

## APPENDIX C

### Systems Performance Report

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# System Performance Report & Requirements

According to the FAST Act, a long range transportation plan needs to include a system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets. The information should include progress achieved by the MPO in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data. The long range transportation plan will provide information on the current and proposed target information adopted by MDOT for roads, highways, and transit. Updates to target data will be on the Region 2 Planning Commission website.

## Roads and Highways Reporting Requirements

MDOT is required to report to FHWA on the establishment of state performance targets and the progress made in attaining the state targets on a biennial basis (October 1 of each even numbered year). One exception to the biennial reporting requirements is for the safety performance measures, which are required to be reported by MDOT to FHWA through the Highway Safety Improvement Program Annual Report by August 31 of each year.

MPOs are not required to provide annual reports other than MPO decisions on targets. MPOs are required to report MPO performance targets to MDOT in accordance with the documented procedures. This will result in MPOs reporting MPO safety targets annually to MDOT, and other performance targets as they are established (every two or four years).

## 2024 Safety Targets - Roads and Highways

Federal regulations require the use of five year rolling averages for each of the performance measures, which include: Fatalities, Fatality Rate per 100 million VMT, Serious Injuries, Serious Injury rate per 100 million VMT, and Non-motorized fatalities and serious injuries. The values used in creating the following charts for 2022, 2023, and 2024 are estimates provided by MDOT.

## Total Fatalities & Fatality Rate

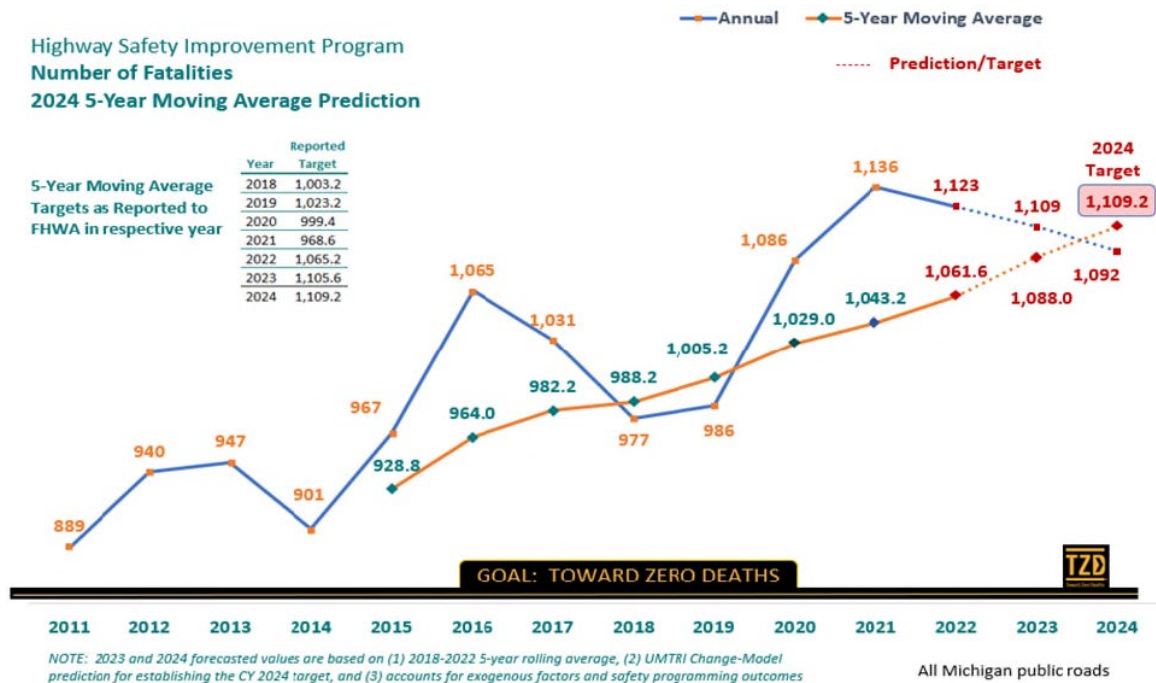
**How Targets Are Set:** MDOT and Office of Highway Safety planning used two different models to forecast the total fatalities and serious injuries for target setting. The fatality models developed by MDOT relied on the relationship between oil prices, the Dow Jones Industrial (DJI) futures and fatalities. The price of oil and the level and changes in the DJI futures are closely correlated to the travel demand and traffic crashes. The second model was developed and maintained by the University of Michigan Transportation Research Institute (UMTRI). The UMTRI model relies on results of a recently completed research report titled *Identification of Factors Contributing to the Decline of Traffic Fatalities in the United States*. The model relies on the correlation between traffic crashes and vehicle miles traveled (VMT), Gross Domestic Product per capita, median annual income, and the unemployment rate among 16-24 year olds.

To determine the forecasted five year rolling average for Fatalities, Fatality rate per 100 million VMT, Serious Injuries, and Serious Injury Rate per 100 million VMT, the forecast

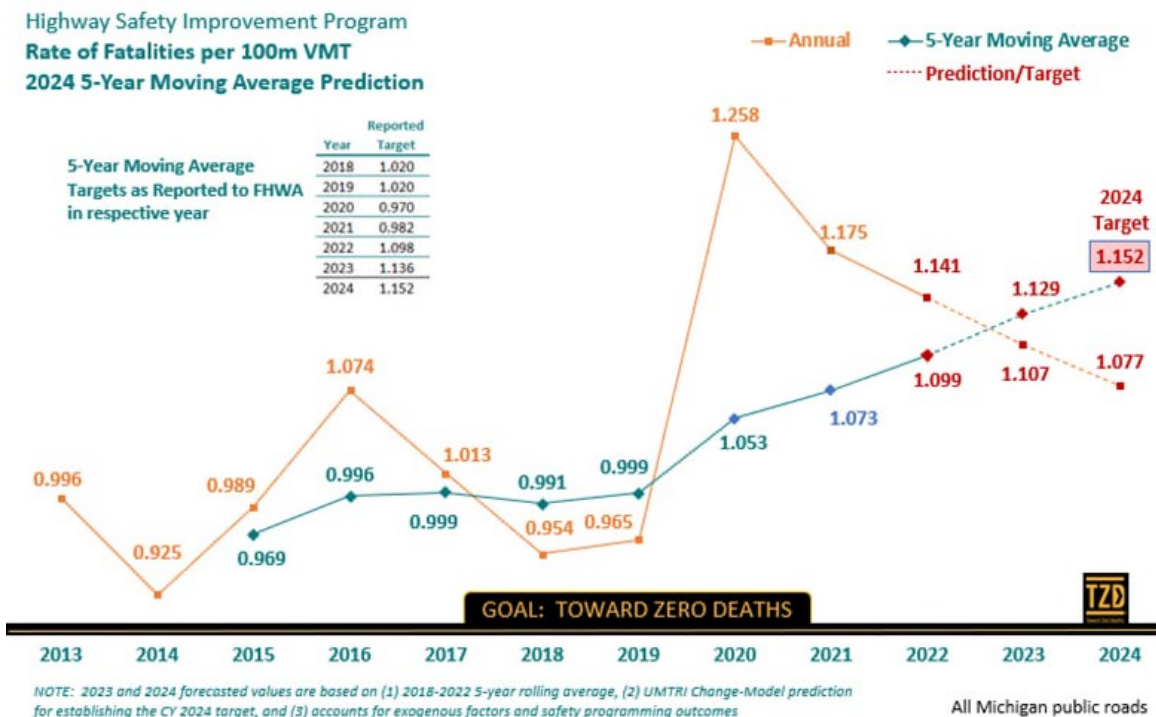
was obtained from the models for 2022, 2023, and 2024. The final forecasted value for fatalities is the average of MDOT and UMTRI forecasted values which predicts **1,123 in 2022, 1,109 in 2023 and 1,092 in 2024**. The target for calendar year **2024** is **1,109.2** for fatalities and **1.152** for fatality rate, which is shown in Figure C-1.

Figure C-1

(a) Michigan Total Fatalities 2024 5-Year MA



(b) Michigan Fatality Rate 2024 5-Year MA



**Chart Interpretation:** The statewide number of fatalities rose significantly in 2020 and 2021. While part of the rise reflects an increase in the overall amount of travel in the state, the fatality rate shows elevated risk for every mile traveled in 2020 and 2021.

**Reporting Requirements:** MDOT is required to report to FHWA on the establishment of state performance targets and the progress made in attaining the state targets on a biennial basis (October 1 of each even numbered year). One exception to the biennial reporting requirement is for the safety performance measures, which are required to be reported by MDOT to FHWA through the Highway Safety Improvement Program Annual Report by August 31 of each year.

### State Actions

- To meet the safety goal of reducing fatalities and serious injuries on the state Trunkline system the strategy of the Safety Program is to select cost-effective safety improvements, as identified in Michigan's Strategic Highway Safety Plan (SHSP), to address Trunkline locations with correctable fatality and serious injury crashes.
- All proposed safety funded improvements must be supported by the MDOT Region's Toward Zero Deaths Implementation Plan to mitigate crashes within the area. Priority is given to those projects with SHSP focus area improvements that have the lowest cost/benefit analysis or are a proven low-cost safety improvement to address the correctable crash pattern.
- On the local road system, MDOT administers federal safety funds for safety improvements supported by a Local Road Safety Plan or addressed by means of a low-cost safety project. High Risk Rural Road is one program used to address rural roadways where fatalities and serious injuries exceed the statewide average for that class of roadway.

### MPO Actions

- As shown in Table C-1, the Jackson MPO supported the adoption of MDOT's State Targets for Safety Performance Measures for Calendar Year 2024. This established targets for five performance measures based on five year rolling averages, including:
  - Number of Fatalities,
  - Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT),

**Table C-1: Michigan State Safety Targets for Fatalities in 2024**

Safety Performance Measure	Baseline Condition Calendar Year 2022	Calendar Year 2024 State Safety Target
Fatalities	1,061.6	1,109.2
Fatality Rate	1.099	1.152

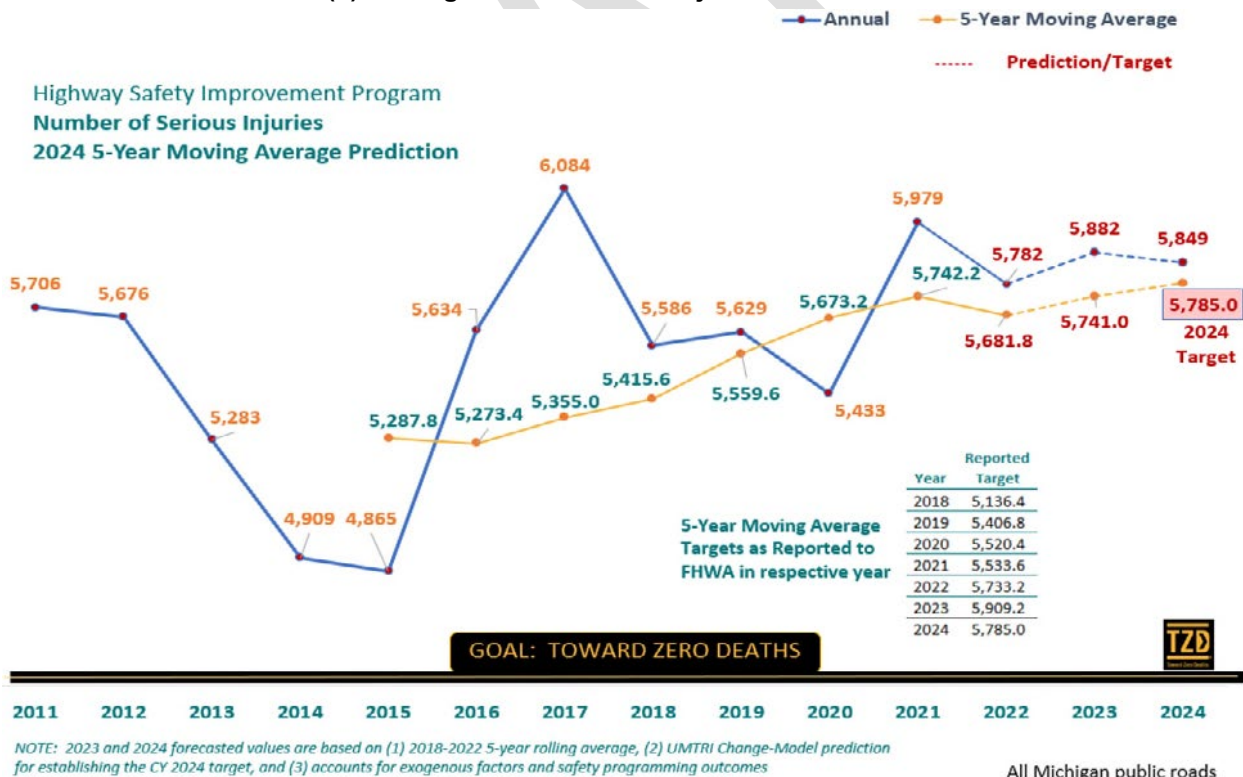
- Implement the recommended strategies based on the defined emphasis areas for Jackson County in the Region 2 Regional Transportation Safety Plan
  - There should be a particular focus on locations outlined in Appendix B – Top Local Road Locations by Emphasis Area
- Give priority in the TIP to projects that address safety
- Encourage Act 51 Agencies to implement systemic treatments, such as cable stay barriers and center rumble strips to reduce lane departure crashes
- Use data to develop projects that address safety hazards in particular locations
- Promote safe travel habits for drivers, cyclists, and pedestrians through education and enforcement initiatives and programs

## Total Serious Injuries & Serious Injury Rate

**How Targets Are Set:** The UMTRI model was the sole model used in forecasting total serious injuries as it exhibited a strong linear relationship of the ratio of serious injuries and fatalities (A/K). The forecasting total for serious injuries is **5,782 in 2022, 5,882 in 2023 and 5,849 in 2024**. The target for calendar year **2024** is **5,785** for serious injuries and **5.999** for serious injury rate.

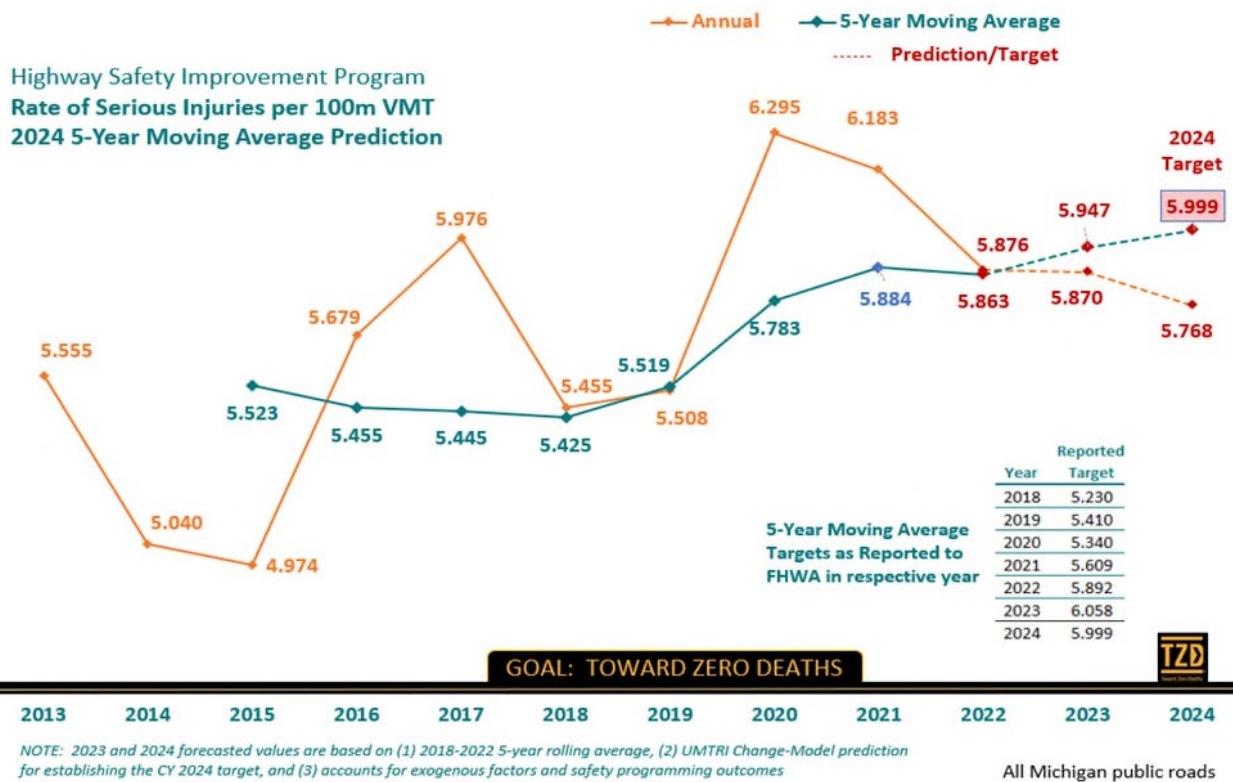
Figure C-2

(a) Michigan Total Serious Injuries 2024 5-Year MA





(b) Michigan Serious Injury Rate 2024 5-Year MA



**Chart Interpretation:** The statewide number of serious injuries rose significantly in 2021, but has been lower since then. While the rate of serious injuries in the state was very high in 2020 and 2021, it is trending down for risk in 2022 (5.876), 2023 (5.870), and 2024 (5.768).

### State Actions

- To meet the safety goal of reducing fatalities and serious injuries on the state Trunkline system, the strategy of the Safety Program is to select cost-effective safety improvements, as identified in Michigan's SHSP, to address Trunkline locations with correctable fatality and serious injury crashes.
- All proposed safety funded improvements must be supported by the MDOT Region's Toward Zero Deaths Implementation Plan to mitigate crashes within the region. Priority is given to those projects, within each Region, with SHSP focus area improvements that have the lowest cost/benefit analysis or are a proven low-cost safety improvement to address the correctable crash pattern.
- On the local road system, MDOT administers federal safety funds for safety improvements supported by a Local Road Safety Plan or addressed by means of a low-cost safety project. High Risk Rural Road is one program used to address rural roadways where fatalities and serious injuries exceed the statewide average for that class of roadway.

## MPO Actions

- As shown in the table below, the Jackson MPO supported the adoption of MDOT's State Targets for Safety Performance Measures for Calendar Year 2024. This established targets for five performance measures based on five year rolling averages, including:
  - Number of Serious Injuries,
  - Rate of Serious Injuries per 100 million VMT

**Table C-2: Michigan State Safety Targets for Serious Injuries in 2024**

Safety Performance Measure	Baseline Condition Calendar Year 2022	Calendar Year 2024 State Safety Target
Serious Injuries	5,681.8	5,785
Serious Injury Rate	5.863	5.999

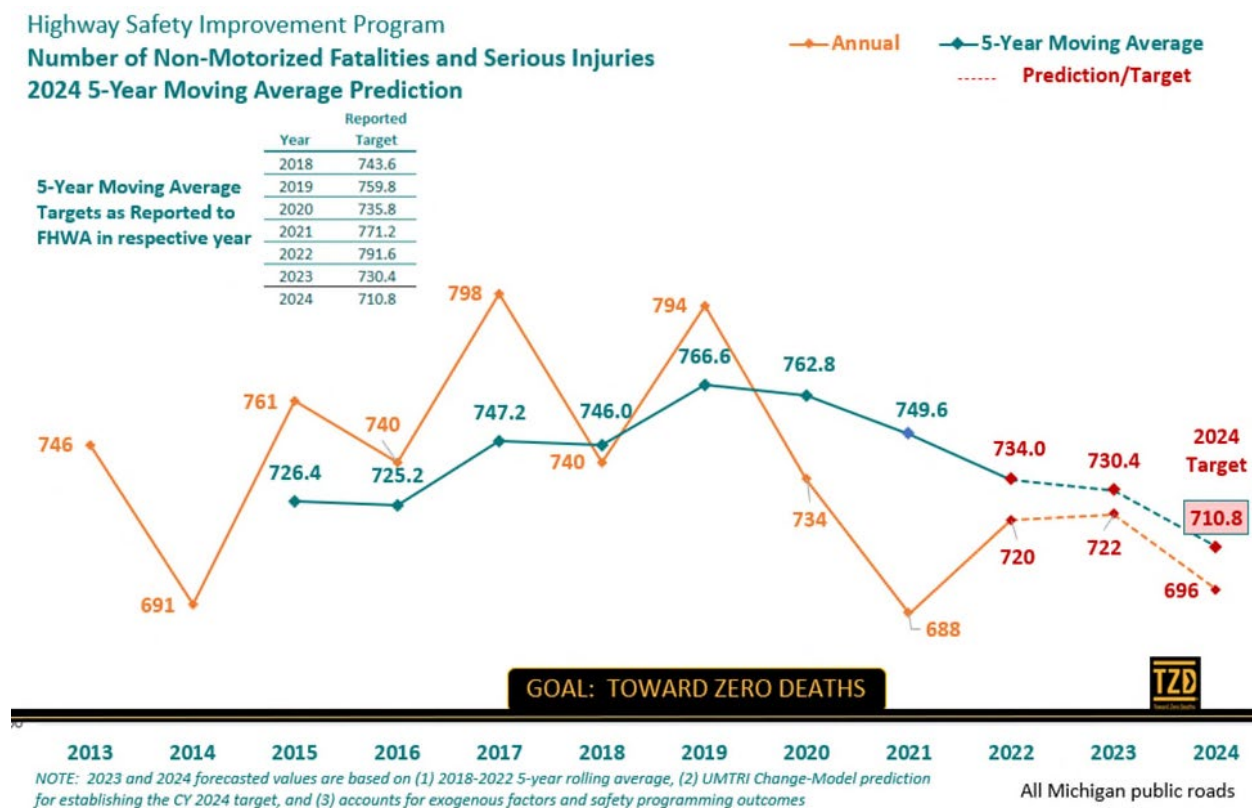
- Implement the recommended strategies based on the defined emphasis areas for Jackson County in the Region 2 Regional Transportation Safety Plan
  - There should be a particular focus on locations outlined in Appendix B – Top Local Road Locations by Emphasis Area
- Give priority in the TIP to projects that address safety
- Encourage Act 51 Agencies to implement systemic treatments, such as cable stay barriers and center rumble strips to reduce lane departure crashes
- Use data to develop projects that address safety hazards in particular locations
- Promote safe travel habits for drivers, cyclists, and pedestrians through education and enforcement initiatives and programs



## Total Non-Motorized Fatalities & Serious Injuries

**How Targets Were Set:** Results from the UMTRI model (the A/K relationship) were also used to generate forecasted 5 year moving average values for non-motorized fatalities and serious injuries for 2022, 2023, and 2024. The forecasting total for fatalities and serious injuries is **720 in 2022, 722 in 2023, and 696 in 2024**. The target for calendar year **2024** is **710.8** for fatalities and serious injuries.

**Figure C-3: Non-Motorized Fatalities and Serious Injuries 5-Year MA**



**Chart Interpretation:** Fatalities and Serious Injuries have seen a general downward trend since 2019 and saw the lowest number since 2014 in 2021. The decrease in fatality and serious injury rate is most likely due to an increase in non-motorized facilities that have been installed in recent years.

### State Actions

- Implement the recommendations of the MDOT University Region Non-Motorized Plan.
- MDOT continues to work with researchers to improve pedestrian and bicycle safety. Examples of current or past work include the development of gateway treatments for pedestrians and Michigan bicycle and pedestrian travel models.
- MDOT supports Western Michigan University's participation in the Roadway Safety Institute as part of the Region 5 University Transportation Center aimed at high risk road users.

- MDOT also participates with UMTRI in the development of a risk model for non-motorized users, and with Wayne State University in research to further side-path safety.

## MPO Actions

- As shown in the table below, the Jackson MPO supported the adoption of MDOT's State Targets for Safety Performance Measures for Calendar Year 2024. This established targets for five performance measures based on five year rolling averages, including:
  - Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries

**Table C-3:**  
**Michigan State Safety Targets for Non-Motorized Fatalities and Serious Injuries in 2024**

Safety Performance Measure	Baseline Condition Calendar Year 2022	Calendar Year 2024 State Safety Target
Non-Motorized Fatalities & Serious Injuries	734	710.8

- Direct the consultants working on road projects to address safety issues, concerns, and needs for drivers, bicyclists, and pedestrians.
- Implement the recommendations of the Jackson City + County Non-Motorized Plan.
- Focus safety funding on high priority road segments, intersections, and initiatives as identified in the Region 2 Regional Transportation Safety Plan.
- Work with the Walkable Communities Coalition and Active Jackson to advocate for the issues and needs of non-motorized users.
- Utilization of MDOT road safety audits and engineering countermeasures, and other initiatives, programs or designs that are promoted as part of the Toward Zero Deaths National Strategy.

## Transit Reporting Requirements

The Federal Transit Administration (FTA) Transit Asset Management Rule requires a group Transit Asset Management (TAM) plan to set one or more performance targets for each applicable performance measure. The goal is to establish a strategic and systematic process of operation, maintaining, and improving public capital assets effectively through their entire life cycle. The targets should be based on realistic expectations, and the recent data available and the financial resources from all sources that are reasonably expected funding the TAM plan horizon period. The three asset types to be in the Transit Asset Management plan are: Rolling Stock (Vehicles), Systems, and Facilities.

**Coordination Efforts:** MDOT discussed the federal requirements. Once MDOT drafted the targets, they were shared with all transit agencies for comments.

Table C-4: 2022 State of Michigan State of Good Repair			
Asset Category	Current Condition	2022 Targets	Goals
Rolling Stock (Vehicles)			
Revenue Vehicles			
Autos/SUV	15% past ULB	Not more than 10% will exceed ULB of 7 years	Not more than 20% of each agency's fleet will exceed ULB
Vans	16% past ULB		
Cutaways	7% past ULB	Not more than 10% will exceed ULB of 10 years	
Bus (Med-Duty)	16% past ULB		
Bus (Med-Heavy Duty & Large)	5% past ULB	Not more than 15% will exceed ULB of 14 years	
Ferry Boat (N/A for Jackson MPO)	20% past ULB	Not more than 40% will exceed ULB of 42 years	Not more than 50% of each agency's fleet will exceed ULB
Non-Revenue Vehicles			
Service Vehicles	71% past ULB	50% may exceed ULB of 7 years	Not more than 50% of each agency's fleet will exceed ULB
Admin Vehicles	72% past ULB	100% may exceed ULB of 7 years	Local decision (MDOT does not set a goal or provide funding)
Equipment			
Equipment Over \$50,000	47% past ULB	Not more than 50% will exceed ULB (varies)	Not more than 50% of each agency's equipment inventory will exceed ULB
Facilities			
Statewide Facility Assets	3% past ULB	Not more than 5% will exceed ULB (varies)	Not more than 50% will receive a rating of 3 or lower

**How Targets Are Set:** MDOT ran reports from Public Transportation Management System (PTMS), the reporting system for public transit agencies who receive federal funding. Targets were set based upon funds available to MDOT and the current conditions of revenue vehicles, service vehicles and facilities. Targets are set for the rural area by MDOT on an annual basis each year in January and reported in the National Transit Database (NTD).

## Objectives

The State of Michigan has established the following objectives:

- Maintain the average condition of facilities at a minimum rating of 3.5 on the TERM scale by the end of FY 2030.
- Maintain the rural vehicle fleet at a target of under 20% past their useful life benchmark.
- Annually, increase and maintain the percentage of assets with FTA condition ratings above 3 on the TERM scale.

## Urban Transit Targets

Transit agencies in an urban area are required to develop targets for State of Good Repair. The purpose of the State of Good Repair is to establish a strategic and systematic process of operation, maintaining, and improving public capital assets effectively through their entire life cycle. The Jackson Area Transportation Authority provided information in the table on the next page to address the targets.

Table C-5: 2023 Jackson Area Transportation Authority State of Good Repair							
Asset Category	Asset Class	Sub-Asset	Useful Life	Performance Measure	2023 Targets	Current	Ratio
Rolling Stock	Buses	25 feet+	14 years	% of fleet exceeds default useful life benchmark	50%	29%	4/14
		Cutaway	10 years		50%	75%	3/4
	Vans	Med-Duty	8 years		50%	56%	5/9
		Light Duty	8 years		50%	100%	9/9
	Automobile	N/A	8 years		50%	0%	0/5
	Non-Revenue Vehicles	Maintenance / Utility	N/A		50%	80%	4/5
Facilities	Support Facilities	Admin. & Maintenance Facilities	N/A	% of facilities rated under 3.0 on TERM scale	50%	0%	N/A
	Passenger Facilities	Downtown Transfer Center	N/A		100%	0%	N/A
Infrastructure	N/A	N/A	N/A	N/A	N/A	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.							