



## MEMORANDUM

**To:** Transportation Committee

**From:** CMAP staff

**Date:** March 2017

**Re:** Performance Measures and Target-Setting

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One of the most significant policy changes in the Moving Ahead for Progress in the 21st Century (MAP-21) transportation bill, passed in 2012, was to institute a national performance measurement system for the highway and transit programs. This memo provides a brief overview of [final regulations](#) implementing this system and how they affect planning and programming in the region. These measures, including target-setting, are closely related to the asset management process last discussed by the Transportation Committee in November, 2016. A summary of these measures in table form is provided in the attachment to this memo.

### Overview

In general, the performance measurement program is organized so that the federal government, through the U.S. Department of Transportation (USDOT), establishes national performance measures. Then state departments of transportation (state DOTs) and metropolitan planning organizations (MPOs) set targets for each highway measure, while transit agencies and MPOs set targets for transit asset condition. For instance, for highway safety, if a state had 800 fatalities in the last year of its reporting period, then it might set a target of 760 for the year following, or a five-percent reduction. The appropriate value for the target is generally a non-federal decision.

For most of the highway measures, MPOs can choose either to set quantitative targets for their metropolitan planning areas or commit to help implement the state's target by planning for and programming appropriate projects. In either case, coordination is required between the state and MPO. Arrangements for how to share data, set targets, track progress, etc., can either be established in a metropolitan planning agreement or through other written documentation. For the transit measures, MPOs must set quantitative targets. MPOs must indicate how their transportation improvement programs (TIPs) will help meet the targets, a stipulation that goes into effect two years after each rule's effective date. Targets might be established to take into account new policy directions, recent trends, the level of resources required for initiatives to "move the needle," and the expected effectiveness of those initiatives.

The timelines for reporting differ by measure, but have either 1-, 2-, or 4-year performance periods. For the highway measures, at the conclusion of each performance period, the USDOT assesses whether “significant progress” has been made toward achieving the highway targets, which is defined differently depending on the measure. If states do not make significant progress, they are required to submit documentation to FHWA on how they will reach the targets; in certain cases, states are also required to program more federal funds toward improving conditions. No penalties are assessed on MPOs or transit agencies.

### **Highway safety (effective date April 14, 2016)**

- **Measures:** (1) Number of fatalities, (2) number of serious injuries, (3) rate of fatalities per 100 million VMT, (4) rate of serious injuries per 100 million VMT, and (5) the number of non-motorized serious injuries, all based on a 5-year rolling average.
- **Reporting:** Annual targets. DOTs set targets in August 2017, MPOs in February 2018. MPOs report targets to the state DOT, and the state DOTs report their targets as part of their annual Highway Safety Improvement Program report.
- **Geography:** MPO targets are for “public roadways within the metropolitan planning boundary,” state DOT targets are for public roadways throughout the state, but the state DOT can voluntarily establish additional targets for “any number and combination of urbanized area boundaries”.
- **Significant progress:** Agency has met or made significant progress toward meeting its targets when at least four of the five performance targets are met or the measure has improved from its baseline. In addition to being required to submit documentation on how the state will achieve the targets if significant progress is not made, the state must use more of its HSIP funds for safety projects if it is not already doing so.

### **Transit asset condition (effective date October 1, 2016)**

- **Measures:** (1) Rolling stock -- percent of vehicles by category that have met or exceeded their useful lives; (2) Non-revenue service vehicles such as maintenance equipment -- percent of vehicles by category that have met or exceeded their useful lives; (3) Infrastructure -- percentage of track segments, signals, and systems with performance restrictions, such as slow zones; (4) Facilities -- percent of facilities within an asset class rated “marginal” or “poor” on FTA’s Transit Economic Requirements Model.
- **Reporting:** Annual targets. Transit agencies set first targets by January 1, 2017, and MPOs by the end of June 2017. Transit agencies must report targets and asset condition data to the National Transit Database, although not immediately. There are no reporting requirements for MPOs.
- **Significant progress:** Not assessed. Target allows for declining conditions.

### **Pavement and bridge condition (effective date March 21, 2017)**

- **Measures:** Condition of pavement on the Interstate system, condition of pavement on the non-Interstate National Highway System (NHS), and the condition of bridges on the NHS.

- **Reporting:** State DOT targets are for a performance period of 4 years, with a 2-year midpoint target as well. State DOTs will establish their first targets by March 21, 2018, submit the first baseline performance report by October 1, 2018, and submit the first mid-performance period progress report by October 1, 2020. MPOs must set their targets 180 days later (no later than September 17, 2018), but are only required to set 4-year targets. Further, MPOs must communicate their targets to the respective state DOTs but are not required to provide separate reporting to FHWA. MPOs must report baseline conditions and progress made toward achieving targets as part of their metropolitan transportation plans.
- **Geography:** State DOT targets are for NHS segments throughout the state, but the state DOT can voluntarily establish additional targets for “any number and combination of urbanized area boundaries.” MPOs may choose to affirm a state DOT’s statewide targets and agree to plan and program toward meeting them, or instead set a unique target for their metropolitan planning areas.
- **Significant progress:** Agency has either met its target, or the measure has improved from its baseline. No penalty for failure to meet targets, although state DOTs would be required to describe to FHWA the actions they will take to achieve better performance outcomes. However, if more than 10 percent of the bridge deck area on the NHS is structurally deficient, then certain funds must be obligated and set aside from the National Highway Performance Program (NHPP) for NHS bridge projects, regardless of targets established by the state DOT. Similarly, if more than 5 percent of the Interstate system pavements are in poor condition, then additional NHPP funding must be obligated to improve Interstate pavement and a portion of the state’s Surface Transportation Program funding transferred to NHPP.

### **System performance measures (effective date March 21, 2017)**

- **Measures:** Performance of the Interstate system (travel time reliability), performance of the non-Interstate NHS (travel time reliability), percent change in CO<sub>2</sub> emissions on the NHS compared to 2017 levels, freight movement on the Interstate system (truck travel time reliability), annual excessive peak hour delay per capita on the NHS, percent non-single occupancy vehicle (SOV) travel, and total on-road mobile source emissions reduction (2- and 4-year cumulative emissions reduction from CMAQ projects). A table summarizing these measures is included in the attachment to this memo.
- **Reporting:** State DOT targets are for a performance period of 4 years, with a 2-year midpoint target as well. State DOTs will establish their first statewide targets by February 20, 2018, and MPOs must set their targets within 180 days of the state doing so (no later than August 19, 2018). State DOTs submit their first baseline performance report by October 1, 2018, and submit their first mid-performance-period progress report by October 1, 2020. The rule does not specify the format of the initial target, but MPOs will report baseline conditions and progress toward achieving performance targets in a system performance report as part of their metropolitan transportation plans. In addition, MPOs must complete a CMAQ performance plan including 2- and 4-year targets for the annual excessive peak hour delay per capita measure, percent of non-SOV travel, and total emission reductions. MPOs must submit their CMAQ

performance plans to the respective state DOT to be incorporated as an attachment as part of the statewide reporting process.

- **Geography:** The travel time reliability, truck travel time reliability, and percent change in CO<sub>2</sub> measures are all applied to mainline miles of NHS within a state or each metropolitan planning area. The state DOT may voluntarily establish additional targets for “any number and combination of urbanized area boundaries.” The annual hours or excessive delay and percent of non-SOV travel measures are initially applied to urban areas of more than 1 million residents or in nonattainment or maintenance for criteria pollutants, and all states and MPOs that are part of the urbanized area must agree on a single target for the entire urbanized area. The total emissions reduction measure applies all nonattainment or maintenance areas for criteria pollutants.
- **Significant progress:** Agency has either met its target, or the measure has improved from its baseline. No penalty for failure to meet targets, although state DOTs would be required to describe to FHWA the actions they will take to achieve better performance outcomes.

## Discussion

GO TO 2040 strongly supported moving toward a performance basis for the federal transportation program. CMAP has longstanding experience in measuring the performance of the highway system in northeastern Illinois, including innovative practices such as congestion and crash scans. From this standpoint, the new rules just formalize performance measurement activities CMAP has already been undertaking. Note, however, that the “regional indicators” adopted in GO TO 2040 are different in character than the performance measures described above; how to reflect these measures in the regional indicators for ON TO 2050 is under discussion.

In the upcoming year, CMAP’s governing boards will need to establish targets for transit asset condition (due June 30, 2017) and highway safety (due February 27, 2018), in the latter case either by setting quantitative targets or agreeing to plan and program toward meeting the Illinois Department of Transportation’s (IDOT) targets. Staff has begun coordinating with the transit agencies and expects to bring information to the Transportation Committee on setting targets for transit asset condition at its April 28 meeting. On the safety targets, staff is preparing a strategy paper on highway safety as part of ON TO 2050 development; the paper will address the question of which targets may be most appropriate. Later in 2018, CMAP’s governing boards will need to consider the remainder of the performance targets, and integrate a system performance report within ON TO 2050.

## Action requested: Discussion

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Attachment – summary of performance measure rulemakings

TABLE 1—SUMMARY OF RULEMAKINGS TO IMPLEMENT THE NATIONAL PERFORMANCE MANAGEMENT MEASURE RULES

Rulemaking	23 CFR part 490 section	Final performance measures	Measure applicability
Safety PM Final Rule.	490.207(a)(1) .....	Number of fatalities .....	All public roads.
	490.207(a)(2)	Rate of fatalities .....	All public roads.
	490.207(a)(3)	Number of serious injuries .....	All public roads.
	490.207(a)(4)	Rate of serious injuries .....	All public roads.
	490.207(a)(5)	Number of non-motorized fatalities and non-motorized serious injuries.	All public roads.
Infrastructure PM Final Rule	490.307(a)(1) .....	Percentage of pavements of the Interstate System in Good condition.	The Interstate System.
	490.307(a)(2)	Percentage of pavements of the Interstate System in in Poor condition.	The Interstate System.
	490.307(a)(3)	Percentage of pavements of the non-Interstate NHS in Good condition.	The non-Interstate NHS.
	490.307(a)(4)	Percentage of pavements of the non-Interstate NHS in Poor condition.	The non-Interstate NHS.
System Performance PM Final Rule.	490.407(c)(1)	Percentage of NHS bridges classified as in Good condition	NHS.
	490.407(c)(2)	Percentage of NHS bridges classified as in Poor condition ..	NHS.
	490.507(a)(1) .....	Percent of the Person-Miles Traveled on the Interstate That Are Reliable.	The Interstate System.
	490.507(a)(2)	Percent of the Person-Miles Traveled on the Non-Interstate NHS That Are Reliable.	The non-Interstate NHS.
	490.507(b)	Percent Change in Tailpipe CO <sub>2</sub> Emissions on the NHS Compared to the Calendar Year 2017 Level.	NHS.
	490.607	Truck Travel Time Reliability (TTTR) Index .....	The Interstate System.
	490.707(a)	Annual Hours of Peak Hour Excessive Delay Per Capita .....	The NHS in urbanized areas with a population over 1 million for the first performance period and in urbanized areas with a population over 200,000 for the second and all other performance periods that are also in nonattainment or maintenance areas for ozone (O <sub>3</sub> ), carbon monoxide (CO), or particulate matter (PM <sub>10</sub> and PM <sub>2.5</sub> ).
	490.707(b)	Percent of Non-SOV Travel.	
	490.807	Total Emissions Reduction .....	All projects financed with funds from the 23 U.S.C. 149 CMAQ program apportioned to State DOTs in areas designated as nonattainment or maintenance for ozone (O <sub>3</sub> ), carbon monoxide (CO), or particulate matter (PM <sub>10</sub> and PM <sub>2.5</sub> ).

## Attachment – Summary of system performance measures

Measure groups (program area)	Performance measures	Measure/target applicability	Metric data source & collection frequency	Metric
NHPP .....	Percent of Person-Miles Traveled on the Interstate That Are Reliable.	Mainline of the Interstate System within a State or each metropolitan planning area.	All traffic/vehicles data in NPMRDS or Equivalent—every 15-minutes.	Level of Travel Time Reliability (LOTTR).
	Percent of Person-Miles Traveled on the Non-Interstate NHS That Are Reliable.	Mainline of the non-Interstate NHS within a State or each metropolitan planning area.	All traffic/vehicles data in NPMRDS or Equivalent—every 15-minutes.	Level of Travel Time Reliability (LOTTR).
	Percent Change in CO <sub>2</sub> Emissions on the NHS Compared to the Calendar Year 2017 Level.	NHS within a State or each metropolitan planning area.	Annual state total fuel sales data from Highway Statistics and VMT estimates on NHS and all public roads from HPMS.	Annual Total Tailpipe CO <sub>2</sub> Emissions on the NHS.
Freight movement on the Interstate System measure (NHFP).	Truck Travel Time Reliability (TTTR) Index.	Mainline of the Interstate System within a State or each metropolitan planning area.	Truck data in NPMRDS or equivalent data set—every 15—minutes.	TTTR Index.

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TABLE 2—SUMMARY OF FINAL MEASURES IN THE THIRD PERFORMANCE MEASURE FINAL RULE—Continued

Measure groups (program area)	Performance measures	Measure/target applicability	Metric data source & collection frequency	Metric
CMAQ .....	Annual Hours of Peak-Hour Excessive Delay Per Capita.	Mainline of NHS in urbanized areas with a population over 1M/200k in nonattainment or maintenance for any of the criteria pollutants under the CMAQ program.	All traffic/vehicles data in NPMRDS or equivalent data set—every 15 minutes (bus, car and truck volumes in HPMS; occupancy factors published by FHWA.	Total Peak-Hour Excessive Delay person-hours.
	Percent of N SOV Travel.	Urbanized areas with a population over 1M/200k in nonattainment or maintenance for any of the criteria pollutants under the CMAQ program.	ACS, local survey, or local counts (includes bike/pedestrian counts).	n/a.
	Total Emission Reductions.	All nonattainment and maintenance areas for CMAQ criteria pollutants.	CMAQ Public Access System	n/a.