

Performance Management and the Transportation Improvement Program

A key feature of the Fixing America's Surface Transportation (FAST) Act is the establishment of a performance and outcome based program, originally introduced through the Moving Ahead for Progress in the 21st Century (MAP-21) Act. The objective of a performance-based program is for states and MPOs to invest resources in projects that collectively will make progress toward the achievement of national goals. 23 CFR 490 outlines the seven areas in which performance goals are required, including: safety, infrastructure condition, congestion reduction, system reliability, freight movement, environmental sustainability, and reduced project delivery delay.

Performance Measures

The regulations required the U.S. Department of Transportation/Federal Highways Administration to establish final rules on performance measures resulted in the following measures for the transportation system, including:

1. Pavement Condition – on the Interstate and Non-Interstate National Highway System (NHS)
2. System Reliability – on the Interstate and Non-Interstate NHS
3. Bridge Condition – on the Interstate and Non-Interstate NHS
4. Fatalities and Serious Injury
 - a. Number and Rate per vehicle mile traveled on public roads
 - b. Bicycle and Pedestrian Fatalities and Serious Injuries
5. Traffic Congestion
6. On-Road Mobile Source Emissions
7. Freight Movement – on the Interstate System

The Federal Transit Administration was charged with developing a rule establishing a strategic and systematic process of operating, maintaining, and improving public capital assets effectively through their life cycle. The Transit Asset Management Final Rule 49 CFR part 626 became effective October 1, 2016, and established four performance measures. The performance management requirements outlined are a minimum standard for transit operators and involved measuring and monitoring the following:

1. Rolling Stock – vehicles used for providing public transportation, revenue and non-revenue
2. Equipment – articles on non-expendable, tangible property with a useful life of at least one year
3. Facilities – building or structure used in providing public transportation
4. Infrastructure – the underlying framework or structures that support a public transportation system

A Transit Asset Management Plan was required to be in place for transit operators by October 1, 2018, two years after the effective date of the regulations.

The time-line for implementation of the national performance measures was determined when the final rule was published for each measure. A summary of the required data and timeline is listed below.

Final Rule	Effective Date	States Set Targets By (1 year)	MPOs Set Targets By	MTP and TIP Inclusion
Safety Performance Measures	April 14, 2016	August 31, 2017	Up to 180 days after the states set targets, but not later than Feb. 27, 2018	Updates or amendments on or after May 28, 2018
Pavement/Bridge Performance Measures	May 20, 2017	May 20, 2018	No later than 180 days after the State sets target November 16, 2018	Updates or amendments on or after May 20, 2019
Reliability & Freight Performance Measures	May 20, 2017	May 20, 2018	May 27, 2018	Updates or amendments on or after May 20, 2019
Statewide non-metropolitan and metropolitan planning	May 27, 2016	There are no measures associated with the planning rule.		
Asset Management Plan	October 2, 2017	By April 30, 2018 State DOTs submit initial plans describing asset management plan processes. By June 30, 2019 State DOTs submit fully compliant asset management plan.		
Transit Asset Management Plan	October 1, 2016	January 1, 2017	Optional reporting year for 2017 and mandatory for 2018. State will set targets for rural transit providers and urban providers will set own targets.	
Transit Safety Plan	Currently no regulation has been adopted to enact this rule.			

Performance Targets

State Targets

Within one year of the U.S. Department of Transportation final rule on performance measures, States are required to set performance targets in support of those measures. States may set different performance targets for urbanized and rural areas. To ensure consistency each State must, to the maximum extent practicable:

- Coordinate with an MPO when setting performance targets for the area represented by that MPO
- Coordinate with public transportation providers when setting performance targets in an urbanized area not represented by an MPO [§1202; 23 USC 135(d)(2)(B)]

The Statewide Transportation Improvement Program (STIP), state asset management plans under the National Highway Performance Program, and state performance plans under the Congestion Mitigation and Air Quality Improvement program are required to include performance targets. State and MPO targets should be included in statewide transportation plans.

MPO Targets

Within 180 days of the state and/or providers of public transportation setting performance targets, MPOs are required to set performance targets in relation to the performance measures (where applicable). To ensure consistency, each MPO must, to the maximum extent practicable, coordinate with the relevant state and public transportation providers when setting performance targets. MPO Long Range Transportation Plans and Transportation Improvement Programs (TIP) are required to include state and MPO targets.

Performance-Based Planning for the Region 2 Planning Commission

The Region 2 Planning Commission (R2PC) has several systems in place to address the mandate. R2PC participates in the MDOT sponsored collection of pavement condition data on federal-aid eligible roads through the asset management program which provides R2PC with current and historic pavement condition data. MDOT also collects data through the Highway Performance Monitoring System (HPMS). R2PC has access to detailed crash data through the Traffic Crash Analysis Tool program through the Transportation Improvement Association of Michigan and through the Crash Facts program of the Michigan State Police/Office of Highway Traffic Safety.

Most of the performance targets are directed at the NHS. R2PC will coordinate with MDOT on the state-owned portion of the NHS in the development of targets for roads in the R2PC area that are subject to the NHS-based performance targets. R2PC will choose to support the state targets as its official response for the performance measures. Any road designated as NHS which is under local jurisdiction will be assessed in conjunction with the responsible road agency. The issues of separate targets for the MPO will be decided by R2PC, based on the recommendations from the JACTS Technical and Policy committees and R2PC staff.

In the process of developing future long range transportation plans and TIPs once targets are established, R2PC will assess the impact of any proposed project on the performance measures area and target. This will be done using the best resources available. Projects providing a high level of benefit in meeting identified performance targets may be considered for priority in programming, based on the goals and objectives and measure of the long range transportation plan.

MPO Target Setting

Safety

Safety performance measures are the first performance area that targets are required. The MDOT safety targets for calendar year 2019 were set by the state on August 31, 2018 and the MPOs had 180 days to set the 2019 targets. The safety target due date was February 28, 2019.

On February 14, 2019 the Region 2 Planning Commission voted to support and adopt the state targets for the five safety categories. Safety targets are required to be developed by the state and responded to by the Region 2 Planning Commission annually. The table below contains the Safety Performance Measures adopted by the Region 2 Planning Commission for calendar year 2019.

Michigan State Safety Targets – Calendar Year 2019

Safety Performance Measure	Baseline Condition (2013 – 2017)	Calendar Year 2019 State Safety Target
Fatalities	981.4	1,023.2
Fatality Rate	1.00	1.02
Serious Injuries	5,355	5,406.8
Serious Injury Rate	5.47	5.41
Non-motorized Fatalities & Serious Injuries	743.6	759.8

R2PC has limited access to federal safety funds from the state. As a non-TMA MPO, R2PC’s local agencies apply annually for consideration of funding for safety projects from a statewide pool of safety funds. The criteria for project selection at the state level are heavily weighted toward projects impacting fatality and serious injury crash locations. Fortunately, for the R2PC area, the fatality number is low and random in nature. R2PC supports the local agencies when they decide to apply for safety funding, and will add any selected project to the TIP as soon as a positive funding determine had been made by MDOT.

A regional traffic safety plan was completed for the Region 2 Planning Commission by a consultant retained by MDOT. The plan recommended that safety projects target certain emphasis areas. The identification of emphasis areas was determined by a review and analysis of historical crash and safety data and stakeholder and public input.

The overarching goal of the Regional Transportation Plan is the reduction of fatal and serious injury crashed within Hillsdale, Jackson, and Lenawee Counties which form the region boundaries. The vision and mission of the plan are guided by the State Highway Safety Plan and are as follows: “Move towards zero deaths” and “Improve traffic safety on local roads by fostering improved safety, communication, coordination, collaboration, and education within the three counties.” The document is intended to provide guidance to local agencies regarding local areas of concern.

Three goals for the three-county area were created based on crash history data in the region and concerns raised by local stakeholders:

- Identify three safety partners to increase awareness.

- Reduce traffic fatality crash rates per 100 million vehicle miles travelled (MVMT) from .0035 in 2015 to .0026 in 2025.
- Reduce serious traffic injury crash rates per 100MVMT from .0148 in 2015 to .0081 in 2025.

The plan identifies six region-wide emphasis areas:

- At-risk driver age groups,
- Driver behavior,
- Impaired drivers,
- Intersection related,
- Non-motorized,
- Single vehicle crashes.

Since these were developed at regional level, it is not possible to break out the R2PC data for the Jackson MPO. R2PC will use information in the report to help inform projects that should be in the TIP in future years.

Pavement

Federal regulations require that states measure, monitor, and set goals for pavement performance based on a composite of metrics. The four pavement conditions metrics are: International Roughness Index (IRI), Cracking percent, Rutting, and Faulting as reported by each state to the Highway Performance Monitoring System database. IRI and cracking percent are metrics for all roads. Rutting is only applicable to asphalt, and faulting is only measured for jointed concrete. The rule applies to the NHS, which includes the interstate and non-interstate system. MDOT is responsible for approximately 6,080 miles of interstate in Michigan as for 2017. The non-interstate portion of the system includes MDOT trunkline routes/M-routes (about 12,082 miles in 2017) and local government owned non-trunkline roads (about 4,271 miles in 2017). Local agencies are responsible for 19% of the National Highway System. In the R2PC area, MDOT is responsible 1,955 miles of the National Highway System.

MDOT established 2-year and 4-year targets for a 4-year performance period for pavement conditions on the NHS in response to federal regulations. The 4-year performance period runs from January 1, 2018 – December 31, 2022. MDOT's first target reporting was due on May 20, 2018. There are a total of three progress reports due within the 4-year performance period:

- A Baseline Performance Report due October 1, 2018
- A Mid-Performance Period Progress Report due October 1, 2020
- A Full Performance Period Progress Report due October 1, 2022

FHWA will determine if progress has been made from report to report. Based on the pavement condition metrics and the rating of roads along a metric value range, there are four measures that will be used to assess pavement condition.

- % of Interstate pavement of Good Condition
- % of Interstate pavement in Poor Condition
- % of Non-Interstate NHS pavement in Good Condition
- % of Non-Interstate NHS pavement in Poor Condition

R2PC is required to establish 2-year and 4-year targets for the measures. R2PC pavement targets were due November 16, 2018. On October 11, 2018 the Region 2 Planning Commission voted to support and adopt the state targets. The table below contains the Pavement Condition Performance Measures adopted by the Region 2 Planning Commission for calendar year 2018.

Michigan State Pavement Condition Targets for Calendar Year 2018

Pavement Condition Performance Measure	Baseline Condition 2017	2-year Target	4-year Target
% of Interstate Pavement in Good Condition	56.8%	n/a	47.8%
% of Interstate Pavement in Poor Condition	5.2%	n/a	10.0%
% of Non-Interstate NHS Pavement in Good Condition	49.7%	46.7%	43.7%
% of Non-Interstate NHS Pavement in Poor Condition	18.6%	21.9%	24.9%

Bridge

MDOT is required to establish 2-year and 4-year targets for a 4-year performance period for the condition of infrastructure assets. MDOT established its statewide targets by May 20, 2018. Like the pavement conditions reporting, MDOT will be required to submit period reports to FHWA.

- A Baseline Performance Report due October 1, 2018
- A Mid-Performance Period Progress Report due October 1, 2020
- A Full Performance Period Progress Report due October 1, 2022

The performance measures for assessing the bridge include:

- % of NHS bridges in Good Condition
- % of NHS bridges in Poor Condition

R2PC is required to establish 2-year and 4-year targets for the measures. R2PC established targets by supporting state targets. R2PC bridge targets were due May 20, 2018. On October 11, 2018 the Region 2 Planning Commission voted to support and adopt the state targets. The table below contains the Bridge Condition Performance Measures adopted by the Region 2 Planning Commission for calendar year 2018.

Michigan State Bridge Condition Targets for Calendar Year 2018

Bridge Condition Performance Measure	Baseline Condition 2018	2-year Target 2020	4-year Target 2022
NHS Deck Area in Good Condition	32.7%	27.2%	26.2%
NHS Deck Area in Poor Condition	9.8%	7.2%	7.0%

R2PC supports the maintaining of NHS and local bridges within its area. Bridge funding is administered at the state level by MDOT. MDOT evaluates bridge on interstate and state trunkline routes for necessary projects and funding. A statewide Local Bridge Advisory Board allocates funds for the Michigan Local Bridge Program based on available funds and weighted ratios. In 2016, only 89 of the 363 submitted local bridge projects could be funded due to budget constraints. By June 2017, approximately 2M sq ft of locally owned bridges in Michigan has deck area in poor, serious, or critical condition. Local agencies across the state have 17% of NHS bridge deck area under their jurisdiction in poor condition. This exceeds the penalty threshold of no more than 10% of NHS bridges, measured by deck area, being classified as structurally deficient. MDOT’s NHS bridge condition by deck area is only slight under the 10% threshold, at 9% poor condition.

MDOT is projecting “condition improvement” for the NHS bridges in the state based on projects programmed through the MDOT and local bridge program. Deterioration is estimated based on comparing network wide deterioration rates to the age and condition of each major component of each structure.

The targets are highly dependent on the deck area of bridges that are labeled “poor,” and the smaller inventory considered, the higher potential for a single bridge to skew results. The statewide targets are assumed to be less variable than for an individual MPO.

System Performance of the NHS and Freight

MDOT is assessing the best way to address the travel time reliability measure associated with interstate travel, non-interstate NHS travel, and truck travel. The state has set targets for this category on May 20, 2018. The system reliability targets were due on November 16, 2018. On October 11, 2018 the Region 2 Planning Commission voted to support and adopt the state targets. System Reliability targets are required to be developed by the state and responded to by the Region 2 Planning Commission every two years. The table below contains the System Reliability Performance Measures adopted by the Region 2 Planning Commission for calendar year 2018.

Michigan State System Reliability Targets for Calendar Year 2018

System Reliability Performance Measure	Baseline Condition 2018	4-year Target
Level of Travel Time Reliability of Interstate	85.8%	75.0%
Level of Travel Time Reliability of the Non-Interstate NHS	85.8%	70.0%
Freight Reliability Measure on the Interstate	1.49	1.75

Congestion Mitigation and Air Quality

The Jackson MPO area does not qualify for this measure because the population is less than the 200,000 threshold.

NHS Asset Management Plan

MDOT is required to develop an Asset Management Plan for the NHS that includes:

- Pavement and Bridge inventory and conditions on the NHS
- Objectives and Measures
- Performance gap identification
- Life-cycle cost and risk management analysis
- A financial plan
- Investment strategies

The U.S.DOT has set minimum standards for states to use in developing and operating bridge management systems and pavement management systems.

The Performance Report for Region 2 Planning Commission was in the 2045 JACTS Long Range Transportation Plan that was approved and adopted on June 14, 2018.

Transit Performance Measures and Targets

There is one small urban transit provider in the R2PC area, the Jackson Area Transportation Authority (JATA). JATA is a direct recipient of funds from the Federal Transit Administration. JATA is identified as a Tier II recipient under the current federal legislation and has developed State of Good Repair targets for 2019 in the table on the next page.

Jackson Area Transportation Authority State of Good Repair Targets for 2019

Asset Category	Asset Class	Sub-Asset	Useful Life	Performance Measure	2019 Targets	Current
Rolling Stock	Buses	25 ft+	12 yrs	% of fleet exceeds default useful life benchmark	90%	100%
	Vans	Med-Duty	7 yrs		50%	33%
		Light Duty	4 yrs		50%	45%
Equipment	Maintenance / Utility	N/A	Varies		50%	0%
	Non-Revenue Vehicles	Vans	4 yrs		25%	0%
Facilities	Support Facilities	Admin. & Mainten. Facilities	N/A	% of facilities rated under 3.0 on TERM scale	50%	Unknown
	Passenger Facilities	Downtown Transfer Center	N/A		100%	Unknown
Infrastructure	N/A	N/A				

*Applicable to capital assets that JATA owns, except equipment with an acquisition value under \$50,000 that is not a service vehicle.

A Transit Asset Management Plan was adopted by JATA on September 26, 2018, and was shared with R2PC by October 1, 2018. This document assists JATA in selecting TIP projects and helps JATA meet its State of Good Repair (SGR) targets. Federal rulemaking for the transit safety plans has not yet been released.

Project Selection in the FY 2017-2020 TIP

For the development of the FY 2017-2020 Transportation Improvement Program, JACTS followed the following policy prepared to establish an objective method of selecting federally-funded transportation projects on the basis of local priorities.

Local project selection was based on a number of factors including the JACTS Technical and Policy committees and public input; annual average daily traffic volumes (AADT); pavement condition (PASER ratings); crash history and safety; system improvement/system completion; financial resources; and addressing capacity deficiencies identified in the JACTS 2045 Long Range Transportation Plan.

The JACTS committees prioritized the urban and rural surface transportation projects by fiscal year and funding category prior to the finalization of the TIP. Due to the small amount of funding available for local projects, JACTS does not have an extensive or involved project prioritization process. JACTS prioritized the projects based on how each would enhance the entire transportation system, including the overall benefit to users. This encouraged the implementing agencies to examine the project's impact on several performance measures categories as well as any positive impacts on the performance measures criteria.

During project selection, the amount of available local matching funds available to the implementing agencies for the projects was also taken into account. The design and scheduling of the projects for programming is the responsibility of the agency having jurisdiction over the proposed project.

Project Selection in the Upcoming FY 2020-2023 TIP

During the development of the FY 2020-2023 TIP, in addition to current selection factors required, JACTS will also request eligible agencies include information on congestion issues, bridges located within the project limits, and any complete street components. Additional information will likely be requested for evaluation within the performance-based planning process and to support the MPO's adopted performance targets.

Transit project requests will require detailed information how proposed projects will address the public transportation performance measures and targets, including the Transit Asset Management Plan that was adopted by September 26, 2018.