MAP-21
Moving Ahead with Progress in the 21st Century
Performance Management Elements
An Overview of Requirements and Implementation Status

Northeast Pavement Preservation Partnership Meeting
April 29, 2013
What is Transportation Performance Management?

Transportation Performance Management is a strategic approach that uses system information to make investment and policy decisions to achieve a desired set of national goals.
Performance Management In Action

Business Plan 2004 & 2005
Ohio Department of Transportation

State of the System 2005
Bay Area Transportation

2007 Annual Attainment Report
Maryland DOT

Annual Attainment Report
on Transportation System Performance

Measures, Markers and Mileposts
Washington State Department of Transportation

Good to Great
Strategic Plan and Annual Report
New Mexico DOT

Tracker
Missouri Department of Transportation
## USDOT Performance Report

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010 Target</th>
<th>2010 Actual</th>
<th>Met / Not Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of travel on the National Highway System (NHS) meeting pavement performance standards for &quot;good&quot; rated ride.</td>
<td>52</td>
<td>52</td>
<td>54</td>
<td>57</td>
<td>56</td>
<td>57</td>
<td>58</td>
<td>58*</td>
<td>Met</td>
</tr>
<tr>
<td>Percentage of deck area on National Highway System (NHS) bridges rated as deficient, adjusted for average daily traffic.</td>
<td>32.0</td>
<td>29.9</td>
<td>29.2</td>
<td>29.7</td>
<td>29.5</td>
<td>29.2</td>
<td>28.9</td>
<td>28.7</td>
<td>Met</td>
</tr>
</tbody>
</table>
**Condition Reporting**

**Report to Congress**
- System Conditions
- Operational Performance
- Safety
- Revenue and Expenditures
- Investment Analysis

Difficult to associate performance with federal investments.
ARRA Reporting Outcomes
National Commission Report

- Strong Federal role focused on national goals
- Consolidated program structure
- Performance management
- Many groups issued reports supporting many of the Commission’s recommendations, all embraced a performance-based program (U.S. DOT, AASHTO, AMPO, APTA, GAO, and more)
MAP-21 Performance Elements

- National Goals
- Performance Measures
- Performance Targets
- Performance Plans
- Performance Reports
- Performance Accountability
Performance Measures

Highways
– Safety (4)
– Infrastructure Cond. (3)
– System Performance (2)
– Freight Movement (1)
– Traffic Congestion (1)
– On-Road Mobile Source Emissions (1)

Public Transportation
– State of Good Repair (1+)
– Safety Performance Criteria (1+)

Highway Safety Programs
– 14 Measures
Performance Targets

- States, MPOs, and public transit providers set targets for each of the measures
- Coordination between States, MPOs and public transit providers to ensure for consistent targets
- Option to set different targets for urbanized and rural locations
- Identified through planning process with reference to individual performance plans
Transportation Performance Management

**Performance Plans**

- Highway Safety Plan (1 yr)
- Strategic Highway Safety Plan (TBD)
- Transit Safety Plan
- NHS Asset Management Plan (4 yr)
- Transit Asset Management Plan (TBD)
- CMAQ Performance Plan (2 yr)
- State Freight Plan
- MPO System Perf. Report (4 yr)
- S/TIP Target Achievement Disc. (4 yr)

**Performance Reports**

- Highway Safety Plan (1 yr)
- HSIP Report (1 yr)
- Performance Report (2 yr)
- Transit Perf. Report (1 yr)
- CMAQ Performance Plan (2 yr)
- MPO System Perf. Report (4 yr)

- National Strategic Freight Plan
- Transit Safety Plan

- Perf Based Planning Reports
- Freight Conditions & Performance
- Conditions and Performance
Performance Accountability

- **Target Achievement Requirements**
  - National Highway Performance Program
  - Highway Safety Improvement Program

- **Standards**
  - Interstate Pavements and NHS Bridges
  - Rural Road Safety and Older Driver Safety

- **Planning Reviews**

- **State Performance-Based Planning Evaluation**

- **5 Year Progress Evaluation**
Rulemaking Process

- Proposed Regulation
  - Consultation with stakeholders
  - Drafting of the Notice of Proposed Rulemaking (NPRM)
  - Regulatory impact analysis
  - Coordination with other rulemakings

- Public Comment
  - 90 day minimum comment period required after NPRM is published (highways).

- Final Regulation
  - Consideration of all comments and publication of final rule in Federal Register with effective date.
Stakeholder Outreach

- **Methods of Outreach**
  - Webinars
  - National Online Dialogues
  - Virtual Town Hall Meetings
  - Subject Matter Meetings
  - Direct Contact to FHWA: PerformanceMeasuresRulemaking@dot.gov

- **Focused Areas for Outreach**
  - Performance Measures
  - Target Setting Listening Session
  - Reporting and Assessment
Online Dialogue Summary

- Visited 8,165 times
- 228 ideas, 293 comments, 3,695 votes
- 8 Campaigns

FTA has completed an online dialogue on asset management and is planning one for transit safety.
Coordinating Implementation

Measure Rules
- Define Measure
  - Data Elements
  - Data Source
- Interstate Pavement Condition
- Target Setting Requirements
- Define Significant Progress
- State Performance Reporting
- Establish Timing

Planning Rule
- Performance-based Planning Process
- Target Setting Coordination
- MPO Performance Reporting
- STIP/TIP Discussion
- Transition Period

Program R/G
- Plan Requirements
- Special Rules
- Integrating Performance
- Transition Period
# STAGED RULE SCHEDULE

<table>
<thead>
<tr>
<th>Measures / Fiscal Year</th>
<th>Safety Measures</th>
<th>Pavement &amp; Bridge Measures</th>
<th>CMAQ, Performance, and Freight Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY / QUARTER</td>
<td>Status I</td>
<td>Status II</td>
<td>Status III</td>
</tr>
<tr>
<td>FY13 (Year 1 of MAP-21)</td>
<td>Q1</td>
<td>Consultation/NPRM</td>
<td>Consultation/NPRM</td>
</tr>
<tr>
<td></td>
<td>Q2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Q3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Q4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY14 (Year 2 of MAP-21)</td>
<td>Q1</td>
<td>Comments</td>
<td>Comments</td>
</tr>
<tr>
<td></td>
<td>Q2</td>
<td>Final Rule</td>
<td>Final Rule</td>
</tr>
<tr>
<td></td>
<td>Q3</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Q4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY15</td>
<td>Q1</td>
<td></td>
<td>Final Rule</td>
</tr>
<tr>
<td></td>
<td>Q2</td>
<td></td>
<td>Final Rule</td>
</tr>
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</table>

Single Effective Date: Spring 2015
Evaluation of Candidate Measures

Is it Appropriate?
Will the measure support national programs?

Are We Ready?
Can data be in place to support the desired measure?

6 Factors

6 Factors
### Is The Measure Appropriate?

<table>
<thead>
<tr>
<th>Category</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focused</td>
<td>Is the measure focused on an area of national interest?</td>
</tr>
<tr>
<td>Collaborated</td>
<td>Has the measure been developed in partnership with stakeholders?</td>
</tr>
<tr>
<td>Maintainable</td>
<td>Is the measure maintainable to accommodate changes?</td>
</tr>
<tr>
<td>Impactful</td>
<td>Can the measure be used to support investment decisions, policy making and target setting?</td>
</tr>
<tr>
<td>Track-able</td>
<td>Can the measure be used to analyze performance trends?</td>
</tr>
<tr>
<td>Feasible</td>
<td>Has the feasibility &amp; practicality to collect, store, &amp; report data for the measure been considered?</td>
</tr>
</tbody>
</table>
### Are We Ready to Use the Measure?

<table>
<thead>
<tr>
<th>Who Provides the Data?</th>
<th>Data Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Federal Agency</td>
<td>• Timeliness</td>
</tr>
<tr>
<td>• State/Local Agency</td>
<td>• Consistency</td>
</tr>
<tr>
<td>• Third Party</td>
<td>• Completeness</td>
</tr>
<tr>
<td>• Collection</td>
<td>• Accuracy</td>
</tr>
<tr>
<td>• Storage</td>
<td>• Accessibility</td>
</tr>
<tr>
<td>• Access</td>
<td>• Data Integration</td>
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</tbody>
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**Transportation Performance Management**

**U.S. Department of Transportation**

**Federal Highway Administration**
Implementation Challenges

- Does “One Size Fit All”
- Setting Challenging Targets
- Trade-Off Decisions
- Predicting Outcomes
- Integrating into an Existing Process
- Multiple Performance Areas
- Managing Uncertainty/Risk
- Program Transparency
Safety Measures

- Considerations
  - Defining serious injuries
  - Time lag associated with national data
  - Coordination with Highway Safety Plan
  - Target setting

- Current Efforts
  - Highway Safety Plan Interim Final Rule
  - Target setting best practices
  - Highway Safety Improvement Program guidance
Traffic Congestion and NHS Performance

- Considerations
  - Data sources, availability, coverage
  - Trip information, movement of people
  - Modes of transportation
  - Scalability
  - Target setting

- Current Efforts
  - Acquiring data
  - Exploring measure alternatives
  - Evaluating feasibility for implementation
Infrastructure Condition Measures

- Considerations
  - Data sources, availability, coverage
  - Measures linked to decision making
  - NBI element level data requirements
  - Advancing technologies
  - Target setting

- Current Efforts
  - Evaluating data (HPMS 2010+)
  - Exploring measure alternatives
  - Evaluating feasibility for implementation (pilot studies)
Infrastructure Pilot Studies Conducted

• **1st Pilot Study - 2010**
  – Objective – Evaluate how 3 states report pavement and bridge performance for the same corridor
  – Corridor – I-95 in DE, MD, and VA

• **2nd Pilot Study - 2011**
  – Objective – Test out Tier 1 and 2 approaches to report pavement and bridge condition for the same corridor
  – Corridor – I-90 in WI, MN, and SD
I-95 Corridor Study - Findings
I-90 Pilot Study Corridor
I-90 Bridge Conditions - Metrics

• Structurally deficient – 3%

2. Minimum Rating

3a. Weights, based on HI

3b. Weights, based on SR

3c. Equal weights

3d. Variable weights

[Bar charts showing the distribution of bridge conditions across different categories: Good, Fair, Poor]
IRI Comparison – Summary

Do HPMS, state, and field data collection methods tell us the same thing?
Comparing Good/Fair/Poor Options

Field Collected Data

- IRI + rutting flag
- FCI
- IRI

Good | Fair | Poor

<table>
<thead>
<tr>
<th>Field Collected Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
</tr>
<tr>
<td>20%</td>
</tr>
<tr>
<td>40%</td>
</tr>
<tr>
<td>60%</td>
</tr>
<tr>
<td>80%</td>
</tr>
<tr>
<td>100%</td>
</tr>
</tbody>
</table>
What Are We Doing Now?

Building Our Strength
- Awareness
- Capacity Building Plan
- Information Access
- Tools

The Performance Story
- Workshops
- Benchmark Studies
- Pilots
- Case Studies

Designing a Program
- New Measures
- Framework Elements
- Guidance
- Coordinating Efforts
In the Spotlight

NEW!

Mobile Moments: Bicycle Safety Infographic
630 cyclists died on U.S. highways in 2009.

This report gives Maryland residents a transparent assessment of the performance of their transportation system.

Infographic: How Long is It Taking Americans to Get to Work?
New York and Chicago have the longest commutes. What about your city?
Mobile Moments: Bicycle Safety Infographic

630 cyclists died on U.S. highways in 2009.

The typical bicycle fatality victim was:

- Male: 87%
- Female: 13%
- In an Urban Area: 70%
- Rural: 30%

Between 45 and 54 Years Old

The accident occurred:

- Between 4 p.m. and 8 p.m.

The number of trips by bicycle was up 25% between 2001 and 2009.

Source: National Household Travel Survey (2009).

>> Transportation Performance: Learn More About Our System at Work
Transportation Performance Report

This report summarizes transportation performance measures at the NATIONAL level.

HIGHLIGHTED MEASURES

These measures are recommended as a National Priority.

Are We Reducing Fatalities on our Roads?  YES

EXPLANATION

THE NUMBER OF FATAL CRASHES IS DOWN.
The past five years have shown a steady decline in fatal crashes, but certain driver behaviors and crash types have remained a persistent threat to the safety of our roadways. There was a 19% reduction in fatal crashes in 2010 (versus the five-year average).

THE FACTS

- Fatal crashes in 2010 were at a 15-year low.
- Approximately 40,000 people are killed on the road every year.
- Seatbelt usage has shown an increasing trend since 1994. In 1994 usage was at 58%. In 2011 usage was 84%.\(^1\) Studies have found seatbelts to be 56% effective at reducing fatalities.\(^2\)
- Road departure crashes account for over 50% of fatal highway crashes.

SNAPSHOT

TRENDS

Data Sources: Annual Fatal Crashes from FARS.

- FHWA and state DOT's have developed a focused approach to safety through the adoption of State Highway Safety Plans which establish strategic goals and include evaluation processes.
- Since the 1990's states have enacted graduated drivers licensing laws for teen drivers.
- Forty-eight states and D.C. have restricted nighttime driving and 45 states and D.C. have passenger restrictions.\(^3\)
- Click it or Ticket mobilizations have been effective at increasing seatbelt usage.\(^4\)
North Carolina
Refining a Performance Management System

NCDOT recognized they needed to refine their performance management system and therefore began a transformation process. (.pdf, 0.6 mb)