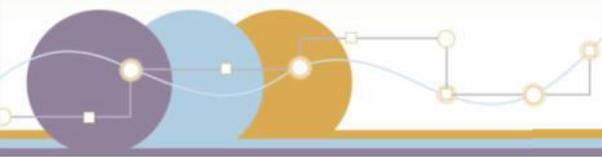


**National Performance Management Measures NPRM:  
Assessing Performance of the National Highway System,  
Freight Movement on the Interstate System, and  
Congestion Mitigation and Air Quality Improvement Program**

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

May 2016



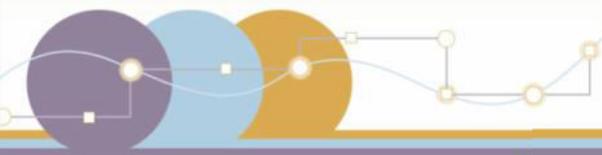
## *Opening Comments and Introductions*



**Caitlin Rayman**

*Director*

*Office of Freight Management and Operations*



## Today's Webinar

### Part 1

Introduction to Transportation Performance Management  
*Pete Stephanos, Office of Infrastructure*

### Part 2

Freight Trends, Measurement, and Planning  
*Tamiko Burnell, Office of Freight Management and Operations*

### Part 3

Public Sector Use of Freight Data  
*Tamiko Burnell, Office of Freight Management and Operations*

### Part 4

Proposed Performance Measures and Concepts  
*Rich Taylor, Office of Operations*

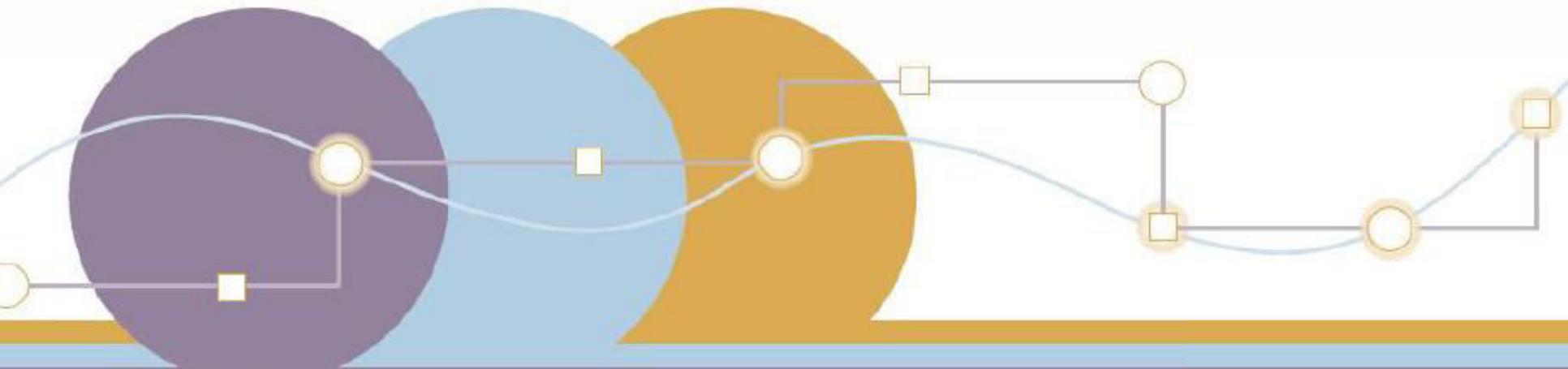
### Part 5

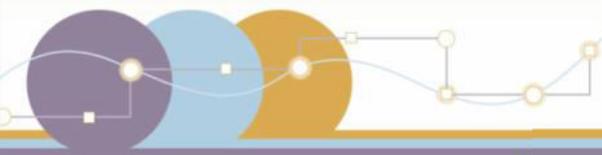
Summary and Q&A  
*Pete Stephanos, Office of Infrastructure*

# Part 1

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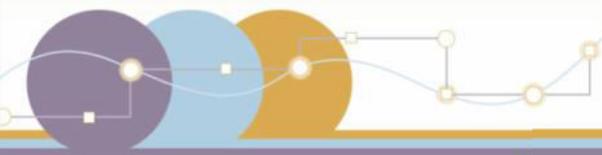
## Introduction to Transportation Performance Management





## *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



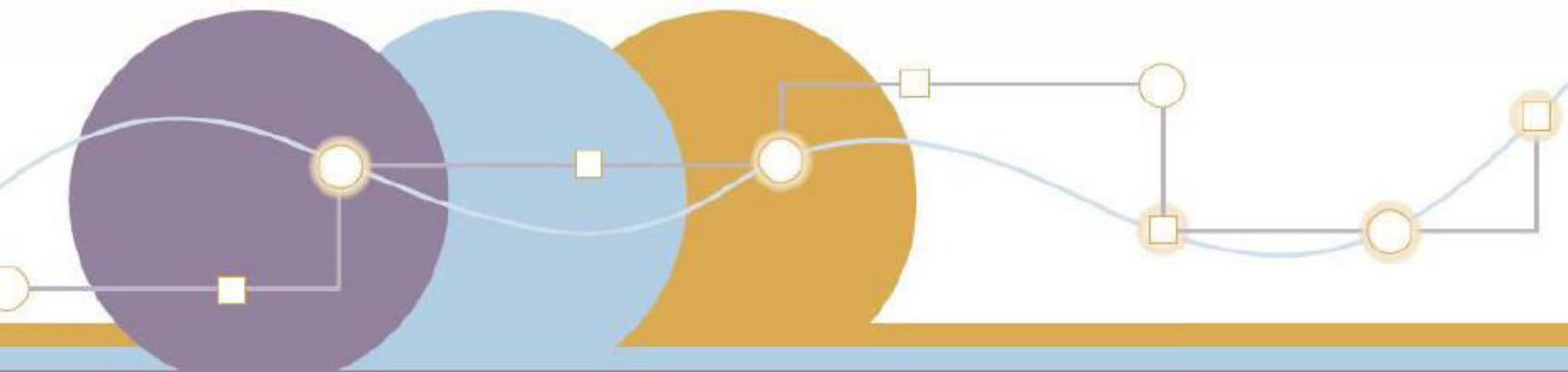
## *Summary of Proposed New 23 CFR Part 490*

- 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

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## Freight Trends, Measurement, and Planning



## Economic Impact of the US Freight System

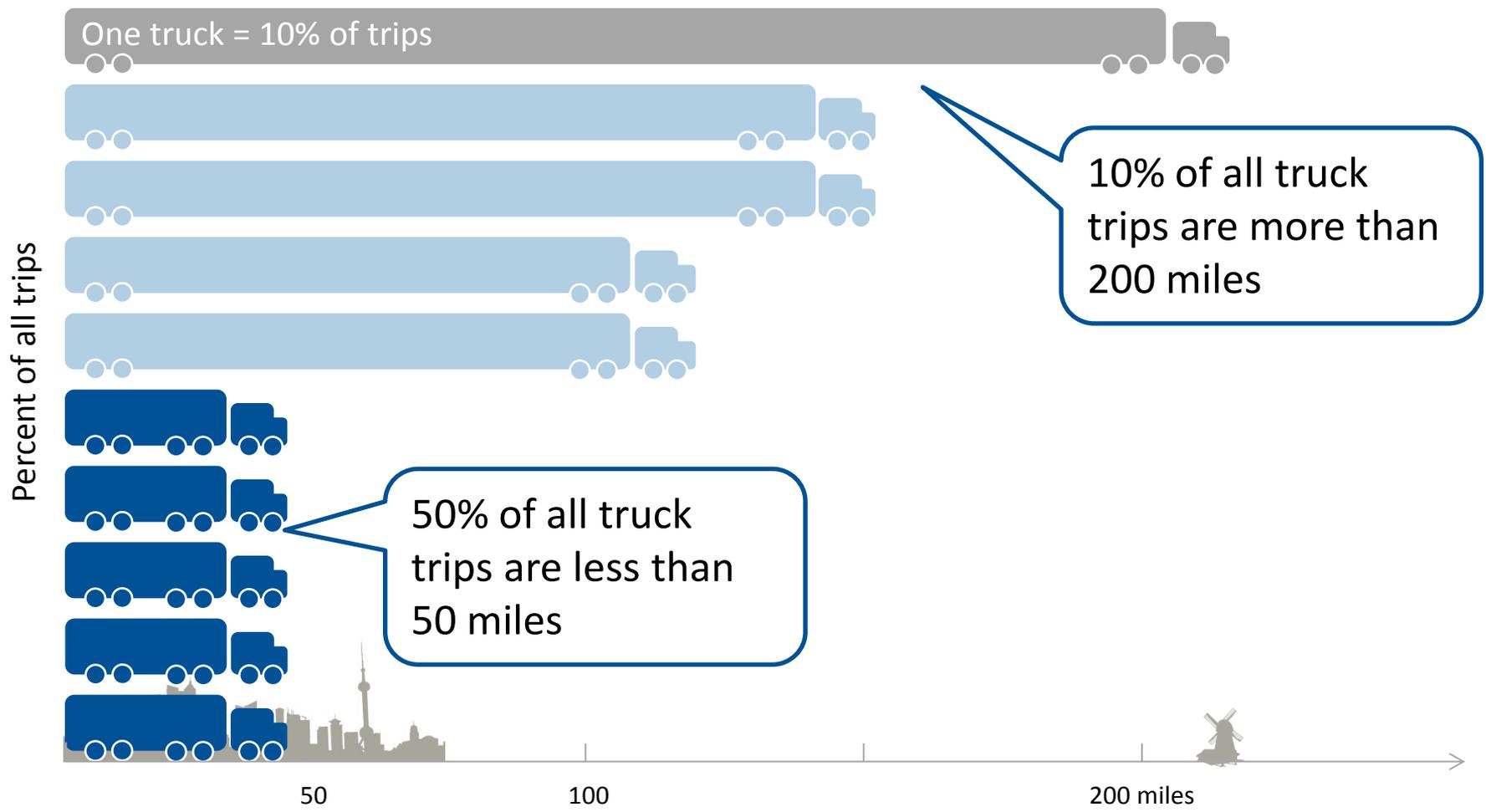


— + — } NHS segments that carry at least 8,500 trucks per day

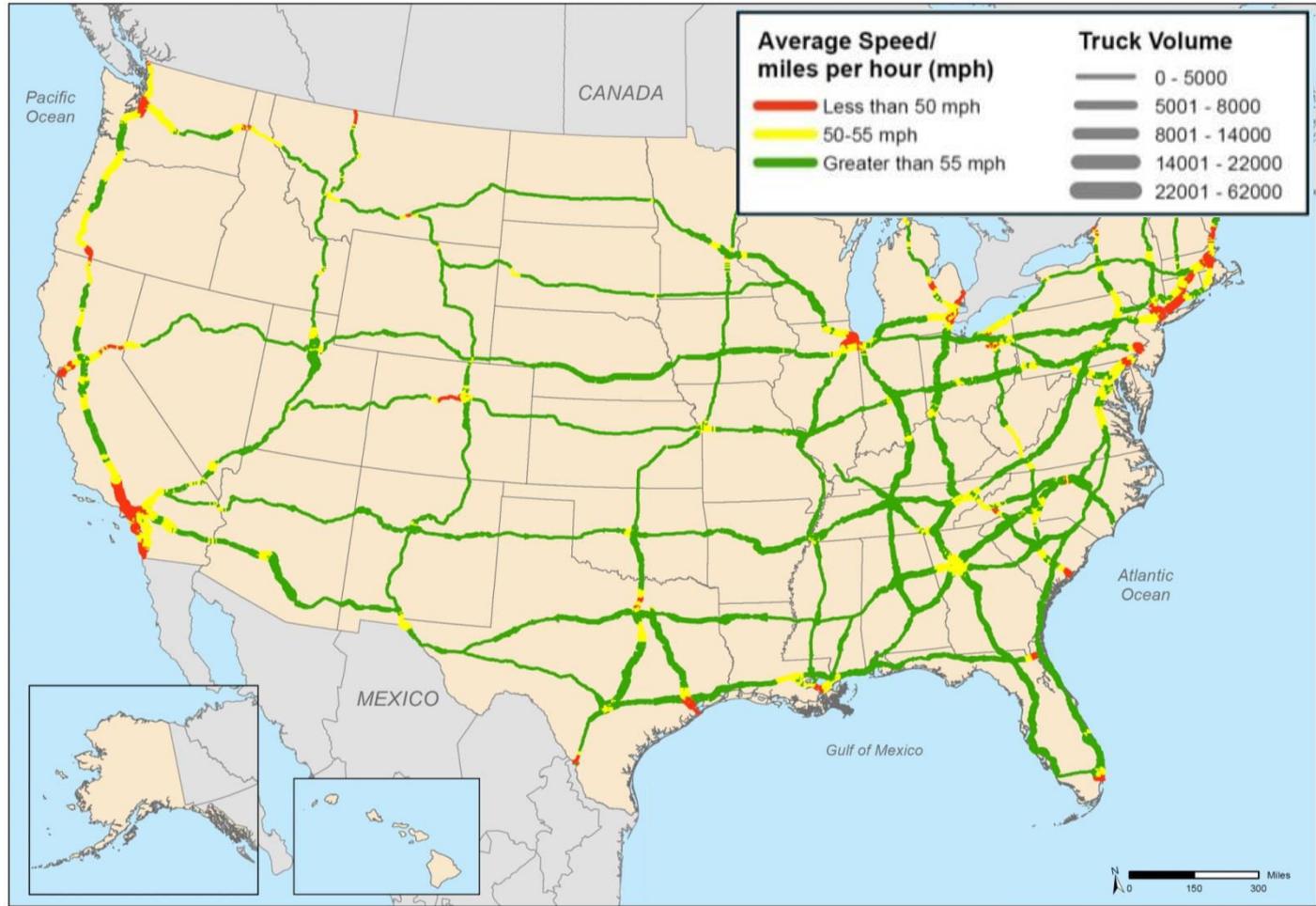
*Future forecasts indicate a **1.4% increase** in freight tonnage per year!*

## Economic Impact of the US Freight System

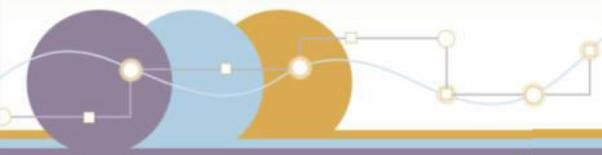
Distance of Truck Trips



## Intensity of Truck Freight Congestion on Selected Interstate Highways, 2012

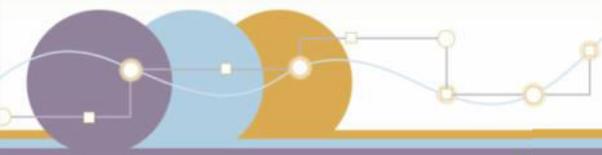


Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Performance Measurement Program, 2013.



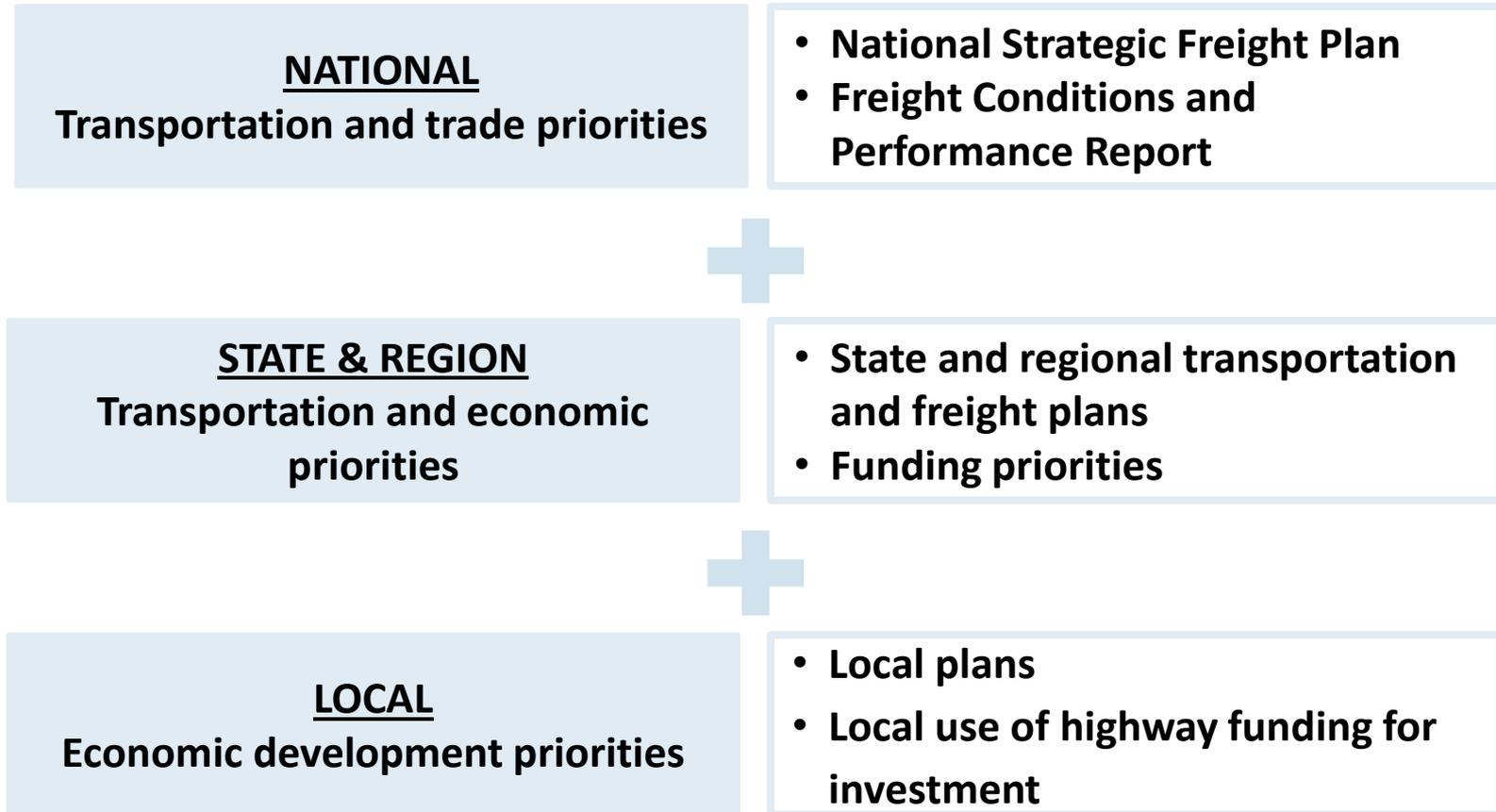
## *Why Measure and Plan for Freight?*

- 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*

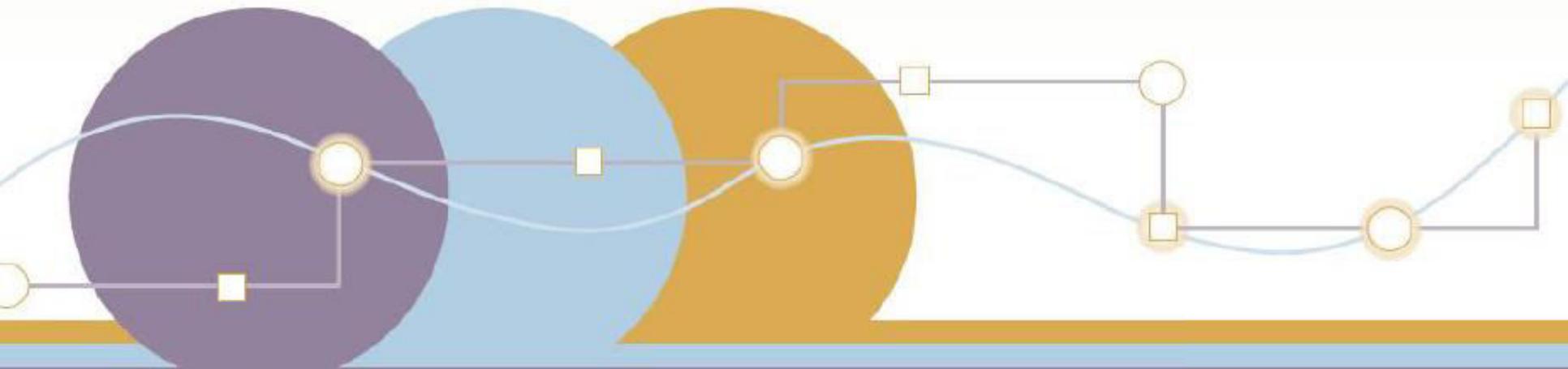
### *Transportation Decision-Making*

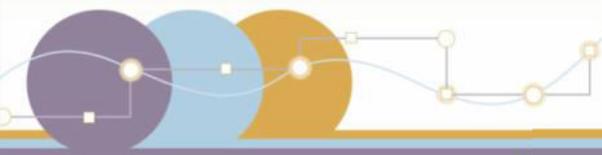


# Part 3

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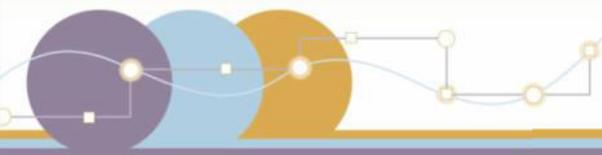
## Public Sector Use of Freight Data





## ***FHWA's Current Uses of Probe Data for Freight***

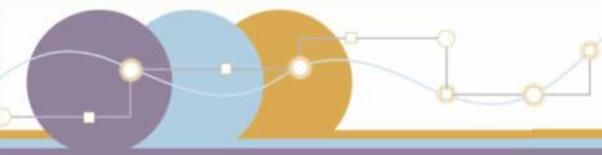
1. Support the Freight Performance Measurement (FPM) Program
  - » Support FHWA and USDOT freight performance monitoring and analysis of freight significant corridors and locations.
  - » Provide analysis of origins and destinations, incidents, weather impacts, congestion.
2. Perform supply chain/key 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.



# Transportation Performance Management



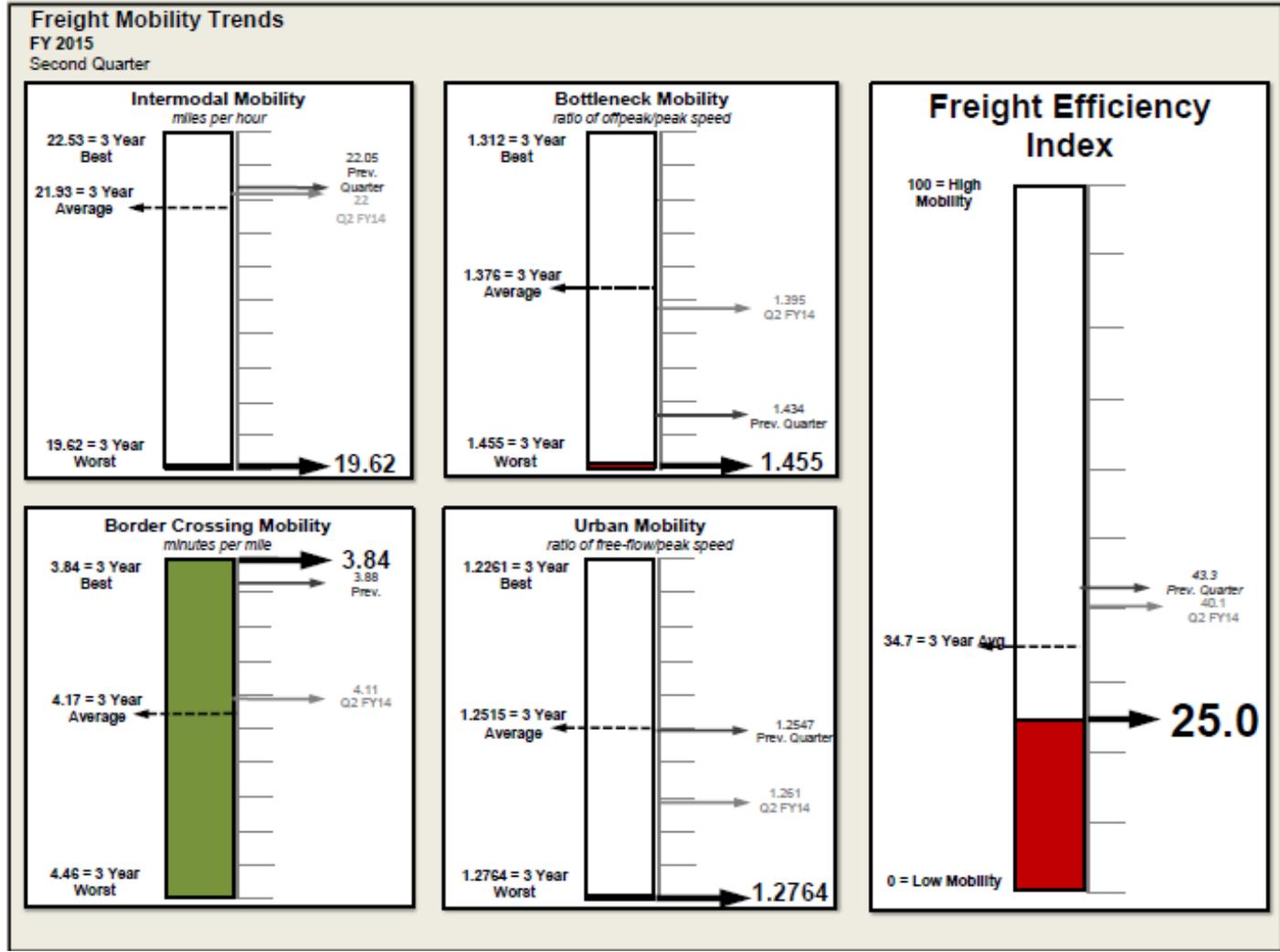
Measures to Assess Freight Movement on the Interstate System

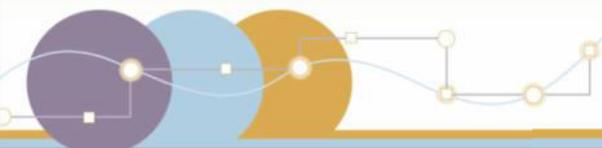


## ***FHWA Probe Data Characteristics***

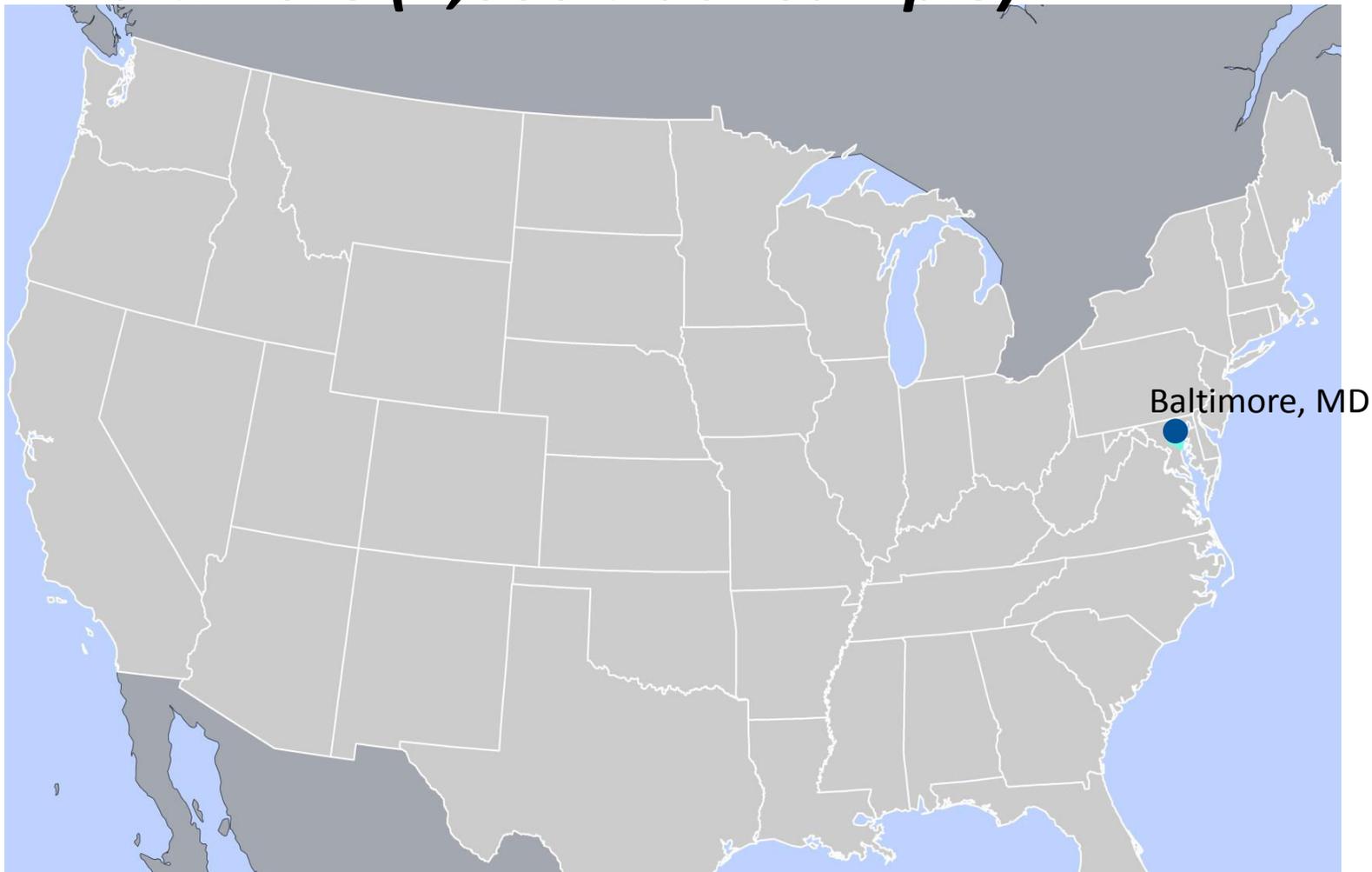
- Continuous data since 2002
- Data collected by the second from approximately 600,000 trucks with embedded technology
- Billions of unique truck positions received & processed annually
- Multiple industry data sources provide the data, ATRI is trusted 3<sup>rd</sup> party
- Nationwide coverage

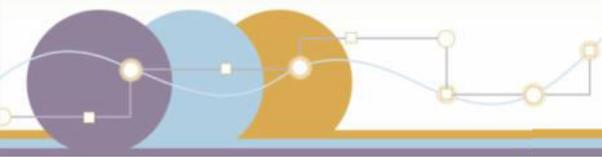
## Freight Movement Efficiency Index





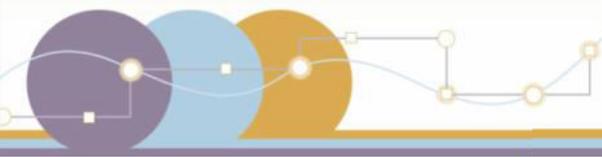
## *Supply Chain Analysis Example: Truck Flows from Baltimore (1,000 truck sample)*





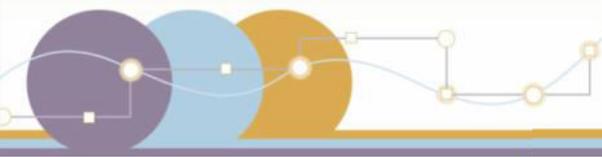
## *Example, Cont.: Same 1,000 Trucks After 24 Hours*





## ***Example, Cont.: Same 1,000 Trucks After 5 Days***

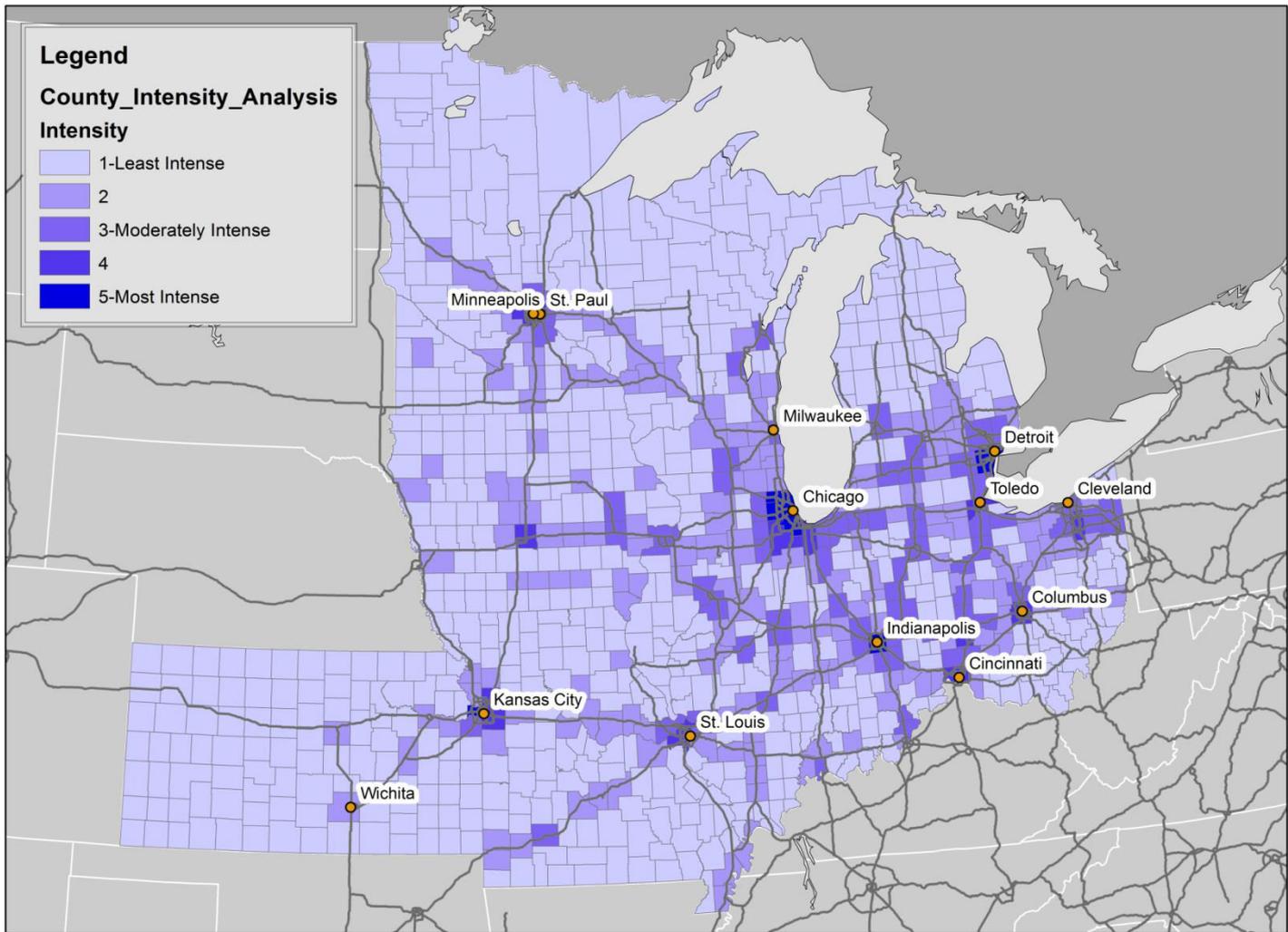


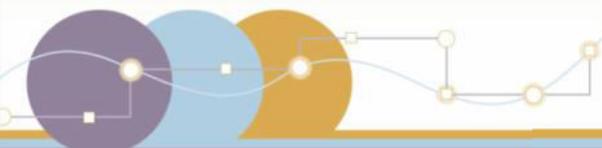


## *Example, Cont.: Same 1,000 Trucks After 7 Days*



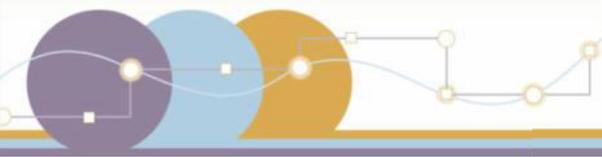
## County Intensity Example





### ***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

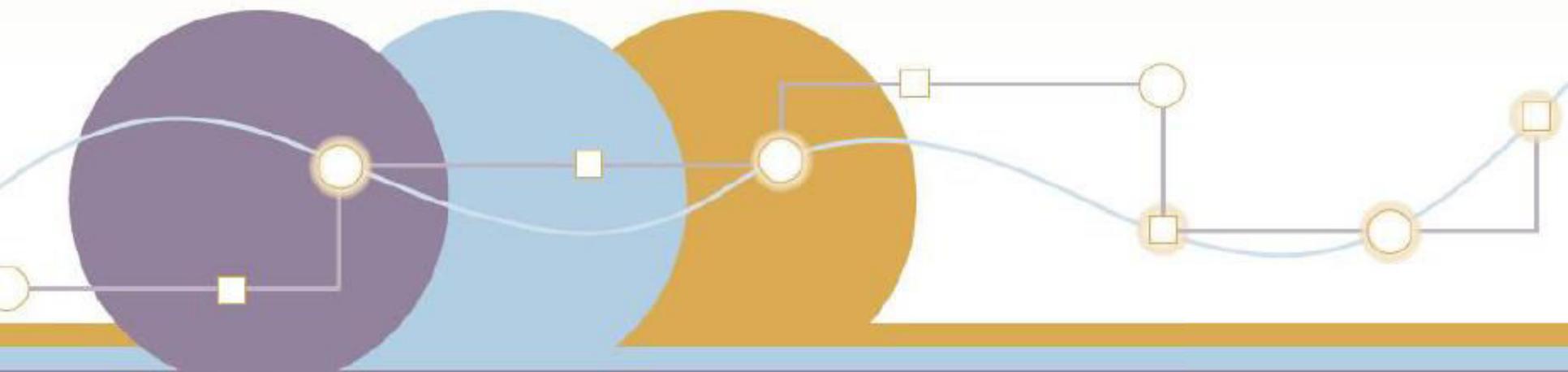


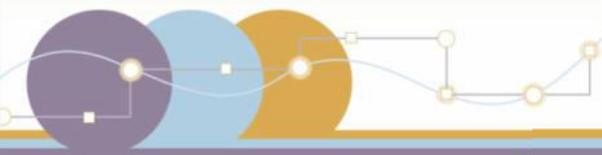
Consistent Performance  
Measurement

# Part 4

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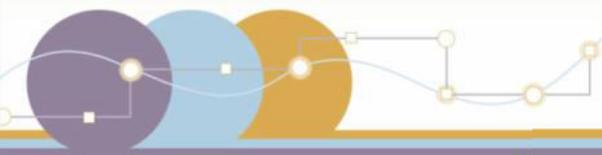
## Proposed Performance Measures and Concepts





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

<b>1</b> <b>Truck Travel Time Reliability</b>	Percent of the Interstate System Mileage providing for Reliable Truck Travel Times
<b>2</b> <b>Mileage Uncongested</b>	Percent of the Interstate System Mileage Uncongested



## Metrics, Thresholds, and Measures

Each Reporting Segment

### METRIC

A quantifiable indicator of performance or condition

### THRESHOLD

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

Entire Applicable Network

### MEASURE

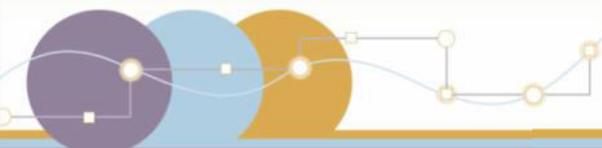
An expression based on a metric, used to establish targets and to assess progress towards achieving the established target

Example

Average truck speed =  
**52.30 mph**

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

2,510 uncongested miles  
3,000 total miles =  
**83.7% uncongested**



## Measures to Assess Freight Movement on the Interstate System – Truck Travel Time Reliability

Each Reporting Segment

Entire Applicable Network

### METRIC

Truck Travel Time Reliability (TTTR) for each segment on the Interstate System

### THRESHOLD

TTTR < 1.50 for the reporting segment = reliable

### MEASURE

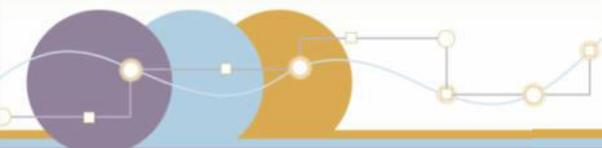
Percent of the Interstate System mileage providing for reliable truck travel times

Example

60 (95<sup>th</sup> percentile) /  
42 (50<sup>th</sup> percentile)  
**TTTR = 1.43**

1.43 < 1.50  
**Reliable**

2,492 reliable miles /  
3,000 total miles =  
**81.3% reliable**



## Measures to Assess Freight Movement on the Interstate System – Mileage Uncongested

Each Reporting Segment

Entire Applicable Network

### METRIC

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

### THRESHOLD

Average truck speed  
> 50 mph for the  
segment = uncongested

### MEASURE

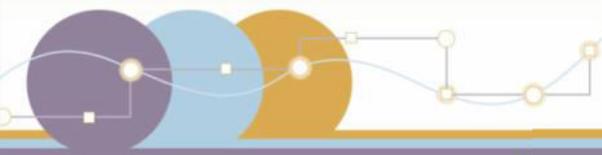
Percent of the  
Interstate System  
mileage uncongested

Example

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

52.30 mph > 50.00 mph =  
**Uncongested**

2,250 uncongested miles /  
3,000 total miles =  
**75.0%  
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

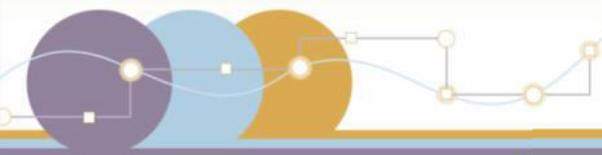
### TARGET

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

Example

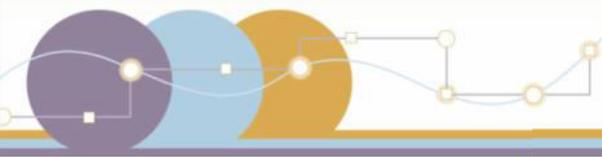
83.7% total Interstate miles uncongested

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**

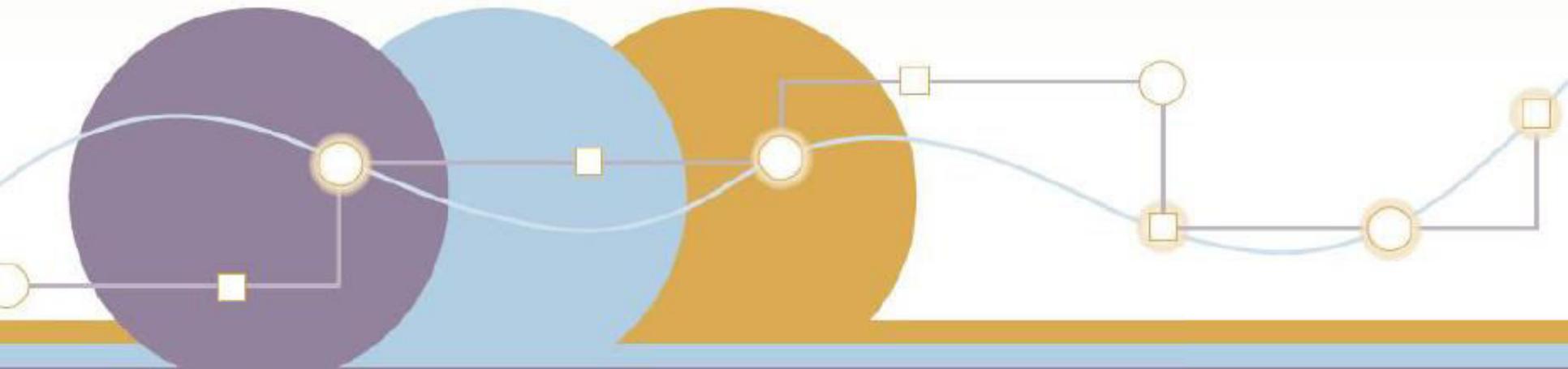


*Questions?*

# Part 5

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## Summary and Q&A

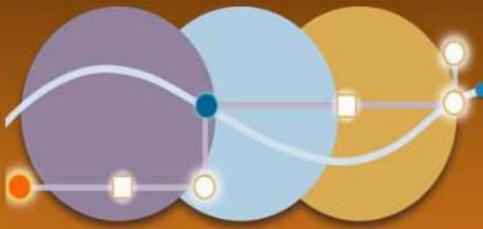


## Participate in the Rulemaking Process

### Transportation Performance Management

TPM and MAP-21 Engagement Resources

Home / Programs / Transportation Performance Management



## Notices of Proposed Rulemaking

**Notice 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.

Play Previous Next

1 2 3 4

#### Related Links

- [FHWA TPM-related Links](#)
- [TPM External links](#)

#### Contacts

- Susanna Hughes-Reck**  
[Office of Transportation Performance Management](#)  
202-366-1548  
[E-mail Susanna](#)

#### 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

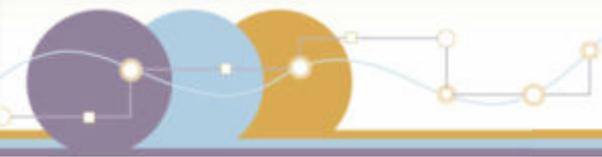
- Rulemaking Stakeholder Engagement
- Readiness Stakeholder Engagement
- Reporting

#### Resources

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

#### Email Notification

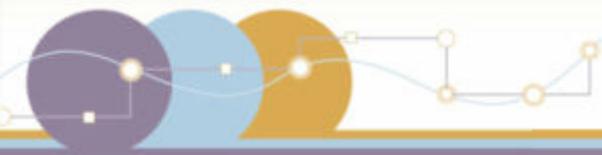
- Subscribe to email updates



## *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](http://www.regulations.gov)**

**FHWA 2013-0054**

**<https://www.federalregister.gov/articles/2016/04/22/2016-08014/national-performance-management-measures-assessing-performance-of-the-national-highway-system>**

***For clarifying questions or more information, please contact:***

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FSWhitson@dot.gov

**[PerformanceMeasuresRulemaking@dot.gov](mailto:PerformanceMeasuresRulemaking@dot.gov)**