

System Performance Report

Federal law requires states and Metropolitan Planning Organizations (MPOs) to establish and approve performance measures and targets related to transportation safety, highway operations, and transit systems. This report provides information on the performance measures and targets, including how our long-range transportation plan, [Moving Dutchess Forward](#), and our capital program, the 2023-2027 TIP, contribute to meeting established targets.

Background

Chapter 23 part 150(b) of the United States Code [23USC §150(b)] includes seven national performance goals for the Federal-Aid Highway Program:

- **Safety** – To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Capital Assets Condition** – To maintain the highway infrastructure and transit capital asset systems in a state of good repair.
- **Congestion Reduction** – To achieve a significant reduction in congestion on the National Highway System.
- **System Reliability** – To improve the efficiency of the surface transportation system.
- **Freight Movement & Economic Vitality** – To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental Sustainability** – To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- **Reduced Project Delivery Delays** – To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

For public transportation, the law states that performance management shall be used to advance the general policy and purposes of the public transportation program as included in 49 USC §5301(a) and (b).

The [Dutchess County Transportation Council \(DCTC\)](#) adopted [Moving Dutchess Forward](#), its current Metropolitan Transportation Plan (Plan), on July 27, 2021, and subsequently adopted its 2023-2027 TIP on August xx, 2022. Plans and Capital Programs (Transportation Improvement Programs, or TIPs) adopted or amended after the following dates must include performance targets for the measures listed here:

- May 27, 2018: Highway Safety Improvement Program (HSIP) and Highway Safety
- October 1, 2018: Transit Asset Management
- May 20, 2019: Pavement and Bridge Condition

- May 20, 2019: System Performance/Freight/Congestion Mitigation & Air Quality Improvement Program
- July 20, 2021: Transit Safety

MPOs must also include a system performance report in their Plan and TIP that describes the condition and performance of the transportation system with respect to required performance measures and targets, and reports on progress achieved in meeting the targets in comparison with baseline data and previous system performance reports.

We developed [Moving Dutchess Forward](#) and our 2023-2027 TIP in cooperation with our member agencies, including the New York State Department of Transportation (NYSDOT), Metropolitan Transportation Authority (MTA), and Dutchess County Public Transit. It reflects the investment priorities established by the MPO to improve transportation safety, reliability, and access to basic needs in Dutchess County, and incorporates feedback from stakeholder agencies and the public.

We believe our [System Performance Report for Moving Dutchess Forward](#) meets the requirements of 23 USC §134(i)(2)(B)(C), and that this System Performance Report for our TIP-Capital Program meets the requirements of 23 USC §134(j)(2)(D). Each of the measures and targets is described below, along with a discussion of how the TIP addresses them.

HSIP and Highway Safety

Performance Targets

On March 15, 2016, the Federal Highway Administration (FHWA) published the final rule for the HSIP and Safety Performance Management (Safety PM) Measures in the *Federal Register* with an effective date of April 14, 2016. The rule finalized five roadway safety measures:

- Number of Fatalities
- Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)
- Number of Serious Injuries
- Rate of Serious Injuries per 100 million VMT
- Number of Nonmotorized Fatalities and Serious Injuries

Each target is expressed as an annual five-year rolling average, which is the average of five individual, consecutive annual points of data. The five-year rolling average provides a smoothing effect for variations in data that may occur from year to year and helps to better evaluate progress over time in a more consistent fashion than one based on single year peaks and valleys.

The 2017 New York Strategic Highway Safety Plan (SHSP) is intended to reduce “the number of fatalities and serious injuries resulting from motor vehicle crashes on public roads in New York State.” The SHSP guides NYSDOT, the MPOs, and other safety partners in addressing safety and defines a

framework for implementation activities to be carried out across New York State. The NYSDOT HSIP annual report documents the statewide performance targets.

We agreed to support the NYSDOT statewide 2022 targets for the following Safety PM measures based on five-year rolling averages per Title 23 Part 490.207 of the *Code of Federal Regulations* on July 27, 2022 via Resolution DCTC Resolution #21-09:

Performance Measure	2022 Targets
Number of Fatalities	1,005.4
Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)	0.818
Number of Serious Injuries	11,173.9
Rate of Serious Injuries per 100 million VMT	9.084
Number of Non-Motorized Fatalities and Serious Injuries	2,644.1

Anticipated Effects

Safety is a critical component of our mission, and the projects on the TIP are consistent with the need to address safety. Safety is a primary consideration in the selection of projects to be included in the TIP. Improving safety is a recurring theme in [Moving Dutchess Forward](#) and is embodied in our stated goal to “Provide safe and convenient access for all people to housing, jobs, goods, services, and recreational amenities, regardless of age, ability, race, income, location, or mode of transportation.”

On March 1, 2022, we adopted a new project selection framework to help ensure that available federal transportation funds are used to carry the plan’s goals. The framework directly addresses the trends, barriers, best practices, and investments outlined in [Moving Dutchess Forward](#), with a focus on improving transportation safety, reliability, access to basic needs, and equity. For transportation safety, the framework asks if the proposed project will reduce Barriers to Safe Access, with a focus on how it achieves the following items:

- Improves safety at one or more high-crash intersections, segments, or corridors on state, county, or local roads. This includes high crash locations for vehicles, and for people walking or biking (see [Barriers to Safe Access Map](#)).
- Implements a safety-related recommendation from a DCTC Safety Assessment or other DCTC planning study.
- Promotes a systemwide approach to address a transportation safety issue such as roadway departures or speeding.

Although the TIP does not include any projects programmed with HSIP funds, many of the programmed projects using other fund sources are still expected to materially benefit the safety of the traveling public on roads throughout our area. This includes two road reconstruction projects – Grand Ave in the City of Poughkeepsie and Teller Ave in the City of Beacon – that include sidewalk and ADA improvements. These two projects total almost \$2.5 million in federal highway investment.

In addition, NYSDOT's regional capital program includes systemwide HSIP funded projects that may benefit our area. The anticipated effect of the overall program is that it will contribute toward achieving NYSDOT's safety performance targets.

Transit Asset Management

Performance Targets

On July 26, 2016, the Federal Transit Administration (FTA) published the final Transit Asset Management rule. This rule applies to all recipients and subrecipients of Federal transit funding that own, operate, or manage public transportation capital assets. The rule defines the term "state of good repair" (SGR), requires that public transportation providers develop and implement transit asset management (TAM) plans, and establishes performance measures for four transit asset categories: rolling stock, equipment, transit infrastructure, and facilities. The rule became effective on October 1, 2016.

Public transportation providers must establish TAM targets annually for the following fiscal year and report them to FTA. Each provider shares its targets with the MPO in which the provider's projects and services are programmed in the MPO's TIP. The MPO is required to establish its first set of TAM targets within 180 days of the date that public transportation provider established its first targets. After this, MPOs are not required to establish TAM targets each year after the transit provider establishes targets. Instead, MPOs must set updated TAM targets when the MPO updates its LRTP.

When establishing transit asset management targets, the MPO can either agree to program projects that will support the transit provider targets or establish its own separate transit asset management targets for the MPO planning area.

For the TAM rule, FTA defines two tiers of public transportation providers based on size. Tier I providers are those that operate rail service or more than 100 vehicles in all fixed route modes, or more than 100 vehicles in one non-fixed route mode. Tier II providers are those that are a subrecipient of FTA 5311 funds, or an American Indian Tribe, or have 100 or fewer vehicles across all fixed route modes or have 100 vehicles or fewer in one non-fixed route mode. Tier I providers must establish their own transit asset management targets, while Tier II providers have the option to establish their own targets or to participate in a group plan with other Tier II providers whereby targets are established by a plan sponsor for the entire group. A state DOT is typically the group TAM plan sponsor.

The following transit providers operate in our county: the MTA (Tier I) and County Public Transit (Tier II). The MTA has established its own targets listed below, while County Public Transit is participating in the New York State Group TAM Plan.

Asset Category - Performance Measure	Asset Class	Useful Life Benchmark	Baseline Condition
Rolling Stock			
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	Bus	n/a	%
	Cutaway Bus	n/a	%
	Mini-Bus	n/a	%
	Van	n/a	%
	Other (Medium Heavy-Duty Bus)	n/a	%
Equipment			
Age - % of non-revenue vehicles within a particular asset class that have met or exceeded their ULB	Non-Revenue/Service Automobile	n/a	%
	Trucks and other Rubber Tire Vehicles	n/a	61%
	Maintenance Equipment	n/a	%
	Other	n/a	73%
Infrastructure			
% of track segments with performance restrictions (as applicable)	Rail fixed guideway track	n/a	2%
Facilities			
Condition - % of facilities with a condition rating below 3.0 on the FTA TERM Scale	Administration	n/a	28%
	Maintenance	n/a	34%
	Parking Structures	n/a	24%
	Passenger Facilities	n/a	40%
	Shelter	n/a	%
	Storage	n/a	%
	Other	n/a	%

We agreed to support these transit asset targets on August 23, 2018 via Resolution #18-12, and they remain unchanged as of this writing. With this action, we agree to plan and program projects in the TIP that will, once implemented, make progress toward achieving the transit asset targets.

Anticipated Effects

Our TIP was developed and is managed in cooperation with the MTA and County Public Transit. The TIP includes specific investment priorities that support the MPO's goals, including transit asset management, using a project selection process that is anticipated to address transit SGR in the MPO planning area. The MPO's goal of addressing transit asset condition is linked to the investment plan of County Public Transit, and the process used to prioritize the projects within the TIP is consistent with federal requirements. TIP investments that address transit SGR include the following County Public Transit projects:

- 12 Heavy Duty bus replacements supported by \$4.7 million in federal funding
- 21 Medium Duty bus replacements supported by \$6.7 million in federal funding
- Preventive maintenance work supported by \$6.5 million in federal funding

As discussed for transportation safety, our new project selection framework helps ensure that available federal transportation funds are used to carry the goals of [Moving Dutchess Forward](#). For transit, the framework asks if a proposed project will reduce Barriers to Reliable Bus Access or Train Access. It also asks how the project will support recommended Transformative Packages such as Bus Service Improvements, including basic maintenance, repairs, and bus replacements.

We anticipate that the projects in the TIP, once implemented, will contribute toward achieving the established transit asset management targets. Improving the SGR of transit capital assets is an overarching goal of our MPO.

Pavement and Bridge Condition

Performance Targets

On January 18, 2017, FHWA published the Pavement and Bridge Condition Performance Measures Final Rule in the *Federal Register*. This second FHWA performance measure rule, which has an effective date of May 20, 2017 (originally February 17, 2017), established six performance measures to assess pavement conditions and bridge conditions for the National Highway Performance Program (NHPP).

The pavement condition measures represent the percentage of lane-miles on the Interstate and non-Interstate National Highway System (NHS) that are in good or poor condition. FHWA established five pavement condition metrics¹: International Roughness Index (IRI); cracking percent; rutting; faulting; and Present Serviceability Rating (PSR). FHWA set a threshold for each metric to establish good, fair, or poor condition. Each section of pavement is classified as being in good condition or poor condition

¹ Per FHWA, "To ensure consistent definitions, a distinction between 'performance measure' and 'performance Metric' was made in 23 CFR 490.101. A 'metric' is defined as a quantifiable indicator of performance or condition whereas a 'measure' is defined as an expression based on a metric that is used to establish targets and to assess progress toward meeting the established targets." (*FHWA Computation Procedure for the Pavement Condition Measures – FHWA-HIF-18-022*, FHWA Office of Infrastructure and Office of Policy & Governmental Affairs, April 2018)

based upon the ratings of the metrics applicable to that pavement type. Pavement sections that are not good or poor condition are classified as fair.

The bridge condition measures represent the percentage of bridges, by deck area, on the NHS that are in good condition or poor condition². The condition of each bridge is evaluated by assessing four bridge components: deck, superstructure, substructure, and culverts. The Final Rule created a metric rating threshold for each component to establish good, fair, or poor condition. If the lowest rating of the four metrics is greater than or equal to seven, the structure is classified as good. If the lowest rating is less than or equal to four, the structure is classified as poor. If the lowest rating is five or six, it is classified as fair.

NYSDOT established the statewide pavement and bridge condition performance targets in the table below on May 20, 2018. We subsequently agreed to support NYSDOT’s performance targets on August 23, 2018 via Resolution #18-11. By adopting NYSDOT’s targets, we agree to plan and program projects that help NYSDOT achieve these targets. The table below lists performance for each measure for the 2017 baseline year and for 2019.

Pavement & Bridge Condition Performance Measures	New York Performance 2017 Baseline	New York 2019 Actual Performance	New York 2-year Target (2019)	New York 4-year Target (2021)
Percent of Interstate pavements in good condition	N/A*	51.1%	N/A*	47.3%
Percent of Interstate pavements in poor condition	N/A*	1.1%	N/A*	4.0%
Percent of non-Interstate NHS pavements in good condition	36.7%	37.2%	14.6%	14.7%
Percent of non-Interstate NHS pavements in poor condition	26.7%	26.3%	12.0%	14.3%
Percent of NHS bridges (by deck area) in good condition	22.8%	26.0%	23.0%	24.0%
Percent of NHS bridges (by deck area) in poor condition	10.6%	9.6%	11.6%	11.7%

*For the first performance period only (January 1, 2018 through December 31, 2021), baseline condition and 2-year targets are not required for the Interstate pavement condition measures.

The two-year and four-year targets represent pavement and bridge condition at the end of calendar years 2019 and 2021.

² The sum of total deck area of good or poor NHS bridges is divided by the total deck area of all bridges carrying the NHS to determine the percent of bridges in good or in poor condition. Deck area is calculated by multiplying the structure length by either the deck width or approach roadway width.

Anticipated Effects

Maintaining, and where possible, improving the condition of NHS pavements and bridges is a critical component of our mission, and the projects on the TIP are consistent with the need to address the condition of these infrastructure assets. NHS highway and bridge conditions are primary considerations in the selection of projects to be included in the TIP.

Our focus on maintaining pavement and bridge conditions across our system, including NHS roads, serves as a key component of our mission, and is an important consideration in the selection of projects. It's also a recurring theme in [Moving Dutchess Forward](#), embodied in our stated goal to "Prepare a transportation system that can anticipate and adapt to changes in the population, economy, technology, climate, and travel behavior." Our new project selection framework specifically asks how a proposed project "Maintains existing infrastructure, including roads, bridges, transit systems, sidewalks, and trails." The TIP includes one NHPP funded project that will materially improve pavement and bridge conditions on the NHS system in Dutchess County: the rehabilitation of a bridge on Route 22 over the Wassaic Creek in the Town of Amenia. In addition, NYSDOT's regional capital program includes several multi-county, systemwide NHPP funded projects that will benefit our area.

We anticipate that the projects in the TIP, once implemented, will contribute toward achieving NYSDOT's pavement and bridge condition targets.

System Performance, Freight, and Congestion Mitigation and Air Quality

Performance Targets

On January 18, 2017, FHWA published the system performance, freight, and CMAQ Performance Measures Final Rule in the *Federal Register*. This third and final FHWA performance measure rule, which has an effective date of May 20, 2017 (originally February 17, 2017), established six performance measures to assess the performance of the NHS, freight movement on the Interstate System, and traffic congestion and on-road mobile source emissions for the CMAQ Program.

There are two NHS performance measures that represent the reliability of travel times for all vehicles on the Interstate and non-Interstate NHS. FHWA established the Level of Travel Time Reliability (LOTTR) metric to calculate reliability on both the Interstate and non-Interstate NHS. LOTTR is defined as the ratio of longer travel times (80th percentile) to a normal travel time (50th percentile) during four time periods from the hours of 6 AM to 8 PM each day (AM peak, midday, and PM peak on Mondays through Fridays and weekends). The LOTTR ratio is calculated for each segment of applicable roadway. A segment is reliable if its LOTTR is less than 1.5 during all time periods. If one or more time periods has a LOTTR of 1.5 or above, that segment is unreliable. The measures are expressed as the percentage of person-miles traveled on the Interstate and non-Interstate NHS that are reliable.

The single freight movement performance measure represents the reliability of travel times for trucks on the Interstate system. FHWA established the Truck Travel Time Reliability (TTTR) Index, which is

defined as the ratio of longer truck travel times (95th percentile) to a normal truck travel time (50th percentile). The TTTR Index is calculated for each segment of the Interstate system over five time periods from all hours of each day (AM peak, midday, and PM peak on Mondays through Fridays, overnights for all days, and weekends). The highest TTTR Index value among the five time periods is multiplied by the length of the segment, and the sum of all length-weighted segments is then divided by the total length of Interstate to generate the TTTR Index.

There are three traffic congestion and on-road mobile source emissions performance measures that represent peak hour excessive delay per capita (PHED), non-single occupancy vehicle (SOV) travel, and total on-road mobile source emissions reductions. We meet all current air quality standards and are not subject to establishing targets for these performance measures.

NYS DOT established the statewide system performance and freight performance targets in the table below on May 20, 2018. We subsequently agreed to support the NYS DOT statewide targets on August 23, 2018 via Resolution #18-11. The table below lists the performance for each measure for the 2017 baseline year and for 2019.

System Performance Measures	New York Performance 2017 Baseline	New York 2019 Actual Performance	New York 2-year Target (2019)	New York 4-year Target (2021)
Percent of person-miles on the Interstate system that are reliable (Interstate LOTTR)	83.2%	78.8%	73.1%	73.0%
Percent of person-miles on the non-Interstate NHS that are reliable (Non-Interstate NHS LOTTR)	77.0%	80.3%	N/A	63.4%
Truck travel time reliability index (TTTR)	1.39	1.47	2.00	2.11

Anticipated Effects

Providing for the reliable movement of people and goods is a critical component of our mission, and the projects on the TIP are consistent with the need to address the reliability of travel times for vehicles, including trucks. These are primary considerations in the selection of projects to be included in the TIP. As with safety and transit, our new project selection framework helps ensure that available federal transportation funds are used to carry the goals of [Moving Dutchess Forward](#), which includes system reliability. We address this in our goal to “Provide safe and convenient access for all people to housing, jobs, goods, services, and recreational amenities, regardless of age, ability, race, income, or mode of transportation.” For system reliability, the framework asks if the proposed project will reduce Traffic Congestion, with a focus on how it improves travel time reliability or reduces delay at [high-congestion locations](#) or other congested locations identified by us or through another study. These congested locations include those identified by us in our Congestion Management Process

(CMP). Our framework also asks how a proposal provides a reliable alternative to driving, such as through transit, walking or bicycling, on or adjacent to the congested location.

Our TIP includes projects programmed with funds from various funding programs that have benefits to reliability in travel times for people and freight. This includes a countywide signal improvement project for NYSDOT roads and intersections, totaling \$1.2 million in STBG-Flex funding. In addition, NYSDOT's regional capital program includes several multi-county, systemwide travel demand projects that will benefit our area. This includes the Newburgh-Beacon Ferry that connects the City of Newburgh to the Beacon Train Station.

We anticipate that the projects in the TIP, once implemented, will contribute toward achieving NYSDOT's system performance and freight performance targets.

Transit Safety

Performance Targets

The FTA published a final Public Transportation Agency Safety Plan (PTASP) rule on July 19, 2018. Under this rulemaking, providers of public transportation systems that are a recipient or sub-recipient of FTA Urbanized Area Formula Grant Program funds under 49 U.S.C. Section 5307, or that operate a rail transit system that is subject to FTA's State Safety Oversight Program, must develop and implement a PTASP based on a Safety Management Systems (SMS) approach. As it relates to this documentation, each PTASP must include performance targets based on the safety performance measures established in FTA's National Public Transportation Safety Plan (NSP). Other elements of a PTASP include but are not limited to approval by the agency's Accountable Executive and Board of Directors, designation of a Chief Safety Officer, documented processes of the agency's SMS, an employee reporting program, and process and timeline for annual reviews and updates of the PTASP.

Providers subject to the rule must annually certify a PTASP, including targets for transit safety measures that cover fatalities, injuries, safety events, and system reliability. The date by which providers must first certify a PTASP and targets was initially July 20, 2020. However, FTA extended the deadline to July 20, 2021, to provide regulatory flexibility due to the operational challenges presented by the COVID pandemic.

Upon establishing transit safety targets, a public transportation provider must make the targets available to the MPO in which the provider's projects and services are programmed in the MPO's TIP. The MPO is required to establish its first set of transit safety targets within 180 days of the date that provider established its first targets. After this, MPOs are not required to establish transit safety targets each year after the transit provider establishes targets. Instead, MPOs must set updated targets when the MPO updates its LRTP.

An MPO must reflect the transit safety targets in any LRTP and TIP updated on or after July 20, 2021. When establishing transit safety targets, the MPO can either agree to program projects that will support the transit provider targets or establish its own separate targets for the MPO planning area.

The MTA and County Public Transit are the only transit providers in Dutchess County that are subject to the PTASP rule. They are responsible for developing a PTASP and establishing transit safety targets annually. However, a PTASP is not required for Commuter Railroads such as Metro-North Railroad since they fall under the Federal Railroads Administration’s jurisdiction for safety. Accordingly, we have taken no action on Metro-North’s PTASP but will do so for County Public Transit. County Public Transit set the following transit safety targets on May 11, 2021:

Transit Mode	Fatalities (total)	Fatalities (specify rate)	Injuries (total)	Injuries (specify rate)	Safety Events (total)	Safety Events (specify rate)	System Reliability
Fixed Route Bus	0	0	2	0.16	1	0.08	30,825
Demand Response	0	0	2	1.11	1	0.55	12,814

We endorsed County Public Transit’s transit safety measures and targets on July 27, 2021 via Resolution #21-08, agreeing to plan and program projects that are anticipated to make progress toward achieving the targets.

Anticipated Effects

Our TIP was developed and is managed in cooperation with the MTA and County Public Transit. It includes specific investment priorities that support the MPO’s goals, including transit safety, using a project selection process that is anticipated to address transit operations in the MPO planning area. Specifically, our goal of addressing transit safety is linked to the safety plan of County Public Transit, and the process used to prioritize the projects within the TIP is consistent with federal requirements. The County’s PTASP identifies safety issues and safety risk mitigation strategies, which include recurring safety training sessions, safety management activities, and daily safety inspections. Though our TIP does not program federal funding specific to transit safety beyond bus replacements, it does include \$50,000 in state funding for bus shelters, bicycle racks, benches, and other amenities, which will improve transit safety.

As mentioned for the other measures, our new project selection framework ensures that available federal transportation funds are used to carry the goals of [Moving Dutchess Forward](#). For transit safety, the framework asks if a proposed project will reduce Barriers to Reliable Bus Access or Train Access. It also asks how the project will support recommended Transformative Packages such as Bus Service Improvements, including basic maintenance, repairs, and bus replacements. We anticipate that the projects in the TIP, once implemented, will contribute toward achieving the established transit safety targets. We will continue to coordinate with our transit providers to improve the safety of travelers in our planning area and maintain transit assets in a state of good repair.