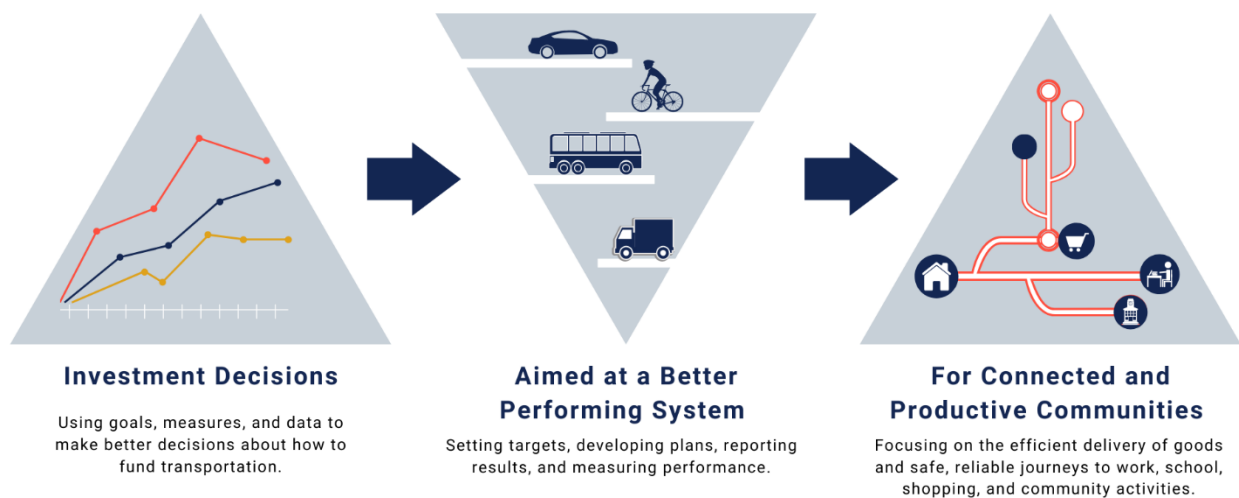


## Performance-Based Planning

Performance-based planning and programming have become a focus in the transportation community as a way to ensure that resources are used effectively and transparently to achieve goals. The objective of a performance-based transportation program is for states and metropolitan planning organizations (MPOs) to invest resources in projects that collectively make progress toward the achievement of national goals. As demonstrated in the graphic below, the Federal Highway Administration (FHWA) defines Transportation Performance Management (TPM) as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals. Federal rules identify seven areas of performance goals: Safety, Pavement and Bridge Condition, System Reliability, Congestion Reduction, Freight Movement, Environmental Sustainability, and Reduced Project Delivery Delay. The MACC is required to incorporate the first three goals along with a fourth transit target.



**Figure 32:** How smart investment decisions can lead to a better transportation system

The MACC has taken steps to incorporate performance measures and targets into the transportation planning process by using a performance-based approach in its planning activities and when building the Transportation Improvement Program (TIP) and Long-Range Transportation Plan (LRTP). The MACC supports adjusting its long-term planning strategies as necessary to assist the State of Michigan in reaching performance goals. It is the intention that any improvements made within the MACC area, which receive federal funds, will help support at least one of the targets set by the State of Michigan. A System Performance Report, which can be found in the appendix, looks at both state and local trends and provides information and feedback that allows for making any revisions in investment decision-making as required over the duration of the LRTP.

## Transportation Performance Management Framework

The U.S. Department of Transportation developed a framework that establishes a feedback loop between performance results and future planning. The framework sets up

a process in which a strategic direction is set, standard analysis is conducted to identify trends and establish achievable future targets, available funding is programmed to support the achievement of the targets, and performance is monitored to evaluate and adjust future target setting and programming decisions. There are four main goals of the framework.

### Goals of the Framework

- ▽ Be applied on a regular, ongoing process.
- ▽ Provide key information to help decision-makers, allowing them to understand the consequences of investment decisions across transportation assets or modes.
- ▽ Improve communication between decision-makers, stakeholders, and the traveling public.
- ▽ Ensure targets and measures are developed in cooperative partnerships and based on data and objective information.

### Federal Requirements

The passage of Federal legislation in 2012, the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP 21), strengthened the growing focus within transportation agencies on using performance-based approaches in transportation planning. The law requires agencies to set targets in relation to established national performance measures and requests coordination between States and MPO's when setting targets to ensure consistency.

#### Federal Requirements for Performance-Based Planning

*Metropolitan transportation planning:* "[MPOs]..., in cooperation with the State and public transportation operators, shall develop long-range transportation plans and transportation improvement programs through a performance-driven, outcome-based approach to planning." 23 USC § 134(c)(1); 49 USC § 5303(c)(1). "The metropolitan transportation planning process shall provide for the establishment and use of a performance-based approach to transportation decisionmaking to support the national goals...." 23 USC § 134(h)(2); 49 USC § 5303(h)(2).

*Statewide and nonmetropolitan transportation planning:* "The statewide transportation planning process shall provide for the establishment and use of a performance-based approach to transportation decisionmaking to support the national goals...and the general purposes [of the public transportation program]. The performance measures and targets established [in relation to national performance measures] shall be considered by a State when developing policies, programs, and investment priorities reflected in the statewide transportation plan and statewide transportation improvement program." 23 USC § 135(d)(2); 49 USC § 5304(d)(2).

## State Supported Targets



### Safety

Beginning in January 2017, the Michigan Department of Transportation (MDOT) hosted a series of safety target coordination meetings to identify federal requirements, review historic trends and discuss how state targets would be determined. MACC staff offered input during this process and participated in monthly meetings with MDOT and other MPOs.

The latest annual State targets for safety performance measures were released by MDOT on August 31, 2019, and were adopted by the MACC's Policy Board on January 6, 2020. Safety predictions are based on the current trends in the data and determined through models developed by the University of Michigan Transportation Institute. Five-year rolling averages are used for the baseline assumptions. Final safety targets were developed after evaluating the correlation between traffic crashes, VMT, Gross Domestic Product (GDP) per capita, and other economic factors that impact travel. FHWA strongly suggests that targets should be based on trends and projections, and not be simply inspirational. There are currently 17 projects obligated in the MACC's FY20-23 TIP that are specifically geared toward the improvement of safety. State fatalities for 2018 and current trends for 2019 show fatality numbers trending down.

**Table 10:** 2020 Safety Performance Targets

Safety Performance Measure	Baseline (2014-2018)	2020 Target
Fatalities	987.4	999.4
Fatality Rate	0.99	0.97
Serious Injuries	5,415.6	5,520.4
Serious Injury Rate	5.41	5.34
Nonmotorized Fatalities and Serious Injuries	742.4	735.8

Michigan State Safety Targets (Rate per 100 million Vehicle Miles Traveled)



### Pavement and Bridge Condition

MDOT has developed two-year and four-year targets for the National Highway System (NHS) separated by the Interstate and the non-Interstate. The performance measures focus on pavement conditions that are good or poor. Metrics include an International Roughness Index (IRI), cracking, rutting, and faulting.

MDOT has also developed a system to evaluate bridge conditions. The table below illustrates that bridge condition throughout the state is expected to decline at a rate

faster than improvements can be made. There are currently 24 projects obligated in the MACC's FY20-23 TIP that specifically target improving pavement and bridge conditions.

**Table 11:** Michigan State Pavement Targets

Pavement Performance Measure	Baseline Condition (2017)	2 – Year Target (2020)	4-Year Target (2022)
% Interstate Pavement in Good Condition	56.8%	N/A	47.8%
% Interstate Pavement in Poor Condition	5.2%	N/A	10.0%
% Non-Interstate Pavement in Good Condition	49.7%	46.7%	43.7%
% Non-Interstate Pavement in Poor Condition	18.6%	21.6%	24.6%

**Table 12:** Michigan State Bridge Targets

Bridge Performance Measure	Baseline Condition (2017)	2 – Year Target (2020)	4-Year Target (2022)
% 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%



### System Reliability

MDOT has developed targets for Travel Time Reliability on the NHS for Interstate and non-Interstate roads. Freight reliability is also included and is a separate measure. Data on travel time is evaluated to see how it varies over time and to demonstrate consistency. The definitions below help to explain the difference between Congestion and Travel Time Reliability:

Congestion – occurs when there are too many vehicles at the same place at the same time (demand exceeds supply). An increase in congestion usually results in a decrease in “quality” of the driving experience. An increase in congestion relates to an increase in the “use of the system” and usually occurs during the “peak” periods of the day. Most travelers are accustomed to everyday congestion – they can plan for it.

Travel Time Reliability – relates to the consistency or dependability in travel time, and is measured from day to day, or across different times of the day. Unreliable travel times usually occur during the “peak” periods of the day, and most travelers are less tolerant of “unexpected” delays – as they can't plan for them. Michigan's highways have been around 85 percent reliable, meaning 85 percent of person-miles traveled are meeting

the federally established thresholds. Due to longer travel times, the freight reliability measure is calculated using the 95<sup>th</sup> percentile travel time. 2018 State of Michigan Level of Travel Time Reliability for weekend and weekday periods largely track around 1.25. Any value less than 1.50 would claim to have overall system reliability for travel times.

**Table 13:** Reliability – Recommended Targets

Measure	Baseline from Jan. 2017 to Apr. 2018 (Source: NPMRDS-RITIS)	2 – Year Target (2020)	4-Year Target (2022)
Interstate Travel Time Reliability	2017 – 85.2% 2018 – 84.9%	75%	75%
Non-Interstate NHS Travel Time Reliability	2017 – 86.1% 2018 – 85.7%	N/A	70%
Freight Reliability	2017 – 1.38 2018 – 1.50	1.75	1.75



### Public Transportation

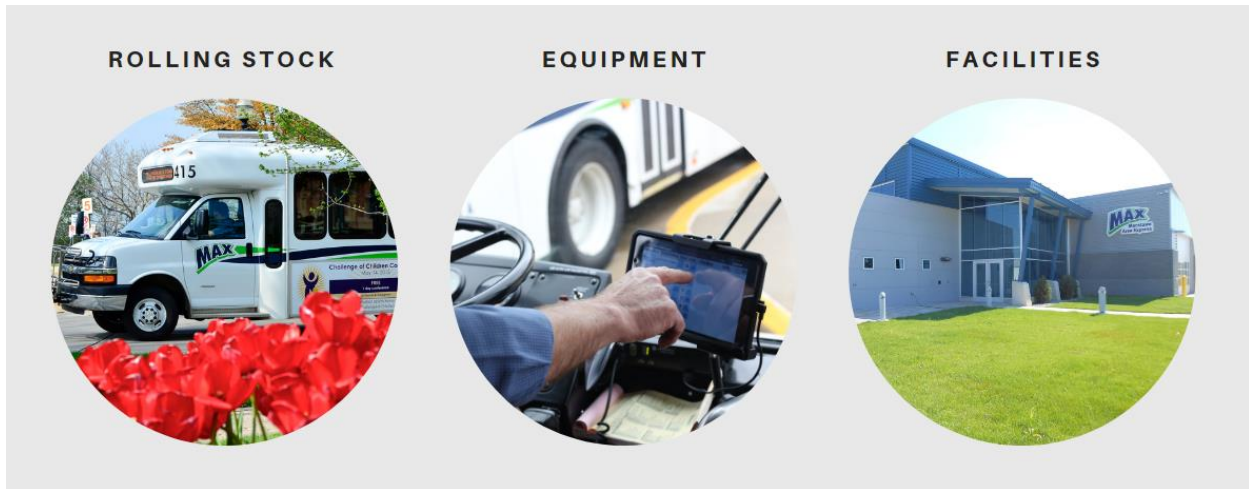
Transit agencies were required to have an initial Transit Asset Management (TAM) plan in place by October 1, 2018. Since transit providers vary widely with the type and scale of assets, providers were instructed to individually create TAM plans. Updates to the plan shall be made every four years. Recording the condition of each asset helps transit agencies to achieve or maintain transit assets above marginal or poor condition ratings, known as maintaining a State of Good Repair (SGR). The federal rules for Transit Asset Management noted that the new standards are meant to help transit agencies keep their systems operating smoothly and efficiently while working at the same time to reduce the nation's backlog of needed transportation improvements. Macatawa Area Express Transit Authority (MAX Transit) has prepared a TAM plan and approved SGR targets. The transit agency also created targets for FY2020, which were adopted by the MACC Policy Board on October 28, 2019. Transit performance targets include revenue vehicles, equipment, and facilities. The following table shows the performance targets for MAX Transit for the fiscal year 2020.

Revenue Vehicles - MAX Transit expects its full-service revenue fleet to remain within the Useful Life Benchmark (ULB) threshold throughout FY2020. Buses, cutaways, and vans are targeted for replacement after reaching FTA's Useful Life age but before the ULB (or maximum age) is met.

Equipment – MAX Transit is typically able to utilize some of its non-revenue/service automobiles (road supervisor, staff, and maintenance vehicles) slightly beyond the 8-

year Useful Life Benchmark provided preventative maintenance costs remain reasonable.

Facilities – Both facilities (Padnos & Greenway) are expected to remain well above a 3.0 score. Building systems are monitored monthly and scores are calculated following inspections of each facility HVAC, substructure, electrical, fire protection, rooftop, and plumbing systems.



**Table 14:** MAX Transit Annual Performance Target (FY2020)

Asset Category	Performance Measures	FY2020 Target
<b>Rolling Stock</b>		
Bus	Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	0%
Cutaway Bus		0%
Rubber-tire Vintage Trolley		100%
Van		0%
<b>Equipment</b>		
Non-Revenue/Service Automobile	Age - % of vehicles that have met or exceeded their ULB	50%
Non-Vehicle Equipment (>\$50,000)		0%
<b>Facilities</b>		
Maintenance	Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	0%
Passenger Facilities		0%