



**CLARKSVILLE URBANIZED AREA
METROPOLITAN PLANNING ORGANIZATION**

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January 28, 2021

Ms. Jennifer Marshall, Senior Planner
TDOT, Long Range Planning Division
J. K. Polk Bldg., 9th Floor
505 Deaderick Street
Nashville, TN 37243

RE: Clarksville Urbanized Area MPO FY2020-FY2023 TIP Administrative Modification #10

Dear Ms. Marshall:

The Clarksville Urbanized Area is submitting FY2020-FY2023 TIP Administrative Modification #10 for approval. The administrative modification is consistent with the requirements of the FAST ACT for PM2 Bridge and Pavement Performance Measure Targets and PM3 System Performance Measure Targets required by Federal Highway Administration (FHWA).

It is therefore, the request by the Clarksville Urbanized Area MPO that the FY2020-FY2023 TIP administrative modification #10 is submitted for approval and made part of the FY2020-FY2023 TIP. Please find attached Resolution 2021-01 supporting the PM2 Bridge and Pavement Performance Measure Targets and PM3 System Performance Measure Targets for the State of Tennessee and the State of Kentucky, along with the old and new FY2020-FY2023 TIP page 14 and 16 showing the PM2 and PM3 Performance Measure Targets in Figure 3 and Figure 4.

Should you have any questions, please contact me.

Sincerely,

A handwritten signature in black ink that reads "Jill Hall".

Jill Hall, Transportation Planner
Clarksville MPO

RESOLUTION 2021-01
ADOPTION TO SUPPORT THE PM2 BRIDGE AND PAVEMENT PERFORMANCE MEASURE
TARGETS AND PM3 SYSTEM PERFORMANCE MEASURE FOR THE STATE OF TENNESSEE AND
THE STATE OF KENTUCKY

WHEREAS, the Clarksville Urban Area Metropolitan Planning Organization (MPO) is the organization responsible for planning an efficient transportation system in the Clarksville Metropolitan Planning Area and for the appropriate use of federal transportation funds in that area; and

WHEREAS, in 2012 Congress passed the Moving Ahead for Progress in the 21st Century (MAP-21) and in 2015 the Fixing America's Surface Transportation (FAST) Act that mandate the establishment of a performance and outcome based program for transportation decisions; and

WHEREAS, the PM2 Bridge Performance Management Measures require State DOTs and MPOs to establish 2-year and 4-year for PM2 Bridge Performance Measure Targets. States are required to establish minimum standards for the percentage of bridges in poor condition and good condition on the total NHS, in which the percentage of bridges in poor condition do not exceed 10.0%; and

WHEREAS, the PM2 Pavement Performance Measures require State DOTs and MPOs to establish 2-year and 4-year for PM2 Pavement Performance Measure Targets. States are required to establish minimum standards for the percentage of pavements in poor condition and good condition on the Interstate system and non-Interstate system, in which the percentage of pavements in poor condition do not exceed 5.0%; and

WHEREAS, the PM3 System Performance Measures require State DOTs and MPOs to establish 2-year and 4-year Targets for Interstate reliability, non-Interstate NHS reliability, freight reliability, peak hour excessive delay (PHED), non-single occupancy vehicle (non-SOV) travel, and on road mobile source emissions measure. The emissions measure is not applicable to the Clarksville MPO area; and

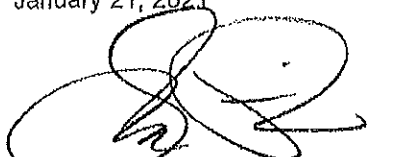
WHEREAS, the PM2 Bridge and Pavement Performance Measure Targets, and the PM3 System Performance Measure Targets adopted by the States are depicted in "Attachment A" attached to this resolution; and

WHEREAS the Clarksville MPO, with concurrence from the TCC, will support each individual State's PM2 Bridge and Pavement Performance Measure Targets, and the PM3 System Performance Measure Targets;

NOW, THEREFORE BE IT RESOLVED, that the Executive Board of the Clarksville Urban Area Metropolitan Planning Organization (MPO) hereby approves that the Clarksville MPO will support each individual State's PM2 Bridge Performance Measure Targets, PM2 Pavement Performance Measure Targets, and PM3 System Performance Measure Targets for each of the above-mentioned measures by agreeing to plan and program projects so that they contribute toward the accomplishment of each State's PM2 Bridge, PM2 Pavement, and PM3 System Performance Measure Targets.

Resolution Approval Date: January 21, 2021

Authorized Signature:



Mayor Joe Pitts, Chairperson
MPO Executive Board

Attachment A:

PM2 Bridge and PM2 Pavement Performance Measures Targets for 2018-2021 Performance Period:

Pavement Performance	TDOT Baseline	TDOT 2 year Condition/ Performance	TDOT 2 year Target	TDOT 4 year Target	KYTC Baseline (2013-2017)	KYTC 2020 Target	KYTC 2022 Target
% Good Interstate	N/A	71.5%	N/A	60.0%	N/A	N/A	50.0%
% Poor Interstate	N/A	0.3%	N/A	1.0%	N/A	N/A	4.0%
% Good Non-Interstate NHS	72.7%	41.6%	42.0%	40.0%	78.9%	35.0%	35.0%
% Poor Non-Interstate NHS	6.7%	4.0%	4.0%	*5.0%	4.3%	6.0%	6.0%
NHS Bridge Performance							
% Good Condition by Deck Area	39.5%	35.1%	36.0%	36.0%	34.8%	35.0%	27.0%
% Poor Condition by Deck Area	3.5%	4.1%	6.0%	6.0%	3.8%	3.7%	3.6%

*TDOT Adjusted value

PM3 System Performance Measures Targets for 2018-2021 Performance Period:

Measure:	TDOT Baseline	TDOT 2 year Condition/ Performance	TDOT 2 year Target	TDOT 4 year Target	KYTC Baseline (2013- 2017)	KYTC 2020 year Target	KYTC 2022 Target
Interstate Travel Time Reliability	87.7%	88.2%	85.3%	83.0%	95.6%	93.0%	93.0%
Non-Interstate NHS Travel Time Reliability	N/A	89.4%	N/A	87.5%	N/A	N/A	82.50%
Truck Travel Time Reliability Index	1.35%	1.35	1.35%	*1.37%	1.24	1.25%	1.30%
Peak Hours Excessive Delay (PHED) Per Capita	N/A	7.5%	N/A	*8.0%	N/A	N/A	12.0%
% Non-SOV Travel	16.6%	15.9%	16.5%	*14.5%	17.6%	17.4%	17.4%
Total Emissions Reduction	VOC=230.025 CO=530.282 NOx=363.399 PM2.5=2.897	VOC=44.438 NOx=196.176 PM2.5=7.586	VOC=30.698 CO=75.000 NOx=62.840 PM2.5=0.120	*VOC=41.449 CO=150.000 *NOx=181.679 *PM2.5=7.340	VOC=4.93 NOx=33.4	VOC= 100 NOx= 100	VOC= 48.0 NOx= 36.0

*TDOT Adjusted value

Figure 2: PM1 Safety Performance Measure Targets: FY 2021

Safety Performance Measures	KYTC Baseline 2015-2019	KYTC 2021 Targets	TDOT Baseline 2015-2019	TDOT 2021 Targets
Number of Fatalities	767.0	720	1039.8	1078.8
Number of Serious Injuries	2,955.0	2,590.0	6725.8	6227.1
Fatality Rate	1.560	1.5	1.302	1.355
Serious Injury Rate	6.000	5.4	8.462	8.394
Number of Non-motorized Fatalities and Serious Injuries	289.0	285	511.4	521.0

- **Bridge and Pavement (PM2)**

Existing federal statutes and regulations now require that each state Department of Transportation (DOT) and each MPO establish performance targets to assess and monitor the condition of pavements and bridges on the National Highway System including the Interstate System. The MPO has chosen to support TDOT's and KYTC's performance targets for PM2. The bridge and pavement targets place greater emphasis on transportation system preservation and asset management. Asset management can generally be defined as a strategic process to maintain and replace assets in a desired state of good repair over their lifecycles at a minimum practicable cost. The City and County work to maintain and preserve the roadways through paving and preventive maintenance of the roadway and bridges. TDOT's state routes in the MPO area are on a rotational scheduling for paving. Each of these efforts strives to reach the performance measure targets.

Figure 3: PM2 Bridge and PM2 Pavement Performance Measures Targets:

Pavement Performance	TDOT Baseline	TDOT 2 year Target	TDOT 4 year Target	KYTC Baseline	KYTC 2 year Target	KYTC 4 year Target
% Good Interstate	N/A	N/A	60.0%	N/A	N/A	50.0%
% Poor Interstate	N/A	N/A	1.0%	N/A	N/A	4.0%
% Good Non-Interstate NHS	72.7%	42.0%	40.0%	78.9%	35.0%	35.0%
% Poor Non-Interstate NHS	6.7%	4.0%	5.0%	4.3%	6.0%	6.0%
NHS Bridge Performance						
% Good Condition by Deck Area	39.5%	35.1%	36.0%	34.8%	35.0%	27.0%
% Poor Condition by Deck Area	3.5%	4.1%	6.0%	3.8%	3.7%	3.6%

The national performance measures for pavement established in the final rule are the percentage of pavements of the Interstate System and the Non-Interstate NHS in "good" or "poor" condition as defined in the regulations. Pavement conditions will be assessed based on the International Roughness Index, cracking, rutting, and faulting using established Highway Performance Management System methodologies. The regulations have also established a minimum level that stipulates that the percentage of lane miles on the Interstate System in "poor" condition cannot exceed 5 percent. If the

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expected delay threshold. The MPO chose to support TDOT's and KYTC System Performance (PM3) targets. The PM3 targets are listed in Figure 4 below:

Figure 4. PM3 System Performance Measures Targets:

Measure:	TDOT Baseline	TDOT 2 year Target	TDOT 4 year Target		KYTC Baseline	KYTC 2 year Target	KYTC 4 year Target
Interstate Travel Time Reliability	87.7%	85.3%	83.0%		95.6%	93.0%	93.0%
Non-Interstate NHS Travel Time Reliability	N/A	N/A	87.5%		N/A	N/A	82.50%
Truck Travel Time Reliability Index	1.35%	1.35%	1.33%		1.24%	1.25%	1.30%
Peak Hours Excessive Delay (PHED) Per Capita	N/A	N/A	18.81%		N/A	N/A	12.0%
% Non-SOV Travel	16.6%	16.5%	16.5%		17.6%	17.4%	17.4%
Total Emissions Reduction	VOC=230.025 CO=530.282 NOx=363.399 PM2.5=2.897	VOC=30.698 CO=75.000 NOx=62.840 PM2.5=0.120	VOC=61.396 CO=150.000 NOx=125.680 PM2.5=0.240		VOC=4.93 NOx=33.4	VOC= 100 NOx= 200	VOC= 48.0 NOx= 36.0

On October 18, 2018, the Executive Board of the Clarksville MPO voted unanimously to support the PM2 Pavement and Bridge performance targets, and PM3 System Performance measure targets established by the Tennessee Department of Transportation and the Kentucky Transportation Cabinet for each state's respected portion of the metropolitan planning area. This action fulfilled the aforementioned requirements related to PM2 and PM3 performance measure target setting established under MAP-21 and the FAST Act. These targets are found in Figure 3 and Figure 4 above.

By agreeing to support each state's PM2 and PM3 targets, the Clarksville MPO agrees to:

- Plan and program projects so that they contribute towards the accomplishment of each State's PM2 and PM3 targets.
- Work with each State to address areas of concern on the infrastructure/roadway system within the metropolitan planning area.
- Coordinate with the State and include the PM2 and PM3 targets in the MTP.
- Integrate into the metropolitan transportation planning process, the goals, objectives, performance measures and targets PM2 and PM3.
- Include a description in the TIP of the anticipated effect of the TIP toward achieving PM2 and PM3 targets in the MTP, linking investment priorities in the TIP to those PM2 and PM3 targets (Shown in Section 4 for all performance measures).

- Transit Asset Management

Public transportation provides thousands of people in the Clarksville MPO's planning area with daily access to life-essential resources and opportunities. It is critical to have well maintained, reliable transit assets to help ensure safe, dependable, and accessible transit services. Transit asset management (TAM) is a business model that prioritizes funding based on the condition of transit assets to achieve or maintain transit networks in a state of good repair. TAM supports a series of practices to achieve a transit state of good repair including, but not limited to:

- Regular maintenance

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Figure 2: PM1 Safety Performance Measure Targets: FY 2019

SAFETY PERFORMANCE MEASURES	KYTC Baseline 2013- 2017	KYTC 2019 Target	TDOT Baseline 2013-2017	TDOT 2019 Target
Number of Fatalities	737.4	737	1,000.6	1,022.0
Fatality Rate	1.521	1.5	1.329	1.291
Number of Serious Injuries	3,124.8	2,991	7,227.6	7374.6
Serious Injury Rate	6.451	6.070	9.594	9.324
Number of Non-motorized Fatalities and Serious Injuries	277.8	276	467.7	546.8

- **Bridge and Pavement (PM2)**

Existing federal statutes and regulations now require that each state Department of Transportation (DOT) and each MPO establish performance targets to assess and monitor the condition of pavements and bridges on the National Highway System including the Interstate System. The MPO has chosen to support TDOT's and KYTC's performance targets for PM2. The bridge and pavement targets place greater emphasis on transportation system preservation and asset management. Asset management can generally be defined as a strategic process to maintain and replace assets in a desired state of good repair over their lifecycles at a minimum practicable cost. The City and County work to maintain and preserve the roadways through paving and preventive maintenance of the roadway and bridges. TDOT's state routes in the MPO area are on a rotational scheduling for paving. Each of these efforts strives to reach the performance measure targets.

Figure 3: PM2 Bridge and PM2 Pavement Performance Measures Targets:

Pavement Performance	TDOT Baseline	TDOT 2 year Target	TDOT 4 year Target	KYTC Baseline	KYTC 2 year Target	KYTC 4 year Target
% Good Interstate	75.6%	N/A	60.0%	N/A	N/A	50.0%
% Poor Interstate	0.14%	N/A	1.0%	N/A	N/A	3.0%
% Good Non-Interstate NHS	44.8%	42.0%	40.0%	78.9%	35.0%	35.0%
% Poor Non-Interstate NHS	3.24%	4.0%	4.0%	4.3%	6.0%	6.0%
NHS Bridge Performance						
% Good Condition by Deck Area	39.5%	36.0%	36.0%	34.8%	35.0%	35.0%
% Poor Condition by Deck Area	4.9%	6.0%	6.0%	3.8%	3.7%	3.2%

The national performance measures for pavement established in the final rule are the percentage of pavements of the Interstate System and the Non-Interstate NHS in "good" or "poor" condition as defined in the regulations. Pavement conditions will be assessed based on the International Roughness Index, cracking, rutting, and faulting using established Highway Performance Management System methodologies. The regulations have also established a minimum level that stipulates that the percentage of lane miles on the Interstate System in "poor" condition cannot exceed 5 percent. If the

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expected delay threshold. The MPO chose to support TDOT's and KYTC System Performance (PM3) targets. The PM3 targets are listed in Figure 4 below:

Figure 4. PM3 System Performance Measures Targets:

Measure:	TDOT Baseline	TDOT 2 year Target	TDOT 4 year Target	KYTC 2 year Target	KYTC 4 year Target
Interstate Travel Time Reliability	87.7%	85.3%	83.0%	93.0%	93.0%
Non-Interstate NHS Travel Time Reliability	N/A	N/A	87.5%	N/A	82.5%
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transit state of good repair including, but not limited to:

- Regular maintenance
- Inspections