

*Baltimore Regional
Transportation Board (BRTB)
Technical Committee Meeting*

November 10, 2020

**Mid-Performance
Period Progress Report: TPM 3
CMAQ Measures Overview
2020**



MAP-21 and FAST Act
Transportation Performance
Management (TPM)

✓ **Federal Transportation Performance Management Program**

 **Federal Performance Period Progress Reporting**

 **Mid-Period Performance Progress Report**

 **Mid-Period Performance Progress Report Measures**

 **TPM 3: Peak-Hour Excessive Delay (PHED)**

 **TPM 3: Non-Single Occupancy Vehicle (Non-SOV) Travel**


 **TPM 3: Total Emissions Reduction**


 **MPO Role/Responsibility**


 **MDOT TPM Contacts**

PRESENTATION OUTLINE

TPM performance management outcomes are grouped into six elements to more effectively communicate the efforts under way to implement the statutory requirements:

 **National Goals:** set to focus the Federal-aid highway program into specific areas of performance.

 **Measures:** established to assess performance/condition in carrying out performance-based Federal-aid highway programs.

 **Targets:** established by State DOTs and MPOs for the measures to document future performance expectations

 **Plans:** strategic and/or tactical plans developed by State DOTs and MPOs to identify strategies and investments that address performance needs.

 **Reports:** reports developed by State DOTs and MPOs that document progress toward target achievement, including the effectiveness of Federal-aid highway investments.

 **Accountability and Transparency:** FHWA-developed requirements for State DOTs and MPOs to use to achieve or make significant progress toward targets.

FEDERAL TRANSPORTATION PERFORMANCE
MANAGEMENT PROGRAM (TPM)

 **MDOT**
MARYLAND DEPARTMENT
OF TRANSPORTATION

Performance Period Progress Reporting: Federal Requirement

- **Under 23 USC 150(e), Starting October 1, 2018, State DOTs were required to submit to FHWA, a Biennial Report that includes at a minimum:**
 - NHS condition and performance for required measures
 - Progress in achieving performance targets
 - Effectiveness of the investment strategies in the State's NHS asset management plan
 - How freight bottleneck congestion is being addressed
- **Reports:**
 - Baseline Report by Oct. 1 of the first performance year (2018)
 - Reported Baseline performance, 2-year Targets, 4-year Targets
 - Mid Period Progress Report by Oct. 1 of the third performance year (2020)
 - Full Period Progress Report by Oct. 1 of the fifth year following the performance period (2022)

**PERFORMANCE PERIOD
PROGRESS REPORTING**



Mid-Performance Period Progress Report: Components

- 2-year condition/performance
- 2-year progress in achieving performance targets
- 2-year significant progress discussion for the National Highway Performance Program (NHPP) targets and the National Highway Freight Program (NHFP) target
- Extenuating circumstances discussion on 2-year Targets
- Target adjustment discussion
- Investment strategy discussion
- Congestion at truck freight bottlenecks
- MPO CMAQ Performance Plan

MID-PERFORMANCE PERIOD PROGRESS REPORT



TPM 2. Pavement Condition (4 measures)



TPM 2. Bridge Condition (2 measures)



TPM 3: Travel Time Reliability (2 measures)



TPM 3: Freight Reliability (1 measure)



TPM 3. CMAQ Congestion (2 measures)



TPM 3: CMAQ Air Quality (2 measures)

MID-PERFORMANCE PERIOD
PROGRESS REPORT MEASURES

Data Collection and Target Setting Methodology

- **Data:** NPMRDS Version 2 -baselines for the PHED per capita
- Calculated using the CATT Lab MAP-21 tool for the Baltimore, MD UZA.
- **Initial Target Setting Methodology/Coordination:** The limitations of the data contributed to a level of uncertainty of the values for the measure.
- **Mid-Performance Period Review:** 2 additional years of data were included to evaluate the trend against the baseline.

Baseline Performance:

20.2

2yr Performance vs. 2yr Target:

20.6 vs. N/A

Original 4yr vs. Proposed 4yr

Target:

Remain 22.6

	ID	Performance Measure	2-Year Target Met	4-Year Target Adjusted	Penalty Assessment
CONGESTION MANGEMENT	1	Annual Hours of Peak-Hour Excessive Delay Per Capita: Baltimore MD	N/A	No	No

PEAK-HOUR EXCESSIVE DELAY (PHED)

Data Collection and Target Setting Methodology

- **Data:** U.S. Census Bureau American Community Survey (ACS) 5-Year Estimates DP-03 “Journey-to-Work” table with baseline data from the 2012-2016 survey.
 - includes car/vanpool, public transportation, ridesharing and taxi, non-motorized modes, and working from home.
- **Initial Target Setting Methodology/Coordination:** The percent of non-SOV travel targets were calculated by MDOT SHA for the Baltimore, MD UZAs. A best-fit trend analysis was completed considering data from 2012 to 2016 ACS and projected 2 and 4 years ahead.
- **Mid-Performance Period Review:** there were 2 additional years of data to evaluate against the baseline to determine current performance and inform/re-evaluate 4-year target projection.

Baseline Performance:

25.1%

2yr Performance vs. 2yr Target:

25.2% vs. 24.8%

Original 4yr vs. Proposed 4yr

Target:

Remain 24.8%

	ID	Performance Measure	2-Year Target Met	4-Year Target Adjusted	Penalty Assessment
CONGESTION MANAGEMENT	1	Percent of Non-Single Occupancy Vehicle Travel: Baltimore MD	Yes	No	No

NON-SINGLE OCCUPANCY VEHICLE TRAVEL

Data Collection and Target Setting Methodology

Baseline Performance:

1. (VOC) 13.32
2. (NOx) 140.68

2yr Performance vs. 2yr Target:

1. (VOC) 145.48 vs. 6.78
2. (NOx) 335.66 vs. 88.88

Original 4yr vs. Proposed 4yr Target:

1. (VOC) remain 8.13
2. (NOx) remain 123.96

- **Initial Target Setting Methodology/Coordination:** evaluation of historic CMAQ trends, averaging emissions from FY2014 through FY2017 for the SHA CMAQ projects, and the known MTA bus replacements for FY2018 – FY2021 based on MTA’s programmed projects. The statewide target is the sum of the SHA and MTA projects. MDOT primarily uses two analysis tools for estimating emissions benefits of CMAQ projects.
 - i. MAQONE – a Maryland specific tool for analyzing off-network projects that uses MD MOVES emission rates and it is populated with county-level defaults.
 - ii. FHWA Emissions Calculator Toolkit (downloaded Feb. 2018) – supports a number of project types developed by FHWA to analyze CMAQ projects.
- Future SHA CMAQ projects are not officially programmed or are subject to change. Typical CMAQ projects over the last four years include CHART, roundabouts, advanced signals and park and ride lots.
- MTA – new bus replacement contract signed for FY2018-FY2022. Replaced buses are assumed to be 12 years old. Most of the other projects are continuing projects supporting Metro, LOTS ridesharing, etc.
- For recommended MPO targets, the statewide target was allocated to the MPO based on project location as reported in the updated FHWA’s PAS.

Mid-Performance Period Review: Reported Emissions Reduction values were pulled from the FHWA PAS for evaluation against baseline performance and potential for achievement of 4-years targets.

	ID	Performance Measure	2-Year Target Met	4-Year Target Adjusted	Penalty Assessment
AIR QUALITY	1	On-road Mobile Source Emission Reduction (Volatile Organic Compounds)	Yes	No	No
	2	On-road Mobile Source Emission Reduction (Nitrogen Oxides)	Yes	No	No

TOTAL EMISSIONS REDUCTION

FFY	Project List (Emission Reductions quantified)	Funding Category	MPO
2018	Bus Replacement	Transit Improvements	BMC
2019	Bus Replacement	Transit Improvements	BMC
2018	LOTS State of MD Guaranteed Ride Home - Baltimore Area	Ride Sharing	BMC
2018	LOTS State of MD Guaranteed Ride Home -Washington DC Area	Ride Sharing	MWCOG
2019	LOTS State of MD Ridesharing Funds	Ride Sharing	State-sponsored
2018	Metro Rail Car Overhaul	Transit Improvements	BMC
2018	Baltimore City Bike Share Program	Bicycle and Pedestrian Facilities and Programs	BMC
2018	Baltimore City's Traffic Management Center	Congestion Reduction and Traffic Flow Improvements	BMC
2018	Adaptive "Smart" Signal Systemization - Baltimore Area	Congestion Reduction and Traffic Flow Improvements	BMC
2018	Adaptive "Smart" Signal Systemization - Washington DC Area	Congestion Reduction and Traffic Flow Improvements	MWCOG
2019	MD 180 (Jefferson Pike) at Mt. Zion Road - Park and Ride Lot	Ride Sharing	MWCOG
2019	MD 273 (Telegraph Road) at Appleton Road - Roundabout	Congestion Reduction and Traffic Flow Improvements	WILMAPCO

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TOTAL EMISSIONS REDUCTION

MPO ROLE/ RESPONSIBILITY

- MPOs may adopt and support the State's Total Emissions Reduction targets or develop their own targets.
- MPOs have the option to revise 4-year Total Emissions Reduction targets within 180 days of the State reporting its targets = March 30th.
- MPO targets are reported to the State DOT.
 - *MPOs must include/document baseline performance and progress toward achieving those targets in the Metropolitan Transportation Plan (MTP).*

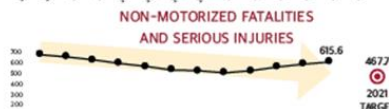


TRANSPORTATION PERFORMANCE MANAGEMENT (TPM) ESTABLISHED TARGETS FOR MARYLAND

The Maryland Department of Transportation (MDOT) established performance targets for Safety, Infrastructure Condition, System Performance, and Congestion Mitigation and Air Quality (CMAQ), per 23 U.S.C. 490 - National Performance Management Measures.

TPM 1: SAFETY

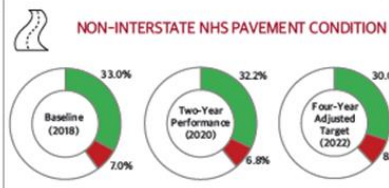
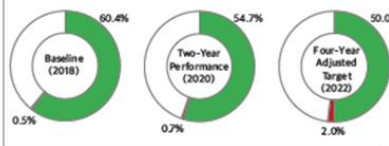
In support of Maryland's "Toward Zero Deaths" goal to halve fatalities and serious injuries by 2020, MDOT applies an exponential trend analysis to the five-year rolling averages to establish safety targets, as documented in the Maryland Strategic Highway Safety Plan 2016-2020. Targets are updated annually and reported in the Highway Safety Improvement Program.



MDOT MARYLAND DEPARTMENT OF TRANSPORTATION

TPM 2: INFRASTRUCTURE CONDITION

Infrastructure condition targets for the National Highway System (NHS) in Maryland were developed through an iterative, collaborative process which included monitoring performance trends, analyzing life cycle plans, and reevaluating future performance projections in partnership with other owners, including Maryland's seven Metropolitan Planning Organizations.



Baseline performance is derived from the latest data available for each measure as of 2018. Baseline data is from 2016 for pavement measures and 2017 for bridge measures.

The MDOT SHA managed development of NHS Bridge condition targets through the Office of Structures and NHS Pavement condition targets through the Office of Materials Technology.

The MDOT managed development of TPM 1: Safety targets through the MDOT Motor Vehicle Administration (MDOT MVA) Maryland Highway Safety Office and MDOT State Highway Administration (MDOT SHA) Office of Traffic and Safety.

- USDOT Planning Website: www.planning.dot.gov
- FHWA Transportation Performance Management Website: www.fhwa.dot.gov/tpm
- FHWA Transportation Performance Management Safety Target Setting Website: https://safety.fhwa.dot.gov/hsip/spm/state_safety_targets/
- MDOT SHA Transportation Performance Management Website: <http://arcg.is/1r04uH>

TPM RESOURCES



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