPO for the Pittsburgh urbanized area. SPRPC developed plans and programs in compliance with federal regulations. In addition to long-range transportation planning, the MPO is also active in economic development; local government assistance; business information services; and highway, transit, airport, and multi-modal planning activities.

Summary of Methods Used to Develop Plans and Programs Prior to ISTEA

SPRPC developed transportation and land use planning models and methods to undertake the required planning and programming activities. Much of the MPO's work was carried out for project planning.

Methods to Achieve Coordination Prior to ISTEA

The MPO representation includes all of the relevant federal, state, regional, and local agencies required to coordinate transportation, environmental, and local transportation plans. However, as noted below, ISTEA established not only a mandate, but an opportunity for more substantive input by all participants.

The Extent to Which the 15 ISTEA Factors Were Incorporated Prior to ISTEA

To the extent that limited resources were available to do so, most of the factors were incorporated. Their treatment is summarized below.

Influence of the MPO Recommendations on State Plans and Programs

Prior to ISTEA, the MPO was influential in determining transportation plans and programs. However, typical of most planning processes, this was done without consideration of realistic financial constraints.

The Impact of ISTEA—Current Status of Plans and Programs

In addition to a long series of required planning factors including fiscal restraint, management systems, air quality impact, and community input, ISTEA identifies 15 other issues that MPOs are obliged to consider in formulating their long-range transportation plans. SPRPC did so, and the effects of its plan on these factors are documented next. SPRPC is also actively working to improve its capabilities to integrate these factors into the modeling and analysis stages of future plans.

Response to Incorporation of the 15 Factors

1. *Preservation of existing facilities.*

Preservation of the existing transportation system is a primary focus of SPRPC's long-range transportation plan. Over $6.7 billion (80 percent) of the dedicated highway funding is for upgrading and maintaining the existing highway system. Of this amount, over $2 billion is dedicated to future bridge repair, rehabilitation, and reconstruction in the region.

The targeting of growth in the plan supports more efficient use of existing transportation facilities, particularly mass transit. Encouraging growth in transit service areas will enhance ridership on current transit routes and facilities. Land use policy recommendations in the plan further support this strategy of maintaining and more efficiently using the region's existing transportation facilities.

2. *Energy conservation.*

The long-range transportation plan is consistent with federal and state energy conservation goals. Regional transportation planning supports energy conservation through a variety of programs that improve the flow of traffic and mitigate congestion. Transportation systems management, transportation demand management strategies, and a variety of specific projects that contribute to the efficient use of energy, leading to a 4 percent reduction in vehicle miles traveled, receives high priority in the plan.

3. *Congestion relief.*

Relieving and preventing traffic congestion is addressed in a variety of ways in the plan. In addition to strategies designed to improve the overall efficiency of the region's current transportation facilities, a variety of specific projects in the plan demonstrate the range of approaches that can be taken to alleviate congestion. Five high-occupancy vehicle (HOV) projects are included in the plan. Extensions of existing busways and light rail transit are also being proposed at this time. Allocations have been made for future transportation demand management projects. Most single-occupant vehicle (SOV) expansion projects are geared toward already congested corridors in the region. The long-range plan has also reserved $150 million in future IVHS/transportation system management (TSM) projects that will be defined in the future.

Most importantly, the assessment of plan performance, detailed in the mobility section, demonstrates a reduction in the hours of delay for regional travel from current conditions. The no-build scenario, in contrast, produces a doubling of hours of delay in regional travel.

4. *Land use.*

SPRPC has created a special land use allocation model to determine the impacts of transportation decisions on land use and development. This model, the Mature Economic Region

Land Use Allocation Model (MERLAM), uses data on accessibility from the transportation model and produces input to the transportation model in the form of trip tables. In testing some initial land use and transportation options for the region, this combination of models succeeded in generating different outcomes for land use and transportation based on each scenario's distinctive land use policy assumptions and transportation investments.

In southwestern Pennsylvania, there were no regional land use and development plans before this long-range plan was developed. In SPRPC's land use allocation model, existing plans for major developments reported in the media and through consultations with county planning directors are considered. In Pennsylvania, zoning and land use planning are the domain of local municipalities, but such planning is not required. As a result, local plans and zoning ordinances are largely reactive and subject to change for the vast majority of municipalities. Only a very small number of municipalities have proactive planning efforts. Furthermore, there are more than 400 municipalities in the SPRPC region. For these reasons, local zoning and plans were not inventoried for the long-range plan, but county planning departments did provide expertise on local planning in their own jurisdictions. Their judgments are reflected in adjustments to the MERLAM land use allocation.

The forecast used as the basis for population and employment in developing the long-range plan also contains numerous "hand set" adjustments that reflect planned local developments and localized impacts of new highway interchanges.

5. *Enhancement activities.*

Transportation enhancement activities have received priority treatment in the long-range plan. Twelve projects totaling almost $6 million are identified in the 1995–1998 TIP. These projects are included in the general allocation of $30 million for future enhancement projects listed in the long-range plan.

6. *Effects of all projects.*

The effects of transportation projects were considered in the plan regardless of their funding sources. The Airport Multi-Modal Corridor includes a tolled multi-modal facility that would likely be financed privately. The Pennsylvania Turnpike Commission, a semiprivate road-building agency, is active in the region. Their Southern Beltway and Mon/Fayette Expressway projects have been integrated into the long-range plan. All of these projects are included in the modeling that SPRPC has done for the plan.

There are other examples of projects generated outside the typical government-led planning process. Near Pittsburgh International Airport, a public-private transportation authority and a special transportation district were set up to enhance and implement a program of local transportation improvements. The McCandless Transportation Authority is a similar venture. These organizations and their recommendations have been part of the long-range plan development process.

7. *Intermodal access.*

Access to the Pittsburgh International Airport is given major consideration in the plan as evidenced by projects such as the Airport Multi-Modal Corridor, the Airport Busway, and the Southern Beltway. In addition, the plan includes $50 million for future freight transportation projects, affecting every mode. Access to various other types of facilities, whether for transportation, recreation, business, or tourism, is addressed case by case with the affected municipality or combination of affected governing bodies acting as the lead agency. These bodies have had direct input to the plan.

8. *Connectivity of roads.*

A functional classification of roads within the region was recently completed. This effort included an assessment of the connectivity with roads outside the metropolitan area. The plan includes a number of projects identified in that assessment. The upgrade work on Interstate 79 improves north-south movement within and outside the region. Interstate 70, Route 30, and Route 22 upgrades improve east-west connectivity. Other examples within the region are the Mon/Fayette Expressway, the Kittanning Bypass, and the Route 28 upgrade in Armstrong County.

9. *Use of management systems.*

Because ISTEA's mandated management systems will not be fully implemented until 1996, no regional transportation needs have yet been identified by these systems. However, many projects listed in the long-range plan concern the type of needs that will likely be identified by the management systems once they become operational. Several of the management systems called for in ISTEA are similar to programs administered by the Pennsylvania Department of Transportation (PennDOT). An interim congestion management system (CMS) study process has been established, and projects in the development stage are being evaluated under its guidelines.

10. *Preservation of rights-of-way.*

Identifying and preserving rights-of-way to meet future transportation needs is now accomplished on a case-by-case basis. Needs typically arise when specific projects have been identified or when opportunities present themselves to acquire unused or abandoned facilities. Consideration of uses for the Wheeling and Lake Erie railroad right-of-way is one example of a project that addresses this planning factor. The long-range plan allows for similar studies to be initiated as they arise.

11. *Efficient movement of freight.*

The long-range plan includes a number of projects whose primary justification is to enhance freight movement. Examples include the Donora Industrial Park Access Road and an industrial access road through the Lawrenceville section of Pittsburgh. The highway projects that improve the connectivity within the region and connections to other regions also support the more efficient movement of freight.

There is also a line item in the plan to fund projects identified by the three modal committees reporting to SPRPC—a

motor carrier task force, a rail task force, and an air cargo advisory committee. One example of the plan's freight related projects is the creation of truck layover areas to facilitate just-in-time delivery in the region. Recommendations of SPRPC's recent air cargo study and its current rail freight study will also be considered. SPRPC is also working with Conrail to help site and improve access to a major new intermodal rail freight center in the region.

12. *Use of life-cycle costs.*

The long-range plan has considered life-cycle costs by reserving much of the funding in the fiscal projections for system preservation. PennDOT uses life-cycle information in its bridge management system and highway pavement management system to establish priorities for repair projects.

13. *Effects of transportation decisions.*

These effects were addressed in a number of ways during the development of SPRPC's long-range plan. For example, the social impacts of transportation decisions were considered at SPRPC's annual policy conferences in 1991, 1992, and 1993. This conference brings together 80 to 100 regional leaders for intense discussion of key regional issues. These particular discussions affected the development of four initial options that SPRPC tested. In 1993, they contributed significantly to the definition and development of strategies for the plan's land use policy areas.

SPRPC's transportation plan policy committee developed a series of criteria for evaluating the options, including social, economic, and environmental assessments. Through MERLAM and the various transportation network models, the performance results of the initial options were presented to highlight their effects on community quality, jobs/housing balance, land consumption, energy consumption, environmental impact, and transportation effects. Simulations were also run to compare the economic impacts of the four options. Consideration of these findings influenced the goals and objectives that were developed for the final long-range plan.

In addition to discussions and analyses related to the four preliminary options, a number of other forums were used to generate input on the social, economic, and environmental effects of transportation systems. SPRPC convened and met with its citizen's advisory panel as well as an independent working group on community development to discuss these subjects. These topics were also addressed in surveys and interviews conducted during plan development. All of these streams of input had a direct impact on the goals and objectives for the long-range plan.

The plan discusses regional land use impacts, as well as its relationship to regional goals. In general, however, the ability to assess the social, economic, and environmental impacts of transportation decisions is limited. These impacts are addressed extensively, however, in the discussions of growth strategies and policies for plan implementation. SPRPC is also seeking to improve its ability to assess these impacts in the future. A study of the regional economic impact of transportation investments, begun in April 1994, will enhance SPRPC's ability to assess economic impacts in the next long-range plan. Also, as SPRPC's geographic information system (GIS) is further developed, more detailed, insightful, and graphically oriented analyses will be possible. For example, the current plan looks at how much development occurs in sewer service areas; future plans will be able to consider sewer system capacities in assessing development impacts.

14. *Transit improvement.*

The long-range transportation plan calls for several expansions of the existing transit system. The most immediate projects are the Airport Busway/Wabash HOV and the extension of the Martin Luther King East Busway. The expansion of the light rail transit system to link the two busiest districts in Pittsburgh is one of the largest projects in the working plan (estimated at over $1.4 billion). Some $30 million has been allocated to regionwide park-and-ride projects to be determined at a future date. In addition, three intermodal transportation centers, which would intercept and transfer commuters onto public transit, are being proposed by the City of Pittsburgh.

15. *Transit security.*

Adequate funding for transit security is included in the operating budgets of the area transit authorities.

Accomplishment of Regional Goals

Technical assessment of the plan shows that its transportation investments and land use distribution patterns substantially meet regional goals and objectives as well as the requirements of ISTEA. While the analytical techniques available to SPRPC may not be able to assess the full depth and range of issues related to the 15 metropolitan planning factors listed above, this assessment does show that the long-range transportation plan reduces congestion, increases transit use, promotes more efficient development patterns, and realizes other plan objectives.

Planned Modifications in Process and Coordination of Activities

The long-range plan will be implemented through a combination of specific transportation projects, related public investments, and local government policies. Federally mandated studies and programming procedures will govern the advance of its capital projects. Regional economic cycles will have a significant influence on the pace of related public investments. But it is the willingness of state, county, and municipal officials to enact supporting policies that will have the most decisive effect on the plan's success. These policies and their key implementation mechanisms are discussed next.

Encourage and Facilitate the Redevelopment of Abandoned Industrial Sites

The redevelopment of abandoned industrial lands and the continued renewal of active industrial sites is fundamental to

accomplishing the plan's goals and objectives. This strategy will not only increase employment in older communities, it will also create an impetus for people to live and shop in those towns. Furthermore, this strategy will reduce the pressure to expand public infrastructure into currently undeveloped areas. Three actions are critical for these purposes: relax environmental regulations concerning the reuse of abandoned sites, give these sites priority in state infrastructure spending programs, and give state tax advantages to industries at these abandoned sites.

Maintain and Update Public Infrastructure and Other Public Facilities

Maintaining viable communities is also fundamental to implementing the long-range plan. These are communities that have already made significant investments in their infrastructure—investments that must be continuously maintained and updated. Helping these communities protect that investment will make the best use of available tax dollars, protect the region's environmental assets, and reduce the pressure to invest in entirely new infrastructure. Actions critical for these purposes are to give priority in grant and loan programs to the rehabilitation and maintenance of existing public facilities and infrastructure, and to support public-private partnerships for commercial area management and renewal.

Encourage Proactive Areawide Planning

Proactive areawide planning is essential to keeping the cost of public infrastructure associated with development to a minimum. Areawide planning is also essential to maintaining the region's environmental assets and to assuring the quality of community services. Actions critical for these purposes are to promote opportunities for intergovernmental cooperation such as tax base sharing; to foster coordinated local, regional, and statewide planning; and to give priority to infrastructure grants that conform with local and regional development plans.

Support and Strengthen Regional Assets

Southwestern Pennsylvania has a variety of economic, cultural, recreational, and environmental assets. Prominent among them are the region's economic centers, rich cultural institutions, and network of parks and water resources. In keeping with the plan's focus on efficient public investments and quality of life, the region's assets require special attention. Critical actions include encouraging downtown development and funding implementation of management strategies, particularly in the Golden Triangle and Oakland; identifying regional assets through natural and historic resource inventories, and then protecting and managing those assets through local planning; and providing financial support to those communities that provide regional amenities.

Encourage Community and Site Designs That Minimize Congestion

Conventional wisdom holds that "we cannot build our way out of congestion"—that more and more highways cannot eliminate the congestion that harms the quality of life in cities, towns, and suburbs. The manner in which cities, towns, suburbs, and the sites within them are built can reduce congestion. Critical actions for these purposes include encouraging high density developments and redevelopments that will support transit service, designing urban and suburban areas with pedestrian access both between parcels and between neighborhoods, encouraging grid circulation patterns in new developments and infill construction at existing development sites, limiting curb cuts and other access points along arterials, and supporting transit in the culture of the community.

Challenges and Next Steps

Many of the challenges to be addressed by SPRPC were identified above. As of the writing of this synthesis, the critical decisions on policy, program, and project priorities are being discussed and debated.

Lessons Learned

The MPO is still learning how to make decisions under ISTEA. To do so, local elected officials will need to look more broadly at regional issues, and not those associated with specific jurisdictions. However, because local officials are elected locally and not regionally, the MPO staff is faced with a challenge to effectively analyze and present alternatives that will result in more regional decision making. Because there are simply too many projects desired, the fiscal constraints imposed by ISTEA create an unprecedented challenge for citizens and local elected officials to be statesman as those difficult decisions are made.

CASE STUDIES FOR FOUR ADDITIONAL MPOS

The following sections summarize the responses to the 15 ISTEA factors as obtained from Chicago, Illinois; Houston, Texas; Portland, Oregon; and San Francisco–Oakland, California. Interviews with representatives from these four areas provided additional insights to the MPO planning process.

Chicago, Illinois

Following is the response provided by the Chicago Area Transportation Study (CATS).

Fifteen Factors

ISTEA lists 15 factors to be considered in the regional transportation planning and programming process. While all 15 factors relate to the long-range regional transportation plan in some fashion, few of them can be considered fully satisfied by this part of the regional planning process alone. In many cases, the long-range regional transportation plan can only point to other aspects of the regional planning process to demonstrate how certain factors are considered; while in some instances it can provide guidance on how particular factors

should be considered. The Strategic Plan for Land Resource Management provides a comprehensive set of regional goals that should be used to determine consistency of the transportation plan with the region's development policies. This section contains a brief narrative for each factor describing how it is considered in the Chicago region.

1. *Preservation of existing facilities.*

Among the goals contained in this update of the 2010 transportation system development (TSD) plan is one making preservation of the existing transportation infrastructure a high priority. This goal was also contained in the original 2010 TSD plan and year 2000 TSD plan. Each plan supported this goal by allocating most of the anticipated capital funds (i.e., 84 percent of transit and 77 percent of highway in the 2010 TSD plan; 65 percent of transit and 63 percent of highway in the 2000 TSD plan) to maintaining the existing transportation system. The Chicago region has developed and implemented programs over the years to increase the efficiency of its existing transportation system ranging from the TOPICS program of the 1970s to Operation GreenLight in the 1990s, to the introduction of cab control cars in commuter rail service.

2. *Energy conservation.*

The 2010 TSD plan is consistent with and supports all applicable energy conservation programs. The importance of energy conservation is clearly stated in the plan's goals and is shown by the use of transportation energy consumption minimization as an evaluation measure in plan development.

3. *Congestion relief.*

Beginning with the year 2000 TSD plan, the identification and quantification of areas of congestion has been a major focus in long-range regional planning. Minimizing the amount and extent of congestion has been a primary factor in the design of alternative transportation plans, as well as an evaluation measure in plan selection.

4. *Land use.*

The 2010 TSD plan has strong ties to land use planning. The socioeconomic forecasts used to estimate future travel are based on the region's adopted land use plan; and the projects that comprise the long-range transportation plan are important considerations in the development of future land use and socioeconomic projections. The following recommendations contained in the Strategic Plan for Land Resource Management are incorporated into this plan to help achieve consistency between this region's transportation plan and its land use plan.

- The closure of major expressway or transit facilities should be considered comparable to additions to the system. Any closure of a major facility should be the result of a corridor study (including economic impact analysis) and be subject to a regional decision process to amend it out of the long-range transportation plan.
- Prior to construction, all new major expressway and transit facilities should be properly included in the long-range transportation plan; be coordinated with an intergovernmental land resource planning process covering the impacted area; and be subject to a full environmental review equivalent to the requirements presented in the National Environmental Policy Act (NEPA).
- For major expressway or transit facilities, the region should work to develop appropriate and reasonable local intergovernmental land resource planning agreements and development standards covering the impacted area. The development standards will be applicable to both the project implementer and local governments. These agreements and standards should give full consideration to the management of land use density consistent with the provision of transportation infrastructure.

5. *Enhancement activities.*

The improvement programming process for the Chicago region includes federally funded transportation enhancement activities in the TIP. The Illinois Department of Transportation (IDOT) has prepared guidelines for enhancement projects. The Northeastern Illinois Planning Commission (NIPC) and CATS are working jointly to ensure that enhancement projects are consistent with regional plans. The enhancement program emphasizes the following project categories: nonmotorized vehicle and pedestrian projects, historic projects, landscaping and scenic beautification projects, and control of outdoor advertising.

6. *Effects of all projects.*

The Chicago region has and will continue to include the effect of all regionally significant transportation projects regardless of funding source in its regional planning process. The toll highway system in northeastern Illinois was an identified part of the original 1956 CATS study. More recently, the North-South Tollway was a long standing element of the region's long-range transportation plan prior to the decision to construct it as a toll facility. Private sector capital improvements, such as the new United Postal Service distribution center in Countryside, are integrated into travel demand forecasting, and improvement project programming is coordinated with their implementation schedule. The region has included state-only funded projects in its TIP for some time. The region anticipates annual receipt of information of regionally significant county only funded projects, and is exploring ways to appropriately assemble information about regionally significant township and municipal projects in the future. Local governments' long and close working relationship with the CATS staff makes this level of detail achievable.

7. *Intermodal access.*

The Chicago region has historically been a transportation hub, including facilities from canals to railroads to air travel.

Addressing the items listed for this particular factor on a point by point basis would be excessively long and yet still likely not to be all inclusive. Thus, a matrix of modes by the items listed in this factor was prepared to provide examples of how this factor is considered. This region owes its vitality to good freight and passenger intermodal connections with the rest of the world.

8. *Connectivity of roads.*

The connectivity of the roadway system within the Chicago region and to areas outside has been an important consideration in the development of this area's highway system. Much of the region has a strong grid system of roads based on range township geography. The 2010 TSD plan identified the strategic regional arterial (SRA) system. The roadways included in this system provide a high level of accessibility and connectivity throughout the region. Coordination with bordering MPOs (Southeast Wisconsin Regional Planning Commission (SEWRPC), Northeastern Illinois Regional Planning Commission (NIRPC)) on regional plans and programs, and IDOT liaison with adjacent states (as well as the portion of Illinois outside of the Chicago area) on issues such as functional classification, are examples of how connectivity of the region with areas outside the Chicago area is considered by the planning process.

9. *Use of management systems.*

The six management systems included in ISTEA currently are at various states of definition. Bridge and pavement management systems represent current IDOT practice but may change somewhat when the relevant rule making is finalized. The other four management systems (intermodal, transit, safety, and congestion) are new initiatives yet to be functionally defined. Of the six, the CMS is the one where CATS will be most directly involved and will build upon its Operation GreenLight program. As each management system is operationalized, it will be integrated into the regional planning process.

10. *Preservation of rights-of-way.*

The 2010 TSD plan includes several highway and transit corridors of the future. Essentially, these are transportation facilities deemed potentially beneficial to the region's transportation system beyond the plan's time horizon or beyond the plan's financial capacity. The plan's intent in identifying these corridors is to preserve the rights-of-way for future construction and to indicate where corridor level studies should be conducted as part of ongoing plan refinement. The regional transit authority (RTA) has retained a consultant to assist in developing a policy for identifying and preserving existing rights-of-way for future transit projects. IDOT has funded the acquisition of property for the purpose of corridor preservation for a number of years and will incorporate any ISTEA requirements for rights-of-way preservation.

11. *Efficient movement of freight.*

Enhancing the efficiency of freight movement in the Chicago region has been addressed by sections in previous long-range transportation plans, and is an ongoing CATS staff activity. Resources have not always been available to carry on freight related planning at desired levels, or in a continuous manner. CATS will include freight planning as part of the overall transportation planning process. The emphasis placed on freight movement and intermodal connections is therefore a welcome support to an aspect of transportation planning this region has long recognized. Efforts in this area include activities and projects done as part of the Operation GreenLight program, and large-scale commercial vehicle surveys conducted in support of the travel forecasting process.

12. *Use of life-cycle costs.*

The use of life-cycle costs in the design and engineering of transportation improvements, with the exception of IDOT highway projects, is not currently standard practice in the Chicago region. It is anticipated that as they are implemented, several management systems will address the use of life-cycle costs.

13. *Effects of transportation decisions.*

The goals section of the 2010 TSD plan recognizes the importance of transportation related decisions on the region's overall social, economic, energy, and environmental status. The following recommendations contained in the Strategic Plan for Land Resource Management are incorporated into this plan to help achieve consistency between this region's transportation plan and its land use plan:

- The planning and design of transportation facilities should be closely coordinated with the regional greenways plan to take advantage of opportunities for joint use of rights-of-way and to ensure that continuity of the planned greenway network is preserved.
- A priority of the long-range regional plan should be continued enhancement of public transportation services between housing rich and job-rich areas to respond to changes in regional development patterns.
- The programming process for transportation funds should be designed so that one of the criteria will be community revival by promoting infill development and well-planned redevelopment. Transportation investments along with other economic development initiatives in these areas, e.g., as planned in Lake Front Expressway (Amstutz corridor) in Lake County, or needed rehabilitation of existing transit facilities in areas experiencing severe disinvestment may be used to leverage economic development in these areas.

14. *Transit improvement.*

The 2010 TSD plan supports the expansion and enhancement of transit service by identifying new transit facilities to be constructed and by allocating significant (approximately equal to that for roadways) capital funds to maintain and construct transit facilities and equipment. In addition, there are the transit agencies' efforts to enhance and increase the use of transit service:

- Market development policy (RTA)
- Extended transportation agenda (Metra)
- Land use in commuter rail areas: guidelines for communities (Metra)
- Comprehensive operating plan (Pace)
- Service criteria and performance guidelines for fixed-route service (Pace)
- Pace development guidelines (Pace)
- Chicago Transit Authority (CTA) service standards (CTA)
- A strategic framework: "Preparing for the Future" (CTA).

Finally, Operation GreenLight task forces identified specific projects to enhance transit's ability to reduce traffic congestion, as well as actions, methods, and practices that can contribute to reduction, stabilization, or redistribution of travel demand.

15. *Transit security.*

Through the TIP, capital funds for improved surveillance (e.g., video monitoring at stations) and communication (station emergency call boxes, radios for buses) are programmed as part of the Chicago region's effort to increase security on its transit system.

Houston, Texas

Following is the response provided by the Houston-Galveston Area Council (H-GAC).

Fifteen Factors

The 15 ISTEA factors to be addressed in metropolitan planning are discussed briefly below; they are all addressed in the issue papers that make up ACCESS 2010 REVISED. Each issue paper includes textual references to the factor or factors it addresses.

1. *Preservation of existing facilities.*

Many projects are planned within the 5- and 10-year horizons of the metropolitan transportation plan (MTP), which employs both new technology as well as conventional approaches for increasing roadway capacity without new road construction. Paramount among these efforts is synchronized traffic signalization, centralized traffic monitoring with real time surveillance, enhanced incident management, and motorist information systems. As existing freeway corridors undergo major rehabilitation or expansion, barrier-separated HOV lanes have been incorporated.

2. *Energy conservation.*

Although energy conversation has not been a major objective of the current MTP, the need to reduce motor vehicle emissions has resulted in the adoption of several complementary strategies. The MTP contains two clean air strategies that are particularly supportive of energy conservation goals: 1) the use of alternative fuels (specifically natural gas and gasoline blended with ethanol); and 2) the emphasis on use of alternative modes, including mass transit, bicycling, and a variety of employer trip reduction strategies.

3. *Congestion relief.*

Traffic congestion and its consequences are explicitly measured in the MTP and impact a number of the plan's mobility and environmental goals. Anticipated levels of congestion are measured in terms of vehicles per lane-mile for both the base year (1990) and a series of interim years (1996, 1999, 2007, and 2010). The plan does not, at this time, include the measures of system performance that will be employed in the CMS. However, many aspects of traffic congestion are captured in the plan's evaluation of air quality impacts. The process of prioritizing projects for the first 3 years of the plan was based principally on congestion and air quality impacts.

4. *Land use.*

The impact of transportation policy decisions on land use was addressed through a panel of experts' review of expected market response to transportation supply decisions. This review was conducted at the beginning of the plan revision cycle based on the previous MTP. This review, therefore, could not fully reflect the plan's revisions to project timing or scope. Since the current transportation plan maintains some level of facility investment in all corridors identified in the previous plan, changes to the land use forecast were expected to be small.

Only a small percentage of land area encompassed in the MTP is subject to zoning, although subdivision controls and deed restrictions may apply. Where available, land use plans developed by local governments were reviewed for potential conflict with the MTP. In addition, expected near-term development activities were assembled and compared to forecasted activity.

H-GAC is in the process of implementing models, which will provide an explicit link between transportation access and land use.

5. *Enhancement activities.*

The MTP has been expanded to include bicycle and pedestrian plan elements. Because the selection of enhancements projects for funding under ISTEA is based on a statewide competition, programming of actual enhancements projects is restricted to the first year of the plan unless the project is supported by a local governmental funding commitment.

6. *Effects of all projects.*

Because of the need to recognize the air quality impacts of transportation projects, all projects of "regional significance"

are included in the MTP. Regional significance has been defined to include, at a minimum, added capacity roadway projects on facilities considered a principal arterial or higher and any new or expanded transit services. These definitions are applied regardless of the project's funding or financing source.

7. *Intermodal access.*

The current MTP does not include specific consideration of plans to develop the region's ports and airports other than as major generators of automobile and truck traffic. However, two significant projects designed to improve rail access into the Port of Houston are supported with highway funding in the MTP.

8. *Connectivity of roads.*

Connectivity of roads inside and outside the metropolitan area is considered in the analysis of the regionally significant network and the travel survey data. Because projects included in this plan address transportation services based on geographically distributed demand, regionally significant connectivity is incorporated as a priority.

9. *Use of management systems.*

The CMS, currently in development by H-GAC, is required for the analysis of approaches for meeting the increasing or unsatisfied demand for transportation services. The remaining five management systems—highway pavement, bridge, highway safety, public transportation, and intermodal transportation facilities—are being developed and implemented by the Texas Department of Transportation (TxDOT) and will be incorporated into the MPO's long-range plan as appropriate.

10. *Preservation of rights-of-way.*

Similar to connectivity issues, preservation of rights-of-way is a key component of addressing future demand. The analysis of deficiency in "Issue Paper No. 7: Roadway Options" identifies corridors where rights-of-way preservation is being considered. In addition, right-of-way acquisitions and future facility feasibility studies are included in the project list.

11. *Efficient movement of freight.*

Goods movement planning is currently underway and will build on the intermodal management system discussed earlier.

12. *Use of life-cycle costs.*

Life-cycle costs will be among the variables considered in the management systems developed and implemented by TxDOT for bridges and pavement. There is one regionally significant tunnel and several smaller tunnels.

13. *Effects of transportation decisions.*

The public process for plan development and project selection provides consideration of social, economic, and environmental effects of transportation decisions. Input is incorporated, in addition to the public comment period and meeting, through the Transportation Policy Council, Regional Air Quality Planning Committee, and H-GAC Board memberships. "Issue Paper No. 8: Environmental and Land Use Considerations" discusses these issues in greater depth. The impact of transportation decisions on energy use is accounted for by vehicle miles traveled in the conformity analysis, as discussed earlier.

14. *Transit improvement.*

The expansion, operation, and maintenance of transit services in the H-GAC region will account for approximately $6 billion of 35 percent of the MTP's financial resources by the horizon year of 2010. Much of the investment in new services and facilities will occur within the next 5 to 8 years of the plan. The plan relies on development of neighborhood transit centers, park-and-ride lots, and HOV lanes to increase the competitiveness of transit services. Also included are basics such as provision of sidewalks and transit shelters.

Traveler information systems providing real-time schedule and route information to transit users are planned. Also included is improved technology to facilitate formation of car and vanpools.

15. *Transit security.*

Increased security in transit systems is addressed in Issue Papers Nos. 4 and 6 on transit and in planning by the Metropolitan Transit Authority and local transit operations.

Portland, Oregon

Following is the response provided by Tri-County Metropolitan Transportation District of Oregon (Tri-Met).

1. *Preservation of existing facilities.*

This provision will be addressed in the policy section of the regional transportation plan (RTP). Although the existing language is consistent with this planning factor, the new language will more specifically relate to the federal requirement.

2. *Energy conservation.*

This factor will be addressed in a new appendix, along with new findings consistent with the Fifth Biennial Oregon Energy Plan. Energy issues will likely be significant in the next major update to the RTP, when newly formed land use policies are considered in detail.

3. *Congestion relief.*

The revised RTP will describe the expected form and function of the management systems as part of the decision process and in terms of policy implications. The next major update will include details on how the various management systems will be implemented.

4. *Land use.*

Under Oregon's statewide planning system, land use impacts from transportation decisions are considered at the local level, when cities and counties adopt local transportation plans as part of an overall comprehensive plan. Local transportation plans must be consistent with the RTP. The next major update to the RTP will be more comprehensive in this respect, with the results of the Region 2040 project providing a regional analysis of land use impacts.

5. *Enhancement activities.*

This provision is addressed primarily in the TIP, with corresponding findings in the financial analysis element of the RTP.

6. *Effects of all projects.*

The RTP contains extensive findings on the effects of the recommended systems, and only minor changes to the language in the performance section of the plan will be made.

7. *Intermodal access.*

New text on intermodal facilities will be added to the system concept portion of the plan, with a focus on the intermodal management systems (currently being developed) and regional attractions.

8. *Connectivity of roads.*

This subsection will be addressed in a text revision to the systems concept of the RTP, as well as the TIP, where specific projects that create connectivity with the region's hinterlands and other urban areas will be identified.

9. *Use of management systems.*

The various management systems will be identified and their implications addressed in the growth impacts and system concept portions of the plan. The ultimate form and function of the management systems will be included in the next major plan update.

10. *Preservation of rights-of-way.*

The interim update to the RTP will contain new findings on right-of-way planning issues as part of a discussion of the state's efforts to allow earlier acquisition on specific projects.

11. *Efficient movement of freight.*

The interim update to the RTP will include new findings on intermodal movements and freight systems as part of the system concept discussion.

12. *Use of life-cycle costs.*

This subsection will be addressed in the cost and financial analysis portion of the plan. Any specific project contained in each TIP that typifies a life-cycle approach to design and engineering will also be identified.

13. *Effects of transportation decisions.*

The RTP already contains extensive findings on the overall social, economic, energy, and environmental effects of transportation decisions, and the interim update will expand on the existing language. Further, the next major update to the RTP will include the results of the Region 2040 project, and thus have a still broader scope of these issues.

14. *Transit improvement.*

The RTP specifically addresses the expansion of transit services, and establishes a framework for cooperation with Tri-Met in coordinating transit services. Additional language addressing this provision may be added to the policy section of the RTP.

15. *Transit security.*

This subsection will be addressed on an interim basis in a new appendix to the plan; specific projects in each TIP that focus on improving existing facilities will also be identified.

San Francisco–Oakland, California

Following is the response provided by the Metropolitan Transportation Commission (MTC).

1. *Preservation of existing facilities.*

This provision is being addressed by MTC as follows:

- Thirty percent of RTP Track 1 investment is for maintaining and preserving existing transportation facilities: metropolitan transportation system (MTS) streets and roads rehabilitation shortfalls are fully funded ($315 million).
- Non-MTS streets and roads rehabilitation is partially funded ($200 million, with $2 billion unfunded).
- Transit capital replacement is nearly fully funded ($529 million, with $87 million unfunded).
- The RTP improves MTS performance by funding operational improvements such as traffic signals ($94 million), TransLink ($29 million), traffic operations system ($200 million), and transit upgrades ($313 million).
- Bridge seismic retrofit costs are expected to be largely funded in the RTP baseline. (The RTP currently devotes $125 million toward seismic retrofit costs.)

2. *Energy conservation.*

The 1992–1993 California Energy Plan emphasizes the need to increase transportation system efficiency, and the

RTP improves system efficiency by investing in strategies to reduce traffic delays, increase carpooling, and upgrade/expand transit.

3. *Congestion relief.*

The RTP's investments in system expansion, operational improvements, and nonmotorized transportation are designed to relieve congestion. Average vehicle speeds are expected to rise slightly with these investments. However, the percentage of peak hour vehicle miles traveled under congested conditions is expected to increase significantly between 1990 and 2010 as are vehicle hours of delay. This situation is due to the limited amount of funding available for capital and operating strategies after maintenance needs have been accommodated. Additionally, travel is projected to grow at a greater rate than available transportation revenue.

4. *Land use.*

The RTP travel analysis is based on the Association of Bay Area Governments' (ABAG) demographic projections, which reflect local policies for land use in the region. As required by ISTEA, these planning assumptions represent the most realistic assumptions for forecasting travel in the region. The RTP environmental impact report (EIR) also assesses the impacts of RTP investments on the future distribution of jobs and housing in the region. This assessment is based on the RTP's effects on regional accessibility in ABAG's land use allocation model.

Land use/transportation issues may also be addressed in future corridor studies that feed into RTP updates.

5. *Enhancement activities.*

MTC has programmed two rounds of enhancements, which are included in the RTP baseline. The Bay Area secured over $14 million for enhancements in the first round and anticipates receiving over $17 million in the second round through the state-administered process. The Bay Area's success is largely due to MTC's selection criteria and the quality of projects that have emerged.

6. *Effects of all projects.*

Transportation and air quality analyses for the RTP take into account all significant projects in the region, without regard to sources of funding.

7. *Intermodal access.*

Criteria for defining the MTS explicitly consider access to intermodal facilities, major recreation areas, and other regionally significant activity centers. Airport and seaport access issues are addressed in greater detail through separate plans. Key recommendations from the seaport plan and regional airport system plan are incorporated into the RTP.

8. *Connectivity of roads.*

The MTS criteria consider the connectivity of highways that link the Bay Area with surrounding counties. MTC's cooperative work with the state to define the Bay Area component of the national highway system (NHS) also focused on interregional connectivity.

9. *Use of management systems.*

Application of the management systems must start by defining the system to be managed. The MTS is the basis for applying the management systems in the Bay Area.

The RTP addresses transportation asset-based management needs through MTC's existing pavement management system and Transit Capital Replacement Model. These tools will be improved and expanded as appropriate through the development of ISTEA required management systems for pavement and public transit capital assets.

Bridge seismic retrofit needs were estimated by the California Department of Transportation (Caltrans). Future development of the state's bridge management system will provide information for subsequent RTP and programming decisions.

The congestion, intermodal, and safety management systems are under development. Implementation activities have been identified to help develop and apply these management systems.

10. *Preservation of rights-of-way.*

A number of railroad rights-of-way are being considered for extensions of mass transit systems, or for operation of intercity/commuter type rail service:

- North Western Pacific (WP) right-of-way in Marin/Sonoma counties
- Southern Pacific (SP) branch line in San Mateo County (for BART-SFO extension)
- SP Vasona branch line in Santa Clara City
- SP/Union Pacific lines for a Fremont-South Bay connection
- Dumbarton Bridge (undefined future rail service).

Various road improvements may require right-of-way protection as well. The RTP includes funding toward right-of-way needs for Doyle Drive, an I-880/I-680 connector, and Route 84.

11. *Efficient movement of freight.*

In general, RTP investments that relieve or prevent increases in congestion also benefit truck mobility. MTC's Freight Advisory Council has been instrumental in identifying improvements for freight in the RTP, including intermodal access improvements at the ports of San Francisco and Oakland, a truck bypass lane at I-205/I-580, and truck weigh-in-motion facilities.

12. *Use of life-cycle costs.*

MTC's pavement management system determines optimum rehabilitation cycles and improvement needs to

minimize long-term maintenance costs. This system was used to estimate local streets and roads maintenance shortfalls throughout the region. MTC's Transit Capital Replacement Model considers life-cycle costs to estimate asset replacement schedules, and was used to estimate long-range capital replacement needs in the RTP.

13. *Effects of transportation decisions.*

MTC prepares an EIR for the RTP, which complies with the California Environmental Quality Act. This document is a program-level EIR, which provides a comprehensive assessment of the overall social, economic, energy, environmental, and other RTP effects.

14. *Transit improvement.*

The RTP places a priority on maintaining existing transit systems, an essential investment to support transit ridership. Over $529 million is included in the RTP Track 1 for maintaining existing transit systems. The inability to fund operating shortfalls with existing funding sources is the most important constraint to expanding and enhancing transit. The RTP Track 1 includes $313 million to upgrade existing transit services and $819 million to expand transit. These investments will improve the Bay Area Rapid Transit System (BART), light rail, and intercity/commuter rail systems over the next 20 years.

The RTP includes funding for TransLink, a universal fare collection system to simplify transfers between transit operators.

15. *Transit security.*

RTP funding for existing transit services addresses security issues. Details are found within operators' short-range transit plans.

CHAPTER FIVE

CONCLUSIONS

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) requires metropolitan planning organizations (MPOs) to consider 15 factors in developing plans and programs. Those 15 factors now represent the fundamental elements of the metropolitan planning process.

The purpose of this synthesis is to summarize the approaches that were being used to meet those requirements during a specific period in time—the summer and early fall of 1994. This synthesis summarizes how several MPOs, representing a small, unscientifically selected sample of urban transportation planning processes around the country, addressed the challenge presented by ISTEA.

In selecting MPOs for that purpose, an attempt was made to include a range of sizes (by population), located in various geographic attainment and nonattainment areas of the country. However, it was soon discovered that all MPOs at that time were deeply involved in meeting the first set of federal deadlines for developing and submitting plans and programs. Consequently, it was very difficult for many to find the time needed to participate in this project. Thus, it was possible to obtain information from eight MPOs only, during the time and within the resources available to complete this project.

This is one of a series of research projects recently completed or still underway to document and better understand the manner in which MPOs are meeting the requirements for metropolitan planning as defined by ISTEA. This document provides one perspective from the vantage point of a limited number of MPO staff members who have the responsibility for meeting those requirements.

However, in spite of the above limitations, there are a number of important conclusions that can be drawn from this work:

- The 1991 ISTEA and 1990 CAAA have required that renewed and serious attention be given to the urban transportation planning process in all metropolitan areas throughout the nation. All MPOs contacted during this study are doing everything possible to meet those requirements.
- A concerted effort is underway at the MPO level to take full advantage of the opportunities provided by ISTEA to develop effective multimodal metropolitan transportation plans and programs in full cooperation with other public agencies, the private sector, and citizens.
- ISTEA has helped to place more emphasis on planning elements that, due to limited resources, had been viewed as a lower priority in the past, such as freight planning, land use planning, and intermodal considerations.
- The requirements to develop fiscally constrained plans and programs represent one of the most powerful tools in the MPO battery of requirements. If highway and transit agencies implement these requirements seriously, more effective planning will be possible.
- The need to deal with the preservation of existing highway and transit systems has the potential for focusing energy and resources on immediate needs rather than on actions to deal with old pipeline problems and adding new projects to the pipeline.
- Whereas in the past many MPO activities have been dominated by simply meeting the requirements established for state and federal programs and the funds that are available to implement them, now many MPOs are experiencing more extensive input by those agencies. This is due to the more specific requirements for MPO approval of plans and programs, and the more active participation by MPO staffs in those activities.
- The requirement to undertake major investment studies provides the motivation for all participants to establish a new and innovative planning process that could eventually help to meet many of the expectations created by ISTEA.
- A number of concerns were found to exist:

—ISTEA has raised the expectations of citizen groups and local officials beyond reasonable levels of possible results, at least within the short run.

—Some MPOs have expressed concerns about the need for more extensive coordination with the state DOTs that are developing statewide plans to meet the requirements of ISTEA. The MPO goal is to be able to provide more substantive input to statewide decision making.

—Policy and technical decisions will be made on the basis of technical models that often need updating. Consequently, public officials must be made aware of this situation, and serious consideration and adequate resources must be given to developing more effective analytical tools that deal with today's problems and issues.

—The MPO staffs need technical assistance from state and federal sources to enable them to meet their objectives more effectively.

The significance of this synthesis is that it summarizes some of the early struggles and successes by several MPOs in meeting the new federal requirements imposed by ISTEA. It documents some of those evolving experiences provided by MPO directors and their staffs in transforming the urban transportation planning process to meet the new challenges of the 21st century. Since the time when research for this project was completed, significant progress has no doubt been made in going beyond the summaries contained here. However, there are several issues that might be considered as the work of MPOs proceeds throughout the nation.

- There is great value in providing opportunities for MPO directors and staffs to meet regularly to discuss issues, successes, failures, and innovations that have helped to advance

the state of the practice. This form of technology transfer could reap benefits relatively quickly.

- There is a definite need for a series of technical assistance programs to be initiated and continued to provide the assistance needed by MPOs to deal with the issues addressed in this document.
- One of the most immediate needs in the entire planning process is that more extensive research is needed to improve existing data and analytical procedures. (As noted earlier, some MPOs are spending considerable funds to do so.)
- A continuous series of issue papers dealing with technical, process, and institutional successes and failures in this newly invigorated planning process would be very helpful to MPO staffs. This would provide for a continuous dialogue among all the actors involved.
- The private sector transportation participants, including shippers and carriers as well as other, perhaps nontraditional participants such as port authorities, need to be included more extensively in the planning process.

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3. *Transportation Research Circular 389: Environmental Research Needs In Transportation*, Transportation Research Board, National Research Council, Washington, D.C., 1992.
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6. *Transportation Research Circular 406: Transportation Planning, Programming and Finance, Proceedings of a Conference*, Seattle, Washington, June 1992, Transportation Research Board, National Research Council, Washington, D.C., 1993.
7. *Special Report 240: ISTEA and Intermodal Planning: Concept, Practice, Vision, Proceedings of a Conference*, Beckman Center, Irvine, California, December 2–4, 1992, Transportation Research Board, National Research Council, Washington, D.C., 1993.
8. Draft Proceedings, Conference on Multimodal Transportation Planning, Beckman Center, Irvine, California, November 1993, Transportation Research Board, National Research Council, Washington, D.C.
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13. "Review of the Transportation Planning Process in the Pittsburgh Metropolitan Area," Research and Special Programs Administration, Volpe National Transportation Systems Center, U.S. Department of Transportation, Cambridge, Massachusetts, 1993, 43 pp.
14. "Review of the Transportation Planning Process in the Southern California Metropolitan Area," Research and Special Programs Administration, Volpe National Transportation Systems Center, U.S. Department of Transportation, Cambridge, Massachusetts, 1993, 66 pp.
15. "Critical Issues and Choices—A Mobility Plan for the New York Region Through the Year 2015," The New York Metropolitan Transportation Council, New York, 1994.
16. "Long Range Transportation Plan for the National Capital Region," National Capital Region Transportation Planning Board, Washington, D.C., 1994.

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"Regional Transportation Plan Report," Capital District Transportation Committee, Albany, New York, 1993, 196 pp.

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"New Visions For Capital District Transportation," Capital District Transportation Committee, Albany, New York, 1993, 68 pp.

Boston, Massachusetts

"The Transportation Plan for the Boston Region," Central Transportation Planning Staff, Boston, Massachusetts, 1993.

"Prospectus 1979–1980," Central Transportation Planning Staff, Boston, Massachusetts, 1979.

Charlotte, North Carolina

"Memorandum of Understanding for Cooperative, Comprehensive, and Continuing Transportation Planning," North Carolina Department of Transportation, Charlotte, North Carolina, 1992.

"Fifteen Planning Items to be Considered in Developing Transportation Plans and Programs for Metropolitan Planning Organizations in North Carolina," Statewide Planning Branch, North Carolina Department of Transportation, Charlotte, North Carolina, 22 pp.

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"1994 Transportation Improvement Program for the Gulf Coast State Planning Region," Houston–Galveston Area Council, Houston, Texas, 1993.

Pittsburgh, Pennsylvania

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Portland, Oregon

"Regional Transportation Plan—1992 Revision of the 1989 Update," Council of the Metropolitan Service District, Portland, Oregon, 1992.

"Transportation Planning Rule (adopted 4/26/91)," Oregon Department of Land Conservation and Development.

"Region 2040 Decisions For Tomorrow: Transportation Analysis of Growth Concepts," Tri-Met, Portland, Oregon, July 1994.

"Recommended Alternative Decision Kit," Tri-Met, Portland, Oregon, September 1994.

"Concepts for Growth—Report to Council," Tri-Met, Portland, Oregon, June 1994.

"Metro Region 2040 Update—You Said It," Tri-Met, Portland, Oregon, Fall 1994.

San Francisco, California

"1994 Regional Transportation Plan for the San Francisco Bay Area," Metropolitan Transportation Commission, Oakland, California, 1994.

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GLOSSARY

AASHTO	American Association of State Highway and Transportation Officials
ABAG	Association of Bay Area Governments
ADA	Americans with Disabilities Act of 1990
APTA	American Public Transit Association
ATMS	Advanced Traffic Management System
BART	Bay Area Rapid Transit System
BTPR	Boston Transportation Planning Review
CAAA	Clean Air Act Amendments of 1990
CATS	Chicago Area Transportation Study
CDRPC	Capital District Regional Planning Commission
CDTA	Capital District Transit Authority
CDTC	Capital District Transportation Committee
CMPC	Charlotte-Mecklenburg Planning Commission
CMS	Congestion Management System
CMAQ	Congestion Mitigation and Air Quality Program
CO	Carbon Monoxide
CTA	Chicago Transit Authority
CTPS	Central Transportation Planning Staff
DOT	Department of Transportation
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EOTC	Executive Office Of Transportation and Construction
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GIS	Geographic Information System
H-GAC	Houston-Galveston Area Council
HOV	High-Occupancy Vehicle
IDOT	Illinois Department of Transportation
IM	Interstate Maintenance
IMS	Intermodal Management System
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
IVHS	Intelligent Vehicle/Highway System (also referred to as ITS—Intelligent Transportation System)
JRTC	Joint Regional Transportation Committee
LPA	Lead Planning Agency
MAC	Massachusetts Aeronautics Commission
MAPC	Metropolitan Area Planning Council
MBTA	Massachusetts Bay Transportation Authority
MDC	Metropolitan District Commission
MERLAM	Mature Economic Region Land Use Allocation Model
MHD	Massachusetts Highway Department
MIS	Major Investment Study
MOU	Memorandum of Understanding
MPA	Massachusetts Port Authority
MPO	Metropolitan Planning Organization
MTC	Metropolitan Transportation Commission
MTA	Massachusetts Turnpike Authority
MTP	Metropolitan Transportation Plan
MTS	Metropolitan Transportation System
MUMPO	Mecklenburg-Union Metropolitan Planning Organization
NCDOT	North Carolina Department of Transportation
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NHS	National Highway System
NIPC	Northeastern Illinois Planning Commission
NIRPC	Northeastern Illinois Regional Planning Commission
NOx	Oxides of Nitrogen
NYSDOT	New York State Department of Transportation
NYSEO	New York State Energy Office
PennDOT	Pennsylvania Department of Transportation
PMS	Pavement Management Systems
PTMS	Public Transportation Management System
RTA	Regional Transit Authority
RTP	Regional Transportation Plan
SEWRPC	Southeast Wisconsin Regional Planning Commission
SIP	State Implementation Plan
SOV	Single-Occupant Vehicle
SPRPC	Southwestern Pennsylvania Regional Planning Commission
STP	Surface Transportation Program
TCC	Technical Coordinating Committee
TCM	Transportation Control Measure

TDD	Transportation Development District
TIP	Transportation Improvement Program
TMA	Transportation Management Areas
TSD	Transportation System Development
TSM	Transportation System Management
TxDOT	Texas Department of Transportation
UPWP	Unified Planning Work Program
USDOT	United States Department of Transportation
3C	Continuing, Comprehensive, and Cooperative [Transportation Planning Process]

APPENDIX A

OTHER RELATED STUDIES AND RESEARCH EFFORTS

The following describes a number of related studies on the operations of MPO and statewide planning as required by ISTEA. It is not an exhaustive list by any means, but does include the most current, relevant activities.

Completed Activities/Studies

- NCHRP Project 20–24(9), "State Departments of Transportation: Strategies for Change"—May 1955

  Purpose: To provide the state departments of transportation with the best possible guidance on responding effectively and timely to challenges and changes.

  Final Report: *NCHRP Report 371*

  Contact:
  Crawford F. Jencks
  Transportation Research Board
  National Research Council
  2101 Constitution Avenue, NW
  Washington, DC 20418
  Tele: 202–334–2379

- AASHTO Standing Committee on Planning in cooperation with the National Association of Regional Councils and the American Public Transit Association.

  Purpose: This work is based upon a survey of state DOTs and MPOs conducted during the period July–September 1993. The purpose of the work was to examine the relationships between state DOTs, MPOs, and transit agencies and how they are affected by ISTEA.

  Final Report: Survey and Summaries of MPOs and State DOTs, November 1993

  For more information contact:
  Mr. David Clawson
  AASHTO
  444 N. Capitol Street, NW
  Washington, DC 20001
  Tel: 202–624–5807

- U.S. General Accounting Office (GAO) Survey of MPOs
  December 21, 1990 (pre ISTEA)

  Purpose: To determine the present and future role of MPOs.

  Contact:
  James J. Crosson
  US General Accounting Office
  Room 5844
  441 G Street, NW
  Washington, DC 20548
  Tel: 202–512–3000

- GAO Survey of MPOs—November 13, 1992 (post ISTEA)

  Purpose: To determine the role of MPOs concerning efforts to meet federal ambient air standards for ozone and carbon monoxide.

  Contact:
  Michael Hartnett, Catherine Colwell
  GAO
  200 W Adams Street
  Suite 700
  Chicago, Illinois 60606
  Tel: 312–220–7600

- National Association of Regional Councils (NARC) MPO Conformity Issue Survey—April 1, 1993

  Purpose: To provide feedback from the NARC membership concerning the implementation of the Clean Air Act Amendments and conformity.

  Contact: See below.

- NARC Public Participation Survey—June 1, 1993

  Purpose: To help MPOs understand and apply collaborative decision-making models in intermodal transportation planning concerning community and private sector participation in the MPO planning process.

  Contact: See below.

- NARC—May 29, 1992

  Purpose: To determine how MPOs are implementing the requirements of ISTEA.

  Contact:
  NARC
  1700 K Street, NW
  Suite 1306
  Washington, DC 20006
  Tel: 202–457–0710

- National League of Cities—June 8, 1992

Purpose: To gauge progress on how ISTEA is shifting federal transportation dollars between highway and transit programs and involving local decision makers in the process.

Contact:
National League of Cities
Center For Policy and Federal Relations
1301 Pennsylvania Avenue, NW
Washington, DC 20004
Tel: 202–626–3000

Ongoing Studies and Activities By NARC

National Association of Regional Councils (NARC) MPO Baseline Survey
Sponsor:
NARC
1700 K Street, NW, Suite 1300
Washington, DC 20006
Tel: 202–457–0710

Contact: John W. Epling, Executive Director
Consultant: Professor Robert Gage, University of Colorado at Denver
Expected Date of Report: late 1994

Related Ongoing ISTEA Transportation Planning Research Sponsored At Least in Part by the Federal Highway Administration

- NCHRP Project 8-32(1), "Innovative Practices for Multimodal Transportation Planning for Freight and Passengers"

  Contractor: Transmanagement Inc.
  Matthew Coogan, Tel: 802–295–7499

  NCHRP Contact: Ronald D. McCready
  Tel: 202–334–3034

- FHWA Interagency Agreement with the U.S. Advisory Commission on Intergovernmental Relations, "Analysis of MPO Institutional Capacity"

  Contractor: Bruce McDowell
  US Advisory Commission on
  Intergovernment Relations
  800 K Street, NW
  Washington, DC 20575
  Tel: 202–653–5540

  FHWA Contact: Sheldon Edner (HEP-21), Tel: 202–366–4066

- FHWA Work Order B-93-03, "Synthesis of Intermodal Statewide Transportation Planning." This work is summarizing the "model intermodal planning grant" activities funded out of special ISTEA funding for Ohio. Florida, Louisiana, Alaska, New Mexico, and the New England Consortium.

  Contractor: James Covil (Wilbur Smith) and Michael Meyer (Georgia Tech)
  Wilbur Smith Associates
  PO Box 92
  Columbia, South Carolina 29202
  Tel: 803–738–0580

  FHWA Contact: Lee Chimini (HEP-50), Tel: 202–366–4068

- FHWA Contract DTFH61-94-Z-00022, "Synthesis of Best Practices in Statewide Transportation Planning." This project is documenting "best" state practices in eight subcategories of the Statewide Transportation Planning process.

  Contractor: Robert Reish
  Balloffet and Associates
  1444 Wazee, Suite 225
  Denver, Colorado 80202
  Tel: 303–534–7545

  FHWA Contact: Dee Spann (HEP-12), Tel: 202–366–4086

Other Studies and Activities

- FHWA Contract for Development of a new NHI Course: "Statewide Transportation Planning Process"

  Contractor: Wilbur Smith Associates, J. Covil, P.I.

  FHWA Contact: Phil Hazen (HEP-12)
  Tel: 202–366–4053

- NCHRP Project 8-32(2), "Multimodal Transportation: Development of a Performance-Based Planning Process"

  Contractor: Cambridge Systematics, Inc.
  Steven M. Pickrell, Tel: 510–873–8700

  NCHRP Contact: Ronald D. McCready,
  Tel: 202–334–3034

- NCHRP Project 8-32(3) "Integration of Land Use Planning with Multimodal Transportation Planning"

  Contractor: In process

  NCHRP Contact: Ronald D. McCready,
  Tel: 202–334–3034

- NCHRP Project 8-32(4) "Developing and Maintaining Partnerships for Multimodal Transportation Planning"

  Contractor: Kimley Horn and Associates, Inc.
  Dr. Edd Hauser, Tel: 919–677–2000

  NCHRP Contact: Ronald D. McCready,
  Tel: 202–334–3034

- NCHRP Project 8-32(5) "Multimodal Transportation Planning Data"

  Contractor: Jack Faucett Associates
  Jack G. Faucett, Tel: 301–961–8800

  NCHRP Contacts: Crawford F. Jencks,
  Tel: 202–334–2379

- FHWA/FTA Contract on Innovative Techniques for Public Involvement in Transportation Planning and Project Development

  Contractor: Howard/Stein-Hudson Associates

  FHWA Contact: Florence Mills (HEP-32),
  Tel: 202–366–2062

Federal Certification Requirements for the MPO Planning Process

One final item of information is relevant as background and context for this synthesis. All MPOs having a population of 200,000 or more (designated as Transportation Management Areas (TMAs)) are subjected to a self-certification process, as well as an in-depth verification that is carried out jointly by FHWA and FTA. In 1992 and 1993, pilot in-depth certification activities were conducted by FHWA and FTA in six metropolitan areas—Chicago, Houston, Pittsburgh, Kansas City, Minneapolis-St. Paul, and Southern California (the Los Angeles area). The titles of the final reports for those activities are included in the references for this synthesis (references 9–14).

One hundred thirty MPOs must be certified by FHWA and FTA before October 1, 1996 for those areas to continue to be eligible for federal transportation funds under ISTEA. During the summer of 1994, plans were made to complete 20 such activities. Federal reviews have been scheduled and will be made in Nashville, Tennessee; Omaha, Nebraska; Spokane, Washington; San Diego, California; Albuquerque, New Mexico; Provo, Utah; Worcester, Massachusetts; Indianapolis, Indiana; Albany, New York; Richmond, Virginia; Louisville, Kentucky; and Orlando, Florida. Other reviews will be scheduled soon thereafter.

Those reviews were not available prior to the publication of this synthesis. However, they will provide additional detailed information on a number of MPO activities as they relate to ISTEA requirements and will be made available by FHWA and FTA in the near future.

APPENDIX B

A Sample of How the 23 Statewide Factors Were Addressed by Wisconsin DOT

Following is a summary of how the ISTEA requirements and the 23 ISTEA factors were addressed in the Wisconsin Statewide Transportation Planning Process.

STATEWIDE TRANSPORTATION PLANNING PROCESS: FACTORS
23 CFR Part 450.208

(a) Each state shall, at a minimum, explicitly consider, analyze as appropriate and reflect in planning process products the following factors in conducting its continuing statewide transportation planning process.

(b) The degree of consideration and analysis of the factors should be based on the scale and complexity of many issues, including transportation problems, land use, employment, economic development, environmental and housing and community development objectives, the extent overlap between factors and other circumstances statewide or in sub-areas within the State.

ISTEA PLANNING FACTORS	TRANSLINKS 21 PRODUCTS
(1) The transportation needs (strategies and other results) identified through the management systems required by 23 U.S.C. 303;	Of the six management systems, the Congestion and Intermodal systems are the most related to the purposes of TRANSLINKS 21. The U.S. DOT rules for all the management systems were not issued until December 1, 1993. Work plans for these two systems are required by October 1, 1994, and the systems are to be fully operational by October 1, 1996. WisDOT is well ahead of schedule. Draft work plans (attached) have already been submitted to U.S. DOT for their review and comments.
(2) Any Federal, State, or local energy use goals, objectives, programs, or requirements;	"Transportation and the Environment," a TRANSLINKS 21 strategic issue paper, and a more detailed appendix (attached) considers a number of strategies to conserve energy, including vehicle fuel efficiency, certain alternate fuels, alternate modes, and many other issues and strategies. "Environmental Evaluation Guidance" provides guidelines for MPOs in evaluating environmental impacts of metropolitan system plans.
(3) Strategies for incorporating bicycle transportation facilities and pedestrian walkways in appropriate projects throughout the State.	"Wisconsin Bicycle Planning Guidance" and "Wisconsin Pedestrian Planning Guidance" provide guidelines to be used by MPOs, communities, and counties as they plan and develop bicycle and pedestrian facilities. The bicycle guidelines include identification of bicycle travel corridors and accommodation standards for streets where bicycles are permitted. The pedestrian guidelines include goal setting, inventory, facility planning, education, and enforcement, land use and site design, and implementation.
(4) International border crossings and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation and scenic areas, monuments and historic sites, and military installations;	The Intercity Passenger and Freight Elements of the "Integrated Staff/Consultant Work Plan" call for the development and analysis of alternative future scenarios for all passenger and freight modes including integration among modes and intermodal access. A comprehensive passenger and freight travel data base of intercounty movements will include all major generators. TRANSLINKS 21 background papers entitled "Intercity Passenger Rail Transportation," "Freight Rail Transportation," "Waterborne Freight Transportation," "Passenger Ferry Service," "Intercity Bus Transportation" and "Intercity Air Transportation" provide background information, overview of issues, and four alternative scenarios for intercity transportation. "Corridors 2020 Review and Update" updates the Corridors 2020 plan for a statewide highway network designed to provide essential links to key centers throughout the state and beyond. TRANSLINKS 21 Four Alternatives For Our Transportation Future," which includes a "Preliminary Environmental Review," is a comprehensive document of the TRANSLINKS 21 process that presents four alternatives for Wisconsin's multimodal transportation system. The scope of the "Intermodal Management System Work Plan" is to develop system level performance measures and identify system level deficiencies in intermodal connectivity. Wisconsin's proposal for the National Highway System links together the various sectors of the state's economy and is a key component of the state's intermodal transportation system.
(5) The transportation needs of nonmetropolitan areas (areas outside of MPO planning boundaries) through a process that includes consultation with local elected officials with jurisdiction over transportation;	The "Rural Transportation Forum Summary" presents the results of a forum held in Wausau on December 8, 1993, which addressed the major issues related to rural transportation. The issues were discussed by 32 panelists representing business, industry, special interest groups and municipal and county governments. There were also 19 audience participants. The "Summary of Regional Forums" summarizes the issues and concerns discussed in nine regional forums held throughout the state. The 15 major issue topics include rural as well as urban issues. Papers on "Local Roads Financing" and "Rural and Specialized Transportation" discuss rural transportation needs and issues in these areas.

APPENDIX B (Continued)

ISTEA PLANNING FACTORS	TRANSLINKS 21 PRODUCTS
(6) Any metropolitan area plan developed pursuant to 23 U.S.C. 134 and section 8 of the Federal Transit Act, 49 U. S. C app. 1607;	TRANSLINKS 21 will incorporate each MPO plan into the planning process. The MPO Guidance reports provide consistent, but not mandated, metropolitan planning standards and guidelines for the MPOs to use as they address a wide variety of issues. The report "Working Together to Shape Wisconsin's Future Transportation System" describes, on page 9, the process of integrating the MPO plans into TRANSLINKS 21. "TRANSLINKS 21, Four Alternatives For Our Transportation Future," which includes a "Preliminary Environmental Review," includes, on pages 23-25, a further description of the process for coordinating MPO plans with TRANSLINKS 21.
(7) Connectivity between metropolitan planning areas within the State and with metropolitan planning areas in other States;	The Intercity Passenger and Freight Elements of the "Integrated Staff/Consultant Work Plan" requires the development of a comprehensive passenger and freight travel data base of intercounty movements that will include all metropolitan areas and major generators. Connectivity between metropolitan areas is fundamental to the intercity planning process. The intercity plan elements of TRANSLINKS 21 will include connections with metropolitan areas in adjacent states. See also the reports referred to in (4).
(8) Recreational travel and tourism;	"Transportation and Tourism Forum" presents the results of the forum held in Milwaukee on February 6, 1994. Tourism and transportation issues were discussed by 18 panelists representing the Governor's Council on Tourism, local and regional tourist and visitors bureaus, hotel and resort operators, and tourism agencies. Topics included highways essential to tourism, environmental issues, increased rail service, air service, intermodal options, rustic roads and country roads, and winter tourism promotion. "Transportation & Economic Development" report sets forth alternative development strategies that include direct consideration of tourism benefits in transportation projects. See also the reports referred to in (4).
(9) Any State plan developed pursuant to the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq. (and in addition to plans pursuant to the Coastal Zone Management Act);	"Transportation and the Environment" addresses physical environment issues that include storm water runoff, wetlands, leaking storage tanks, contaminated soil, and harbor dredged material all of which can impact water quality. The report sets forth environmental strategy packages that include compliance with state and federal requirements.

ISTEA PLANNING FACTORS	TRANSLINKS 21 PRODUCTS
(10) Transportation system management and investment strategies designed to make the most efficient use of existing transportation facilities (including consideration of all transportation modes);	The section on Access Management in "Corridor Preservation & Access Management Guidance" sets forth one tool for managing transportation in a corridor that will preserve the functional integrity of the highway system and serve desired land use goals. "Transportation Demand Management" describes alternative TDM policies. TDM is the use of devices to shift travel on to higher occupancy modes, reduce travel demand, or shift travel patterns to achieve more efficient use of transportation systems.
(11) The overall social, economic, energy, and environmental effects of transportation decisions (including housing and community development effects and effects on the human, natural and man made environments);	Several reports provide strategic issue analysis and guidance to MPOs and forum results on the overall social, economic, energy and environmental effects of transportation. These include "Transportation and the Environment," "Transportation and Economic Development," "Transportation and Land Use," "Impacts of Highway Facility Improvements on Travel & Regional Development," "Long-Range Plan Alternatives, MPO Guidance," "Environmental Evaluation-MPO Guidance," "Economic Development Forum," "Transportation & Environment Forum," and "Urban Transportation Forum Summary. "Reference Document for Preparation of System Plan Environmental Evaluations" presents procedures on the preparation of SEE'S. The SEE process will apply to all elements of TRANSLINKS 21.
(12) Methods to reduce traffic congestion and to prevent traffic congestion from developing in areas where it does not yet occur, including methods which reduce motor vehicle travel, particularly single-occupant motor vehicle travel;	The reports referenced in (10), especially "Transportation Demand Management" address methods to reduce traffic congestion. "Transportation and Land Use" describes alternative land use-transportation policies for DOT consideration. The report recognizes the close relationship between land use and transportation and the positive impact that proper land use decisions can have on reducing and preventing traffic congestion.
(13) Methods to expand and enhance appropriate transit services and to increase the use of such services (including commuter rail);	"Transit in Wisconsin" sets forth five alternative visions of the role transit should play in Wisconsin. These range from meeting basic mobility needs of the transit-dependent to making transit a competitive and attractive alternative to the single occupant vehicle. The two Transit Planning forums and the Urban Transportation Forum addressed transit issues in depth.

APPENDIX B (Continued)

ISTEA PLANNING FACTORS	TRANSLINKS 21 PRODUCTS
(14) The effect of transportation decisions on land use and land development, including the need for consistency between transportation decision making and the provisions of all applicable short-range and long-range land use and development plans (analyses should include projections of economic, demographic, environmental protection, growth management and land use activities consistent with development goals and transportation demand projections);	See reference to "Transportation and Land Use" in (12). "Impacts of Highway Facility Improvements on Travel and Regional Development" explores how the transportation system interfaces with land use development. The paper presents policy options for improving traffic forecasting and evaluation capabilities. The "Long Range Plan Alternative Guidance" addresses the need to evaluate a range of future land-use scenarios and alternative transportation systems to serve them.
(15) Strategies for identifying and implementing transportation enhancements where appropriate throughout the State;	The Statewide Transportation Enhancements Program began in 1993 and includes projects in the ten different activities eligible for funding under ISTEA. The MPOs and the DOT are involved in the project selection process.
(16) The use of innovative mechanisms for financing projects, including value capture pricing, tolls, and congestion pricing;	The Prospectus of the TRANSLINKS Finance Committee includes options for new revenues. These include new and expanded revenue sources, as well as sources that have been considered in the past. WisDOT has engaged Cambridge Systematics to work with a diverse advisory group to define the relationship between travel behavior and the cost of auto use.
(17) Preservation of rights-of-way for construction of future transportation projects, including identification of unused rights-of-way which may be needed for future transportation corridors, identification of those corridors for which action is most needed to prevent destruction or loss (including strategies for preventing loss of rights-of-way);	The Corridor Preservation section of "Corridor Preservation & Access Management Guidance" describes methods of corridor preservation and the MPO role in corridor preservation.
(18) Long-range needs of the State transportation system for movement of persons and goods;	The Intercity Passenger and Freight Elements of the "Integrated Staff/Consultant Workplan" includes development and analysis of alternative future scenarios for all passenger and freight modes. Multimodal travel forecasts will be made for each scenario that will be input to determine system level deficiencies. See also the reports referred (4). Long range needs are identified in all those reports. "Transportation Needs Assessment Guidance" provides guidelines for MPO's in assessing street and highway and public transit improvement needs in their communities.

ISTEA PLANNING FACTORS	TRANSLINKS 21 PRODUCTS
(19) Methods to enhance the efficient movement of commercial motor vehicles;	The Intercity Freight Elements of the "Integrated Staff/Consultant Workplan" includes highway/truck commodity flow movements as part of the multimodal forecasts for the freight scenarios. The "Wisconsin Freight Forum" presents a summary of the key issues discussed by Wisconsin freight shippers and operators at a forum held in Appleton on April 7, 1993. Prominent trucking discussion points included full implementation of Corridors 2020, congestion in Chicago causes delays for Wisconsin firms, increased congestion can be expected on I-94 south of Milwaukee, and double trailers can reduce congestion and energy consumption. Efficient movement of commercial motor vehicles were prominent concerns at the Economic Development Forum.
(20) The use of life-cycle costs in the design and engineering of bridges, tunnels, or pavements;	Life-cycle costs will be included in the Pavement and Bridge Management Systems Work Plans.
(21) The coordination of transportation plans and programs developed for metropolitan planning areas of the State under 23 U.S. C 134 and section 8 of the Federal Transit Act with the statewide transportation plans and programs developed under this sub-part, and the reconciliation of such plans and programs as necessary to ensure connectivity within transportation systems;	See (6).
(22) Investment strategies to improve adjoining State and local roads that support rural economic growth and tourism development, Federal agency renewable resources management, and multipurpose land management practices, including recreation development; and	See (5) and (8).
(23) The concerns of Indian tribal governments having jurisdiction over lands within the boundaries of the State.	Concerns about transportation needs on reservations were expressed at the Rural Transportation Forum and the Spooner Regional Forum.

APPENDIX B (Continued)

STATEWIDE PUBLIC INVOLVEMENT
23 CFR Part 450.212

PUBLIC INVOLVEMENT REQUIREMENTS	TRANSLINKS 21 PRODUCTS
(a) Public involvement processes shall be proactive, and provide complete information, timely public notice, full public access to key decisions, and opportunities for early and continuing involvement. The process shall provide for:	WisDOT has completed the first (outreach) stage of an ambitious public involvement process for TRANSLINKS 21. All possible interested and affected parties from throughout the state have been included. The second (choices) stage is currently in process.
(1) early and continuing public involvement opportunities throughout the transportation planning and programming processes;	The TRANSLINKS 21 planning process was initiated during early 1993 and the public has been involved since the beginning, receiving TRANSLINKS publications, attending forums, and having ample opportunities to comment on plans. During the summer and fall of 1993, WisDOT joined regional planning commissions in sponsoring nine regional forums throughout Wisconsin. At each regional forum, 20-30 leaders representing transportation, economic development and business, environmental concerns, tourism, elderly and disabled interests, and local government joined WisDOT in discussing the transportation issues affecting the region. Eight thematic forums, addressing specific transportation issues, were also held at various locations around the state. To help the Department prepare for the thematic forums, scoping sessions were held with a select group of experts on each topic. Detailed summaries of all regional and thematic forums are available from WisDOT's Office of Public Affairs. At the current time, the second (choices) stage of public involvement is being conducted. During the summer, 1994, this will include ten additional regional forums, 11 focus groups, meetings with 16 statewide organizations and 15 meetings with Chambers of Commerce. Each of these meetings will review and comment on four transportation alternatives. Questionnaires will be used to record the public's preferences.
(2) timely information about transportation issues and processes to (all affected constituents);	Newsletters, issue papers, and guidance documents have provided timely, professional analyses of a wide range of transportation issues affecting Wisconsin residents. Sixteen newsletters, 7 issue papers, 11 MPO guidance documents and 7 modal papers have been published. WisDOT expects to complete two additional issue papers, three more guidance documents, two modal papers, and 8-10 newsletters.
(3) reasonable public access to technical and policy information used in the development of the plan and the STIP;	Issue papers and guidance documents, which were the primary planning documents prepared over the past year, are made readily available to all constituents. Their availability is announced in the newsletters. In addition, all the issue papers, with an accompanying questionnaire, were sent to a list of approximately 1,000 people for review and comment. The results are being summarized and documented. The draft plan alternatives are also being sent to this mailing list.
(4) adequate public notice of public involvement activities and time for public review and comment at key decision points. . ;	All public involvement activities are announced in the newsletters. Invitations are mailed to all forum participants well in advance of the forum date. The public has the opportunity to comment on the plan at every step of the process.
(5) a process for demonstrating explicit consideration and response to public input during the planning and program development process;	Department staff have reviewed forum summaries and issue paper comments sent in by those asked to review the alternatives in the issue papers. The "Choices" document which has been prepared for the second stage of public involvement reflects comments received during the first stage of public involvement. Likewise, the final plan will reflect comments received on the four alternatives.
(6) a process for seeking out and considering the needs of those traditionally underserved by existing transportation systems, such as low-income and minority households which may face challenges accessing employment and other amenities;	The Department has a made a special effort to consider the needs of those traditionally neglected by existing transportation systems. All organizations representing minority group interests, including low-income, elderly, and handicapped, are included on the TRANSLINKS mailing list. Minority groups have been well represented at forums around the state. During the second stage of public involvement, (choices) individual focus group meetings are being held with a number of minority groups (African-Americans, Hispanic, Indian, etc.) to learn their specific reaction to alternative plans being developed.
(7) periodic review of the effectiveness of the public involvement process to ensure that the process provides full and open access to all and revision of the process as necessary.	Now that the first stage of public involvement has been completed, WisDOT is reviewing the effectiveness of its public involvement process to ensure that it provides opportunities for all constituents to comment and generates information that will be useful in the development of the final TRANSLINKS 21 plans. The second stage of public involvement (choices) includes additional newsletters and staff papers, a video presentation of the choices, meetings with statewide organizations, a second round of regional forums, meetings with chambers of commerce, focus group meetings, media outreach, legislative briefings, questionnaires, and public comment on a report on four transportation alternatives. The Department is always open to suggestions on how the public involvement process could be improved.

APPENDIX B (Continued)

PUBLIC INVOLVEMENT REQUIREMENTS	TRANSLINKS 21 PRODUCTS
(b) Public involvement activities carried out in a metropolitan area in response to metropolitan planning requirements in SS 450.322 (c) or SS 450.324 (c) may by agreement of the State and the MEPO satisfy requirements of this section.	An Urban System Planning Team consisting of staff from the Division of Planning and Budget, Division of Highways, Division of Transportation Assistance, and various metropolitan planning organizations, has met regularly since January, 1993. The group has developed a series of technical assistance (guidance) documents to assist MPOs as they develop their own multi-modal plans. One of the guidance documents addresses public involvement at the metropolitan level.
(c) During the initial development and major revisions of the statewide transportation plan required under SS 450.214, the State shall provide citizens ... a reasonable opportunity to comment on the proposed plan. The proposed plan shall be published, with reasonable notification of its availability, or otherwise made readily available for public review and comment. Likewise, the official statewide transportation plan shall be published, with reasonable notification of its availability, or otherwise made readily available for public information.	From the early stages of the TRANSLINKS 21 planning process, all interested and affected constituents have had the opportunity to review and comment on both technical documents and proposed plans. The TRANSLINKS 21 mailing list consists of around 3,500 constituents and continues to grow. A sampling of the list includes mayors legislators, transit operators, labor representatives, Indian Tribal Governments, metropolitan planning organizations, regional planning commissions, environmental groups, consultants, bicycle/pedestrian advocates, business and industry, airports, major daily newspapers, minority/inner city groups, representatives of the elderly and handicapped, passenger rail interests, state government agencies, and statewide organizations (e.g., AAA, Alliance of Cities, Farm Bureau, NAACP, Pedestrian Rights Coalition, Native American Tribal Council, etc.). Open access to all planning documents and processes will continue throughout the development of the plan, including at the proposed plan and official plan stages.

PUBLIC INVOLVEMENT REQUIREMENTS	TRANSLINKS 21 PRODUCTS
(d) During development and major revision of the statewide transportation improvement program required under SS 450.216, the Governor shall provide citizens...	Division of Highways staff have produced a public involvement document related to the Statewide Transportation Improvement Program (STIP).
(e) The time provided for public review and comment for minor revisions to the statewide transportation plan or statewide transportation improvement program will be determined by the State and local officials based on the complexity of the revisions.	Revisions will be documented and noted and are always open for public comment. Through the regional forums and other activities, WisDOT is working closely with local officials statewide. All final decisions will be made cooperatively with local officials.
(f) The State shall, as appropriate, provide for public comment on existing and proposed procedures for public involvement throughout the statewide transportation planning and programming process. As a minimum, the State shall publish procedures and allow 45 days for public review and written comment before the procedures and any major revisions to existing procedures are adopted.	The second TRANSLINKS 21 newsletter outlines the public participation plan. It was distributed three months prior to the first regional forum. In general, the Department is always open to suggestions on how the TRANSLINKS 21 Public Involvement Process could be improved.
(g) The public involvement processes will be considered by the FHWA and the FTA as they make the planning finding required in SS 450.220 (b) to assure that full and open access is provided to the decision making process.	The FHWA and WisDOT are currently conducting a joint review of public involvement procedures related to the Statewide Transportation Improvement Program and the TRANSLINKS 21 Multimodal Transportation Plan development - WisDOT central office. The public participation procedures for the State and each MPO will be reviewed.

APPENDIX C

INTERVIEW GUIDE

National Cooperative Highway Research Project 20-5, Topic 25-13

Procedures MPOs Use To Consider the 15 Factors In Developing Plans and Programs Under ISTEA

The National Cooperative Highway Research Program (NCHRP) has convened a panel of experts from around the country to develop a synthesis of the best practices currently underway on the topic: Procedures MPOs Use to Consider the 15 Factors in Developing Plans and Programs Under ISTEA.

Several selected MPOs are being requested to provide current information on this topic. We request that you take the time to provide that information through a telephone interview to our consultant on the project, Mr. Thomas F. Humphrey. The enclosed interview guide will be used for that purpose. It should take no more than 30 minutes of your time.

Also, we request that you send any written documentation that you may have on this topic; this includes information that your agency may have prepared as well as guidelines you may have received from your State Department of Transportation.

All information should be sent directly to

Thomas F. Humphrey
MIT Center for Transportation Studies
77 Massachusetts Avenue, Room 1-153
Cambridge, MA 02139

If you have any questions, please call Mr. Humphrey at 617–253–4978. Fax 617–258–5942.

Procedures MPOs Use to Consider the 15 ISTEA Factors
MPO Case Study Interview Outline

Description Of Each MPO Interviewed

Name of MPO
TMA or not

The Jurisdictions Included
(Indicate if area is bi-state or tri-state)

Status of Air Quality Attainment

Agencies Included in MPO
(Highway, Transit, Port, Turnpike, State, local, etc....)

Population and Transportation Statistics

Director's Name and other Contacts
Address, etc.

Date of Interviews (telephone or in person)

Transportation Planning and Programming Prior to ISTEA

Introduction (Overview / History)

Summary of methods used to develop plans and programs prior to ISTEA

- — Urbanized area plan (dates of plans)
- — TIP and updates
- — SIP and updates

Methods to achieve Coordination prior to ISTEA

- — State transportation plans
- — State air quality plans
- — Land Use and economic planning activities

The extent to which the 15 ISTEA Factors were incorporated prior to ISTEA

Influence of the MPO recommendations on state plans and programs

The Impact of ISTEA—Current Status of Plans and Programs

Introduction

Organizational and institutional changes due to ISTEA

Methods used to develop the first plan under ISTEA

Methods used to develop first program under ISTEA

Methods used to provide input to and approval for the Statewide Implementation Plan (SIP) required by CAAA

Plans to develop six ISTEA Management Systems

Summary of issues faced to achieve the above and how they were resolved

The Response To the Incorporation of the 15 Factors

Reproduced as submitted.

Planned Modifications In Process and Coordination of Activities

Narrative to discuss anticipated future activities

Challenges and Next Steps

Schedules anticipated

Institutional / organizational issues

Analytical procedures to be used—same or different

Anticipated effectiveness of new process

Input from local officials

Input from citizens

Input from private sector

Lessons Learned

Narrative

THE TRANSPORTATION RESEARCH BOARD is a unit of the National Research Council, which serves the National Academy of Sciences and the National Academy of Engineering. It evolved in 1974 from the Highway Research Board, which was established in 1920. The TRB incorporates all former HRB activities and also performs additional functions under a broader scope involving all modes of transportation and the interactions of transportation with society. The Board's purpose is to stimulate research concerning the nature and performance of transportation systems, to disseminate information that the research produces, and to encourage the application of appropriate research findings. The Board's program is carried out by more than 270 committees, task forces, and panels composed of more than 3,300 administrators, engineers, social scientists, attorneys, educators, and others concerned with transportation; they serve without compensation. The program is supported by state transportation and highway departments, the modal administrations of the U.S. Department of Transportation, the Association of American Railroads, the National Highway Traffic Safety Administration, and other organizations and individuals interested in the development of transportation.

The National Academy of Sciences is a nonprofit, self-perpetuating society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare. Upon the authority of the charter granted to it by the Congress in 1863, the Academy has a mandate that requires it to advise the federal government on scientific and technical matters. Dr. Bruce Alberts is president of the National Academy of Sciences.

The National Academy of Engineering was established in 1964, under the charter of the National Academy of Sciences, as a parallel organization of outstanding engineers. It is autonomous in its administration and in the selection of its members, sharing with the National Academy of Sciences the responsibility for advising the federal government. The National Academy of Engineering also sponsors engineering programs aimed at meeting national needs, encouraging education and research, and recognizes the superior achievements of engineers. Dr. Harold Liebowitz is president of the National Academy of Engineering.

The Institute of Medicine was established in 1970 by the National Academy of Sciences to secure the services of eminent members of appropriate professions in the examination of policy matters pertaining to the health of the public. The Institute acts under the responsibility given to the National Academy of Sciences, by its congressional charter to be an adviser to the federal government and, upon its own initiative, to identify issues of medical care, research, and education. Dr. Kenneth I. Shine is president of the Institute of Medicine.

The National Research Council was organized by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the Academy's purposes of furthering knowledge and advising the federal government. Functioning in accordance with general policies determined by the Academy, the Council has become the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in providing services to the government, the public, and the scientific and engineering communities. The Council is administered jointly by both Academies and the Institute of Medicine. Dr. Bruce Alberts and Dr. Harold Liebowitz are chairman and vice chairman, respectively, of the National Research Council.

Transportation Research Board
National Research Council
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ADDRESS CORRECTION REQUESTED