

# UPDATE ON THE DEVELOPMENT OF MAP-21 PERFORMANCE MEASURES

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# Presentation Items

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- Performance Provisions Rulemaking Schedule
- System Performance Measures draft Rulemaking
  - Performance of the National Highway System (NHS)
  - Freight
  - Congestion and Air Quality (CMAQ)
- Federal TPM Survey
- Calendar for Performance Provisions



# Rulemaking Schedule

	<b>Planning Rules</b> <i>USDOT Significant Rulemaking Report, as of April 15, 2016</i>	<b>Proposed Rulemaking</b>	<b>Final Rulemaking</b>
Planning	<ul style="list-style-type: none"> <li>Statewide and Metropolitan and Non-metropolitan Planning Rule</li> </ul>	June 2014	May 2016
Highway Safety	<ul style="list-style-type: none"> <li>Safety Performance Measure Rule</li> <li>Highway Safety Improvement Program (HSIP)</li> </ul>	March 2014	March 15, 2016
Highway Conditions	<ul style="list-style-type: none"> <li>Pavement and Bridges Performance Measurement</li> <li>Asset Management Plan</li> </ul>	January/February 2015	October 2016
Congestion / System performance	<ul style="list-style-type: none"> <li>System Performance Measures Rule (Congestion, Air Quality, and Freight)</li> </ul>	April 22, 2016	?
Transit	<ul style="list-style-type: none"> <li>Transit Asset Management</li> <li>National Public Transportation Safety Plan</li> <li>Public Transportation Agency Safety Plan</li> </ul>	September 2015 (Transit Asset) February 5, 2016 (Transit Safety)	July 2016 (Transit Asset)



# System Performance Measures NPRM (Congestion, Air Quality, and Freight)

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- Proposes eight system performance measures
  - Performance of the NHS – Four measures
  - Freight – Two measures
  - Air Quality (CMAQ) – Two measures
- Requirement for State DOTs to submit Initial System Performance Report by October 1, 2016
- Also refines requirements for Highway Condition (Pavement and Bridges) and Highway Safety performance provisions



# Performance of the NHS

	1 Interstate System	2 Non-Interstate NHS
Travel Time Reliability	Percent of the Interstate System providing for reliable travel times	Percent of the non-Interstate NHS providing for reliable travel times
Peak Hour Travel Time	Percent of the Interstate System in urbanized areas over 1M in population where peak hour travel times meet expectations	Percent of the non-Interstate NHS in urbanized areas over 1M in population where peak hour travel times meet expectations



# 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



# CMAQ Program

<b>1</b> <b>CMAQ – Traffic Congestion (Subpart G)</b>	Annual Hours of Excessive Delay Per Capita
<b>2</b> <b>CMAQ – On-Road Mobile Source Emissions (Subpart H)</b>	2- and 4-year Total Emission Reductions for each applicable criteria pollutant and precursor



# Target-Setting for System Performance

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System performance would have one set of targets for Washington, DC--VA--MD Urbanized Area, agreed to by the following:

- Baltimore Regional Transportation Board
- Fredericksburg Area MPO
- National Capital Region Transportation Planning Board
- District of Columbia DOT
- Virginia State DOT
- Maryland State DOT

## Evaluation of Significant Progress

- The FHWA will determine that a State DOT has made significant progress toward the achievement of each 2-year or 4-year applicable target if either:
  - (i) The actual condition/performance level is better than the baseline condition/performance; or
  - (ii) The actual condition/performance level is equal to or better than the established target.





# Federal TPM Survey

- FHWA and FTA to survey DOTs and MPOs in Aug-Oct on transportation performance management (TPM) with 54 page questionnaire

Section	List Questions	Rating Questions	Open Ended	Total
<b>Agency Overview</b>				
<b>A. TPM General</b>	5	7	3	15
<b>B. Performance-based Planning and Programming</b>	7	5	0	12
<b>C. Highway Asset Management</b>	6	8	1	15
<b>Performance Area Specific Qs (includes 22 Common Qs)</b>				
<b>D. Highway Safety</b>	16	12	2	30
<b>E. Bridge</b>	11	12	2	25
<b>F. Pavement</b>	12	13	2	27
<b>G. Freight</b>	12	12	2	26
<b>H. Congestion/Mobility/System Performance</b>	11	12	2	25
<b>I. On-road Mobile Source Emissions</b>	12	12	2	26
<b>J. Transit</b>	12	12	2	26
<b>Totals</b>	<b>86</b>	<b>85</b>	<b>14</b>	<b>227</b>



# Calendar for Performance Provisions

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|----------|---|
| May 2016 | Metropolitan and Statewide Planning Final Rule <ul style="list-style-type: none"><li>• Two years to implement</li></ul>   |
| Jul 2016 | Transit Asset Final Rule <ul style="list-style-type: none"><li>• Transit agencies must set targets 90 days after final rule</li></ul>   |
| Sep 2016 | State DOTs submit initial System Performance report   |
| Oct 2016 | Transit agencies set Transit Asset targets <ul style="list-style-type: none"><li>• MPOs set Transit Asset targets (within 180 days ?)</li></ul>                                   |
| Aug 2017 | State DOTs submit Highway Safety (HSIP) reports, including targets <ul style="list-style-type: none"><li>• MPOs set Highway Safety targets within 180 days</li></ul>              |
| Feb 2018 | State DOTs submit Highway 2-year and 4-year targets <ul style="list-style-type: none"><li>• MPOs set targets within 180 days</li></ul>  |
| May 2018 | Metropolitan Transportation Plan and TIP requirements for performance measures, targets and projects  |
| Sep 2018 | State DOTs submit baseline Highway Condition and System Performance reports <ul style="list-style-type: none"><li>• MPOs submit report (implied that same time as DOTs)</li></ul> |



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**Transportation Planning Board**

# Travel Time Reliability

- Level of Travel Time Reliability (LOTTR) of a segment:

$$LOTTR = \frac{80th\ Percentile\ Travel\ Time}{50th\ Percentile\ Travel\ Time}$$

- LOTTR < 1.50: Travel time is reliable
- Applicable network: Statewide; MPO-wide



# Peak Hour Travel Time

- Peak Hour Travel Time Ratio (PHTTR) of a segment:

$$PHTTR = \frac{\textit{Longest Peak Hour Travel Time}}{\textit{Desired Peak Hour Travel Time}}$$

- PHTTR < 1.50: Meet expectation
- Applicable network: Urbanized area over 1M in population
- Desired Peak Hour Travel Time (AM and PM) would be set by State DOTs, in coordination with MPOs, for each reporting segment, based on operational policy (i.e., desired travel at posted speed limits).



# Traffic Congestion

- Delay occurs if
  - Speed < 35 mph for Interstates, freeways, or expressways
  - Speed < 15 mph for all other NHS roadways
- Delay in vehicle-hours needs Traffic Volume data
- Applicable network: Nonattainment or maintenance urbanized area over 1M in population



# Mileage Uncongested

- Average truck speed of a segment
- Average truck speed > 50 mph: Uncongested
- Applicable network: Statewide; MPO-wide



# Truck Travel Time Reliability

- Truck Travel Time Reliability (TTTR) of a segment:

$$TTTR = \frac{95th\ Percentile\ Travel\ Time}{50th\ Percentile\ Travel\ Time}$$

- TTTR < 1.50: Truck travel time is reliable
- Applicable network: Statewide; MPO-wide





# Data Sources

- Travel Time Data Set
  - National Performance Management Research Data Set (NPMRDS), OR
  - Equivalent data set: FHWA approval; Strict requirements including no imputation
  - ***Decision: NPMRDS or Equivalent data?***
- Desired Peak Period Travel Time
  - To be established by state DOTs, in coordination with MPOs, for each reporting segment based on operational policies
  - ***Decision: Set desired peak period travel time***
- Hourly Traffic Volume
  - To report traffic volume estimation methodology to FHWA
  - ***Decision: Methodology to estimate hourly traffic volume for each segment***

