

Performance-Based Planning for Small Metropolitan Areas

December 2014



U.S. Department of Transportation
Federal Highway Administration

Notice

This document is distributed by the U.S. Department of Transportation, in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturer's name or products are mentioned, it is because they are considered essential to the objective of the publication and should not be considered as an endorsement. The United States Government does not endorse products or manufacturers.

Quality Assurance Statement

The Federal Highway Administration (FHWA) provides high-quality information to serve Government, industry, and the public in a manner that promotes public understanding. Standards and policies are used to ensure and maximize the quality, objectivity, utility, and integrity of its information. FHWA periodically reviews quality issues and adjusts its programs and processes to ensure continuous quality improvement.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.
PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. REPORT DATE (DD-MM-YYYY) 01/31/2015		2. REPORT TYPE Final Report		3. DATES COVERED (From - To) January 2014 - October 2014	
4. TITLE AND SUBTITLE Performance-Based Planning for Small Metropolitan Areas				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) William Lyons; James Andrew; Logan Nash				5d. PROJECT NUMBER HW2LA3	
				5e. TASK NUMBER TD62	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) John A. Volpe National Transportation Systems Center U.S. Department of Transportation 55 Broadway, Cambridge, MA 02142				8. PERFORMING ORGANIZATION REPORT NUMBER DOT-VNTSC-FHWA-15-05	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Federal Highway Administration U.S. Department of Transportation 1200 New Jersey Ave SE, Washington, DC 20590				10. SPONSOR/MONITOR'S ACRONYM(S) FHWA	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S) FHWA-HEP-15-015	
12. DISTRIBUTION/AVAILABILITY STATEMENT No Restrictions					
13. SUPPLEMENTARY NOTES FHWA Project Contact: Egan Smith, Office of Planning ; 202-366-6072; egan.smith@dot.gov					
14. ABSTRACT This report provides insights on effective practices in performance based planning by Metropolitan Planning Organizations (MPOs) that plan for Urbanized Areas with populations less than 200,000. It references existing best practices research on performance based planning for MPOs in general, and presents key themes from interviews with small MPOs and DOT partners across the country that are engaged with metropolitan performance based planning in varying ways. Finally, the report includes two case studies of small MPOs that are currently leaders in implementing performance based planning.					
15. SUBJECT TERMS metropolitan planning organization, performance, performance based planning, performance measures, non-tma, small metropolitan areas					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Egan Smith, FHWA
None	None	None	None	50	19b. TELEPHONE NUMBER (Include area code) 202-366-6072

Foreword/Acknowledgements

This report was prepared for the Federal Highway Administration (FHWA) Office of Planning by the U.S. Department of Transportation (USDOT) Volpe National Transportation Systems Center (Volpe Center). Egan Smith was FHWA project manager. William M. Lyons was the Volpe project manager, and James Andrew and Logan Nash were the lead researchers and authors, all of the Transportation Planning Division. Mr. Lyons also manages Volpe Center research on best practices in transportation planning for the FHWA Office of Planning.

At the time of this research, FHWA and the Federal Transit Administration (FTA) were finalizing formal guidelines for MAP-21 Performance Based Planning and Programming (PBPP) and Performance Management requirements through the rulemaking process. This report and other technical assistance resources focus on assisting Metropolitan Planning Organizations (MPOs) and their planning partners to create effective performance-based planning frameworks—the overall intent of the new legislation—rather than on specific legislative requirements. This report and supporting resources benefit from the experience of MPOs and DOTs that are developing performance-based approaches, some of whom began development before the passage of MAP-21.

This report and other FHWA resources related to performance based planning, including companion case studies for MPOs serving major metropolitan areas and DOTs, are available at: http://www.fhwa.dot.gov/planning/performance_based_planning/ and the FHWA-FTA Transportation Planning Capacity Building website (<http://www.planning.dot.gov/>). The views expressed in this report are those of the research team and not necessarily the USDOT, the FHWA, the Volpe Center, or MPO contacts.

The research team thanks Egan Smith for his guidance and support in developing this report. The team also thanks FHWA reviewers and staff from the following MPOs and their partners who generously contributed insights to development of this report:

Peter Keating; Michele Boomhower (Chittenden County Regional Planning Commission)

David Wessel (Flagstaff MPO)

Jerri Bohard; Erik Havig; Philip Kase (Oregon Department of Transportation)

Jasmine Harris; Satvinder Sandhu (FHWA Oregon Division)

Dan Moore; Jonathan David (Rogue Valley Council of Governments)

Cindy Mueller (Texas Department of Transportation)

Sarah Rhodes; Wood Hudson (Thomas Jefferson Planning District Commission)

Thera Black (Thurston Regional Planning Council)

Table of Contents

- Foreword/Acknowledgements i
- Table of Contents ii
- Chapter 1: Introduction and Background 1
 - Audience and Purpose 1
 - Existing Resources on Performance based Transportation Planning 2
 - Research Approach 5
 - Report Organization 6
- Chapter 2: Key Themes in Performance 8
 - Based Planning by Small MPOs 8
 - Establishing a “performance-ready” planning process 8
 - Collaboration with State DOTs 14
 - Coordinated Data Sourcing 17
 - Communication and Transparency 18
 - Cross-Sectoral Approach 20
- Chapter 3: Suggested Framework for Performance Based Planning by Small MPOs 21
 - Focus-based Framework 21
 - Two Performance based Planning Models for Small MPOs 23
- Chapter 4: Case Studies 26
 - Chittenden County Regional Planning Commission 26
 - Thomas Jefferson Planning District Commission 35
- Chapter 5: Conclusions 43
 - General Observations 43
 - Suggested uses and rationale for performance based planning 45
 - USDOT and State DOT support for performance based planning 45

Chapter I: Introduction and Background

This research for the Federal Highway Administration (FHWA) by the U.S. Department of Transportation Volpe Center (Volpe) provides insights on effective practices in performance based planning by Metropolitan Planning Organizations (MPOs) that plan for Urbanized Areas with populations less than 200,000. These MPOs have similar required responsibilities under the joint Federal transportation planning requirements to those that plan for large Transportation Management Areas (TMAs) but are typically smaller organizations with more limited resources. These MPOs also have more flexibility in how they conduct planning; for example, they are able to propose simplified planning procedures for development of plans and programs¹. In addition, non-TMA MPOs are expected to cooperate with the State DOT and public transportation operators to select projects to be funded, while TMA MPOs select projects more directly, in consultation with State and public transportation operators. Despite these differences, MPOs serving non-TMA regions are expected to begin using a performance based approach to the planning process, and plan and TIP development.

Audience and Purpose

The audience for this report includes small MPOs and their partners in metropolitan area transportation planning and performance management. It discusses effective practices and requirements in performance based planning with an eye towards the particular circumstances and needs of small MPOs around the country. The report will also be useful for organizations and individuals involved in policy making in sectors beyond transportation who wish to collaborate or partner with, or better understand the activities and responsibilities of MPOs planning for smaller communities.

This report is intended as a resource for developing successful performance based planning processes and not for meeting related MAP-21 requirements defined thru Federal rulemaking. A successful performance based process should advance accomplishment of the metropolitan area's own goals and provide a platform that can be adapted to meet the Federal requirements.

National Emphasis on Performance in Planning

Performance based planning and programming (PBPP) is the application of performance management – a strategic approach to decision-making that is based on the development, application, and monitoring of performance data – to the long range planning and programming process. PBPP uses data derived indicators about the current and desired transportation system to set strategic directions; to analyze how funds are invested and programmed, and to evaluate program outcomes. [Moving Ahead for Progress in the 21st Century \(MAP-21\)](#), signed into law in 2012, introduces a focus on and requirements for performance based planning and performance management in statewide and metropolitan planning.

¹Scope of the metropolitan Transportation planning process. 23CFR 450.306(j). http://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=0b17d31f4781e6dcab590e0af22c83e5&r=PART&n=pt23.1.450#se23.1.450_1314

It also sets seven national goals, requires USDOT to establish performance measures, and requires States and MPOs to adopt targets based on these measures.²

FHWA, the Federal Transit Administration (FTA) and other agencies within the U.S. Department of Transportation (USDOT) are currently working with MPOs, States, and other stakeholders to develop resources, such as this report, that expand on other available PBPP technical assistance and expand the support available to planning agencies.

Performance based Planning and non-TMA MPOs

The research team concluded that small MPOs have unique characteristics and needs that may distinguish how they develop effective approaches to performance based planning. These approaches may entail some differences from the approaches taken by MPOs planning for larger metropolitan areas. Performance based planning for non-TMA MPOs is not simply a more basic version of the approach practiced by MPOs planning for large TMAs. Effective approaches build on the goals and attributes that are often particular to small metropolitan areas and the MPOs that serve them.

Existing Resources on Performance based Transportation Planning

Transportation agencies have increasingly been applying "performance management" - a strategic approach that uses performance data to support decisions to help achieve desired performance outcomes. FHWA continues to encourage performance based planning through technical assistance, including best practice case studies, webinars, and peer exchanges. With the passage of MAP-21, FHWA increased technical assistance to help agencies meet requirements and direction under the new law. In particular, FHWA developed the [Performance based Planning and Programming Guidebook](#), which helps DOTs, MPOs, and relevant partners understand the fundamentals of PBPP and describes effective ways these agencies can use PBPP to improve their planning processes and anticipate legislative requirements. Other resources from FHWA and its partners are identified in the following discussion.

This report is not intended to summarize or present in detail the content and results of previous technical assistance, but focuses instead on the specific challenges and opportunities that small MPOs face in implementing performance based planning. Readers should also note and consider the potential value to apply the techniques, lessons and frameworks described in the Guidebook and other resources. This includes Figure 1 below, which illustrates the role of performance in the federally-required transportation planning process.

² See FHWA Office of Transportation Performance Management, "Transportation Performance Management and MAP-21," <http://www.fhwa.dot.gov/tpm/about/>

Figure 1: Outline of performance's role in the metropolitan and statewide transportation planning processes. (Source: FHWA PBPP Guidebook)



Resources for Small MPOs

Many small MPOs have not implemented a performance based approach. For these agencies in particular, limited staff and financial resources may mean that they are hesitant to experiment with a performance based planning and programming approach before specific requirements and guidance are available both from the Federal agencies and their DOT partners. However, a small group of innovative smaller MPOs have been engaged in performance based planning to support their own processes and are well-poised to adopt a PBPP approach.

Three of these MPOs participated as peer experts at the June 19, 2013 FHWA/FTA peer exchange held in Bismarck, North Dakota.³ The [North Dakota Peer Exchange on Introducing Performance Management](#)

³ Those that participated in the Bismarck Peer Exchange are noted with a * in the list of MPOs featured in this report, below.

[into the MPO Planning Process](#)⁴ focused on the experiences and needs of small MPOs in particular. The three featured peers were:

- Champaign County Regional Planning Commission (CUUATS), Urbana-Champaign, IL
- Rochester-Olmsted Council of Governments (ROCOG), Rochester, MN
- Thomas Jefferson Planning District Commission (TJPDC), Charlottesville, VA

CUUATS is described in a [case-study](#) as part of the PBPP Guidebook, and TJPDC is a case study in this report. As one of the few existing resources oriented towards small MPOs, lessons from the Bismarck peer exchange are a key input into the themes and conclusion of this report.

This report relies extensively on the experiences of these non-TMA MPOs that are making themselves “performance-ready,” as well as lessons from previous FHWA and partner research.

List of Resources and Tools

The two most important related resources for readers, as mentioned above, are the PBPP Guidebook and the North Dakota Peer Exchange Summary. This section lists some additional resources and tools that may be useful for non-TMAs. Where MPOs featured in this report demonstrate use of performance-related tools, these applications are also noted in Chapter 2: Themes and the appropriate case study.

Unless otherwise noted, these tools and resources are not tailored to the needs of small MPOs. However, descriptions of these resources may be useful in helping non-TMA MPOs understand best practices and meet legislative requirements, which are common among all MPOs. In addition, the tools described here may be particularly appealing to small MPOs, who often do not have the resources to develop their own customized models and technical tools.

⁴ http://www.planning.dot.gov/peer/NorthDakota/MPO_Performance_Mgt_06-13.pdf

Technical Assistance and Guidance

- [FHWA Performance based planning website](#)⁵
 - [Performance based Planning Guidebook](#)⁶
 - [Performance based Planning MPO / DOT Case Studies](#)⁷
- [Performance Management Rulemaking](#)⁸
- [Best practice case studies – Performance based Planning by MPOs planning for TMAs and DOTs](#)⁹

Performance Tools

- [SHRP2 C3 – Transportation Project Impact Case Studies](#)¹⁰
- SHRP2 C11 – [Tools for Assessing Wider Economic Benefits](#)¹¹
- [Center for Neighborhood Technology – Housing and Transportation \(H+T\) Affordability Index](#)¹²
- RVCOC used HERS-ST in measuring progress toward goals

Research Approach

The research team began by gathering input from FHWA headquarters and Division staff about non-TMA MPOs that have developed or were developing a performance based planning approach. The research team then reviewed publicly available documents, such as long range transportation plans (LRTPs), Transportation Improvement Programs (TIPs), and Unified Planning Work Programs (UPWPs). The research team focused on identifying MPOs with the following characteristics:

- MPOs with PBPP approaches that have not been extensively documented
- MPOs with innovative or newly developed approaches to PBPP
- Diversity of MPO and metropolitan area priorities
- Diversity of geography and DOT relationships
- Diversity of MPO/host relationships (e.g., independent, council of governments (COG), county)

⁵http://www.fhwa.dot.gov/planning/performance_based_planning/

⁶ *Performance Based Planning Guidebook*

http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/

⁷ *Performance Based Planning and Programming Guidebook Case Studies:*

http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/page11.cfm

⁸ FHWA Notices of Proposed Rulemaking: <http://www.fhwa.dot.gov/tpm/rule.cfm>

⁹ FHWA Case Studies Performance based planning:

http://www.fhwa.dot.gov/planning/performance_based_planning/case_studies/

¹⁰ <http://tpics.us/>

¹¹ <http://www.tpics.us/tools/>

¹² <http://htaindex.cnt.org/>

Based on these characteristics, the research team reached out to and conducted structure discussions with the following MPOs:

- Thomas Jefferson Planning District Commission (TJPDC), Charlottesville, VA metropolitan area (2010 urbanized area population: 92,359)
- Flagstaff MPO, Flagstaff, AZ metropolitan area (2010 urbanized area population: 71,957)
- Rogue Valley Council of Governments (RVCOG), Medford, OR metropolitan area (2010 urbanized area population: 154,081)
- Thurston Regional Planning Council (TRPC), Olympia, WA metropolitan area (2010 urbanized area population: 176,617)
- Chittenden County Regional Planning Commission (CCRPC), Burlington, VT metropolitan area (2010 urbanized area population: 108,740)

Acknowledging the important relationship between small MPOs and DOTs, the research team also sought input from FHWA Divisions and the above MPOs on DOTs that are working closely with their small MPOs on implementing performance based planning. The team held discussions with the following DOTs:

- Oregon Department of Transportation (ODOT)
- Texas Department of Transportation (TxDOT)

Staff contacts from the MPOs and DOTs above, combined with insights from the North Dakota peer exchange, and reviews of technical planning documents were the primary inputs for this report.

Report Organization

This report presents key themes and insights from the team's research, synthesizes an overall framework that can help guide other small MPOs, and delves more deeply into the experiences of two MPOs that exemplify two successful potential approaches from the framework.

Chapter 1: Introduction and Background describes the purpose and audience for this report, related resources, and the team's research approach.

Chapter 2: Key Themes in Performance Based Planning by Small MPOs presents insights from discussions with innovative MPOs in a thematic format. Each theme illustrates the core ideas by describing and analyzing particular planning activities of featured non-TMA MPOs.

Chapter 3: Suggested Framework for Incorporating Performance Based Planning by Non-TMA MPOs outlines a framework that other non-TMA MPOs can use to successfully integrate performance based planning and programming into their activities. The chapter includes two distinct approaches; one focuses on collaborative regional visioning with non-transportation partners, whereas the other is oriented towards using performance to create consensus on a program of transportation projects.

Chapter 4: Case Studies include in-depth descriptions of CCRPC and TJPDC, which are strong examples of the two approaches described in Chapter 3.

Chapter 5: Conclusion summarizes findings and potential next steps.

This report presents primary examples and lessons from the team’s research in Chapter 2. These are organized according to themes identified through the discussions with several MPOs and DOTs. Chapter 3 presents a few high-level observations about performance based planning by non-TMA MPOs and two broad, successful approaches the study team distilled during the research. Finally, the report includes two case studies that are good demonstrations of these two approaches.

Chapter 2: Key Themes in Performance Based Planning by Small MPOs

Based on discussions with the MPOs and DOTs listed in Chapter 1, the June 2013 Bismarck Peer Exchange, and other documented examples, the project team identified five key themes in how small MPOs are successfully moving towards performance based planning:

- Establishing a “performance-ready” planning process
- Collaboration with State DOTs
- Coordinated data sourcing
- Performance as a key tool for public and stakeholder engagement
- Cross sectoral planning

The MPOs discussed in this report focused on different themes or combinations of themes in their own approaches. Peer MPOs can review these approaches, methods, and insights to determine which are most relevant to advance their own planning priorities and goals, and adapt as useful for their own planning approaches.

Establishing a “performance-ready” planning process

Small MPOs may lack the resources to rapidly and substantially restructure their planning processes in response to evolving Federal and State shifts toward performance based planning. Instead, many are taking incremental steps to integrate performance concepts and methods into the existing planning practice, preparing data, processes, and staff for future implementation of performance based planning. With this incremental approach, non-TMAs are nonetheless developing innovative approaches to PBPP of interest to their small MPO peers as well as possibly to larger MPOs. The approaches of non-TMAs described in this report are not basic or limited versions of TMA approaches, but represent distinctive strategies that respond to the different context for planning by small MPOs.

Visioning or Scenario Planning

Regional visioning or scenario planning are potential foundations for a performance based planning approach. Both processes can help engage stakeholders, gather data, and focus performance activities on the priorities of that particular agency. Performance indicators can help to articulate a broad range of core and emerging regional goals and initiate early discussion on how the MPO and its partners can move toward achieving them. Vision and scenario planning can encourage innovative thinking about priority concerns and opportunities for the region; the longer time horizon encourages an open exchange among stakeholders about priorities without the immediate controversy of selecting among competing alternative near term investments.

Performance based planning is not a subcategory of vision or scenario planning, nor do these two approaches to planning require a performance component to be successful. However, performance indicators can introduce informed discussion of trade-offs and choices among the long term choices that are often the focus of visioning or scenario planning; choices can extend beyond traditional transportation goals, such as congestion relief or state of good repair, to consider goals of other sectors, from improved public health, economic development, or climate resilience. Broader goals bring new stakeholders to the MPO's table for visioning or scenario planning and can introduce both challenges and opportunities for establishing a meaningful performance based planning approach.

Thomas Jefferson Planning District Commission (TJPD) is using performance measures in scenario planning as a way to analyze and communicate impacts of potential sets of projects in its [2040 LRTP](#) to staff, decision-makers, and the public. MPO staff developed a set of scenarios and analyzed these for impacts on key outcome-oriented performance measures. TJPD's scenarios were focused on results that could be achieved by implementing the new plan; each scenario was a combination of proposed regional transportation projects.

TJPD divided its measures into the following four categories, with examples of key performance measures:

- **Mobility:** Including congestion, mode share, and safety. E.g., the total percentage of roads that will have a level of service E or F in 2040.
- **Economy:** Including access to jobs and transit accessibility. E.g., the average travel time to work.
- **Environment:** This category includes measures that TJPD developed from its application of FHWA's Eco-Logical program for enhanced project development and environmental review. E.g., the aggregate impacts of natural resources and habitats within 500 feet of projects.
- **Community:** Including Land Use and impact on environmental justice and Title VI groups. E.g., the total number of land parcels within a 500 foot buffer of the potential projects by different land use type.

The case study on TJPD in Chapter 4 includes a comprehensive table of these performance measures. Although not currently organized as such, TJPD's measures and categories correlate to the seven national goals outlined in MAP-21.

TJPD presented the scenarios and anticipated performance outcomes to stakeholders including the MPO Policy Board (consisting of elected officials, agency representatives, and citizens), the Citizen Transportation Advisory Committee, and Technical Advisory Committee. The MPO adjusted these scenarios iteratively based on feedback from these decision-makers and the public, eventually moving through three rounds of analysis before deciding on a preferred scenario with these stakeholders. The scenario planning process proved to be an effective channel for communicating using performance measures.

Chittenden County Regional Planning Commission (CCRPC) has also employed performance based scenario planning for the last three updates to its metropolitan transportation plan. Scenario planning allows the MPO to contrast alternative land use and transportation futures and communicate them to

the public using performance measures such as amount of new development in areas planned for growth, transportation mode split and mobility measures. Scenario results led to specific vision, policy and project recommendations that were included in each MTP. Within the last few years, both **CCRPC** and **Thurston Regional Planning Council (TRPC)** used vision planning as a way to gather input on measures and leverage outside funds to develop the data for effective measures. As described in the following section on cross-sectoral planning, both communities obtained grants from the USDOT/HUD/EPA Partnership for Sustainable Communities and used these resources to think regionally about performance and hence develop ideas and data that the MPOs use in the performance based planning process.

Prioritization Criteria

Project prioritization criteria help MPOs determine what projects to program in TIPs and help link planning to the programming of transportation funds. These criteria also play an important role in performance based planning. Prioritization or selection criteria that are linked to performance measures can help orient the decision-making process around performance and clarify more transparently how and why projects are selected for funding. This is the case even if the project level analysis must be more qualitative than at the regional level, for example, in the 20 year long range plan either due to the nature of the criteria or current data availability.

Each of **Rogue Valley Council of Governments' (RVCOG)** project evaluation criteria are tied to regional, Federal and State goals, and also may be directly connected to its regional performance indicators. Oregon requires that MPOs set targets for reducing vehicle miles travelled and increase transportation choice. When developing its performance measures, the MPO tracked their link to statewide and Federal goal areas, which would inform the selection criteria for using Federal funds (Table 1). The MPO has not been able to reduce vehicle miles travelled within its planning period so it tracks measures like miles of sidewalks and bicycle facilities, and the funding provided for transit operations, which they see as ways to achieve the objective of providing more types of trips. When RVCOG evaluates projects to be included in the TIP, they compare the degree to which they address these goals through expected performance indicators.

While these indicators may be useful for tracking regional progress, many may be unavailable or unsuitable for project-by-project evaluation. RVCOG instead uses substitute measures or other types of analysis to predict how the project will affect certain indicators. As demonstrated in Figure 1, experience, performance monitoring, and validation of regional performance indicators can help MPOs to continuously refine and apply these selection or screening criteria.

Table 1: RVCOG's Goals and Project Evaluation Measures (From RVCOG project submission form)

	RVMP0 Goal	2034 RTP Goal	SAFETEA-LU / MAP-21 MPO Requirements	Evaluation Criteria	How Measured
1: Mobility		Plan for, develop and maintain a balanced multi-modal transportation system to address existing and future needs.	Enhance the integration and connectivity of the transportation system, across and between modes for people and freight.	1. Safety or security issue addressed; Accident/injury reduction	Describe safety problem, and how project would reduce number and severity of crashes. (If project demonstrates air quality benefit it will be evaluated for CMAQ.)
				2. Congestion relief/reduce delay	Level of Service improvement; idle time reduced. HDV may be calculated separately. (To qualify for CMAQ project must provide cost-effective congestion mitigation that provides an air quality benefit. If project adds capacity, it will not be considered for CMAQ.)
		Optimize safety and security of the transportation system.	Increase accessibility and mobility. Increase safety of the transportation system. Increase security of the transportation system.	3. Promote connectivity (more direct travel, network infill)	Describe connectivity feature. If project reduces VMT it could help the region meet greenhouse emission requirements.
				4. Population # served (ADT; pop/jobs w/in 1/2-mi)	Provide traffic count; estimate # jobs and population that will be served by this project. Objective is to show the number of people who will be served by the project. Staff will estimate population & employment using RVMP0 model data. Numbers generated will be used to estimate VMT reduction and air quality benefit.
2: Community Vitality & Livability	Continue to work toward more fully integrating transportation and land use planning.	Use transportation investments to foster compact, livable communities. Develop a plan that builds on the character of the community, is sensitive to the environment and enhances quality of life.	Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and planned growth and economic development.	1. Benefit/impact on senior, disabled, low-income, or minority populations	Does the project impact protected populations based on RVMP0 Environmental Justice Plan
				2. Support Alternative Measure 2: increase housing on transit route	Does the project promote or support an increase in housing along transit routes. (If VMT reduction can be directly linked)
		Use transportation investments to foster economic opportunities.	Support economic vitality especially by enabling global competitiveness, productivity and efficiency.	3. Support Alternative Measure 5: Increase % housing in downtowns, mixed use/ pedestrian friendly areas Support Alternative Measure 6: Increase % employment in downtowns, mixed use/ pedestrian friendly areas	Is the project located in a downtown, activity center, designated TOD or other mixed-use (residential/employment) area? Does the project support, or is it part of, a high-density (at least 10-unites/acre for housing) area? Describe the relationship
				4. Benefit to freight movement, commercial traffic	Describe the benefit to movement of commercial vehicles. (If project reduces truck VMT or emissions – esp. pre 1986 trucks – project will be evaluated for CMAQ).
3: Transportation Options	Increase integration and availability of transportation options.	Use incentives and other strategies to reduce reliance on single-occupant vehicles.		1. Encourage/support SOV reduction; Reduce auto dependence.	Does the project reduce SOV use; what elements of project contribute?
				2. Support Alternative Measure 1: increase transit, bike, ped mode share	Describe how the project will increase use of alternative modes
				3. Support Alternative Measure 3: increase bike facilities on collectors, arterials	Provide total length of qualifying bicycle lane.
				4. Support Alternative Measure 4: increase sidewalks on collectors, arterials in TOD areas	Provide total length of qualifying sidewalks

Table 1: RVMCOG's Goals and Project Evaluation Measures (From RVMCOG project submission form)

	RVMP0 Goal	2034 RTP Goal	SAFETEA-LU / MAP-21 MPO Requirements	Evaluation Criteria	How Measured
4: Resource Conservation	Incorporate environmental and energy conservation into the RVMP0 planning process.	Maximize efficient use of transportation infrastructure for all users and modes.	Promote efficient system management and operation.	1. Address/mitigate environmental impacts	Describe project's benefit to natural environment. Does project include conservation features (ex. permeable surface)
				2. Air quality benefit, long term including NOX and VOC.	If there are air quality benefit in addition to responses provided to RED-TEXT criteria, describe. Emission reductions and cost/benefit analysis will be done based on responses provided to items in red. Numbers supplied or staff-generated for Mobility item 4 will be used in this analysis.
				3. Reduce greenhouse gas emissions (CO) ₂	Does the project reduce reliance on travel by combustion vehicles, or shift to lower-carbon fuel? (It's anticipated that projects contributing to the Alternative Measures will reduce GHG emissions.)
		Encourage use of cost-effective emerging technologies to achieve regional transportation goals.	Emphasize the preservation of the existing transportation system.	4. Use emerging/new technology	Describe technology to be incorporated into project.
				5. Preserves existing transportation asset	How does the project extend the life of facility without the construction of new facilities? Does the project refurbish existing facility? (If facility is transit, bike or pedestrian it will be considered for CMAQ evaluation.)
				6. Reduce VMT	Reduction formula based on project type.
				7. Improve system efficiency	Describe efficiency: Facility able to handle greater ADT without expansion; Improve other transportation function with smaller investment; reduced operational costs; other?
				8. Lifespan	Useful life of investment. For roadway projects, uniform lifespan applies as determined by predominate material used: concrete = 30 years; asphalt = 20 years; bike lanes = 20 years.
				9. Other public, private funding sources (leverage)	List overmatch, other funds

Internal Reporting and Tracking

As discussed later, public reporting of the status and progress of performance measures can help engage stakeholders and in the process elevate the stature of small MPOs within the policy environment of their communities. Internally tracking performance can also be useful to an agency as it develops its performance approach. In an environment of limited resources, performance tracking allows small MPOs to determine which measures are most effective and which measures are difficult to obtain and may not be worth pursuing.

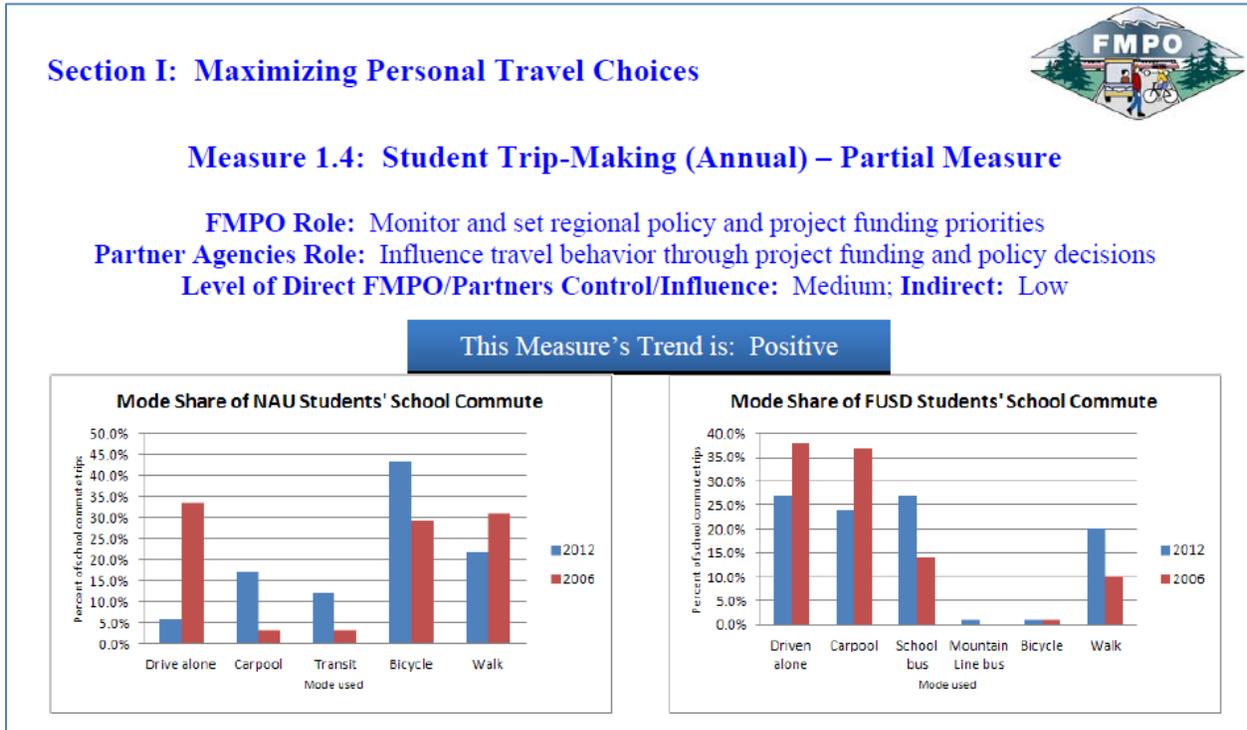
Flagstaff MPO specified a number of measures linked to its overall plan goals in its 2009 LRTP, [Pathways 2030 Regional Transportation Plan](#)¹³. Since then, it has developed two performance progress reports that it shared with its stakeholders and leadership. This process has helped the MPO develop perspective on the kinds of data that are available for measuring system performance. As shown in Figure 2, the tracking report includes:

- An indication of the trend for several measures that support policy goals (negative, mixed, or positive)
- A description of whether the measure is influenced directly or indirectly by MPO policies.
- The role of Flagstaff MPO to take actions that relate to the measure
- The role of partnering agencies to take actions that relate to the measure

This tracking report helps the Flagstaff MPO to communicate transportation-related policy issues and to demonstrate how well the region is performing toward meeting its goals. The report also discusses how much the MPO is able to influence the direction of some of the measures.

¹³ <http://www.flagstaff.az.gov/DocumentCenter/Home/View/10092>

Figure 2: An example from Flagstaff MPO's Tracking Report (Page 9)



Collaboration with State DOTs

DOT-MPO coordination is an important feature of transportation planning processes. This relationship is particularly crucial for small MPOs. DOT expertise and resources can be valuable for non-TMA MPOs, which often have small staffs and may not maintain their own GIS infrastructure or travel demand models. DOTs and MPOs benefit from the consistency that this coordination allows; compatible data and measures across State planning boundaries help with the implementation of a consistent performance framework. In addition, DOTs may be further advanced than their non-TMA MPOs in preparing a performance management approach to transportation planning.

Modeling Capacity

Many DOTs conduct or assist with travel demand modeling for non-TMA MPOs. Given that model outputs can be an important source of performance measures for small MPOs, a strong working relationship between the MPO and DOT on models can be a foundation for developing a mature approach to performance based planning. DOTs may play a direct role in applying or managing models for small MPOs, or may help advance the sophistication of MPO-maintained models.

Oregon DOT operates models on behalf of some of its MPOs, but, in addition, all Oregon MPO models and the statewide transportation model are built on a similar platform. This not only makes it easier for

the DOT to provide consistent support to MPOs, but also allows MPOs and the DOT to share improvements as they are developed between the statewide model and the models of Oregon MPOs. For example, if the Portland metropolitan area's MPO, Metro, develops a model add-on that allows it to estimate public health benefits of transportation improvements, this could be adapted to the statewide model and other MPO models more readily than if these systems did not share a common platform. Oregon DOT and its MPOs are able to accomplish this because they have established a statewide modelling consortium made up of all MPOs and ODOT. In Oregon, early coordination on issues such as data sharing and modelling platform development has allowed both the State and its MPOs to be prepared to conduct performance based planning. This exemplary practice in data sharing and modelling coordination could be an effective model for State DOTs and MPOs as they align goals and objectives, determine measures, and set targets related to the State's transportation system.

Research by Citilabs and Georgia Tech revealed that small MPOs were more likely to use policy judgment or qualitative methods for forecasting land use than are medium or large MPOs, who were likelier to use land use modeling or visioning tools. Small MPOs were also more likely to use three or four-step travel demand models rather than activity-based models, which are more sophisticated.

All of the examples described in this report are of MPOs that use travel demand models. The Citilabs and Georgia Tech research indicated that in general compared to larger MPOs, MPOs planning for small communities have the following characteristics:

- have less experience using transportation and/or land use models to analyze the performance of alternative scenarios,
- have "simpler" models and forecasting methods,
- are less comfortable sharing model results,
- may have differing policy goals and priorities, and
- are less certain of the role models should play in performance based planning activities.¹⁴

Statewide Data

Another key potential role for DOTs is providing data to small MPOs and enhancing consistency between MPO and statewide approaches to data. Even when a DOT may not have direct responsibility for certain transportation assets or in cases where they do not manage data sets, they may have established relationships with those entities that do have control that could allow them to support non-TMA MPOs by consolidating external data requests.

TxDOT packages a variety of data for its small MPOs, including:

- Bridge condition,
- Pavement condition, and
- Crashes and other safety incidents.

¹⁴ Brown, Colby; Lee, David. Understanding Differences in Performance based Planning Practices at Small, Medium, Large, and Very Large MPOs. Presented at TRB Tools of the Trade Conference, Burlington, VT. July 2014.

MPOs, including non-TMA MPOs, determine their own measures and targets, but TxDOT proactively assists in providing consistent data for these measures. TxDOT also provides transit data, even though these data often come from local agencies. TxDOT—like many DOTs—works directly with transit agencies on compliance and other requirements, and can hence provide the data in a format consistent across the State’s MPOs.

For some data sources, information is only available at the county level. This can be a challenge for consistent use of performance measures for MPOs that cross county lines. For these MPOs, TxDOT provides an approach to incorporating data for counties for which they only partially have planning responsibility.

ODOT has recognized that most of the State’s MPOs do not have the staff and financial resources to analyze the data that ODOT routinely collects. To help overcome this, ODOT has engaged in efforts in partnership with universities to make the data more accessible and to create a clearinghouse where all State collected data are accessible.

Collaboration on Goals, Targets, and Measures

MPOs can set their own performance measures and targets. But, given resource constraints, common goals, and shared data sources, it may be useful for both non-TMA MPOs and DOTs to work closely together in establishing measures. For non-TMA MPOs in particular, the State implementation of the national performance planning guidelines can provide a critical foundation for their approach to performance.

Both **TxDOT** and **Oregon DOT** continue to actively discuss the implementation of performance based planning with MPOs. In Oregon, established regular meetings between DOT and MPO staff on topics such as modeling and transit provide a forum for stable dialogue on performance. TxDOT has used relevant committee meetings of the [Association of Texas Metropolitan Planning Organizations](#) (TEMPO) as a forum to communicate and outline principles for a consistent approach for MPOs and the DOT. This kind of coordination can be useful as MPOs and DOTs establish and refine their approach to implementation of Federal expectations for performance based planning.

Some states, such as **Oregon**, may also have existing performance requirements that can be incorporated into the development of new performance based planning approaches. For instance, MPOs in Oregon must report progress in reducing vehicle miles traveled (VMT), or provide a summary of alternative performance outcomes that show that they are incorporating this objective into their planning and programming. As explained in the RVCOG example earlier, MPOs in Oregon can show the outcomes of VMT-reduction strategies as results from MPO investments such as miles of new dedicated bikeways and sidewalks or projects that reduce single-occupant vehicle travel. Oregon DOT and the State’s MPOs are using MAP-21 as an opportunity to build from this existing experience with performance while exploring other potential measures that can both be consistent with Federal goals but also advance the State goal of VMT reduction.

As explained in the [North Dakota Metropolitan Planning Organizations TPCB Peer Exchange report](#),

before developing its long range plan, **Rochester Olmstead Council of Governments (ROCOG)** determined whether **MnDOT**'s established performance measures in several areas could be valuable for the MPO to track areas of regional importance.¹⁵ In recognition of its limited resources as a small organization, ROCOG has made excellent use of existing statewide data from MnDOT research and performance monitoring.

Coordinated Data Sourcing

While State DOTs are a primary partner for non-TMA MPOs in obtaining the data needed for performance planning, there are other sources that may be especially useful for small MPOs. Using existing data helps limit the strain on agency resources. For example, MPOs planning for non-TMAs may benefit from access to data maintained by other offices or agencies that may be co-located within councils of government or regional planning organizations. In smaller communities, staff or planners with transportation responsibilities may also have responsibilities for planning economic development, health, land use, or education. This feature of small planning organizations can make it easier to bring data required for non-traditional goals and performance measures, for example, increasing physical activity to meet health goals, or improving access to new developments, into transportation planning.

Travel Demand Models

As an established tool for transportation planning, a travel demand model can be an important resource for performance data and estimates that can be used in the planning process. While it may be helpful for a small MPO to have the flexibility of operating its own travel demand model, models operated by DOTs can also be valuable in a performance based planning process, particularly if MPOs and the DOT discuss this while developing a collaborative approach to performance.

TJPD's scenario planning approach to performance uses the travel demand model outputs to provide key measures to evaluate policy options. Models are an especially effective data source for scenario planning, since they are predictive and generate data and performance measures that can be used to compare alternatives – whether scenarios, options for corridor investments, or comparisons on project alternatives. In addition to describing the current performance level of the region, models can use regional measures to estimate or forecast future results of proposed transportation projects. However, models are typically limited in scope and may be less effective at estimating the performance of pedestrian, transit, or other alternative transportation projects. These limitations make it imperative that MPOs supplement modelling with other analysis to predict the effect on performance of actions that models are unable to account for.

Transit Agency

Even small transit agencies document key quantitative measures relating to ridership and operations

¹⁵ http://www.planning.dot.gov/peer/NorthDakota/MPO_Performance_Mgt_06-13.pdf

because of existing reporting requirements for funding eligibility. Transit partners can thus be a helpful data source for non-TMA MPOs, especially given the challenge of measuring alternative transportation performance. Transit providers, from local or regional fixed route or paratransit operators, can be important data sources.

DOTs can help coordinate across multiple transit agencies to support non-TMA MPOs. This may be especially important if an MPO's boundaries include multiple local transit agencies. State DOTs may have existing funding, safety, or oversight relationships with small and rural transit agencies that could include reporting requirements. **TxDOT**, for example, provides transit data to Texas MPOs to support their performance based planning efforts. This also creates greater consistency in the use of transit data and derived measures, which better enable TxDOT to assist MPOs with performance based planning and to coordinate MPO plans with statewide plans and other planning activities.

Municipalities

Local governments can be a source for data on topics such as road condition or congestion, but may also help set priorities for collecting data and developing measures and targets. Developing a performance based planning approach that draws from and benefits municipalities can help strengthen the partnership between non-TMA MPOs and their member municipalities, and support a meaningful role for small MPOs.

For instance, **Flagstaff MPO** is working to collect and analyze pavement data from municipalities. These data will be used by the MPO to create a pavement management system that will be used to prioritize the use of a new source of funding dedicated to pavement management.

Municipalities are also typically responsible for setting priorities that go beyond the transportation sector but upon which transportation has an impact including health, environment, and economic development. While an MPO does not have to restate these priorities, it can find opportunities to tie-in the monitoring of transportation progress by leveraging the efforts at tracking related measures by municipalities. As described later in the detailed case study, CCRPC has made these partnerships a cornerstone of its performance based planning framework.

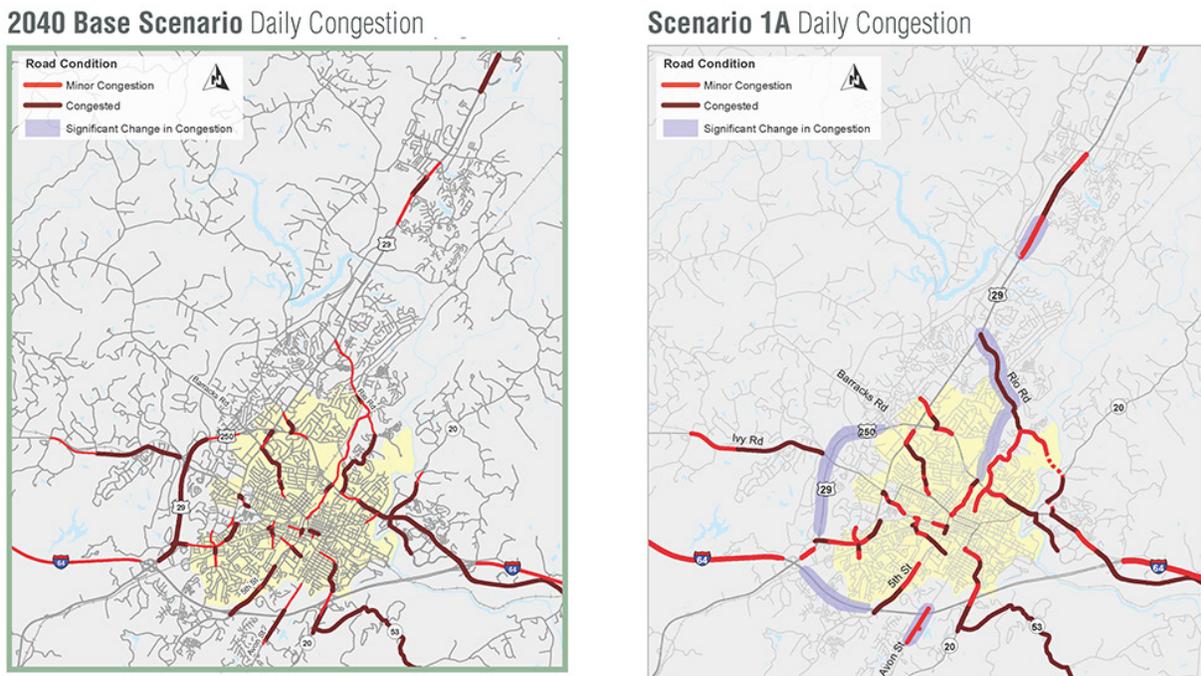
Communication and Transparency

Performance based planning can support a highly transparent and easily communicated form of policy setting, including important components such as monitoring of results. Once a region has established goals and objectives and developed strategies and investments to meet them, policymakers and the public can see the progress that the region may or may not be making as a result of these decisions. Performance based planning connects all of the individual components of planning from visioning to goal and objective-setting to implementation and evaluation into a coherent and credible story that the public can follow. For this reason, the best communicated plans tend to be organized around performance principles.

For example, **CCRPC** and **Flagstaff MPO** each made use of published annual reports to track progress toward meeting some of the area’s goals. The CCRPC’s Environment, Community, Opportunity, and Sustainability (ECOS) Project publishes measurements of several outcomes and trends related to transportation and other policy areas. This project is described in depth at the end of this report. As shown in Figure 2, the Flagstaff MPO’s tracking report similarly publicizes available data and analyzes whether plans and decisions affect policy areas over which the MPO has some influence. Each of these efforts improves communication of the MPO’s activities and increases the MPOs coordinating capabilities through increased visibility of the organization’s activities.

TJPDC made extensive use of tables, maps, and data visualizations in drafting and conducting outreach for its [2040 LRTP](#). Using performance measures, the MPO created additional technical numbers and terms that the MPO needs to communicate to stakeholders and the public. Creating maps and data visualizations that display the anticipated performance outcomes of different combinations of projects not only overcame this barrier but actually increased engagement relative to past plans, according to MPO staff. Figure 3 shows two maps from a series that TJPDC used to show congestion differences between scenarios and compared to a no-build base scenario. These maps, though simple, help outline performance tradeoffs to decision makers.

Figure 3: Two congestion comparison maps from TJPDC's 2040 LRTP (Chapter 7, Page 94)



Cross-Sectoral Approach

Smaller MPOs benefit tremendously from partnerships with local agencies and organizations outside of the transportation sector. Beyond being simply a good comprehensive planning approach, such partnerships allow under-resourced MPOs to leverage the resources of other organizations in implementing strategies that cut across many policy areas like health or affordable housing and land use planning. For the same reasons, these partnerships also make sophisticated performance measurement more attainable.

Two small MPOs, **CCRPC** and **TRPC**, have significantly expanded their reach and capacity to conduct sophisticated performance based planning by partnering with other agencies and organizations involved in setting regional policy in other sectors such as environmental sustainability, economic development, health, and housing. In each case, the MPO was awarded a competitive planning grant through the HUD/EPA/DOT Partnership for Sustainable Communities Planning Grant to conduct performance based planning in partnership with community organizations outside of the traditional transportation planning realm. The use of this seed funding to conduct a regional plan that goes beyond the responsibilities required of the MPO and connects its transportation policy setting with other related regional goals has significantly improved regional planning and put the MPO at the center of tracking implementation of the cross-sectoral plan.

This new role for the MPO has elevated the importance and visibility of the MPO as the key agent in stewarding regional policy. In the case of CCRPC's ECOS Project, the MPO folded its metropolitan transportation plan into the wider ECOS plan as one chapter. Although such an action might seem to diminish the importance and visibility of regional transportation planning, it has in fact had the opposite effect as the wider plan is far more visible to a greater audience.

Chapter 3: Suggested Framework for Performance Based Planning by Small MPOs

Most MPO and State DOTs are in early stages of incorporating the principles and components of performance based planning into their planning process. But the passage of MAP-21 by the Federal government was by no means the first use of this approach to planning and programming at statewide and metropolitan area or regional levels. Several vanguard MPOs and State DOTs have been engaged in this type of planning for many years, as documented in FHWA and other best practice research. Federal, State, and metropolitan agencies nationwide can benefit from understanding the early experiences of these pioneers in performance based planning: incentives for adapting this approach, results, lessons learned, and plans for the future.

Based on the examples from these MPOs—discussed in the preceding chapter and the case studies—this chapter outlines a framework that peer MPOs may find useful when developing their own approach to performance based planning and programming, adapted to meet local needs and priorities. This supplements the existing FHWA PBPP framework (discussed in Chapter 1). State DOTs and other partners may also find this a useful framework to consider when collaborating with non-TMA MPOs.

In addition, this chapter characterizes two successful potential approaches to performance based planning by small MPOs:

- Cross-sectoral coordination
- Focus on project evaluation

These approaches are rooted in the project team’s conversations with MPOs and particularly, the case studies of TJPDC and CCRPC. These models may be especially useful as small MPOs consider how to implement performance measures in a context of limited resources.

Focus-based Framework

The small MPOs reviewed in this report have begun to realize many benefits from adoption of a performance based planning approach. In particular, integrating performance into their planning and programming has helped them coordinate with partners and guide regional decisionmaking. While MPOs are only beginning to respond to the new and upcoming Federal requirements for performance management, the experiences and work of this small group of innovative peers can serve as a reference to help other small MPOs as they develop a performance approach appropriate to their needs and resources.

The previous chapter presented five themes from discussions with non-TMA MPOs that are at various

stages of integrating performance into their planning processes. The project team suggests that each of these themes is important for small MPOs developing a performance based planning process (the “performance-ready” theme is not included in this framework as it is an interim step rather than an overall strategy):

- Collaboration with State DOTs
- Coordinated data sourcing
- Performance as an engagement tool
- Cross sectoral planning

The project team’s framework recommends that small MPOs consider pursuing each of the above strategies to some degree when developing their performance based planning approach. However, the framework suggests that, while ideally integrating all of the above themes, MPOs should focus limited resources on one or two that most align with their priorities.

Figure 4: Focus areas for CCRPC under this study's framework

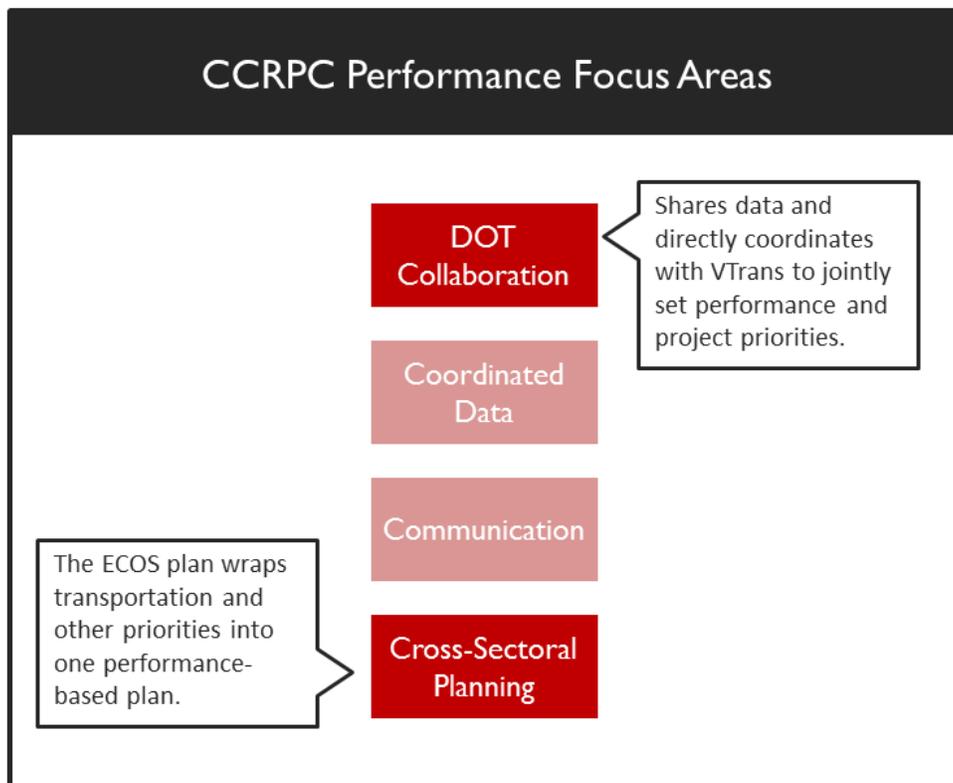


Figure 5: Focus areas for TJPDC under this study's framework

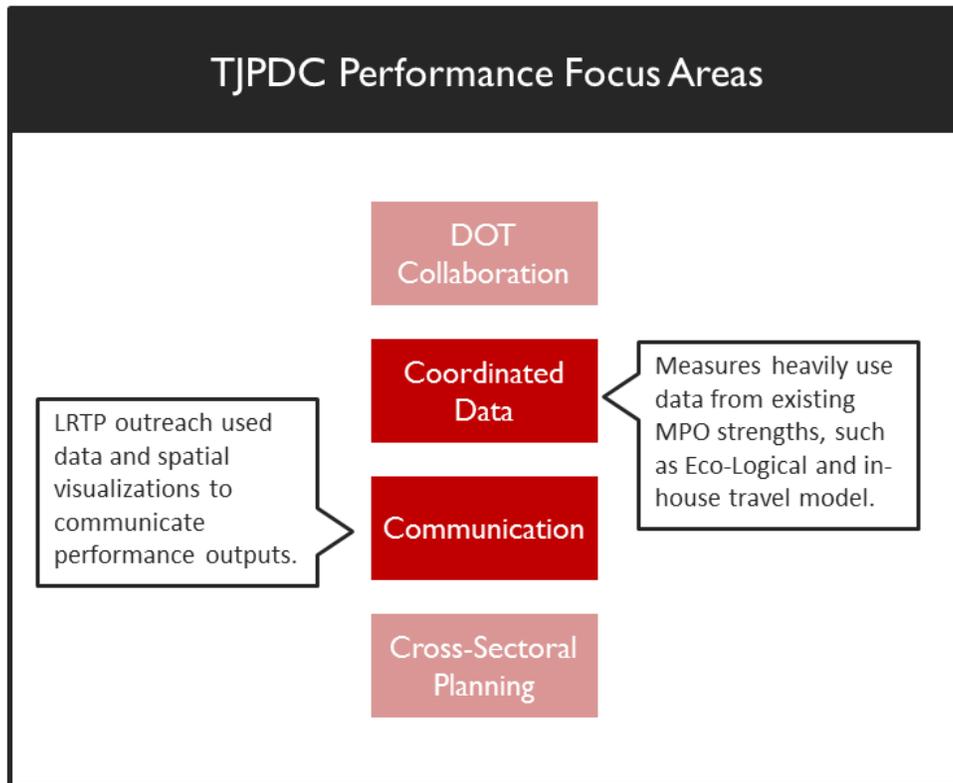


Figure 4 and Figure 5 show how this framework applies to the two case study MPOs featured in this report: CCRPC and TJPDC. Both MPOs incorporate aspects of all themes in their approach, not just those that are a focus. For example, TJPDC is collaborating with its DOT; it worked with the Virginia Department of Transportation to obtain safety data and explain the role of a travel demand model in transportation planning to the public. And communication is a feature of CCRPC's approach; it publishes annual indicator reports under the ECOS plan that are readily accessible to partners and members of the public. But each MPO focuses on the method that is best aligned with local circumstances and priorities: TJPDC focuses on using its travel demand model and other existing data to communicate with stakeholders and the public, while CCRPC collaborates very closely with its DOT and partner agencies to set performance priorities and track progress.

Peer DOTs may similarly find it useful to identify their own preferred methods from within the four key themes identified as important in this framework.

Two Performance based Planning Models for Small MPOs

Based on this framework and the supporting research, the project team also identified two performance based planning approaches that may be especially useful for other non-TMA MPOs. Both are efficient

approaches to performance based planning that may appeal to small MPOs that often have limited resources and plan for smaller amounts of funding than TMA peers:

- **The MPO as coordinator across sectors and agencies:** Working with other regional planning agencies provides opportunities to share the costs of data coordination and can help a small MPO more effectively plan for regional decisionmaking.
- **Scenario planning to develop a program of projects:** Because they usually plan for a small number of projects, non-TMA MPOs may be able to use performance and scenario planning to identify preferred projects during LRTP development, simplifying the creation of a TIP.

The MPO as Coordinator Across Sectors and Agencies

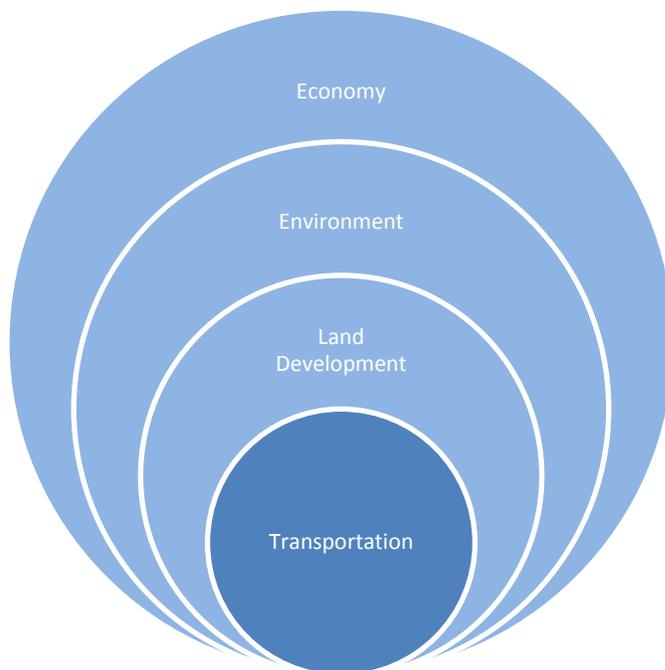
MPOs that serve large TMAs often lead cooperative planning for the distribution of large sums of Federal funds for transportation projects, and play a central role in policy and planning in their regions. Smaller MPOs play a similar role as their larger counterparts but typically have limited resources to conduct planning activities and plan for a smaller proportion of Federal funding compared to funds that State and local partners directly program. One effective way to engage in meaningful performance based long range planning is to partner with other agencies to create plans and programs that reflect community values and priorities across sectors and agencies. These plans may reflect community aspirations for a healthier population, economic growth, a more equitable and sustainable economy, or an improved environment in addition to a well-functioning transportation system.

The Chittenden County Regional Planning Commission in Burlington, Vermont and the Thurston County Regional Planning Commission both offer models of this approach to performance based planning by small MPOs. They both took advantage of HUD/EPA/DOT Partnership for Sustainable Communities Planning grants to conduct cross-sector planning incorporating the goals of affordable housing, environmental protection, economic development and the improvement of transportation assets and expansion of transportation choices.

Small MPOs may be a logical “home” for broadly-based performance management in some regions. This is especially true if the MPO is part of or integrated within a council of governments or another organization that coordinates and provides resources to member governments. Playing this role may help the MPO to assemble partner resources support consideration of performance in project implementation, and may also help the MPO exercise a voice in metropolitan transportation and other planning areas that is larger than its direct influence over total transportation spending would otherwise entail. Finally, communicating area-wide performance can be a key way for small MPOs to engage the public and make them aware of the MPO’s role in transportation planning and a broad range of regional activities.

Figure 6 illustrates the cross-sectoral planning approach. MPOs must plan for metropolitan transportation needs, but may find that planning documents are more effective and efficient to develop when integrated with the actions of other regional planning entities.

Figure 6: Cross-sectoral planning. Small MPOs may benefit from the coordinated resources and data of agencies that plan for topics that relate to transportation.



Scenario Planning to Develop a Program of Projects

Another, not mutually exclusive, approach is to focus particularly on project evaluation and prioritization using performance measures. This method, as practiced by the Thomas Jefferson Planning District Commission (TJPDC, described in detail later), uses anticipated performance to program its transportation projects. For its most recent transportation plan, TJPDC used scenario planning to demonstrate potential performance outcomes for different combinations of projects to MPO decision-makers. This allowed MPO staff to engage in a data and performance-driven conversation about what projects the MPO should prioritize to maximize positive outcomes, minimize negative effects, and meet the goals of elected officials and stakeholders. TJPDC staff reported that this approach allowed the agency to develop an LRTP that could readily be used to develop a regional TIP.

This may be an especially effective strategy for small MPOs that can begin by developing project selection criteria that align with performance goals and objectives. And because small MPOs often program fewer total projects compared to large metropolitan areas, it may be easier to estimate performance effects of proposed investments and reach a consensus with stakeholders about a program. Like the focus on cross-collaboration, it builds on the strength of performance measures and goals as a communication tools.

Chapter 4: Case Studies

The following two examples of small MPOs engaged in performance based planning illustrate aspects of the framework suggested above.

Chittenden County Regional Planning Commission

The Chittenden County Regional Planning Commission (CCRPC) has incorporated some elements of performance based planning in its activities for over 15 years. The CCRPC is responsible for long range transportation planning and programming for Chittenden County (2010 pop. 156,811), which includes the Burlington, Vermont urbanized area.

This section provides a brief description and review of performance based planning in Chittenden County and its recent experience with cross-sector planning that has significantly enhanced the performance management activity of this MPO (Metropolitan Planning Organization).

CCRPC has incorporated some elements of performance based planning in its activities since the 1990s. It has focused on using performance measurement for regional visioning to guide its long range plans and setting prioritization criteria for the programming of transportation funding.

Performance based Visioning and Scenario Planning

The CCRPC developed the 1997, 2005, and 2013 iterations of its [Metropolitan Transportation Plan](#) (MTP) after conducting scenario planning processes. In each of these instances, the region evaluated several alternative future transportation and land use scenarios and tested their results using a variety of performance measures.¹⁶

Each of the scenarios helped the region agree on the vision residents wanted to work towards. Each scenario under these processes was starkly different. They included, for example, an exclusive focus on building roads, a maintenance-only program, or a scenario in which almost all funding was geared toward expanding transit. These transportation scenarios were paired with contrasting land use development scenarios. The performance measures for the combined scenarios allowed the CCRPC to communicate the policy trade-offs inherent in each vision for the future through the use of outcome indicators such as PM peak hour vehicle hours of delay, greenhouse gas emissions, and land consumption. After a public process, the scenario results led to a specific vision, with policy and project recommendations that were included in each MTP. Generally, the CCRPC used the travel demand model to estimate forecasted impacts from land use and transportation alternatives in these scenario planning exercises.¹⁷

¹⁶ <http://www.ccrpcvt.org/regionalplan/>

¹⁷ http://www.ccrpcvt.org/MTP/2035/Vision_2060_Scenario_Planning_Report_20110104.pdf

The conclusions that the CCRPC drew from the 2008 scenario planning process (Figure 7 and Figure 8) were a key input into the design of the ECOS project described later in this section. The scenario planning report recognized that CCRPC had limited ability at the time to implement the vision that came out of the process and recommended a more comprehensive regional strategy to guide decision making.

Figure 7: Chittenden County Scenarios (2008)

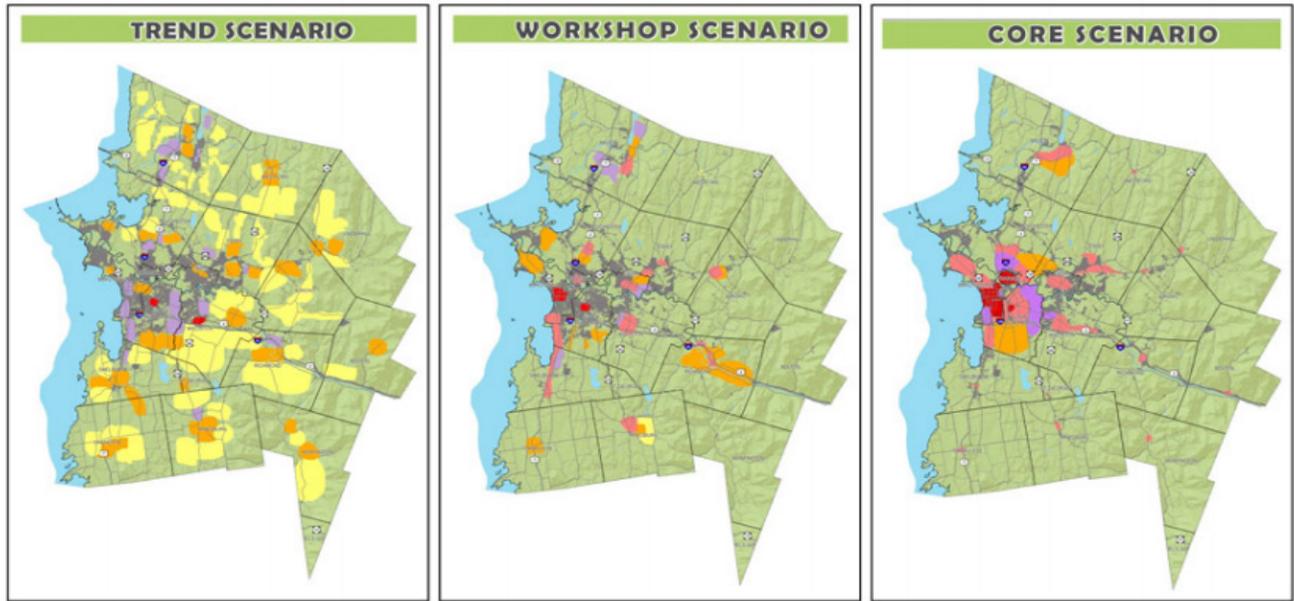


Figure 8: Scenario Performance Measures (2008)

	2005	Trend	Workshop	Core
Congestion (Weekday PM Peak Hour Annual Vehicle Hours of Delay)	6.6	15.4	13.6	10.4
Weekday Daily Greenhouse Gas Emissions (tons)	1,790	2,550	2,500	2,260
Annual Transit Ridership (million boardings)	1.9	4.1	5.8	10.8
Percent of Daily Trips by Walking or Bicycling	4.8%	4.3%	5.0%	8.3%
Land Consumption (square miles)		124	25	25

Developing Prioritization Criteria with the Vermont Agency of Transportation

In 2005 and 2006, the Vermont Agency of Transportation (VTrans) developed a prioritization method for its major assets including paving, bridge, aviation, roadway, safety and bicycle and pedestrian assets. The State legislature created this asset management policy and also required VTrans to solicit input from the State’s regional planning commissions including CCRPC. The legislature directed VTrans¹⁸ to develop

¹⁸ http://www.leg.state.vt.us/jfo/appropriations/fy_2014/AOT%20-%20Entire%20Budget.pdf

a numerical grading system to assign priority ratings to all paving, roadway, safety and traffic operations, State and interstate bridges, town highway bridges, and bridge maintenance projects. Under the rating system, the legislation requires consideration of:

- Safety conditions
- Traffic volume and congestion
- Availability of alternative routes
- Future maintenance and construction costs
- CCRPC or other RPC priorities
- Functional importance of the transportation asset in the social and cultural life of communities

The CCRPC collaborates with VTrans to follow these requirements to develop a prioritized list of projects for its planning area. Under this arrangement, VTrans provides a list of all of its candidate road projects in the region, which includes all projects in the Capital Program with the exception of rail, aviation, interstate, and bridge maintenance programs, which are handled exclusively by the State. VTrans provides engineering-based evaluation of factors such as pavement and bridge conditions or traffic volumes and congestion. CCRPC provides evaluation of other factors that involve environment, energy and quality of life; economic vitality; and the importance of the project to the region. CCRPC's prioritizing methodology coordinates this package of criteria and scores projects on a five-point scale (High, Medium-High, Medium, Low, or No Impact) for each of its criteria (Figure 9). In addition to this role in setting roadway funding priorities, CCRPC is responsible for setting priorities for other modes like pedestrian and bicycle facility projects.

Figure 9: Sample of CCRPC Project Selection Criteria

		Planning Factors	
		Economic Vitality <i>Support the economic vitality especially by enabling global competitiveness, productivity, and efficiency</i>	Safety and Security <i>Increase the safety and security of the transportation system for motorized and non-motorized users</i>
Project Characteristics	High Impact (10 points)	<input type="checkbox"/> Project provides new or improved access*, including transit and pedestrian/bike access*, to or within a Vermont designated Growth Center, Downtown, New Town Center or Village Center or CCRPC designated Enterprise Planning Area <input type="checkbox"/> Project on an interstate or principal arterial that improves access* for freight <input type="checkbox"/> Project improves airport access* <input type="checkbox"/> Project improves access*, including transit and pedestrian/bike access*, to tourism facility <input type="checkbox"/> Project that improves access* to the rail network	<input type="checkbox"/> Safety improvement in a VTrans identified High Crash Location – intersection or section of roadway <input type="checkbox"/> Bridge improvement for a bridge with a sufficiency rating up to 25 <input type="checkbox"/> Transit equipment for safety or security <input type="checkbox"/> Dedicated pedestrian/bike facility making intermodal linkages or regional connections in a location with a documented existing safety problem
	Medium-High Impact (7 points)	<input type="checkbox"/> Project provides new or improved access*, including transit and pedestrian/bike access*, to or within a CCRPC designated Center, Metro or Village Planning area, or a municipal designated growth area <input type="checkbox"/> Project on a minor arterial or major collector that improves access* for freight <input type="checkbox"/> Project that maintains existing access facilities on interstate or principal arterial <input type="checkbox"/> Project improves an access* facility important to rural community <input type="checkbox"/> Project addresses environmental issues that could impact economic development <input type="checkbox"/> New/expanded Park and Ride Lot	<input type="checkbox"/> Improvement to emergency access <input type="checkbox"/> Bridge improvement for a bridge with a sufficiency rating of 25.1 to 50 <input type="checkbox"/> New median barriers, guardrails or shoulders <input type="checkbox"/> Intersection/roadway safety improvement in a location with a documented safety problem <input type="checkbox"/> Rail grade crossing improvement or warning signs <input type="checkbox"/> Dedicated pedestrian/bike facility with a documented safety problem on a Principal or Minor Arterial roadway
	Medium Impact (5 points)	<input type="checkbox"/> Project that provides access*, including transit and pedestrian/bike access*, to or within a future activity area identified in a municipal plan or study <input type="checkbox"/> Project that provides new or improved access*, including transit and pedestrian/bike access*, to or within locally important areas of economic activity <input type="checkbox"/> Bus station/stop amenities and shelters <input type="checkbox"/> Project that supports the mobility needs of rural community <input type="checkbox"/> Project that maintains existing access facilities on minor arterial or major collector	<input type="checkbox"/> Bridge improvement for a bridge with a sufficiency rating from 50.1–80 <input type="checkbox"/> Repave interstate or principal arterial <input type="checkbox"/> Dedicated pedestrian/bike facility in a location with a documented safety problem on a Major Collector roadway <input type="checkbox"/> Safety related transportation project identified in a study/report
	Low Impact (3 points)	<input type="checkbox"/> Other transportation improvement that supports economic development	<input type="checkbox"/> Repave a minor arterial or major collector <input type="checkbox"/> Dedicated pedestrian/bike facility in a location with a documented safety problem on a local road <input type="checkbox"/> Other safety related improvement identified in a study/report
	No Impact (0 Points)	<input type="checkbox"/> No discernible benefit	<input type="checkbox"/> No discernible benefits

* Improved access is defined as increase in capacity or reduced delay

The CCRPC continues to use this methodology but, in establishing, monitoring, and communicating these factors now draws from a new regional cross-sector planning effort.

Partnering Across Sectors: The ECOS Project

CCRPC's experience with scenario planning and performance based project prioritization provides the backbone for a new partnership that has allowed it to more clearly incorporate regional priorities for investments and increase its coordinating influence in the region. After receiving a Federal seed grant to collaborate with regional partners, the Burlington area is now served by a performance based comprehensive regional plan that includes land use and transportation but also other community issues such as energy, health, public safety, and education. The process of engaging with one another in the development of this coordinated plan not only allowed the MPO, the economic development agency, and the regional planning commission to pool resources and involve more stakeholders, but resulted in the merger of the previous Regional Planning Commission, which was tasked with the Regional Plan – a State-mandated document that established county policies and planning on land use, energy, natural and cultural resources, and housing – with the MPO to create the new Chittenden County Regional Planning Commission.

HUD/DOT/EPA Sustainable Communities Grant

The new CCRPC led the initiative to apply and receive a [HUD/DOT/EPA Sustainable Communities Grant](#)¹⁹ to create a regional sustainable development plan. The CCRPC partnered with several nonprofit organizations and government agencies operating in the region, most notably the Greater Burlington Industrial Corporation (GBIC), which is responsible for updating the region's Comprehensive Economic Development Strategy (CEDS) to create a unified regional plan that would cross all sectors of economy, environmental sustainability, land use, transportation, and quality of life. The result of this effort was the [Environment, Community, Opportunity, and Sustainability \(ECOS\) Project](#)²⁰.

The ECOS Plan

After two years of effort, in June 2013, the CCRPC adopted the ECOS Plan as both the Regional Plan and the Metropolitan Transportation Plan, and the GBIC adopted the ECOS Plan as the Comprehensive Economic Development Strategy (CEDS). Prior to the ECOS effort, three regional entities were tasked with creating these plans as three separate documents through separate planning processes. In addition to streamlining the preparation and update of these three plans into one plan, the ECOS project engaged a variety of stakeholders to reach consensus on the choice of goals to guide development in the region as well as the strategies, and measures that the region could use to evaluate its progress towards meeting those goals.

The ECOS project incorporated the scenario planning activities that the CCRPC has long used to establish

¹⁹ <http://www.sustainablecommunities.gov/>

²⁰ <http://www.ecosproject.com/plan>

its MTP priorities. Through this scenario planning process, the region's stakeholders were able to help establish consensus on transportation and land use goals and objectives within a conversation and planning process that included economic development and environmental sustainability. As a result of the ECOS project, transportation decisions are now tethered to a range of cross-cutting regional goals, and the CCRPC will benefit from the formalization of partnerships between it and the other regional entities that took part in the project and that the plan identifies as being responsible for carrying out the plan's strategies. The plan also outlines an approach for monitoring the plan's progress on over 80 indicators.

ECOS Indicators Annual Report

Besides the new partnerships that the ECOS project formalized, the ECOS plan is significant in that it established indicators to monitor progress and assigned responsibility for measurement to the plan's partners. The ECOS plan sets in place a process for [annual reporting](#) on whether the region is progressing along the desired trajectory.²¹

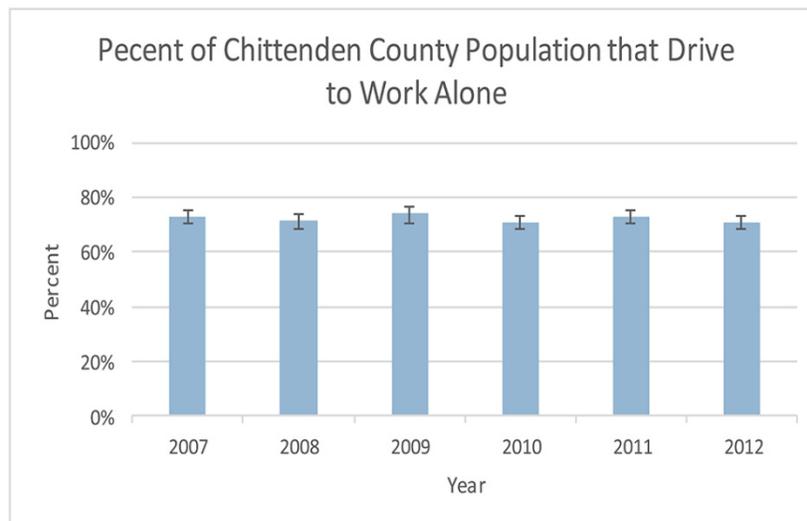
The ECOS plan included goals and strategies and identified indicators to measure performance, but for the most part did not identify targets for the region to meet. The only target that CCRPC uses to measure its progress is the land use target that 80 percent of new development be in areas planned for growth, which amounts to 15 percent of the land area. Since developing reasonable targets for so many indicators would be an extremely ambitious effort, the ECOS partners agreed that monitoring of trends was sufficient to indicate areas where regional partners should concentrate their pooled resources and to communicate to the public the relative progress towards goals (Figure 10).

²¹ http://www.ecosproject.com/sites/default/files/documents/2013%20ECOS%20Annual%20Report_0.pdf

Figure 10: Indicators of Progress on the Measures of the Built Environment (ECOS Annual Indicators 2013, Page 10)

MEASURE	2013 TREND
Land Use: Residential Development	POSITIVE
Housing: Affordability	NEUTRAL
Housing: Vacancy Rate	NEGATIVE
Housing: Inventory	POSITIVE
Housing: Homelessness	NEGATIVE
Housing: Affordable Rental Housing	POSITIVE
Transportation: % of Workers Who Do Don't Drive Alone to Work	NEUTRAL
Transportation: VMT Per Person	NEUTRAL
Transportation: Walking/Biking Infrastructure	POSITIVE
Transportation: Sustainable Funding	POSITIVE

Figure 11: Chart from a drill-down section on a specific indicator in the ECOS annual report (ECOS Annual Indicators 2013, Page 80)



All ECOS indicators are connected with the 17 goals outlined in the plan. Of these, five are related to transportation and can be affected by projects and programs of the CCRPC and transportation agencies:

- Reduce greenhouse gas emissions contributing to climate change and adapt to become more resilient to a changing climate
- Improve the safety of the public including the loss of life and property from natural and manmade hazards
- Increase opportunities for people of all backgrounds to engage in the multi-cultural social fabric and activities of the community
- Improve the financial security of households

- Provide accessible, safe, efficient, interconnected, secure, equitable and sustainable mobility choices for the region's businesses, residents and visitors

From these goals, the ECOS Annual Report measures the performance trajectory of:

- Emissions from on-road vehicles
- Trips provided by Special Services Transportation Agency and volunteers
- Combined housing and transportation costs
- Percent of workers commuting by private vehicles (see Figure 5 above)
- Car-sharing membership
- Bus transit trips
- Electric vehicle registrations
- Public electric vehicle charging stations
- Vehicle miles travelled per capita per day
- Miles of sidewalks and shared use paths
- Percent of annual Transportation Improvement Program (TIP) funding assigned to system preservation projects
- Ratio of crashes to million miles of VMT

CCRPC is only one entity charged with collecting and reporting on the performance indicators in the annual report. The ECOS planning process has revealed the need to strengthen partnerships in data collection between CCRPC, municipalities, VTrans and others involved in the ongoing project. Since the adoption of the ECOS plan, CCRPC has worked with partners to share data on a regular basis, and CCRPC staff expects these activities should become more streamlined with practice.

Summary of Observations

The ECOS plan elevated CCRPC's stature as a leader in the region addressing issues related to the built environment, economy and quality of place. Further, merging the RPC with the MPO through ECOS has helped the public to see a united regional leader that can speak with one voice to VTrans and other State agencies that are responsible for carrying out policies and programs.

Another benefit of partnering across sectors and agencies is that an MPO, particularly a small one, has limited direct control over the trajectory of any one indicator and will have to work extensively with partners – such as VTrans, municipalities, or the GBIC – to address them completely. Establishing a shared responsibility for monitoring indicators also establishes a shared responsibility for working on their progress through policy and programmatic partnerships in the years ahead.

The annual public performance reporting is brand new and the region is inevitably finding some challenges with monitoring. For instance, CCRPC staff recognize that it can be difficult to identify trends year to year because they must ascertain not only what exists (such as housing inventory), but what has been built, and there may be so little change in such a small temporal increment as a year that the results have limited meaning. Another challenge is that many of the indicators have not been measured

before so it is impossible to track trends from the data thus far. CCRPC would also like to improve upon its communication of the indicators by providing something more user-friendly than an online report. CCRPC is working on the release of a new version of their annual report through the use of the Results Scorecard application. This will enhance the communication of performance management and enable the embedding of data in the CCRPC's messaging and decision making. The scorecard will be available at the ECOS Project's website ECOSproject.com and the scorecard will be live sometime in January 2015.

CCRPC staff is still determining how the agency will address upcoming MAP-21 requirements but are optimistic that their recent activities in establishing a formal process of collecting data and monitoring progress on regional goals will position them well to respond to any new requirements for performance management. The goals of ECOS reflect the values of this community and are not inconsistent with national goals and priorities. By partnering with regional entities across sectors and building a more comprehensive planning structure that strives to position the region to achieve multiple objectives beyond just transportation, the CCRPC is constructing a performance based framework that serves as a model for MPOs in similarly-sized regions seeking to positively guide metropolitan planning with limited resources.

Thomas Jefferson Planning District Commission

The Thomas Jefferson Planning District Commission (TJPDC) is the MPO responsible for planning for the Charlottesville-Albemarle urbanized area, which includes the city of Charlottesville, VA and the urbanized areas of surrounding Albemarle County (2010 pop. 92,359).

In May 2014, TJPDC adopted the “2040 LRTP,” its regional long range transportation plan. Reacting to MAP-21, TJPDC integrated performance based planning and programming in 2040 LRTP as well as the process of developing and adopting the new plan. In particular, the 2040 LRTP includes 16 system performance measures organized around plan goal areas and national planning factors. Rather than evaluate projects individually, TJPDC used scenario planning to assess what combinations of projects would bring the greatest measurable benefit to the region over the next 25 years.

Crucially, TJPDC’s scenario-based approach to performance in the 2040 LRTP enhanced the agency’s engagement with stakeholders and members of the public. TJPDC presented initial scenarios to these groups, and then created two additional rounds of scenario revisions based on their feedback and suggestions. By communicating trade-offs in a concrete and measurable way, MPO staff reported that the 2040 LRTP received more public and media attention than any transportation planning efforts in recent memory.

2040 LRTP: Developing Performance Measures

TJPDC developed the 16 performance measures used in the 2040 LRTP based on input from its [Citizens Transportation Advisory Committee](#) (CTAC) and its [Technical Committee](#). The CTAC helps represent the views of the local community, and the technical committee includes local government staff planners. MPO staff refined these recommendations into measures based on available data sources, public comment, and FHWA technical assistance such as the [SHRP2 Capacity Performance Measures Data Tool](#). The 16 performance measures are organized in the following four categories as shown in Table 1.

Table 2: 2040 LRTP Performance measures and categories (Chapter 5, Page 52)

Measure	Description
Mobility	
Congestion	The total percentage of roads that will have a level of service E or F in 2040.
Delay	The total daily hours of delay that congestion will cause in the year 2040.
Mode Share	The percentage of trips across the four main travel modes, automotive, transit, bike and walk for 2040.
Vehicle Mobility	The total system-wide vehicle miles traveled for 2040.
Vehicle Crashes	The total system-wide crashes per year for 2040.
Bicycle Connectivity	The total percentage of bikable roads in the urban area.
Economy	
Access to Jobs	The average travel time to work.
Transit Accessibility	The percentage of population and the percentage of employed individuals within the MPO with access to transit.
Environment	
Habitat	The aggregate impact of projects on natural resources and habitats within 500 foot buffer of project.
Air Quality	The percent change in air quality gases and particulates in tons per year.
Water Quality	The percent change in the amount of stormwater pollutants in tons per year.
Flood Plain	The total acreage of flood plain within a 500 foot buffer of the projects.
Historical/Archeological Sites	The total number of historic or archeological sites within a 500 foot buffer of these projects.
Community	
Land Use	The total number of land parcels within a 500 foot buffer of the potential projects by usage: residential, comm./ind., parks, educ./religious/charitable, and agricultural/undeveloped.
Environmental Justice and Title VI: Transit Access	The total percentage of Environmental Justice or Title VI groups with access to transit: minorities, 65 and older, limited-English speaking, and household income of less than \$25,000.
Environmental Justice and Title VI: Impacts	The total percentage of Environmental Justice or Title VI groups <u>potentially impacted</u> due to projects: minorities, 65 and older, limited-English speaking, and household income of less than \$25,000.

TJPDC designed these measures to map onto the eight national planning factors as well as the three overall goals for the 2040 LRTP:

- A multimodal transportation network
- A cohesive relationship between land use and multimodal transportation planning
- A more structured and proactive method for pursuing transportation funding for all modes

To reinforce these connections, the 2040 LRTP includes tables that explicitly outline the relationship of performance measures to each of the planning factors as well as plan goals and their related actions. Table 2 reproduces the planning factor table, and [both tables are available on the 2040 LRTP website](#). These visualizations help stakeholders and the public understand the role of performance measures, but also enable planners to see where data may not fully measure an important issue, and where other, more qualitative planning tools could be helpful.

MPO staff sought to match the performance measure suggestions from their stakeholder committees with available data sources. Staff reported that this was sometimes challenging, since TJPDC’s scenario-based approach, discussed below, required measures that could be projected out to 2040 based on each project. For example, to estimate the number of crashes in 2040, staff calculated a composite measure based on estimated VMT from the travel demand model and current trends in crash reduction.

Table 3: LRTP 2040 table showing relationship between performance measures and national planning factors



Charlottesville/Albemarle MPO
Long Range Transportation Plan

Eight Planning Factors and Performance Measures Relationship Matrix

	Congestion: The total percentage of roads of service for F in 2040.	Delay: The total percentage of roads that will have a level in the year 2040.	Mode Share: The percentage of trips across the four main travel modes, automobile, transit, bike and walk for 2040.	Vehicle Mobility: The total system-wide vehicle miles traveled for 2040.	Vehicle Crashes: The total system-wide vehicle miles traveled in the urban area.	Bicycle Connectivity: The total percentage of bikable roads in the urban area.	Access to Jobs: The average travel time to work.	Transit Accessibility: The percentage of the population employed within the MPO.	Eco Logical (Habitat): A project score based on a local model that identifies and weights regionally significant habitats.	Air Quality: The percent change in air quality based on a local model particulates in tons per year.	Water Quality: The percent change in air quality based on a local model stormwater pollutants in tons per year.	Flood Plain: The percent change in the amount of buffer of the projects.	Historical/ Archeological sites: The total acreage of flood plain within a 500 foot buffer of the projects.	Land Use: The total number of historic or archeological sites within a 500 foot buffer of the projects.	Env. Justice and Title VI (Transit Access): The total percentage of Env. Justice or Title VI groups with transit access.	Env. Justice and Title VI (Impacts): The total percentage of Env. Justice or Title VI groups impacted due to projects.
1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency.	✓	✓		✓			✓	✓						✓	✓	
2. Increase the safety of the transportation system for motorized and nonmotorized users.				✓	✓				✓		✓					
3. Increase the security of the transportation network for motorized and nonmotorized users.					✓											
4. Increase the accessibility and mobility of people and for freight.	✓	✓	✓	✓		✓	✓	✓						✓	✓	✓
5. Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6. Enhance integration and connectivity of the transportation system, across and between modes, for people and freight.			✓	✓		✓	✓	✓							✓	✓
7. Promote efficient system management and operation.	✓	✓	✓	✓		✓	✓	✓	✓							
8. Emphasize the preservation of the existing transportation system.				✓												

Many of TJPDC's planning performance measures are based on tools or standards that the MPO or its partners already use to meet other needs such as congestion forecasting or environmental review. This not only allows the agency to leverage existing resources in applying performance based planning and programming, but also helps integrate these programs and their goals into the planning process.

Travel Demand Model

Staff reported that the agency's travel demand model was extremely valuable in quickly developing performance measures that could be projected into the future and responsively adjusted. A number of the 2040 LRTP measures, especially in the mobility category, use data from the demand model. Unlike some small MPOs, TJPDC maintains its own travel demand model, and its staff includes one in-house modeler. This helped the agency respond quickly to requests for scenario adjustments or further explanation of measures from stakeholders or the public.

Staff also noted that the process placed the model under increased scrutiny from these groups. In response, TJPDC explained the model at public meetings and developed a two-page summary of what kind of data a transportation model generates, and its role in the planning process.

Virginia Department of Transportation Data

The Virginia Department of Transportation (VDOT) provided safety and crash data that was important to the development of the 2040 LRTP's performance measures. In addition, VDOT helped the agency develop its travel demand model and participated in the LRTP outreach process. TJPDC staff stated that VDOT's endorsement of TJPDC's travel demand model helped reassure stakeholders and the public that it was a solid foundation on which to build performance measures.

Eco-Logical

TJPDC received an FHWA [Eco-Logical grant](#) in 2008 to pilot implementation of the Eco-Logical approach to integrated transportation and resource planning. Under this grant, the agency coordinated habitat data with partners and identified environmental mitigation opportunities and areas of high ecological value at a scale appropriate for project-level development as well as regional planning.²² It developed a [final report](#) based on the pilot and resulting GIS information.²³ The 2040 LRTP uses these data as the source for the habitat performance measure.

²² Federal Highway Administration, *2012 Eco-Logical Grant Program Annual Report*, "Appendix: Thomas Jefferson Planning District Commission," March 1, 2013, http://www.environment.fhwa.dot.gov/ecological/grantProgram_rpt/report2013.asp#fig18

²³ TJPDC, *Eco-Logical: Integrating Green Infrastructure and Regional Transportation Planning*, May 19, 2011 <http://www.tjpd.org/pdf/Environment/Ecologic%20Final%20Report.pdf>

Figure 12: Sample project with Eco-Logical tool data overlaid. Darker shades are more important for ecological habitat.



Title VI Standards

Environmental Justice and compliance with Title VI of the Civil Rights Act of 1964 are standard and well-defined requirements in transportation planning.²⁴ TJPDC uses these established definitions in two of its performance measures under the community category.

Performance based Scenario Planning

LRTP 2040 is notable not only for its creation of robust performance measures, but also for how its scenario planning component puts them into action to determine a set of priority projects subject to fiscal constraint. TJPDC's use of performance measures that could be projected to the plan's end date of 2040 allowed it develop scenarios that illustrated the estimated regional outcomes for each set of projects. A scenario-based approach also meant the agency could run analyses on combinations of projects rather than developing performance estimates for every proposed action.

Scenario Planning Process

TJPDC began with a list of 21 proposed projects (10 road projects and 11 transit projects). An initial evaluation of basic benefits (congestion relief for road projects, ridership or system benefits for transit) narrowed this set down to seven road projects and eight transit projects.

TJPDC used these 15 projects to develop the initial set of three scenarios plus a base, no-build scenario. MPO staff calculated the expected performance outcomes of each scenario and presented these to

²⁴ See the FHWA Environmental Guidebook section on Title VI and Environmental Justice:
<http://www.environment.fhwa.dot.gov/guidebook/results.asp?selSub=99>

stakeholders and the public through tables and maps. Stakeholders included the CTAC, the MPO Technical Committee, the MPO Policy Board, and the Albemarle County Board of Supervisors.

Based on the results of this analysis and feedback received, TJPDC revised the scenarios by adding, removing, or adjusting projects. Ultimately, the agency conducted three rounds of scenario analysis, with three scenarios in the first round, two in the second, and three in the third, before arriving at a preferred set of projects.

Figure 13: Comparison of anticipated performance outcomes for scenarios from TJPDC’s 2040 LRTP

Performance Measurement	Base		Scenario 1A		Scenario 1B		Scenario 1C	
	Value	Unit of Measure	Value	% Change	Value	% Change	Value	% Change
Mobility								
Congestion (% of roads at LOS E or F)	14.1%	% of Roads	12.6%	10.5%	14.6%	-3.5%	12.9%	8.0%
Congestion (hours of delay per day)	23,181.0	Hours	20,187.0	11.6%	23,757.1	-2.5%	20,907.8	9.8%
Mode Share (percent of Trips)	759,319	Trips/Day	759,334	0.0%	759,488	0.0%	759,317	0.0%
Auto	88.1%	Percent of Trips	88.1%	0.1%	87.6%	0.7%	87.9%	0.2%
Transit	2.5%	Percent of Trips	2.5%	0.1%	3.1%	25.9%	2.6%	5.1%
Bike	2.7%	Percent of Trips	2.7%	0.2%	2.7%	-0.8%	2.7%	0.3%
Walk	6.7%	Percent of Trips	6.8%	0.9%	6.7%	-0.6%	6.8%	1.1%
Vehicle Mobility (vehicle miles traveled)	6,228,031.0	Miles/Day	6,145,450.8	0.6%	6,214,996	0.2%	6,193,388	0.6%
Vehicle Crashes (crashes per year)	2,865.0	Crashes/Year	2,827.0	1.3%	2,859.0	0.2%	2,849.0	0.6%
Bicycle Connectivity (% in largest connected area)	68.2%	% of largest area	73.4%	5.2%	79.2%	16.1%	81.6%	19.6%
Economy								
Access to Jobs (average travel time to work)	10.6	Minutes	10.3	2.8%	10.4	1.9%	10.3	2.8%
Transit Accessibility (total population within ¼ mile of transit stop) (2040)	67,185	People	67,185	0.0%	70,589	5.1%	69,101	2.9%
Transit Accessibility (total employment within ¼ mile of transit stop) (2040)	52,633	People	52,633	0.0%	55,907	6.2%	55,269	5.0%
Environment								
Habitat	1,775.5	Eco Logical Score/Mile	1,786.9	-0.6%	1,773.4	0.1%	1,778.4	-0.2%
Air Quality (tons per year)	13,321.0	Tons/Year	13,211.0	0.8%	13,302.0	0.1%	13,348.0	-0.2%
Water Quality (% change in stormwater/water pollutants) (tons per year)	1,079.1	Tons/Year	1,168.3	-8.3%	1,080.5	-0.1%	1,085.7	-0.6%
Flood Plain (acres of 100 year flood plain affected)	99.1	Acres	120.2	-21.3%	99.1	0.0%	105.0	-6.0%
Historical (designated historic sites within 500 ft of projects)	1,141	# of Sites	1,171	-2.6%	1,149	-0.7%	1,154	-1.1%
Archeological (designated archeological sites within 500 ft of projects)	264	# of Sites	299	-13.3%	275	-4.2%	270	-2.3%
Community								
Land Uses Affected (# of parcels within 500 ft of projects)	35,061	Parcels	35,895	-2.4%	35,167	-0.3%	35,465	-1.2%
Residential	32,411	Parcels	33,055	-2.0%	32,463	-0.2%	32,660	-0.8%
Commercial/Industrial	1,267	Parcels	1,400	-10.5%	1,307	-3.2%	1,394	-10.0%
Parks	42	Parcels	45	-7.1%	42	0.0%	42	0.0%
Educational/Religious/Charitable	343	Parcels	359	-4.7%	346	-0.9%	352	-2.6%
Agriculture or undeveloped	998	Parcels	1,036	-3.8%	1,009	-1.1%	1,017	-1.9%
Environmental Justice and Title VI Populations with Transit Access (2010), within ¼ mile of transit stops								
Total Minority with transit access	18,996	People	18,996	0.0%	19,365	1.9%	19,104	0.6%
Total 65 and over with transit access	5,135	People	5,135	0.0%	5,448	6.1%	5,191	1.1%
Total Limited English-Speaking with transit access	8,428	People	8,428	0.0%	8,643	2.6%	8,498	0.8%
Total Households with transit access	20,877	People	20,877	0.0%	21,581	3.4%	21,437	2.7%
Total Household Income > \$25K with transit access	6,564	People	6,564	0.0%	6,650	1.3%	6,591	0.4%
Environmental Justice and Title VI Populations potential impacts due to projects (2010)								
Total Minority impacted	28,812	People	29,071	0.9%	28,925	0.4%	29,117	1.1%
Total 65 and over impacted	10,658	People	11,033	3.5%	10,728	0.7%	10,883	2.1%
Total Limited English-Speaking impacted	13,427	People	13,867	3.3%	13,480	0.4%	13,565	1.0%
Total Households impacted	37,119	People	38,134	2.7%	37,316	0.5%	37,690	1.5%
Total Household Income Less than \$25,000 impacted	9,287	People	9,511	2.4%	9,321	0.4%	9,457	1.8%

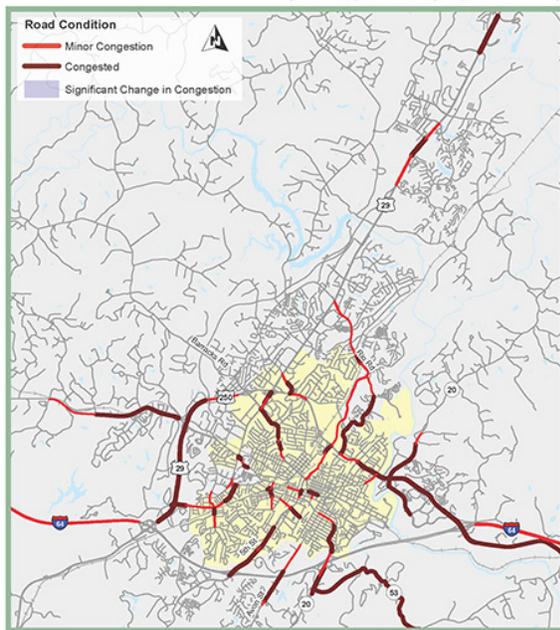
Communicating Performance Outcomes

MPO staff reported that performance based scenario planning increased stakeholder and public engagement with the plan. TJPDC used the graphic design skills of one of its staff members to develop compelling tables and maps that simply and effectively communicated complex performance outcomes. TJPDC presented these visualizations at meetings but also posted them on the 2040 LRTP website for public reference during plan development.

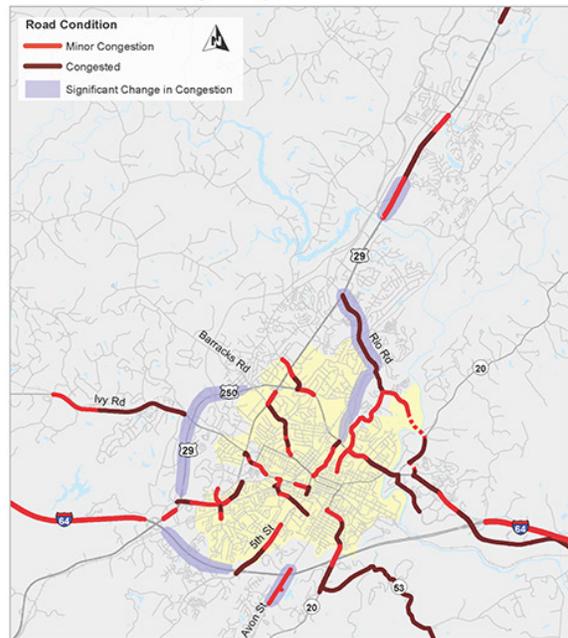
Staff reported that the new ability to discuss performance with stakeholders in concrete and understandable terms led decision makers to consider and often adjust their project preferences based on technical data.

Figure 14: Maps from the 2040 LRTP comparing congestion in the base scenario to one of the initial scenarios proposed.

2040 Base Scenario Daily Congestion



Scenario 1A Daily Congestion



Adjusting Scenarios based on Feedback

Adjusting scenarios based on feedback consumed the time and resources of MPO staff. However, TJPDC staff developed automated spreadsheets and processes to calculate measures quickly. The travel demand model produces outputs used in calculating multiple measures, and adjusting this to match new scenarios was the most time-intensive part of the process. TJPDC reported that recalculating scenarios took about one day of staff time.

Summary of Observations

TJPDC's approach to performance based planning makes effective use of existing resources and data sources that may be available to many small MPOs. Much of the data used to develop the 2040 Plan performance measures comes from the travel demand model or topic areas where the MPO has experience, such as air quality, habitat, and Environmental Justice.

Projecting Performance Measures for Scenario Planning

Rather than focus on indicators of current progress to regional targets, TJPDC focused on developing performance measures for which it could project future outcomes based on various conditions. Its in-house travel demand modeled enabled this approach, which was especially useful for scenario planning. And while adjusting scenarios based on feedback required additional staff time, the MPO found ways to streamline this process and valued the additional engagement it created.

Stakeholder and public engagement

TJPDC staff stated that the 2040 LRTP was the most extensive outreach effort they had conducted, but that it also reaped the most results in the form of media attention and engagement from stakeholders and the public. Performance measures create additional technical numbers in the planning process that may initially be perplexing for non-experts. However, TJPDC's experience shows that effective visualizations can overcome this barrier and actually capture public attention.

LRTP and TIP

Finally, the iterative process of reviewing scenarios with stakeholders allowed for an LRTP that is much more explicit about the region's priority projects. It also allowed TJPDC to move the LRTP closer to the Transportation Improvement Program (TIP). This may be a particular benefit of performance based planning for small MPOs. With a smaller number of total projects, it may be easier to engage stakeholders at the planning stage to discuss and make adjustments to specific projects.

Chapter 5: Conclusions

This study identifies three key observations about successful performance based planning by non-TMA MPOs. These are:

- The important role of partnerships with State DOTs
- The adoption of goals, objectives and performance measures that reflect local priorities, sometimes incorporating sectors other than transportation
- Using performance to establish a more influential voice in metropolitan area decision-making

In general, small MPOs can use performance based planning to not only meet Federal requirements and enhance their own planning activities, but also to foster strategic connections to partners and stakeholders that can help them efficiently meet their agency goals. State DOTs and the USDOT may consider opportunities to support the efforts of small MPOs by providing more tools to help conduct performance based planning or other encouragement, including data, technical assistance, or best practice examples.

General Observations

Non-TMA MPOs and their State partners are implementing performance planning in different ways; this report describes two notable, successful models. But the project team also noted a few general characteristics of small MPOs that are successfully adopting performance based planning. These combined insights are part of the overall framework developed in this report for a successful approach that small MPOs can take to performance based planning.

The important role of partnerships with the State DOT

The relationship between an MPO and the State DOT or DOTs that it collaborates with is essential to a successful 3-C Planning Process (Continuing, Cooperative, and Comprehensive), as encouraged by the joint planning requirements²⁵. This partnership is especially critical for small MPOs setting up their performance based planning approach.

State DOTs can be a resource for small MPOs; DOTs are often at an advanced stage of performance based planning; may have resources to collect, manage, and analyze data; and maintain sophisticated travel demand models. In turn, MPOs can help the State DOT meet its goal to implement performance management at the statewide level for the overall statewide network.

²⁵ FHWA and FTA, "The Transportation Planning Process:: Key Issues – A Briefing Book for Transportation Decision makers," 2007, <http://www.planning.dot.gov/documents/briefingbook/bbook.htm>

Using performance based planning to support local priorities

Small MPOs can use performance based planning to advance their own goals and programs. The performance focus in legislation directed attention to the uses of performance based planning with a focus on a set of broad national goal areas. However, the small MPOs reviewed in this report—like many large MPOs—are also using performance based planning to meet their own needs and priorities. In particular, MPOs planning for non-TMAs may want to develop performance measures in combination with other initiatives and goals in order to use resources more efficiently, and because doing so can enhance their influence in shaping broad regional policy as well as transportation decisions.

PBPP can help non-TMA MPOs influence broader regional decision-making

Compared to peers in large cities, non-TMA MPOs typically have more limited resources and plan for a smaller amount of transportation funding. To maximize the effectiveness of their planning resources, small MPOs can link their planning and measurement with that of partners in the metropolitan area. Many local transportation agencies, economic development organizations, and others are also integrating performance into their activities. The MPOs described in this report are extending their contribution to effective funding allocation in a number of ways: using PBPP to engage stakeholders in planning for and developing consensus for transportation decisions in new ways; pursuing joint priorities with local governments and other partners; or serving as a clearinghouse for other planning stakeholders across the region.

PBPP as a communication tool

The performance based planning approach provides easily understood information for the non-expert public and policymakers to understand the range of causes and effects of policies and investments and the direction and extent of progress being made on issues of regional importance. This approach to planning can distill a highly complex policy environment into a series of straightforward and logical steps that are well-adapted to the use of engaging visualization tools. In this way, more careful organization of regional goals and objectives with performance measures can communicate technical transportation planning knowledge to the public and stakeholders, meeting the growing expectation that policymakers demonstrate tangible progress on important local issues and measurable results.

As the report demonstrates with the Thurston County Regional Planning Commission and the Chittenden County Regional Planning Commission case studies, adopting a cross-sectoral performance based planning framework to guide their activities has increased their visibility and influence on decision-making around regional transportation and land use issues.

Suggested uses and rationale for performance based planning

Small MPOs have adopted performance based planning for several reasons, in addition to meeting Federal requirements. The MPOs studied are using PBPP to increase their capacity to coordinate with peers. A performance focus has also helped MPOs define their purpose and mission for the public.

Performance based planning is useful in helping to guide **regional visioning**. The Chittenden County Regional Planning Commission's participation in the region-wide ECOS project is an important example of an MPO using performance to integrate transportation with other region-wide sustainability goals.

Performance based planning goes hand-in-hand with data-driven **project prioritization** processes. Most MPOs use PBPP primarily to guide investments in transportation. Project selection criteria can be set up within a performance based structure so that projects can be clearly evaluated based on their ability to further advance transportation goals.

MPOs can use performance based planning to **validate or invalidate existing policies or programs**. It is highly conducive to an iterative method of implementing public policy in that it can allow agencies to identify whether existing or past projects and programs are having the effect that was intended when they were launched.

USDOT and State DOT support for performance based planning

Several non-TMA MPOs have begun to take a performance based approach to long range planning and short-term programming. However, many others have not yet adopted this effective practice and await guidance from USDOT and State DOTs about expectations. USDOT agencies, specifically, the Federal Highway Administration and the Federal Transit Administration, as well as State DOTs, could build on the findings of this report to support small MPOs as they transition to performance based planning. Promising actions these agencies could take to support performance based planning by small MPOs include:

- Provide assistance with travel demand models;
- Provide performance management tools that simplify data collection;
- Provide best practice peer examples that indicate what was done, why, and with what results;
- Establish seed funding for small MPOs or groups of MPOs to establish and share a performance based approach within a State; and
- Conduct outreach through webinars or other means explaining PBPP and promoting case studies illustrating, how it applies to small MPOs, and identify State DOT partnerships that promote successful collaboration and coordination.

These actions could help empower small MPOs to use performance based planning to meet their local needs, while also helping USDOT and State DOTs achieve their goal for the adoption of a performance based approach to transportation decision-making.



U.S. Department of Transportation
Federal Highway Administration

Office of Planning, Environment, & Realty (HEP)
1200 New Jersey Avenue SE
Washington, DC 20590

www.fhwa.gov/planning/

January 2015

Publication No.: FHWA-HEP-15-015