The State of Transportation Performance Management

By
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Congress approved legislation in 2012 known as Moving Ahead for Progress in the 21st Century, or MAP-21, that not only provided two years of funding for transportation programs and a variety of policy changes after nearly three years of short-term extensions but also set in motion a process that continues today, even after minor tweaks were made in 2015’s five-year Fixing America’s Surface Transportation, or FAST, Act. States and planning organizations have been working with the Federal Highway Administration, or FHWA, to implement a performance-based approach to the federal highway program.

“Performance management will transform the Federal aid highway program and provide a means to the most efficient investment of Federal transportation funds by refocusing on national transportation goals, increasing the accountability and transparency of the Federal-aid highway program, and improving project decision making through performance-based planning and programming,” read the declaration of policy in the law.

The law goes on to say that it is in the interest of the United States to focus the program on seven national goals, including:

- **Safety**: To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure condition**: To maintain the highway infrastructure asset system in a state of good repair.
- **Congestion reduction**: To achieve a significant reduction in congestion on the national highway system.
- **System reliability**: To improve the efficiency of the surface transportation system.
- **Freight movement and economic vitality**: To improve the National Highway Freight Network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental sustainability**: To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- **Reduced project delivery delays**: To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies’ work practices.

The law required promulgation of rules to establish performance measures and standards not later than 18 months after MAP-21’s July 2012 enactment. It required the U.S. secretary of transportation to establish minimum standards for states to use in developing and operating bridge and pavement management systems.
and measures for states to use in assessing the condition of pavements on the interstate system and national highway system, the condition of bridges on the national highway system and the performance of the interstate and national highway systems. The secretary was also required to establish measures for states to use in assessing serious injuries and fatalities per vehicle mile traveled and the number of serious injuries and fatalities, measures to assess traffic congestion and on-road mobile source emissions, and measures to assess freight movement on the interstate system.

In addition, the law required each state to set performance targets that reflect these measures not later than one year after the promulgation of final rules. States were also required to submit a report to the U.S. secretary of transportation within four years of the enactment of MAP-21 describing the condition and performance of the national highway system in the state, the effectiveness of the investment strategy document in the state asset management plan for the national highway system, progress in achieving performance targets and the ways in which the state is addressing congestion at freight bottlenecks.

On Jan. 18, 2017, just two days before the change in administrations, the Federal Highway Administration published the final rules for the last two national performance management measure regulations. That milestone presents an opportunity to check in on how state departments of transportation and their partners are faring in their efforts to implement a system with the potential to improve transparency and accountability, project selection and states’ ability to make the case for additional future funding as well as to achieve significant gains in the areas the measures are designed to highlight.

**Embracing Performance Management at Transportation Agencies**

At the Transportation Research Board annual meeting in Washington, D.C., in January 2017, two panels of transportation professionals weighed in on how well performance management has become ingrained in the transportation community in the years since MAP-21.
“I believe it has been embraced (over the last several years) and there is a better understanding of what the goals of performance management are and the performance measures within those disciplines,” said Mike Patterson, executive director of the Oklahoma Department of Transportation. “But there are still some challenges to understand exactly... at the federal level (how to) put us on an even plane and measure certain aspects of our daily lives. But I will tell you that every state has performance measures and performance management beyond what is required by the federal government.”

Despite all the activity in recent years, performance measurement and management in transportation are hardly recent developments. For some states, their experience goes back 20 years. That doesn't mean the journey has always been smooth, said Walter “Butch” Waidelich, who now serves as acting deputy administrator of the Federal Highway Administration.

“I do think at the national level where we struggled was how do you tell that story with a level of consistency from state to state around the country at that high level,” Waidelich said.

While the focus of most of the early performance measurement efforts in the 1990s was on improving transportation operations, other outcomes have become more of the focus in recent years, said Emil Frankel, a senior fellow at the Eno Center for Transportation.

“The question I think we’re really beginning to struggle with (in) MAP-21 and the rulemaking that has gone on at the Federal Highway Administration (is) how we measure whether or not investments are being made and operational programs are being implemented in a way to advance broader social, national and public purposes,” he said. “I think that has been more difficult for many state agencies and MPOs to get their arms around. ...We have a long way to go in that regard.”

How Transformational is Performance Management?

Transportation professionals say the evolution of performance management has been transformational in a variety of ways, including moving from a project focus to a system focus.

“With the implementation of the new rules, we are seeing a cultural shift going from local decision-making and looking at one (transportation) asset in isolation to actually a global, system-wide, ‘let’s put the system first’ and ‘let’s make decisions based on that first,’ ” said Christos Xenophontos, assistant director at the Rhode Island Department of Transportation. “For a lot of (state) DOTs, that’s actually something new. We have been very one-dimensional in nature in thinking about roads and bridges and a lot of times forgetting about other assets in that process.”

One positive side effect of that shift to a system-wide focus is that it has brought additional transportation stakeholders to the table and allowed them to better communicate with each other, explained Todd Lang, director of transportation planning at the Baltimore Metropolitan Council, the metropolitan planning organization, or MPO, serving the Baltimore region.

“Sometimes pavement was measured at a different level (between) state DOTs and local governments. Now we’re bringing in additional players such as transit agencies and local governments into that program,” said Lang. “So I think what it does is it finally starts to have that across the board conversation at least in some key areas.”

Others note, however, that true transformation is likely to take time and some transportation agencies will proceed at their own pace and level of sophistication.

“I think we’re finally selling performance management as a good business practice and I think more and more the state DOTs and MPOs understand now that it’s good business practice to measure performance and to use performance to guide their decision making,” said Bud Wright, executive director of the American Association of State Highway and Transportation Officials, or AASHTO. “As with any cultural change, it’s going to take
Performance Management and Decision-Making

Indeed many are hopeful that better transportation decision-making can be an important outcome of these efforts.

“Performance management isn’t going to make bad decisions; people are,” said FHWA’s Waidelich. “But my hope is with the increase in coordination with stakeholders involved and transparency we’ll actually have better decisions. Are they going to be perfect? No. ... (But) we’re going to work through this.”

Still, it’s unlikely that political considerations and other factors can ever be eliminated from the decision-making calculus, AASHTO’s Wright noted.

“There are a lot of variables other than just the objective outputs of a performance management system that state and local decision makers have to take into account and not the least of them ... is your legislature and the expectations that they have and the fact that in many states, still, there’s an expectation that all parts of the state are going to share in the resources that are available to a state,” he said.

Wright pointed to his home state of Virginia, where some might argue that spending transportation dollars anywhere outside the population centers of Northern Virginia and the Tidewater region is perhaps not the most efficient use of those dollars.

“But the political reality is you’re never going to manage a program that doesn’t acknowledge that the rest of the state exists,” Wright said. “Just because the model says that this is where we should be investing isn’t necessarily going to be the decision that is always made within a state department of transportation or within a local government.”

Eno’s Frankel believes that’s perfectly OK and improvement in transportation decision-making is still within the grasp of state officials as a result of performance management.

“It’s been my own experience, particularly at the state level, (that) it’s either a highly politicized process or sometimes driven understandably by engineers who are concerned about condition of bridges and they understandably make proposals to deal with the bridges in the worst condition even though it may not be the most important economically to the state,” he said. “We can improve the process, I think, by introducing better analytical tools, more effective utilization of data—real-time data in terms of performance of the system—so that we can make not perfect but better strategic decisions about where limited, scarce investment resources are going.”

But Xenophonos of the Rhode Island Department of Transportation has another concern about performance-driven decision making. He said even though states may have limited resources available, it’s important to continue to allocate funds across a variety of transportation assets.

“One of the biggest fears we have with the new rules is unintentionally enforcing a ‘worst first’ approach,” Xenophonos said. “Rhode Island ranks 50th among 50 states when it comes to the condition of our bridges. We know that is a priority. But sometimes when people compare you with other DOTs and want to know why you are 50th in the country and there is that pressure to ignore other classes of assets in order to improve more rapidly in one particular one. That is a fear not just in Rhode Island. I think that is a fear that we share (with other state) DOTs.”

It should be noted that the Ocean State has hopes of turning that 50 out of 50 ranking around in the years ahead. In 2016, Rhode Island Gov. Gina Raimondo signed legislation to fund a multi-year bridge repair program with a new toll on large commercial trucks and a combination of borrowing and refinancing.

Transparency and Accountability

Performance management also allows transportation agencies to be transparent and accountable when it comes to how decisions are made not only as far as which projects to undertake but which measures to focus
“You’ve got to set targets and you’re going to have to explain why you’re not setting an aggressive target for safety but you are for bridge conditions,” said FHWA’s Waidelich. “I think it’s going to transform the way departments of transportation and MPOs actually communicate to the public and actually get ahead of this data and information as those decisions are being made.”

Many believe that transparency and accountability can be important in convincing the public that transportation dollars are being spent well.

“What we’ve been dealing with increasingly, I think, over the last 15 or 20 years if not longer has been distrust of experts, anger at government,” said Eno’s Frankel. “We have to do the best we can in terms of making sure the decision-making process is as analytically sound as possible, as defensible, as accountable, but ultimately we’re dealing in an environment in which I’m more concerned about the radio talk show people who just pan everything that’s done in order to get listeners.”

**Working Together: State Departments of Transportation and MPOs**

As already noted, one element critical to the success of implementing performance management is cooperation between transportation stakeholders. State departments of transportation in many cases already have been able to strengthen their relationships with metropolitan planning organizations in particular to forge improved planning processes. But challenges remain.

“There are different relationships between MPOs and states all across the country. There are no two MPOs that are the same. All the states are different,” said Todd Lang of the Baltimore Metropolitan Council. “This is an opportunity for us all to be on the same language, talking about the same topics. (But) I think it’s going to be a challenge because it’s an evolving relationship.”

Bud Wright of AASHTO said many state DOTs have come to a realization that a contentious relationship no longer makes much sense in an age when coordination is needed to achieve common goals.

“It’s not us versus them any longer,” Wright said. “I think there is much more of a recognition that MPOs and state DOTs working together is the model that’s going to yield success and we’re seeing much more of that. … We can point to many successful relationships around the country where there is that conversation and where there is shared responsibility and account- ability for decision making and it works.”

But state and local transportation agencies continue to face challenges. Eno’s Frankel noted that at one point his small state of Connecticut had 13 MPOs serving a population of only about 3 million and most of them were too small to be able to carry out the tasks assigned to them.

“Many agencies ... are still under-resourced in order to collect and analyze data and to use it effectively in the decision-making process,” Frankel said. “So the one thing that seems clear to me is with the goal of having better relations between MPOs and DOTs, we need to look at the fundamentals of those agencies and make sure that as they cooperate that they are adequately resourced and sized to carry out the tasks that they need to.”

Ultimately though, cooperation simply makes sense because of how the public views the transportation system.

“Our constituency, our users, our customers don’t really know whether it’s a city street, a county road or a (state) highway,” said Patterson of the Oklahoma Department of Transportation. “They just want good transportation. And we have to band together to make that happen.”

**Performance Measures and Priorities**
With MAP-21, Congress set in motion a path toward performance measurement that not only tackles measures that are easy for states to get their heads around such as safety and the condition of roads and bridges, but also more complex concepts potentially fraught with challenges such as congestion mitigation and air quality.

“Safety is quantifiable,” said Eno’s Frankel. “You can set targets. It’s much, much more difficult obviously when you start talking about congestion management or (whether) a transportation investment or set of investments (is) contributing to economic growth.”

Once states start measuring things, they must also decide which things they want to seek to improve, said AASHTO’s Wright.

“How do you prioritize safety versus pavement performance versus bridge condition versus congestion relief?” he said. “Safety is one of the more unique ones in a way...(because) it’s not just investment decisions that are going to make a difference. There are legislative decisions. There are other sorts of educational decisions that can be made within a state to affect that.”

Transportation experts say for the most part Congress got things right in the measures and goals they chose to highlight in the MAP-21 legislation. But it was just a first step and more will need to be done in the future to clarify which national goals are of highest priority and to expand the universe of measures as new data and measurement tools become available.

“I think (Congress) hit the right themes,” said AASHTO’s Wright. “I think they have taken the right steps forward. Do I think that the things we’re measuring today or will be measuring soon are the things we’ll be measuring 20 years from now? No. I think all of us recognize that this is a system that has to evolve.”

Wright also noted that there has been impatience in some quarters that Congress did not go far enough, that not enough is being measured and particularly that there are few penalties in place if states fail to meet their targets.

“(But) I don’t think any of that would be productive and it could end up being extremely counterproductive,” said Wright. “So I would say more or less ‘yes, they did get it right.’ But I would also say that I’d be shocked if we’re not evolving to much more sophisticated measures as we go forward.”

Eno’s Frankel agreed that for Congress to have overreached in MAP-21 would have been counterproductive but he said as performance management evolves there will eventually need to be consequences.

“If we’re really going to have accountability as a part of performance management, I think states and localities have to be accountable,” he said. “There have to be consequences, whether it comes in the form of rewards for good performance, achieving or surpassing targets or loss of funds if targets that have been established at the state and metropolitan level have not been achieved. So over time I hope we will move towards a truly accountable system where there are consequences for not achieving the targets that have been established by state agencies and MPOs themselves.”

But it may be increasingly challenging for the powers that be in Washington to carry a big stick on performance for one very important reason.

“The proportion of the total investment that’s happening in transportation in this country that comes from the federal government is declining, not increasing,” said Wright. “So any scenario that suggests that the federal government exerts influence over 100 percent of what goes on in state and local areas, to me, is misguided.”

Using Performance Management to Tell the Story

For transportation agencies, performance measurement can be an important tool in shaping the narrative
about transportation investment and decision-making.

“Communicating to the public and to legislators and to others what you’re able to do and what you’re not able
to do given the resources that are available— I think controlling that narrative from the beginning is an
important element in all of this,” Wright said.¹⁰

The Washington State Department of Transportation, or WSDOT, has made a name for itself in performance
measurement with The Gray Notebook [3], a quarterly performance and accountability report that was first
produced in 2001. The publication tracks transporta- tion projects both successful and unsuccessful and trends
in statewide transportation policy goals such as safety, preservation, congestion relief, environment, and
economic vitality and stewardship. State trans- portation officials say the transparency has allowed them to
justify three gas tax increases over the years, the most recent in 2015.¹¹ The Gray Notebook also has won
numerous awards for its approach to government performance reporting.

But Daniela Bremmer, who heads WSDOT’s Division of Strategic Assessment and Performance Analysis, said
the way data is presented must constantly evolve.

“You cannot just create a dashboard ... or create a performance report and be good,” she said. “You might be
good for a year or two and then you have a new legislative makeup or you might have a change in the
governor’s office or you might have a change in your audiences or priorities or something really bad happens
like a natural disaster and all of a sudden they’re saying ‘no, we want this kind of information and this is how
we want it.’ ”¹²

Trump Administration and Performance Management

So what does a change in administrations mean for performance management? Most say it appears likely that
implementation plans will continue to move forward with Republicans in charge of both the White House and
Congress.

“I think the reality is it transcends administrations,” said FHWA’s Waidelich. “This has been coming for a long
time. ... (MAP-21) came from a Republican Congress, ...My sense is there may be different thoughts about
it—maybe how to implement it—coming down the line but as far as a general direction that we’re headed, I
think I’m not putting the brakes on at this point and I’m not sure anybody else is. I don’t think there’s reason to
worry about that.”

Others have more concern however.

“I think that there’s some reason to fear that this administration will come in with different ideas, among them
flexibility to state departments of transportation and MPOs with their funding,” said AASHTO’s Wright.

Wright said his organization will seek to articulate the importance of performance management to the new
administration should its worth be challenged.

“We want to ensure accountability for all funds, in- cluding federal dollars, and as long as there’s going to be a
federal program, I don’t think that there’s any better way to ensure accountability for the use of those dollars
than through performance management systems,” he said.¹³

Future of Performance Management

Many believe the future is bright for performance man- agement but MAP-21 and the rulemakings on
transportation measures were only the start. States and MPOs are likely to add their own priorities and their
own measures to the process in the years ahead.

But transportation agencies face challenges in devel- oping the data, resources and tools that can make per-
formance management effective. Xenophontos of the Rhode Island Department of Transportation noted that on
data, the issues that will need to be resolved include who is responsible for collecting it and how long it will be
stored. On resources, two primary concerns will be how to build institutional capacity at state DOTs and other
agencies and how to pay for data collection when no dedicated funding exists for performance man- agement.
Xenophontos also said better data analysis tools will be needed to make sure that state DOTs are better equipped to predict future conditions based on current and past conditions reflected in the data.

“We know that performance management works, but it is also a process of continuous improvement so you are never really done with performance management,” he said. “So past MAP-21, we see this as a continuous journey of getting better and better every day.”

And many are convinced that performance management ultimately will help agencies make the case to policymakers and the public about the soundness of their investment decisions and the need for additional transportation funding in the future.

“I am hopeful that performance management and all that’s involved in it—greater use of data, stronger analytical tools, better cooperation between the agencies—will lead to what we need in terms of these investments—really comprehensive, strategic programs where investments are prioritized and targeted and resources are targeted on the most important and beneficial projects,” said Eno’s Frankel.14

RESOURCES

4 Ibid.
5 Ibid.
7 Transportation Research Board Annual Meeting.  
8 Ibid.
9 Ibid.
10 Ibid.
12 Transportation Research Board Annual Meeting.  
13 Ibid.
14 Ibid.
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