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16. Abstract <p>Performance measurement is a topic of increasing importance to transportation agencies, as issues with funding shortfalls and concerns about transportation system efficiency lead to a shift in how transportation decision making is carried out. In addition to the increased emphasis on performance-based management and accountability, the role of the metropolitan planning organization (MPO) has also gained much significance. MPOs are unique in their role in bridging the gap between various stakeholders in the transportation planning process, and in the expertise and input they provide for transportation decision making. Thus, MPOs play a very important coordinating role in the transportation planning process. However, individual MPOs differ vastly from one another and often do not have the authority to raise revenue or allocate funds. MPOs often lack the resources to identify and use performance measures. By the use of proper performance measures, MPOs can help guide the local transportation planning process toward achieving higher-level transportation goals.</p> <p>The aim of this project is to consolidate available knowledge and provide guidance to transportation agencies, specifically MPOs, to help them incorporate performance measurement relating to transportation planning and operations. This research includes a survey of agency practices and agency needs, development of guidance on effective performance measurement and allied issues of strategic planning, goal setting, and data collection.</p>					
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Performance Measures for Metropolitan Planning Organizations

Devin Moore
Graduate Research Assistant
Texas Transportation Institute

Tara Ramani
Assistant Research Scientist
Texas Transportation Institute

Nicolas Norboge
Assistant Transportation Researcher
Texas Transportation Institute

Katherine Turnbull
Executive Associate Director
Texas Transportation Institute

April 2012

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TEXAS TRANSPORTATION INSTITUTE
The Texas A&M University System
College Station, Texas 77843-3135

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EXECUTIVE SUMMARY

Performance measurement has emerged as a topic of importance to the transportation sector in recent years. Transportation agencies are placing an increased emphasis on performance measurement/management for functions such as system management, program evaluation, fund allocation, decision-support, and establishing accountability. Among transportation agencies, metropolitan planning organizations (MPOs) play a very important coordinating role in the transportation planning process by bringing together various stakeholders in the transportation planning process and by providing expertise and input for transportation decision making. However, individual MPOs differ vastly from one another and often do not have the authority to raise revenue or allocate funds. The Metropolitan Transportation Plan (MTP) is created by the MPO to direct transportation funds within their geographical jurisdiction. MPOs often lack the resources to identify and use performance measures in their MTPs, even though the use of performance measurement at the MPO level can promote efficient planning and decision making, and also link the local transportation planning process to higher-level transportation goals. The aim of this project is to develop an understanding of current performance measurement practices and to develop guidance aimed at MPOs and other transportation agencies looking to incorporate performance measurement into their planning efforts.

A review of existing literature and documents was conducted covering the use of performance measures among transportation agencies. Limited resources are available specifically targeting MPOs, including a recent EPA guide on the use of performance measures for sustainability at the MPO level. Performance measurement has been shown to increase the efficiency of resource allocation and is federally recognized as a critical part of long-range planning. Recent research has also found that a one-size-fits-all federally mandated performance measurement program would not be suitable for all MPOs, especially smaller agencies. Small and medium sized MPOs have difficulty determining how to implement a performance measurement program with limited funds and staff. While these difficulties exist, these smaller MPOs (which equate to the fair majority of MPOs around the country) still desire to improve their usage of performance measures and many see the great benefit of applying historical and trend data in their area for various purposes.

The performance measurement programs and strategic planning efforts of some MPOs indicate that goals set within MPO jurisdictions frequently define the importance of certain performance measures. In a review of MTPs throughout the country, the broad areas of focus for MPOs depended upon the type of MPO and the size of the community being served. The major performance measurement themes identified include: 1) air quality improvements, 2) traffic congestion mitigation, 3) mode split diversification, 4) safety, 5) travel demand management, 6) economic development, and 7) livability.

The focus of this project is on MPOs in the Texas region, and interviews were conducted with MPOs throughout Texas. The findings indicated that MPOs are very interested in receiving guidance on performance measures and many are actively seeking guidance, training, and literature on the subject. MPO directors are training their staff members on the importance of performance measurement but are still faced with the difficulty of implementing a program where none had existed or in improving an existing performance measurement program. MPOs with performance measurement programs see the use of performance measurement in supporting their planning efforts and funding allocations and in explaining decisions to stakeholders including local and state officials and the public.

Performance measurement programs are beneficial to MPOs, and many MPOs are seeking guidance on how to implement performance measurement/performance management as a part of the metropolitan transportation planning process. Producing the MTP is an important part of an MPO's function, and performance measures can help shape MTPs and long range planning efforts. MPOs that currently do not have performance measures in their MTPs and those looking to improve their current application of performance measures are seeking guidance on the types of performance measures and their application for various purposes. Small to medium sized MPOs that have limited staff and funding especially find it difficult to allocate the time and resources to create performance measurement programs from scratch. This report gives MPOs a framework from which to build on and contains suggestions and best practice examples that can be used to implement performance measurement to suit the agency's needs. The report covers various topics including effective performance measurement and allied issues such as strategic planning, goal setting and data collection, and list other resources and references on performance measures, and will provide guidance to policy committees and technical staff in MPOs to encourage effective planning.

CHAPTER 1 – INTRODUCTION

Urban areas with a population greater than 50,000 are required to have a metropolitan transportation organization (MPO). MPOs are critical for bringing together stakeholders in the transportation planning process. Since landmark federal transportation legislation mandated the existence of MPOs, progress has been made on strengthening the planning, coordination, and decision-making processes among state DOTs, metropolitan areas, transit agencies, and the public and private sectors. Some of the main functions of MPOs include establishing the setting for decision making between government agencies, developing and updating short- and long-range transportation plans, evaluating transportation alternatives, and pursuing public-involvement programs to involve public and stakeholders in the transportation process (1).

The use of performance measurement to support transportation agencies and transportation planning functions has gained importance in recent years. It is also anticipated that future transportation reauthorization bills could further emphasize performance measurement-based planning and funding decisions. In general, performance measures are measurable criteria with regard to a specific goal or objective. They translate data and statistics into information that can be readily understood. Performance measures can be used by transportation agencies to evaluate progress toward goals, track system performance or trends, evaluate alternatives, project selection, and for internal and external communication. While data availability/use of the right data is a very important consideration, it needs to be combined with a clear idea of appropriate data for a particular use.

The use of performance measurement or performance management can support decision making and be used to monitor progress toward long-term goals and objectives by MPOs. Incorporating successful performance measurement techniques could help to improve efficiency, performance, and relevancy of MPOs in the transportation planning process.

The following observations formed the basis for this research project, which examined the use of performance measurement among MPOs in order to identify applications and best practices:

1. Performance measurement is becoming of increasing significance to transportation agencies at the local/metropolitan planning level.
2. MPOs are unique in terms of their role in the transportation planning process. They are agencies that bridge the gap between various stakeholders and can thus help promote sound decision making as well as strategic direction.

3. MPOs often lack the funding and staff resources to develop performance measurement systems. There is a need to provide MPOs with tools and information to help them implement their own performance measurement system at the planning level.
4. There is a need to consolidate available knowledge on the subject of transportation performance measurement for local agencies to promote sharing of best practices and improved agency practice.

This research project aims to fill the gaps in current practice and research by providing a comprehensive overview of the state of practice combined with basic guidance on the subject of performance measurement, specifically as applicable to MPOs. The ultimate aim is to promote the use of performance measures for more effective system performance, sound decision making, and progress toward strategic goals. The research project included a review of the available literature and state-of-practice on MPOs' functions and their use of performance measurement in planning and operations, case studies of selected MPOs (with a focus on Texas MPOs), and consolidation of findings. Researchers interviewed representatives from MPOs throughout Texas as part of this project.

Following this introductory chapter, Chapter 2 provides a summary of the literature review and state of practice assessment, followed by Chapter 3 containing MPO case studies. Chapter 4 compiles the performance measurement best practices, and Chapter 5 contains summary and conclusions. The appendices to the reports provide further information on the case studies, interviews, and performance measurement examples.

CHAPTER 2 – LITERATURE REVIEW AND STATE OF PRACTICE

This literature review provides a general overview of MPOs, their role and functions in the transportation process, and main stakeholders. This is followed by an overview of performance measurement in transportation and transportation planning, including their application among MPOs, including a review of best practices among MPOs in the U.S., with an emphasis on the Texas MPOs for which case study interviews were conducted as described in Chapter 3.

Overview of MPOs – Functions, Structure, and Stakeholders

A Metropolitan Planning Organization (MPO) is a transportation policy-making body made up of representatives from local government and transportation agencies with authority and responsibility in metropolitan planning areas. MPOs were created in order to ensure that existing and future expenditures for transportation projects and programs were based on a continuing, cooperative, and comprehensive (3-C) planning process. They are charged with a variety of duties related to regional transportation planning, such as involving the public in transportation decision-making, developing long range plans for surface transportation, and prioritizing projects to receive federal aid (2).

While individual MPOs differ greatly and often do not have a role in raising revenue or allocating funds, they are a very important in bringing together stakeholders in the transportation planning process. Despite the above commonalities, the MPOs functions depend upon the size and complexity of the region, as well as the nature of transportation issues there (3). In accordance with federal regulations, the MPO is required to carry out metropolitan transportation planning in cooperation with the state and with operators of publicly owned transit services. The MPO approves the metropolitan transportation plan (MTP). Both the governor and the MPO approve the Transportation Improvement Plan (TIP) (4). Some MPOs also operate under regional planning organizations, regional mobility authorities, and may include designated transportation management areas.

History and Development of MPOs

The Federal Aid Highway Act of 1962 created the first mandate for transportation planning in the United States. This act established an active role for local governments in transportation planning by mandating a “continuous, comprehensive, and cooperative” planning process to be carried out by the states and local officials (4). Many of today’s requirements for MPOs were created by the Intermodal Surface Transportation Efficiency Act (ISTEA), passed by Congress in 1991. ISTEA’s metropolitan planning provisions were intended to foster better planning that would result in better transportation systems. ISTEA expanded the roles and authority of MPOs in regional planning and provided funding for MPO programs, particularly for MPOs in urbanized communities with a population of 200,000 or more. ISTEA is also considered to have

significantly broadened flexible funding between highway and transit projects (5). Many states have also passed laws further developing the responsibilities of their MPOs.

In 1998, the Transportation Equity Act for the 21st Century (TEA-21) replaced ISTEA as the primary federal authorizing legislation for surface transportation and further expands the role of MPOs in the transportation planning process. TEA-21 maintained the basic elements of ISTEA and focused on funding the highway and transit programs, as well as the increasing number of earmarked projects inserted by Congress (5). The current governing transportation legislation, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), maintains the basic approach and the programs contained in TEA-21 and also includes numerous earmarked projects. The responsibilities of MPOs and the metropolitan transportation planning process remain strong components in this reauthorization bill.

Core Functions of an MPO

There are several main functions of an MPO. The main functions of an MPO include (1,4):

- Establishing the setting for decision making between government agencies across different modes.
- Developing and updating long-range multimodal transportation plans - metropolitan transportation plan (MTP) and a shorter-range transportation improvement program (TIP).
- To identify and evaluate transportation alternatives and support metropolitan decision making.
- Pursuing public-involvement programs that help the general public and stakeholders get involved in the transportation planning process.

According to federal and Texas state law, MPOs are responsible for developing a total of six products—two plans and four administrative documents. The MPO is responsible for producing both a long-term MTP and a short-term TIP. The MPO is also responsible for producing four administrative documents: a unified planning work program (UPWP), a public involvement plan, an annual performance/expenditure report, and an annual listing of projects. Federal law requires MPOs to establish a planning process that will produce “investment decisions that result in safe and efficient mobility and accessibility and protection of the human and natural environments” (6).

Table 1 below was prepared for an official TxDOT guidebook in 2002 and explains products produced by MPOs (2).

TABLE 1 Documents Produced by MPOs*

Document	Purpose	Time Horizon	Updates
Metropolitan Transportation Plan (MTP)	Establish short-and long-term transportation goals	20–25 yrs	Every 3–5 years
Transportation Improvement Plan (TIP)	Outline projects that will be implemented in the next 3 years	3 yrs	Every 2 years
Unified Planning Work Program (UPWP)	Demonstrate proper use of federal funds	1 yr	Every year
Public Involvement Plan (PIP)	Show how MPO plans to engage public in planning process	Indefinite	Periodically
Annual Performance and Expenditure Report	Show MPOs past year performance and actual expenditures for planning	1 yr	Every year
Annual Listing of Projects	Communicate to public past year's highway and transit projects	1 yr	Every year

**Adapted from Reference 2*

Designation of MPOs

The service area for an MPO is defined by the Metropolitan Area Boundary (MAB) and includes both the urbanized area (a population of 50,000 or greater) and the expected urbanized area within the next 20 years as determined by the U.S. Census Bureau. An MPO with a population of 200,000 or greater is considered a Transportation Management Area (TMA) and applies to the entire metropolitan planning area served by the MPO(s) within which the TMA is located. In Texas, TMAs receive additional funding and are jointly reviewed by the U.S. Department of Transportation and the Texas Department of Transportation (TxDOT).

Funding MPO Planning and Operations

In terms of funding for MPOs, federal sources can provide up to 80 percent of the cost for transportation planning activities. The remaining 20 percent match must be provided by state or local governments. In Texas, TxDOT is responsible for distributing federal planning funds to each MPO based on a formula mutually agreed upon by TxDOT, Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) (7). The state is responsible for considering population, status of planning, metropolitan area needs, and other factors when developing the funding formula to ensure appropriate distribution of funds to carry out federal requirements (8). Sometimes, TxDOT will provide a 20 percent match of federal funds in the form of in-kind services, which may consist of staff time and expenditures for monitoring and assisting MPOs (9).

Organizational Structure of MPOs

MPOs play a very important role in bringing together stakeholders in the transportation planning process. The governing body of an MPO is the policy committee. The policy committee is comprised of local elected and appointed officials, modal representatives, state agency officials, interest group representatives, and tribal governments. The policy committee is tasked with approving plans for the MPO, including the MTP, MTP updates, the TIP, TIP updates, and the UPWP. The policy committee also hires MPO staff and establishes personnel agreements with the fiscal agent. In addition, federal law allows MPO policy committees to freely appoint whatever subcommittees they deem useful in the planning process. Finally, the policy committee must review the boundary of the planning area and make minor changes if necessary.

The technical committee is an advisory body to the MPO Board for transportation issues, primarily technical in nature. This committee oversees technical work and develops recommendations on projects and programs for board consideration. This committee meets on a regular schedule and is usually comprised of staff-level officials of local, state, and federal agencies. Some MPOs (such as Bryan/College Station and Longview in Texas) have citizen advisory committees. Citizen advisory committees often act in an advisory capacity to an MPO on public participation strategies. These committees may meet regularly to review and develop plans, and also assists in organizing and managing public meetings and comments. Often times, citizen advisory committees are appointed by localities and the MPO Policy Board and may include representatives of community, environmental and other interested organizations. Figure 1 was adapted from a report by consulting firm Resource Systems Group, Inc. (10) and is intended to show the typical MPO structure around the U.S.

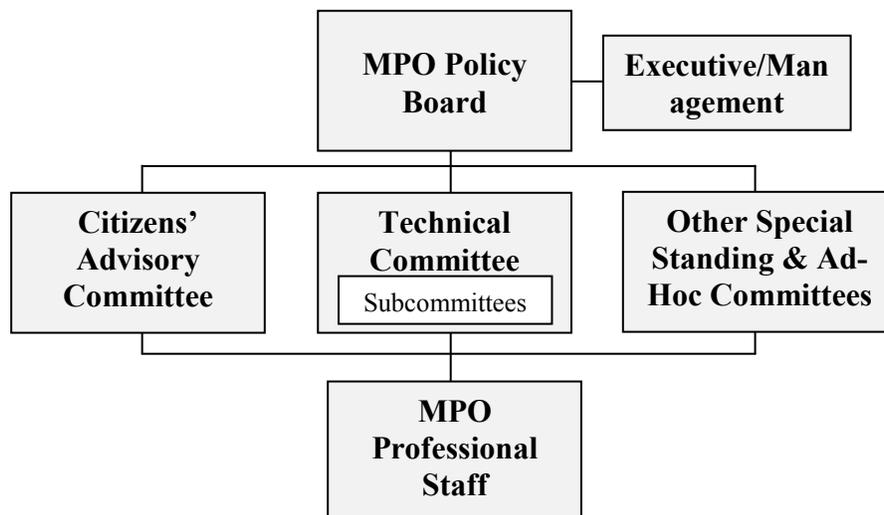


FIGURE 1 Structure of an MPO

MPOs are required by federal law to facilitate collaboration among governments, interested parties, and residents within its MAB. Stakeholders in the MPO process include elected officials, federal and state agencies, municipalities, transit operators, interest groups, and the private sector. Several entities other than the MPO have responsibilities in the metropolitan planning process, including the state DOTs, the Federal Highway Administration, and the Federal Transit Authority. Most of these responsibilities are advisory, rather than regulatory, however. At the FHWA workshop on MPO planning, several transportation practitioners noted that the quality of relationships between them and other public agencies was a crucial component to their success (10). Furthermore, an MPO's willingness to step out and form collaborative relationships with other agencies is a good way to improve their effectiveness.

Performance Measurement and Applications for MPOs

Performance measurement is defined as a qualitative or quantitative measure of outcomes, outputs, efficiency, and originated as a management tool used by private-sector organizations to evaluate progress toward goals using measurable results or targets (11). Performance measures translate data and statistics into succinct information that can be readily understood. Performance measurement is described by the U.S. General Accounting Office (GAO) as "the ongoing monitoring and reporting of program accomplishments, particularly progress toward pre-established goals," which may address processes, outputs, or outcomes (12). These same measures have been required of MPOs as part of recent federal legislation. Performance measurement is a broad field with many applications and scholars such as Glaser have significant work in adapting generic performance measures to fit an individual organization (13). The population within the jurisdiction of an MPO has been found to be a determining factor as to organization structure and which performance measures are most useful and desired. MPOs with larger populations are more inclined to be actively engaged in the use of performance measures in the planning process and typically have more funding resources to allocate to transportation projects. Research has also found that mandating certain performance measures from MPOs of all sizes, organization structure, and structures is not an adequate method of helping the MPO guide their decisions. Depending on certain variables (including size) MPOs benefit from different performance measures (3).

In recent times, public agencies have increasingly used performance measurement-based processes for planning, management, and decision making. These processes have been shown to improve resource allocation efficiency, advocate change, and it recognized in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) as a critical part of long-range planning for transportation (14). In the transportation sector, declining revenues and increased demands on infrastructure have resulted in a shift toward performance measurement. Recent federal legislation and transportation reauthorization bills have also emphasized the importance of performance measurement. Performance measures can be used across all aspects of an agency to

track system performance or trends, evaluate alternatives for project selection, and for internal and external communication. An allied issue when discussing performance measurement is data—both in terms of the data requirements for desirable performance measures, and framing appropriate performance measures that make use of available data.

Performance Measurement for MPOs

Defining and using performance measures at the planning and operations level can enable MPOs to perform their core functions effectively. A survey of MPOs conducted as a part of previous research by TTI (15) indicated that the use of performance measures differed vastly among agencies. However, there is potential for shared knowledge and learning relating to performance measures and data needs. Recognition has been given in recent years to the importance of implementing performance measurement in public agencies. Research has shown potential to improve decision making, service delivery, program effectiveness, internal management, efficiency, and public accountability through performance management programs. Performance measurement became a requirement for most federal agencies with the creation of the Government Performance and Results Act of 1993. This act required each federal agency to develop a strategic plan that would include performance measurement aspects (16).

Currently, there are no federal requirements for MPOs to meet system-wide performance measures but state and local officials are wasting no time in examining ways to develop their own internal and external measures (17). Initiatives taken by states and localities demonstrate the positive impact performance measures can have on improving overall transportation system performance. MPO officials who have been successful at incorporating performance measures into the transportation planning process have found:

- Greater accountability about how funds are spent.
- Improved transparency to ensure public involvement and understanding.
- An assessment of “system” performance, rather than individual projects.
- A refocusing of decision making on outcomes.
- Increased attention to cost-effectiveness.

There are also other ways in which MPOs could benefit from using a performance-based approach. Performance measures could be used to improve communication with the public and add transparency to long-range transportation processes. The performance-based approach could also connect short-term transportation programs and project implementation decisions with long-term regional vision plans and better inform policy board decision making. For example, after working with local stakeholders, the Chicago Metropolitan Agency for Planning (CMAP) refined and adopted over 200 regional indicators covering issues ranging from transportation to civic involvement. These new indicators will enable transportation officials to communicate and engage with the public current transportation issues as well as a transportation vision for the future. The Delaware Valley Regional Planning Commission (DVRPC) uses “dashboard”

indicators to communicate to the public progress toward achieving the goals established in its long-range transportation plan.

Performance measures can also be used to better connect short-term transportation programming and project implementation decisions with long-term regional vision plans and goals. Agencies can use performance measures to decide which projects are included in the short-range TIP and to ensure selected projects reflect the goals adopted in the long-range transportation plan. For example, the Atlanta Regional Livable Centers Initiative (LCI) provides an opportunity to link short-term investment decisions with its long-term regional goals. The LCI encourages local governments to plan strategies that link transportation improvements with land use development strategies to create livable communities consistent with long-term transportation planning goals. Innovative performance measures are used for LCI project selection, such as requiring transit-supportive zoning in local land use plans to qualify for capital grants (18).

Performance measures can also be used to inform better MPO board decision making. For example, the Southern California Association of Governments (SCAG) uses performance measures to streamline transportation decision making. The SCAG board called for incorporating federal planning factors into its performance measures in order to create a more explicit link between federal priorities and local priorities. Southeastern Michigan Council of Governments (SEMCOG) uses a trade-off tool to better inform board decision making. SEMCOG shared information with its various committees about the extent and condition of the existing transportation system, how infrastructure is generally funded, and the average cost for maintaining the infrastructure (19).

Some MPOs are seeking attempting to overcome a number of challenges when seeking to integrate performance measures into their short- and long-term transportation planning processes. Portland Metro initially identified over 100 potential measures that support the goals and objectives of its Regional Transportation Plan (RTP). After encountering problems with collecting data for so many measures, Metro officials sought to focus its performance analysis on a smaller number of useful measures. Now, Metro has identified a total of 10 performance measures that best support the specific goals and objectives of the 2035 MTP. Also, traditional performance measures such as pavement conditions and asset management principles are easy to measure while others are more difficult to define and quantify and have not been widely adopted into use. For example, the Atlanta Regional Commission sought to develop its next RTP around the vision of sustainability, but transportation officials have cited that the most significant planning challenges they face is how to develop performance measures to incorporate these hard-to-measure issues into the planning process (20). Finally, developing an effective performance measurement approach takes time and capacity building. Each time the SCAG begins an update to its RTP, it revises its performance measures approach to reflect the lessons learned from prior experiences (21).

In reality, transportation agencies have used performance measures for many years and are often the guinea pigs for other public agencies. For example, the city of Charlotte, North Carolina, pioneered the use of the balanced scorecard in the public sector and the Charlotte Department of Transportation was the first city agency selected to pilot test the balanced scorecard application (22). However, the U.S. Congress is currently formulating proposed legislation for the re-authorization of the Federal Surface Transportation Program, and it is likely that new mandates for incorporating performance measures might be on the horizon. Therefore, states and MPOs could benefit by getting ahead of the curve by examining a performance-based transportation planning approach. As federal, state, and local revenue sources continue to decline, MPOs could begin to get smart by using performance measures to more effectively set goals, detect and correct problems, manage and improve processes, and document accomplishments.

National level research has produced guidance for performance measurement programs. Based on performance measurement programs in 12 DOTs and MPOs, Report 446 from the National Cooperative Highway Research Program (NCHRP) suggests that a successful performance measurement program should (23):

- Begin with measures that are easy to implement.
- Have commitment from top-level leadership.
- Have the support of career-level managers.
- Coincide with creation of a ‘performance measurement culture’ and employee accountability.
- Link measure results with decision making and actions.
- Include widespread responsibility for data collection, management, and analysis.
- Include cyclical reporting, especially to external stakeholders.

Best Practices among State DOTs

The increasing pressure for public accountability and transparency, combined with the need to maximize limited resources, have prompted many state DOTs to adopt performance-based management programs. Some states have been successful at integrating such performance measures into the transportation planning process. One example of an integrated approach toward performance measurement is by the Montana State DOT. This process provides a method to develop an optimal funding allocation and investment plan based on strategic highway system performance goals and the continual measurement of progress toward meeting these goals. The Minnesota Department of Transportation has established 10 policies in the statewide plan. Each policy has related performance measures and targets. The department is now working on establishing priorities among these policies. Twenty-year targets have been set for the various performance measures. The targets have been established on the basis of customer expectations, engineering, and other factors (22). The Minnesota Department of Transportation’s district

planning process focuses on a 2008 to 2030 horizon. Two scenarios are included. The first is the performance-based plan, which includes the investments needed to meet targets by 2023. The second is the fiscally constrained plan, which includes priorities based on forecast revenues. System preservation is a top priority at the district level. Another priority is to allocate resources in constrained plans to meet pavement targets by 2014 and to make progress toward bridge targets by 2023.

Long-range planning initiates the process of setting specific project needs and can assist in preparing for project issues. Many state DOTs are recognizing specific projects in their long-range planning efforts. California Department of Transportation (Caltrans), for example, sets its own objectives to measure the outcome of its planning process. For example, the DOT may work to create an outcome that calls for a connected multimodal system that meets specific productivity measures (24). Managing stakeholder planning is also an integral component to planning and programming for state DOTs.

Florida DOT works with local elected officials to determine their accessibility to projects and planning. Because the planning process can serve as the framework for decision makers, it is important to know if they have complete access to the information they need, and if they easily can interpret the information. These are critical elements that contribute to their satisfaction or dissatisfaction with the effectiveness of the planning process. Finally, because the overall performance of the transportation system relies on multiple parties, state DOTs are developing methods and techniques that create a shared accountability system for performance among their system partners. For example, Washington State DOT's shared accountability with its 11 MPOs has led the MPOs to be more accountable to their customers. Florida DOT is working with its 26 MPOs on preservation of the system in order to address capacity. This will allow the DOT to use its long-range revenue forecast to inform MPOs on how funding will be allocated. The governor of California requires Caltrans to create a shared-accountability system to benefit the health of the state. This initiative will allow the DOT, 19 MPOs, and 43 regional planning agencies to discuss cross-cutting issues. In addition, the DOT is working to include pavement management system guidance in its statewide plan.

State of Practice among MPOs around the U.S.

Many MPOs around the United States have demonstrated key successes in transportation planning and operations. Appendix A contains the results from a set of National MPO case studies performed as part of this project. According to data collected in a recent best practices MPO survey, the following five strategies are considered the best approaches for maximizing effectiveness (2):

- Reaching out to local officials.
- Building trust with quality work.
- Hiring and retaining competent staff.

- Using innovative, interactive public involvement techniques.
- Focusing funds on priority projects.

Various techniques were cited by MPO officials as key reasons to their success. One key aspect toward improving effectiveness was the ability for MPO executives to reach out to local officials in member jurisdictions. For example, one MPO official cited efforts to embrace partnerships with local counties, transit agencies, and the state transportation agency was a critical component in helping facilitate agreement and resolutions and improved their effectiveness (2). A Vermont MPO executive director believes that it is important for MPO officials to communicate clearly and directly with local government officials during the transportation planning process. Some MPO officials in North Dakota have earned respect of their planning staff through hard work and an earnest desire to innovate. Still, other MPO officials believe that broad public involvement is essential to doing a good job. One Virginia MPO director mentioned that their approach to public involvement, which included training community members to conduct workshops, was a direct contributor to ensuring that they delivered transportation projects that their constituents wanted. Finally, many MPO officials noted that the ability to apply funds strategically was crucial to ensuring their success. Several Washington State MPO officials noted that staying focused on the most important transportation issues, and utilizing technology were all critical components to success. Ultimately, MPOs around the U.S. have found that by bringing together *all* stakeholders to address only critical transportation projects will generally lead to a successful transportation planning process.

In the use of performance measures to describe the success of the transportation system, research has shown that the input of the system user is extremely important. Publicized performance measures are what the public actually sees in regards to the progress that MPOs are making with their allocated funds and public input can help them better understand movement toward goals and objectives (25). Societal interest has been shown to peak as the public can easily comprehend what is being measured and how it is directly concerning to the user (26). The question then arises, are MPOs choosing their performance measures to serve the public? Studies have repeatedly shown that common performance measures are important to the system user, including: travel time, traffic density or maneuverability, safety, and value of travel information (27).

Review of Texas MPOs

Most MPOs in Texas receive a much smaller percentage of their funds from local jurisdictions and as a result resources tend to be limited. Many Texas MPOs receive the minimum amount of funding allowable under state and federal laws. Small MPOs in Texas are especially vulnerable to the lack of local funding for transportation planning. A survey conducted in 2002 found that despite differences in geography, funding, political climate, and transportation issues, small Texas MPOs experienced many of the same challenges. MPO officials noted that tasks such as land use forecasting and travel demand modeling require an investment of time and an

experienced staff that is competent in the technical skills of planning (2). However, not all solutions require additional funding. Enhanced communication and cooperation with stakeholders, strategic project prioritization, and innovative reorganization of planning staff could be how Texas MPOs seek to solve planning challenges for the future.

A preliminary scan of Texas MPOs was conducted to assess the prevalence of agency performance measurement and to prepare for the surveys described in Chapter 3. During this preliminary survey, information was also gathered about the agency's strategic planning/goal setting process – whether the agency aligns its goals with those of larger statewide relevance (such as TxDOT's goals, or goals of other state agencies), or uses performance measurement to assess progress toward the goals. The results from this Texas MPO study are presented in Appendix B.

Concluding Remarks

MPOs across the United States are taking innovative approaches toward improving their decision-making capabilities and performance. But many transportation agencies today continue to struggle with balancing between building vision and innovation and managing normal day-to-day operations. In addition, ensuring cooperation among all stakeholders continues to be a formidable challenge. With new federal initiatives that will likely shift future transportation funds away from highways and toward multimodal transportation options, it is likely that the role of the MPO will continue to increase. Yet with decreasing transportation revenues from all levels of government, performance measurement seems to be the only likely solution.

CHAPTER 3 – TEXAS MPO CASE STUDIES

While the research and findings from this project are applicable for MPOs around the United States, this project focused on MPOs in Texas. There are 25 MPOs in Texas, ranging from the Dallas-Fort Worth MPO, that serves an urban population of approximately 4.5 million, to the Sherman-Denison MPO that has a population slightly over 56,000 (28). In the Texas context, there are extensive guidelines provided on the role of MPOs and TxDOT in the context of metropolitan transportation planning (29).

As part of this project, representatives from MPOs throughout Texas were interviewed regarding their understanding, use, and opinions of performance measures within their organization. The consent process and survey questions were reviewed and approved by Texas A&M University System's Institutional Review Board. Appendix C lists the interview questions, and Appendix D contains detailed responses from each of the MPOs. This chapter highlights the findings from three Texas MPOs that had a performance measurement program in place that was represented in their long-range planning documents.

Capital Area Metropolitan Planning Organization (CAMPO)

Located in the Austin, TX area, CAMPO has a performance measurement program in place that is documented in their MTP. According to the 2010 Census the CAMPO service area included 1,603,952 persons. The MTP included 31 performance measures that CAMPO tracks and reports to the public (shown in Figure 2). They also have four major categories under which each performance measure is grouped including: system effectiveness, economic impacts, environmental impacts, and social equity. Those major categories could be used in creating a performance measurement program. Within those major categories exist subcategories that further refine the performance measurements and their purpose. In order of the four major categories listed above the sub categories are: improve mobility, improve accessibility and improve system performance; maximize affordability, support economic development, and support freight movement; minimize air pollution and minimize resource use/impact; and maximize equity and increase safety.

	#	Measures	2010	2035	No Build	
System Effectiveness	Improve Mobility	1	Average Freeway Speed	47.7	38.0	34.4
		2	Average Network Speed	38.6	33.3	30.0
		3	Percent Congested	8.31%	22.21%	28.30%
		4	Vehicle Hours of Delay Per Person during 24 hours	0.12	0.3	0.44
	Improve Accessibility	5	Number of roadway system intersections	2,201	2,667	2,201
		6	Transit Stops	5,467	6,588	5,467
		7	Number of intermodal stations	21	49	21
		8	Percent of fixed guideway and rapid bus miles serving high density areas	75%	85%	88%
		9	Population within half mile transit	41.3%	40.21%	32.85%
	Improve System Performance	10	Vehicle Hours Traveled Per Person during 24 hours	0.6	0.78	0.93
		11	Percent Non-SOV Trips	44%	44%	44%
		12	No. transit trips	158,377	275,341	222,748
		13	Vehicle Miles Traveled Per Person during 24 hours	24.20	23.01	22.44
		14	Average Home-base work trip time	14.04	14.65	15.27
	#	Measures	2010	2035	2035 on 2010	
Economic Impacts	15	Average private cost per trip	1.51	2.37	2.95	
	Support Economic Development	16	Employment within one-half mile of fixed-guideway transit, rapid bus, and limited access roadways	732,138	1,424,804	1,288,757
		18	Percent of population in high density traffic analysis zones	79.5%	90.3%	90.3%
		19	Square miles of redevelopable or vacant, low sensitivity land within 1/2 mile of fixed guideway transit.	7	88	7
	Support Freight Movement	20	Avg Trip to Airport (min)	16.76	16.34	17.5
		21	Travel time for through freight traffic.	96.13	142.24	162.43
	#	Measures	2010	2035	2035 on 2010	
Environmental Impacts	Minimize Air Pollution	22	Total VOC	24.59	19.17	19.57
		23	Total NOx	42.14	14.33	14.22
		24	Total Greenhouse Gas Emissions (CO, CO2, CH4)	24,744.68	33,283.73	32,674.13
	Minimize Resource Use/Impact	25	Miles of new roads and transit intersecting high sensitivity areas	0	53.2	0
		26	Miles of new roads and fixed guideway transit adjacent to and intersecting vacant land	0	810	0
	#	Measures	2010	2035	2035 on 2010	
Social Equity	Maximize Equity	27	Percent EJ Pop within 1/2 mile of transit	73.01%	71.69%	64.13%
		28	EJ Average Trip Length	13.28	17.49	21.16
		29	Transit mode share	2.40%	2.33%	1.88%
	Increase Safety	30	Miles of improvements to "high crash" corridors	0	148	0
		31	Miles of Improvement to hurricane evacuation routes (and links to hurricane evacuation routes)	0	94	0

FIGURE 2 Performance Measures Used by CAMPO

Harlingen – San Benito Metropolitan Planning Organization (HSBMPO)

While much smaller than CAMPO with a 2010 population of 153,819, the HSBMPO is still using performance measures. HSBMPO with its small staff has decided at this time to work with the performance measures that are provided to them by their local transit agency. Since the transit agency is required by federal law to collect and report certain measures to the Federal Transit Administration (FTA) for inclusion in the National Transit Database (NTD), the MPO can benefit from those same measures to benefit the MPO. HSBMPO has taken the focus of their performance measurement program specifically toward public transportation. Having these performance measures allows the MPO to hold the transit agency accountable and helps the MPO partner with the transit agency to plan future route changes or additions. The following list is the performance measurements that are listed in the MTP:

- a. Increased patronage of existing services.
- b. Increase in the potential demand for transit.
- c. Total population in neighborhoods of high transit need.
- d. Demographics of the Harlingen-San Benito area.
- e. Population growth in areas that are distant from the center cities.
- f. Location of commercial development.
- g. Congestion at the industrial complexes, medical center, and TSTC campus.
- h. Increased awareness and interest in transit as a recruitment tool.
- i. Regional growth.

Although some of the measures are broad and difficult to quantify, the following goals and objectives are also listed in the MTP, which have inherent performance measures tied to them.

Goal 1: Provide for Safe Travel

Objective: Reduce potential for traffic accidents and provide for increased travel safety.

Goal 2: Reduce Travel Time and Congestion

Objective: Reduce traffic congestion and travel time in and around the Harlingen- San Benito MPO area.

Goal 3: Enhance Aesthetics of the Transportation System

Objective: Integrate the transportation system with the aesthetic qualities of the landscape and historic sites.

Goal 4: Encourage International Trade

Objective: Incorporate economic and development considerations to increase accessibility and mobility of people, freight, and international trade.

Goal 5: Coordinate with Land Development Needs

Objective: Provide accessibility to existing and anticipated patterns of development throughout the Harlingen-San Benito MPO area while preserving resources.

Goal 6: Incorporate Intermodalism

Objective: Integrate the various modes of transportation, particularly roadways (private auto, trucking, and public transit), railroad, bikeway, airports, pedestrian, and seaport.

Goal 7: Develop a Transit Transportation System

Objective: Continue to monitor the Assessment of Public Transportation Needs and Transit Plan and the newly developed Harlingen-San Benito Express system for future expansion.

Goal 8: Emphasize the Preservation of the Existing Transportation System

Objective: Use applicable monitoring systems to monitor and evaluate the conditions of the transportation system.

Goal 9: Implement a policy requiring a minimum acquisition of 75% of the necessary right-of-way before a project can be included in the Transportation Improvement Program

Objective: Ensure the feasibility of project implementation and distribution of allocated construction funds in an efficient manner.

HSBMPO is excited for new opportunities in the field of planning with performance measures and took the first step with the performance measures that they had from their local transit agency to begin the process.

Waco Metropolitan Planning Organization (Waco MPO)

The Waco area with its 2010 population of 234,906 has an active performance measurement program. The following principles and objectives are listed in the MTP. Each objective has a corresponding performance measure that is quantifiable.

Principle 1: Maintain existing transportation facilities

Objective 1-1: Rehabilitate all roadways rated with a condition of poor or were constructed/reconstructed prior to 1990.

Objective 1-2: Perform adequate preventative maintenance on all other roadways.

Objective 1-3: Replace or rehabilitate all structurally deficient or functionally obsolete bridges.

Objective 1-4: Replace public transportation rolling stock every 10 years.

Objective 1-5: Reconstruct all sidewalks which cannot accommodate wheelchairs.

Principle 2: Address serious safety and security problems

Objective 2-1: Reduce total crashes by 10%.

Objective 2-2: Reduce red light running crashes by 25%.

Objective 2-3: Reduce fatal, incapacitating, and non-incapacitating injury crashes by 10%.

Objective 2-4: Provide safe pedestrian connections between all elementary, intermediate, and middle schools and residential neighborhoods within 1 mile.

Objective 2-5: Provide safe, well lit shelters along Waco Transit's fixed route system.

Principle 3: Maximize the use of existing transportation facilities

Objective 3-1: Improve Level of Service for all arterials and expressways to "E" or better.

Objective 3-2: Improve incident clearing time on expressways and arterials to an average of 30 minutes or less.

Objective 3-3: Retrofit all arterial highways to meet TxDOT access management standards.

Objective 3-4: Adopt regional ITS architecture and deploy ITS systems on regional freeways, principal arterial, and selected minor arterials.

Principle 4: Preserve the region's air quality and environment

Objective 4-1: Increase percent of regions workers walking or bicycling to work or school to 7%.

Objective 4-2: Increase total annual boardings for public transportation within the region to 1.5 million.

Objective 4-3: Develop interregional passenger rail services as an alternative to IH-35.

Principle 5: Support the region's economic development efforts

Objective 5-1: Employers with more than 100 employees should have direct access to a minor arterial or larger facility and the level of service for that facility should be equal to or better than E.

Objective 5-2: Waco Transit's fixed route system should provide walking access* to 80% of employers with more than 100 employees.

Objective 5-3: Employers with more than 100 employees should have pedestrian infrastructure connecting their location with the Waco Transit fixed route system.

Objective 5-4: Waco's transportation system should be developed in such a way to encourage most future development to occur within existing nodes of development and

provide walking access between new residential development and most basic municipal and commercial services.

*Walking access defined as access within 0.25 miles with sidewalk connections.

The MTP also lists the following as performance measures that are recorded and used in the long-range planning process.

- a. Employment.
- b. Demographics.
- c. LOS.
- d. Vehicle hours of delay.
- e. Facility age.
- f. Regional connectivity.
- g. Highway score.
- h. Crash data.
- i. Vehicle miles traveled.
- j. Bicycle suitability index.

General Trends and Observations

These case studies show that whether an MPO is experienced with performance measures or is developing a future program, examples exist, and guidance can be found from various sources. Each of these MPOs suggested references and sources that they used while creating their performance measurement program. Other MPOs throughout Texas use performance measures in part but do not have an existing performance measurement program.

Based on the information gathered from the responses, the following trends and commonalities were noted among the various MPOs. Overall, the MPOs' main concern in implementing performance measurement is the cost and time it would take from its already limited amount of funding and resources. Some MPOs seem weary of designing and implementing performance measure and do not fully understand the benefits the measures would have for their community. Overall, when asked what would be most beneficial in terms of resources and guidance for performance measures, MPOs requested clear, concise and user friendly implementation guides, and listing of best practice examples.

CHAPTER 4 – COMPILATION OF PERFORMANCE MEASUREMENT GUIDANCE AND BEST PRACTICES

Performance measurement is a process for evidence-based decision making and can be used to monitor progress toward long-term goals and objectives by MPOs. Incorporating successful performance measurement techniques could help to improve efficiency, performance, and relevancy of MPOs in the transportation planning process, as well as for project or investment prioritization. Based on the state of the practice assessment described in Chapter 2 and the interviews with Texas MPOs (described in Chapter 3), the following areas/themes were identified for performance measures relevant to MPOs:

1. Maintenance of the existing system.
2. Safety.
3. Traffic Congestion Mitigation.
4. Meeting Air Quality Standards.
5. Traffic Demand Management.
6. Increasing Public Participation.
7. Diversifying Mode Split.
8. Livability.

Performance measurement not only allows an MPO to track their progress and quantitatively account for their responsibility to their constituents but allows for more accurate planning, more efficient project prioritization and selection, and more beneficial fund allocation. Overall, the best practices in terms of performance measurement included defining major goals, followed by area-specific objectives and identification and implementation of performance measures.

The remainder of this chapter describes the steps involved in developing an effective performance measurement system, along with a list of resources and guidance available on the topic that will be useful to MPOs.

Defining Major Goals

MPOs with performance measurement programs in place defined major goals that the local area desired. These goals should be developed (if they do not already exist) in collaboration with stakeholders such as the public, transit agencies, municipalities, counties, cities, and even state governments. These goals can be similar to many visioning goals but need to be specific to transportation. Following is a list of suggested goals relevant to MPOs and the transportation system:

- Increase safety.
- Improve mobility.
- Improve system performance.
- Enhance the aesthetics of the transportation system.
- Maximize affordability.

- Support economic development and growth.
- Support freight movements.
- Minimize air pollution.
- Maximize equity.
- Incorporate intermodalism and multimodalism.
- Improve transit service.
- Preserve existing transportation system.

Define Area-Specific Objectives

Once the major goals are established and agreed upon, specific objectives should be defined to derive from the major goals. This step is also relevant in the case where existing goals (such as state-level goals) are used directly in the development of performance measures. This will allow more specified plans of action within the major goals. This process creates performance measures from the major goals that are determined to be most important in each area. Optimally various objectives will be defined within each major goal. A list of potential objectives follows:

- Improve LOS for all arterials to E or better.
- Reduce traffic congestion and travel time.
- Improve incident clearing time on arterials to an average of less than ____ (*desired time limit*).
- Increase percent of workers walking or biking to work or school to ____ (*desired percentage*).
- Increase public transit boardings.
- Reduce red light running crashes.
- Reduce fatal, incapacitating, and non-incapacitating injury crashes by ____ (*desired percentage*).
- Reduce total crashes by ____ (*desired percentage*).
- Perform preventative maintenance on all roadways.
- Replace or rehabilitate all structurally deficient bridges.
- Monitor system performance with ITS.
- Integrate various modes of transportation.
- Provide accessibility to existing and anticipated patterns of development.
- Provide public transportation to all citizens, within ¼ mile walk.

Define Performance Measures that Can Be Collected, Monitored, and Publicized

Performance measures should be developed based on the objectives. These performance measures are quantifiable measures that should be easily collected, monitored, and shared with the public with relative ease (not too technical). Each organization can determine the timeline for updating and collecting data for these performance measures, but again, choose measures that can be collected and monitored within the resources and staffing available. In the case of performance measures that do not directly define targets, targets or benchmarks may be set as appropriate. HSBMPO used only performance measures that were collected from the local transit

agency, this can be a good starting point since it does not require the MPO staff to collect data. Appendix E provides a list of performance measures that were found in the Texas MPO case studies conducted as part of this project. There are many more performance measures that can be used, and the research team encourages interested agencies to seek other resources for additional guidance.

Additional Guidance on Performance Measures for MPOs

The following guidance materials were identified as being useful resources for MPOs and other transportation agencies in implementing performance measurement.

- TRB Publications (Available on Transportation Research Board Website):
 - NCHRP Report 446 – A Guidebook for Performance-Based Transportation Planning.
 - NCHRP Report 618 – **Cost-Effective Performance Measures for Travel Time Delay, Variation, and Reliability.**
 - NCHRP Report 660 – **Transportation Performance Management: Insight from Practitioners.**
 - NCHRP Report 708 – Guidebook for Sustainability Performance Measures for Transportation Agencies.
 - TRB Conference Proceedings 26 – Performance Measures to Improve Transportation Systems and Agency Operations.
 - TRB Conference Proceedings 36 – **Performance Measures to Improve Transportation Systems.**
 - Transportation Research Circular E-C073 Performance Measures to Improve Transportation Planning Practice – A Peer Exchange.
- Guide to Sustainable Transportation Performance Measures (U.S. EPA) http://www.epa.gov/dced/transpo_performance.htm.
- Developing Sustainable Transportation Performance Measure for TxDOT’s Strategic Plan (TTI) <http://tti.tamu.edu/documents/0-5541-1.pdf>.
- The Collaborative Advantage (FHWA) http://ops.fhwa.dot.gov/publications/benefits_guide/index.htm.
- Planning for Operations Guidebook (FHWA) <http://ops.fhwa.dot.gov/travel/plan2op.htm>.
- A Primer on Safety Performance Measures for the Transportation Planning Process (FHWA) <http://safety.fhwa.dot.gov/hsip/tsp/fhwahep09043/>.

CHAPTER 5 – SUMMARY AND CONCLUSIONS

The aim of this project is to develop an understanding of current performance measurement practices and to develop guidance aimed at MPOs and other transportation agencies looking to incorporate performance measurement into their planning efforts. A review of existing literature and documents was conducted covering the use of performance measures among transportation agencies. The focus of this project is on MPOs in the Texas region, and interviews were conducted with MPOs throughout Texas. The findings indicated that MPOs are very interested in receiving guidance on performance measures and many are actively seeking guidance, training, and literature on the subject.

Performance measurement programs are beneficial to MPOs and many MPOs are seeking guidance on how to implement performance measurement/performance management as a part of the metropolitan transportation planning process. Producing the MTP is an important part of an MPO's function and performance measures can help shape MTPs and long-range planning efforts. MPOs that currently do not have performance measures in their MTPs and those looking to improve their current application of performance measures are seeking guidance on the types of performance measures and their application for various purposes. Small to medium sized MPOs that have limited staff and funding especially find it difficult to allocate the time and resources to create performance measurement programs from scratch.

The guidance in this report supports the use of performance measures in MPOs of every size. Among transportation agencies, MPOs play a very important coordinating role in the transportation planning process by bringing together various stakeholders in the transportation planning process, and by providing expertise and input for transportation decision making. However, individual MPOs differ vastly from one another and often do not have the authority to raise revenue or allocate funds. The MTP can be greatly enhanced through the use of a performance measurement program. MPOs often lack the resources to identify and use performance measures in their MTPs; this report provides guidance into the creation of a performance measurement program to aid MPOs.

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APPENDIX A: NATIONAL MPO CASE STUDIES

The use of performance measures by MPOs throughout the country was examined as part of this project. Information from recent conferences, reports, publications, and MPO websites was reviewed. Long-range transportation plans and other documents from MPOs were obtained and reviewed. Examples of the use of performance measures in MPO long-range transportation plans, freight plans, corridor plans, and other plans were identified (1, 2, 3).

This chapter highlights plans from eight MPOs currently using performance measures as part of their transportation planning process. The case studies provide a mix of large, medium, and small MPOs. Each case study summarizes the inclusion of performance measures in the long-range transportation plan or other plans. Information is presented on monitoring and reporting on the performance measures for some case studies. The MPO websites are also provided for additional information. Case studies are presented on the following MPOs.

- Mid-America Regional Council (MARC), Kansas City Metropolitan Area.
- Denver Regional Council of Governments (DRCOG), Denver Metropolitan Area.
- Metropolitan Transportation Commission (MTC), San Francisco Bay Area.
- Ohio, Kentucky, Indiana (OKI) Regional Council of Governments.
- Ames Area Metropolitan Planning Organization (AAMPO).
- Indianapolis Metropolitan Planning Organization.
- Delaware Valley Regional Planning Commission (DVRPC).
- San Diego Association of Governments (SANDAG).

MID-AMERICA REGIONAL COUNCIL (MARC)

Documents – Transportation Outlook 2040 and Transportation Guidebook 2040 Performance Measures Progress Report

Summary

MARC is the MPO for the nine-county Kansas City metropolitan area, which includes 120 cities. The area's population was approximately 2 million in the 2010 Census. The region covers 4,423 square miles.

MARC's long-range transportation plan, *Transportation Outlook 2040 (4)*, provides a framework for managing, operating, and investing in the Greater Kansas City's multimodal transportation system for several decades. Development of the plan, which was adopted in 2010, included extensive public and stakeholder participation. The plan includes a long-term vision for the region's transportation system, goals to be achieved by 2040, strategies and measures to achieve these goals, issues requiring more planning, and future transportation investments.

The plan outlines a vision for the region that is socially, environmentally, and economically sustainable. The nine goals included in the plan are linked to performance measures and desired trends. The performance measures are monitored to track progress toward meeting the goals.

Performance progress reports are being completed annually. The first progress report was issued in 2011 (5). Table A-1 highlights examples of the nine goals, related factors, and performance measures from the plan. There are 30 measures in the plan.

Table A-1. Examples of MARC Transportation Outlook 2040 Goals, Factors, and Measures

GOAL	FACTOR	MEASURE
Accessibility	Level of Transit Service	- Revenue service hours - Ridership
	Environmental Justice	- Percent of transportation investments in Environmental Justice tracts
Economic Vitality	Transportation Costs	- Combined transportation and housing costs as a percent of median income
Climate Change/ Energy Use	Vehicle Miles Traveled / Carbon Dioxide	- System-wide daily VMT/CO ² emissions
	Vehicle Occupancy	- Vehicle occupancy rate
Environment	MetroGreen Network	- Percent/miles of MetroGreen network completed
Place Making	Multimodal Options	- Modal balance (mode share)
Public Health	Ozone	- Ozone levels
	Physical Health	- Obesity rate
Safety and Security	Crash Fatality and Disabling Injuries	- Annual crash fatalities and disabling injuries
System Condition	Bridge & Pavement Condition	- Pavement condition - Bridge condition
System Performance	Level of Service	- Observed speed versus posted speed on the Congestion Management System network
	Congestion	- Percent of Congestion Management System network congested
	Travel Time	- Average commute time
	On-Time Performance	- On-time performance of transit system

Source: Transportation Outlook 2040 (4).

Five of the nine goals—accessibility, economic vitality, safety and security, system condition, and system performance—represent more traditional transportation goals that were included in previous MARC long-range plans. The factors and performance measures associated with these goals represent more standard approaches. For example, the factors and performance measures related to the safety and security goal focus on annual crash fatalities and disability injuries. The four remaining goals address newer or more non-traditional topics and are new to the MARC’s long-range plan. These goals focus on climate change/energy use, the environment, place making, and public health. The factors and performance measures associated with these goals also represent new areas for MARC. For example, one of the public performance measures is the obesity rate of residents, which has not previously been monitored. Table A-2 provides an example of the annual performance measures reporting summary. The annual summary utilizes historical and current data to assess progress toward meeting the identified goals. The annual report provides both a narrative description and summary tables to present the information. The measures, desired trends, and actual trends are highlighted in tables and described in the text.

Table A-2. Examples of MARC Annual Monitoring of Performance Measures

ACCESSIBILITY					
FACTOR	MEASURE	DESIRED TREND		ACTUAL TREND	
Level of transit service	Population within ¼ mile of fixed-route transit service	↑	Population living within ¼ mile of fixed-route transit stops	↓	-5.27% (2008–2010)
	Ridership	↑	Annual unlinked passenger trips ¹	↓	-9.22% (2008–2009)
	Revenue service hours	↑	Annual hours of operating service	↑	+7.15% (2008–2009)
Environmental justice	Transportation investment in environmental justice tracts ²	↑	Percent of total federal funds invested in environmental justice tracts	N/A	Awaiting data release in October 2011
ENVIRONMENT					
FACTOR	MEASURE	DESIRED TREND		ACTUAL TREND	
MetroGreen® network	Miles of MetroGreen® trails and greenways network	↑	Completed MetroGreen® network miles	↑	+3.48% (2009–2010)

Source: *Transportation Guidebook 2040 Performance Measures Progress Report (5)*.

Additional Information – <http://www.marc.org/2040/>

DENVER REGIONAL COUNCIL OF GOVERNMENTS (DRCOG)

Documents – **Metro Vision 2035 Plan, Metro Vision Regional Transportation Plan, and Measuring Progress: Regional Performance Measures and Indicators**

Summary

The DRCOG planning area covers the 10-county Denver metropolitan area, which is home to some 2.7 million residents. The *Metro Vision 2035 Plan (6)* provides a comprehensive framework that integrates regional growth and development, transportation, and environmental management. Initially developed in the mid-2000s, an updated plan was adopted in 2011. It presents an action agenda for guiding the region’s future. The plan builds on previous efforts including the Metro Vision Guiding Vision in 1992 and the Mile High Compact in 2000. The *2035 Metro Vision Regional Transportation Plan (2035 MVRTP) (7)* addresses the transportation components of the *Metro Vision 2035 Plan*. It guides the development and operation of a multimodal transportation system in the Denver region through the year 2035. The first 2035 MVRTP was completed in 2007. The updated 2035 MVRTP, which was adopted in 2011, incorporates sustainability principles and recent cost and revenue estimates. The public was involved in the development of the 2011 plan through scenario planning workshops, public meetings, “sustainability cafe” workshops, and public hearings.

The 2035 MVRTP includes policies and action strategies related to the various plan elements, which address congestion management, regional roadways, transit services, pedestrian facilities, bicycling facilities, multimodal passenger facilities, and freight facilities. System management and operational improvements, travel demand management, system preservation, safety, security, and aviation are also included.

The DRCOG monitors key indicators related to the goals in the *Metro Vision 2035 Plan*. The first indicators report was completed in 2005. The second report, *Measuring Progress: Regional Performance Measures and Indicators (8)*, was published in 2008. The report

examines the 23 indicators in the *Metro Vision 2035 Plan* addressing growth and development, transportation, and the environment.

The 23 indicators relate to specific goals in the plan. The report presents both a graphic summary using up, sideways, and down arrows, and a narrative summary to highlight trends and report progress. An up arrow means the indicator is moving in a positive direction consistent with the *Metro Vision* goals. A sideways arrow means there is no major trend or the indicator is only for baseline measurement. A down arrow means the indicator is moving in a negative direction away from the Metro Vision goals.

The report tracks the following five indicators related to progress on the transportation goals listed below. The goal and related policies and measures are presented, and the progress or lack of progress on meeting them is described.

- Funding of major transportation projects that add capacity to the system.
- Traffic congestion.
- Safety.
- Roadway surface and bridge conditions.
- Use of alternatives to driving alone.

The first goal—funding of major transportation projects that add capacity to the system—received a down arrow as transportation funding had not kept pace with the regional growth in population and travel. The report estimates that only a fraction of the needed capacity projects can be constructed based on current funding levels.

The second goal—traffic congestion—also received a down arrow. The report notes that based on data from DRCOG, the Colorado Department of Transportation (CDOT), the TTI Urban Mobility Report, and other sources, traffic congestion has continued to get worse.

The third goal—safety—received a sideways arrow because the crash rate increased, but the fatality rate decreased.

The fourth goal—roadway surface and bridge conditions—also received a sideways arrow. The percentage of state highways in good to fair pavement condition improved from 47 percent in 2000 to 70 percent in 2006. The sideways arrow reflects that future funding is insufficient to maintain the current conditions.

The fifth goal—use of alternatives to driving alone—received a sideways arrow. Transit ridership in the region increased with the opening of the southwest and southeast light rail transit (LRT) lines. Telecommuting has also increased in the region. The region has a lower share of carpooling than other metropolitan areas in the country, however.

Additional Information – <http://www.drcog.org/index.cfm?page=MetroVision>

METROPOLITAN TRANSPORTATION COMMISSION (MTC), SAN FRANCISCO BAY AREA

Documents – Plan Bay Area and Transportation 2035 – Change in Motion

Summary

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area. The region’s population is approximately 7 million.

Change in Motion – Transportation 2035 Plan for the San Francisco Bay Area (9) was adopted in April 2009. The plan vision supports a prosperous and globally competitive Bay area economy, provides for a healthy and safe environment, and promotes equitable mobility opportunities for all residents. The transportation vision in the plan focuses on the three “E” principles of the economy, the environment, and equity. Table A-3 presents the eight goals and related general performance measures associated with these three principles.

Table A- 3. MTC Example Performance Measures

"E" Principle	Goal	Performance Objective
Economy	Maintenance and Safety	Improve Condition of Assets Reduce Collisions and Fatalities
	Reliability	Reduce Delay
	Efficient Freight Travel	
	Security and Emergency Management	Reduce Security Vulnerability Improve Emergency Preparedness
Environment	Clean Air	Reduce Vehicle Travel
	Climate Protection	Reduce Emissions
Equity	Equitable Access	Improve Affordability
	Livable Communities	

Source: Plan Bay Area and Transportation 2035 – Change in Motion (9).

The plan includes more detailed performance measures for many of the measures listed in Table A-3. For example, more specific performance measures for the reduce collisions/fatalities measures are to reduce fatalities from motor vehicle collisions by 15 percent from today to 2035, reduce bicycle and pedestrian fatalities attributed to motor vehicle collisions by 25 percent (each) by 2035, and reduce bicycle and pedestrian injuries attributed to motor vehicle collisions by 25 percent (each) by 2035.

The MTC is in the process of finalizing a new long-range plan, called the Plan Bay Area (10). Ten new performance targets have been adopted as part of the new plan:

- The first performance target is to reduce per capita carbon dioxide emissions from cars and light-duty trucks by 15 percent by 2035, which is a statutory requirement in California.
- The second target is to house 100 percent of the region’s projected 25 year growth by income level without displacing current low-income residents.

- The third target is to reduce premature deaths from exposure to particulate emissions—10 percent for fine particulates and 20 percent for coarse particulates—achieving greater reductions in highly impacted areas.
- The fourth target is to reduce by 50 percent the number of injuries and fatalities from all collisions.
- The fifth target is to increase the average daily time walking or biking for transportation by 60 percent, for an average of 15 minutes per person per day.
- The sixth target is to direct all non-agricultural development within the urban footprint (existing urban development and urban growth boundaries).
- The seventh target is to decrease by 10 percent the share of low-income and lower-middle residents' household income consumed by transportation and housing.
- The eighth target is to increase gross regional product (GRP) by 90 percent—an average annual growth rate of approximately two percent (in current dollars).
- The ninth target is to decrease by 10 percent the VMT per capita and average per trip travel time for non-automobile modes.
- The final target is to maintain the transportation system in a state of good repair.

Additional Information – http://www.mtc.ca.gov/planning/2035_plan/

OHIO, KENTUCKY, INDIANA (OKI) REGIONAL COUNCIL OF GOVERNMENTS

Document – OKI Regional Freight Plan

Summary

The OKI region covers eight counties in three states. Cincinnati is the largest city in the region, which includes major Interstate truck routes and rail, river, and air freight components. The OKI Regional Freight Plan (*11*) focuses on enhancing the mobility of people and goods in the region, while encouraging economic development and mitigating adverse environmental impacts.

Development of the freight plan included public and stakeholder involvement, data collection and analysis, and a regional needs assessment. It also involved the development of freight performance goals, a freight performance framework, and the first iteration of suggested performance measures. The final draft plan was completed in August 2011.

The following five performance goals are included in the plan.

- Mobility and intermodal connectivity.
- Economic viability.
- Environment and public health.
- Safety and security.
- System preservation and condition.

The five freight performance goals are cross-referenced with the nine goals in the OKI *2030 Regional Transportation Plan* as presented in Table A-4.

Table A-4. OKI 2030 Plan Goals Cross-Referenced with OKI Freight Goals

OKI 2030 Long-Range Plan Goals	Proposed OKI Freight Goals
1. Safety	Safety and Security
2. Accessibility and Mobility Options	Mobility and Intermodal Connectivity
3. Environment	Environment and Public Health
4. Intermodal Connectivity	Mobility and Intermodal Connectivity
5. Efficient Management and Operation	Mobility and Intermodal Connectivity
6. System Preservation	System Preservation and Condition
7. Economic Vitality	Economic Vitality
8. Regional Security	Safety and Security
9. Land Use	Environment and Public Health

Source: OKI 2030 Regional Transportation Plan goals

The five goals were used as metrics in the freight plan. Goals, objectives, and key performance indicators were developed for the five metrics for each freight mode: trucks, rail, water, and air. For example, a water goal under the mobility and intermodal connectivity metric is to improve the movement of freight along the Ohio River. The objective for this goal is to maintain existing throughput. The related key performance indicator is the number of cargo tons moved on the river.

The future considerations section of the plan discusses the development of a freight performance management system to monitor progress toward meeting the goals and objectives. The freight plan notes the need for new data, tools, and technical skills to develop and maintain a freight performance management system. The importance of securing buy-in and ongoing support from private sector stakeholders, public agencies, and OKI policymakers and management staff is stressed. The need for agreement on data sharing between public agencies and with private freight carriers in all modes is also discussed.

Additional Information – <http://www.oki.org/>.

AMES AREA METROPOLITAN PLANNING ORGANIZATION (AAMPO)

Document – Ames Area MPO 2035 Long-Range Transportation Plan

Summary

The Ames Area Metropolitan Planning Organization (AAMPO) urbanized area covers 41 square miles, including the city of Ames, and has a population of approximately 52,000. The Ames metropolitan area was officially designated as an MPO in 2002, based on the results of the 2000 census.

The AAMPO 2035 Long-Range Transportation Plan (12) was adopted in 2010. The plan includes goals, objectives, transportation strategies, and performance measures. The public involvement process used in developing the plan included a community survey, focus groups, visioning workshops, alternatives development workshops, transportation concepts evaluation workshops, and public meetings and hearings.

The plan includes the following six goals:

- Develop a safe and connected multimodal network.
- Foster livability, quality of life, and sustainable development.
- Deliver context sensitive solutions.
- Support economic development.
- Maximize the benefits of transportation investments and provide efficient transportation service.
- Protect environmental resources.

Each goal has at least one objective and performance measure. The goals, objectives, and performance measures related to fostering livability, quality of life, and sustainable development and supporting area economic opportunities are presented in the following:

Goal – Foster Livability, Quality of Life, and Sustainable Development

Objective – Match the transportation system with the desired community development pattern.

Measure – Calculate the percent of new transportation projects that are consistent with the LUPP on an annual basis.

Objective – Link land uses with a multimodal network to reduce VMT traveled and enhance non-automobile modes as an efficient means of travel and a recreational opportunity.

Measure – Calculate the total VMT on the area’s roadway system each time the system-wide traffic counts are updated. Collect the total transit passenger miles on an annual basis.

Objective – Reduce overall system vehicular hours traveled and improve regional access and travel times for emergency response.

Measure – Conduct studies to determine average travel time for selected origin-destination sets.

Goal – Support Area Economic Opportunities

Objective – Develop a transportation system that provides desirable linkages to existing developments, new developments, re-developments, and supports economic drivers, such as the airport.

Measure – Percent of top 20 traffic analysis zones with the highest total employment that are served by all modes of transportation (roadway, bicycle/pedestrian, and transit) on an annual basis.

Additional Information – <http://www.cityofames.org/index.aspx?page=1068>

INDIANAPOLIS METROPOLITAN PLANNING ORGANIZATION

Document – Indianapolis Metropolitan Planning Area 2030 Long-Range Transportation Plan – Volume 1

Summary

The Indianapolis MPO includes seven counties in central Indiana. Indianapolis is the major city in the region, which has a population of approximately 1.3 million. The *Indianapolis Metropolitan Planning Organization 2030 Long-Range Transportation Plan (13)* includes a performance-based planning process. This framework includes developing goals and objectives, performance measures, and targets, as well as allocating resources and measuring reporting results.

The goals and objectives from the 2030 Long-Range Plan were reviewed in developing the 2035 plan. No major changes were made in the goals and objectives, which are presented in Table A-5.

Table A-5. 2035 LRTP Goals and Objectives

Goals	Objectives
Goal 1: Preserve, make safe, and improve utilization of the existing transportation system.	<p>Objective 1: Maintain the existing network in a state-of-good repair.</p> <p>Objective 2: Use cost-effective transportation system management, transportation demand management, intelligent transportation system, and operational improvements and techniques to increase the efficiency and safety of the existing transportation system.</p>
Goal 2: Enhance regional transportation mobility and accessibility.	<p>Objective 1: Provide cost-effective transportation improvements to address identified mobility problems and reduce the growth in traffic congestion.</p> <p>Objective 2: Provide appropriate travel options and choice for all users, including auto, transit, paratransit, bicycle, and pedestrian.</p> <p>Objective 3: Improve accessibility to regional employment and activity centers.</p> <p>Objective 4: Enhance connections between modes.</p> <p>Objective 5: Support commercial goods movement within and through the region.</p>
Goal 3: Coordinate transportation system improvements to be consistent with regional values.	<p>Objective 1: Partner with state and local jurisdictions to ensure transportation and land use are complementary.</p> <p>Objective 2: Enhance transportation system sustainability and minimize impacts of the transportation system to the built and natural environment.</p> <p>Objective 3: Support regional economic development.</p> <p>Objective 4: Support transportation security.</p>

Source: *Indianapolis Metropolitan Planning Organization 2030 Long-Range Transportation Plan (13)*.

Table A-6 presents the performance measures contained in the 2035 plan. The performance measures may be applied at the network, corridor, or project level, as well as used for monitoring the long-range plan.

Table A-6. 2035 LRTP Performance Measures

Goal	Performance Measure	Plan Development			
		Network Analysis	Corridor Analysis	Project Analysis	Plan Monitoring
Goal 1: Preserve, make safe, and improve utilization of the existing transportation system.	Percent of pavement in good condition	X			X
	Percent of bridges in good condition	X			X
	Crash rates		X		
Goal 2: Enhance regional transportation mobility and accessibility.	Reduction in peak-period delay	X		X	X
	Volume to capacity ratio		X		
	Intercorridor connectivity		X		
	Intracorridor connectivity		X		
	Potential trips served by transit service			X	
Goal 3: Coordinate transportation system improvements to be consistent with regional values.	Importance to freight mobility		X		
	Changes in population and employment		X		
	Industry cluster support			X	
	Land use intensity			X	

Source: Indianapolis Metropolitan Planning Organization 2030 Long-Range Transportation Plan (13).

Additional Information – <http://www.indympo.org/Plans/Regional/Pages/current.aspx>

DELAWARE VALLEY REGIONAL PLANNING COMMISSION (DVRPC)

Documents – Destination 2030: The Year 2030 Plan for the Delaware Valley, Tracking Progress Toward 2030 – Regional Indicators for the DVRPC Long-Range Plan, and Connections 2035 – The Regional Plan for a Sustainable Future

Summary

The DVRPC is an interstate, intercounty, and intercity agency that provides continuing, comprehensive, and coordinating planning to shape a vision for the future growth of the Delaware Valley region. The DVRPC covers four counties and the city of Philadelphia in Pennsylvania and four counties in New Jersey. The DVRPC is the designated MPO for the area.

Connections 2035 – The Regional Plan for a Sustainable Future (14) is the current long-range plan for the region. The previous long-range plan was *Connections 2035 – The Regional Plan for a Sustainable Future (15)*. *Connections 2035* establishes four key strategies for realizing a sustainable future for the region. These strategies are managing growth and protecting natural resources, developing livable communities, building an energy-efficient economy, and establishing a modern transportation system that serves all modes. The plan’s by-line is re-invest, re-develop, and re-vitalize.

Connections 2035 includes a number of goals and policies related to the strategy of establishing a modern transportation system that serves all modes. Goals include re-building and maintaining the region’s transportation infrastructure, ensuring adequate funding, and ensuring that transportation investments support the long-range plan goals. Other goals are creating a safer transportation system, creating a more secure transportation system, increasing mobility and accessibility, reducing congestion, and limiting transportation impacts on the natural environment.

The DVRPC has tracked progress toward attaining the goals contained in the long-range plans since the late 1990s. Tracking Progress is an ongoing outcome-based effort to align DVRPC’s planning and implementation activities, to help guide investments, and to help achieve the adopted vision and goals. Tracking Progress includes the collection and analysis of key time series data. *Tracking Progress 2030: Regional Indicators for the DVRPC Long-Range Plan (16)* is the most recent report documenting progress toward meeting the goals.

The report documents the development of a set of meaningful and practical indicators and performance measures to track progress on meeting the *Destination 2030* goals. The criteria developed to use in selecting indicators include the following:

- Cover the entire nine-county DVRPC region.
- Be readily acquirable.
- Have a plausible prospect of being updated regularly and frequently in the future.
- Measure results, if possible, rather than inputs or processes.
- Focus, where reasonable, on things DVRPC and its partners have some ability to affect.

The initial set of indicators focused on growth management, urban revitalization, economic development, transportation, and equity and opportunity. The indicators are presented in a table format. The table includes the measure tracked, and a dashboard dial with five positions or outcomes. Red indicates a negative trend, yellow signifies mixed results, and green signals a positive trend. Mixed results are further classified as trending toward green or red.

Table A-7 presents the summary table for transportation. As illustrated by the dashboard dial on the table, two measures—transit ridership increases and the DVRPC’s Transportation Improvement Program (TIP) investments in keeping with the long-range plan goals—are in the green. The congestion measure is in the yellow toward the green, reflecting stable levels of congestion, but increases in VMT. The reducing vehicle crashes and fatalities measure is in the middle of the yellow, reflecting a reduction in fatalities per million VMT, but an increase in the overall number of crashes. The road maintenance measure is leaning toward the red side,

reflecting the slight increase in road miles considered deficient, which is attributed to the New Jersey Department of Transportation (NJDOT’s) stricter standards. Three measures, the number of structurally deficient bridges, the number of people driving alone to work, and the number of drivers and miles driven, are all in the red zone.

Table A-7. Summary Table – Transportation

What We Track	How is the DVRPC Region Performing?	Trend
TR 1: Have vehicle crashes and fatalities declined?	Between 2001 and 2005, the DVRPC region experienced an 18% decrease in fatalities per million VMT and less than 1% decrease in all crashes per million VMT. However, the overall number of crashes rose by 4.6% during this same time period.	
TR 2: Is congestion getting worse?	Congestion appears to be stable – neither improving nor worsening, though VMT has increased.	
TR 3: Is transit ridership increasing?	While transit ridership has experienced some fluctuation, it has increased in the last 5 years.	
TR 4: Has the number of deficient bridges in need of rehabilitation or replacement decreased?	The number of bridges identified as structurally deficient in the DVRPC region has remained steady, but remains twice as high as the acceptable level set by FHWA in its current strategic plan.	
TR 5: Are roads better maintained?	The region saw a slight increase in road miles considered to be deficient, mostly due to NJDOT's stricter standards.	
TR 6: Are fewer people driving to work alone?	The number of people driving to work by themselves continues to increase and is now 73% of all commuters.	
TR 7: Are people driving less?	There are more cars and more drivers driving more miles every year in the region. The region appears to be more auto-dependent.	
TR 8: Are DVRPC's TIP investments in keeping with the LRP goals?	Approximately 97% of the mapped 2007-2010 TIP project funding supports the Long Range Plan and its stated goals.	

Source: Tracking Progress Toward 2030 – Regional Indicators for the DVRPC Long-Range Plan (16).

Additional Information – <http://www.dvrpc.org/LongRangePlan/RegionalIndicators/>

SAN DIEGO ASSOCIATION OF GOVERNMENTS (SANDAG)

Documents – MOBILITY 2030: The Transportation Plan for the San Diego Region and Draft 2050 Regional Transportation Plan

Summary

The SANDAG region includes 18 cities and San Diego County. The population of the county is approximately 3 million. San Diego is the largest city in the county with some 1.5 million residents.

MOBILITY 2030 focused on the four components of mobility: land use, systems development, systems management, and demand management. The regional measures of performance correspond to the plans seven policy goals, which address mobility, accessibility, reliability, efficiency, livability, sustainability, and equity. Policy objectives are identified for each goal. The two policy objectives for the livability goal are: put transit where it works—focus transit improvements in areas with compatible land uses that support an efficient transit system, and smart growth carrots—use regional transportation funding as an incentive for smarter land uses. *MOBILITY 2030* includes performance measures for the livability goals. The performance measures for the livability goal are homes within one-half mile of a transit stop, jobs within one-

fourth mile of a transit stop, and work trips modes split (drive alone, carpool, transit, and bike/walk/other). The performance measures were used to assess the current condition, the “no build” 2030 alternative, and the 2030 mobility alternative, as well as ongoing monitoring. The *Draft 2050 Regional Transportation Plan* focuses on a transportation system that enhances the quality of life, promotes sustainability, and offers more mobility options for people and goods. The plan addresses the forecast 1.2 million additional residents, half a million new jobs, and 400,000 new homes. The plan focuses on a more sustainable future by integrating land use, housing, and transportation.

The *Draft 2050 Regional Transportation Plan* includes revised and updated regional performance measures to match the new focus. For example, economic impact performance measures include the average number of jobs per year, the average amount per year of gross regional product in millions of dollars, and the average payroll in millions of dollars per year.

Additional Information:

<http://www.sandag.org/index.asp?projectid=197&fuseaction=projects.detail>

Appendix A - References

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APPENDIX B: PRELIMINARY SCAN OF TEXAS MPOS

A preliminary scan of Texas MPOs was conducted to find information about performance measures being incorporated into the planning process and to identify potential interviewees. The findings from this scan are tabulated below.

MPO Name/ Region	Documents Available/ Reviewed	Details of Performance Measures/Programs	Contact person for Potential Interview (name, job title, email, phone)
Abilene MPO	2035 MTP	They probably use performance measures, RTP says their goals are to increase safety, decrease emissions, be consistent with state goals, integrate modes, preserve existing transportation system. If they don't use performance measures, they could definitely benefit from implementing them to quantify these goals and achievements.	Robert R. Allen <i>Transportation Planning Director</i> robert.allen@abilenetx.com 325-676-6243
Amarillo MPO	2035 MTP	-LOS is the only explicitly mentioned performance measure. -ADT also (used to find LOS). -The State's Safety Improvement Index is also mentioned.	Travis Muno <i>MPO Senior Planner</i> travis.muno@ci.amarillo.tx.us 806-378-4219
CAMPO/ Austin	2035 MTP	-Public outreach and Education (not a whole lot listed explicitly, but seems like they have a lot of performance measures behind the scenes)	Stevie Greathouse <i>Principal Planner</i> stevie.greathouse@campotexas.org 512-974-9715
SETRPC/ Beaumont	2030 MTP	Only Performance Measures for Transit are provided: -Service effectiveness (APT [annual passenger trips] per vehicle revenue mile (VRM) and vehicle revenue hour [VRH]) -Service Efficiency (decrease operating expenses per VRH and VRM) -Cost effectiveness (decrease operating expenses per APT and passenger mile) This MPO probably uses more performance measures or would know how to use them efficiently if they were provided or encouraged	Bob Dickinson <i>Director, Transportation & Environmental Resources Division</i> bdickinson@setrpc.org 409-899-8444 ext 7520
Brownsville MPO	2035 MTP	-Traffic Flow data -Crash data -Cost/benefit index -Texas Congestion Index	Alfonso Vallejo <i>Transportation Planner</i> http://www.ci.brownsville.tx.us/contact.asp?dept=22 (go to this site to send an email, no direct email is given) 956-548-6150

BCS MPO/ Bryan – College Station	2035 MTP	-LOS -Travel Times -Traffic Volumes -Crash Data -Criteria for highway project prioritization (crashes, severity, connectivity analysis, LOS)	Linda LaSut <i>Transportation Director</i> llasut@bcsmo.org 979-260-5298
Corpus Christi MPO	2035 MTP	-Crash Data -Document states that the MPO works with the 31 specific performance measures provided by the FY2007 Texas Highway Safety Performance Plan (TxDOT), though not listed -Speed data -Congestion index -Travel time and delay -Safety Improvement Index	Brigida Gonzalez <i>Transportation Development Specialist</i> bgonzalez@cctxmpo.us 361-884-0687 (not direct)
NCTCOG/ Dallas	2030 MTP and “Progress North Texas 2010”	-Financial measures -Number of specific projects measures -Ozone amounts -Dollars invested in infrastructure -Crash Statistics -Ridership Statistics -Capacity investments -Maintenance investments	Dan Lamers <i>Senior Program Manager at NCTCOG</i> dlamers@nctcog.org 817-695-9263
El Paso MPO	2035 MTP	-Average Speed -Ridership per Revenue Hour (Transit) -Crash data -Emissions data -Level of Mobility (LOM)	Roger Williams <i>Transportation Planner</i> rwilliams@elpasompo.org 915-591-9735 ext. 24
HSBMPO/ Harlingen – San Benito	2030 MTP	-Mention many times the need to measure performance, and that they do, but no specific performance measures are discussed except LOS	Rebeca Castillo <i>MPO Director</i> rcastillo@myharlingen.us 956-216-5242
HCMPO/ McAllen	2035 MTP	-Document mentions a Pavement Management System, probably uses some sort of performance measures (PCI – pavement index)	Linda DeLaFuente <i>Planner II</i> ldelafuente@hcmopo.org 956-969-5778 (not direct)
H-GAC/ Houston	2035 RTP	-New Development -Town Centers -Employment and Population Growth within ¼ mile of new town centers -Development in flood plain -Reduction in VMT and VHT in town centers -Delay Index -Congestion Index -Employment and Population growth within ¼	Rebecca Blatnica <i>Transportation Program Manager</i> becky.blatnica@h-gac.com 832-681-2591

		<p>mile of transit</p> <ul style="list-style-type: none"> -Transit PMT & PHT -Transit accessibility index -NOx and VOC emissions -Safety improvement Index 	
KTMPO/ Killeen - Temple	2035 MTP	-No performance measures explicitly mentioned	<p>Charlotte Humpherys Regional Planner charlotte.humpherys@ctcog.org 254-770-2360</p>
Laredo	Texas urban Mobility Plan (Laredo- Webb County) 2035 MTP	<ul style="list-style-type: none"> -Texas Congestion Index -Crash Data -LOS -Mobility Index -Border Delays -Empty freight mileage -MTP says they are awaiting implementation of more performance measures as directed by USDOT -Not a whole lot of performance measures outlined, but they are referenced to a lot 	<p>Keith Selman MPO Director sselman@ci.laredo.tx.us 956-794-1623</p>
Longview MPO	2035 MTP	<ul style="list-style-type: none"> -Traffic volume -Freight volumes -Congestion -Crash data -Air Quality 	<p>Melissa Bechtold Transportation Planner http://longviewtexas.gov/services-contact#MPO@LongviewTexas.gov (this site will allow you to email) 903-237-1062 (not direct)</p>
Lubbock MPO	2035 MTP	<p>(seems like these are yet to be implemented, but performance measures are mentioned many times)</p> <ul style="list-style-type: none"> -TDM measures -Growth values -Congestion Pricing -Improvements -Public transportation improvements -Capacity increases -ITS implementations -Congestion index -Delay time -Crash statistics -Air Quality statistics 	<p>Darrell Westmoreland Transportation Planner DWestmoreland@mylubbock.us 806-775-1674</p>
MOTOR MPO /Midland – Odessa	2035 MTP	<ul style="list-style-type: none"> -Crash data -Travel Demand model output -LOS -Travel times 	<p>Ming Ma Senior Transportation Planner</p>

		<ul style="list-style-type: none"> -Traffic counts -Public transit capital -HOV usage -others are referenced, but not named -Document requests USDOT to set performance measures that should be required by MPOs 	http://www.motormpo.com/contact_us.html (to send an email) 432-617-0129 (not direct)
SAMPO/ San Angelo	2035 MTP	<ul style="list-style-type: none"> -Congestion Index 	E'Lisa Smetana <i>Senior Transportation Planner/MPO Director</i> transportation@sanangelotexas.us 325-657-4210
SA-BC MPO/ San Antonio	2035 MTP	Seems like they don't publish performance measures but might use them. RTP states that future endeavors "include establishing performance effectiveness measures"	Stephanie Velasquez <i>Regional Transportation Planner</i> velasquez@sametropolitan.org 210-230-6908
Sherman – Denison MPO	2035 MTP	<ul style="list-style-type: none"> -Various management systems exist in the document that probably use performance measures, but none are listed. The management systems are: Pavement, Bridge, Safety, Public Transportation, Congestion and Intermodal Transportation Facilities 	Wally Johnson <i>Transportation Planner</i> wjohnson@sdmpong.org 903-813-3531
Texarkana MPO	2035 MTP	<ul style="list-style-type: none"> -LOS -AADT -Bridge condition -Travel Time -Miles of Trails, sidewalks and bike lanes -Number of crosswalks, bike & pedestrian friendly intersections -% parks accessible by bikes and pedestrians -% schools accessible by bike or pedestrians -Linear feet of connectivity gaps filled 	Shirley Jaster <i>Planning Administrator</i> jaster@txkusa.org 903-798-3949 (might not be the right person to talk with)
Tyler MPO	2035 MTP	<ul style="list-style-type: none"> -LOS -Travel demand model outputs (volumes) -Crash rates -Environmental impact -Air quality measures 	Tony Filippini tfilippini@tylertexas.com 903-531-1175 (not direct)
Victoria MPO	2035 MTP	<ul style="list-style-type: none"> -V/C ratios -LOS -VHT -Average Speeds -Delay -Crash data 	Ray Miller <i>MPO Coordinator</i> rmiller@victoriatx.org 361-485-3360

		-seems like they use them, but not a lot explicitly mentioned	
Waco MPO	2035 MTP	-Transit need index -LOS -Facility Age -Regional connectivity -Highway Score -Crash Data -VMT -Bicycle suitability index -Travel demand model outputs (volumes...)	Chris Evilia MPO Director http://www.waco-texas.com/cms/forms/contactus.aspx?name=Chris%20Evilia (this site will send an email to Chris) 254-750-5650
WFMPO/ Wichita Falls	2035 MTP	-LOS -Vehicle Hours of Delay -Speed -V/C ratios -VMT -Volumes -Transit Trips -Lane miles -Connectivity Index -Travel time	Lin Barnett <i>MPO Transportation Planning Director</i> Lin.Barnett@wichtaf.allstx.gov 940-761-7450
TxDOT	Strategic Plan 2009-2013	-Fatalities per 100 million VMT -Bridge and Road Pavement Rating -Crash data -Click-it or Ticket -Funding invested in infrastructure -Vehicle Emissions -Congestion Peak Travel -Travel Time Index -VMT	

APPENDIX C: INTERVIEW GUIDE

As part of this project, representatives from MPOs throughout Texas were interviewed regarding their understanding, use, and opinions of performance measures within their organization. The consent process and survey questions were reviewed and approved by Texas A&M University System's Institutional Review Board, and are shown below.

Introduction and Consent Process

The Texas Transportation Institute is conducting a research project titled "Performance Measures for Transportation Planning and Operations for Metropolitan Planning Organizations," sponsored by the South West Regional University Transportation Center. As a part of this project, we are looking to document current transportation agency performance measurement efforts in areas of strategic management, long-range planning and programming, project development and design, construction, and operations and maintenance, through interviews with staff involved with performance measurement efforts.

An initial screening through literature reviews/internet searches indicated that your agency would serve as a good case study. Would you be willing to participate in an interview regarding your agency's implementation of performance measurement? The interview will take no longer than one hour. The information you provide will be incorporated into a guide book on performance measurement for metropolitan planning organizations throughout Texas. Your participation will be confidential and research records will be stored securely. Your name and job title will not be included in any publication resulting from this study.

Interview Questions:

1. In your organization do you use performance measurement in any aspect of your transportation planning and related activities?

(if YES continue through question 11, if NO skip to question 12)

2. When did your agency start using performance measures? *(Elicit details about program history)*
3. Why was a performance measurement program begun in your agency? *(Discuss whether it was due to an external mandate or internal initiative)*
4. What is performance measurement used for in your organization? *(Elicit broad program detail)*
5. Does your agency use performance measures to define progress toward strategic goals?
6. Do performance measures have an impact on funding allocations/decision making?

7. Do you have documentation of performance measures that are publicly-available or other documentation that can be shared with the researchers?
8. Can you describe your agency's overall experience with performance measures? Do agency staff members find it useful or helpful?
9. What resources do you think would be helpful in improving your agency's current performance measurement program?
10. What data sources are currently being used to quantify your performance measures? Do you find data availability to be a constraint in the performance measurement process?
11. Are there any others within the agency that you suggest we talk to regarding performance measures and your agency's use of them?

(End of survey if Question 1 was answered as "Yes")

(Following questions are if Question 1 was answered as "No")

12. Is your agency currently considering implementing a performance measurement program, or has it ever been considered in the past? *(If yes – elicit details of which specific areas they were considered or are being considered, and the future outlook for the use of performance measures)*
13. Is there any specific deterrent to the use performance measures in your agency that could explain why no performance measurement program exists till date?
14. Are there particular resources and data that would potentially be helpful in the process of implementing a performance measurement program in the future?
15. Are there any others within the agency that you suggest we talk to regarding performance measures and your agency's thoughts/experiences with them?

APPENDIX D: RESULTS FROM TEXAS MPO INTERVIEWS

The following pages are the responses of the individual MPOs in Texas that were surveyed. The answers correspond to the questions listed in Appendix C.

Abilene MPO

1. Yes, current – not really in the MTP, in the TIP – yes (congestion management)
 - a. Future – more, crash locations, analysis
2. Limited use
3. Motivation = funding, getting more for their dollars, to make sure their plans are implementing good projects. Externally motivated, but also internally (need some “facts” and data to get funding in their area) mixture of external and internal motivations.
4. Not used in the past.
5. Not towards goals, implementation in the future – tied to budget.
6. Yes, not yet, but in the future yes! PMs show where you want to spend your funding, PMs really help to get the most bang for your buck.
7. Not at this point.
8. Yearly review of PMs and budget, staff doesn’t really understand the benefits of PMs. The training opportunities for PMs in Transportation are not normally attended by all staff members and it’s hard to transfer that knowledge, more trainings would help.
9. There are not any good guidelines for PMs in transportation out there, a list of general PMs would be useful (easy in a city, hard on an MPO level, needs to make sense to citizens and apply to 30 year planning horizons) more training from TTI, FHWA, or TXDOT, a list of 30 PMs that pertain to transportation would be nice – which could then be chosen from to best suit the area.
10. Search on the internet, state DOTs, other MPOs – for developing PMs, definitely need more data, in house: need more data collection, very difficult for a small MPOs, need more sources outside – on PMs.

Comments:

At this point, Abilene is not using performance measures do to it small organization and the inability to allocate its limited staff to collect and track data. A useful resource for implementing performance measure programs would be a list of performance measure programs would be helpful.

Amarillo MPO

1. No
12. Amarillo will use more PMs in the future. Modeling, traffic counts (just in town data collection).
13. No specific deterrents, they're not sure they can really implement PMs though. Only the City of Amarillo is urbanized. The MPO works with the Amarillo TxDOT district and City of Amarillo very closely and haven't seen need for PMs individually as an MPO thus far. It is difficult getting representatives together from the cities, counties, and TxDOT.
14. A best practices handbook/guidebook of how to use PMs from other MPOs, HUD and FHA resources need to be available.

Comments:

Performance measures are not currently in use. The representative recommended guidance and training if a performance measurement program was mandated and help foster understanding of performance measurement benefits.

Austin (CAMPO)

1. Yes.
2. 2005, the MPO started displaying the PMs.
3. Internal motivation to begin a PM program. The MPO wanted to portray the benefits of certain projects; show the public and involve policy boards in the benefits of selected projects or scenario plans.
4. Displaying information to the public and for scenario selection.
5. Not yet, but the MPO is planning on setting strategic goals and use PMs to measure their progress.
6. Yes, mostly just within the MTP in regards to funding since the MTP is financially constrained.
7. In the MTP appendix (pg 49) (also included below).
8. Yes, but PM programs are also challenging. The MPO staff finds PMs helpful especially within the air quality and environmental justice divisions.
9. A way of visualizing the PMs would be helpful. Measurements that aren't from the model are also useful, but hard to quantify, guidance for those measures would contribute to improving PM programs.
10. Travel demand model, GIS data sets for network and EJ areas (features) emissions analysis (MOBILE6), data set of the redevelop-able land inventory (impact of

transportation on vacant lands), and crash data. Data is a constraint, what format the data is in, the nature of the modeling output is difficult (changing the model disrupts historical comparison of PMs).

Comments:

CAMPO is using PMs and tracking indicators since 2005. They use PMs for scenario comparison, not to measure progress toward goals, but they are looking into that for the next MTP.

Brownsville MPO

1. Yes
2. Since before 1994, the travel demand model, used for alternative analysis
3. TxDOT said that you really need to be doing this (developing a model), we developed the socio-economic data, and coded the network
4. Mostly just for alternative analysis
5. No
6. PMs definitely help
7. Land-use planning measures are used, travel-time measures are being developed, No list available, but website includes:
 - a. Vehicle Hours of Delay
 - b. Speed
 - c. V/C
 - d. VMT
 - e. Volumes of Auto Trips
 - f. Transit Trips
 - g. Mode Share
 - h. Lane miles
 - i. Connectivity Indices
 - j. Travel time
8. Yes they understand, it's a guideline to reach our goals, PMs help unify the staff
9. Staff size needs to increase, talk to MPOs, Communication with other agencies will help foster growth, connection, training and mandates
10. TxDOT hasn't given a lot of help, travel-time data (hiring a consultant), congestion management study, Data collection done on a project level

Comments:

The use of PMs has been limited, but they do use them for project selection in the MTP. Few PMs are included in the MTP, and they are not used to measure progress toward strategic goals. The MPO feels that guidance and more resources on improving PM programs will be helpful. A large concern for the future is having to do more work without increasing their funding to allow for more staff members.

BCS MPO (Bryan/College Station)

1. No.
12. The use of PMs is in the plans; the technical advisory committee is currently discussing the implementation of a performance measurement program. PMs are very important to the policy committee; the MPO needs to determine which PMs are going to work for their area.
13. They didn't know the availability of data, knowledge base needed to be expanded, (Motivation – from policy committee perspective: decreased budget, more fiscally constrained, better bang for your buck with each project with PMs, MPO perspective – public stewards or tax money, need to do the right thing and really represent the public well).
14. All training has been aimed at the MPO, fine tuning – small MPOs (under a TMA) gather together and brainstorm, limited staff and resources can't take too big a bite of the pie and be able to deliver, what has worked for other small – medium MPOs? Training for policy level folks for transportation in MPOs (high level training for the technical aspects of PMs in transportation would be very helpful).

Comments:

BCS is excited to apply performance measurement in their MPO. They have been looking for guidance in how to apply the large scale programs that they see around the country to their small MPO. They feel that a guidebook on best practices for small to medium MPOs would be very helpful. They are reading papers, going to trainings, searching for ways to understand better performance measurement and how to apply it.

Corpus Christi MPO

1. Yes.
2. Really got them going in 2004 with a travel time delay study and traffic counts.
3. Quantifying project selection criteria (TxDOT's talk about PMs has made them look to other MPOs and what they're doing).

4. Project selection in fiscally constrained times, reporting back to policy committee members, project evaluations, before- after studies to show those PMs (project level) and project benefits.
5. Yes, policy priority determines the goal (like congestion – now economic development) which shape the PMs they need.
6. Yes, that’s the whole reason why they collect PMs and use them.
7. No, but plan to put one together.
8. PMs are used to quantify benefits of proposed projects. The use of PMs are expected, it’s the philosophy of the MPO so they are used.
9. Best practices document – by size, always welcome new ideas, briefings to policy committees would be useful.
10. The City of CC is doing counts every 2 years, travel time studies 2004, 2006, 2010 for congestion, pavement performance measures (quantitative index), how do you quantify economic development? Data is a constraint, mostly on soft stuff like economic development.

Comments:

Corpus Christi is excited about improving their PM program. They are active in trainings and reading papers and are looking for ways to improve. PMs are used primarily for project selection in an alternative analysis in regards to financial decisions.

El Paso MPO

1. No, a more qualitative rating system identifies TIP projects and their status, they have a tier system 4 levels based on federal mandated progression.
12. They tried it in the past, but weren’t politically accepted. Congestion levels are used. Looked around to see who was doing what (in 2005-6) Dallas, San Diego.
13. The question was always who will operate this, MPO staff? Committee? They also couldn’t define PMs, what scale of model do you use? The board (or executive committee) hasn’t directed the MPO to do it (it’s hard to put together something technical, that the board will still understand).
14. Access to a developed congestion network that looked at each mode, LOS by mode (multimodal), a tool putting that together for LOS. Air quality performance indicators. Access to crash data, how can the MPO gather crash info, currently they obtain it from the city governments, tried getting it from DPS, but didn’t work, FAF data is useful. Trainings are very helpful.

Comments:

El Paso does not use PMs because they have not been mandated by their executive committee or policy board. They can see the benefits of using PMs, but feel that if the board doesn't desire the implementation of PMs that it would be hard to convince them that they should be used. More training and education for the board would be helpful in having them understand the usefulness of PMs.

Harlingen San Benito (HSBMPO)

2. Yes in transit, not anywhere else.
3. Very recently, since 2009 in the MTP.
4. To see if results were being attained, to be able to look back and see what is happening, the board wasn't very happy with the transit provider, so the MPO used PMs to show the board the performance. Allows the MPO to hold the transit provider accountable (PMs for the MTP could hold the MPO accountable to the public).
5. Internally developed. The board asked a lot of questions about certain projects and the MPO brought up the idea of using PMs and setting goals.
6. Yes, they set the goals and keep track of progress with the PMs.
7. Yes, what the MPO noticed is that new transit routes are being developed, local funding and contributions are coming in and the MPO answers their contributions with PMs, outreach to the public. Ridership reports and aiming to increase ridership will let the MPO make decisions about adding new transit routes.
8. In the MTP – goals and objectives (in the MTP)
 - a. increased patronage of existing services
 - b. increase in the potential demand for transit
 - c. total population in neighborhoods of high transit need
 - d. demographics of the Harlingen-San Benito area
 - e. population growth in areas that are distant from the center cities
 - f. location of commercial development
 - g. congestion at the industrial complexes, medical center and TSTC campus
 - h. increased awareness and interest in transit as a recruitment tool;
 - i. regional growth.

These goals are listed in the MTP:

Goal 1: Provide for Safe Travel

Objective: Reduce potential for traffic accidents and provide for increased travel safety.

Goal 2: Reduce Travel Time and Congestion

Objective: Reduce traffic congestion and travel time in and around the Harlingen- San Benito MPO area.

Goal 3: Enhance Aesthetics of the Transportation System

Objective: Integrate the transportation system with the aesthetic qualities of the landscape and historic sites.

Goal 4: Encourage International Trade

Objective: Incorporate economic and development considerations to increase accessibility and mobility of people, freight, and international trade.

Goal 5: Coordinate with Land Development Needs

Objective: Provide accessibility to existing and anticipated patterns of development throughout the Harlingen-San Benito MPO area while preserving resources.

Goal 6: Incorporate Intermodalism

Objective: Integrate the various modes of transportation, particularly roadways (private auto, trucking, and public transit), railroad, bikeway, airports, pedestrian and seaport.

Goal 7: Develop a Transit Transportation System

Objective: Continue to monitor the Assessment of Public Transportation Needs and Transit Plan and the newly developed Harlingen-San Benito Express system for future expansion.

Goal 8: Emphasize the Preservation of the Existing Transportation System

Objective: Use applicable monitoring systems to monitor and evaluate the conditions of the transportation system.

Goal 9: Implement a policy requiring a minimum acquisition of 75% of the necessary right-of-way before a project can be included in the Transportation Improvement Program

Objective: Ensure the feasibility of project implementation and distribution of allocated construction funds in an efficient manner.

9. The MPO is in the introductory phase of PMs, learning the best practices, start incorporating more PMs in construction and mobility projects, how can we measure public participation with PMs?
10. Primarily – training (good information out there but it is very basic, not a lot of technicality, how to develop criteria or measures?) training or workshops that are technical with how they are measuring PMs – hands on.
11. Reporting from the transit agency, revenue hours, ridership increases, service hours, for the first time they're putting together a travel demand model – access to Texas Work

Force Data (didn't have access before), how do we incorporate PMs into part of the project selection criteria?

Comments:

HSBMPO is using the performance measures from the transit provider very effectively. They want to learn how to use more performance measures in their transportation planning, they also spend time looking at other MPOs and their PM programs, and have been attending FHWA trainings.

McAllen (HCMPO)

1. No.
12. The MPO is considering implementing a PM program, but haven't had a lot of time, didn't know how to pick PMs, and don't feel like there is good guidance with the limited staff to implement a PM program.
13. No specific deterrents.
14. Guidebooks on PMs and their usage in transportation and best practices would be helpful.

Comments:

Overall impression is that they do not use PMs due to lack of exposure. Guidance and education of benefits and implementation would be helpful.

Laredo MPO

1. No, not formally, the MPO uses PMs for the alternative analysis, but not really in long range planning.
12. No, the board hasn't come up with anything specifically, so the MPO hasn't thought of anything long term; no set goals with PMs.
13. For the most part there isn't a deterrent but the MPO hasn't explored PMs, hasn't explored the topic deeply, and hasn't heard a lot about it. There are a lot of other things going around and the MPO doesn't have time to explore every new idea. Nobody on the policy board really has PMs on the radar. The MPO is curious to the cost/benefit of implementing a PM program.
14. The travel demand model is helping get data. A template of the program will be very helpful in implementing a PM program. The MPO doesn't want to have to invent a system if they had to implement a PM program. A 10 step guide to Performance Measurement would be helpful, needs to be very user friendly.

Comments:

This MPO is unaware of the benefits and usefulness. More training and guidance would be helpful, but they have limited staff and they don't feel that there is time to devote in exploring new techniques to planning. The MPO feels that unless their policy board asks them to use PMs in long range planning that they won't initiate the program. The MPO does use PMs on an alternative analysis scale for project selection, but no specific plan is set in place. The travel demand model is used to create PMs for project comparison.

Longview MPO

1. No, and training hasn't really solidified understanding of performance measurements.
12. We'd like to, but the project ranking system is really what we're using, just using LOS from TxDOT (their data).
13. Limited amount of data available, funding.
14. Funding, best practices manual from other MPOs in the area. A special focus on smaller MPOs and how performance measures can work there with limited data (need to use performance measures for accountability to the public).

Comments:

This MPO is excited to use PMs but don't really know how. A best practices document specific to small MPOs would be helpful for implementation of PMs because funding and data sources are limited.

Lubbock MPO

1. No.
12. The MPO is going to implement PMs in the next MTP, probably will implement crash statistics, congestion; this will help in convincing the Policy Board of important projects.
13. Policy board opinions, the MPO tried to get a PM program going and were shot down by the past policy board.
14. Don't know right now, plan on spending more time developing the PM program. Planning to use more public participation, taking the plans to the public, not just inviting them to come participate. Approach community leaders and business leaders/constituents.

Comments:

Lubbock is excited to receive guidance. The MPO is planning on implementing PMs in their new MTP that they're starting to work on. They're excited to learn more about PMs and their applications in their area. Even though they are a large MPO, they still have limited staff members.

Midland – Odessa MOTOR MPO

1. Not really, the MPO only uses volumes and V/C ratios.
12. The MPO was established in 2005 and they've gone through 2 executive directors already, so they're still figuring things out. PM programs have been discussed and there are various PMs in the MTP, but not really being talked about currently.
13. The major deterrent to PMs is the fact that there is very little funding. The MPO said that if more projects were competing for their funding then project evaluation would be more important, but in their TIP they don't have a single highway project. Most decisions at this point are made as policy decisions, not based on PMs.
14. The MPO listed the Travel Demand Model as the most important tool for helping keep track of PMs. V/C ratios and LOS were also mentioned as important.

Comments:

This MPO is still getting off the ground, haven't really seen a need for PMs in their area due to the very limited funding.

San Angelo (SAMPO)

1. No, PMs are used, but only organizationally, not with transportation planning, yet.
12. Yes, the next fiscal year brings a desire to implement PM usage in transportation planning. Research and grant opportunities for ped/bike improvements, public involvement, increase website usage, and interagency communication/interaction are all PM elements that have been discussed.
13. PMs haven't really been understood, until very recently SAMPO was under the jurisdiction of the City of San Angelo, so many decisions were policy driven, but with the standalone agency, more PMs will be used. PMs considered include minimizing bike/ped fatalities, reducing crashes, adding bike lanes, trails and sidewalks.
14. Financial resources would be most helpful, local funds will require public support. Texas MPOs are used as resources, they have similar issues to deal with. Safe Routes is used for training, National HWY Institute webinars, Pedestrian and Bike information center, and the Center for Urban Transportation Research University of South Florida are all used as resources.

Comments:

San Angelo is excited about the PMs that are being used internally to show the City of San Angelo that the MPO is valuable, but PMs are not used in transportation planning. It seems as if they understand PMs on a high level, but are looking to improve their understanding and hope to implement a PM program next year. They seek out training and guidance from other Texas MPOs and find them very helpful.

Texarkana MPO

1. Yes.
2. In FY 2001, the MPO started collecting traffic count data and set in place the ability to do travel-time studies (2-3 year basis).
3. Internally motivated at the staff level the PMs were collected, with approval from the board. More detailed data was important for project consideration, and so that project prioritization could be made. Implementing PMs was an effort in showing the public that the MPO was useful – helping the community with economic development – the MPO shares its PMs.
4. Project prioritization.
5. No active goals.
6. Yes, PMs have had an influence – very heavily weighted toward economic development and safety (in the policy board).
7. No, traffic counts and travel time studies, making attempts at getting crash data.
8. The MPO has been working with PMs for a while and see the benefits, but haven't really made up their minds on whether or not to develop a substantial PM program. The MPO thinks that PMs will help them do a better job of planning the transportation for the community.
9. Resources used include: USDOT training materials, planning for operations guidebook, desk reference, Collaborative Advantage 2007, TRB performance measures to improve transportation systems, NTSC Performance Measurement Initiative, PMs to improve transportation planning process (TRB circular 2005), primer on safety PM for transportation planning process, NCHRP 446, 618, and looking at larger MPOs' documents and plans.
10. Crash data is hard to get because of the bi-state area (where are the records?), a travel demand model doesn't exist, Arkansas Highway department is not able to provide demographic information (not available from the State).

Comments:

Texarkana is really back and forth on PMs; want to improve implementation but have limited staff and resources. Therefore, they are waiting for the passing of the reauthorization bill before making any changes.

Victoria MPO

1. Not currently.
12. The MPO is now actively considering implementing PMs for Public Transit – ridership, travel time; sidewalks – livability.

13. No, the MPO just hasn't thought about implementing a PM program until now.
14. Common PMs, geared towards smaller MPOs would be particularly helpful.

Comments:

This MPO is excited to implement PMs but don't have experience with doing so besides traffic counts, V/C ratios, and crash data. They think that straight, to-the-point guidance would be helpful and specifically a list of PMs that can be quickly implemented and easily maintained with limited staff and resources.

Waco MPO

2. Yes, we use them to prioritize projects in the MTP.
3. Been using them for the last 2 MTPs 10 years, but first time the MPO has detailed the PMs and what goals they're trying to achieve.
4. To prioritize limited funding, an emphasis from TxDOT to use PMs, and the policy board was looking for that kind of guidance in decision making.
5. Project prioritization.
6. Yes, goals listed in the MTP:

Principle 1: Maintain existing transportation facilities

Objective 1-1: Rehabilitate all roadways rated with a condition of 'poor' or were constructed/reconstructed prior to 1990.

Objective 1-2: Perform adequate preventative maintenance on all other roadways.

Objective 1-3: Replace or rehabilitate all structurally deficient or functionally obsolete bridges.

Objective 1-4: Replace public transportation rolling stock every 10 years.

Objective 1-5: Reconstruct all sidewalks which cannot accommodate wheelchairs

Principle 2: Address serious safety and security problems

Objective 2-1: Reduce total crashes by 10%.

Objective 2-2: Reduce red light running crashes by 25%.

Objective 2-3: Reduce fatal, incapacitating and non-incapacitating injury crashes by 10%.

Objective 2-4: Provide safe pedestrian connections between all elementary, intermediate and middle schools and residential neighborhoods within 1 mile.

Objective 2-5: Provide safe, well lit shelters along Waco Transit's fixed route system.

Principle 3: Maximize the use of existing transportation facilities

Objective 3-1: Improve Level of Service for all arterials and expressways to “E” or better.

Objective 3-2: Improve incident clearing time on expressways and arterials to an average of 30 minutes or less.

Objective 3-3: Retrofit all arterial highways to meet TxDOT access management standards.

Objective 3-4: Adopt regional ITS architecture and deploy ITS systems on regional freeways, principal arterial and selected minor arterials.

Principle 4: Preserve the region’s air quality and environment

Objective 4-1: Increase percent of regions workers walking or bicycling to work or school to 7%.

Objective 4-2: Increase total annual boardings for public transportation within the region to 1.5 million.

Objective 4-3: Develop interregional passenger rail services as an alternative to IH-35.

Principle 5: Support the region’s economic development efforts

Objective 5-1: Employers with more than 100 employees should have direct access to a minor arterial or larger facility and the level of service for that facility should be equal to or better than E.

Objective 5-2: Waco Transit’s fixed route system should provide walking access* to 80% of employers with more than 100 employees.

Objective 5-3: Employers with more than 100 employees should have pedestrian infrastructure connecting their location with the Waco Transit fixed route system.

Objective 5-4: Waco’s transportation system should be developed in such a way to encourage most future development to occur within existing nodes of development and provide walking access between new residential development and most basic municipal and commercial services.

*Walking access defined as access within 0.25 miles with sidewalk connections

- 7. Yes, that’s the main reason they keep track of PMs.
- 8. In the MTP:
 - a. employment
 - b. demographics
 - c. LOS
 - d. vehicle hours of delay

- e. facility age
 - f. regional connectivity
 - g. highway score
 - h. crash data
 - i. vehicle miles traveled
 - j. bicycle suitability index
9. The MPO has been using them for years and mostly in project prioritization in the MTP. Yes the staff understands their benefit and applications in the planning process.
 10. Data is an issue, the MPO rely heavily on crash data and traffic counts (only once every 5 years from TxDOT, would be nice to get it more frequently), crash data has some issues within the CRIS, freight flows and data is proprietary in nature – so they don't have a good feel for which commodities are flowing on specific roadways, they do have good transit data which is helpful.
 11. Data availability is a constraint, they have a good handle on bridge conditions; roadway conditions from TxDOT are much more challenging – pavement conditions (gibberish to the lay person – how do I share this with the policy board?), non-existent data at the county and city level in most cases. Travel time could be helpful (what are the best ways to measure how a hwy is performing?).

Comments:

Waco is in a good implementation position. The Director is on a National Committee on Performance Measurement, so he has a very clear understanding of their benefits. They use PMs to measure progress towards goals that are included in the MTP.

Wichita Falls (WFMPO)

1. No.
12. No; every August they catalog the MTP projects and look and see which move into the TIP, Tech Advisory committee give a prioritized project list, then they give this to the policy board.
13. Everybody on the policy board and technical committee knows how the projects will affect the congestion and safety, etc. The decisions are made with very little analysis, mostly policy driven.
14. Something that proves that performance measurement is actually helpful.

Comments:

They don't see an immediate importance for PMs. PMs are not understood or deemed beneficial. Small MPOs with little staff don't have time to look for the next new thing. They noted that the

only way that PMs will be used is if they are required to use them federally or by the policy board.

APPENDIX E: EXAMPLE PERFORMANCE MEASURES FROM TEXAS MPOS

System Effectiveness

- Number of crashes
- Crash Rate
- Travel time
- LOS-arterial
- LOS-intersection
- Traffic Counts
- Average Freeway Speed
- Average Network Speed
- Average incident clearance time
- Percent Congested
- Vehicle Hours of Delay per Person (during 24 hrs)
- Number of roadway system intersections
- Average home-based work trip time
- VMT per person (during 24 hrs)
- Vehicle hours traveled per person (during 24 hrs)
- Miles of new road
- Miles of new transit routes
- V/C
- Facility age
- Lane miles
- Roadway condition

Economic Impacts

- Employment within ½ mile of transit
- Percent of non-SOV trips
- Number of Transit trips
- Travel time for through freight traffic
- Average trip to Airport (minutes)
- Average private cost per trip

Environmental Impacts

- Total VOC, NO_x, CO, CO₂, CH₄
- Mile of new bike lanes
- Miles of trails
- Miles of new sidewalks

Social Equity

- Transit mode share
- Miles of improvements to “high crash” corridors
- Percent of population in high density TAZs

- Number of Transit Stops
- Number of intermodal stations
- Percent of fixed route bus miles serving high density areas
- Population within ½ mile of transit
- Number of public meetings
- Attendance at public meetings
- Transit stops with shelters and lights
- Percent workers walking or bicycling to work or school
- Annual transit boardings
- Employment (and other demographics)
- Bicycle suitability index