

2023

National Performance Measures Report



GTC

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En Español

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Financial assistance for the preparation of this report was provided by the Federal Highway Administration and Federal Transit Administration. The Genesee Transportation Council is solely responsible for its content and the views and opinions expressed herein do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

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TABLE OF CONTENTS

Addressing Performance Targets 1

 Introduction 1

 Background 1

 Long Range Transportation Plan 2

 Transportation Improvement Program 3

HSIP and Highway Safety 4

 Performance Targets..... 4

 Targets 4

 Performance Plan and Reporting..... 4

 Significant Progress Determination..... 5

 LRTP 2045 Alignment..... 5

 TIP Anticipated Effects 6

Transit Asset Management..... 7

 Performance Targets..... 7

 Targets 7

 Performance Plan and Reporting..... 8

 Significant Progress Determination..... 9

 LRTP 2045 Alignment..... 9

 TIP Anticipated Effects 9

Pavement and Bridge Condition 11

 Performance Targets..... 11

 Targets 11

Significant Progress Determination.....	12
Performance Plan and Reporting – Pavements.....	13
Significant Progress Determination – Pavements.....	13
Performance Plan and Reporting – Bridges	13
Significant Progress Determination – Bridges.....	14
LRTP 2045 Alignment – Pavements & Bridges.....	14
TIP Anticipated Effects	15
System Performance, Freight, and Congestion Mitigation and Air Quality (CMAQ).....	16
Performance Targets.....	16
Targets	17
Performance Plan and Reporting.....	17
Significant Progress Determination.....	17
LRTP 2045 Alignment.....	18
TIP Anticipated Effects	18
Greenhouse Gases	19
Transit Safety	20
Performance Targets.....	20
Targets	21
Performance Plan and Reporting.....	21
Significant Progress Determination.....	22
LRTP 2045 Alignment.....	22
TIP Anticipated Effects	22
Appendix 1 – Methodologies	24
Highway Safety.....	24

Pavement..... 24
Bridges..... 26

Addressing Performance Targets

Introduction

As the designated Metropolitan Planning Organization (MPO) for the Genesee-Finger Lakes Region, the Genesee Transportation Council (GTC) is required to document National Performance Measures and Targets in support of performance-based planning and programming per the Final Rule governing Metropolitan Planning pursuant to the requirements of the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation (FAST) Act published on May 27, 2016. The Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law (BIL), is the current federal surface transportation authorization that was signed into law on November 15, 2021. The IIJA/BIL continues these requirements concerning performance-based planning.

The *National Performance Measures Report for the Genesee-Finger Lakes Region* is updated periodically to include the GTC Board's latest actions regarding respective State and transit agency performance targets and to reflect the most recent Federal guidance. This Report outlines the National Performance Measures and Targets.

Background

Pursuant to federal requirements, MPOs must employ a transportation performance management approach in carrying out their federally-required planning and programming activities.

For the Federal-Aid Highway Program, 23 USC § 150(b) includes the following seven national performance goals:

- 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 and 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 practice.

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

Each MPO, such as GTC, is required per 23 USC § 134 (B)(i)(1) to establish performance targets that address the performance measures to use in tracking progress toward attainment of critical outcomes for the region.

The Rochester Genesee Regional Transportation Authority (RGRTA) is the public transportation provider for the Rochester Urbanized Area. Under the National Performance Measures requirements, RGRTA and the New York State Department of Transportation (NYSDOT) are responsible for establishing specific performance targets. As the designated MPO for the region, GTC has the option of adopting the targets set by RGRTA and/or NYSDOT and programming projects towards achieving those targets or to establish different targets. GTC has elected to adopt the RGRTA and NYSDOT targets and agrees to program investments in support of the performance measures and targets listed in this report.

On July 13, 2018, a *Performance Management Agreement between the Genesee Transportation Council, New York State Department of Transportation, and the Rochester Genesee Regional Transportation Authority* was executed. This agreement documents the roles and responsibilities of each organization on the implementation of the National Performance Measures in the region.

Long Range Transportation Plan

Long Range Transportation Plans, per 23 USC § 134(j)(2)(C), must include a:

“System performance report. A system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets described in subsection (h)(2), including (i) progress achieved by the metropolitan planning organization in meeting the performance targets in comparison with system performance recorded in previous reports”.

Any LRTP amended or adopted after May 27, 2018 must include performance targets associated with the federally mandated national performance measures.

In accordance with the federal transportation authorization, *Long Range Transportation Plan for the Genesee-Finger Lakes Region 2045* (LRTP 2045) must include a system performance measures report. The *National Performance Measures Report for the Genesee-Finger Lakes Region* is fully incorporated by reference into LRTP 2045 and serves as the plan’s complete system performance measures report.

GTC’s commitment to performance measures predates the above requirements for MPOs. For over a decade the LRTP has included regionally significant performance measures, in addition to

the national performance measures noted in this report. The current plan, LRTP 2045, adopted in June 2021 continues this commitment to a performance-based planning process.

Carefully tracked performance measures indicate how well the transportation system is meeting regional goals and expectations. A performance-based planning approach intends to improve project and program delivery, inform decision-making, keep priorities at the forefront, and provide for greater transparency. Decisions are backed by data, facilitating justification of realistic and achievable transportation investments. As the organization charged with setting the policy direction and overseeing the regional transportation system, it is GTC's responsibility to measure how well the system is performing. The LRTP 2045 performance measures are meant to inform and guide regional decision making regarding the surface transportation system.

Performance measures presented in LRTP 2045 are grouped into categories that directly tie back to the five recommendation categories as follows:

- Health and Safety
- Access and Equity
- System Management and Maintenance
- Sustainability and Resilience
- Economic Development

For each performance measure, a benchmark is listed, along with a target direction that indicates improvement, or the maintenance of an already well-performing metric, consistent with the GTC Goals and Objectives. For a complete listing of regional performance measures unique to the Genesee-Finger Lakes Region please reference the Evaluating Progress chapter in LRTP 2045.

Transportation Improvement Program

Transportation Improvement Programs (TIP), per 23 USC § 134(j)(2)(D), "shall include, to the maximum extent practicable, a description of the anticipated effects of the transportation improvement program toward achieving the performance targets established in the metropolitan transportation plan, linking investment priorities to those performance targets".

The GTC *2023-2027 Transportation Improvement Program* was developed and is managed in cooperation with NYSDOT and RGRTA. It reflects the investment priorities established in the *Long-Range Transportation Plan for the Genesee-Finger Lakes Region 2045*, which incorporates comments and input from affected agencies and organizations and the public.

Highway Safety Improvement Program (HSIP) and Highway Safety

Performance Targets

On March 15, 2016, 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 NYSDOT is responsible for establishing statewide targets for Safety performance measures. The Safety performance measures assesses the absolute number of individuals affected by reportable crashes and the rates at which they occur by transportation system usage. The numbers of fatalities and serious injuries are first calculated using rolling five-year averages. The rates are calculated by normalizing the number of fatalities or serious injuries by the rolling five-year average of vehicle miles traveled (VMT).

The measures for the number and rates of fatalities and serious injuries include all system users. The measure for non-motorized system users include only pedestrians, bicyclists, and other cyclists.

What constitutes a fatality and/or serious injury is defined by the Model Minimum Uniform Crash Criteria, approved by United States Department of Transportation (USDOT). Fatalities include all deaths which occur within thirty days following a motor vehicle or other crash. Serious injuries include skull fractures, internal injuries, broken or distorted limbs, unconsciousness, severe lacerations, severe burns, and individuals unable to leave the scene without assistance.

Targets

Table 1 – Highway Safety Targets for 2023 and 2024

Performance Measure	Targets	
	2023	2024
Number of Fatalities	988.2	1016.1
Rate of Fatalities per 100M Vehicle Miles Traveled (VMT)	.836	0.886
Number of Serious Injuries	11,086.2	11,089.9
Rate of Serious Injuries per 100M VMT	9.337	9.606
Number of Nonmotorized Fatalities and Serious Injuries	2,633.4	2,268.4

Performance Plan and Reporting

The 2023 New York State *Strategic Highway Safety Plan* (SHSP) “strives for an equitable and sustainable transportation system that works towards zero fatalities and zero serious injuries for all roadway users.” 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.

According to FHWA, “the Highway Safety Improvement Program (HSIP) is a core Federal-aid program with the purpose to achieve a significant reduction in traffic fatalities and serious

injuries on all public roads, including non-State-owned roads and roads on tribal land.”¹ The NYSDOT Traffic and Safety Division submits the HSIP annually to FHWA. The HSIP report sets the annual safety performance targets as required by 23 CFR Part 490.209(a)1.

The Highway Safety Improvement Program Report (HSIP) and the Strategic Highway Safety Plan (SHSP) are updated annually by NYSDOT and the NYS Governor’s Traffic Safety Council, respectively. They collaborate on setting statewide targets.

Significant Progress Determination

As part of the HSIP Annual Report, FHWA assessed NYSDOT’s progress toward achieving its 2021 safety targets and determined that NYSDOT did not make significant progress. Only the Number of Fatalities met the targeted reduction and the other measures failed to make significant progress. There have been changes to data standardization and collection relating to serious injuries since the targets were initially set. Per 23 CFR § 490.211(d), NYSDOT will submit a performance improvement plan per 23 USC § 148(i) and reapportion HSIP obligation authority until the safety targets are met again. NYSDOT continues to concentrate on the Emphasis Areas outlined in the *Strategic Highway Safety Plan*. Site specific projects at high accident locations and systemic improvement projects are being implemented to meet crash goals.

L RTP 2045 Alignment

Increasing safety for all users, especially those that are most vulnerable, is a key tenet of L RTP 2045. L RTP 2045 clearly states that the regional transportation system should ensure that all users, regardless of physical ability or chosen mode of transportation, are able to travel safely and securely.

L RTP 2045 outlines fifteen recommendations, as part of the Health and Safety recommendation group, that guide local and regional decision making toward a health- and safety-focused framework. Key recommendations that support the National Safety Performance Measures include:

- HS-9 Rural Highway Intersection Safety Evaluation
- HS-10 Pedestrian Intersection Assessment
- HS-11 Mid-Block Crossing Safety
- HS-14 Safe Routes to Community Destinations
- HS-15 Pedestrian Intersection Enhancements

¹ <https://highways.dot.gov/safety/hsip>

To support implementation of these recommendations and advance progress towards these performance targets, more than \$350 million of Federal, State, and local funding is projected to be programmed through 2045 into the following Investment Categories:

- Safety Enhancements - \$266 million; and
- Safety Emphasis Areas - \$96 million.

TIP Anticipated Effects

Safety is a critical component of GTC's 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. As previously noted, GTC works with NYSDOT to cooperatively develop and manage the TIP. Prior to each TIP/STIP cycle, GTC is provided Planning Targets for each Federal formula fund source. All projects submitted for consideration of funding from the Planning Targets are evaluated against multiple criteria. The extent to which the project improves the safety of the existing transportation system is the highest weighted criterion. The TIP includes projects programmed with HSIP funds and other fund sources that are expected to materially benefit the safety of the traveling public on roadways throughout the TIP planning 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 the 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.

GTC has the Rochester-Genesee Regional Transportation Authority (Tier 1) (RGRTA) operating in the planning area. RGRTA's initial TAM Plan was adopted on September 30, 2018 and is updated on an annual basis. The TAM Plan reports on projected targets for the next fiscal year; condition assessments and performance results; and a narrative report on changes in transit system conditions and the progress toward achieving previous performance targets.

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. GTC agreed to support these transit asset targets on June 10, 2021 via Resolution 21-48. With this action, GTC agrees to plan and program projects in the TIP that will, once implemented, make progress toward achieving the transit asset targets.

Targets

The transit asset management performance measures assess the condition in which a transit capital asset can operate at a full level of performance. A capital asset is in a state of good repair when that asset can perform its designed function; does not pose a known unacceptable safety risk; and its lifecycle investments must have been met or recovered. Targets are provided for Rolling Stock, Equipment, and Facilities. Transit Infrastructure is not included as a major asset class because RGRTA does not own any rail fixed-guideway track, signals or other systems.

For age-based assets, the target represents the percentage of assets per class that exceed the RGRTA-defined Useful Life Benchmarks (ULB). RGRTA has opted to adjust the industry-standard Expected Useful Life (EUL) to reflect RGRTA's anticipated useful life based on operational experience. These targets will be used in capital planning to highlight where additional

investment is needed. The performance measure for Rolling Stock is the percentage of revenue vehicles within a particular asset class that have either met or exceeded their ULB.

RGRTA owns ten facilities, and these are rated to FTA's Transit Economic Requirements Model (TERM) – Lite scale of one (1) (poor) to five (5) (excellent). The performance target represents the percentage of Facilities rated below a three (3).

The performance measure for Equipment or non-revenue, support-service and maintenance vehicles are the percentage of those vehicles that have either met or exceeded their ULB.

Performance targets for Rolling Stock, Facilities, and Equipment are shown in Table 2 below.

Table 2 – Transit Asset Management Targets

Asset Category - Performance Measure	Asset Class	Useful Life Benchmark (ULB)	2023 Target
Rolling Stock			
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	40' Bus	12	7%
	60' Articulated Bus	12	0%
	Paratransit IA	4	15%
	Regional Type III	5	15%
	Regional Type IV	7	15%
Equipment			
Age - % of non-revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	Non Revenue Cars	7	24%
	Maintenance Vehicles	Various	58%
Facilities			
Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	Passenger/Parking	n/a	20%
	Administration/Maintenance	n/a	20%

Performance Plan and Reporting

RGRTA's initial TAM Plan was adopted on September 30, 2018 and is updated on an annual basis to reflect service changes. The TAM Plan reports on projected targets for the next fiscal year; condition assessments and performance results; and a narrative report on changes in transit system conditions and the progress toward achieving previous performance targets. The asset category data (i.e., Rolling Stock, Equipment, Facilities, and Transit Infrastructure) is reported annually to FTA's National Transit Database.

Significant Progress Determination

Significant progress is not determined for Transit Asset Management Targets. There are no penalties or rewards regarding missing and/or meeting the targets.

L RTP 2045 Alignment

L RTP 2045 broadly supports maintaining the existing transportation system, including transit facilities. The goals and objectives support maintaining and preserving the existing system (#5 - promote efficient system management and operations - the transportation system should be designed and managed in a fashion that minimizes lifetime maintenance and user costs). Maintaining the existing transportation system in a state of good repair is an identified transportation system need. Transportation agencies in the region are prioritizing federal-aid investments on preserving existing transportation infrastructure assets.

L RTP 2045 outlines twenty-one recommendations, as part of the System Management and Maintenance group, that emphasize the preservation of the existing transportation system. Key recommendations that support the National Transit Performance Measures include:

- MM-13 Preventative maintenance
- MM-19 Repair and rehabilitation
- MM-20 Infrastructure replacement

To support implementation of these recommendations and advance progress towards these performance targets, more than \$1 billion of Federal, State, and local funding is projected to be programmed through 2045 into the following Investment Categories:

- Transit Rolling Stock - \$998 million;
- Transit Electrification \$100 million; and
- Transit Facilities - \$96 million.

TIP Anticipated Effects

The GTC TIP was developed and is managed in cooperation with the RGR TA. 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 TIP planning area. The MPO's goal of addressing transit asset condition is linked to the investment plan of the RGR TA, and the process used to prioritize the projects within the TIP is consistent with federal requirements.

The focus of GTC's investments that address transit "state of good repair" (SGR) include:

- 63 – 40' bus replacements;
- 20 – 60' bus replacements;
- 50 – paratransit bus replacements;
- 5 – Low-Floor bus replacements;

- 6 – Type VI bus replacements;
- 2 – Hydrogen bus acquisitions;
- 2 – Hydrogen van acquisitions; and
- Annual preventive maintenance of buses.

GTC anticipates 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 the 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 State DOT, in this case NYSDOT, is responsible for establishing targets for both pavement and bridge condition performance measures.

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 metrics²: 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 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. Good condition assumes that no major investment is needed, while poor condition assumes that major investment is needed.

The bridge condition measures represent the percentage of bridges, by deck area, on the NHS that are in good condition or poor condition³. 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.

Targets

The State DOT is required to set statewide two- and four-year targets for all pavement condition measures. The MPO is only required to take action on the four-year target. The State must establish targets for the entire NHS, even if they do not own the facility. Only the mainline of the highway is evaluated—not ramps, shoulders, and so forth.

² 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)

³ 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.

The State DOT is required to set two- and four-year targets for the bridge condition measures. Again, the MPO is only required to take action on the four-year target. The measure requires that State DOTs maintain bridges so that the percentage of the deck area of bridges classified as Structurally Deficient (SD) does not exceed 10 percent for three or more consecutive years.

The two-year and four-year targets represent pavement and bridge condition at the end of calendar years 2023 and 2025, and are shown in Table 3 below.

Table 3 – Pavement and Bridge Condition Targets

	2017	2018	2019	2020	2021	2022	2023	2024	2025
Period 1	Baseline		Target		Target				
Period 2					Baseline		Target		Target
Percentage of Pavements of the Interstate System in Good Condition									
Annual	-	53	51.1	45.5	45.3				
Target	-				47.3		53.2		54.3
Percentage of Pavements of the Interstate System in Poor Condition									
Annual		1.2	1.1	0.7	1.1				
Target					4		1.4		1.7
Percentage of Pavements of the Non- Interstate NHS in Good Condition									
Annual			13.4	18.3	18.9				
Target			14.6		14.7		22.3		20.7
Percentage of Pavements of the Non- Interstate NHS in Poor Condition									
Annual			7.5	7.3	7.6				
Target			12		14.3		9.3		10.9
Percentage of NHS Bridges Classified as in Good Condition									
Annual	22.8	24.4	26	25.3	25.3				
Target			23		24		24.1		21.1
Percentage of NHS Bridges Classified as in Poor Condition									
Annual	10.6	10.2	9.6	10.9	11.3				
Target			11.6		11.7		12.5		12.8

Significant Progress Determination

FHWA determines significant progress for these measures after the mid-point and end of each performance period. A State has met or made significant progress toward target achievement if “actual” condition/performance is equal to or better than the established two-year target or “actual” condition/performance is better than baseline performance 23 CFR 490.109(e). As provided in 23 CFR 490.107(b)(2)(ii)(A), baseline condition/performance is derived from the latest data collected through the beginning date of the performance period. FHWA will classify the assessment of progress toward the achievement of an individual 2-year or 4-year target as

“progress not determined” if a State provides the extenuating circumstance information required in 23 CFR 490.109(e)(5), and FHWA accepts the information.”⁴

Performance Plan and Reporting – Pavements

NYSDOT submits pavement condition data related to full distress and the International Roughness Index (IRI) through FHWA’s Highway Performance Monitoring System (HPMS). The HPMS data is then used to determine the pavement condition on the system. In previous reporting periods a direct comparison between the baseline and actual results and the targets for non-Interstate NHS pavement cannot be made, due to different calculation methodologies used for the targets.

The Transportation Asset Management Plan (TAMP), completed by NYSDOT in June 2019, documents both bridge and pavement conditions on the state’s system and outlines a path for maintaining these assets. According to federal legislation the TAMP must outline a management plan for NHS pavements and bridges.

Significant Progress Determination – Pavements

NYSDOT recently reported the 2022 Full Performance Period (i.e., the first full four-year performance period) to FHWA for pavement and bridge performance for the last two years of the four-year performance period, as well as progress toward achieving the four-year targets. NYSDOT also reported the new two-year and four-year targets for the next performance period, 2023 and 2025 respectively, as shown in Table 3 above.

FHWA has yet to formally determine if significant progress has been achieved for the 2022 Full Performance Period. It is anticipated that significant progress will be determined in the summer of 2023.

If significant progress is not made, the pavement condition measure carries a penalty provision per 23 CFR 490.109(f) for State DOTs, if the Interstate pavement conditions falls below the minimum level for the most recent year. If this happens the State must then obligate a portion of the National Highway Performance Program (NHPP) and transfer a portion Surface Transportation Funding (STP) to address Interstate pavement conditions.

Performance Plan and Reporting – Bridges

NYSDOT submits bridge condition data to FHWA through the National Bridge Inventory (NBI) based on a 0-9 scale, 0 indicating failed condition and 9 indicating excellent condition.

NYSDOT recently reported the 2022 Full Performance Period (i.e., the first full four-year

⁴ https://www.fhwa.dot.gov/tpm/reporting/state/condition.cfm?state=New+York#perf_target

performance period) to FHWA, as well as progress toward achieving the four-year targets. NYSDOT also reported the new two-year and four-year targets for the next performance period, 2023 and 2025 respectively, as shown in the table above.

As noted above, the TAMP is the state's asset management plan for bridges with special emphasis placed on NHS facilities.

Significant Progress Determination – Bridges

FHWA has yet to formally determine if significant progress has been achieved for the 2022 Full Performance Period.

If significant progress is not made, the bridge condition measure carries a penalty provision per 23 CFR 490.109(f). The measure requires that State DOTs maintain bridges so that the percentage of the deck area of bridges classified as Structurally Deficient (SD) does not exceed 10 percent for three or more consecutive years. If the State DOT fails to meet this requirement, penalties are imposed. If this happens the State must then obligate a portion of the National Highway Performance Program (NHPP) funds for eligible bridge projects on the NHS. If significant progress is not made for either of the bridge performance measures, the State DOT must document actions it will take to achieve the NHS bridge condition target.

L RTP 2045 Alignment – Pavements & Bridges

L RTP 2045 broadly supports maintaining the existing transportation system and not building new high-capacity facilities. The goals and objectives support maintaining and preserving the existing system (#5 - promote efficient system management and operations - the transportation system should be designed and managed in a fashion that minimizes lifetime maintenance and user costs). Maintaining the existing transportation system in a state of good repair is an identified transportation system need. Transportation agencies in the region are prioritizing federal-aid investments on preserving existing transportation infrastructure assets.

L RTP 2045 outlines twenty-one recommendations, as part of the System Management and Maintenance group, that emphasize the preservation of the existing transportation system. Key recommendations that support the National Pavement Performance Measures include:

- MM-13 Preventative maintenance
- MM-18 Corrective maintenance treatments
- MM-19 Repair and rehabilitation
- MM-20 Infrastructure replacement

To support implementation of these recommendations and advance progress towards these performance targets, over \$1 billion of Federal, State, and local funding is projected to be programmed through 2045 into the following Investment Categories:

- NHS Assets: Pavements - \$724 million;
- NHS Assets: Bridges - \$1,176 million; and
- Thruway Capital (including pavements and bridges) - \$919 million.

TIP Anticipated Effects

Maintaining (and, where possible, improving) the condition of NHS pavements and bridges is a critical component of GTC's 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.

Pavement and bridge conditions are primary considerations in the selection of projects to be included in the TIP. As noted above, GTC works with NYSDOT to cooperatively develop and manage the TIP. Prior to each TIP/STIP cycle, GTC is provided Planning Targets for each Federal formula fund source. All projects submitted for consideration of funding from the Planning Targets are evaluated against multiple criteria. The extent to which the project improves the condition of the existing pavements and bridges is the second highest weighted criterion, only after safety. These projects are prioritized using pavement and bridge condition data, treatment life, and traffic volume. The evaluations are conducted for pavement and bridge preventive maintenance and rehabilitation/replacements, respectively.

The TIP includes projects programmed with NHPP funds and other fund sources that are expected to materially benefit the condition of pavement and bridge assets throughout the metropolitan planning area. GTC anticipates 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 (CMAQ)

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.

The CMAQ Performance Measures are as follows:

- Annual hours of peak hour excessive delay per capita (PHED)
- Percent of non-single occupant vehicle travel (Non-SOV)
- Cumulative two-year and four-year reduction of on-road mobile source emissions for CMAQ funded projects (CMAQ Emission Reduction)

The three CMAQ performance measures listed above are applicable only to designated nonattainment areas or maintenance areas for National Ambient Air Quality Standards by the Environmental Protection Agency. GTC meets all current air quality standards and is not subject to establishing targets for these performance measures.

Targets

The System Performance and Freight Performance Measures and Targets are shown in Table 4 below.

Table 4 – System Performance Targets

	2017	2018	2019	2020	2021	2022	2023	2024	2025
Period	Baseline		Target		Target				
Period					Baseline		Target		Target
Percent of Person-Miles Traveled on the Interstate that are Reliable									
Annual	83.2	80.7	78.8	86.9	81.6*				
Target			73.1		73		75		75
Percent of Person-Miles Traveled on the Non-Interstate NHS that are Reliable									
Annual			80.3	86.8	85.7				
Target					63.4		70		70
Interstate Highway Truck Travel Time Reliability Index									
Annual	1.39	1.43	1.47	1.33	1.39*				
Target			2		2.11		2		2

*as adjusted by FHWA per NYSDOT

Performance Plan and Reporting

NYSDOT submits highway reliability data to FHWA through the annual Highway Performance Monitoring System (HPMS) data submittal and the Biennial Performance Report.

NYSDOT recently reported the 2022 Full Performance Period (i.e., the first full four-year performance period) to FHWA, as well as progress toward achieving the four-year targets. NYSDOT also reported the new two-year and four-year targets for the next performance period, 2023 and 2025 respectively, as shown in Table 4 above.

Significant Progress Determination⁵

FHWA has yet to formally determine if significant progress has been achieved for the 2022 Full Performance Period. FHWA determines if significant progress has been made at the mid-point and the end of each performance period (i.e., every two or four years). According to 23 CFR 490.109(e) significant progress towards a target is met or made if “actual” condition/performance is equal to or better than the established two-year target or “actual” condition/performance is better than baseline performance. Per, 3 CFR 490.109(f) there are no consequences if the targets have not been met.

⁵ https://www.fhwa.dot.gov/tpm/reporting/state/reliability.cfm?state=New+York#perf_target

L RTP 2045 Alignment

L RTP 2045 recognizes that overall, the region's transportation system is reliable, and congestion is not a major barrier to the movement of goods and people. The transportation system performs well by traditional standards with minimal traffic congestion and reliable travel times as compared to major metropolitan areas of similar size. L RTP 2045 strives to maintain the current level of reliability through the efficient management of the existing system (e.g., Transportation System Management and Operations (TSMO) strategies) and does not recommend adding new capacity to address congestion constraints.

L RTP 2045 outlines recommendations, as part of the System Management and Maintenance and the Economic Development groups, that seek to maintain the existing transportation system overall reliability. Key recommendations that support the National System Performance Measures include:

- MM-1 TSMO Programs and Services
- MM-2 Intelligent Transportation System (ITS) Integration
- MM-4 Core TSMO Programs
- MM-7 Traffic Incident Management
- MM-9 Congestion Management Process
- MM-21 Advanced ITS Field Instrumentation
- ED-1 Freight Corridor Reliability

To support implementation of these recommendations and advance progress towards these performance targets, approximately \$130 million of Federal, State, and local funding is projected to be programmed through 2045 into the following Investment Category:

- Systems Management and Operations - \$130 million.

TIP Anticipated Effects

Providing for the reliable movement of people and goods is a critical component of GTC's 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.

National Highway System, freight, and emissions reductions are significant considerations in the selection of projects to be included in the TIP. As noted above, GTC works with NYSDOT to cooperatively develop and manage the TIP. Prior to each TIP/STIP cycle, GTC is provided Planning Targets for each Federal formula fund source. All projects submitted for consideration of funding from the Planning Targets are evaluated against multiple criteria. The extent to which the project improves system performance and reduces emissions are primary criteria.

The TIP also includes projects that are not primarily intended to address deficiencies in system performance but do address such deficiencies as part of the larger project. The TIP includes projects programmed with NHPP, STGB, and other fund sources that are expected to have benefits to improve the reliability in travel times for people and freight.

The projects on the TIP align with the *Genesee-Finger Lakes Regional Transportation System Management and Operations (TSMO) Strategic Plan*. The TIP includes funding for the continued operations of the Regional Traffic Operations Center and Highway Emergency Local Patrol program. These programs and ITS expansion support reductions in non-recurring delay (including secondary crashes) and emissions related to congestion.

Congestion Mitigation and Air Quality Improvement Program (CMAQ) funds have been programmed to support the implementation of low/no-emissions vehicles and travel demand management programs. Such programs include the implementation of shared mobility programs that have introduced bike share, vanpool, and other transportation options that have demonstrated potential to reduce single-occupancy vehicular trips.

The TIP includes projects programmed with funds from various funding programs that have benefits to reliability in travel times for people and freight. GTC anticipates that the projects in the TIP, once implemented, will contribute toward achieving NYSDOT's system performance and freight performance targets.

Greenhouse Gases

On July 15, 2022, FHWA published a Notice of Proposed Rulemaking (NPRM) concerning greenhouse gas (GHG) performance measures and targets. A final rule has yet to be published. The NPRM calls for State DOTs and MPOs to support the national GHG emission reduction goals. Specifically, the GHG targets must support the goal of net-zero emissions by 2050. Therefore, State DOTs and MPOs must establish declining CO2 emissions year over year.

Applicability - All mainline highways on the Interstate and non-Interstate National Highway System (NHS)

Proposed Measure - Percent change in tailpipe carbon dioxide (CO2) emissions on the NHS compared to the reference year (Calendar Year 2021)

Proposed Metric - Annual total tailpipe CO2 emissions on the NHS

The New York State Climate Leadership and Community Protection Act (Climate Act), signed into law on June 18, 2019, requires New York to reduce total greenhouse gas emissions 40 percent by 2030 and no less than 85 percent by 2050 from 1990 levels.⁶

⁶ <https://climate.ny.gov/>

Transit Safety

Performance Targets

The Federal Transit Administration (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-19 public health emergency.

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 Rochester-Genesee Regional Transportation Authority is subject to the PTASP rule in the GTC planning area. They are responsible for developing a PTASP and establishing transit safety targets annually. In December 2023, the RGRTA Board of Commissioners approved the 2023-2024 PTASP. RGRTA has set December 2023 through December 2024 targets to meet the latest PTASP requirement. GTC agreed to support RGRTA's transit safety targets on February 29, 2024 via Resolution 24-02, thus agreeing to plan and program projects that are anticipated to make progress toward achieving the targets.

Targets

The PTASP must include performance targets for the performance measures established by FTA in the National Public Transportation Safety Plan, which was published on January 28, 2017.

The transit safety performance measures are as follows, and are shown in Table 5 below:

- Total number of reportable fatalities by mode.
- Reportable fatality rate per total vehicle revenue miles by mode.
- Total number of reportable injuries by mode.
- Rate of reportable injuries per total vehicle revenue miles by mode.
- Total number of reportable safety events by mode.
- Rate of reportable safety events per total vehicle revenue miles by mode.
- System reliability – mean distance between major mechanical failures by mode.

Table 5 – Transit Safety Performance Targets for the Rochester-Genesee Regional Transportation Authority (RGRTA)

Transit Mode	Service	Fatalities (total)	Fatality Rate (per 100,000 VRM)	Injuries (total)	Injury Rate (per 100,000 VRM)	Safety Events (total)	Safety Event Rate (per 100,000 VRM)	System Reliability (VRM per change off)
Fixed Route	DO	0	0	42	0.71	23	0.39	5,500
Demand Response	DO	0	0	6	0.33	3	0.17	20,000

PT= Purchased Transportation; DO = Directly Operated; VRM = Vehicle Revenue Miles

Performance Plan and Reporting

Currently, RGRTA is not required to report the Safety Performance Targets to FTA. Instead, FTA will review the Public Transportation Agency Safety Plan (PTASP) to ensure compliance with federal regulations.⁷

⁷ <https://www.transit.dot.gov/sites/fta.dot.gov/files/2021-06/SPTs-Guide-v2-20210629.pdf>

Significant Progress Determination

The transit safety performance measures are new. Performance for each measure has only recently been assessed and initial targets have been developed. Future National Performance Measures Reports will discuss transit safety performance and progress towards meeting the targets over time. To date, FTA has not imposed penalties for transit providers that do not meet their Safety Performance Targets. Therefore, a determination of significant progress is not officially made.

L RTP 2045 Alignment

Increasing safety for all users, especially those that are most vulnerable, is a key tenet of L RTP 2045. L RTP 2045 clearly states that the regional transportation system should ensure that all users, regardless of physical ability or chosen mode of transportation, are able to travel safely and securely.

L RTP 2045 outlines recommendations, as part of the Health and Safety, Access and Equity, and the System Management and Maintenance groups, that lay out programs and policies that promote safety, enhance transit, and champion system preservation. Key recommendations that support the National Transit Safety Performance Measures include:

- HS-13 Self-Enforcing Street Design
- AE-1 Primary Equity Considerations
- AE-2 Equity in Design and Maintenance
- AE-8 Transit Supportive Street Design
- AE-17 Transit Facility Support
- MM-20 Infrastructure Replacement

To support implementation of these recommendations and advance progress towards these performance targets, Federal, State, and local funding is projected to be programmed through 2045 into the following Investment Categories:

- Transit Rolling Stock - \$998 million; and
- Transit Services and Operations - \$2,317 million.

While, the majority of the funding will be used for daily operations, a portion of the funding will be used to advance safety initiatives.

TIP Anticipated Effects

The GTC TIP was developed and is managed in cooperation with RGR TA. The TIP 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. The MPO's goal of addressing transit safety is linked to the safety plans of the RGR TA, and the process used to prioritize the projects within the TIP is consistent with federal requirements.

GTC's investments that address transit safety include on-going preventive maintenance of rolling stock and a commitment to associated transit improvements that provide safe, accessible connections between transit trips and other modes.

GTC anticipates that the projects in the TIP, once implemented, will contribute toward achieving the established transit safety targets. GTC will continue to coordinate with the region's transit provider(s) to improve the safety of travelers in the MPO planning area and maintain transit assets in a state of good repair.

Appendix 1 – Methodologies

Highway Safety

Data Sources

Fatality totals are provided by the Fatality Analysis Reporting System (FARS) and injury totals are provided by the New York State Traffic Safety Statistical Repository (TSSR). The TSSR provides public access to the Accident Information System (AIS) managed by the NYS Department of Motor Vehicles. The data portal was designed and implemented by the University at Albany's Institute for Traffic Safety Management and Research (ITSMR) and funded by the Governor's Traffic Safety Committee (GTSC).

The vehicle miles traveled projections are provided by the Highway Performance Monitoring System (HPMS) submitted by NYSDOT to USDOT. The projections are based upon vehicle counts across the functional classification system statewide.

Target Setting

The targets are calculated by first estimating the existing statewide trends for each measure. For example, a forecast for 2022 is made using a five-year moving average linear trend line. The percentage change, rounded and capped at two percent between 2018-2022 and 2015-2019 is then extrapolated to 2022. The cap allows for a target that forecasts a significant reduction, but recognizes that large decreases are unlikely to happen year after year.

NYSDOT and the GTSC report on the progress towards achieving the targets to USDOT on annual basis in the Highway Safety Improvement Program (HSIP) Annual Report and the Highway Safety Plan, respectively. NYSDOT established their initial performance targets. On December 14, 2017, GTC formally incorporated the initial NYSDOT Safety performance measures and targets into GTC's planning documents and planning process. NYSDOT will update its targets, shown in Table 5, on an annual basis.

Pavement

Data Sources

The four pavement condition measures represent the percentage of lane-miles on the Interstate and non-Interstate NHS that are in good condition or poor condition. The PM2 rule defines NHS pavement types as either asphalt, jointed concrete, or continuously reinforced concrete pavement (CRCP), and defines five pavement condition metrics that states are to use to assess pavement condition:

- International Roughness Index (IRI) – an indicator of roughness; applicable to all three pavement types.
- Cracking percent – percentage of the pavement surface exhibiting cracking; applicable to all three pavement types.
- Rutting – extent of surface depressions; applicable to asphalt pavements only.

- Faulting – vertical misalignment of pavement joints; applicable to jointed concrete pavements only.
- Present Serviceability Rating (PSR) – a quality rating that is applicable only to NHS roads with posted speed limits of less than 40 miles per hour, for example toll plazas and border crossings.

A state may choose to collect and report PSR for applicable segments as an alternative to the other four metrics. For each pavement metric, a threshold is used to establish good, fair, or poor condition. Table 5, that follows below, lists the thresholds. Using these metrics and thresholds, pavement condition is assessed for each

0.1 mile section of the through travel lanes of mainline highways on the Interstate or the non-Interstate NHS, as follows:

- Asphalt segments are assessed using the IRI, cracking, and rutting metrics, while jointed concrete segments are assessed using IRI, cracking, and faulting. For these two pavement types, each segment is rated good if the rating for all three metrics are good, and poor if the ratings for two or more metrics are poor.
- Continuous concrete segments are assessed using the IRI and cracking metrics. A segment is rated good if both metrics are rated good, and poor if both metrics are rated poor.
- If a state collects and reports PSR for any applicable pavement segments, those segments are rated according to the PSR scale in Table 6, below.

For all three pavement types, sections that are not good or poor are rated fair. The good/poor pavement condition measures are expressed as a percentage and are determined by summing the total lane-miles of good or poor highway segments and dividing by the total lane-miles of all highway segments on the applicable system. Pavement in good condition suggests that no major investment is needed. Pavement in poor condition suggests major reconstruction investment is needed in the near term.

Table 6 – Federal Pavement Performance Condition Metric Thresholds

Metric	Good	Fair	Poor
IRI (inches/miles)	<95	95-170	>170
Rutting (inches)	0.2	0.20-0.40	>0.4
Faulting (inches)	<0.10	0.10-0.15	>0.15
Cracking (%)	<5	5-20 (asphalt)	5-20 (asphalt)
	<5	5-15 (JCPC)*	5-15 (JCPC)*
	<5	5-10 (CRCP)**	5-10 (CRCP)**

**JCPC – Jointed Plain Concrete Pavement*

***CRCP - Continuously Reinforced Concrete Pavement*

Data Sources

The following data sources are used:

- NYSDOT’s accepted pavement management modeling program with committed projects and minimum expected future funding for the NHS
- NYSDOT’s Surface Score Rating System on pavement management sections
 - Score \geq 8 equates to federal measure good
 - Score \leq 5 equates to federal measure poor

The New York State Department of Transportation (NYSDOT) adjusted the 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. This assumes the difference remains constant.

Bridges

Data Sources

The deck area, the surface of the bridge, is calculated using data from the NBI, structural length and deck width or approach roadway width (for select culverts).

The National Bridge Inventory (NBI), maintained by the Federal Highway Administration, classifies the condition all bridges and tunnels in the U.S. with roads that pass above or below. The bridge condition ratings from the NBI for the deck, superstructure, substructure, and culvert are used to calculate the measure. The condition of the bridge is determined by the lowest rating of the four NBI classifications. The NBI rates the four classifications on a 0-9 scale, as shown below:

- Good when the lowest rating is ≥ 7
- Fair if the lowest rating is a 5 or 6
- Poor if the lowest rating is ≤ 4

The deck area, the surface of the bridge, is calculated using data from the NBI, structural length and deck width or approach roadway width (for select culverts).