

DRAFT NYS SAFETY TARGET SETTING METHODS – 2019 TARGETS

NYS Department of Transportation, Office of Traffic Safety

Overview

As per the Highway Safety Improvement Program final rule (23 CFR Part 490); States are required to set targets for five safety performance measures.

The measures are the 5-year rolling averages for:

1. Number of Fatalities*
2. Rate of Fatalities (Fatalities / 100M VMT) *
3. Number of Serious Injuries*
4. Rate of Serious Injuries (Serious Injuries / 100M VMT)
5. Number of Non-motorized Fatalities and Non-motorized Serious Injuries

* Must be identical to the National Highway Traffic Safety Administration's Highway Safety Plan targets set annually by the Governors Traffic Safety Committee (GTSC).

MPO Requirements

MPOs establish safety targets by either:

- Agreeing to plan and program projects that contribute toward the accomplishment of the State DOT target or
- Committing to a quantifiable safety target for the metropolitan planning area.

Timeline

- GTSC reports targets in the annual HSP on July 1 each year.
- NYSDOT establishes safety targets in the HSIP annual report on August 31, 2018.
- MPOs must agree to support state targets or establish their own within 180 days of the State establishing and reporting its safety targets. The MPO targets are due February 28, 2019.

NYSDOT's Target Setting Framework

1. Estimate existing trend
 - A linear trendline is used as the forecasting method. It is a clear, straightforward method recommended by FHWA.
 - The five year moving average (current year plus four preceding years) is used as the data point for each year.
2. Adjust forecast for reasonability
3. Adjust forecast based on external and other factors where necessary

Step 1: Estimate existing trend

- Forecast 2019 using a 5-yr moving average linear trendline.
- Calculate a % change for 2015-2019 vs. 2012-2016.

Step 2: Adjust for reasonability

- Round the % change between 2015-2019 vs. 2012-2016.
- Apply a 4% cap.
The cap allows for a target that forecasts a significant reduction but recognizes that large decreases are difficult to sustain year after year.

Step 3: Adjust trend for external and other factors

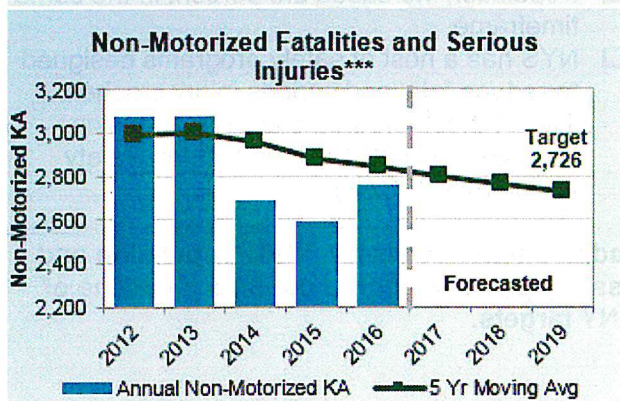
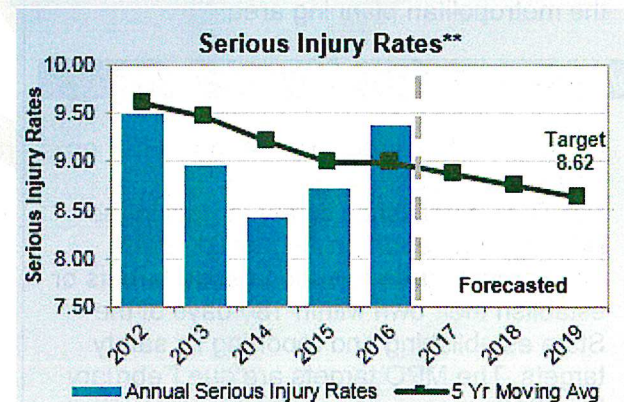
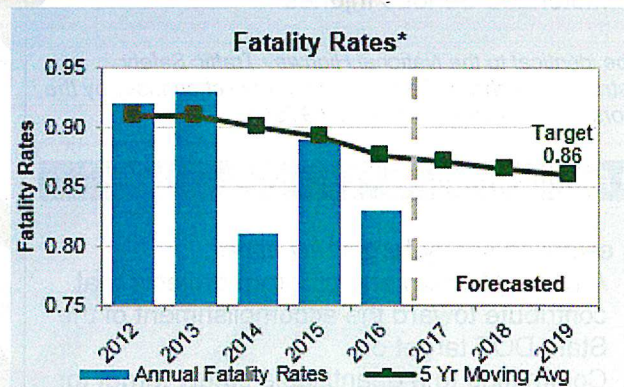
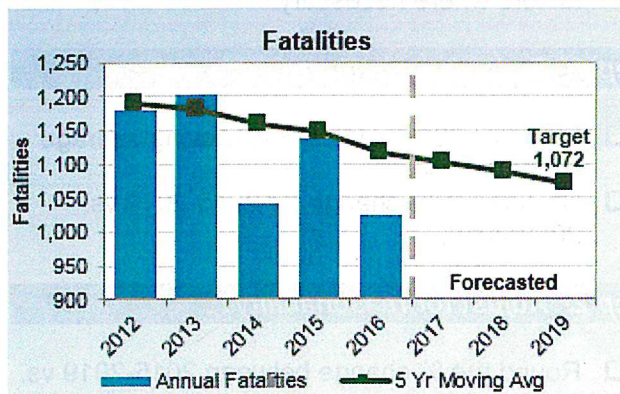
- VMT declined 10 percent between 2007 and 2016.
- Population increased 2.3 percent in the same timeframe.
- NYS has a host of safety programs designed to reduce fatal and serious injury crashes. Two of these programs are NYC's Vision Zero and the NYSDOT Pedestrian Safety Action Plan (PSAP).

No adjustment necessary. VMT, population and NY safety plans support a continued decline of the NY targets.

Draft 2019 Targets and Supporting Data

Measure	Last Annual and 5 yr baseline		Step 1: Forecast Using 5-Yr Moving Average Trendline		Step 2: Round and apply 4% Cap	
	2016 Annual	2016 Baseline 2012-2016 avg.	2019 Forecast	% Change 2015-2019 vs. 2012-2016	Rounded / Capped Percent	NYSDOT Target 2019
Number of Fatalities	1,025	1,117	1,068	-4.4%	-4.0%	1,072
Fatality Rate	0.83	0.88	0.86	-1.8%	-2.0%	0.86
Number of Serious Injuries	11,501	11,445	10,442	-8.8%	-4.0%	10,987
Serious Injury Rate	9.36	8.98	8.39	-6.6%	-4.0%	8.62
Number of Non-Motorized Fatalities and Serious Injuries	2,758	2,840	2,716	-4.4%	-4.0%	2,726

Graphs



Note: The 5 yr trend was generated using the FORECAST function in Excel. The 5 yr trend used the 5 yr averages on 2008-2012, 2009-2013, 2010-2014, 2011-2015, and 2012-2016 data.

*Fatality Rate computed using VMT from Highway Performance Monitoring System (HPMS)

**Serious Injury Rate computed using VMT from HPMS

*** Based on combined total of Pedestrian Fatalities and Bicyclist and Other Cyclist Fatalities from FARS.

BRIDGE PERFORMANCE MEASURES

NYS National Highway System
NYS Department of Transportation, Office of Structures

May 2018

Overview

On January 18, 2017, the Federal Highway Administration (FHWA) published the final rules that established regulations to assess the condition and performance of bridges on the NHS (23 CFR Part 490 “Subpart D—National Performance Management Measures for Assessing Bridge Condition”). This was issued to implement performance provisions established by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America’s Surface Transportation (FAST) Act.

Key Points

- Regulation applies to highway bridges carrying the NHS, which includes on- and off-ramps connected to the NHS and NHS border bridges.
- The regulation defines three classes for bridge condition assessment—percent of deck area of bridges in good, fair and poor conditions using the lowest of the four NBI ratings (Deck, Superstructure, Substructure and Culverts) on a 0-9 Scale:
 - Good when the lowest rating is ≥ 7
 - Fair if lowest rating is 5 or 6
 - Poor if lowest rating is ≤ 4

Target Setting

- Establish targets for:
 - % NHS Bridge by Deck Area in Good Condition.
 - % NHS Bridge by Deck Area in Poor Condition.
- Must establish statewide 2-year and 4-year targets by May 20, 2018 and report targets by October 1, 2018, in the Baseline Performance Period Report.
- May adjust 4-year targets at Mid Performance Period Progress Report (October 1, 2020).

Condition-Based Performance Measures

Requires State DOTs to maintain bridges so that the percentage of the deck area of bridges classified as Structurally Deficient (SD) does not exceed 10%.

Bridge Analysis Methodology

- Four-year analysis of all NHS bridges in the State.
- Bridge condition data baseline September 7, 2017.
- Includes programmed projects as of December 2, 2017 and tool selected projects with remaining budget.

MPO Requirements

- Support the relevant State DOT 4-year target or
- Establish their own target by 180 days after the State DOT target is established.

Penalties

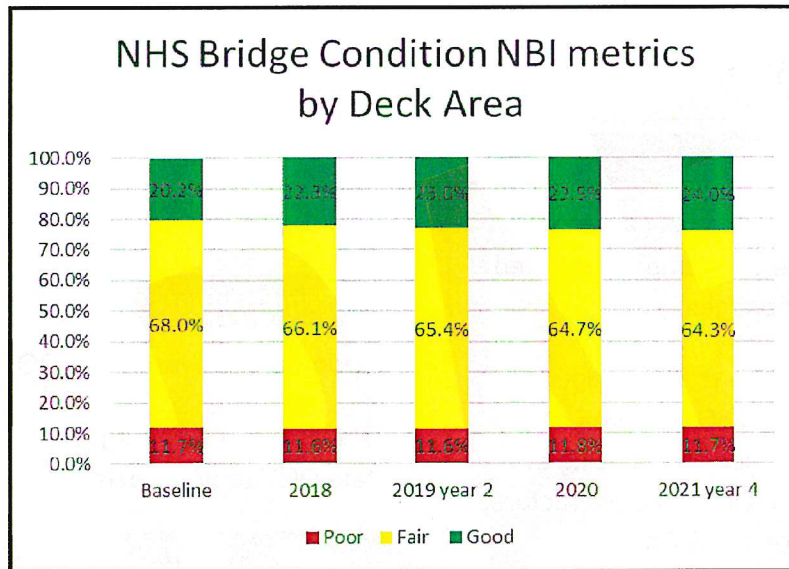
- Condition-Based: If for 3 consecutive years more than 10.0% of a State DOT’s NHS bridges’ total deck area is classified as Poor, the State DOT must obligate and set aside National Highway Performance Program (NHPP) funds for eligible projects on bridges on the NHS. This means that NYSDOT must set aside NHPP funds to be used exclusively for eligible bridge projects in the NHS before we can use the funding flexibility of the FAST Act.
- Target Setting: If significant Progress is not made for either target established for the NHS bridge condition measures, then the State DOT shall document the actions it will take to achieve NHS bridge condition target.

BRIDGE PERFORMANCE MEASURES

NYS National Highway System
 NYS Department of Transportation, Office of Structures

Initial Targets

NHS Bridge Condition Metrics by Deck Area			
Metric	Baseline	Year 2	Year 4
Good	20.2%	23.0%	24.0%
Poor	11.7%	11.6%	11.7%



NHS Bridges by Owner

Owner	Deck Area (SF)	% Good	% Fair	% Poor
NYSDOT	57,579,039	28.7	59.4	11.9
Authorities & Commissions	23,352,906	9.4	79.4	11.2
Municipalities	10,637,953	19.4	67.9	12.7
Other	293,361	72.6	24.4	3
Total	91,863,259	20.2	68.0	11.7

NYS PAVEMENT TARGET SETTING - DRAFT

NYS Department of Transportation, Office of Technical Services

Overview

As per 23 CFR Part 490 – National Performance Management Measures; States are required to set 2 year interim targets and 4 year targets for four pavement performance measures to assess performance of the National Highway System (NHS). The measures are:

1. Percentage of Interstate System in Good Condition
2. Percentage of Interstate System in Poor Condition
3. Percentage of non-Interstate NHS in Good Condition
4. Percentage of non-Interstate NHS in Poor Condition

MPO Requirements

MPOs establish pavement performance targets by either:

- Agreeing to plan and program projects that contribute toward the accomplishment of the State DOT target or
- Committing to a quantifiable target for each pavement performance measure for the metropolitan planning area.

Timeline

- States must establish pavement performance 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 its pavement targets. The first MPO targets are due by November 16, 2018.
- States have the option to adjust 4 year targets in their Mid Performance Period Progress Report, due October 1, 2020.

Performance Measure Determination

1. Metrics Analyzed *
 - Asphalt Surfaces – rutting, IRI (smoothness), cracking (percent area with fatigue cracking in the wheelpath)
 - Concrete Surfaces – faulting, IRI (smoothness), cracking (percent of concrete slabs with transverse cracks for jointed concrete pavement)
2. Performance Measure Determination
 - Good if all 3 metrics are good
 - Poor if 2 or more metrics are poor
 - Fair for all other combinations

* Metric thresholds shown in table under Additional Information

NYSDOT's Target Setting Framework

1. Use NYSDOT's accepted pavement management modeling program with committed projects and minimum expected future funding for the NHS
2. Use NYSDOT's Surface Score Rating System on pavement management sections
 - Score ≥ 8 equates to federal measure good
 - Score ≤ 5 equates to federal measure poor
3. Adjust percentages by applying the difference between the federal baseline percentage and state surface rating percentages to account for differences in rating systems and averaging that occurs over longer pavement management sections. Assume difference remains constant. Baseline data shown under Additional Information.

Recommended Pavement Performance Measure Targets - Draft

Federal Measure	Baseline (%)	2 Year Interim Target (%)	4 Year Target (%)
Interstate % Good	52.2	46.4	47.3
Interstate % Poor	2.7	3.1	4.0
Non-Interstate % Good	20.4	14.6	14.7
Non-Interstate % Poor	8.3	12.0	14.3

Additional Information

Federal Pavement Performance Condition Thresholds

Metric	Good	Fair	Poor
IRI (inches/mile)	<95	95-170	>170
Rutting (inches)	0.20	0.20-0.40	>0.40
Faulting (inches)	<0.10	0.10-0.15	>0.15
Cracking (%)	<5	5-20 (asphalt) 5-15 (JCPC) 5-10 (CRCP)	5-20 (asphalt) 5-15 (JCPC) 5-10 (CRCP)

Difference Between Federal Baseline and State Surface Rating

NHS Type	Baseline Federal Report		NYSDOT Score		Delta (Federal Report - NYSDOT)	
	% G	% P	%VG&E (≥8)	%P (≤5)	% G	% P
Interstate	52.2	2.7	45.2	1.5	7.0	1.2
non-Interstate	20.4	8.3	26.2	4.0	-5.8	4.3