



Peer Exchanges

Planning for a Better Tomorrow

FHWA/FTA
Transportation Planning Capacity Building

Transportation Planning Capacity Building Program

– Peer Roundtable Report –

“Peer Roundtable on Performance Management for the Massachusetts Department of Transportation (MassDOT)”

- Event Location:** Boston, MA
- Event Date:** July 22, 2010
- Roundtable Host:** Massachusetts Department of Transportation (MassDOT)
- Roundtable Participants:** Lucy Garliauskas, Federal Highway Administration (FHWA), MA Division
Jeff Mullan, Massachusetts Department of Transportation (MassDOT)
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Jeff Price, Virginia Department of Transportation (VDOT)
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I. Introduction

This report highlights key recommendations and best practices for successfully implementing performance management at a state Department of Transportation (DOT). The exchange was sponsored by the [Transportation Planning Capacity Building](#) (TPCB) Program, which is jointly funded by the [Federal Highway Administration](#) (FHWA) and the [Federal Transit Administration](#) (FTA) under the Surface Transportation Environment and Planning Cooperative Research Program (STEP).

The TPCB Peer Program advances the state of the practice in multimodal transportation planning nationwide by organizing, facilitating, and documenting peer events to share noteworthy practices among DOTs, Metropolitan Planning Organizations (MPOs), transit agencies, and local and Tribal transportation planning agencies. During peer events, transportation planning staff interact with one another to share information, accomplishments, and lessons learned from the field and help one another overcome shared transportation planning challenges.

The report summarizes key information discussed during the peer exchange and is organized in the following sections:

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II. About the Peer Exchange

The Massachusetts Department of Transportation (MassDOT) hosted this one-day peer exchange at its headquarters in Boston, Massachusetts. MassDOT worked closely with the FHWA Massachusetts Division staff to structure a peer exchange that would provide its senior management team with expert advice from four other state DOTs experienced in performance management. The peer event included peers from:

- Maryland Department of Transportation's State Highway Administration (Maryland SHA)
- Missouri Department of Transportation (MoDOT)
- Virginia Department of Transportation (VDOT)
- Washington State Department of Transportation (WSDOT)

In addition, Pete Rahn, Senior Vice President HTNB, former Secretary of Transportation in New Mexico, former Director of Transportation in Missouri, past president of American Association of State Highway and Transportation Officials (AASHTO) and former chair of AASHTO's standing committee on performance management, provided opening remarks.

III. Background on MassDOT's Request for a Peer Event

Chapter 25 of the 2009 Acts of the Massachusetts General Court (Text included in Appendix E) created an Office of Performance Management and Innovation. Established on November 1, 2009, the office was charged with making performance management a central part of how MassDOT conducts business. For its initial task, the office is focusing on identifying key performance indicators, setting performance goals around those indicators, and measuring performance towards goals. Additionally, the office is responsible for reporting publicly on MassDOT's performance. From the Office's inception, the Secretary of Transportation, Jeff Mullan, has stated his commitment to making performance management a centerpiece of MassDOT's operations and decision making. Secretary Mullan writes: "Effective performance management is at the core of Governor Deval Patrick's vision for transportation reform and the legislation he signed in June 2009 creating the Massachusetts Department of Transportation. It is a critical step forward as we seek to rebuild public trust in our transportation system by creating a unified transportation organization that delivers the most efficient and cost-effective services possible."

MassDOT published its first performance measures report, the *ScoreCard*, in December 2009, consolidating metrics gathered by its predecessor agencies. Still in its first year as a consolidated transportation agency, MassDOT is now focused on identifying key performance statistics to help with the ongoing evaluation of how it performs its business. To that end, the agency requested a peer exchange from the TPCB Program with peer agencies that have a well established history with performance management programs.

IV. The Importance of Performance Management in Transportation Planning

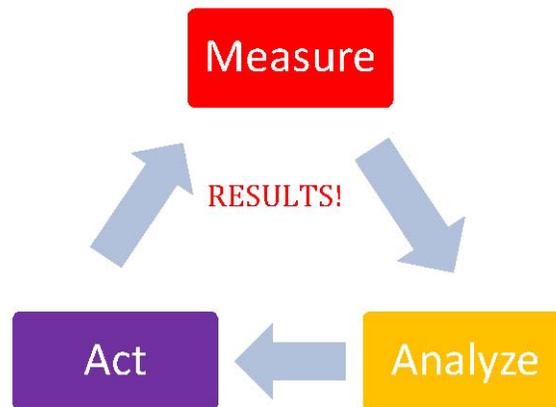
The peer experts presented background material on why each of their agencies established a performance management system and how it is used to better manage and operate their agencies. The following information is a compilation of the presentations and the question and answer periods with MassDOT staff.

A. What is Performance Management?

Performance management is an overarching framework that consists of setting goals and objectives for an agency or division, selecting appropriate performance measurements and targets to manage to, allocating resources based on the selected objectives and targets, and then measuring and reporting results. A final step involves evaluation and feedback of all the stages to ensure an improvement in the process. The identification and implementation of performance measurements, while a crucial tool in the process, is only one component of the overall program.

Measurements alone will not be effective in revealing the areas that need attention. Measurements often focus on *outputs*, while performance management is more focused on *outcomes*: How good a system is our agency? How quickly do we respond? How satisfied is the public? Those are the questions addressed by performance management.

The performance management process consists of collecting data and selecting appropriate *measures*, *analyzing* the data—turning it from data into information—and *acting* on the information to get *results*. As illustrated in the diagram below, it is an iterative process, using information produced in one step of the process to refine the measures, add to the analysis, and produce additional information to direct actions and create results. The results are then monitored on an ongoing basis and feedback from that process is used to continually refine the measures, analysis and actions. It is intended to clearly show what is working and what is not, supporting decisions about where and how to invest shrinking resources to maximal effect.



B. Why Implement Performance Management?

A primary reason to implement performance management is that it can enable agency staff to make better decisions when allocating resources, both capital and personnel. In addition, it is anticipated that the next federal surface transportation reauthorization will include performance management guidance. Thus, states that already have performance management in place and are using data to manage their organizations may be rewarded in the new reauthorization bill .

Performance management has been identified as a best practice by transportation agencies as they strive to better serve their customer's needs. Performance management can truly make an agency more successful in the eyes of its users and the public at large. These reasons include:

- **Accountability.** Accountability is a critical means to developing public credibility. As one peer noted: "Without accountability, you might as well stick the measurements on a shelf."
- **Satisfaction.** Engaged employees, who have a better understanding of the operations of the agency, can provide a superior level of customer service. Pleased customers are more likely to support increasing resources for the agency. It becomes a positive feedback system.
- **Efficiency.** The process of measuring, analyzing data, and acting upon the results allows an agency to squeeze out remarkable efficiencies. The agency gets more out of its existing resources and as a result pleases its customers.

- **Effectiveness.** An agency using performance management can better understand exactly where—which part of the state, which division, which team— and when to provide resources for maximum effect.
- **Survival.** Performance management allows an agency to demonstrate the value of the work it is doing to the public. As fiscal constraints become more severe and experiments with privatization of transportation services increase, it is essential that agencies make the case for their effective management of public infrastructure.

In summary, performance management is a useful instrument to employ throughout the agency. It can help managers and staff at all levels better utilize resources. It provides managers with a tool to use with their staff to keep them focused on what's important; it also allows staff at all levels to better understand what is important to the agency as a whole.

C. Introducing Performance Management into an Agency

In bringing performance management into a DOT, national expert Pete Rahn believes there are five key factors in empowering staff to move in the right direction:

- 1) open and candid communication about the process,
- 2) a safe, level playing field in which it is acceptable for employees to challenge managers,
- 3) commitment to challenging people to attain the fullest within their talent and level of initiative,
- 4) performance measures to provide direction for the team, and
- 5) investment in employees by providing training and tools for them to be successful.

Resistance to performance management often centers around how the measures will be used, making it important to show early on that measurements are tightly linked to accountability. This can lead to improved credibility, both for individuals and for the agency as a whole. However, until this has been demonstrated, it can be difficult for some staff to believe in the concept. There are commonly three stages in the process of bringing the staff of a large and complex agency to accept and welcome performance management.

In the first stage, there is internal fear and anxiety, specifically about publishing “negative” data. There is concern that “they’ll use this information against us,” either internally or in the media. That is one reason why performance *measurement* must be embedded in a performance *management* process to ensure that negative results will be framed by a full understanding of relevant conditions. Fear and anxiety are often expressed as an intention to “wait out” the new system or regime, based on the assumption that it may be a temporary management fad associated with a particular individual. The only way to overcome this is through a clear leadership mandate, supported by a clear message that performance management is about the agency’s relationship to its customers.

The second stage is commonly an attempt to do a “safe” version of measuring *outputs* (such as miles of road or percent of budget) rather than *outcomes* such as level of customer satisfaction. This, if allowed to continue, will fail to deliver the benefits of the full performance management cycle.

The third stage is acceptance. This is when positive feedback, in the form of improved credibility and positive recognition, helps staff realize a key fact: only those who are measured will be recognized and supported with resources. It occurs to people that their data were already being

measured—but the new process allows them to stay ahead of the curve and to frame the data as part of a coherent, intentional process. At that point, there is a rush to measure everything; the challenge becomes one of keeping the list of measures well focused.

Pete Rahn noted that the process will take time and is unlikely to be smooth. Recommendations and examples of how the four peer agencies addressed the challenge of cultural change are provided in Section V. below.

V. How to Implement Performance Management: Recommendations for Overcoming Challenges

In its application to the TPCB Peer Exchange program, MassDOT requested assistance from peer State DOTs that have already faced many of the same challenges that MassDOT currently faces as it strives to incorporate an agency-wide culture of performance management. The challenges tend to group around three distinct issues, which are expanded in the sections below:

- 1) **Metrics:** How does an agency identify the “right” things to measure?
- 2) **Communication:** How can an agency share a high volume of information in a timely and effective manner?
- 3) **Cultural Shift:** How can we help our people accept this process and make it effective?

A. Selecting Meaningful Metrics

A key part of performance *management* is selecting and using performance *measures*. Experience shows that selecting these measures is an iterative process, requiring trial and error. It will take time and experience to discover the measures that are most effective in painting an accurate picture of an agency’s actions to meet the state’s transportation needs. In developing measures, it is important to consider what the audience needs to know. A DOT’s audience includes the state legislature, the media, the users of the system, and the public at large.

1. *Just get started*

There is no single formula for how to begin performance management. A DOT needs to look at the information it has that would help tell the story of its progress—including its lack of progress—and start to report it. Over time, the agency’s measures will change and evolve, responding to public, political and financial realities. However, while there is no such thing as a perfect measure, there are ways to evaluate measures and help them evolve. The DOT staff should choose several measures, use them and report on them, and then see which measures turn data into information desired by their customers.

- VDOT recommends starting with areas where the agency is committed to change, and measuring that. Over time, with more information and experience, these can be added to and expanded.
- Maryland SHA started with measures that were already being used to track core business activities. These included highway fatalities, level of service for maintenance, and environmental compliance. SHA now tries to track a wide range of key performance areas.
- MoDOT tracks about 100 individual measures built and organized around 17 Tangible Results. These indicators are based on customer expectations and many are regularly confirmed by public outreach efforts, which include regular surveys. The measures are

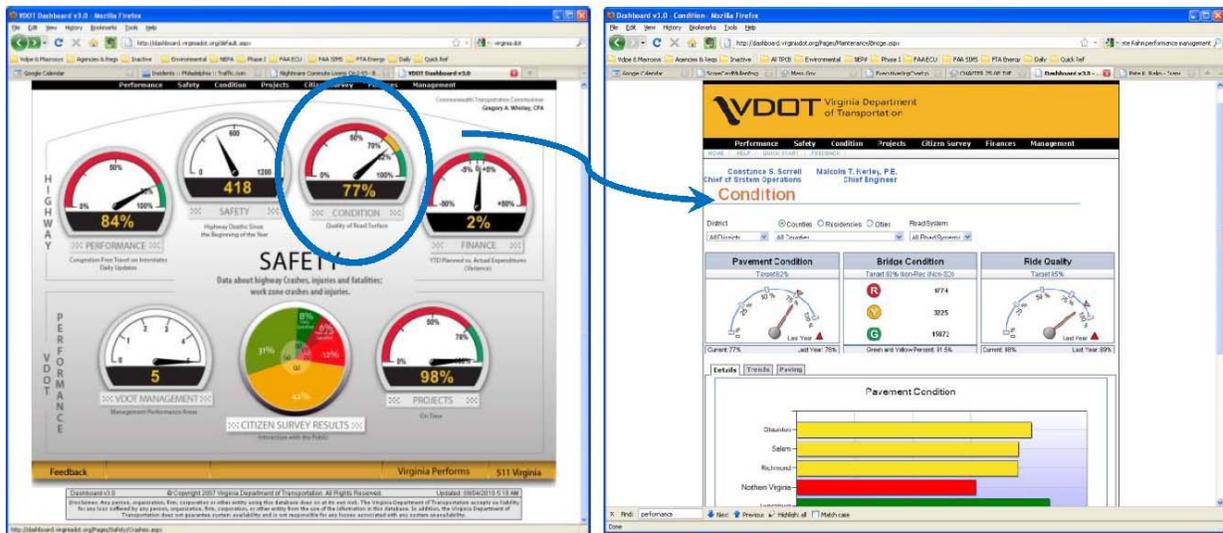
published quarterly in MoDOT's *TRACKER*, available in hard copy and at http://www.modot.mo.gov/about/general_info/Tracker.htm

- While WSDOT has a standard set of measures (over 100) that it tracks and reports in its quarterly *Gray Notebook* document, the agency is flexible enough to develop new measures and data in rapid response to topical public or media interest. For example, WSDOT created and published a pesticide metric in less than three weeks, in response to citizen and media questions on pesticide use, and was able to tell its own story on the issue rather than have the media speculate. The "Gray Notebook" can be found at: <http://www.wsdot.wa.gov/accountability/>

2. **An agency may eventually develop several different groupings of measures.**

It's important to keep in mind that measures are a tool for decision-making. Different measures may be important to different audiences. Some measures important to the Department Secretary or CEO will not be as useful or interesting to the public. In some areas, a DOT may want to start with only a few measures and later, once those measures are well managed, expand its measures.

- In the past, Maryland SHA tracked maintenance only at the state-wide level. Now the agency tracks performance at each maintenance shop. The shops can compare themselves to each other, which motivates local performance.
- Sometimes it's useful to regroup the data being compared. SHA used to compare overall pavement quality between districts. Now it compares different functional classifications in order to identify important trends. This change came about due to customer feedback.
- VDOT uses "cascading measures," with a few key measures reported widely and a system with the ability to drill down to more detail available for those who are interested. For example, in its web-based *DASHBOARD* reporting format, the initial screen provides an overall report on seven different major measures: performance, safety, condition of facilities, finance, VDOT management, citizen survey results, and projects. Clicking any of these topics brings the viewer to a page with more detailed performance results.



- MoDOT also uses "cascading measures" as each division and district has developed and matured its own individual grouping of measures that are more detailed and are used to manage its daily operations. The "cascading effect" reaches all the way down to

individual performance measures included in employee's appraisals. Each of the measurement groupings is related to and fed in to overall agency metrics. The performance measures link the department's strategic planning and executive policy directly to the daily work of employees and help push the integrated process of performance management to all levels of the agency.

3. **Ask the customers: What are their priorities?**

The priorities of the agency's customers are an important set of measures. Agencies should find out what the customers care about by asking them and analyzing the responses received. The answers may turn out to be different from the agency's assumptions. Based on the answers, the agency can develop a range of performance indicators, from general questions about public credibility to very specific questions about road conditions such as "are we mowing the proper amount?" The agency measures its performance in these indicators by asking the public again. This is often accomplished via surveys, but there are other ways to meet and question the public.

- MoDOT holds periodic "road rallies" in which it hires outside consultants to drive 900 citizens around the state on different roads and bridges, asking the citizens to evaluate the condition of the infrastructure. As a result of a recent road rally, MoDOT found out that mowing—a significant agency expense—is not a major interest of their public while reflective road paint is very important. MoDOT followed up by investigating inexpensive means to measure road paint reflectivity throughout the state. In the course of this project, it was discovered that the newest and most expensive paint product was no more reflective than an older-generation, cheaper type of paint. As a result, MoDOT has saved money by changing its paint product and cutting back on mowing, while pleasing the public with a more effective road-striping program.
- MoDOT also performs telephone surveys of residents within a given radius of a particular project, asking whether the citizen thinks the project was the right transportation solution. Another technique MoDOT has successfully used is to invite all callers to its call-in line to take a two-minute customer satisfaction survey.
- VDOT's Public Affairs Office performs an annual telephone survey of a statistically significant sample of Virginia residents. This survey asks citizens their opinions about current road conditions, including congestion, safety, construction, and comfort and many other areas. VDOT uses the results to review priorities on a district by district basis—e.g., whether reductions in spending on certain programs or maintenance areas create a perceived impact to VDOT's customers, and which investments to make with limited transportation funding. The latest survey showed that people who used the Virginia highway 511 information system were three times more likely to say they were satisfied than those who did not use the 511 system.
- Maryland SHA performs a telephone survey every two years. By providing a list of activities and asking the respondents two questions—How important is this to you? And how well do we do it?—the highway agency identifies disconnects between what had been perceived as customer preferences and what customers actually report as important activities, and is able to modify priorities. SHA also implemented a customer service management system, putting complaints at the top of its list in prioritizing work. While this sometimes frustrates road crews, it has helped educate all throughout the DOT as to the customers' real interests. SHA is dedicated to responding to every call within one business day.
- WSDOT has adopted a "point of sales approach" that asks for input based on how people have interacted with the agency, whether in response to a particular project location or around a specific issue or concern. WSDOT found a more comprehensive survey approach did not address the real diversity of population and conditions in the different

areas of the state, which vary significantly on either side of the mountains. In addition, WSDOT is 100 percent committed to a two-day customer response time, and has a process in place to reply to citizen questions in a quick and timely manner.

- Planning departments can use data from public meetings and survey results to create measures. MoDOT looked at how and where people attended public meetings, how they gave input, and whether they feel MoDOT listens to them, and found out that holding “virtual meetings”—i.e., setting up a website for opinions to be recorded and exchanged—dramatically increased public participation. MoDOT also annually surveys its partner MPOs and regional planning commissions (RPCs) to find out whether they feel the relationship is collaborative and whether they feel that MoDOT listens to them and responds to their requests. The peers from all states acknowledged that it is more challenging to measure outcomes of the planning process than design and construction activities.

4. **Measures that are meaningful to staff will be used more consistently.**

If the measures are selected purely for the sake of meeting compliance requirements, this is not true performance management and gaining their acceptance or implementation may be more difficult. The agency should look at areas where it’s actually going to change the program and measure to assess the impact of those changes.

The DOT should start with measures that are already being used and build on those measures. Even if data indicates poor performance, it’s important to “shine the light of day” on the conditions that exist. A facility or organization with performance challenges will be recognized, which is necessary in order for resources to be applied to correct any problems. Only those issues that are measured and recognized are likely to be solved.

- VDOT had some measures mandated by the state legislature. Others were selected by gathering subject matter experts to research and suggest measures. Since measures may change behavior, it is also important to see if the behavior is being changed in the right direction.
- Maryland SHA looks at the link between performance measures and funding to see where the dollars are being spent and whether performance is improving in those areas. It helps them make difficult decisions and find trade-offs.
- MoDOT has successfully used measures to close performance gaps and drive continual incremental improvements and accountability. For example, when a process improvement need was identified regarding the timely completion of construction final plans, a measurement was implemented and drilled down to the district and project office level to measure the time to submit their plans. In 18 months, the average time decreased by over 42 percent. Transparent measures showing “warts and all” can motivate staff to exceed expectations.

5. **Set high targets that can stimulate achievement.**

- The Virginia legislature requires VDOT to set two-year targets. Based on recent performance, VDOT identifies what it believes is achievable moving forward.
- MoDOT commits to benchmarking itself against “the best,” even reaching outside the transportation field for target levels. MoDOT benchmarks the percent of Missouri’s major highways in good condition against Georgia’s accomplishment for any given year,



because Georgia is known for its smooth highways. MoDOT compares its overall level of customer satisfaction with the most successful company it knows: H. J. Heinz, maker of the country's most popular ketchup and 150 other number one- or number two-ranked food brands. MoDOT has found that setting high targets elicits more effort and achievement from staff than mid-level milestones.

B. Communicating Performance Results Effectively

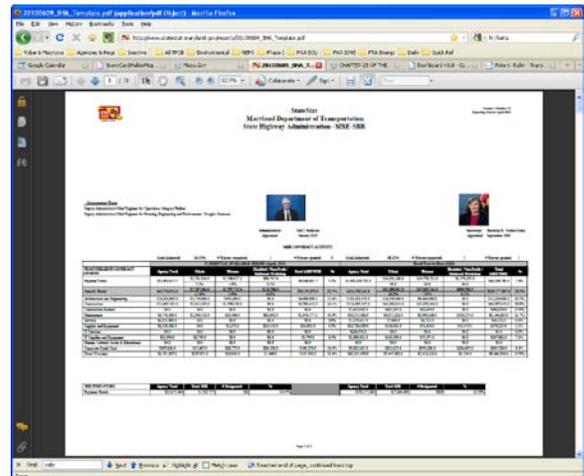
A key part of performance management is reporting results to the customers. The agency needs to publish its goals, achievements, and challenges in a format that is clear, honest, and timely. In order to do this well, it is important to break down “silos” and have different divisions and districts pool their data to create a more complete picture of current conditions for a given topic or geographic area.

An effective report includes both “good” and “bad” measurements: the path to improvement and to public credibility is honest reporting and a clear focus on the areas that need work.

1. Tell the public the DOT's story: Provide regular reader-friendly reports.

When assembling data, a DOT may suffer from the DRIP syndrome: Data Rich, Information Poor. Data is most powerful when it is communicated as part of a story—whether that story is prepared for a legislature or a Departmental Secretary or the traveling public. Once data have been collected and analyzed, it is very useful to synthesize key data into a coherent presentation, or story, that explains trends, successes, and failures. It's helpful for the DOT to tell its own story, before someone else tells it.

- WSDOT has made a strategic commitment to transparency and accountability with the public. Its mantra is “No-Surprised Reporting” and the quarterly *Gray Notebook* has become the face and brand of WSDOT. It is designed to tell clear stories, backed up by quality data and rigorous systems analysis, so the public and the legislature clearly understand WSDOT's results, challenges and accomplishments. Each 100-plus page edition also includes an executive-summary level Performance Dashboard. The Dashboard clearly summarizes the trend of selected, key performance metrics in five legislative policy goal areas: safety, preservation, mobility, environment, economic vitality, and stewardship. Graphics clearly indicate which measures are trending favorably, and which are not.¹

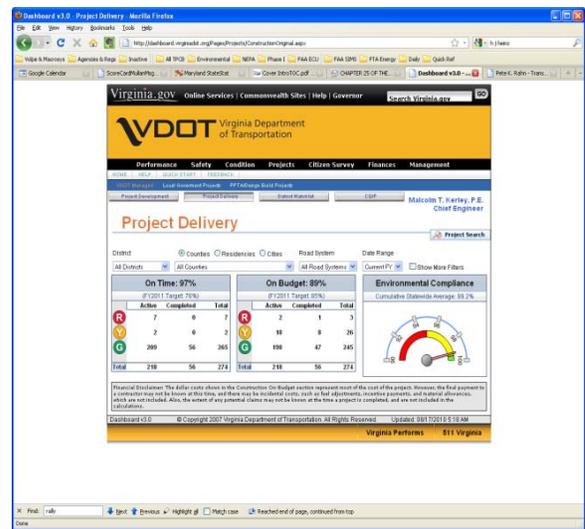


1 The March 2010 Performance Dashboard is at http://www.wsdot.wa.gov/NR/rdonlyres/C1B0C0DB-9C89-46D8-AC3A-64C031A9861A/0/GNB_Dashboard_Mar10.pdf

WSDOT ensures that its reports are current and timely. It emphasizes using “plain talk” to communicate “the good, the bad, and the ugly—no exceptions.” WSDOT has identified seven components of good performance reporting, which it developed into a reporting approach it coined “Performance Journalism”: good stories, good writing, good data, good graphics, content-driven design, quality control, and good timing.²

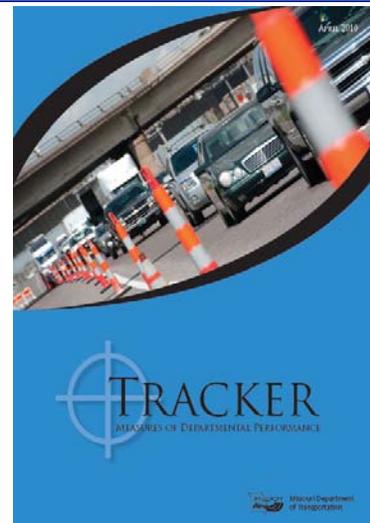
Maryland SHA reports on a monthly basis to the Governor’s Office and fellow state agencies as part of Maryland’s StateStat program. It submits 25 key measures with its budget report, and another 30 to 40 measures to the StateStat system. Internally, there may be as many as 500 measures kept as backup in the case of public inquiries.³

- VDOT publishes its data on its website, using a car dashboard motif and simple green-yellow-red scale to show selected metrics. The intuitive and colorful presentation invites viewers into the site, while the carefully selected metrics ensure that viewers learn where VDOT is moving forward or falling behind.



- MoDOT, like WSDOT, publishes a quarterly report, the *TRACKER*. It is organized around 17 tangible results and 100-plus individual metrics the DOT knows are important to the public. It also includes measures that are intended to meet the interests of the governor, legislature, and public. The *TRACKER* does not rely on any sophisticated data management system—the first edition was created within six weeks.

2. **Learn to use performance reports to frame quick responses to sudden problems.**



² More information on performance journalism can be found at http://www.wsdot.wa.gov/NR/rdonlyres/FODE7328-BA3D-45A0-95DB-641A4CE32D7B/0/2008_TRB_Performance_Journalism.pdf and in the TRB publication “Bridging the Gap Between Agencies and Citizens: Performance Journalism as a Practical Solution to Communicate Performance Measures and Results” at <http://pubsindex.trb.org/view.aspx?type=CO&id=848183>.

³ SHA’s StateStat report for April 2010 can be found at http://www.statestat.maryland.gov/reports/20100609_SHA_Template.pdf

An agency with its own performance data at its fingertips can respond immediately to challenging questions from the public, the media or the legislature.

- WSDOT found an unexpected use for its backlog of clearly reported and organized data. When an engineering miscommunication led to a costly mistake and the headline “**Human error blamed for misplaced off ramp**” topped the front pages of a local newspaper, WSDOT was able to use its performance data to quickly respond to reporters and frame an appropriate response that explained the broader context of the situation.



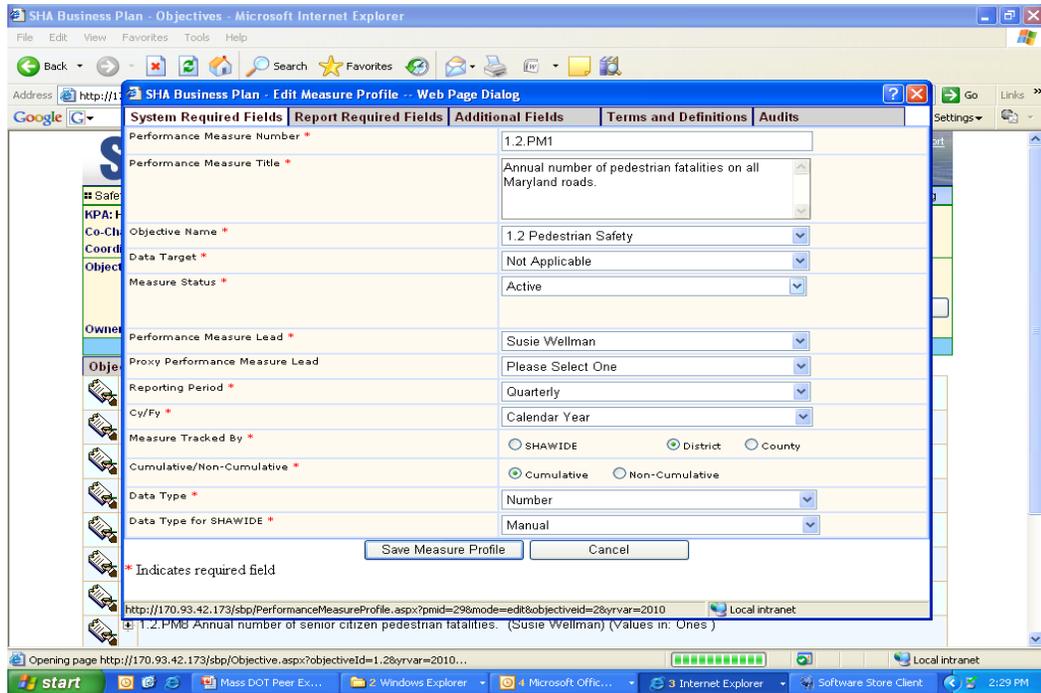
C. Internal Accountability, Culture Change, and Managing the Details

Dedicated leadership is the key to success throughout the process of converting an agency to a performance management approach. A leader who is fully engaged will be able to engage others. But it must also be made clear that performance management is not tied to any particular individual. For the process to work, it must be institutionalized in the agency itself, able to function in the face of changes in administration and leadership.

1. **Accountability: Report metrics in person, in public.**

The peers noted that successful agencies stress the importance of holding quarterly or bimonthly metric reporting meetings to serve as an in-person gathering of managers from all departments and divisions. The purpose of this is to improve internal communication and promote opportunities for synergistic problem-solving. If these meetings are combined with public recognition by management of every individual for achieving--or failing to achieve--stated goals, the process also improves individual accountability and participation in the overall performance management process.

- MoDOT’s leadership convenes quarterly meetings where managers verbally report progress on performance measures. Managers are assigned responsibility for each performance measure and those “measurement drivers” provide updates on what has been delivered. Not only does this promote broader understanding between divisions and departments, but it also encourages strenuous efforts to meet expectations. This can be a challenge in the beginning, but experienced agencies realize “this is not a spectator sport.”
- Maryland SHA created councils of individuals that are responsible for specific performance topics, with a lead person identified for each performance measure (see screen shot below). Each council or department reports to the SHA Administrator quarterly.



- At MoDOT's quarterly review meetings, the head of the agency brought an air horn to every meeting. If anyone reported *plans* rather than *actions*, the executive blew the air horn. This immediately demonstrated that "paying lip service" would not be tolerated. The result was actually very positive: now people are excited to come to the quarterly meetings and announce what they have done.
- WSDOT conducts internal as well as external executive quarterly review meetings. The external review meetings include the Governor and a panel of senior state leaders who review WSDOT's reports and ask probing questions. WSDOT found that, by holding itself accountable as an agency for both successes and failures, it gained enormous credibility with the public and with the state legislature. In the time since WSDOT started publishing its results, "warts and all," in the *Gray Notebook*, the department has been able to implement two gas tax increases to increase funding for transportation.

2. **Push performance management at all levels of the agency.**

Performance management can be used to stimulate internal communication and strengthen the internal cohesiveness of the agency. Successful performance management fully involves both middle management and field staff, because these are the people who know what really is happening in the field.

- After publishing its *TRACKER* report on overall agency performance for several years, MoDOT created Division and District *TRACKERS*. This effort got maintenance and operations staff more fully engaged and helped them feel connected to each other and to the larger organization. Now the Districts compete with each other for results—nobody wants to be the District on the bottom.
- It's important to acknowledge that performance management requires a cultural shift. It can be especially difficult for agency technical staff to accept the wide range of measures that may need to be considered when setting priorities once the cross-functional nature of meaningful results is fully understood. Technical experts may be accustomed to directing resource decisions without consultation with other groups or concerns.

VI. Conclusions and Next Steps:

MassDOT Secretary Jeff Mullan highlighted two conclusions for his agency at the end of the peer event:

- **“Waiting it out” is not a good strategy.** Transportation reform, specifically via performance management, is a good idea and will be supported by whoever is governor and whoever is Department Secretary. It is also now the law in Massachusetts (see Appendix D).
- **Publish the data, warts and all.** The public doesn’t expect perfection; they expect excellence. Don’t be afraid to share what we’re learning with the public.

This peer exchange is part of a comprehensive effort by MassDOT to incorporate a performance management system into the overall management of the DOT. Four weeks after this peer exchange was held, a Performance Management Action Plan was developed to guide the overall work effort. This plan lays out the steps to be taken to identify goals and objectives as well as develop both performance measures and the data needed for each measure.

As part of the Performance Management Plan, each division has been charged with developing mode-specific performance measures that respond to the specific goals in the recently developed MassDOT strategic plan. The data will be published via MassDOT’s web-based *ScoreCard*, revised to align with the goals and the measures of the Strategic Plan.

As the first step, four working sessions developed potential initial lists of performance measures for the new *ScoreCard*. The results of that effort are contained in Appendix C of this report, “Working Sessions Notes.”

VII. About the Transportation Planning Capacity Building (TPCB) Program

The [Transportation Planning Capacity Building \(TPCB\) Program](#) is a joint venture of the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) that delivers products and services to provide information, training, and technical assistance to the transportation professionals responsible for planning for the capital, operating, and maintenance needs of our nation’s surface transportation system funded under the Surface Transportation Environment and Planning Cooperative Research Program (STEP). The TPCB Program website (www.planning.dot.gov) serves as a one-stop clearinghouse for state-of-the-practice transportation planning information and resources. The clearinghouse includes over 70 peer exchange reports covering a wide range of transportation planning topics.

VIII. Appendices

Appendix A Acronyms

| | |
|---------|--|
| AASHTO | American Association of State Highway and Transportation Officials |
| DOT | Department of Transportation |
| DRIP | Data rich, information poor |
| FHWA | Federal Highway Administration |
| FTA | Federal Transit Administration |
| GHG | Greenhouse gas |
| HOC | Highway Operations Center |
| IT | Information Technology |
| ITS | Intelligent Transportation Systems |
| MassDOT | Massachusetts Department of Transportation |
| MoDOT | Missouri Department of Transportation |
| MPO | Metropolitan Planning Organization |
| NTP | Notice to Proceed |
| OUI | Operating Under the Influence |
| PRC | Project Review Committee |
| RFI | Request for Information |
| ROW | Right-of-Way |
| RPC | Regional Planning Commission |
| SHA | State Highway Administration |
| STIP | State Transportation Improvement Plan |
| TPCB | Transportation Planning Capacity Building |
| TRB | Transportation Research Board |
| VDOT | Virginia Department of Transportation |
| WSDOT | Washington State Department of Transportation |

Appendix B Agenda and Presenters

| Time | Agenda Item | Presenter/Description |
|---------------------|--|---|
| 8:30 am | Welcome and Introductions - State Mandate - Highway Division Performance Measures | Jeff Mullan, Secretary, MassDOT Luisa Paiewonsky, Highway Division Administrator, MassDOT |
| 8:50 am | National perspective on performance management - Introduction of Pete Rahn | Lucy Garliauskas, Division Administrator, FHWA |
| 9:00 am | Opening Remarks | Pete Rahn, Senior Vice President, HNTB Former Director, Missouri DOT Past Chair, AASHTO Standing Committee on Performance Management |
| 9:30 am | Goals of the Peer Roundtable TPCB program goals | Lance Neumann, Cambridge Systematics Inc., Facilitator TPCB team reviews overall goals for the Peer Roundtable and establishes ground rules for the day's discussions. |
| 9:45 to 10:45 am | Introductory Presentations Mara Campbell, Missouri DOT Jeff Price, Virginia DOT Cathy Rice, Maryland DOT Daniela Bremmer, Washington DOT | Each peer representative gives a brief presentation (10-15) minutes) that summarizes its current use of Performance Measures. <i>At end of presentations, a brief Q&A session, to be followed by facilitated discussion after break</i> |
| 10:45-11:00 | Break | |
| 11:00 am | Benefits, Opportunities and Challenges of Effective Performance Measures in managing transportation resources | Lance Neumann + Peer participants Facilitated Discussion to highlight key lessons learned from implementation of performance measures |
| 12:30 pm to 1:30 pm | Lunch | <i>Participants have lunch on their own and return for the afternoon working session. Note: Morning only participants will be asked to fill out TPCB evaluation forms before leaving.</i> |
| | <i>Afternoon Working Sessions</i> | <i>MassDOT and Peer participants</i> |
| 1:30 – 3:30pm | Participants from MassDOT attend 1 of the afternoon sessions. Topics: Safety- Cathy Rice, Maryland, Tom Broderick MassDOT Project Development and Delivery- Daniela Bremmer, Washington, David Anderson and Mike McGrath, MassDOT Operations and Maintenance – Jeff Price, Virginia, Jerry Allen, MassDOT Customer Service - Mara Campbell, Missouri, Steve Jacques, MassDOT | <i>Breakout groups will address performance measures by topic, with a report-back to the full group.</i> <ul style="list-style-type: none"> • Discussion with peers of key challenges and/or barriers to implementation of performance measures at MassDOT • Identification and evaluation of proposed performance measures • Summarize results for report back to full group |
| 3:30 – 4:30pm | Wrap-Up - Report Back from Working Sessions identifying Next Steps for Performance Management Implementation at MassDOT | Report Back from Groups and facilitated discussion to ask participants what they learned and actions they will take as next steps |
| 4:30pm | TPCB Peer Program Evaluations | Participants fill out TPCB peer program evaluation forms. |

Appendix C Working Session Notes

After the conclusion of the formal portion of the peer exchange, MassDOT and the four state DOT peers conducted four working sessions to help develop potential initial lists of performance measures for the new MassDOT *ScoreCard*. Speakers from each of the peer agencies co-facilitated sessions with MassDOT managers. Over 50 MassDOT staff members representing each of the modal agencies participated in the working sessions. The four sessions corresponded with the four state overall MassDOT goals. The session topics were:

- A. Safety
- B. Project Development and Delivery
- C. Operations and Maintenance
- D. Customer Service

1. Safety Working Session on Performance Measures

This group focused on distinguishing between internal, management-driven measures and external measures such as customer service and meeting the new performance management requirements of Chapter 25 of Massachusetts General Law Acts of 2009. Measures need to relate directly to strategies for meeting the MassDOT goal of creating the nation's safest transportation system. A significant obstacle to producing the metrics is the lag time between data collection and data reporting. For example, crash data from the Registry of Motor Vehicle are two years old when they becomes available.

The group identified the following safety-related performance measures to incorporate into the MassDOT Highway Division's performance management plan:

Engineering

- # of road safety audits conducted annually
- # of intersection improvements that were initiated based on road safety audits
- # highway miles of lighting, guardrail, and median improvements that were initiated based on a road safety audits
- # of crashes by type, number of truck related incidents, motorcycle and pedestrian accidents annually

Traffic Management/Operations

- Reduction in the incident detection, response and clearance times
- # of Motorist Assistance (CaresVan) Program responses to disabled motorists
- # of reports to Project Clean (Highway Hotline) regarding roadway debris or other related problems
- # of accidents in work zones
- # of construction personnel injuries or lost time related to injury

Behavioral

- # of enforcement areas implemented by the Massachusetts State Police (MSP)
- # of citations given for seatbelt, Operating Under the Influence (OUI) arrests, aggressive driving etc

- # of fatalities

2. Project Development & Delivery Working Session on Performance Measures

In addition to identifying performance measures for the MassDOT Highway Division's project development and delivery units, this group identified the mechanism and rationale for obtaining each metric.

Pre-Advertising: Top 5 Measures

- % of State Transportation Improvement Program (STIP) projects advertised in Year One of the STIP (this measure is currently reported in the Highway Division Scorecard)
- Distribution of STIP projects advertised in each quarter (historically a disproportionate number are advertised in the fourth quarter, straining the procurement process)
- Projects advertised on schedule (required by Chapter 25 of the Acts of 2009) and the reasons for delays
- Backlog of projects approved by Project Review Committee (PRC) but not yet programmed on the STIP, by municipality
- Months to procure a consultant, from identification of need to Notice to Proceed (NTP) (currently reported in the Scorecard)

Pre-Advertising: Measures to Consider

- Duration of the environmental permitting process by project
- Duration of project development and design process
- Number of Preliminary Right-of-Way (ROW) Plan submittals for each project
- Cost changes for each project

Post-Advertising: Measures

- Total number of field personnel assigned to each construction project
- % of construction claims processed in accordance with existing Standard Operating Procedures
- Incidences of incentive for completing crucial work ahead of schedule/disincentive for falling behind schedule (measure to be determined)
- Success of Value Engineering Change Proposals (measure to be determined)
- # of projects completed on time per quarter
- Average # days of construction procurement process, from project advertisement to NTP

Post-Advertising: Measures to Consider

- Contractor submittal times: response times for requests for information (RFIs), shop drawings and material submittals
- Public impacts, such as number of complaints received, traffic delays, opening of roadways on time, etc.
- Effectiveness of the 110% municipal agreements: are the terms being fulfilled by the community? Did issues associated with the agreement delay the project?
- Construction budget: compare amount of funds originally encumbered to the total expenditures made to complete a project

3. Operations and Maintenance Working Session on Performance Measures

This group initially focused on identifying challenges to be overcome. It then brainstormed potential performance measures.

Challenges to Developing Performance Measures

- Resources: funding and staffing
- Understanding MassDOT budget
- Understanding MassDOT purchasing
- Data integrity
- Universal understanding of data
- Understanding assumptions around data
- Ownership of new systems
- Merger of Highway Operations Center (HOC)/Communications
- Revisiting and finishing “best practices”

Possible Performance Measures

- Amount of contaminants in Right of Way
- Amount of cleanup in Right of Way
- Intelligent Transportation Systems (ITS) coverage and % working
- Customer satisfaction with maintenance activities
- Response to customer calls
- Incident clearing time
- Equipment availability
- Congestion
- Bridge maintenance
- Pavement conditions
- Highway Integration – Highway Operations Center (HOC)
- Human capital
- Fines paid for permits
- Time taken to issue access permits
- # of crashes
- Signs
- Dollars spent on maintenance per district to achieve specific results
- Dollars recovered
- Speed of vendor payments
- Vegetation management/cleanliness
- Snow and ice measures

- Work Zone safety

4. Customer Service Working Session on Performance Measures

This group brainstormed potential obstacles and barriers that MassDOT must overcome in order to implement successful performance management. The group identified the customer service measurement goal as finding out what customers want and what makes customers happy; therefore, it's important to learn about the customers (demographics), identify any competition, and find out customer expectations about product safety, on-time delivery, and social responsibility.

Obstacles and Barriers:

- Funding and staff shortages: limited resources; limited Information Technology (IT) support; staff stretched thin; limited staff who can lead with passion, experience, and peer credibility; lack of training resources; and lack of equipment
- Lack of buy-in: concerns about both senior and middle management buy-in and inadequate leadership, and actual management changes
- Communication issues: inadequate communication throughout the agency—not enough information for everyone to understand
- Conflicting priorities/one size doesn't fit all
- Various issues related to fear and uncertainty: who is the customer, no service level agreements, airing dirty laundry, and political concerns

Measures for MassDOT success at providing excellent customer service:

- % overall customer satisfaction
- # complaints
- Customer wait time: % on-time (e.g., train/bus/plane/ferry arrival; highway trip time; transaction time at desk, phone, or toll booth)
- Cost/value of fees (measure would be hard to develop)
- Overall reliability: asset availability (e.g., lane drops, trips operated), travel time, safety
- Transaction satisfaction: % customers responded to; time per transaction; ratio between positive and negative customer feedback; % customers who experience courteous and professional response
- Customers perceiving MassDOT as “The Best Source” of credible transportation information: % of articulated commitments that are met (e.g., train arrives when advertised, project completed on time)
- Service quality (need to find out what customers want in order to develop this measure)
- Where customers get information: # repeat website visitors, # online transactions, call volumes
- How frequently do we reach out to customers? # public meetings, # customers attending virtual and physical public meetings, # community events, attendance at community events, # people spoken to about significant programs
- How well do we deal with media or advocacy groups? % positive editorials, # stories, # calls from media requesting expertise, # partnering meetings.
- Is MassDOT perceived as respectful/good steward of environment: tons of green house gas (GHG) emissions, % recycled materials used, other measures related to GreenDOT

- Safety: # fatalities, # crashes by segment, # crimes reported on types of DOT property

Appendix D Web Resources/Links

Peer Sites:

Maryland SHA: <http://www.marylandroads.com/Home.aspx>

Massachusetts DOT: <http://www.massdot.state.ma.us/main/main.aspx>

Missouri DOT: <http://www.modot.mo.gov/index.htm>

TRACKER: http://www.modot.mo.gov/about/general_info/Tracker.htm

Virginia DOT *DASHBOARD*: <http://dashboard.virginiadot.org/default.aspx>

Biennial Needs Report:

http://www.virginiadot.org/projects/resources/Biennial_Needs_Report_VDOT_website.pdf

Washington DOT: <http://www.wsdot.wa.gov/>

Gray Notebook:

<http://www.wsdot.wa.gov/Accountability/GrayNotebook/navigateGNB.htm>

Other Resources:

AASHTO Performance Management: <http://www.transportation.org/?siteid=97>

Federal Highway Administration: <http://www.fhwa.dot.gov/>

Federal Transit Administration: <http://www.fta.dot.gov/>

Transportation Planning Capacity Building: <http://www.planning.dot.gov/>

TRB Performance Journalism: <http://pubsindex.trb.org/view.aspx?type=CO&id=848183>

TRB Performance Measures: <http://www.trb.org/Main/Blurbs/157275.aspx>

TRB Performance Management: <http://pubsindex.trb.org/view.aspx?id=773179>

Appendix E. Chapter 25 of the Acts of 2009

Chapter 6C: Massachusetts Department of Transportation

Section 6. (a) The secretary shall operate and administer an office of performance management and innovation within the department that shall, without limitation, administer this section. The divisions of the department shall report to the office of performance management and innovation with regard to setting goals and establishing performance measures to improve the department and divisions' operations and the delivery of transportation services and projects in the commonwealth.

(b) The secretary shall establish a performance measurement system for the divisions of the department, which shall establish program goals, measure program performance against those goals and report publicly on progress to improve the effectiveness of transportation design and construction, service delivery and policy decision making. Performance measurements shall include, for at least the then current fiscal year and the previous 5 fiscal years, all modes of transportation. Performance measurements shall include the number of projects completed, the percentage of projects completed early or on time, the percentage of projects completed under budget or on-budget, the number of projects in construction phase and the percentage of projects advertised early or on time. Performance measurements shall include usage information for all modes of transportation, including measures of throughput, utilization and ridership. This information shall be presented with measurements of congestion, on-time performance, if appropriate, and incidents that have caused delays or closures. Performance measurements shall include assessments of maintenance performance by asset class, mode and region, including a breakdown of highway pavement, bridge and track, for subway, commuter and commonwealth-owned freight rail, by condition level, with an explanation of current year and future year planned maintenance expenditures and the expected result thereof. Reporting on planned maintenance programming shall include an assessment of the categories of maintenance-related activity as described in the American Association of Highway and Transportation Officials' Maintenance Manual for Roadways and Bridges. The division of highways shall expand and enhance its project information system and shall develop additional means to establish a centralized system, available on the internet, to document performance measurements and the progress and status of all planning, design, construction and maintenance projects undertaken by the department, and all road and bridge projects of any city or town that are funded, in whole or in part, by the commonwealth. A municipality shall have access to the system at no cost, shall enter such information into the system as may be required by the division of highways and shall otherwise fully participate in the system as a condition of receiving financial assistance from the commonwealth. All information in the project information system shall be a public record unless otherwise exempted by law. A report of the project information system and performance measurements shall be published annually and made available to the public not later than December 31. The report shall also be filed annually with the clerks of the senate and house of representatives, the chairs of the house and senate committees on ways and means and the senate and house chairs of the joint committee on transportation. The performance measurement system shall require each division to develop a strategic plan for program activities and performance goals. The system shall require annual program performance reports which shall be submitted to the house and senate committees on ways and means and the joint committee on transportation.

(c) The office of performance management and innovation shall be charged with evaluating the goals and measures established by the department and its divisions and monitoring the results reported. The office shall recommend changes to proposed goals and measures as are appropriate to align goals and measures with the strategic priorities of the secretary. The office shall report regularly to the public on the progress the department and its divisions are making at achieving stated goals. The office shall be responsible for the establishment and, in cooperation with each of the divisions, operation of an asset management system for all divisions and shall report regularly on the condition of assets and infrastructure. Reports on performance shall include measures of: (i) maintenance activity and results; (ii) usage on all modes of transportation; (iii) operational performance; and (iv) planning, design and construction, including on-time and on-budget project delivery.

The office shall annually publish a "scorecard" identifying the number of projects actively under construction and those completed in the previous year by type, value and location and those planned for the following year. Notwithstanding any other provision of law, the office shall determine the appropriate measures and standards of performance in all categories and reporting on performance trends.

The office shall be responsible for reporting publicly and transparently and making all reports available through an on-line system.

The secretary shall use the performance criteria established in this section to determine the quality of service of all private entities, including commuter rail providers, that perform transportation services on behalf of the department. The results of such performance measures shall be criteria used in negotiating any contracts.