National Performance Measures Report

for the Genesee-Finger Lakes Region

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NATIONAL PERFORMANCE MEASURES REPORT

Introduction

As the designated Metropolitan Planning Organization 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.

GTC's commitment to performance measures predates this requirement. For over a decade the *Long Range Transportation Plan for the Genesee-Finger Lakes Region* (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 measures 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 please reference the Evaluating Progress chapter in LRTP 2045.

In accordance with the federal transportation authorization, 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.

National Performance Measures

As previously noted, MAP-21 directed the U.S. Department of Transportation to establish a set of performance measures to increase the accountability and transparency of the federal highway and transit programs and improve project decision-making through performance-based planning and programming through the rulemaking process. In 2015, the FAST Act continued the performance management and performance-based planning and programming requirements of MAP-21 with minor changes.

Pursuant to MAP-21 (and carried through into the FAST Act), MPOs must employ a transportation performance management approach in carrying out their federally-required planning and programming activities. Chapter 23 part 150(b) of the *United States Code* [23USC §150(b)] includes the following 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.

Infrastructure Condition – To maintain the highway infrastructure asset system 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.

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

The Final Rules established national Performance Measures across four subject areas (see Table 1) which require that state Departments of Transportation (DOTs) and providers of public transportation must:

- establish performance targets that reflect the measures;
- report on progress towards achieving those targets;
- develop performance based plans for safety and asset management; and
- implement a performance based approach to planning and programming.

The National Performance Measures Report documents statewide performance measures and targets. The exception is the performance measures listed in the Transit Asset Management Plan. For a listing of regional performance measures, unique to the nine-county GTC planning region, please reference the Evaluating Progress chapter found in the Long Range Transportation Plan for the Genesee-Finger Lakes Region 2045.

Table 1 – National Performance Measures Timeline

Final Rule	Federal Effective	GTC Board Action Date
Transit Asset Management	March 16, 2016	June 8, 2017
Safety	July 26, 2016	December 14, 2017* August 27, 2020
Pavement and Bridge Condition	May 20, 2017	December 13, 2018
System Performance	May 20, 2017	December 13, 2018

*Initial GTC Board Action

23 U.S.C. § 134 (B)(i)(1) requires that each Metropolitan Planning Organization (MPO), such as GTC, 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 as each performance measure area was finalized. Furthermore, GTC 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. Since RGRTA and NYSDOT have the opportunity, and sometimes obligation, to adjust their performance targets outside of the MPO process, it was determined that GTC would use this stand-alone document for the national performance measures, in order to nimbly respond to changes in performance targets established by NYSDOT and RGRTA. Background information on each of the individual National Performance Measures along with the agreed to corresponding targets follows.

Image credit: RTS

Transit Asset Management

All transit providers that are recipients or subrecipients of Federal financial assistance under 49 U.S.C. Chapter 53 and own, operate, or manage transit capital assets used in the provision of public transportation are required to develop Transit Asset Management (TAM) Plans to achieve and maintain a State of Good Repair. RGRTA's initial TAM Plan was adopted on September 30, 2018 and is updated on an annual basis.

Entities submitting a TAM Plan will submit annual reports to the Federal Transit Administration (FTA) with:

- Projected targets for the next fiscal year;
- Condition assessments and performance results; and
- Narrative report on changes in transit system conditions and the progress toward achieving previous performance targets.

The Final Rule on Transit Asset Management requires MPOs to coordinate with transit providers in urban areas to set TAM performance targets, and integrate those performance targets into their planning documents. MPO's have the option to either agree to program investments in support of the transit operator's targets or set their own quantifiable targets. The Rochester Genesee Regional Transportation Authority, the Tier I transit provider for the Rochester Urbanized Area, established their initial performance targets. On June 8, 2017, GTC formally incorporated the RGRTA performance measures and targets into GTC's planning documents and planning process. On December 13, 2018 GTC adopted the updated TAM performance measures as reported in the initial TAM Plan adopted by RGRTA on September 30, 2018. The transit assets in the rural counties served by RGRTA are included in this report as well.

The transit asset management performance measures assess the condition in which a transit capital asset is able to operate at a full level of performance. A capital asset is in a state of good repair when that asset:

- is able to perform its designed function;
- does not pose a known unacceptable safety risk; and
- its lifecycle investments must have been met or recovered.

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.

Rolling Stock

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. Examples of Rolling Stock are noted in Table 2 below.

Table 2 – Rolling Stock

Asset	Description	EUL (years)	ULB (years)
40' Bus	RTS fixed-route service	12	12
60' Articulated Bus	RTS fixed-route service	12	12
Paratransit IA	RTS Access service	4	5
Regional Type III	24' rural service bus	5	5
Regional Type VI	29' rural service bus	7	7

Facilities

RGRTA owns ten (10) facilities, including:

- RTS Administration Building
- RTS Operations Building
- RTS Service Building
- RTS Transit Center
- RTS Access Administration/Maintenance Facility
- RTS Access Bus Storage Facility
- RTS Livingston Administration Building
- RTS Livingston Bus Storage
- RTS Orleans Facility
- RTS Wyoming Facility

The facilities are rated to FTA's Transit Economic Requirements Model (TERM) – Lite scale of 1 (poor) to 5 (excellent). The performance target represents the percentage of assets rated below a 3.

Equipment

The performance measure for non-revenue, support-service and maintenance vehicles equipment is the percentage of those vehicles that have either met or exceeded their ULB. Examples of equipment follow in Table 3 below.

Table 3 – Equipment

Asset	Description	EUL (years)	ULB (years)
Non-revenue Cars	Includes road supervisor, pool, and courier cars	7	7
Maintenance Vehicles	Includes service trucks, vans, tow trucks, plows, and payloader	Various	Various

Note: "Infrastructure" is not included as a major asset class because RGRTA does not own any rail fixed-guideway track, signals or other systems.

Image credit: RTS

Targets

See Table 4 on the following page.

On-Going Progress

RGRTA has maintained an overall State of Good Repair on its Rolling Stock and Equipment assets. The lifecycle of existing assets has been extended through a preventive maintenance program and timed replacements. The Facilities across the region are being replaced in a strategic manner to coordinate with changing ridership and evolution of services through Reimagine RTS and other initiatives. RGRTA expects to update their Transit Asset Management Plan in late-2021 and will include initial findings from the new service plan.

LRTP 2045 Alignment

LRTP 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.

Table 4 – Transit Asset Management Measures and Targets

Performance Measure	Quantity	Quantity > ULB	% > ULB	Target (ULB)
Rolling Stock: Percent of revenue vehicles within asset classes that have met or exceeded useful life				
40' Bus	190	16	8%	15%
60' Articulated Bus	30	0	0%	15%
Access	53	15	28%	15%
Regional Type III	93	38	41%	15%
Regional Type VI	33	4	12%	15%
Equipment: Percent of vehicles that have met or exceeded useful life				
Non-revenue Cars	20	6	30%	15%
Maintenance Vehicles	12	6	50%	35%
Facilities: Percent of facilities with a condition rating below 3.0 on TERM Lite (1-5) scale				
Passenger/Parking Facility	1	0	0%	20%
Admin/Maintenance Facility	9	3	33%	20%

Source: RGRTA for submission to the 2019 National Transit Database

LRTP 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.

Safety

The New York State Department of Transportation (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.

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.

Targets

The targets are calculated by first estimating the existing statewide trends for each measure. A forecast for 2021 is made using a five-year moving average linear trend line. The percentage change, rounded and capped at two percent between 2017-2021 and 2014-2018 is then extrapolated to 2021. 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.

Table 5 – Safety Measures and Targets

Performance Measure	2014-2018 Average	NYSDOT Target (2021)
Number of Fatalities	1,033	1,012.7
Fatality Rate	.84 per 100M VMT	.824 per 100M VMT
Number of Serious Injuries	11,119	10,896.8
Serious Injury Rate	9.05 per 100M VMT	8.865 per 100M VMT
Number of Non-Motorized Fatalities and Serious Injuries	2,636	2,583.5

*Revised August 27, 2020 (GTC Resolution 20-31)

On-Going Progress

The five-year rolling average for each safety measure decreased each year between 2016 and 2018. In 2020, FHWA assessed NYSDOT's progress toward achieving its 2018 safety targets and determined that NYSDOT has made significant progress, by meeting at least four of the five targets.

NYSDOT continues to concentrate on the Emphasis Areas outlined in the *Strategic Highway Safety Plan* (2017). Site specific projects at high accident locations and systemic improvement projects are being implemented to meet crash goals. The first ever statewide *New York State Pedestrian Safety Action Plan* (PSAP) targeted funds to implement systemic pedestrian safety enhancements in urban areas, in addition to education and enforcement initiatives.
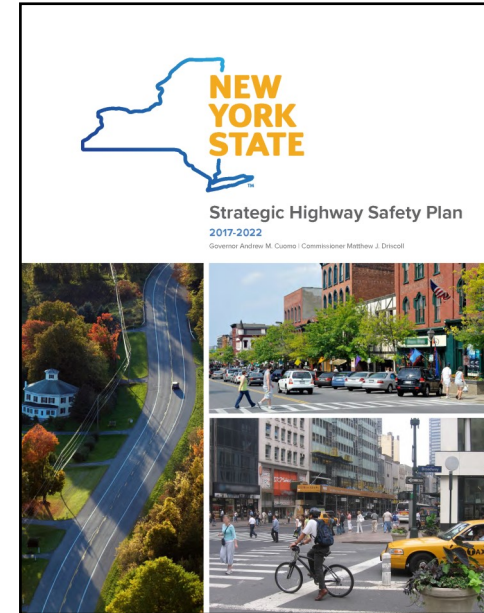
LRTP 2045 Alignment

Increasing safety for all users, especially those that are most vulnerable, is a key tenet of LRTP 2045. LRTP 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.

LRTP 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

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.

Pavement Condition

The New York State Department of Transportation (NYSDOT) is responsible for establishing targets for Pavement Condition performance measures. The performance measures for Pavement Condition assesses the condition of Interstate and non-Interstate National Highway System (NHS) pavements. The measures tracks the percentage of pavements for both facility types that are in good and poor condition. Good condition assumes that no major investment is needed, while poor condition assumes that major investment is needed. Pavement condition measures follow below:

- Percent of Interstate pavements in good condition
- Percent of Interstate pavements in poor condition
- Percent of non-Interstate NHS pavements in good condition
- Percent of non-Interstate NHS pavements in poor condition

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 6 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

Table 7 – Pavement Measures and Targets

Performance Measure	Baseline 2017	2019 Actual Performance	2 Year Interim Target (2019)	4 Year Target (2021)
Interstate % Good	n/a*	51.1%	n/a*	47.3%
Interstate % Poor	n/a*	1.1%	n/a*	4.0%
Non-Interstate % Good	36.7%	37.2%	14.6%**	14.7%**
Non-Interstate % Poor	26.7%	26.3%	12.0%	14.3%

*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.
**For the first performance period, states were evaluated based on IRI performance for this measure. NYSDOT has established its targets based on the full distress plus IRI measure.

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 ≥ 8 equates to federal measure good
    - Score ≤ 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.

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.

The pavement condition measure carries a penalty provision for the State DOT, 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. See Table 7 above.

On-Going Progress

The pavement condition on the non-Interstate NHS improved slightly between 2017 and 2019, increasing the percent in Good condition from 36.7 to 37.2 percent, and reducing the percent in Poor condition from 26.7 to 26.3 percent. A direct comparison between the baseline and 2019 actual results and the targets for non-Interstate NHS pavement cannot be made, due to different calculation methodologies used for the targets.

For Interstate pavement, a 2017 baseline and two-year targets were not required for this first performance period, however, performance in 2019 is exceeding the four-year targets. In October 2022 NYSDOT will report pavement and bridge performance for the last two years of the four-year performance period to FHWA, as well as progress toward achieving the four-year targets. At the same time. NYSDOT will also report new two-year and four-year targets for the next performance period.

LRTP 2045 Alignment

LRTP 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.

LRTP 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; and
- Thruway Capital (including pavements and bridges) - $919 million.

Bridge Condition

The New York State Department of Transportation (NYSDOT) is responsible for establishing targets for Bridge Condition performance measures. The performance measures for Bridge Condition assesses the condition of bridges on the NHS, including on- and off- ramps connecting the NHS and NHS bridges that cross a State border that are ranked good or poor based on the National Bridge Inventory classifications. Only the condition of the deck area, the surface of the bridge, is measured. The State must establish targets for all bridges on the NHS, even if they do not own the facility. Bridge condition measures follow below:

- Percent of NHS bridges by deck area in Good condition
- Percent of NHS bridges by deck area in Poor condition

Data Sources

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).

Targets

The State DOT is required to set two- and four-year targets for the bridge condition measures. 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. 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 then the State DOT must document actions it will take to achieve the NHS bridge condition target. See Table 8 below.

On-Going Progress

The bridge deck area in Good condition exceeded its target, increasing from 22.8 percent to 26.0 percent between 2017 and 2019 and exceeding the two-year target of 23.0 percent by three percentage points. NYSDOT has made progress in attaining and exceeding its target for bridge deck area rated in Poor condition, reducing its percentage of Poor deck area from the baseline of 10.6 to 9.6, which is a decrease of approximately 10 percent and exceeds the two-year target of 11.6 percent.

In October 2022 NYSDOT will report pavement and bridge performance for the last two years of the four-year performance period to FHWA, as well as progress toward achieving the four-year targets. At the same time. NYSDOT will also report new two-year and four-year targets for the next performance period.

Table 8 – Bridge Condition Measures and Targets

Performance Measure	Baseline 2017	2019 Actual Performance	2 Year Interim Target (2019)	4 Year Target (2021)
Good	22.8%	26.0%	23.0%	24.0%
Poor	10.6%	9.6%	11.6%	11.7%

LRTP 2045 Alignment

LRTP 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.

LRTP 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 Bridge 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: Bridges - $1,176 million; and
- Thruway Capital (including pavements and bridges) - $919 million.

System Performance

The New York State Department of Transportation (NYSDOT) is responsible for establishing targets for System Performance Measures. The System Performance Measures assess the reliability of the National Highway System through the following two measures:

1. Interstate Travel Time Reliability Measure
   - Percent of person-miles traveled on the Interstate that are reliable, Level of Travel Time Reliability (LOTTR)
2. Non-Interstate Travel Time
   - Percent of person-miles traveled on the non-Interstate NHS that are reliable, Level of Travel Time Reliability (LOTTR)

The Level of Travel Time Reliability (LOTTR) is defined as the ratio of the longer travel times (80th percentile) to a normal travel time (50th percentile) over applicable roads during four time periods that cover the hours of 6 a.m. to 8 p.m. each day (AM peak, Mid-day, PM peak, and weekends). The LOTTR ratio is calculated for each roadway segment. The segment is reliable if its LOTTR is less than 1.5 during all four time periods. If one or more time periods has a LOTTR of 1.5 or above, that segment is unreliable.

The two LOTTR measures are expressed as the percent of person-miles traveled on the Interstate or non-Interstate NHS system that are reliable. By using person-miles, the measures take into account the total number of people traveling in buses, cars, and trucks over these roadway segments. To obtain total person-miles traveled, the length of each segment is multiplied by an average vehicle occupancy factor. NYSDOT uses a factor of 1.7, as provided by FHWA for all vehicles.

The sum of person-miles on reliable segments is divided by the sum of person-miles on all segments to determine the percent of person-miles traveled that are reliable.

Data Sources

The travel time data used to calculate the LOTTR measure is provided by FHWA via the National Performance Management Research Data Set (NPMRDS). This dataset contains historical travel times, segment lengths, and Annual Average Daily Traffic (AADT) for Interstate and non-Interstate NHS roads.

On-Going Progress

In the fall of 2020 NYSDOT completed and assessment of system performance measures for 2018 and 2019 for the State's Mid Performance Period Report to FHWA. As shown in Table 9, the percent of person-miles on the Interstate system that are reliable in 2019 (78.8) decreased from the baseline but remains well above the two-year target of 73.1. For the non-Interstate NHS, a 2017 baseline and two-year targets were not required for this first performance period, however, performance in 2019 is exceeding the four-year target.

In October 2022, NYSDOT will report system performance results for the last two years of the performance period (2020 and 2021) to FHWA, as well as progress toward achieving the four-year targets. At the same time NYSDOT will also report new two-year and four-year targets for the next performance period.

Table 9 – System Performance Measures and Targets

Performance Measure	Baseline 2017	2019 Actual Performance	2 Year Interim Target (2019)	4 Year Target (2021)
LOTTR Interstate	83.2%	78.8%	73.1%	73.0%
LOTTR Non-Interstate NHS	77.0%	80.3%	N/A*	63.4%

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

LRTP 2045 Alignment

LRTP 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. LRTP 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.

LRTP 2045 outlines recommendations, as part of the System Management and Maintenance and 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.

Freight Performance

The New York State Department of Transportation (NYSDOT) is responsible for establishing targets for Freight performance measures. The Freight Performance measure is the measurement of travel time reliability for truck traffic on the Interstate System. The State DOT is required to set two- and four-year targets.

Reliability for truck traffic is measured by the Truck Travel Time Reliability (TTTR) Index. A TTTR ratio is generated by dividing the 95th percentile truck travel time by a normal travel time (50th percentile) for each segment of the Interstate system over five time periods throughout weekdays and weekends (AM peak, Mid-day, PM peak, weekend, and overnight). The time periods cover all hours of the day.

For each Interstate segment, the highest TTTR value among the five time periods is multiplied by the length of the segment. The sum of these length-weighted segments is then divided by the total length of Interstate to generate the TTTR Index.

Data Sources

The travel time data used to calculate the TTTR measures is provided by FHWA via the National Performance Management Research Data Set (NPMRDS). This dataset contains historical travel times, segment lengths, and Annual Average Daily Traffic (AADT) for Interstate and non-Interstate NHS roads.

Targets

See Table 10 below.

On-Going Progress

TTTR decreased slightly between 2017 and 2019 from 1.39 to 1.47. However, performance in 2019 exceeded the two-year target and is well below the four-year target.

In October 2022, NYSDOT will report system performance results for the last two years of the performance period (2020 and 2021) to FHWA, as well as progress toward achieving the four-year targets. At the same time NYSDOT will also report new two-year and four-year targets for the next performance period.

LRTP 2045 Alignment

LRTP 2045 recognizes that overall, the region's transportation system is reliable, and congestion is not a major barrier to freight movement. LRTP 2045 also acknowledges that freight movement is evolving due to technology and the prevalence of e-commerce. The

Table 10 – Truck Travel Time Reliability (TTTR) Targets

Performance Measure	Baseline 2017	2019 Actual Performance	2 Year Interim Target (2019)	4 Year Target (2021)
Truck Travel Time Reliability (TTTR) Index	1.39	1.47	2.00	2.11

importance of reliable freight movement continues to be paramount as the industry's needs change over the next 25 years.

LRTP 2045 outlines fourteen recommendations, as part of the Economic Development group, that seek to maintain the existing multimodal transportation system as an asset to the region's economy. The following key recommendation directly supports the National Freight Performance Measures:

ED-1 Freight Corridor Reliability

To support implementation of these recommendations and advance progress towards these performance targets, over $150 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.

Congestion Mitigation and Air Quality Improvement (CMAQ)

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. The Genesee Transportation Council meets all current air quality standards and is not subject to establishing targets for these performance measures.

Although, the CMAQ measures are not applicable to the Genesee Transportation Council, LRTP 2045 broadly supports reducing energy usage and greenhouse gas emissions, as well as expanding active transportation and transit options that both help to reduce the dependency on single occupancy trips.

LRTP 2045 outlines recommendations, as part of the Health and Safety, Access and Equity, and the Sustainability and Resilience groups, that lay out programs and policies to enhance and expand active transportation, transit, and alternative transportation options, including those that reduce vehicle emissions and improve air quality. Key recommendations that support the National Congestion Mitigation and Air Quality Improvement Performance Measures include:

- HS-3 Sidewalk Network Expansion
- HS-4 On-Street Bicycle Network Expansion
- HS-12 Fully Integrated Cycling Network
- AE-6 Direct Non-Motorized Connections
- AE-7 Core Transit Frequency
- AE-13 On-Demand Mobility
- SR-4 Alternative Fuel Benefit Promotion
- SR-5 Alternative Fuel Supply Expansion
- SR-6 Alternative Fuel Fleet Expansion

To support implementation of these recommendations and advance progress towards these performance targets, more than $300 million of Federal, State, and local funding is projected to be programmed through 2045 into the following Investment Categories:

- Active Transportation Expansion - $187 million;
- Transit Electrification - $100 million; and
- Shared Mobility - $54 million.