

National Capital Region Transportation Planning Board

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Item #9

MEMORANDUM

Date: November 4, 2011

To: TPB Technical Committee

From: Ron Kirby
Director, Department of Transportation Planning

Subject: A Review of Performance-Based Planning and Programming and its Potential Application to the TPB Regional Transportation Priorities Plan

This memorandum for the TPB Technical Committee reviews Performance-Based Planning and Programming and its Potential Application to the TPB Regional Priorities Plan.

The memorandum is broken into six sections, as listed below:

- A. Background on the TPB Regional Priorities Plan Process
- B. Federal Government Focus on Performance Measurement
- C. International Scan
- D. NCHRP Project 08-36
- E. TPB Goal Areas and Performance Measures
- F. Congestion Management Example

A. Background on the TPB Regional Transportation Priorities Plan

The concept of a priorities plan has its roots in more than a decade of TPB planning, including the establishment of regional goals through the *TPB Vision and Region Forward*, analysis of transportation and land-use scenarios using the adopted CLRP as a baseline, and various studies of the region's transportation funding challenges. In 2010, the TPB extensively discussed how these activities might be better integrated. On May 26, 2010 the TPB hosted an event called the Conversation on Setting Regional Transportation Priorities, which addressed the possibilities for more explicitly establishing regional priorities. The impetus for that event was a request by the TPB's Citizens Advisory Committee (CAC) for the TPB to develop a "Regional Priorities Plan" that would serve as a "financially unconstrained" regional vision for transportation operations and investment. The Conversation generated broad interest among TPB stakeholders in developing a priorities plan. As a result, on July 21, 2010, the TPB voted to form a task force to determine the scope and process for developing such a plan.

The TPB Regional Priorities Plan Scoping Task Force included approximately 20 stakeholders in the TPB process – members of the TPB, CAC, Access for All Committee, and the Technical Committee. Between October 2010 and April 2011 the TPB Priorities Plan Scoping Task Force met four times and discussed planning processes and activities

in the region, reasons for enhancing the current process, and options for change. At its first meeting, the task force also learned about the priorities planning activities of other Metropolitan Planning Organizations (MPOs) around the country. The task force reached general consensus that the priorities plan should describe goals and performance measures, assess challenges, and develop priorities - both funded and unfunded - for addressing those challenges. On July 20, 2011, the TPB approved a work schedule and scope for developing such a plan, as summarized in the diagrams below and on the following page. The work scope also specified that public participation will be sought at each and every stage of the two-year process, including in particular the development of performance measures, strategies, and benefit-cost analysis.

Schedule											
Tasks	FY2011		FY2012				FY2013				FY2014
	Jan-Jun		Jul-Dec		Jan-Jun		Jul-Dec		Jan-Jun		
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Task 1											
Reaffirm Regional Goals and Agree Upon Performance Measures	■		■								
Task 2											
Determine Regional Challenges and Strategies to Address Them											
–Near Term		■	■	■	■	■					
–Longer Term											
Task 3											
Develop Regional Priorities, both Funded and Unfunded											
–Near Term											
–Longer Term											
Interim Reports					▲		▲		▲		▲
Public Outreach and Comment					●		●		●		●
Final Reports											■

Proposed Tasks

Task 1

Regional Goals
(TPB Vision and Region Forward)
(e.g. Improve Safety of All Modes)



Performance Measures quantify progress toward regional goals
(e.g. Traffic Fatalities in the Washington Region; bicycle and pedestrian fatalities are now over 30 percent of the total, a percentage which has been growing)



Task 2

Regional Challenges identify actions the region needs to take in order to meet regional goals
(e.g. Reduce bike and pedestrian fatalities, as well as motorized fatalities)



Regional Strategies are designed to address regional challenges
(e.g. Support the implementation of effective safety measures for bicyclists and pedestrians)



Task 3

Regional Priorities are those strategies offering the greatest potential to address regional challenges as demonstrated through Benefit/Cost Analysis
(e.g. Promote public awareness of pedestrian and bicycle safety at the regional level)



Specific Programs and Projects
implement regional priorities through inclusion in the CLRP
(e.g. Street Smart Campaign)

B. Federal Government Focus on Performance Measurement

At the federal level, the Transportation Equity Act-21 (TEA-21) bill of 1999 focused greater attention on performance measurement. Additional emphasis was placed on performance measurement in the Safe Accountability Flexible Efficient Transportation Equity Act— A Legacy for Users (SAFETEA-LU) bill of 2005.

A greater reliance on performance measurement is anticipated with the next federal transportation bill. The Senate Environmental and Public Works Committee will hold a voting or “markup” session November 9, 2011 on a proposed two-year surface transportation funding plan named “Moving Ahead for Progress in the 21st Century” (MAP-21). An outline of the bill released in July 2011 included the following language on performance:

MAP-21 focuses the highway program on key outcomes, such as reducing fatalities, improving bridges, fixing roads, and reducing congestion, in order to ensure that taxpayers are receiving the most for their money. States will set their own targets for improving safety, road and bridge condition, congestion, and freight movement.

MAP-21 improves the Statewide and metropolitan planning processes to incorporate a more comprehensive performance-based approach to decision making. Utilizing performance targets will assist states and metropolitan areas in targeting limited resources on projects that will most improve the condition and performance of highways and bridges.

The federal government has sponsored a number of recent conferences and workshops on performance measurement. These conferences have gathered transportation stakeholders from the federal and state governments, metropolitan planning organizations, transit agencies, and academia to discuss how to identify and implement performance measurement:

- December 5-7, 2011 (upcoming), *Data Needs for Decision Making in States and MPOs*, Irvine
- September 20, 2011, *National Workshop on Performance-Based Planning and Programming*, Chicago
- September 13-15, 2010, *National Forum on Performance-Based Planning and Programming*, Dallas
- October 22, 2009, *Executive Roundtable on Developing a Performance-Based Planning and Programming Framework*, Washington D.C.

Additionally, federal agencies have conducted several performance measurement studies targeted towards specific program areas. Examples include performance measurement and environmentally sustainable transportation (EPA 231-K-10-004), transit (TCRP Report-88), congestion management (NCHRP-618), and freight movement (NCHRP-10).

C. International Scan

In July and August 2009, the U.S. Department of Transportation (U.S. DOT)-Federal Highway Administration in cooperation with the American Association of State Highway and Transportation Officials (AASHTO) and the National Cooperative Highway Research Program organized a two-week “International Scan” to explore how countries abroad link transportation performance and accountability. This came at a time when the U.S. Congress was considering more accountability for state and local transportation funds.

The International Scan group included American transportation representatives from the U.S. DOT, state DOTs, an MPO, AASHTO, and consultants. The group visited transportation agencies in Sweden, the United Kingdom, Australia, and New Zealand to learn how these countries link transportation performance and accountability. The team examined how these transportation agencies use goal setting and performance measures to manage, explain, deliver, and adjust their transportation budgets and internal activities.

The International Scan experience offered the team advice in several key areas. A summary of their experience and key lessons learned can be found in the *International Technology Scanning Program: Linking Transportation Performance and Accountability* report that was published in January 2010. The most recurring recommendations from the transportation agencies abroad are highlighted below:

1. Limit the number of performance measures (Since 1998, the British central government has reduced the number of government-imposed performance measures across all government departments from 600 to 30.)
2. Develop a performance measurement process that is incremental, evolutionary, and dynamic
3. Ensure that federal, state, and local officials engage in frequent dialogue and collaborative goal-setting
4. Focus on trends rather than short-term targets
5. Link performance measures to priorities and indicators rather than national targets
6. Do not link performance measures to budget-setting

D. NCHRP Project 08-36, *Integrating Performance Measures into a Performance-Based Planning and Programming (PBPP) Process*

The National Capital Region has been selected by the ongoing NCHRP Project 08-36 as one of three pilot sites to study a Performance-Based Planning and Program (PBPP) process. The focus of the National Capital Region pilot is expected to be on congestion management strategies.

As part of the project, two facilitated workshops will be held for each site. The project will conclude with a final report that synthesizes the results of the pilot sites. For details, please review the NCHRP Project 08-36 Scope of Work in Appendix A.

The objectives of this research are four-fold:

1. Move the conversation of national transportation performance measures and a performance-based planning and programming process from that of a conceptual framework to realistic examples relating national-level measures to the state and regional level.
2. Examine how state DOTs could feasibly work with regional and local stakeholders in relating national transportation performance measures to the state and local level using real-world examples in the U.S.
3. Document potential processes for linking national transportation performance measures to the state and local level for others to use.
4. Identify barriers and obstacles to integrating performance measures into the planning and programming process. Document strategies used to successfully overcome barriers, and additional strategies that might be considered in the future.

E. TPB Goal Areas and Performance Measures

The *TPB Vision* was adopted in 1998 following a three-year process that included public outreach and consensus building. The *Vision* comprises a policy statement, eight overarching policy goals, and objectives and strategies for reaching those goals. Since the *Vision* was approved in 1998, two international concerns – terrorism and climate change – have been pushed to the top of the global agenda. These challenges, which have obvious transportation implications, have influenced TPB activities in recent years.

The *Region Forward* document was approved in 2010 following a two-year development process. It includes goals, targets, and a compact agreement to guide future planning and help measure progress in the areas of housing, transportation, the environment, health and the economy. By the end of 2010, all of COG's member jurisdictions had signed the regional compact established in *Region Forward*. *Region Forward* includes transportation components, largely focused on promoting alternative modes, which are a subset of goals from the *TPB Vision*.

There are a multitude of different performance measures that can be developed and used to evaluate progress toward meeting regional transportation goals. In the course of developing materials for the consideration of the Regional Priorities Plan Scoping Task Force, TPB staff produced a composite list of regional goals drawn from the *TPB Vision* and *Region Forward*, and provided a number of examples of transportation performance measures that might be used to assess the performance of the regional transportation system against these regional goals. Many of the example performance measures that were provided had been used by the TPB over the years, while others were developed specifically to support the TPB's priorities planning effort. Fifteen of these performance measures are listed alongside their respective regional goals in the diagram on the following page.

Selecting the right performance measures may be one of the most challenging aspects of developing a regional priorities plan. It is important to limit the number of measures that are used in the transportation priorities planning process by only selecting those that are the most actionable and understandable, and by using effective public participation techniques to ascertain which measures would resonate most with citizens of the region.

Regional Goal	Examples of Potential Performance Measures
Provide a comprehensive range of transportation options	<ul style="list-style-type: none"> • % change in morning rush hour congestion • % region’s bus stops that are fully accessible
Promote Transportation Connections, Walkability, and Mixed Use Development in Activity Centers	<ul style="list-style-type: none"> • Jobs-household ratio • Street block density in Activity Centers • Average number of other Activity Centers accessible within 45 minutes of a given Activity Center by Transit and Highway
Prioritize Maintenance Preservation, and Safety of the Existing System	<ul style="list-style-type: none"> • % road pavement in ‘Fair or Better Condition’ • % Metro escalators available • Number of bike and pedestrian fatalities
Maximize System Effectiveness through the use of the best available technology	<ul style="list-style-type: none"> • MATOC effectiveness • NextBus Predictability
Enhance Environmental Quality, Protect Human Health, and Improve Energy Efficiency	<ul style="list-style-type: none"> • Mobile-source emission levels • CO2 emission levels
Support International and Inter-Regional Travel and Commerce	<ul style="list-style-type: none"> • Total value of freight movement for all modes • Number of passengers arriving at region’s airports • Number of passengers arriving by inter-city rail

F. Congestion Management Example

As stated in section D, congestion management strategies in the National Capital Region are expected to be the focus of a NCHRP pilot study of Performance-Based Planning and Program (PBPP) processes.

Measurement of the National Capital Region's congestion levels is not a new activity for the TPB, but the sophistication and comprehensiveness of the techniques used to gather the necessary data have improved considerably in recent years.

After the finalization of the 2010 Congestion Management Process Technical Report, staff developed a quarterly dashboard-style National Capital Region Congestion Report that would briefly summarize congestion of the region's transportation systems. The prototype draft report was completed in May 2011, and has been reviewed by the Management, Operations and Intelligent Transportation Systems (MOITS) Technical Subcommittee and the Travel Forecasting Subcommittee. The draft National Capital Region Congestion Report primarily focuses on traffic congestion on the region's freeway system, with limited information on arterials. Information from the Regional Integrated Transportation Information System (RITIS) and the Metropolitan Area Transportation Operations Coordination (MATOC) Program are included in the report.

Inspired by various agency and jurisdictional dashboard efforts around the county (e.g., Virginia Department of Transportation Dashboard), the dashboard-style report tries to take advantage of and integrate several existing data sources to produce customized, and easy-to-communicate, congestion performance measures for the region. The primary goal of this report is to help to facilitate performance-based transportation planning and programming processes to effectively manage congestion in the National Capital Region.

The National Capital Region Congestion Report includes eight performance measures:

- 1) Percentages of Freeway Lane-Miles by Congestion Level
- 2) Freeway Delay and Cost per Freeway Traveler
- 3) Vehicle Miles of Travel (VMT)
- 4) Travel Time Burden (the percentage of additional travel time over and above free flow travel time)
- 5) Top 10 Most Severe Freeway Bottlenecks
- 6) Top 10 Most Unreliable Freeway Segments
- 7) Travel Time of the Last 5 Miles to the Beltway (Freeways Only) in AM Peak Hour (8-9 AM)
- 8) Travel Time of the First 5 Miles from the Beltway (Freeways Only) in PM Peak Hour (5-6 PM)

It is unlikely that eight performance measures would be considered for congestion management in the development of a regional priorities plan. Rather, it would be necessary to limit the number by only selecting those that are the most actionable and understandable. Once the performance measures had been determined, TPB member

jurisdictions could use the data to agree on action to respond to congestion challenges more effectively. Such action would be a combination of short-term and long-term strategies; some examples of potential congestion management strategies are as follows:

Short-term

- MATOC - expand service hours and capability
- Metro PCN - accelerate implementation of bus speed and reliability treatments
- Commuter Connections – expand and promote travel options for commuters
- Freight - encourage urban area off-hour deliveries

Long-term

- Corridor Studies – implement integrated multimodal corridor travel
- Land Use - better utilize existing and planned transportation infrastructure
- Metro Capacity – expand and optimize Metro operations in the core
- Congestion Pricing – implement highway tolling or congestion charging zones

Appendix A

Scope of Work for NCHRP Project 08-36, Task 104

Integrating Performance Measures into a Performance-Based Planning and Programming (PBPP) Process

Background

This project builds upon the 2010 National Forum on Performance-Based Planning and Programming and the 2009 Executive Roundtable on Developing a Performance-Based Planning and Programming Framework. In general, the funds requested would be used to:

1. Identify at least three pilot sites in the U.S. to begin the process of implementing a performance-based planning and programming process.
2. For each pilot site, conduct a minimum of two facilitated workshops in developing a performance-based planning and programming process involving the key stakeholders.
3. Develop a final report that synthesizes the results of the pilot sites and could be used by other states/regions in developing a performance-based planning and programming process.

Statement of Urgency

This research would continue the momentum that has been developed among the many different industry stakeholders (AASHTO, AMPO, APTA, NADO, and the US DOT) in developing a performance-based planning and programming process. The two initial meetings (2009 Executive Roundtable and 2010 National Forum) set the stage at a national level for the use of performance measures in a PBPP process. This research is needed to better understand how a PBPP process could be implemented in the real-world and not as a theoretical/abstract framework.

The workshops that would be convened as part of this research would take the conceptual framework and performance measures already identified and examine how the two may be implemented in the real-world by bringing together key stakeholders for two different regions. The critical next step is to “test the waters” on how we may realistically implement a performance-based planning and programming process using key transportation performance measures at the state and local level.

Project Objective(s)

The objectives of this research are four-fold:

1. Move the conversation of national transportation performance measures and a performance-based planning and programming process from that of a

- conceptual framework to realistic examples relating national-level measures to the state and regional level.
2. Examine how state DOTs could feasibly work with regional and local stakeholders in relating national transportation performance measures to the state and local level using real-world examples in the U.S.
 3. Document potential processes for linking national transportation performance measures to the state and local level for others to use.
 4. Identify barriers and obstacles to integrating performance measures into the planning and programming process. Document strategies used to successfully overcome barriers, and additional strategies that might be considered in the future.

Relationship to Existing Body of Knowledge

This research builds upon significant efforts that have already taken place concerning the identification and development of performance measures and a performance-based planning and programming process. There have been three key events surrounding the design and development of a performance-based planning and programming process for transportation. The first, held in October 2009, identified at a conceptual level what a performance-based planning and programming process may look like. In June 2010, a peer exchange workshop was held that examined what type of transportation would be needed to support a performance-based planning and programming process. In September 2010, the National Forum on Performance-Based Planning and Programming was held that brought together the wide range of stakeholders involved in the transportation planning and programming process with the goal of initiating a discussion of how all of the stakeholders could work together in implementing a performance-based planning and programming process. At the same time, the Standing Committee on Performance Management created the eight task forces charged with identifying an initial set of national-level performance measures as well as two additional task forces looking more broadly about how comparative performance measures and how the performance measures could be incorporated into the transportation planning process.

List of Anticipated Work Tasks

1. Identify at least three pilot sites in the U.S.
2. Conduct a minimum of two facilitated workshops for each pilot site and document results.
3. Develop a final report that synthesizes the results of the pilot sites.