NYS TARGET SETTING METHODS FOR SYSTEM PERFORMANCE ON THE NATIONAL HIGHWAY SYSTEM
NYS Department of Transportation (NYSDOT)

Overview

Measures for the System Performance on the National Highway System are found in 23 CFR Part 490, Subpart E. This section defines two measures for Level of Travel Time Reliability (LOTTR):

1. % of Person Miles Traveled (PMT) on the Interstate that are reliable.
2. % of PMT on the non-Interstate National Highway System (NHS) that are reliable.

These measures compare longer travel time (80th percentile) to average travel time (50th percentile) during specified time periods.

Less than 1.5 is considered "reliable".
1.5 or greater is consider "unreliable".

Mileage that is "reliable" is multiplied by traffic volume, and an average vehicle occupancy factor to determine the PMT that is reliable.

The measures are the % that results from dividing reliable PMT by total PMT.

Date Sources

Speed Data: National Performance Management Research Data Set (NPMRDS)

Traffic Volume Data: Highway Performance Monitoring System (HPMS)

Average Vehicle Occupancy Factor: 1.7 (provided by FHWA for all vehicles)

Timeline

- ❑ State DOTs establish targets by May 20, 2018.
- ❑ MPOs must agree to support state targets or establish their own within 180 days of the State establishing its targets.
- ❑ FHWA assesses performance in 2020. If 2020 targets are not met, states must document actions taken to achieve the targets.
- ❑ 2022 targets may be adjusted in 2020.

NYSDOT's Target Setting Process

1. Establish trend:
   - ❑ Estimate the linear trend for both measures using data from 2014 to 2016. (Note: 2014 is first full year of NPMRDS data; in 2017, NPRMDS data was provided by a different vendor with different data specifications.)

2. Determine Baseline:
   - ❑ Calculate LOTTR based on actual 2017 data. This is the 2018 baseline.

3. Consider data challenges, including:
   - ❑ 2017 is the only available full year of data using the new vendor and revised data specifications.
   - ❑ There is no existing framework for forecasting future trends for these measures.
   - ❑ The NPMRDS data is improving each year, which could affect future results.
   - ❑ Future guidance on specific calculation methods could affect future results.
   - ❑ It is unclear if the linear trend developed using 2014-2016 NPMRDS data will be representative of future data trends.
   - ❑ Performance is expected to be judged on the data reported in 2020 and 2022.

4. Establish Targets:
   - ❑ Use the 2014-2016 linear trend to determine baseline data for 2020 and 2022.
   - ❑ Adjust trend by decreasing the resulting values by 10%.
   - ❑ Reconsider targets in 2020 based on additional data, guidance, and analysis.

Historic Data

Year	LOTTR-Interstate	LOTTR Non-Interstate NHS
2014	83.2	47.8
2015	82.6	46.2
2016	83.1	44.5
2017*	94.5	85.9

* Data vendor for NPMRDS changed in 2017.

Initial Targets*
LOTTR

Year	LOTTR Interstate	LOTTR Non-Interstate NHS*
2018 (Baseline)	94.5	85.9
2020	85.0	NA
2022	84.9	71.4

* Only a four-year target is required for the Non-Interstate NHS

Important Notes on Targets:

- ❑ The declining targets are **NOT** reflective of an analysis of future performance. The targets have been intentionally set to reflect the unknown and emerging nature of this data, as described in Step 3, above.
- ❑ 2017 is the only available full year of data. Targets are speculative pending a reliable data trend.
- ❑ Targets will be revisited in 2020.

NYS TARGET SETTING METHODS FOR FREIGHT PERFORMANCE ON THE INTERSTATE SYSTEM
NYS Department of Transportation (NYSDOT)

Overview

The measure for Freight Performance on the Interstate System is found in 23 CFR Part 490, Subpart F. This section defines the Truck Travel Time Reliability (TTTR) Index. The measure applies only to truck travel on the Interstate system.

This measure compares the longer truck travel time (95th percentile) to the average truck travel time (50th percentile) for each reporting segment on the interstate highway system. Segments are weighted by mileage. The highest value during the year in each defined time period is used for each segment.

Mileage weighted segments are summed and divided by the total interstate centerline miles.

No threshold is established.

Date Sources

Speed Data: National Performance Management Research Data Set (NPMRDS)

Timeline

- ❑ State DOTs establish targets by May 20, 2018.
- ❑ MPOs must agree to support state targets or establish their own within 180 days of the State establishing and reporting Highway Performance and Freight targets.
- ❑ FHWA assesses performance in 2020.
- ❑ If 2020 target is not met, a state must undertake extensive data reporting and analysis on its freight system.
- ❑ 2022 targets may be adjusted in 2020.

NYSDOT's Target Setting Process

1. Establish trend:
   - ❑ Estimate the linear trend for TTTR using data from 2014 to 2016. (Note: 2014 is the first full year of NPMRDS data; in 2017, NPRMDS data was provided by a different vendor with different data specifications.)

2. Determine Baseline:

   - ❑ Calculate LOTTR based on actual 2017 data. This is the 2018 baseline.

3. Consider data challenges, including:

   - ❑ 2017 is the only available full year of data using the new vendor and revised data specifications.
   - ❑ There is no existing framework for forecasting future trends for these measures.
   - ❑ The NPMRDS data, particularly truck data, is improving each year, which could affect future results.
   - ❑ Future guidance on specific calculation methods could affect future results.
   - ❑ It is unclear if the linear trend developed using 2014-2016 NPMRDS data will be representative of future data trends.
   - ❑ Performance is expected to be judged on the data reported in 2020 and 2022.

4. Establish Targets:

   - ❑ Use the 2014-2016 linear trend to determine baseline data for 2020 and 2022.
   - ❑ Adjust trend by decreasing the resulting values by 40%.
   - ❑ Reconsider targets in 2020 based on additional data, guidance, and analysis.

Historic Data

Year	TTTR
2014	1.61
2015	1.60
2016	1.65
2017*	1.38

* Data vendor for NPMRDS changed in 2017.

Initial Targets
LOTTR (Interstate)

Year	TTTR
2018 (Baseline)	1.38
2020	2.00
2022	2.11

Important Notes on Targets:

- ❑ The increasing targets are **NOT** reflective of an analysis of future performance. The targets have been intentionally set to reflect the unknown and emerging nature of this data as noted in Step 3 above.
- ❑ 2017 is the only available full year of data. Targets are speculative pending a reliable data trend.
- ❑ Targets will be revisited in 2020.

NYS TARGET SETTING METHODS FOR ON-ROAD MOBILE SOURCE EMISSIONS
NYS Department of Transportation (NYSDOT)

Overview

Measures to assess the Congestion Mitigation and Air Quality (CMAQ) program are found in 23 CFR Part 490, Subpart H. This section defines one measure, Total Emissions Reduction, for monitoring On-Road Mobile Source Emissions.

The Total Emissions Reduction measure is applicable to all States and MPOs with projects financed with funds from the 23 U.S.C. 149 (CMAQ program) apportioned to State DOTs for areas designated as nonattainment or maintenance for the National Ambient Air Quality Standard (NAAQS) pollutants, ozone (O_3), carbon monoxide (CO), or particulate matter (PM_{10} and $PM_{2.5}$).

The measure uses data from the CMAQ Public Access System to measure the amounts of criteria pollutants that are reduced statewide for states with nonattainment areas that have funded projects with CMAQ funds.

Date Sources

CMAQ Public Access Database

Timeline

- ❏ State DOTs establish targets by May 20, 2018.
- ❏ MPOs must agree to support state targets or establish their own within 180 days of the State establishing and reporting targets.
- ❏ 2022 targets may be adjusted in 2020.

NYSDOT's Target Setting Process

1. Establish trend:
   - ❏ Applied linear regression to the cumulative annual emission reductions for each criteria pollutant for the 2014 through 2017 period. (2014 is the first full year of the MOVES model, which would include the current calculations for estimating reductions.)
   - ❏ Removed outlier projects to ensure a more representative trend line.

2. Baseline was set as the 2017 actual data.

3. Establish Targets:

   - ❏ Adjust (reduce) the established trend to account for fleet efficiency improvements resulting from EPA emissions and fuel economy standards during the performance period, as reflected in the MOVES model.
   - ❏ Calculate the 2-year cumulative reduction by multiplying the 2018 baseline by 365 days, and the 2019 estimate by 365 days and summing the two products.
   - ❏ Calculate the 4-year cumulative reduction by multiplying the 2020 estimated reductions by 366 days and the 2021 estimated reductions by 365 days, summing the two products and adding the 2-year cumulative reductions.

Estimated Daily Average Reduction
(kg/day)

Federal Fiscal Year	VOC	CO	NOX	PM10	PM2.5
2018*	32.452	611.939	83.606	12.885	5.480
2019	30.505	587.462	76.917	12.627	5.260
2020	27.759	558.088	69.995	12.249	4.997
2021	26.371	541.346	64.395	11.881	4.748

*Baseline is 2017 actual data.

Initial Targets
(kg)

Target Year	VOC	CO	NOX	PM10	PM2.5
2020	22,979	437,781	58,591	9,312	3,920
2022	42,765	839,633	107,713	18,132	7,482