Mid-Performance Period Progress Report: TPM 3
CMAQ Measures Overview 2020
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
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.
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)
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
<table>
<thead>
<tr>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPM 2. Pavement Condition (4 measures)</td>
</tr>
<tr>
<td>TPM 2. Bridge Condition (2 measures)</td>
</tr>
<tr>
<td>TPM 3: Travel Time Reliability (2 measures)</td>
</tr>
<tr>
<td>TPM 3: Freight Reliability (1 measure)</td>
</tr>
<tr>
<td>TPM 3. CMAQ Congestion (2 measures)</td>
</tr>
<tr>
<td>TPM 3: CMAQ Air Quality (2 measures)</td>
</tr>
</tbody>
</table>

**MID-PERFORMANCE PERIOD PROGRESS REPORT MEASURES**

MARYLAND DEPARTMENT OF TRANSPORTATION
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.

<table>
<thead>
<tr>
<th>ID</th>
<th>Performance Measure</th>
<th>2-Year Target Met</th>
<th>4-Year Target Adjusted</th>
<th>Penalty Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Annual Hours of Peak-Hour Excessive Delay Per Capita: Baltimore MD</td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Baseline Performance:
- 20.2

2yr Performance vs. 2yr Target:
- 20.6 vs. N/A

Original 4yr vs. Proposed 4yr Target:
- Remain 22.6
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.

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</thead>
<tbody>
<tr>
<td>1</td>
<td>CONGESTION MANGEMENT</td>
<td>Percent of Non-Single Occupancy Vehicle Travel: Baltimore MD</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Data Collection and Target Setting Methodology

- **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.

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</tr>
</thead>
<tbody>
<tr>
<td>AIR QUALITY</td>
<td>On-road Mobile Source Emission Reduction (Volatile Organic Compounds)</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>On-road Mobile Source Emission Reduction (Nitrogen Oxides)</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**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
<table>
<thead>
<tr>
<th>FFY</th>
<th>Project List</th>
<th>Funding Category</th>
<th>MPO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>Bus Replacement</td>
<td>Transit Improvements</td>
<td>BMC</td>
</tr>
<tr>
<td>2019</td>
<td>Bus Replacement</td>
<td>Transit Improvements</td>
<td>BMC</td>
</tr>
<tr>
<td>2018</td>
<td>LOTS State of MD Guaranteed Ride Home - Baltimore Area</td>
<td>Ride Sharing</td>
<td>BMC</td>
</tr>
<tr>
<td>2018</td>
<td>LOTS State of MD Guaranteed Ride Home - Washington DC Area</td>
<td>Ride Sharing</td>
<td>MWCOG</td>
</tr>
<tr>
<td>2019</td>
<td>LOTS State of MD Ridesharing Funds</td>
<td>Ride Sharing</td>
<td>State-sponsored</td>
</tr>
<tr>
<td>2018</td>
<td>Metro Rail Car Overhaul</td>
<td>Transit Improvements</td>
<td>BMC</td>
</tr>
<tr>
<td>2018</td>
<td>Baltimore City Bike Share Program</td>
<td>Bicycle and Pedestrian Facilities and Programs</td>
<td>BMC</td>
</tr>
<tr>
<td>2018</td>
<td>Baltimore City's Traffic Management Center</td>
<td>Congestion Reduction and Traffic Flow Improvements</td>
<td>BMC</td>
</tr>
<tr>
<td>2018</td>
<td>Adaptive &quot;Smart&quot; Signal Systemization - Baltimore Area</td>
<td>Congestion Reduction and Traffic Flow Improvements</td>
<td>BMC</td>
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<tr>
<td>2018</td>
<td>Adaptive &quot;Smart&quot; Signal Systemization - Washington DC Area</td>
<td>Congestion Reduction and Traffic Flow Improvements</td>
<td>MWCOG</td>
</tr>
<tr>
<td>2019</td>
<td>MD 180 (Jefferson Pike) at Mt. Zion Road - Park and Ride Lot</td>
<td>Ride Sharing</td>
<td>MWCOG</td>
</tr>
<tr>
<td>2019</td>
<td>MD 273 (Telegraph Road) at Appleton Road - Roundabout</td>
<td>Congestion Reduction and Traffic Flow Improvements</td>
<td>WILMAPCO</td>
</tr>
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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.
  o MPOs must include/document baseline performance and progress toward achieving those targets in the Metropolitan Transportation Plan (MTP).
• 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
MDOT CONTACTS

Toria Lassiter, Assistant Chief
Office of Planning and Preliminary Engineering
MDOT State Highway Administration
(O) 410-545-5731
tlassiter@mdot.maryland.gov

Virginia Burke, AICP, Transportation Air Quality Program Manager
Office of Planning and Capital Programming
Maryland Department of Transportation
(O) 410-865-1229
vburke@mdot.maryland.gov

Meredith Hill, Chief
Office of Planning and Preliminary Engineering
MDOT State Highway Administration
(O) 410-545-8739
mhill@mdot.maryland.gov