
Subpart F: Freight Movement on the Interstate System - Industry Presentation -

May 2016
Opening Comments and Introductions

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Director
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Part 1

Introduction to Transportation Performance Management
Why Are We Doing Performance Management?

- To transform the Federal-aid Highway Program and to provide a means to the most efficient investment of Federal transportation funds
- To refocus on national transportation goals
- To increase the accountability and transparency of the Federal-aid Highway Program
- To improve decision-making through performance-based planning and programming
Summary of Proposed New 23 CFR Part 490

Subpart A: General Information, Target Establishment, Reporting, and NHPP and NHFP Significant Progress Determination

Subpart B: Measures to Assess the Highway Safety Improvement Program (HSIP)

Subpart C: Measures to Assess Pavement Condition

Subpart D: Measures to Assess Bridge Condition

Subpart E: Measures to Assess Performance of the National Highway System (NHS)

Subpart F: Measures to Assess Freight Movement on the Interstate System

Subpart G: Measure to Assess the CMAQ Program – Traffic Congestion

Subpart H: Measures to Assess the CMAQ Program – On-Road Mobile Source Emissions
Part 2

Freight Trends, Measurement, and Planning
Economic Impact of the US Freight System

Number of Truck Trips by Highway Segment

Future forecasts indicate a 1.4% increase in freight tonnage per year!
Economic Impact of the US Freight System

Distance of Truck Trips

One truck = 10% of trips

10% of all truck trips are more than 200 miles

50% of all truck trips are less than 50 miles

50 100 200 miles

Percent of all trips

Measure to Assess Freight Movement on the Interstate System

U.S. Department of Transportation
Federal Highway Administration

Transportation Performance Management
Intensity of Truck Freight Congestion on Selected Interstate Highways, 2012


Measures to Assess Freight Movement on the Interstate System
Why Measure and Plan for Freight?

- Address impacts of **forecasted growth** in freight
- Reduce **delays** of freight movement
- Reduce **costs** to consumers
- Reduce **costs** to businesses that generate and receive freight
- Improve ability of freight industry to **move goods and provide jobs** in our communities
Planning for Freight
Transportation Decision-Making

NATIONAL
Transportation and trade priorities

- National Strategic Freight Plan
- Freight Conditions and Performance Report

STATE & REGION
Transportation and economic priorities

- State and regional transportation and freight plans
- Funding priorities

LOCAL
Economic development priorities

- Local plans
- Local use of highway funding for investment
Part 3

Public Sector Use of Freight Data
**FHWA’s Current Uses of Probe Data for Freight**

1. **Support the Freight Performance Measurement (FPM) Program**
   - Support FHWA and USDOT freight performance monitoring and analysis of freight significant corridors and locations.
   - Provide analysis of origins and destinations, incidents, weather impacts, congestion.

2. **Perform supply chain/key freight corridor analyses for North America.**

3. **Maintain NPMRDS Travel Time Data: a national data set free for use by Federal, State and regional partners.**
Measures to Assess Freight Movement on the Interstate System
FHWA Probe Data Characteristics

- Continuous data since 2002
- Data collected by the second from approximately 600,000 trucks with embedded technology
- Billions of unique truck positions received & processed annually
- Multiple industry data sources provide the data, ATRI is trusted 3rd party
- Nationwide coverage
Freight Movement Efficiency Index

Freight Mobility Trends
FY 2015
Second Quarter

Intermodal Mobility
miles per hour
22.53 = 3 Year Best
21.53 = 3 Year Average
19.62 = 3 Year Worst

22.06
Prev. Quarter
22 Q2 FY14

1.312 = 3 Year Best
1.376 = 3 Year Average
1.455 = 3 Year Worst

1.395
Prev. Quarter
1.434 Q2 FY14

Border Crossing Mobility
minutes per mile
3.84 = 3 Year Best
4.17 = 3 Year Average
4.46 = 3 Year Worst

3.88
Prev.
4.11 Q2 FY14

1.2261 = 3 Year Best
1.2515 = 3 Year Average
1.2764 = 3 Year Worst

1.2547
Prev. Quarter
1.261 Q2 FY14

Urban Mobility
ratio of free-flow/peak speed

100 = High Mobility
0 = Low Mobility

100 = High Mobility
0 = Low Mobility

Freight Efficiency Index

100 = High Mobility
0 = Low Mobility

25.0
Supply Chain Analysis Example: Truck Flows from Baltimore (1,000 truck sample)
Example, Cont.: Same 1,000 Trucks After 24 Hours
Example, Cont.: Same 1,000 Trucks After 5 Days
Example, Cont.: Same 1,000 Trucks After 7 Days
Transportation Performance Management

County Intensity Example

Measures to Assess Freight Movement on the Interstate System
What is the National Performance Management Research Data Set (NPMRDS)?

- Is a data set provided by FHWA monthly to State DOTs and MPOs
- Includes travel times derived from all traffic using the highway system, in 5-minute bins
- Includes a breakdown of travel times of freight vehicles and all traffic (freight and passenger vehicles)
- Uses travel times that are reported via vehicle probes on contiguous segments of roadway covering the entire mainline NHS
- Uses vehicle probes that could include mobile phones, vehicle transponders, and portable navigation devices
State DOT and MPO Freight Performance Measurement

Fragmented Performance Measurement

Consistent Performance Measurement
Part 4

Proposed Performance Measures and Concepts
### Subpart F: Measures to Assess Freight Movement on the Interstate System

1. **Truck Travel Time Reliability**
   - Percent of the Interstate System Mileage providing for Reliable Truck Travel Times

2. **Mileage Uncongested**
   - Percent of the Interstate System Mileage Uncongested
**Metrics, Thresholds, and Measures**

**METRIC**
A quantifiable indicator of performance or condition

**MEASURE**
An expression based on a metric, used to establish targets and to assess progress towards achieving the established target

**THRESHOLD**
The level of performance for a specific reporting segment that would determine its inclusion in the measure

**Example**
Each Reporting Segment

- **METRIC**
  Average truck speed = 52.30 mph

- **THRESHOLD**
  Uncongested = Avg truck speed > 50.00 mph

- **MEASURE**
  2,510 uncongested miles

Entire Applicable Network

- **METRIC**
  Average truck speed = 52.30 mph

- **THRESHOLD**
  Uncongested = Avg truck speed > 50.00 mph

- **MEASURE**
  3,000 total miles = 83.7% uncongested
## Measures to Assess Freight Movement on the Interstate System – Truck Travel Time Reliability

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<th>METRIC</th>
<th>THRESHOLD</th>
<th>MEASURE</th>
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<td>Truck Travel Time Reliability (TTTR) for each segment on the Interstate System</td>
<td>TTTR &lt; 1.50 for the reporting segment = reliable</td>
<td>Percent of the Interstate System mileage providing for reliable truck travel times</td>
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**Example**

Each Reporting Segment:

- **TTTR** = 1.43
- 60 (95th percentile)/42 (50th percentile)

*Reliable* (Threshold: 1.43 < 1.50)

Entire Applicable Network:

- 2,492 reliable miles / 3,000 total miles = 81.3% reliable
**Measures to Assess Freight Movement on the Interstate System – Mileage Uncongested**

**METRIC**
Average Truck Speed for each travel time segment on the Interstate System for a calendar year

**MEASURE**
Percent of the Interstate System mileage uncongested

**THRESHOLD**
Average truck speed $> \ 50$ mph for the segment = uncongested

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**Example**

Average truck speed (single segment, full year) $= \ 52.30$ mph

$52.30 \ mph > 50.00 \ mph = \text{Uncongested}$

$\frac{2,250 \ \text{uncongested miles}}{3,000 \ \text{total miles}} = 75.0\% \ \text{uncongested}$
Measures vs. Targets

Entire Applicable Network

**MEASURE**
An expression based on a metric, used to establish targets and to assess progress towards achieving the established target

**TARGET**
A quantifiable level of performance or condition, as a value for a measure, to be achieved within a time period required by FHWA

Example

83.7% total Interstate miles uncongested

Target: 80.0% Uncongested
Actual: 83.7% Uncongested
✓ Target Achieved
**Summary of Proposed Freight Performance Measures**

- The NPRM establishes a **consistent, national level of measurement** that is meaningful for the public and private sector.
- Data sources are currently **limited to truck data** but can grow over time to include multi-modal measures.
- Moving forward, FHWA and partners will work together to **develop improved ways to measure freight**.
Questions?
Part 5

Summary and Q&A
Participate in the Rulemaking Process

Notices of Proposed Rulemaking (NPRM). The NPRM on Safety Performance Measures proposes safety performance measures and State DOT and MPO requirements for establishing and reporting specific annual targets for fatalities and serious injuries for the purposes of carrying out the HSIP.

TPM and MAP-21
- What is TPM?
- National Goals
- MAP-21 Performance Requirements Summary
- MAP-21 Putting Performance into Action (.pdf, 1.3 mb)
- Implementation Schedule (.pdf, 0.1 mb)
- Notices of Proposed Rulemaking

Engagement
- Rulemaking Stakeholder Engagement
- Readiness Stakeholder Engagement
- Reporting

Resources
- Apply for P2P Technical Assistance
- Noteworthy Practices
- Presentations and Webinars
- Publications
- Tools
- TPM Digest
- Training

Email Notification
- Subscribe to email updates

Measures to Assess Freight Movement on the Interstate System
Rulemaking Resources

Office of TPM website: http://www.fhwa.dot.gov/tpm/

Fact sheets, previously published NRPM, webinar registration, and related information: http://www.fhwa.dot.gov/tpm/rule.cfm
Submit comments to:

www.regulations.gov

FHWA 2013-0054


For clarifying questions or more information, please contact:

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