MEMORANDUM

TO: Genesee Transportation Council Members & Alternates

FROM: James Stack, Executive Director /s/

DATE: June 5, 2019

SUBJECT: Proposed Resolution 19-51 (Amending the *2017-2020 Transportation Improvement Program* by adding a section addressing Pavement Condition, Bridge Condition, System Performance, Freight, and CMAQ Performance Measures to Chapter 2)

Background – National Performance Measures

The Moving Ahead for Progress in the 21st Century (MAP-21) Act of 2012 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. The Fixing America's Surface Transportation Act (FAST Act) of 2015 continued the performance management and performance-based planning and programming requirements of MAP-21 with minor changes.

The Final Rules established national Performance Measures across four subject areas, including Pavement Condition, Bridge Condition, System Performance, Freight, and CMAQ. 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. To meet this planning requirement, the GTC Board has adopted the *National Performance Measures Report for the Genesee Finger Lakes Region* to incorporate the respective measures and targets.

Additionally, 23USC §134(j)(2)(D) states that MPO TIPs "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".

Coordination with State and Regional Entities

In setting Performance Targets, States and transit agencies must coordinate with MPOs to ensure consistency, to the maximum extent practicable. Any TIP amended or adopted after May 20, 2019 must include such a description for the Pavement Condition, Bridge Condition, System Performance of the National Highway System, Freight Performance on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program – On-Road Mobile Source Emissions Performance Measures and Targets.

Without the relevant topical description, FHWA and FTA are precluded from approving TIP Amendments or a new TIP after each new deadline. To that end, the New York State Association of Metropolitan Planning Organizations (NYSAMPO), has collaborated with NYSDOT,

the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA) to develop common language that can be used in MPO TIPs across New York State to provide a description of the anticipated effects of the TIP towards achieving the Performance Targets.

The following items are provided for your consideration:

1. **Proposed Resolution 19-51** (Amending the *2017-2020 Transportation Improvement Program* by adding the Pavement and Bridge and System Performance, Freight, and CMAQ sections addressing Performance Measures to Chapter 2)
2. **Exhibit 1** – Proposed anticipated effects narrative to incorporate into the *2017-2020 Transportation Improvement Program*, Chapter 2

Recommended Action:

Approve proposed Resolution 19-51.

GENESEE TRANSPORTATION COUNCIL

RESOLUTION

Resolution 19-51 Amending the *2017-2020 Transportation Improvement Program* by adding a section addressing Performance Measures to Chapter 2

WHEREAS,

1. The Genesee Transportation Council (GTC) has been designated by the Governor of New York State as the Metropolitan Planning Organization responsible for transportation planning for the nine-county Genesee-Finger Lakes Region, including the Rochester Metropolitan Planning Area (MPA);

2. Federal regulations require that the urban transportation planning process include the cooperative development of a transportation improvement program, consisting of a staged multi-year program of projects consistent with the metropolitan transportation plan;

3. The *Long Range Transportation Plan for the Genesee-Finger Lakes Region 2040* is the current metropolitan transportation plan which guides the planning and development of transportation improvements and their selection for inclusion in the transportation improvement program;

4. GTC adopted the *2017-2020 Transportation Improvement Program* (TIP) on June 8, 2016 and has since amended the TIP;

5. The amended *2017-2020 TIP* is wholly consistent with the *Long Range Transportation Plan for the Genesee-Finger Lakes Region 2040;*

6. The TIP has been developed in accordance with the adopted *GTC Transportation Improvement Program Procedures Manual* and the *Agreement by and among GTC, New York State Department of Transportation, and Rochester Genesee Regional Transportation Authority,* which identifies and specifies the responsibilities and cooperative procedures for carrying out transportation planning (including without limitation corridor and subarea studies) and programming consistent with Title 23 Section 450 (23 CFR 450) Subpart C of the Code of Federal Regulations;

7. 23 USC §134(j)(2)(D) states that MPO TIPs “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”;

8. TIPs adopted or amended after May 20, 2019 must include those targets for the Pavement and Bridge Condition in addition to System Performance/Freight/Congestion Mitigation & Air Quality Improvement Program;

9. GTC agreed to support the NYSDOT statewide 2022 targets for Pavement Condition per Title 23 Part 490.307 of the Code of Federal Regulations on September 6, 2018 via Resolution 18-55;

10. GTC agreed to support the NYSDOT statewide 2022 targets for Bridge Condition per Title 23 Part 490.407 of the Code of Federal Regulations on September 6, 2018 via Resolution 18-55;

11. GTC agreed to support the NYSDOT statewide 2022 targets for Performance of the National Highway System per Title 23 Part 490.507 of the Code of Federal Regulations on September 6, 2018 via Resolution 18-55;

12. GTC agreed to support the NYSDOT statewide 2022 targets for Freight Movement on the Interstate System per Title 23 Part 490.607 of the Code of Federal Regulations on September 6, 2018 via Resolution 18-55;

13. GTC agreed to support the NYSDOT statewide 2022 targets for the Congestion Mitigation and Air Quality Improvement Program – On-Road Mobile Source Emissions per Title 23 Part 490.807 of the Code of Federal Regulations on September 6, 2018 via Resolution 18-55;

14. Exhibit 1 provides a narrative to be incorporated into the TIP related to Assessing Performance Measures.

NOW, THEREFORE, BE IT RESOLVED

1. That GTC hereby amends the *2017-2020 Transportation Improvement Program* (TIP) by adding a section addressing Performance Measures to Chapter 2;

2. The narrative of the TIP is hereby amended as shown in Exhibit 1; and

3. That this resolution takes effect immediately.

CERTIFICATION

The undersigned duly qualified Secretary of the Genesee Transportation Council certifies that the foregoing is a true and correct copy of a resolution adopted at a legally convened meeting of the Genesee Transportation Council held on June 13, 2019.

Date _____ _____

KEVIN C. BUSH, Secretary
Genesee Transportation Council

Addressing Performance Targets

Pavement and Bridge Condition

Performance Targets

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

The pavement condition measures represent the percentage of lane-miles on the Interstate and non-Interstate National Highway System (NHS) that are in good or poor condition. FHWA established five pavement condition metrics[1]: 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. A pavement section is classified as being in good condition if three or more metric ratings are good, and in poor condition if two or more metric ratings are poor. Pavement sections that are not good or poor are classified as fair.

The bridge condition measures represent the percentage of bridges, by deck area, on the NHS that are in good condition or poor condition[2]. 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.

GTC agreed to support the NYSDOT statewide targets for the following NHS pavement and bridge condition performance measures on September 6, 2018 via Resolution 18-55:

Table 1 – Pavement and Bridge Performance Targets

	NY Statewide Target	
Performance Measure	*2-Year (2018-2019)*	*4-Year (2018-2021)*
% of Interstate pavements in good condition	46.4%	47.3%
% of Interstate pavements in poor condition	3.1%	4.0%
% of non-Interstate NHS pavements in good condition	14.6%	14.7%
% of non-Interstate NHS pavements in poor condition	12.0%	14.3%
% of NHS bridges by deck area in good condition	23.0%	24.0%
% of NHS bridges by deck area in poor condition	11.6%	11.7%

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

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

Anticipated Effects

The measures align with the GTC LRTP 2040 Recommendation #1, "Conduct preventive and corrective maintenance treatments on highways and bridges to extend the useful life of infrastructure without requiring more costly rehabilitation and reconstruction before absolutely necessary". The projects on the TIP are consistent with the need to address the management of pavement and bridge condition.

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.

Projects that are primarily intended to address the management or replacement of pavement and bridge assets are considered using a cost-effectiveness calculation using pavement and bridge condition data, treatment life, and vehicle-miles travelled. The evaluations and project prioritization processes are conducted for pavement and bridge preventive maintenance and rehabilitation/replacements, respectively.

The TIP also includes projects that are not primarily intended to address deficiencies in asset condition but do address such deficiencies as part of the larger project. 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.

The Genesee Transportation Council TIP has been reviewed and the anticipated effect of the overall program is that it will contribute to progress made in addressing the pavement and bridge condition performance targets established by the State.

System Performance, Freight, and Congestion Mitigation and Air Quality

Performance Targets

On January 18, 2017, FHWA published the system performance, freight, and congestion mitigation and air quality (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.

GTC agreed to support the NYSDOT statewide targets for the following system performance and freight performance measures on September 6, 2018 via Resolution 18-55:

Table 2 – System Performance and Freight Targets

	NY Statewide Target	
Performance Measure	*2-Year (2018-2019)*	*4-Year (2018-2021)*
Percentage of person-miles on the Interstate system that are reliable (Interstate LOTTR)	73.1%	73.0%
Percentage of person-miles on the non-Interstate NHS that are reliable (Non-Interstate NHS LOTTR)	N/A	63.4%
Index of reliability of travel times for trucks on the Interstate system (TTTR Index)	2.00	2.11

The performance measure to assess the CMAQ program measures the total emissions reduction of on-road mobile source emissions. Targets are required for ozone precursors nitrogen oxide (NOx) and violate organic compounds (VOC), along with carbon monoxide (CO) and particulate matter (PM_{10} and $PM_{2.5}$). All State DOTs are required to set both two- and four-year targets. MPOs that are in nonattainment or maintenance areas for the National Ambient Air Quality Standard (NAAQS) are required to take action on the four-year target.

On February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in South Coast Air Quality Mgmt. District v. EPA ("South Coast II," 882 F.3d 1138) held that transportation conformity determinations must be made in areas that were either nonattainment or maintenance for the 1997 ozone national ambient air quality standard (NAAQS) and attainment for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked. These areas are referred to as "Orphan Areas". Such conformity determinations are required in Orphan Areas after February 16, 2019. The Rochester, New York Nonattainment Area (Rochester Nonattainment Area) was classified "nonattainment" at the time of the 1997 ozone NAAQS revocation on April 6, 2015 and was also designated attainment for the 2008 ozone NAAQS on May 21, 2012. The Rochester MSA was designated in attainment for the 2015 NAAQS.

GTC agreed to support the NYSDOT statewide targets for the following Congestion Mitigation and Air Quality Improvement Program – On-Road Mobile Source Emissions measures on September 6, 2018 via Resolution 18-55:

Table 3 - Total Emissions Reductions Targets

Target Year	VOC	CO	NO_X	PM_{10}	$PM_{2.5}$
2020	22,979	437,781	58,591	9,312	3,920
2022	42,765	839,633	107,713	18,132	7,482

Anticipated Effects

The measures align with the GTC LRTP 2040 Goal #6, "Promote efficient system management and operations". The projects on the TIP are consistent with the need to address system performance, freight, and air quality.

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, STP, 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*. Funding is included 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.

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 Genesee Transportation Council TIP has been reviewed and the anticipated effect of the overall program is that it will contribute to progress made in addressing the system and freight performance and Congestion Mitigation and Air Quality performance targets established by the State.