

APPENDIX C

Systems Performance Report

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).

2018 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, Non-motorized fatalities and serious injuries. The values used in creating the following charts for 2017 and 2018 are estimates provided by MDOT.

Total Fatalities & Fatalities 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 (GDP) 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 2017 and 2018. The final forecasted value for fatalities is the average of MDOT and UMTRI forecasted values which predicts **1,058 in 2017 and 1,030 in 2018**. The target for calendar year 2018 is **1,003** for fatalities and **1.02** for fatality rate, which is shown on the following table.

Michigan Total Fatalities and Fatality Rate

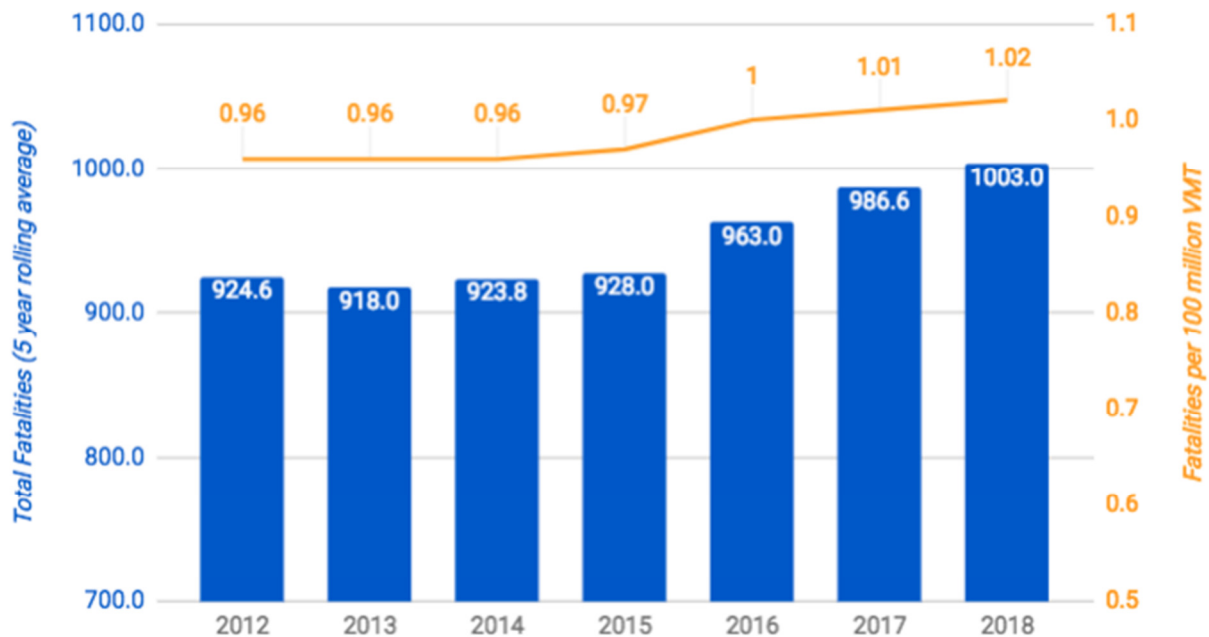


Chart Interpretation: The statewide number of fatalities rose significantly in 2016 and 2017. While part of the rise reflects an increase in the overall amount of travel in the state, the fatality rate shows elevated risk for every mile traveled in 2016 and 2017.

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 the table below, the Jackson MPO supported the adoption of MDOT's State Targets for Safety Performance Measures for Calendar Year 2018. 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),

Michigan State Safety Targets for Calendar Year 2018

| Safety Performance Measure | Baseline Through Calendar Year 2016 | Calendar Year 2018 State Safety Target |
|-----------------------------------|--|---|
| Fatalities | 963.0 | 1,003.2 |
| Fatality Rate | 1.00 | 1.02 |

- 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 Injuries 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 **5,243 in 2017 and 5,031 in 2018**. The target for calendar year 2018 is **5,136** for serious injuries and **5.23** for serious injury rate.

State Total Serious Injuries and Serious Injury Rate

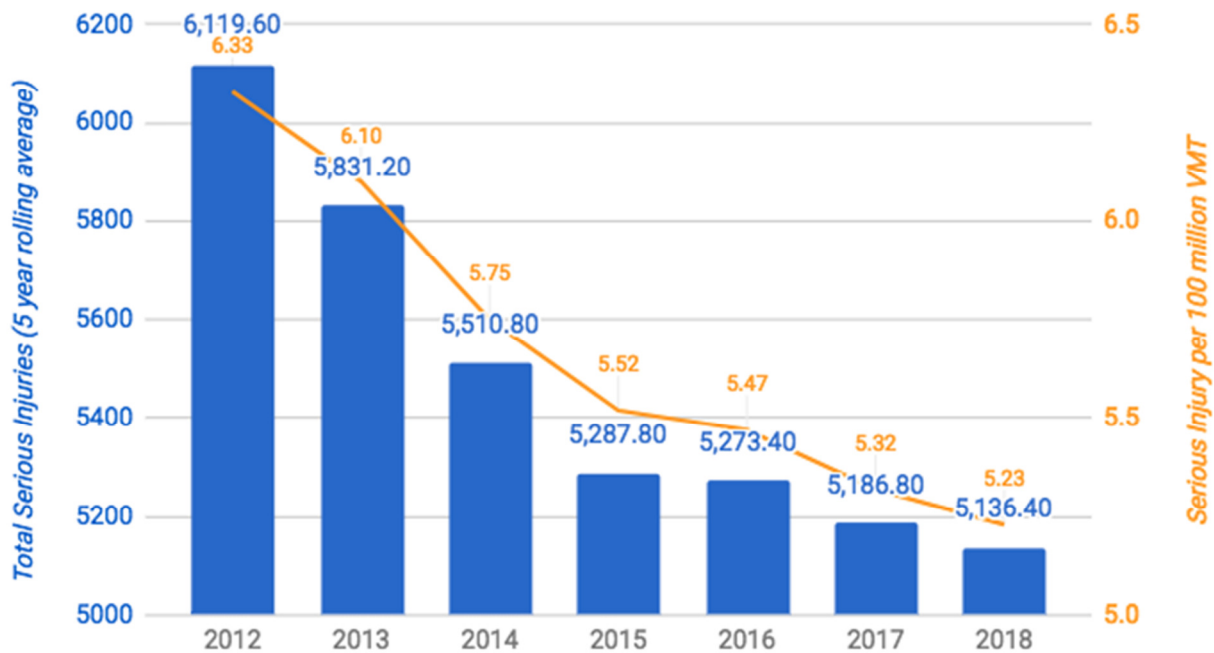


Chart Interpretation: The statewide number of serious injuries has seen a decrease since 2012. While there has been an increase in the overall amount of travel in the state, the serious injury rate is trending down for risk for 2017 (5.32) and 2018 (5.23).

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 2018. 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

Michigan State Safety Targets for Calendar Year 2018

| Safety Performance Measure | Baseline Through Calendar Year 2016 | Calendar Year 2018 State Safety Target |
|-----------------------------------|--|---|
| Serious Injuries | 5,273.4 | 5,136.4 |
| Serious Injury Rate | 5.47 | 5.23 |

- 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 Bicycle & Pedestrian Fatality & 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 bicycle and pedestrian fatalities and serious injuries for 2017 and 2018. The forecasting total for fatalities and serious injuries is **782 in 2017 and 752 in 2018**. The target for calendar year 2018 is **743.6** for fatalities and serious injuries.

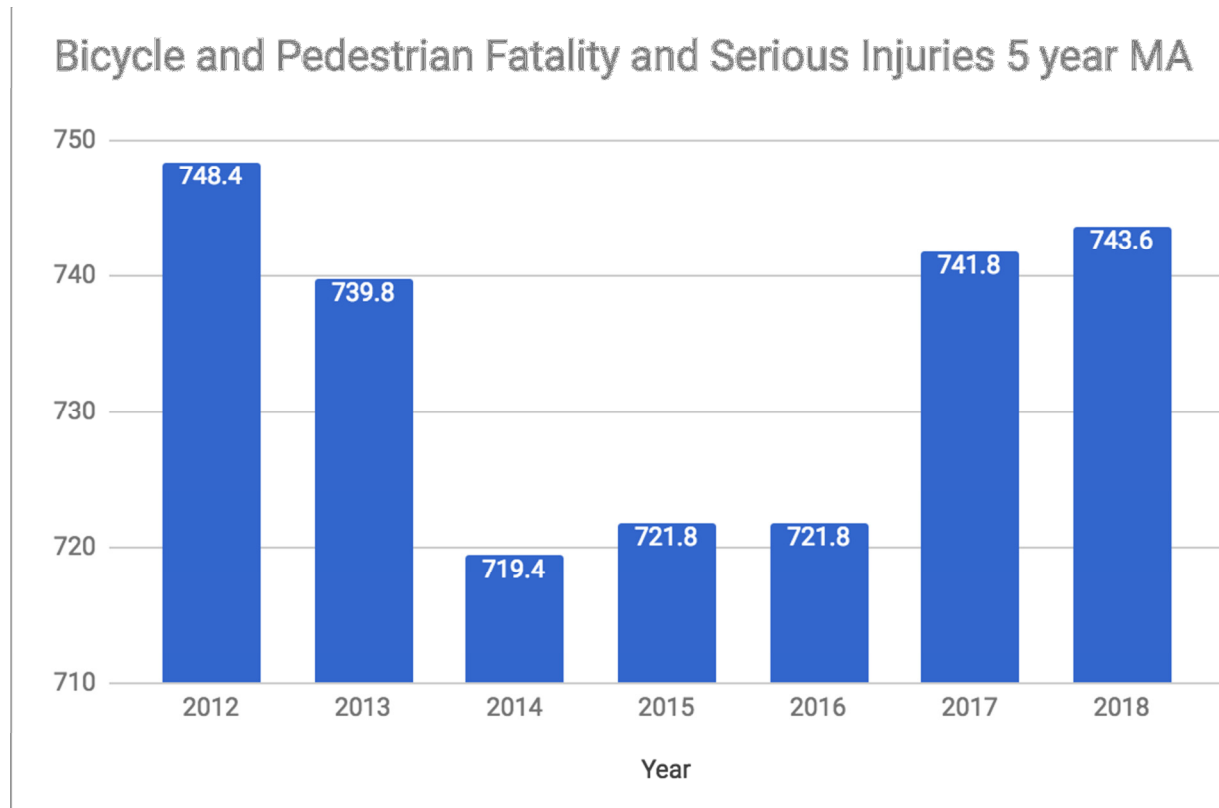


Chart Interpretation: Fatalities and Serious Injuries have seen a general downward trend since 2012 and saw lower numbers from 2014-2016. The increase in fatality and serious injury rate may be due to an overall increase in vehicular traffic (due to a good economy and inexpensive gas prices) as well as an increase in distracted driving. These factors don't appear to be changing in the near future, likely keeping the trends high.

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 2018. This established targets for five performance measures based on five year rolling averages, including:
 - Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries

Michigan State Safety Targets for Calendar Year 2018

| Safety Performance Measure | Baseline Through Calendar Year 2016 | Calendar Year 2018 State Safety Target |
|---|--|---|
| Non-motorized Fatalities & Serious Injuries | 721.8 | 743.6 |

- Direct the consultants working on the combined City of Jackson and Jackson County Non-Motorized Plan to address safety issues, concerns and needs for drivers, bicyclists, and pedestrians.
- Implement the recommendations in the Non-Motorized Plan upon the plan's completion.
- 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 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 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 classes to be in the Transit Asset Management plan are: Revenue Vehicles, Service Vehicles, and Facilities.

The targets for 2017 are based on the following assumptions:

- Section 5339: \$1.75M allocated to MDOT
- Section 5310: 55% of rural and small urban 5310 funds allocated to MDOT \$2M
- State match to the above
- Total \$4,687,500 available to meet the targets
- All available funds will be focused on revenue vehicle replacement

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

| 2017 State of Michigan State of Good Repair | | |
|---|-------------------|--|
| Measure | Current Condition | 2017 Target |
| Rolling Stock | | Not more than 10% will meet or exceed the FTA useful life benchmark (ULB) |
| Small Bus and Van 5311 | 11% | |
| Small Bus and Van 5310 | 0% | |
| Large Bus Class 5311 | 62% | |
| Large Bus Class 5310 | 0% | |
| Service Vehicles | 58% | 100% may not meet or exceed the FTA ULB |
| Facilities - All classes | unknown | 100% may be below a 3.0 rating on the FTA Transit Economic Requirements Model (TERM) |

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).

Actions

The state of Michigan will:

- Use 5339 funds in the amount of \$1.75M allocated to MDOT plus the state match of \$437,500 for a total of \$2.18M just revenue vehicles

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.

2018 Jackson Area Transportation Authority (JATA) State of Good Repair

| Asset Category | Asset Class | Sub-Asset | Useful Life | Performance Measure | 2018 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% |
| | 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.