Baltimore Region
Transportation Board (BRTB)
Metropolitan Planning Organization

December 17, 2019

TPM 1:
ESTABLISHING HIGHWAY SAFETY IMPROVEMENT PROGRAM SAFETY TARGETS
Presented Outline:

1. MAP-21/FAST Act National TPM Goals
2. TPM 1 Safety Performance Measures
3. MDOT Target Setting Methodology
4. CY 2020 State Safety Target Summary
5. MPO Adoption Process
6. Statewide Historical Performance
7. Statewide TPM 1 Advancement
8. TPM 1 Resources
9. MDOT TPM Contacts
TPM 1. Safety (5 measures)

TPM 2. Infrastructure Condition (3 measures)

TPM 3. Congestion Mitigation (2 measures)

TPM 3: Travel Time Reliability (1 measure)

TPM 3: Air Quality (8 measures)

Environmental Sustainability

Reduced Project Delivery Delays

MAP-21/FAST ACT
NATIONAL TPM GOALS
**Number of Fatalities**
- The total number of persons suffering fatal injuries in a motor vehicle crash during a calendar year.

**Number of Serious Injuries**
- The total number of persons suffering at least one serious injury in a motor vehicle crash during a calendar year.

**Fatality Rate**
- The ratio of total number of fatalities to the number of vehicle miles traveled (VMT, in 100 Million VMT) in a calendar year.

**Serious Injury Rate**
- The ratio of total number of serious injuries to the number of VMT (in 100 Million VMT) in a calendar year.

**Non-Motorized Fatality & Serious Injuries**
- The combined total number of non-motorized fatalities and non-motorized serious injuries involving a motor vehicle during a calendar year.

**TPM 1: SAFETY PERFORMANCE MEASURES**
MDOT TARGET SETTING METHODOLOGY: TOWARD ZERO DEATHS

- MDOT's Maryland Highway Safety Improvement Plan (HSIP), submitted annually to FHWA on August 31st, communicates the State’s quantifiable and data-driven highway safety performance targets.

- MDOT maintains the Toward Zero Deaths (TZD) approach by developing interim targets to reduce overall fatalities and serious injuries by at least 50 percent by 2030.

- Starting with a baseline of 2008 to a fixed end goal in 2030, an exponential trend line is fitted between those points. Five-year rolling averages are used to calculate five-year projections. The targets for each individual year are taken from the midpoint of the five-year average, e.g., 2020 target = midpoint of the 2018 – 2022 average.

- This method is applied to the five performance measures required by the Federal Highway Administration (FHWA): fatalities, fatality rate, serious injuries, serious injury rate, and non-motorized fatalities and serious injuries with the first three being identical in Maryland’s HSP and HSIP.
<table>
<thead>
<tr>
<th>Measure</th>
<th>State Target (CY 2020)</th>
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<tbody>
<tr>
<td>Number of fatalities</td>
<td>425.7</td>
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<tr>
<td>Fatalities/100 million VMT</td>
<td>0.752</td>
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<tr>
<td>Number of serious injuries</td>
<td>3,029.4</td>
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<tr>
<td>Serious injuries/100 million VMT</td>
<td>5.372</td>
</tr>
<tr>
<td>Non-motorized fatalities &amp; serious injuries</td>
<td>465.8</td>
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**CY 2020 STATE SAFETY TARGET SUMMARY**
**MPO ADOPTION PROCESS**

- All MPOs must set a target for each of the 5 Safety Performance Measures for their metropolitan planning area.

- MPOs may adopt and support the State's targets, develop their own targets, or use a combination of both.

- MPOs that have previously adopted to support the state's targets and intend to continue to support these targets, you may act in one of two ways:
  1) *the Council/Board can adopt by a new resolution,* or
  2) *the Executive Director may send a letter to the attention of the Director of the Office of Planning and Capital Programming at MDOT, documenting the MPO’s continued support of the state’s TPM 1 Safety Targets.*

- MPOs must establish targets within 180 days of the State establishing and reporting its HSIP targets = February 27th.

- MPO safety targets are reported to the State DOT.
  - *MPOs must include baseline safety performance, safety targets and progress toward achieving those targets in the system performance report in the Long-Range Transportation Plan and other planning/programming documents.*
  - *MPOs must also include a description in the TIP of the anticipated effect of the TIP toward achieving targets in the MTP, linking investment priorities in the TIP to those safety targets.*

- State safety targets are assessed by FHWA annually.
## Statewide Historical Safety Data (2008 - 2018)

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<tbody>
<tr>
<td>Fatalities</td>
<td>591</td>
<td>549</td>
<td>496</td>
<td>485</td>
<td>511</td>
<td>465</td>
<td>442</td>
<td>520</td>
<td>505</td>
<td>550</td>
<td>513</td>
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<tr>
<td>Fatality Rate</td>
<td>1.07</td>
<td>0.99</td>
<td>0.88</td>
<td>0.86</td>
<td>0.90</td>
<td>0.82</td>
<td>0.78</td>
<td>0.89</td>
<td>0.88</td>
<td>0.92</td>
<td>0.86</td>
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<tr>
<td>Serious Injuries</td>
<td>4,544</td>
<td>4,383</td>
<td>4,051</td>
<td>3,809</td>
<td>3,312</td>
<td>2,957</td>
<td>3,053</td>
<td>2,595</td>
<td>3,164</td>
<td>3,345</td>
<td>3,224</td>
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<tr>
<td>Serious Injuries Rate</td>
<td>8.09</td>
<td>7.88</td>
<td>7.21</td>
<td>6.80</td>
<td>5.87</td>
<td>5.24</td>
<td>5.41</td>
<td>4.55</td>
<td>5.37</td>
<td>5.58</td>
<td>5.40</td>
</tr>
<tr>
<td>Non-Motorized Fatalities and Serious Injuries</td>
<td>653</td>
<td>606</td>
<td>547</td>
<td>537</td>
<td>508</td>
<td>510</td>
<td>537</td>
<td>481</td>
<td>708</td>
<td>711</td>
<td>693</td>
</tr>
<tr>
<td>Vehicle Miles Traveled</td>
<td>56,148</td>
<td>55,631</td>
<td>56,206</td>
<td>56,051</td>
<td>56,389</td>
<td>56,457</td>
<td>56,400</td>
<td>57,314</td>
<td>58,974</td>
<td>59,892</td>
<td>59,629</td>
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**Statewide Historical Performance**

**Maryland Department of Transportation**
Regional Partnerships, Resources & Outreach Programs

- Participation in Pedestrian Roadway Safety Audits
- Local representation/participation in the Strategic Highway Safety Plan
- Commercial vehicle safety partnerships
- Automated Speed Enforcement
- Signal System Retiming
- Application of High Friction Surface Treatment
- Pedestrian Safety Guidelines Development

- Overall safety grant funds obligated (FY 2019)
  - Statewide - $12.6 million
  - Baltimore Metropolitan Region ≈ $1 mil

- Overall grant funds used to support media, enforcement, education, and other programs.

STATEWIDE TPM 1 ADVANCEMENT
The Maryland Department of Transportation (MDOT) established performance targets for Safety, Infrastructure Condition, System Performance, and Congestion Mitigation and Air Quality (CMAQ), as specified under 23 U.S.C. 490 - National Performance Management Measures.

**TPM 1: SAFETY**

Maryland has set highway safety performance targets, maintaining the To-Weast 2016 death and injury rate below overall fatalities and serious injuries by at least 30 percent in the next two decades, starting with a baseline of 2008 to an end goal in 2030. The targets are based on the number of fatalities, calculated five-year average targets for each of the safety measures:

- **Total Fatalities**
  - 2000: 426
  - 2020 Target: 426

- **Total Serious Injuries**
  - 2000: 9,029
  - 2020 Target: 9,029

- **Total Fatality Rate (per 100M vehicle miles traveled)**
  - 2000: 0.712
  - 2020 Target: 0.712

- **Total Serious Injuries Rate (per 100M vehicle miles traveled)**
  - 2000: 3.737
  - 2020 Target: 3.737

- **Non-motorized Fatalities & Serious Injuries**
  - 2000: 400
  - 2020 Target: 400

**TPM 2: INFRASTRUCTURE CONDITION**

Infrastructure condition targets for the National Highway System (NHS) in Maryland were developed through the Transportation Model Management Plan (TPM) process for the entire system, regardless of ownership. The NHS in Maryland is owned and maintained by federal, state, and local agencies.

- **HNS Bridge Condition**
  - Baseline 2008: 27.6%
  - Two-Year 2020: 27.6%
  - Four-Year 2022: 24.4%
  - *Baseline was generated using conditions as reported in 2019 with best information available on nationally-owned bridges.

- **INTERSTATE PAVEMENT CONDITION**
  - Baseline 2017: 73.4%
  - Two-Year 2019: 73.4%
  - Four-Year 2021: 71.0%

- **NON-INTERSTATE NHS PAVEMENT CONDITION**
  - Baseline 2020: 86.7%
  - Two-Year 2021: 86.0%
  - Four-Year 2023: 84.3%

**TPM RESOURCES**

- **USDOT Planning Website:** [www.planning.dot.gov](http://www.planning.dot.gov)
- **FHWA Transportation Performance Management Website:** [www.fhwa.dot.gov/tpm](http://www.fhwa.dot.gov/tpm)
- **FHWA Transportation Performance Management Safety Target Setting Website:** [https://safety.fhwa.dot.gov/hsip/spm/state_safety_targets/](https://safety.fhwa.dot.gov/hsip/spm/state_safety_targets/)
MDOT CONTACTS

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

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