

SECTION 3 - PERFORMANCE-BASED PLANNING (March 2019 Amendment)

A key feature of the Fixing America's Surface Transportation (FAST) Act of December, 2015 was 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 nationally set goals. 23 CFR 490 outlines that the national performance goals for the federal-aid highway program are required to be established in seven (7) areas: 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 Highway Administration to establish final rules on performance measures to address the seven areas in the legislation, resulting in the following areas being identified as measures for the system:

- pavement condition on the Interstate system and on the remainder of the National Highway System (NHS)
- performance (system reliability) of the Interstate system and the remainder of the NHS
- bridge condition on the NHS
- fatalities and serious injuries, both number and rate per vehicle mile traveled, on all public roads, plus bicycle and pedestrian fatalities and serious injuries
- traffic congestion
- on-road mobile source emissions
- freight movement on the Interstate system

In addition, the Federal Transit Administration (FTA) 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 625 became effective October 1, 2016 and established four performance measures. The performance management requirements outlined in 49 CFR 625 Part D are a minimum standard for transit operators and involve measuring and monitoring the following:

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

The time-line for implementation of the national performance measures was determined upon when the final rule was published for each measure, which then established an effective date for that measure.

Table 3-1: National Performance Measures - Time line for Implementation

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(s) set target or by November 16, 2018	Updates or amendments on or after May 20, 2019
System 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 20, 2017	No targets, MPO planning process to be compliant with planning regulations of MAP-21/FAST Act by May 27, 2018		
State Asset Management Plan	October 2, 2017	By April 30, 2018, State DOTs submit initial plans describing asset management plan processes. By June, 2019, State DOTs submit fully compliant asset management plan		
Transit Asset Management Plan	October 1, 2016	January 1, 2017	Optional reporting year for 2017, mandatory for 2018 - State sets targets for rural transit providers/urban providers will set own targets, updated annually - Asset Management Plans due October 1, 2018	
Transit Safety Plan	July 19, 2018	Rule effective July 19, 2019 - by July 20, 2020 transit providers to have Public Transportation Agency Safety Plan in place with a requirement for an annual update		

On July 19, 2018, FTA published the Public Transportation Agency Safety Plan (PTASP) Final Rule, which requires certain operators of public transportation systems that receive federal funds under FTA's Urbanized Area Formula Grants to develop safety plans that include the processes and procedures to implement Safety Management Systems (SMS). The Plan must include safety performance targets. Transit operators also must certify they have a safety plan in place, meeting the requirements of the rule by July 20, 2020. The plan must be updated and certified by the transit agency annually.

PERFORMANCE TARGETS

State Targets

Within one year of the U.S. DOT final rule on performance measures, states were required to set performance targets in support of those measures. States could 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; and
- 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 (NHPP), and state performance plans under the Congestion Mitigation and Air Quality Improvement Program are required to include performance targets. Additionally, 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, the regulations require that MPOs 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 Metropolitan Transportation Plans (MTPs) and TIPs are required to include State and MPO targets.

Table 3-2: Performance Measures and Status of BCATS’ Action on Target Setting

Area	Measures	MPO Target Setting Status
Safety Performance	Number of fatalities; Rate of fatalities Number of serious injuries; Rate of serious injuries Number of non-motorized fatalities and non-motorized serious injuries	Approved adoption/support of 2019 statewide targets (Oct. 24, 2018), next MPO targets due February, 2020
Pavement and Bridge Asset Management	Percent NHS Bridges in good and poor condition Percent Interstate pavement in good and poor condition Percent Non-Interstate NHS pavement in good and poor condition	Approved adoption/support of state targets for pavement and bridge (October 24, 2018)
System Performance and Freight	Interstate travel time reliability Non-Interstate travel time reliability Truck travel time reliability	Approved adoption/support of state targets for system performance and freight (October 24, 2018)
Congestion Mitigation and Air Quality	Peak hour excessive delay per capita Percent of non-single occupancy vehicle travel Total emissions reduction	This performance measure will not apply to BCATS as a MPO under 200,000 population
Public Transportation	Transit Asset Management (TAM) Plans (rolling stock, equipment, facilities, and infrastructure) Public Transportation Agency Safety Plan (fatalities, injuries, safety events, system reliability)	Most current local State of Good Repair Targets (2019) adopted/supported October 24, 2018; TAM Plan by transit agency completed in Sept., 2018; Transit Safety Plan due by July 20, 2020

PERFORMANCE-BASED PLANNING IN THE BATTLE CREEK, MICHIGAN URBANIZED AREA

The Battle Creek Area Transportation Study (BCATS) has several systems in place to address the mandated performance measures and targets. BCATS maintains a traffic count program which has partially been integrated into a traffic count database system. This system is projected to facilitate improved data for the travel demand model which forecasts future traffic congestion. The MDOT sponsored collection of pavement condition data on federal-aid eligible roadways, through the statewide Asset Management program, provides BCATS with data (both current and historic) to address the status of pavement conditions in the BCATS area. MDOT also collects data through the Highway Performance Monitoring System (HPMS). BCATS has access to detailed traffic crash data for its area through its subscription to the Traffic Crash Analysis Tool (TCAT) program of the Transportation Improvement Association (TIA) 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 National Highway System, which is almost totally under the jurisdiction of MDOT in the BCATS area. Therefore, BCATS has coordinated with MDOT (as set forth in the federal regulations) in the development of targets for roadways in the BCATS area subject to the NHS-based performance targets and has chosen to “support the state targets” as its official response for these categories. Any roadways designated as NHS which are under local jurisdiction are to be assessed in conjunction with the responsible local road agency. The issue of separate targets for the MPO at any future time will be decided by the BCATS Policy Committee based on recommendations from the Technical Committee and staff.

In the process of developing future Metropolitan Transportation Plans (MTPs) and Transportation Improvement Programs (TIPs), BCATS will assess the impact of any proposed projects on the performance measure areas (and targets), as noted at the beginning of this chapter. This will be done using the best available data at the time of assessment. 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 performance measures of the MTP.

MPO TARGET SETTING

Safety

The first performance measure for which specific targets were required was the safety category. On August 31, 2017, the Michigan Department of Transportation (MDOT) reported to Michigan’s metropolitan planning organizations (MPOs) that it had set safety targets for calendar year 2018. MDOT and Michigan’s MPOs had been meeting prior to this announcement over a period of several months to discuss the setting of these performance measures. The state establishment of safety targets set in motion the clock for MPOs to decide upon their MPO safety targets within 180 days after that date, or by February 27, 2018. On January 24, 2018, the BCATS Policy Committee voted to exercise its option to “support the state targets” for the 5 categories of safety information. Since that time, MDOT has set its second year of safety targets for 2019 and BCATS again opted to “support” the state targets on October 24, 2018. Safety targets will continue to be developed by the state and responded to by the MPOs each year. The TIP will not be updated each year with new targets, but BCATS’ action relative to the targets will be reported on the BCATS website.

The following tables provide Michigan Crash Trends (3-3) and the Michigan State Safety Targets for Calendar Year 2019 (3-4):

Table 3-3: Michigan State Crash Trends - 2013 - 2017

	2013	2014	2015	2016	2017
Fatalities	947	901	963	1064	1028
Serious Injuries	5283	4909	4865	5634	6084
Non-Motorized Fatalities & Serious Injuries	743	687	755	742	797

Table 3-4: Michigan State Safety Targets - Calendar Year 2019

Safety Performance Measure	Baseline through Calendar Year 2017	Calendar Year 2019 State Safety Target
Fatalities	981.4	1,023.2
Fatality Rate	1.00	1.02
Serious Injuries	5,355.0	5,406.8
Serious Injury Rate	5.47	5.41
Non-motorized Fatalities & Serious Injuries	743.6	759.8

The MDOT state safety targets for calendar year 2019 were set by the state by August 31, 2018 and the MPOs had 180 days following that date to set their 2019 targets. BCATS acted to “support” the state targets on October 24, 2018.

BCATS has limited access to federal safety funds provided to the state. As a non-Transportation Management Area (TMA) MPO, BCATS’ 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 is heavily weighted toward projects impacting fatality and serious injury crash locations. Fortunately for the BCATS area, the fatality number is low and random in nature. BCATS supports the local agencies when they decide to apply for safety funding and will add any selected projects to the current TIP as soon as a positive funding determination has been made by MDOT.

A regional traffic safety plan was completed for a five county region of southwest Michigan in 2017 by a consultant retained by MDOT. One result of the Southcentral Regional Traffic Safety Plan was the recommendation that safety projects target certain emphasis areas. The identification of the emphasis areas was based on an analysis of regional and local safety conditions, historical trends, and stakeholder input. The four highest priority emphasis areas were: lane departure, intersection safety, pedestrian and bicycle safety, and drivers age 24 years and younger. The results of the regional review were reported by county. Therefore, it is not possible to break-out the BCATS data individually for the provided data sets since the BCATS area is only equivalent to a six township area within Calhoun County. However,

BCATS will evaluate the identification of potential high risk areas, segments, and intersections identified in the appendices of the Plan as locations needing further evaluation.

In the Southcentral Regional Traffic Safety Plan, the consultant identified intersection and segment data that had an excess of “expected” fatal and injury crashes on an annual basis when examining the 2010-2014 crash data. The locations were ranked as low, medium, and high for this criteria. The number of excess crashes to be expected for each of the categories was identified as: high = greater than 5, medium = 3 to 5, and low = 1 to 3.

For the intersection category, there were no high locations noted in the BCATS area. Intersection locations in the medium category included: M-89 (Michigan Avenue) at M-37 (Bedford Road), M-96 (Columbia Avenue) at Capital Avenue SW, and Capital Avenue SW at Beckley Road. Locations in the low category included: M-37 (Bedford Road) at Morgan Road, M-37 (Bedford Road) at Jackson Street, North Avenue at Emmett Street, I-94BL/M-96 (Helmer Road) at M-96 (Columbia Avenue), M-96 (Columbia Avenue) at Riverside Drive, I-94BL (Dickman Road) at Capital Avenue SW, M-89 (N. Washington Avenue) at Michigan Avenue, and Capital Avenue SW at Hamblin Avenue. The majority of these intersections include state jurisdiction trunklines that will require joint review with MDOT.

In the segment category, no segments were identified in the BCATS area, or in any location within Calhoun County, as qualifying for an excess of “expected” fatal and injury crashes on an annual basis when examining the 2010-2014 crash data.

The FY 2017-2020 TIP includes several projects which are anticipated to impart safety benefits to the transportation system. See Table 3-5 below:

Table 3-5: FY 2017-2020 TIP Specific Safety Related Projects

Year	Project	Description	Safety Benefit
2017	Wrong-way Crash Reduction along I-94 at ramps for Exits 92 and 104, and on I-194 at exit 3	Install signs to indicate “wrong-way” entrance to the freeway system	Reduce the potential for driver error and “wrong way” crashes
2017	M-66 Right-turn lane at Glen Cross Road	Add right-turn lane on southbound M-66 approach to Glen Cross Road	Provide slowing turning vehicles with separation from through traffic
2017	Intersection Project at Verona Road and Wattles Road	Add dedicated left-turn lanes on westbound Verona and northbound Wattles	Provide separation of left-turning traffic from through traffic on Verona Road
2018	Signal Upgrade Project at Capital Avenue and Jackson Street	Upgrade and modernize the traffic signal and interconnect to nearby signals and the City’s Traffic Management Center	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2018	Flashing Beacon at Custer Drive and River Road	Install a flashing beacon at the intersection	Reduce the potential for crashes at the intersection

2019	M-311 Fixed Object Removal	Tree removal along a 4.5 Mile section of M-311	Reduce the potential for K and A crashes along M-311
2019	East Avenue from Morgan Road to Baseline Road	Tree removal along an approx. 3.3 mile segment of East Avenue	Reduce the potential for K and A crashes along East Avenue
2019	6 ½ Mile at Golden Avenue, East Avenue at Roosevelt Avenue, and East Avenue at Morgan Road	Install sign mounted flashing beacon on existing stop signs at three intersections	Increase driver awareness of stop signs and reduce potential for crashes
2019	Signal Upgrade Project at Capital Avenue at Michigan Avenue	Upgrade and modernize the traffic signal and interconnect to nearby signals and the City's Traffic Management Center	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2020	Signal Upgrade Project at Capital Avenue and VanBuren Street	Upgrade and modernize the traffic signal and interconnect to nearby signals and the City's Traffic Management Center	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2020	Intersection Signalization at Cliff Street and Raymond Road Intersection	Upgrade and modernize equipment at this intersection	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2020	D Drive S at 4 Mile Road, and H Drive S at 2 ½ Mile Road, and D Drive N at 9 Mile Road	Install overhead flashing beacons	Increase driver awareness of intersections and reduce potential for crashes
2020	Banfield Road from M-37 to Baseline Road, and N Drive N from 9 ½ Mile Road to 12 Mile Road	Tree removal along roadside right-of-way along segments	Reduce the potential for K and A crashes along these road segments
2020	11 intersections in the BCATS area	Install dual "Stop Ahead" signs at these intersections	Increase drive awareness of stop signs and reduce potential for crashes
2020	Capital Avenue from south City Limits to Beckley Road	Resurfacing project that incorporates spot sidewalk and ramp replacement	Provide enhanced, protected access for pedestrians

Pavement

Federal regulations require that states measure, monitor, and set goals for pavement performance based upon a composite index of metrics. The four pavement condition metrics are: International Roughness Index (IRI), Cracking Percent, Rutting, and Faulting as reported by each state to the Highway Performance Monitoring System (HPMS) database. IRI and cracking percent are metrics for all road types. Rutting is only applicable to asphalt pavements and faulting is only measured for jointed concrete pavements. The rule applies to the entire National Highway System (NHS), which includes Interstate and Non-interstate NHS. MDOT is responsible for approximately 6,080 through-lane miles of interstate in Michigan, as of 2017. The Non-Interstate portion of the system includes MDOT trunkline routes (M-routes) (about 12,082 through lane miles in 2017) and local government owned non-trunkline roads (about 4,271 through lane miles in 2017). Local agencies are responsible for 19% of the NHS route mileage in Michigan. In the BCATS' area, MDOT has a total of 160.5 through lane miles of NHS roadways and the local units are responsible for 16.93 through lane miles of the NHS system. According to MDOT's 2017 data, 11.8% of the NHS Interstate pavement thru miles in the BCATS area are in poor

condition and 26.4% of the NHS Non-Interstate pavement thru miles in the BCATS area are in poor condition.

In May, MDOT established 2-year and 4-year targets for a 4-year performance period for pavement condition on the National Highway System (NHS) in response to the federal regulations. The 4-year performance period includes January 1, 2018 to December 31, 2022. In addition, biennial progress reports are to be submitted to FHWA. 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; and a Full Performance Period Progress Report due October 1, 2022. FHWA will determine if significant progress has been made from report to report. Based on the metrics described above and the rating of roads along a metric value range, there are four measures being used to assess pavement condition: % of Interstate road pavement in “Good” condition; % of Interstate road pavement in “Poor” condition; % of Non-interstate NHS pavement in “Good” condition; and % of Non-interstate NHS pavement in “Poor” condition.

MPOs are required to establish four-year targets for these measures. As with the other performance measures, there is the option to agree to plan and program projects that support MDOT’s targets, or establish their own targets for their Metropolitan Planning Area (MPA). MPO targets for pavement were due November 16, 2018. BCATS acted to “support” the MDOT pavement targets on October 24, 2018, see Table 3-6 below:

Table 3-6: Michigan State Pavement Targets

Pavement Performance Measure	Baseline Condition Calendar Year 2017	2-Year Targets	4-Year Targets
% Interstate Pavement in Good Condition	56.8%	N/A	47.8%
% Interstate Pavement in Poor Condition	5.2%	N/A	10.0%
% Non-Interstate NHS in Good Condition	49.7%	46.7%	43.7%
% Non-Interstate NHS in Poor Condition	18.6%	21.6%	24.6%

Pavement projects on NHS roadways in the BCATS MPA in the 2017-2020 TIP include the following in Table 3-7:

Table 3-7 NHS Pavement Projects in the FY 2017-2020 TIP

Year	Project	Description	Impact on Condition
2018	I-94 Resurfacing	From 6 ½ Mile Rd. east to 11 Mile Rd., both eastbound and westbound - 3 course, 6" HMA overlay, reconstruction under bridges, ramp improvements, other misc.	Improve surface condition and IRI, eliminate any cracking and rutting or faulting issues
2019	I-194 Northbound and Southbound	From I-94 to Golden Avenue, hot mix asphalt - one course resurfacing	Improve surface condition and IRI

Year	Project	Description	Impact on Condition
2020	I-94 WB Entrance Ramp at Exit 104 Interchange	Entire ramp length from I-94BL/M-311 to I-94 - reconstruction of loop entrance ramp	Improve surface condition and IRI, eliminate any cracking and rutting or faulting issues

Bridge

The federal performance measures require that state DOT's establish 2-year and 4-year targets for a 4-year performance period for the condition of infrastructure assets. State DOT's established their first statewide targets by May 20th, 2018. As with the pavement condition reporting, state DOTs are required to submit three performance reports to FHWA within the 4-year performance period: a Baseline Performance Report by October 1, 2018; a Mid-Performance Period Progress Report by October 1, 2020; and a Full Performance Period Progress Report by October 1, 2022. The two performance measures for assessing bridge condition are: % of National Highway System (NHS) bridges in "Good Condition"; and % of NHS bridges in "Poor Condition".

The MPOs are to establish targets by either supporting MDOT's statewide target(s), or defining a target unique to the metropolitan area each time MDOT sets a target. As part of the Full Performance Period Progress Report, the MPOs will report their established targets, performance, progress, and achievement of the targets to MDOT in a manner that is agreed upon by both parties and documented in the Metropolitan Planning Agreement. MPOs are not required to report separately to FHWA.

In May, 2018, MDOT adopted a set of bridge performance measures for the NHS bridges in the state. BCATS acted to "support" the state targets on October 24, 2018. BCATS supports the maintaining of NHS and local bridges within its area. However, bridge funding is administered at the state level by MDOT. MDOT evaluates bridges 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 363 submitted local bridge projects could be funded due to budget constraints. As of June, 2017, approximately 2 million square feet of locally owned bridges in Michigan have deck area in poor, serious, or critical condition. This translates to the local agencies in Michigan having 17% of NHS bridge deck area under their jurisdictions 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 slightly 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 programs described above. 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 fall to poor, and so the smaller the 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. Therefore, it was prudent for BCATS to support the state bridge targets, as noted above.

The adopted MDOT 2-year and 4-year bridge targets are shown below in Table 3-8.

Table 3-8: Michigan State Bridge Targets

Bridge Performance Measure	Baseline Condition Calendar Year 2017	2-Year Targets	4-Year Targets
% National Highway System Deck Area in Good Condition	32.7%	27.2%	26.2%
% National Highway System Deck Area in Poor Condition	9.8%	7.2%	7.0%

Bridge projects included in the BCATS FY 2017-2020 TIP are shown in Table 3-9.

Table 3-9 All Bridge Projects in the FY 2017-2020 TIP

Year	Project	Description	Bridge Impact
2018 (NHS bridge)	I-194/M-66 over I-94	NB and SB bridges over I-94, replace bridge railings, epoxy overlay, concrete deck patching, paint, joint sealing and concrete surface coating	Maintenance to maintain bridge
2019 (non-NHS bridge)	M-311 Bridge over Kalamazoo River	Bridge Replacement	New bridge - this bridge was identified as functionally obsolete as of June, 2011 by MDOT

Outside of the current TIP, MDOT has identified in the BCATS 2040 Metropolitan Transportation Plan (MTP) a bridge project in 2021 for a \$1.8 million rehabilitation of the I-194/M-66 bridge over I-94. This is a NHS bridge and the project will be included in the next TIP covering the years 2020-2023.

During the 2011-2016 time period, five (5) MDOT bridges within the BCATS area that were classified as structurally deficient were replaced or significantly rehabilitated such that they no longer are considered structurally deficient. This addressed 100% of the MDOT bridges in the BCATS area that had been identified as structurally deficient at that time.

There were three non-NHS local bridges identified as structurally deficient in the BCATS 2040 Metropolitan Transportation Plan. One of those bridges, the Raymond Road bridge over the Kalamazoo River, has been replaced in 2016 and is no longer on that list. The Calhoun County Road Department has applied for replacement of another of the structurally deficient bridges within the BCATS area, the Raymond Road bridge over the Conrail tracks, through the Michigan Local Bridge Program. However, funding has not yet been received for this bridge from that program.

System Performance of the NHS and Freight

Federal regulations require states and MPOs to use three performance measures for assessing travel time reliability. Travel time data used to calculate each measure is purchased by the Federal Highway Administration (FHWA) and made available for use by states and MPOs. This vehicle probe data set used for the federally required measures is called the National Performance Management Research Data Set (NPMRDS). The data is processed through an analytical software tool know as Regional Integrated Transportation Information System (RITIS). The travel time reliability measures, as defined in the federal rule are:

- Level of Travel Time Reliability on the Interstate: % of person-miles traveled on the Interstate that are reliable
- Level of Travel Time Reliability on the Non-Interstate National Highway System (NHS): % of person-miles traveled on the Non-Interstate NHS that are reliable
- Freight Reliability Measure on the Interstate: Truck Travel Time Reliability Index

The 2017 and 2018 data shows that Michigan’s Interstate highways and Non-Interstate NHS highways have been between 85 dn 86 percent reliable, meaning that greater than 85% of the person-miles traveled on the NHS system are meeting the reliability thresholds established by the federal regulations (the ratio between the 50th percentile and the 80th percentile being below 1.5). For trucks, due to the higher federal threshold of comparing the 95th percentile to the 50th percentile, the overall truck travel time index on the Interstates has remained near 1.5.

MDOT set targets in May, 2018 for these measures conservatively for the first reporting cycle as shown below in Table 3-10. BCATS acted to “support” the state targets for travel time reliability and freight on October 24, 2018.

Table 3-10: Michigan State Travel Time Reliability Targets

Travel Time Reliability Performance Measure	Baseline from Jan. 2017 to May 2018 (Source: NPMRDS-RITIS)	Recommended 2-Year Target(s) CYE 12/31/2019	Recommended 4-Year Target(s) CYE 12/31/2021
Interstate Travel Time Reliability	2017 - 85.2% 2018 - 84.9%	75%	75%
Non-Interstate Travel Time Reliability	2017 - 86.1% 2018 - 85.7%	-	70%
Freight Reliability	2017- 1.38 2018 - 1.50	1.75	1.75

The previously noted MDOT Pavement and Bridge projects will serve to support the travel time reliability targets on interstate and non-interstate NHS routes.

Congestion Mitigation and Air Quality

This measure applies to urbanized areas containing NHS mileage and having a population over 200,000 (Phase 1 population over 1 million). The BCATS area does not qualify for inclusion in this measure under either phase of its implementation.

National Highway System (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 USDOT has set minimum standards for states to use in developing and operating bridge management systems and pavement management systems.

Related to this state requirement, a Metropolitan System Performance Report is required in the long range Metropolitan Transportation Plan (MTP). The next update of the BCATS MTP is scheduled to commence in the latter months of FY 2019, with Policy Committee approval planned by November 30, 2021.

Transit Performance Measures and Targets

There is one urban transit provider in the BCATS area, Battle Creek Transit (BCT), a department of the City of Battle Creek. BCT is a direct recipient of funds from the Federal Transit Administration. As such, BCT is identified as a Tier II recipient under the current federal legislation and has developed state of good repair targets. The BCT reported its 2019 state of good repair targets within its completed Transit Asset Management (TAM) Plan (September 2018). BCATS acted to “support” BCT’s 2019 State of Good Repair targets from the TAM Plan on October 24, 2018, which are shown as follows in Table 3-11:

Table 3-11: Transit State of Good Repair Targets for 2019

Asset Category - Performance Measure	Asset Class	2019 Target
REVENUE VEHICLES % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	BU - Bus MB - Mini-bus	33% 43%
EQUIPMENT % of vehicles/equipment that has met its Useful Life Benchmark (ULB)	Non-revenue/Service Automobile Maintenance Equipment	75% 0%

Asset Category - Performance Measure	Asset Class	2019 Target
FACILITIES % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	Administration Maintenance Parking Structures Passenger Facilities	0% 0% 0% 0%

Also required of transit agencies is a Transit Agency Safety Plan. Federal requirements for the Safety Plan were released in a final rule on July 19, 2018. The rule becomes effective on July 19, 2019 and transit agencies are required to certify that they have a safety plan meeting the requirements of the rule in place by July 20, 2020.

Table 3-12 Transit Capital Projects in FY 2017-2020 TIP

Year	Project	Description	Condition Impact
2017	Transit vehicle replacement	One heavy-duty low floor transit bus	Replace one bus past its ULB
2017, 2018, 2019, 2020	5339 Capital Project	Cumulative funding for large transit bus	Replace one bus past its ULB

PROJECT SELECTION IN THE FY 2017-2020 TIP

For the development of the FY 2017-2020 TIP, BCATS utilized a “Project/Program Nomination Form” for submittal of potential TIP projects to BCATS. The form was identified as for a road/street project, a transit project, or other project. The other project category included pedestrian, non-motorized or other non-traditional projects.

The “Road/Street” form included the following: “Work description: In addition to a basic description of the project, please include how this project will enhance the transportation system and positively impact safety, road condition, and benefit other modes (such as pedestrians, bicyclists, transit, etc.)” This encouraged the applicants to examine the project’s impact on several performance measures categories.

The “Transit” form included the following: “How will this project address performance measures for transit?” This question directly asked for assessment of the project’s impact on performance measures.

The “Other” form included the following: “In addition to a basic description of the project, please include how this project will enhance the transportation system and positively impact the performance measure criteria.”

The forms were utilized in compiling a listing of projects to be considered for inclusion in the FY 2017-2020 TIP and evaluated by the BCATS TIP Subcommittee. Projects were selected within the financial constraints of the various funding programs and with consideration to supporting the goals of the 2040 BCATS Metropolitan Transportation Plan.

PROJECT SELECTION IN THE UPCOMING FY 2020-2023 TIP

BCATS has implemented, as part of the development of the FY 2020-2023 TIP, use of the project nomination forms again, with an expanded request for more specific information about each project related to the various performance measure target categories, which are now all known. This includes the “Transit” project nomination forms which directly request information about how any project will address the “State of Good Repair” targets from the TAM Plan.

All of these forms are utilized to prepare a listing of projects for consideration by the BCATS TIP Subcommittee. The Subcommittee selects projects within the financial constraints for the various funding programs represented in the TIP, as well as considering each project’s support for the MTP, in addition to the performance targets adopted by BCATS. Projects are then reviewed by the BCATS Technical and Policy Committees before being determined to be the draft for the new TIP.