

A PRIMER ON PERFORMANCE-BASED HIGHWAY PROGRAM MANAGEMENT

Examples from Select States

January 2008



AVA

AMERICAN ASSOCIATION OF
STATE HIGHWAY AND
TRANSPORTATION OFFICIALS
Documents
AASHTO
Document Sharing Hub



**Prepared by the AASHTO Task Force
on Performance Management**

**American Association of State
Highway and Transportation Officials**
444 North Capitol Street, NW
Suite 249
Washington, DC 20001
(202) 624-5800
Fax: (202) 624-5806
www.transportation.org

A PRIMER ON PERFORMANCE-BASED HIGHWAY PROGRAM MANAGEMENT

Examples from Select States

January 2008



Performance Management References and Resources

Measuring Performance Among State DOTs, AASHTO, March 2006
<http://www.transportation.org/sites/quality/docs/MeasuringPerformance.pdf>

Strategic Performance Measures for State Departments of Transportation, A Handbook for CEOs and Executives, AASHTO, June 2003
<http://downloads.transportation.org/Quality-CEOHandbook.pdf>

Comparing State DOTs' Construction Project Costs and Schedule Performance—28 Best Practices from 9 States, May 2007, NCHRP Project 20-24, Task 37A
<http://www.transportation.org/sites/quality/docs/Comparing%20State%20DOTs.pdf>

Survey of State DOT Performance Measures, SCoQ, May 2007
<http://knowledge.fhwa.dot.gov/cops/pm.nsf/home?OpenForm&Group=PMEE6W7JBJ&tab=REFERENCE>

Performance Measures and Targets for Transportation Asset Management, NCHRP 5551, 2006
http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_551.pdf

Peer Exchange Series on State and Metropolitan Transportation Planning Issues; Meeting 2: Non-Traditional Performance Measures, NCHRP 8-36 Task 53, March 2006
<http://www.transportation.org/sites/planning/docs/NCHRP%208-36%2853%29%282%29%20NonTraditional%20Perf%20Measures.pdf>

Transportation Planning Performance Measures, Oregon Department of Transportation and Federal Highway Administration, October 2005
http://www.oregon.gov/ODOT/TD/TP_RES/docs/Reports/PlanningPerformanceMeasures.pdf

ScoQ Quality Information Center
<http://www.transportation1.org/quality/center.htm>

Florida Department of Transportation
<http://www.dot.state.fl.us/businessmodel/>

Maryland Department of Transportation
<http://www.mdot.state.md.us/Planning/Plans%20Programs%20Reports/Index.html>

Minnesota Department of Transportation
<http://www.departmentresults.state.mn.us/dot/index.html>

Missouri Department of Transportation
http://www.modot.org/about/general_info/Tracker.htm

Washington State Department of Transportation
<http://www.wsdot.wa.gov/accountability/default.htm>

Contents

Introduction	4
Outlook: State Performance-Based Management Programs	6
Profiles: Implementation Results at Select State DOTs	12
California	12
New York	14
Maryland	15
Florida	16
Virginia	18
Washington	20
Montana	22
Minnesota	24
Missouri	26
Ohio	28
Michigan	29

Introduction

State Departments of Transportation (DOT) use performance management for a variety of functions from statewide budgeting and resource allocation to asset and systems management and executive dashboards.

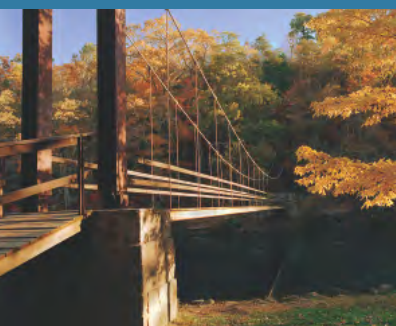
The concept of performance measurement, or measurement on a regular basis of the results (outcomes) and efficiency of services or programs, is nothing new in the public sector. Whether it was known as the RAND Corporation's "systems analysis" in the 1950s or Planning-Programming-Budgeting Systems (PPBS) in the late 1960s, the need to better understand and control outcomes has always been recognized.

Consistent with this trend in the public sector, the use of performance measurement has been embraced by the federal, state, and local transportation agencies across the United States. The sheer breadth and complexity of the transportation network in this country, however, poses a significant logistical and conceptual challenge in the collection, organization, analysis, and application of information based on performance measures as a whole. Fortunately, as the result of the development of better tools and methods, there are a number of successful performance-based transportation programs from which lessons can be drawn.

As demonstrated by these examples, the benefits of a performance-based highway program are numerous:

- It allows for more efficient allocation of increasingly scarce resources;
- It aids in the development and justification of budget and project proposals; and
- It holds government agencies responsible for funding, constructing, maintaining and operating the highway network accountable to the road users and the public at large.

At the same time, there are inherent limitations in performance measurement. First, performance data do not, by themselves, tell why the outcomes occurred. Examining performance data does not tell the story behind the numbers, nor provide the context under which such data was generated. Second, some outcomes cannot be measured directly, such as prevention of undesirable events. Third, information provided through performance measurement is just part of the information managers and elected officials need to make decisions. Fourth, because the range of factors and considerations faced by state DOTs around the country varies from state to state, it is important to avoid using performance measures as a "one-size-fits-all" tool to rank and draw absolute conclusions of state DOT performance.



This report by the AASHTO Performance-Based Highway Program Task Force follows an earlier AASHTO report for the National Surface Transportation Policy and Revenue Study Commission (the Commission) entitled *State DOT Performance Management Programs: Select Examples* published in June 2007. It examined performance-based surface transportation program approaches currently being implemented at some of the state DOTs around the country. Building on that primer, this report describes the basic principles involved in applying performance measurement to the state budgeting and program delivery process, and profiles how 11 states have applied these principles to improve performance and accountability.

AASHTO Performance-Based Highway Program Task Force

Pete Rahn, Chair

Director, Missouri Department of Transportation

Mara Campbell

*Director of Organizational Results
Missouri Department of Transportation*

Daniela Bremmer

*Director of Strategic Assessment
Washington State Department of Transportation*

Susan Mortel

*Bureau Director, Transportation Planning
Michigan Department of Transportation*

Sandy Straehl

*Administrator, Rail, Transit, and Planning
Montana Department of Transportation*

Jeff Roerden

*Management Engineer
North Carolina DOT Productivity Services*

Carlos Braceras

*Deputy Director
Utah Department of Transportation*

Barbara Reese

*Chief Financial Officer
Virginia Department of Transportation*

John Zamurs

New York State Department of Transportation

Dianna Noble

*Director, Environmental Affairs
Texas Department of Transportation*

David Ganovski

*Director, Office of Freight Logistics
Maryland Department of Transportation*

Richard Nordahl

*Chief, Office of Goods Movement
California Department of Transportation*

Troy Costales

*Division Administrator
Oregon Department of Transportation*

Larry Tibbits

*Chief Operations Officer
Michigan Department of Transportation*

Douglas Rose

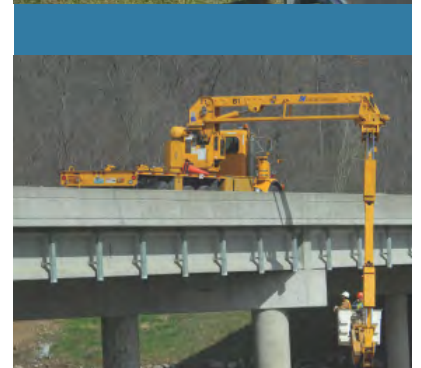
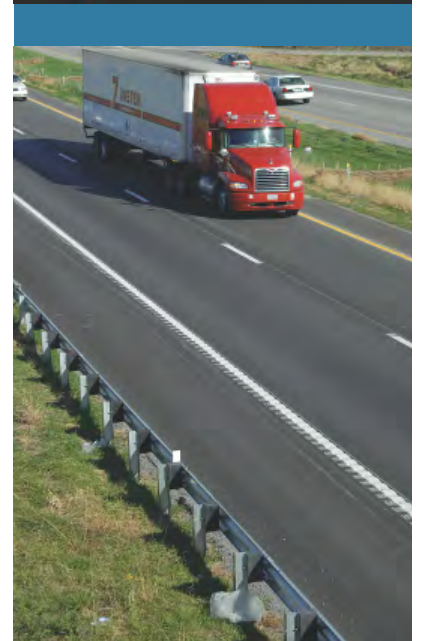
*Deputy Administrator and Chief Engineer
Maryland Department of Transportation*

Timothy Henkel

*Division Director
Minnesota Department of Transportation*

Robert Romig

*Director, Office of Policy Planning
Florida Department of Transportation*





Outlook

State Performance-Based Management Programs

Overview of Performance Management

State and local transportation agencies have been using performance measures for many years. During the 1970s and 1980s, the development of pavement and bridge management systems led to the widespread use of facility condition indicators. A number of states such as Ohio, Pennsylvania, Wisconsin, and Washington developed maintenance management systems that defined performance indicators for a range of maintenance and operations activities as well. During this same period, virtually all states reported a variety of “output” measures that reflected the scope and scale of the programs being implemented. In the late 1980s and early 1990s, it began to be recognized that broader performance measurement, focusing more on the “outcomes” of government programs, was needed. In 1989, Oregon established a Progress Board that defined performance benchmarks for all government agencies, including transportation. Other states such as Florida, Utah, and Minnesota followed with similar efforts. During the same time frame, many local governments and their national associations embraced the use of performance measures.

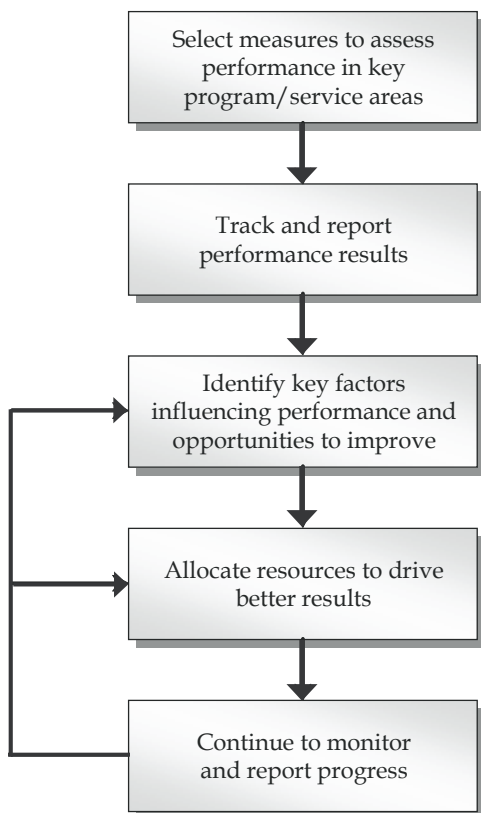
By the mid 1990s, a number of state Departments of Transportation (state DOTs), metropolitan planning organizations (MPOs), and other transportation agencies were beginning to develop and implement more comprehensive approaches to performance measurement. Often these efforts initially focused on a specific function (e.g., long-range planning, project delivery, operations, etc.) or program area (e.g., preservation, safety, maintenance, etc.) and then expanded. Over the past 10 years, as the financial resources available for transportation have become more constrained and the call for more accountability and transparency in government programs has increased, more and more states have implemented or expanded performance management programs.

The trend toward more comprehensive performance management is easy to observe in the programs of three national conferences on transportation performance measurement that have been organized since 2000. From an initial focus on providing guidance on the basic concepts of performance measurement and early implementation results, there is now a wealth of experience with increasingly comprehensive performance management. Many states, including Maryland, Virginia, Florida, Missouri, New Mexico, and Washington; and MPOs, including those in San Francisco, Dallas, Atlanta, and Los Angeles develop quarterly or annual performance reports. Agency Web sites are used to provide access to a wide range of performance information. The CitiStats program, pioneered by the New York City Police Department, involving executive review of agency performance in public forums, has been extended to transportation agencies in a number of cities and states. Performance results are not just reported but are influencing resource allocation and budget decisions.

As a result of the increasing focus on performance over the past few years, comprehensive performance management now is widely embraced as a best business practice in the transportation community. The figure below illustrates the key steps in performance management. At the heart of comprehensive performance management is the discipline to:

- Select appropriate performance measures to assess agency performance in critical program and service areas;
- Track and report actual performance results;
- Analyze results to identify key factors influencing performance and opportunities for improvement;
- Allocate resources and operate transportation systems to drive better results; and
- Continue to monitor and report progress.

Performance Management Process



Increasingly, it is recognized that these steps can be applied to all of the functions and operations of a transportation agency. It also is recognized by organizations that have adopted a performance management approach that the specific strategy must be tailored to each organization, that progress and improvements occur incrementally over time and that full implementation takes sustained leadership over a number of years.

Comprehensive Transportation Performance Management

Adopting a comprehensive approach to performance management requires integrating the basic principles of performance management into all of the critical functions of a transportation agency from planning to delivery to operations. These functions include:

Policy Development and Long-Range Planning. At this stage of the transportation planning and development process, performance measures can help to translate broad policy goals and objectives into more actionable programs, policies, projects and services when combined with broad public outreach and involvement, and a number of cycles of technical analysis and strategy evaluation. Both federal law and planning regulations require that the goals and objectives for transportation plans be developed in cooperation and coordination with a wide range of agencies and stakeholders, including elected officials, business and transportation interest groups, the media and the general public. As a result, the goals, objectives and performance measures in a particular state or region will reflect the results of this process and the priorities of that community.



Programming and Budgeting. A key element of comprehensive performance management is to use performance results to help drive better performance in the future. To achieve this objective requires that performance results in critical program and service areas be tracked and analyzed to identify both the factors that influence performance and opportunities for improvement. Armed with that information, the programming and budgeting process can be used to direct resources and effort where the potential for improved performance is greatest and most important to stakeholders.

Program, Project and Service Delivery. Many transportation agencies' first efforts at performance management have been directed at project and service delivery. Measuring an agency's performance in delivering projects on budget and on schedule can be an effective tool for establishing credibility and accountability. Twenty states participated in a peer effort to compare results in construction project delivery cost and schedule management and define best practices. Service delivery areas that have been the focus of performance measurement efforts include the issuance of permits and licenses, rest area maintenance and response to customer complaints.

System Operations. Managing the real-time operation of the transportation system is a critical priority in virtually every state and metropolitan region in the country. A system operations element in a performance management program is a valuable tool in addressing congestion and safety. In addition to measuring traffic conditions, delay and other service parameters in key corridors or

regions, many states are measuring their effectiveness in a wide range of services that affect system operation, including snow and ice removal, clearance time for incidents and work zone delay and safety.

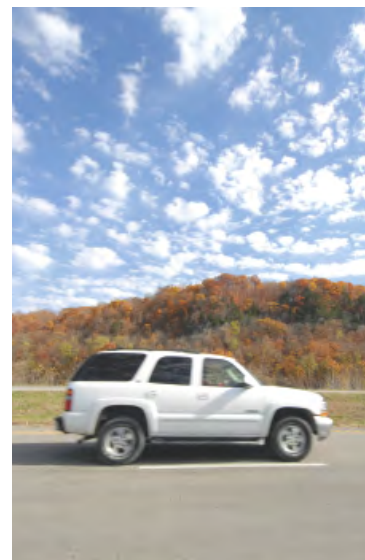
Monitoring and Reporting Results. Tracking and reporting performance results creates the opportunity to learn about the factors that affect performance, identify opportunities for improvement and examine performance results from peer agencies to identify best practice. Depending on the performance results achieved, adjustments may be made in the policy and long-range planning process, resource allocation, delivery, and operations.

Many states have adopted a comprehensive performance management approach involving all of the functions described above. Many others are in the process of introducing performance management into selected functions as a first step. Profiles of a few of these efforts are included at the end of this report. For states that have adopted performance management approaches, the key benefits include:

- Improved system and organizational performance;
- Greater results for the resources available and fewer investments with low performance benefits;
- Strengthened accountability with elected officials and stakeholder groups; and
- Improved communication with the full range of stakeholders.

Relationship to Federal Planning Requirements

The trend toward states adopting comprehensive performance management approaches has been the result of a range of factors, including the demand for more accountability from government programs and agencies, the pressure of scarce financial resources, and the recognition of a best business practice. However, federal planning requirements also have played a





role in supporting and encouraging performance-based approaches. The original ISTEA requirement for management systems encouraged a performance management approach, and the state and metropolitan planning factors define potential performance areas that must be considered. More recently, the SAFETEA-LU requirements for a Congestion Management Process and Strategic Highway Safety Plans encourage consideration of performance measures and performance goals for key emphasis areas. The increasing emphasis on asset management also reinforces the concept of comprehensive performance management.

As mentioned earlier, federal planning regulations also require that any statewide or regional transportation goals, policies, and plans be developed with a process that engages the full range of partners and stakeholders. SAFETEA-LU further expanded the list of partners and stakeholders that must be included. As a result of this process, performance goals and objectives reflect local, regional, and statewide concerns and priorities which vary from state to state and region to region. Likewise, effective performance management approaches must be tailored to reflect these state, regional, and local issues and concerns.

Comparative Performance Measurement and Peer Groups

Most agencies are comfortable with comparing performance results within their own organizations. Tracking on-time contract completion for the current year against the past four years does have value. However, the improvement possibilities may be limited to incremental process changes common to internal comparisons. Careful comparison of performance results across agencies can be a useful source of information on best practices and help focus efforts to improve performance over time. However, data limitations and varying approaches to managing services and tracking performance make agency-to-agency comparisons difficult.

State DOT leaders work with their counterparts in other states to improve business processes by identifying best practices and innovations. A subcommittee of AASHTO's Standing Committee on Quality began working in 2005 on a prototype to analyze on-time and on-budget performance of construction contracts. The 20-state voluntary group chose construction contracts for the prototype because most transportation agencies define the construction phase of project delivery in similar terms and already collect good data on costs and schedules. Where applicable, the prototype used AASHTO's TRNS*PORT software suite, which is a comprehensive construction contract

