WestPlan System Performance Report

March 2020 (Updated September 2021)

WEST MI SHORELINE
Regional Development Commission

WEST MICHIGAN SHORELINE
REGIONAL DEVELOPMENT COMMISSION
(WMSRDC)

The WMSRDC is a regional council of governments representing 127 local governments in the West Michigan counties of Lake, Mason, Muskegon, Newaygo, Oceana, and northern Ottawa.

The mission of WMSRDC is to promote and foster regional development in West Michigan… through cooperation amongst local governments.

Project Staff:

Brian Mulnix, Program Manager
Jamie Way, GIS Specialist

316 Morris Avenue - Suite 340 - - Muskegon, MI 49440

Telephone: 231/722-7878

www.wmsrdc.org

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West Michigan Metropolitan Transportation Planning Program (WestPlan) System Performance Report

Federal transportation legislation established a performance-based planning framework and target setting requirements for states and metropolitan planning organizations (MPOs). These requirements are focused on several national goals which include the following categories:

Table 1:Performance Measures and Targets

Performance Measure	Performance Targets
Safety Performance	• Number of fatalities • Rate of fatalities • Number of serious injuries • Number of non-motorized fatalities and non-motorized serious injuries
Pavement and Bridge Condition	• 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 • Rate of serious injuries
System Performance and Freight Reliability	• Percent of person-miles traveled on the interstate that are reliable • Percent of person-miles traveled on the non-interstate NHS that are reliable • Truck travel-time reliability
Congestion Mitigation and Air Quality	• Peak hour excessive delay per capita • Percent of non-single occupancy vehicle travel • Total emissions reduction
Public Transportation	• Transit Asset Management (TAM) Plans (rolling stock, equipment, facilities, infrastructure) • State of Good Repair measures are identified by individual transit providers as part of TAM Plan • Public Transportation Agency Safety Plan (Fatalities, Injuries, Safety events, System reliability)

Federal legislation requires that transportation long range plans include a system performance report and subsequent updates to evaluate the condition and performance of the transportation system with respect to the adopted performance targets. The information should include progress achieved by the MPO in comparison with system performance baseline data. This document is intended to fulfill this federal requirement, and with the recent introduction of performance reporting, there is not a lot of specific data to draw baseline numbers at this point. However, the WestPlan MPO has incorporated performance-based planning into the MPO process for many years through a variety of multimodal transportation projects that have been programmed by MPO agencies.

The WestPlan MPO System Performance Report will outline the targets and discuss how the MPO is working toward meeting the targets based on planning and projects. There are also examples of projects that have been programmed to address these targets. Information provided in this document is used to evaluate and guide decisions for future transportation investments.

The WestPlan MPO works closely with federal, state, and local member agencies, as well as the public and other stakeholders to establish targets based on the federally required areas of focus. The WestPlan MPO has elected to adopt targets set and developed by the State of Michigan for all the focus areas outlined in the legislation.

Safety Performance

Table 2: Safety Targets

Measure	Baseline Condition	2021 Targets
(5-year rolling average)	(2015-2019)	(2017-2021)
Number of Fatalities	1,004.4	968.6
Rate of Fatalities per 100 million VMT	0.998	0.982
Number of Serious Injuries	5,559.6	5,533.6
Rate of Serious Injuries per 100 million VMT*	5.518	5.609
Number of Non-motorized (Pedestrian and Bicycle) Fatalities and Serious Injuries	768.8	771.2

***Vehicle Miles Traveled (VMT)**

Performance Measure Description

Five performance measures were established for the purpose of carrying out the Highway Safety Improvement Program (HSIP), as noted in the Target Summary, and are based on a 5-year rolling average. The measures will be used to assess traffic fatalities and serious injuries on all public roads regardless of jurisdiction. The intent is to improve national safety data by providing greater consistency in reporting, improve transparency through use of a public reporting system, and enable targets and progress to be aggregated at the national level. The regulation will provide the Federal Highway Administration (FHWA) and the National Highway Traffic Safety Administration (NHTSA) the ability to better communicate a national safety performance story.

Establishing targets is a coordinated effort between the Michigan Department of Transportation (MDOT), the Michigan State Police Office of Highway Safety Planning (MSP-OHSP), and the Michigan metropolitan planning organizations (MPOs). Targets for three of the five measures must be reported to both FHWA and NHTSA, by MDOT and MSP-OHSP respectively, and must be identical. The three measures are: The number of fatalities, rate of fatalities per 100 million vehicle miles traveled (VMT), and number of serious injuries.

MSP-OHSP annually reports the baseline and targets for the subsequent year to NHTSA by July 1 in the Highway Safety Program, thus significant effort must be made to reconcile crash data by May 1 to meet the deadline. The program focuses on reducing fatalities, injuries, and economic losses as a result from vehicle crashes through behavioral traffic safety programs. MDOT reports the baseline condition and targets to FHWA by August 31, 2020, as part of the HSIP report, and the MPOs have an additional 180 days to report their respective targets to MDOT. The HSIP focuses on reducing fatalities and injuries on all public roads through infrastructure programs and projects to improve safety.

Methodology

Existing Trend

The Code of Federal Regulations, Title 23, Chapter I, Subchapter E, Part 490, Subpart B §490.207 prescribes the calculation methodology for each of the five performance measures, summarized as follows: Each performance measure is based on a five-year rolling average. The calculation is the sum of the most recent five consecutive years ending in the year for which the targets are established, dividing by five, and rounding to the tenth decimal place for each measure. The data is obtained from either the Fatalities Analysis Reporting System (FARS) or the State of Michigan Crash Database. For each rate measure, first calculate the number of fatalities or serious injuries per 100 million VMT for the most recent five consecutive years, divide by five, and round to the tenth decimal place.

Target Overview

To determine a forecasted value for the five-year rolling average for the first four measures listed above, the decision was made to use the model created by UMTRI like that used for establishing CY 2019 targets in 2018. The change model created by UMTRI predicts 886 fatalities in CY 2020, and 967 in 2021. While serious injuries have fluctuated over the past three years, the linear relationship of the

ratio of serious injuries and fatalities (A/K) is still evident. However, this trend suggests greater reduction in serious injuries. Therefore, a linear model using the last eight years of data was used which projects a flattening pattern. The model predicts 4,960 serious injuries in CY 2020, and 5,409 in 2021.

VMT values have been predicted for CYs 2019, 2020 and 2021. VMT estimates for CY 2020 are reduced due to COVID-19. Using the fatal and serious injury values, along with the respective predicted VMT, the forecasted fatality rates are 1.040 for CY 2020, and 0.945 for CY 2021, and annual serious injury rates of 5.822 for CY 2020, and 5.287 for CY 2021. Results from the UMTRI model (the fatality and serious injury relationship) were also used to generate non-motorized forecasted annual values of 714 for CY 2020, and 799 for CY 2021.

The above annual forecasted values for CY 2020 and CY 2021 along with the actual values from CY 2017 to 2019 to determine the 2021 Targets (five-year rolling average) are shown in the figure below. In addition, actual values dating back to CY 2011 are included as part of the determination of the 2019 baseline condition.

Figure 1: Statewide Fatalities

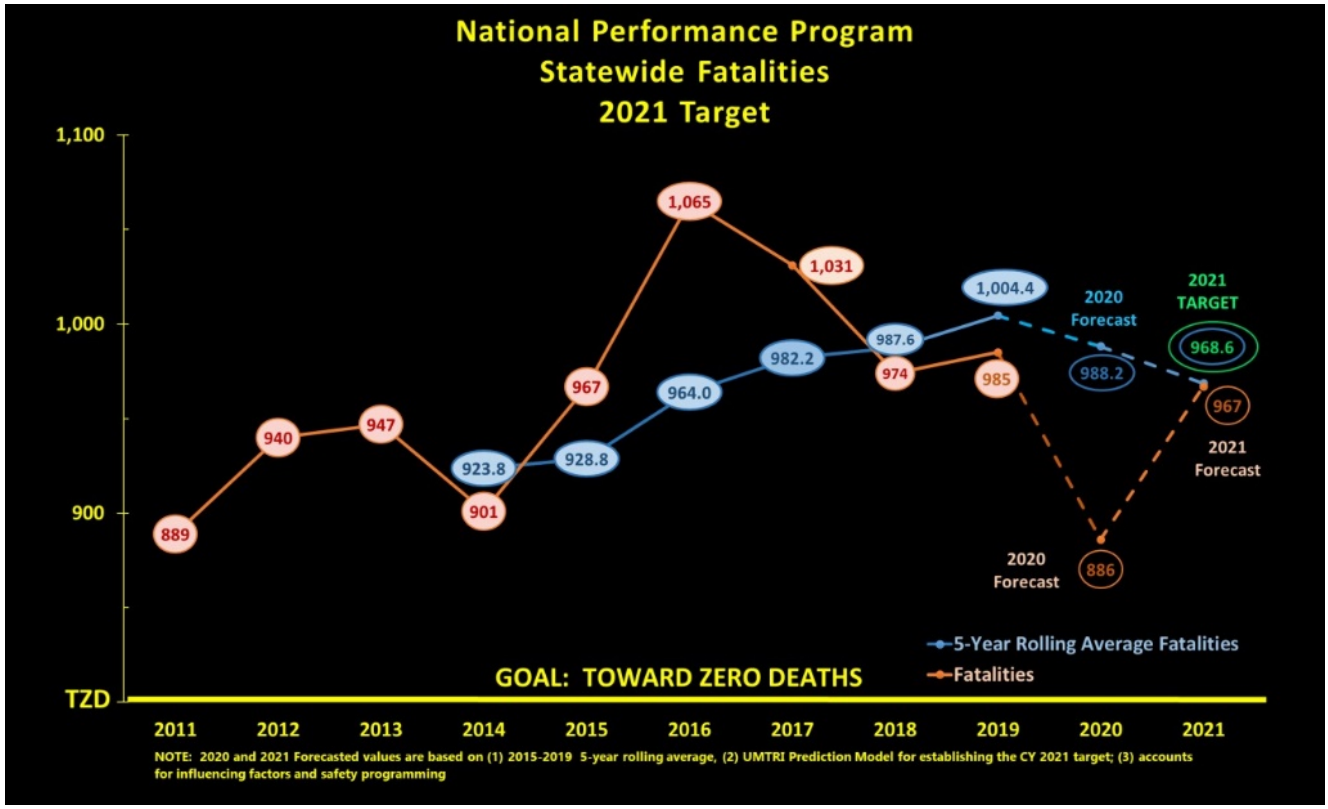


Figure 2 Statewide Fatalities per 100 Million Miles Traveled

Figure 3: Serious Injuries

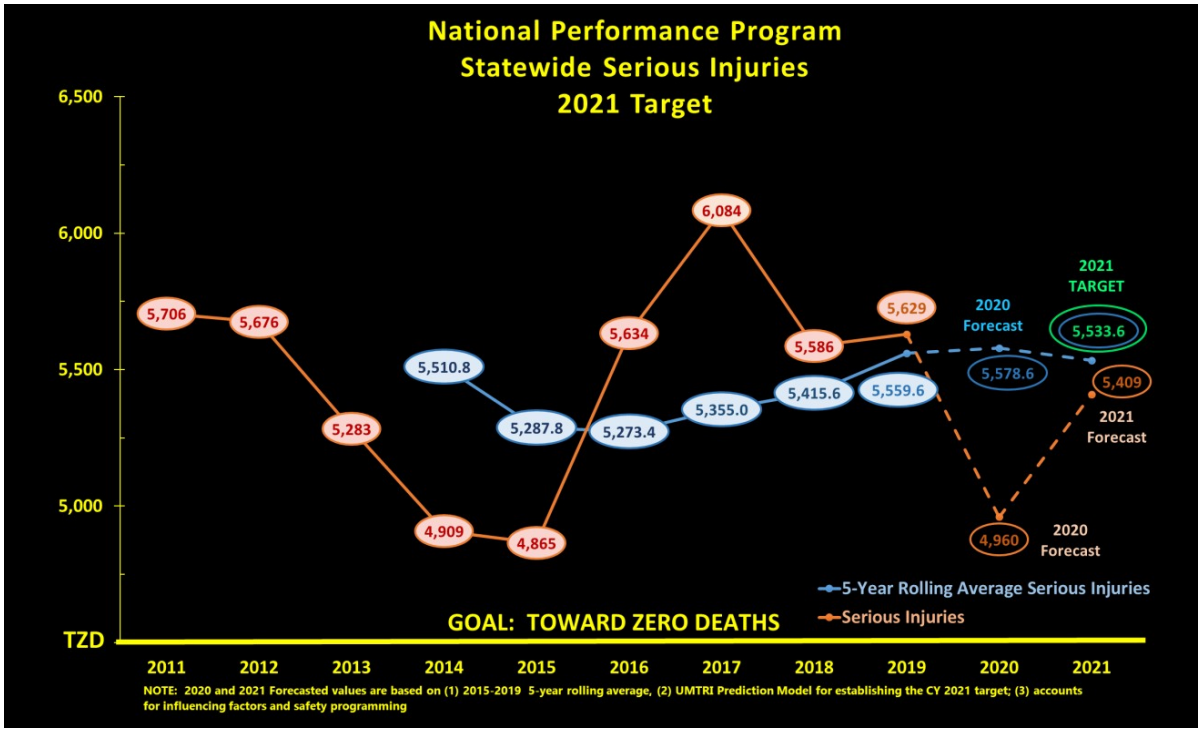


Figure 4: Serious Injuries per 100 Million Miles Traveled

Figure 5: Non-Motorized Fatalities and Serious Injuries

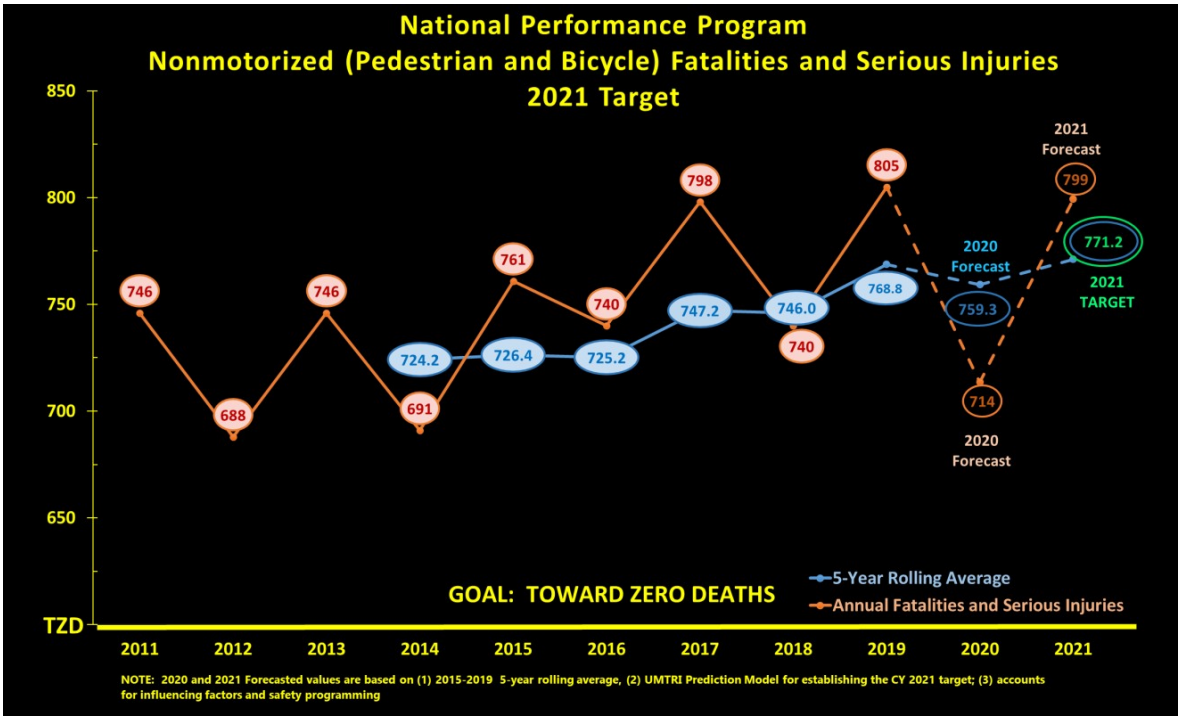


Table 3: State Safety Targets

State Safety Target Data – Calendar Year 2021 Targets in Red

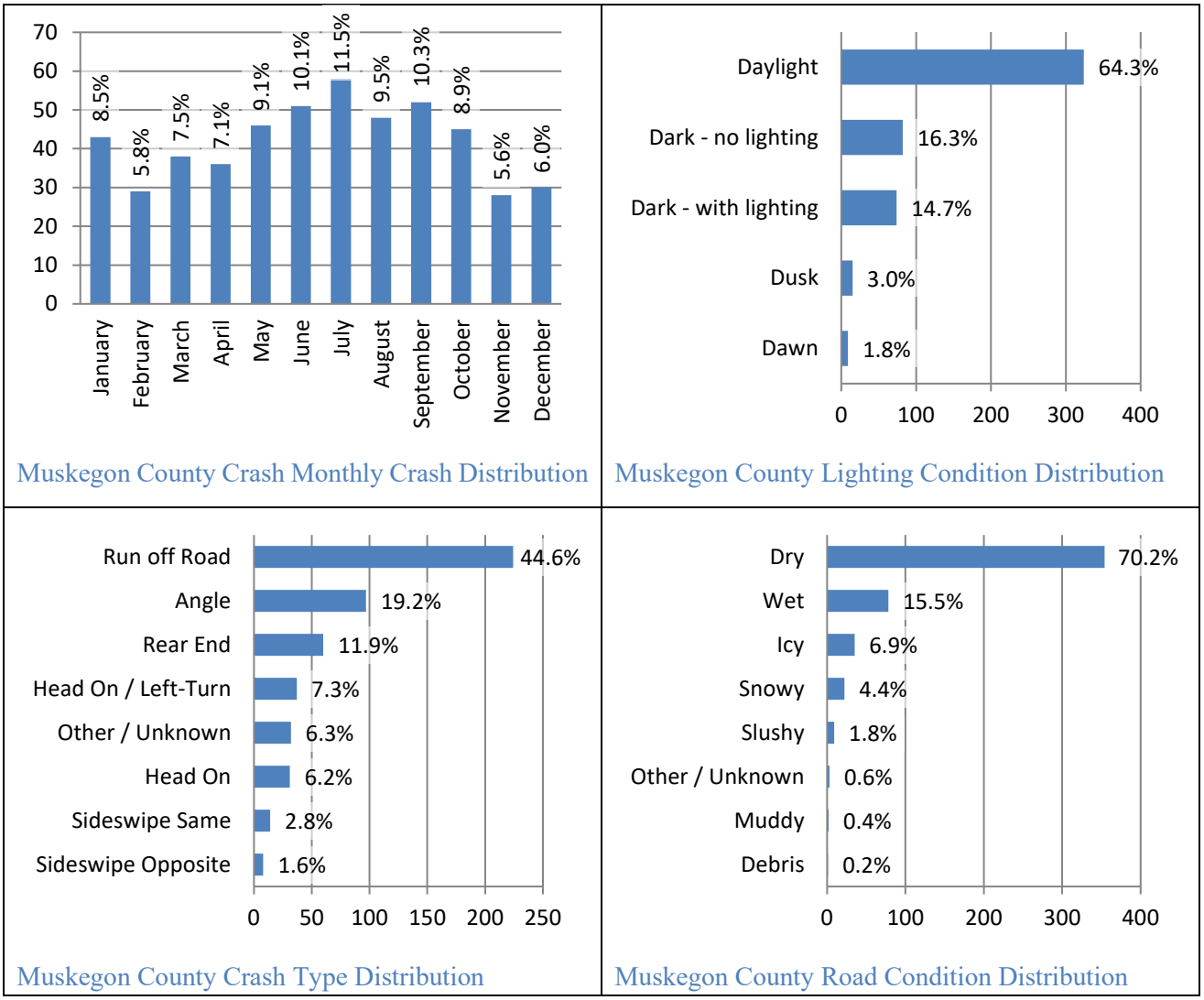
Year	Fatality	Serious Injuries	5yr Moving Average		VMT*	Fatality Rate	Serious Injury Rate	5yr Moving Average		Non-Motorized Fatality/ Serious Injuries	Non-Motorized Fatality/ Serious Injuries 5yr MA
			Fatality	Serious Injuries				Fatality Rate	Serious Injury Rate		
2011	889	5,706			948	0.938	6.019			746	
2012	940	5,676			942	0.998	6.025			688	
2013	947	5,283			951	0.996	5.555			746	
2014	901	4,909	923.8	5,510.8	974	0.925	5.040	0.964	5.753	691	724.2
2015	967	4,865	928.8	5,287.8	978	0.989	4.974	0.969	5.523	761	726.4
2016	1,065	5,634	964.0	5,273.4	992	1.074	5.679	0.996	5.455	740	725.2
2017	1,031	6,084	982.0	5,355.0	1018	1.013	5.976	0.999	5.455	798	747.2
2018	974	5,586	987.4	5,415.6	1024	0.951	5.455	0.990	5.425	740	746.0
2019	985	5,629	1,000.4	5,559.6	1023	0.963	5.502	0.998	5.518	805	768.8
2020	886	4,960	988.2	5,578.6	882	1.040	5.822	1.008	5.687	714	759.3
2021	967	5,409	968.6	5,533.6	1023	0.945	5.287	0.982	5.609	799	771.2

*Vehicle Miles Traveled (VMT) are shown in 100 million miles traveled. Calendar year 2019 to 2021 valueswere estimated were made by determining the percent change in VMT for prior years of actual data and estimating future years by applying the percent change. Bolded values are forecasted, not actual.

In 2017, a traffic safety plan was completed for the five-county region of the West Michigan Shoreline Regional Development Commission (WMSRDC) by a consultant retained by MDOT. Rather than identify specific projects, the plan recommended 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 highest priority emphasis areas were driver age related concerns, driver behavior, impaired drivers, intersection safety, motorcycle safety, roadside related concerns, signs and delineation, and vulnerable road users.

Muskegon County experienced approximately one half (504 of 985 total) of the crashes reported in the WMSRDC region during the analysis period, while accounting for approximately 58% of the average yearly vehicle miles traveled for the region. The summary statistics provided in ***Figure 6*** on the following page mirror those for the region closely. While run off road crashes account for the greatest portion of fatal or incapacitating injury crashes, the county also experiences a greater proportion of angle crashes when compared to the region.

Figure 6: Muskegon County Crash Distribution



The FY 2020-2023 Transportation Improvement Program (TIP) includes several projects which are anticipated to impart safety benefits to the transportation system which are illustrated below in ***Table 4.***

Table 4: FY 2020-2023 TIP Specific Safety Related Projects

Year	Project	Description	Safety Benefit
2020	Intersection of Broadway and Sixth Street	Removal of traffic signal	Establish dedicated stop in one direction, through traffic on the crossroad to improve flow and safety at intersection.
2020	Intersections of 3rd Street and Pontaluna Street, and 3rd Street and Park Street	Traffic signal synchronization	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2020	Lakeshore Drive @ Beach	Construct Roundabout	Reduce the potential for crashes at the intersection.
2020	Multiple routes Muskegon County	Upgrade curve warning signs	Reduce the potential for crashes along multiple roadways with dangerous curves.
2020	Multiple routes Muskegon County	Upgrade stop and stop ahead signs	Reduce the potential for crashes at the intersections throughout county
2020	Whitehall Road River to Bard	Reconstruct add left turn lane	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2020	Regionwide- Muskegon and Ottawa Counties	Traffic signal modernization	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2020	US-31	Indirect left turn lanes	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2020, 2021, 2022, 2023	Grand Region- Regionwide	Longitudinal pavement marking application	Reduce the potential for crashes along multiple roadways with dangerous sight distances
2020, 2021, 2022, 2023	Grand Region- Regionwide	Special marking application on trunkline routes	Reduce the potential for crashes along multiple roadways
2020, 2021, 2022, 2023	Grand Region- Regionwide	Pavement marking retro-reflectivity readings on trunkline routes	Reduce the potential for crashes along multiple roadways with dangerous access points and sight distances
2021	M-104	Major widening, add center left turn lane	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2021	M-46	Signal modernization @ (6) locations	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2021, 2022	US-31 N	ITS devices, advanced traffic signal technologies and communication	Reduce the potential for crashes along multiple trunkline roadways by informing motorist of traffic slowdowns and incidents

In addition to the specific projects listed in ***Table 4***, WestPlan will continue to contribute to achieving the safety targets by working with state and local partners and programming projects that will move toward meeting those targets. As a small MPO, WestPlan local agencies apply annually for consideration of funding for safety projects from a statewide pool of safety funds. Project selection at the state level is heavily weighted toward projects impacting fatality and serious injury crash locations. WestPlan supports the local agencies and assists them with the application process. Once awarded, projects are amended into the TIP. In addition, WestPlan will continue to implement the safety plan and work with state and local agencies to identify potential safety related projects and to support educational campaigns. These actions will help the MPO and state move toward the agreed targets.

Pavement and Bridge Condition

Bridge

The federal performance measures require that state departments of transportation (DOT) establish 2-year and 4-year targets for a 4-year performance period for the condition of infrastructure assets. State DOTs established their first statewide targets on May 20, 2018. As with the pavement condition reporting, state DOTs are required to submit three performance reports to the Federal Highway Administration (FHWA) within the 4-year performance period: a baseline performance report published on 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: percent of National Highway System (NHS) bridges in "good condition"; and percent of NHS bridges in "poor condition."

The MPOs will 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. WestPlan 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 two 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 percent of NHS bridge deck area under their jurisdictions in poor condition. This exceeds the penalty threshold of no more than 10 percent 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 percent threshold, at 9 percent 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.

On May 21, 2018, MDOT reported to Michigan's MPO's that it had set bridge, pavement, and reliability targets for calendar year 2019. On September 19, 2018, the WestPlan Policy Committee voted to exercise its option to "support the state targets" for the bridge, pavement, and reliability performance measures.

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, and rutting or 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 5,931 through-lane miles of interstate in Michigan, as of 2016.

The non-interstate portion of the system includes MDOT trunkline routes (M-routes) (about 11,959 miles in 2016) and local government owned non-trunkline roads (about 4,239 miles in 2016). Local agencies are responsible for 19 percent of the NHS route mileage in Michigan.

MDOT has established 2-year and 4-year targets for a 4-year performance period for pavement condition on the NHS in response to the federal regulations. The 4-year performance period includes January 1, 2018, to December 31, 2022. There are a total of three progress reports due within the 4-year performance period: a baseline performance report was published on 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 that will be used to assess pavement condition: percent of interstate road pavement in "good" condition; percent of interstate road pavement in "poor" condition; percent of non- interstate NHS pavement in "good" condition; and percent of non-interstate NHS pavement in "poor" condition. ***Table 5*** shows the WestPlan supported targets for pavement and bridge condition:

Table 5: State of Michigan Pavement and Bridge Condition Targets

Measure	Baseline	Target
Percent of pavements on the Interstate system in "good" condition	56.8% (2017)	4-year: 9% decrease to 47.8%
Percent of pavements on the Interstate system in "poor" condition	5.2% (2017)	4-year: 4.8% increase to 10%
Percent of pavements on the Non-Interstate NHS in "good" condition	49.7% (2017)	2-year: 3% decrease to 46.7% 4-year: 6% decrease to 43.7%
Percent of pavements on the Non-Interstate NHS in "poor" condition	18.6% (2017)	2-year: 3% increase to 21.6% 4-year: 6% increase to 24.6%
Percent of NHS Bridges classified as in "good" condition	33% (2018)	4-year: 26.2% decrease to 23 % (2021 Adjustment)
Percent of NHS Bridges classified as in "poor" condition	10% (2018)	4-year: 7% increase to 8% (2021 adjustment)

WestPlan will continue to contribute to achieving the pavement and bridge condition targets through the following actions:

- Provide pavement deficiency information to local jurisdictions to utilize during the project selection process.
- Implement road projects that make the most cost-effective use of resources while focusing on maintenance to maximize the life of existing roads.
- Support the development of local asset management plans that are regularly monitored, updated, and coordinated with other infrastructure systems.
- Implement construction projects that make the most cost-effective use of resources with a focus on maintenance to maximize the life of existing roads and bridges.

The FY 2020-2023 TIP includes several projects which are anticipated to help the state meet the proposed targets for pavement and bridge condition. See ***Table 6*** below:

Table 6: FY 2020-2023 TIP Specific Pavement and Bridge Improvement Projects

Year	Project	Description	Benefit
2020	US-31	M-46 to Hile Road, and ramps at M-120, White Lake Drive, Russell Road, Colby Road, and Fruitvale Road	Pavement Improvement
2020	M-45- 120th Ave to 96th Street	Resurface	Pavement Improvement
2021	104th Avenue- M-45 to North	Resurface	Pavement Improvement
2021	US-31 BR	Dowling Street to Stanton Blvd	Pavement Improvement
2022	Terrace Street- Shoreline Drive	Reconstruct	Pavement Improvement
2020	US-31 SB	Bridge over White River- Rehab	Bridge Improvement
2021	US-31 N	Bridge over Grand River- Bridge rehab	Bridge Improvement
2021	US-31	(4) Bridges along US-31 Corridor- Bridge rehab	Bridge Improvement
2022	I-96	Bridge over Hile Road- Rehab	Bridge Improvement
2022	I-96 EB	Bridge over Norris Creek- Rehab	Bridge Improvement
2022	M-104	Bridge over Spring Lake Channel- Rehab	Bridge Improvement
2023	US-31 BR	Bridge Replacement	Bridge Improvement
2023	US-31 NB	Bridge Overlay- Riley Thompson Road	Bridge Improvement
2023	US-31 BR	NB over Black Creek	Bridge Improvement

WestPlan will also continue to monitor the pavement conditions of state and local owned roads within the MPO as well as region wide, through the annual Pavement Surface Evaluation and Rating (PASER) system. The system, under the guidance of the Michigan Transportation Asset Management Council (TAMC), is part of Michigan's ACT 51 (P.A. 499 in 2002 and 199 in 2007), and is the legislation that provides a means for road agencies to

annually report the mileage and condition of the federally funded road and bridge system under their jurisdiction. In addition, the MPO also collects local data for road agencies throughout the MPO and region using the same method. ***Table 7*** describes the PASER rating system, and the results of the current data collection are shown on the following pages.

Table 7: PASER Rating System

Surface Rating		Visible Distress	General Condition / Treatment Measures
10	Excellent	None	New construction
9	Excellent	None	Recent overlay, like new.
8	Very Good	• No longitudinal cracks except reflection of paving joints. • Occasional transverse cracks, widely spaced (40' or greater).	Recent sealcoat or new road mix. Little or no maintenance required.
7	Good	• Very slight or no raveling, surface shows some traffic wear. • Longitudinal cracks (open 1/4") spaced due to reflection or paving joints. • Transverse cracks (open 1/4") spaced 10 feet or more apart, little or slight crack raveling. • No patching or very few patches in excellent condition.	First signs of aging. Maintain with routine crack filling.
6	Good	• Slight raveling (loss of lines) and traffic wear. • Longitudinal cracks (open 1/4" - 1/2") due to reflection and paving joints. • Transverse cracking (open 1/4" - 1/2") some spaced less than 10 feet. • Slight to moderate flushing or polishing. • Occasional patching in good condition.	Show signs of aging, sound structural condition. Could extend life with sealcoat.
5	Fair	• Moderate to severe raveling (loss of lines and coarse aggregate). • Longitudinal cracks (open 1/2") show some slight raveling and secondary cracks. First signs of longitudinal cracks near wheel path or edge. • Transverse cracking and first signs of block cracking. Slight crack raveling (open 1/2"). • Extensive to severe flushing or polishing. • Some patching or edge wedging in good condition.	Surface aging, sound structural condition. Needs sealcoat or non-structural overlay.
4	Fair	• Severe surface raveling. • Multiple longitudinal and transverse cracking with slight raveling. • Block cracking (over 25 - 50% of surface). • Patching in fair condition. • Slight rutting or distortions (1" deep or less).	Significant aging and first signs of need for strengthening. Would benefit from recycling or overlay.
3	Poor	• Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion. • Block cracking over 50% of surface. • Some alligator cracking (less than 25% of surface). • Patches in fair to poor condition. • Moderate rutting or distortion (1" or 2" deep). • Occasional potholes.	Need patching and major overlay or complete recycling.
2	Very Poor	• Alligator cracking (over 25% of surface). • Severe distortions (over 2" deep). • Extensive patching in poor condition. • Potholes.	Severe deterioration. Needs reconstruction with extensive base repair.
1	Failed	• Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction.

Muskegon County Road Ratings

In 2019, WMSRDC staff, along with representatives of the Muskegon County Road Commission (MCRC) and the Michigan Department of Transportation (MDOT), assessed the condition of 100 percent of Muskegon County's federal-aid eligible roads using the PASER road rating system, instead of the 50 percent requested by the State of Michigan Asset Management Council.

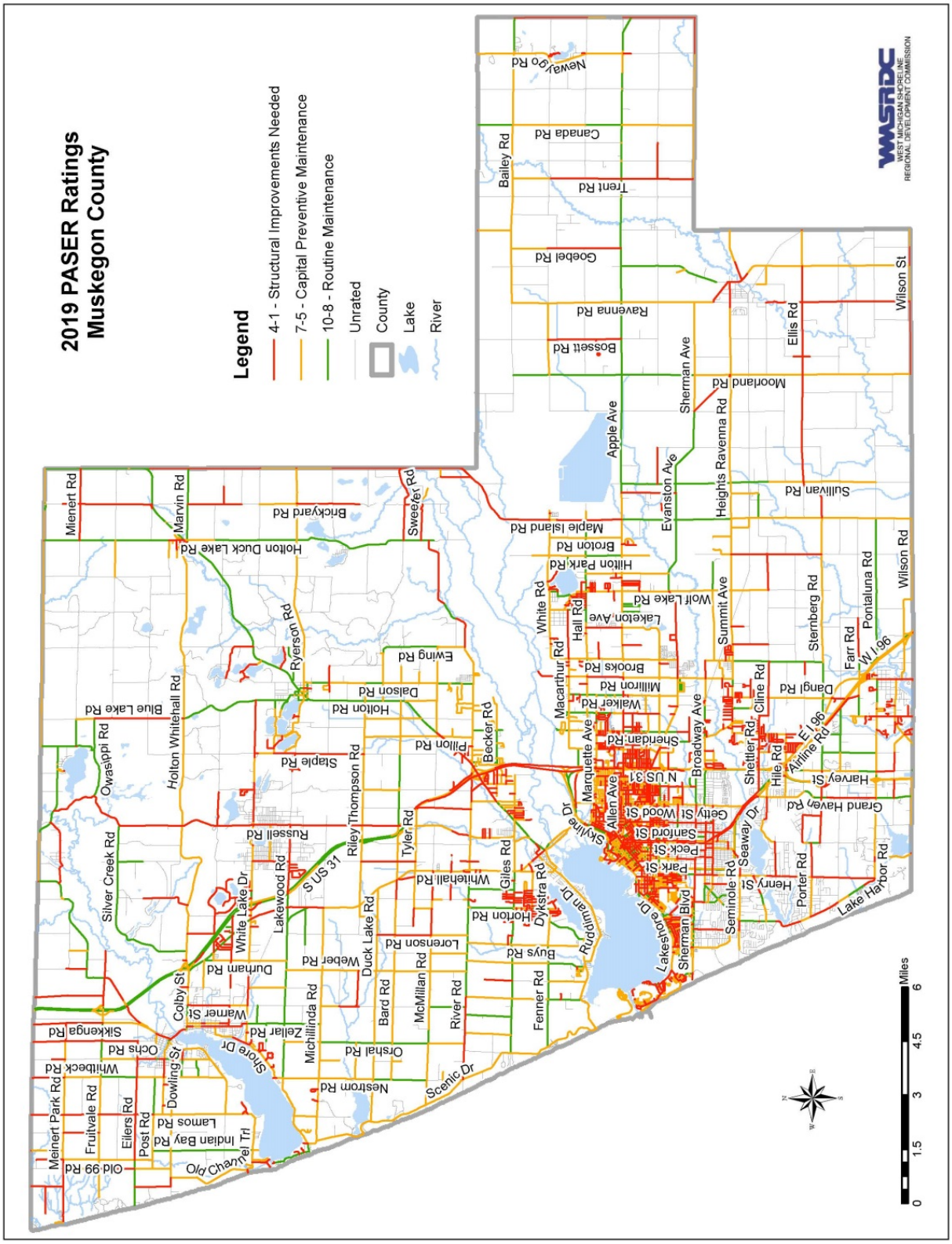
Approximately 628 miles of federal-aid eligible roads were rated for this project in 2019. The following summarizes the distribution of ratings by mileage and percentage of the total for all roads rated in the project. The Asset Management Council has prescribed a fix for each of the PASER rating categories:

- Roads receiving a rating of 8 or higher require only Routine Maintenance
- Roads receiving a rating of 5-7 require Capitol Preventative Maintenance
- Roads receiving a rating of 4 or less require Structural Improvements

2019 Results for Muskegon County PASER

PASER Rating Prescribed Fix Miles / Percent of Total Miles Rated
8-10 Routine Maintenance **142.066 miles (22.60%)**
5-7 Capital Preventative Maintenance **337.026 miles (53.61%)**
1-4 Structural Improvements **149.568 miles (23.79%)**

Figure 7: 2019 Muskegon County PASER Ratings



Ottawa County

Northern Ottawa County is part of the WestPlan MPO which is administered by the WMSRDC. In 2019, WMSRDC staff, along with representatives of the Ottawa County Road Commission (OCRC) and the MDOT, assessed the condition of 100% of Ottawa County Road Commission's federal-aid eligible roads in Spring Lake Township, Grand Haven Township, Robinson Township, and Crockery Township using the PASER road rating system. Even though only 50% of the federal aid network in required by the State of Michigan, the Ottawa County Road Commission requested that 100% be rated in 2019.

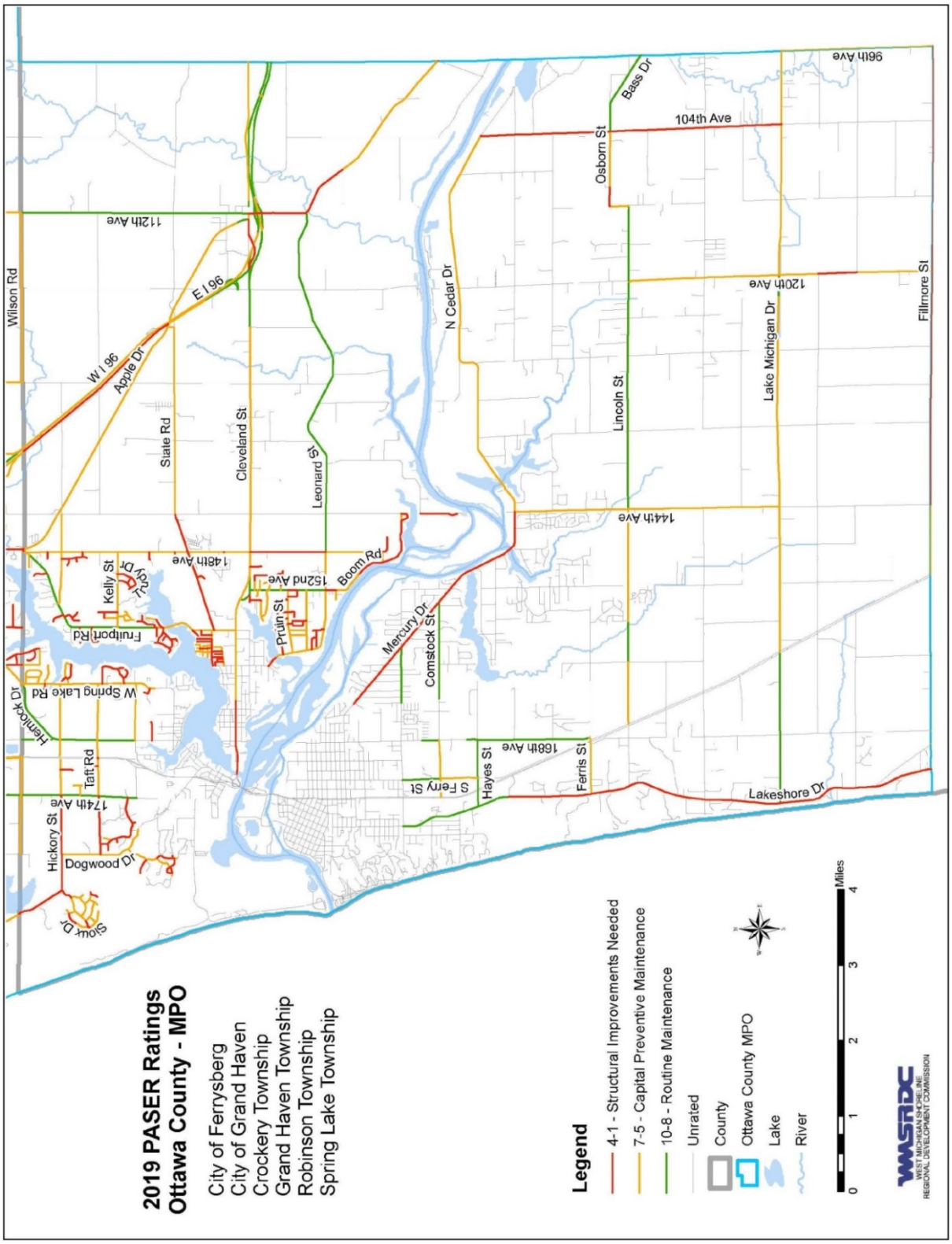
Approximately 136 miles of federal-aid eligible roads were rated for this project in 2019. The following summarizes the distribution of ratings by mileage and percentage of the total for all roads rated in the project. The Asset Management Council has prescribed a fix for each of the PASER rating categories:

- Roads receiving a rating of 8 or higher require only Routine Maintenance
- Roads receiving a rating of 5-7 require Capitol Preventative Maintenance
- Roads receiving a rating of 4 or less require Structural Improvements

2019 Results for Ottawa County PASER

PASER Rating Prescribed Fix Miles / Percent of Total Miles Rated
8-10 Routine Maintenance **45.611 miles (33.38%)**
5-7 Capital Preventative Maintenance **63.055 miles (46.15%)**
1-4 Structural Improvements **27.973 miles (20.47%)**

Figure 8: 2019 Ottawa County PASER Ratings



System Performance and Freight Reliability

On May 21, 2018, the MDOT reported to Michigan's MPO's that it had set reliability targets for calendar year 2020. On September 19, 2018, the WestPlan Policy Committee voted to exercise its option to "support the state targets" for the bridge, pavement, and reliability performance measures. ***Table 8*** shows the supported targets for FY2020:

Table 8: State of Michigan System Performance and Freight Targets

State of Michigan System Performance and Freight Targets		
Measure	**Baseline Condition**	**Target**
Level of travel time reliability on the interstate	85.1% (2018)	2-year: 10.1% decrease to 75% 4-year: 10.1% decrease to 75%
Level of travel time reliability of Non-Interstate NHS	85.8% (2018)	4-year: 15.8% decrease to 70%
Freight reliability measures of the interstate	1.38 (2017)	2-year: 1.75 4-year: 1.75

The level of travel time reliability for both the NHS interstate and non-interstate NHS measures the percentage of person-miles traveled considered to be reliable. The roads are considered reliable when the difference between normal travel time and congested travel time is below 50 percent. Baseline data from 2017 and 2018 reveals Michigan's interstate highways and non-interstate highways have been around 85 percent reliable, meaning 85 percent of person-miles traveled are meeting the federally established thresholds. The freight reliability measure measures the same reliability; however, the longer travel time is calculated using the 95th percentile travel time.

WestPlan staff participated in coordination meetings during MDOT's statewide target development process and the WestPlan MPO Committees elected to support the state targets for this reporting period.

The FY 2020-2023 TIP includes several projects which are anticipated to help the state meet the proposed targets for System Performance and Freight. See ***Table 9*** on the following page.

Table 9: FY 2020-2023 TIP Specific System Performance and Freight Projects

Year	Project	Description	Benefit
2020	M-104- Spring Lake Channel to Lake Avenue	Capital Preventative Maintenance (CPM)	Reliability
2020	US-31- M-45 to Comstock Street	Capital Preventative Maintenance (CPM)	Reliability
2021	US-31 BR- Dowling Street to Stanton Blvd	Capital Preventative Maintenance (CPM)	Reliability

WestPlan will contribute to achieving these statewide targets through the following actions:

- Provide reliability deficiency information to local jurisdictions to utilize during project selection processes.
- Monitor congestion levels, prioritize congested locations, and implement treatments.
- Use data to inform projects for inclusion in the short- and long-term planning process.
- Conduct an annual analysis of congestion performance target setting and program adjustments.

These actions correspond with MDOT's actions to meet these targets:

- Monitor performance measures and consider system performance as a factor in the decision-making process for transportation investments.
- Evaluate project types and funding templates that can impact travel reliability, such as capacity.
- Operational changes, safety projects that have operational impacts, and pavement projects that change the condition from poor to good or fair.

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 WestPlan area does not qualify for inclusion in this measure.

Public Transportation

There are two public transit providers in the WestPlan area: Muskegon Area Transportation System (MATS) and Harbor Transit Multi-Modal Transit System (HT). Both are direct recipients of funds from the Federal Transit Administration (FTA). As such, MATS and HT are identified as tier II recipients under the current federal legislation and have developed state of good repair targets. Federal surface transportation legislation mandated that the FTA develop a rule establishing a strategic and systematic process of operating, maintaining, and improving public capital assets effectively through their entire life cycle. The Transit Asset Management (TAM) Final Rule 49 CFR part 625 became effective Oct. 1, 2016, and established four performance measures:

- Rolling Stock - Percentage of revenue vehicles exceeding useful life benchmark (ULB)
- Equipment - Percentage of non-revenue vehicles exceeding ULB
- Facilities - Percentage of facilities rated under 3.0 on the Transit Economic Requirements Model
- (TERM) scale
- Infrastructure - Percentage of track segments under performance restriction (only applies to rail fixed
- Guideway Systems – not applicable in the WestPlan region

Table 10 shows the supported targets for the TAM:

Table 10: Transit Asset Management Targets

Asset Class	Baseline Condition	Performance Measure	Approximate Baseline Condition	Target
Rolling Stock	Large Bus	Age: Percentage that have met or exceeded their useful life benchmark	0% exceeding ULB	Not more than 15%
	Small Bus	Age: Percentage that have met or exceeded their useful life benchmark	14% exceeding ULB	Not more than 10%
	Sedan/SUV	Age: Percentage that have met or exceeded their useful life benchmark	0% exceeding ULB	Not more than 10%
Equipment	Service Vehicles	Age: Percentage that have met or exceeded their useful life benchmark	25% exceeding ULB	Not more than 20%
	Maintenance Equipment	Condition: Percentage of equipment and facilities with a condition rating adequate or below on the FTA Economic Requirements Model Scale	0% below target	Not more than 20%
	Building Subsystems	Condition: Percentage of equipment and facilities with a condition rating adequate or below on the FTA economic requirements model scale	0% below target	Not more than 10%
Facilities	All fixed facilities	Condition: Percentage of equipment and facilities with a condition rating adequate or below on the FTA economic requirements model scale	25% below target	Not more than 10%

WestPlan received agency-level State of Good Repair (SGR) targets from the MATS and the HT in 2019, which were approved and supported by the MPO Technical and Policy Committees. FTA recommends that MPOs adopt a single set of region-level targets for each asset class that are developed in coordination with the region's public transportation providers. Therefore, staff engaged the public transit providers in a coordination process to cooperatively develop a single set of regional SGR targets after WestPlan received updated targets from the transit agencies, as well as targets from MDOT (applicable to MDOT Section 5311 and 5310 sub recipients). Through

this coordination process, the following region-level targets were developed and adopted by the WestPlan Committees and are shown in ***Table 11*** below.

Table 11: Transit State of Good Repair Targets for 2019

Asset Class	Current Condition MATS	Current Condition HT	2019 Target MATS	2019 Target HT
Revenue Vehicles: small bus and van	1%	5%	1%	5%
Revenue Vehicles: large bus	20%	21%	20%	21%
Service Vehicles	1%	5%	1%	5%
Facilities	1%	5%	1%	5%

MATS and HT have both submitted TAM plans and can be viewed in Appendix H and I of the WestPlan 2045 Long Range Transportation Plan. In addition, the entire transit project list for FY2020-2023 can be viewed in Chapter Two ofthe TIP document. ***Table 12*** on the following page shows the projects in the FY2020-2023 TIP that are expected to help the transit agencies meet their targets for the State of Good Repair.

Table 12: FY2020-2023 Transit Projects

Fiscal Year	Responsible Agency	Project Description	State of Good Repair Benefit
2020	Muskegon Area Transit System	Facility construction	Facilities
2021	Muskegon Area Transit System	Transit facility development	Facilities
2022	Muskegon Area Transit System	Heavy Duty replacement bus	Large Bus
2023	Harbor Transit Multi-Model Transportation System	Bus Replacement	Large Bus
2023	Muskegon Area Transit System	Heavy duty replacement bus	Large Bus
2023	Muskegon Area Transit System	Heavy duty replacement bus	Large Bus
2022	Harbor Transit Multi-Model Transportation System	Bus replacement	Large Bus
2022	Muskegon Area Transit System	Transit facility development	Facilities
2023	American Red Cross of West Michigan	Replacement Vehicles (6)	Small Bus and Van
2020	Harbor Transit Multi-Model Transportation System	Two replacement busses	Small Bus and Van
2020	Harbor Transit Multi-Model Transportation System	Purchase one replacement bus	Large Bus
2021	Harbor Transit Multi-Model Transportation System	Bus purchase	Small Bus and Van
2021	Harbor Transit Multi-Model Transportation System	Bus purchase	Small Bus and Van
2022	Harbor Transit Multi-Model Transportation System	Purchase one replacement bus	Large Bus
2022	Harbor Transit Multi-Model Transportation System	Purchase two replacement busses	Small Bus and Van
2023	Harbor Transit Multi-Model Transportation System	Purchase one replacement bus	Large Bus
2023	Harbor Transit Multi-Model Transportation System	Purchase one replacement bus	Large Bus
2023	Muskegon Area Transit System	Support equipment and one bus	Small Bus and Van
2023	Muskegon Area Transit System	Support equipment and one bus	Small Bus and Van
2022	Muskegon Area Transit System	Mobility Management	
2022	Muskegon Area Transit System	Transit Facility Construct/Acq Small Bus(es)/Acq Revenue Service Minivan(s)	Small Bus and Van
2022	Muskegon Area Transit System	Transit Facility Construct/Acq Small Buses)/Acq Revenue Service Minivan(s)	Small Bus and Van
2022	Muskegon Area Transit System	Transit Facility Construct/Acq Small Bus/Acq Revenue Service Minivan(s)	Small Bus and Van
2020	Muskegon Area Transit System	Bus and Bus Facilities	Large Bus
2020	Muskegon Area Transit System	Bus and Bus Facilities	Large Bus
2020	Muskegon Area Transit System	Bus and Bus Facilities	Large Bus
2020	Muskegon Area Transit System	Bus and Bus Facilities	Large Bus

Project Selection in the FY 2020-2023 TIP

For the development of the FY 2020-2023 TIP, WestPlan collected detailed data for each individual project that was submitted for consideration. To gather this data, road agencies were required to submit a "project/program nomination form" for each project submitted. The form, developed by WestPlan, specifically asks for safety information (number of crashes) about each project, as well as condition data, traffic volumes, crash data, congestion issues, PASER ratings, and priority within the agency if multiple projects were submitted. In addition, the form captures information regarding other modes of transportation, i.e., non-motorized and transit.

The project selection form was utilized in compiling a listing of projects to be considered for inclusion in the FY 2020-2023 TIP and evaluated by the WestPlan TIP Subcommittee. Projects were selected within the financial constraints of the various funding programs and with consideration to supporting the goals of the 2045 WestPlan Metropolitan Transportation Plan.

Transit agencies also submitted forms and worked with MPO staff to determine potential projects that will address the public transportation performance measures and targets, including TAM Plan that is currently in use.

All these forms were utilized to prepare a list of projects for consideration by the WestPlan TIP Subcommittee. The MPO Technical Subcommittee worked together to select projects within the financial constraints for the various funding programs represented in the TIP, as well as considering each project's support for the performance targets adopted by WestPlan.

WestPlan is committed to meeting the statewide performance measure targets for all the national goals. Project planning and allocation of federal funding to meet these measures and goals is an important part of the MPO process. As resources continue to be available, they will be allocated toward multimodal transportation projects that address these measures and targets.

Figure 9 on the following pages shows the detailed project selection form that is used as a tool for selecting projects for the TIP.

Figure 9: WestPlan Project Selection Form

WESTPLAN PROJECT SUBMISSION FORM FY 2020 – 2023

Roadway/Project Name: _____

Limits: _____

Jurisdiction: _____

Work to be completed: _____

Submitting for Year:

FY 2020 **(Projects already programmed)**

FY 2021 _____

FY 2022 _____

FY 2023 _____

Does this project address any of the federally mandated performance measures such as Safety, Transit, Pavement/Bridge Condition, Congestion, System Reliability, or Environmental Sustainability? If so, how?

_____

_____

_____

_____

WESTPLAN PROJECT SUBMISSION FORM FY 2020 – 2023

Estimated Federal Cost	
Estimated State Cost	
Estimated Local Cost	
Total Estimated Project Cost	

NFC Classified

Yes _____ **If Yes, Current Classification? _____**

No _____

N/A _____

Length _____Feet **Posted Speed _____ MPH**

ADT (2-way) _____ **Year_____**

% Commercial _____ **Year_____**

ROW

Existing _____ Feet Additional if needed_____ Feet

# of Lanes

Existing _____ Proposed if necessary_____

Lane Width

Existing _____ Feet Proposed if necessary_____ Feet

WESTPLAN PROJECT SUBMISSION FORM FY 2020 – 2023

Existing Pavement Type? _____

Proposed Pavement Type?_____

Date of most recent work completed? _____

Age of pavement? _____

On street parking? _____

Utility work planned in conjunction with project?_____

Current PASER rating_____

Number of other projects submitting for FY2020-2023 TIP?_____

Rank within Jurisdiction of all projects submitted_____

Population of Jurisdiction submitting? _____

Total miles of federal roads within jurisdiction? _____

Is this project on a Transit route? _____

Adjacent sidewalks or other non-motorized facilities?_____

Total Accidents for project location in last 3 years? _____

Will project improve safety conditions?_____

WESTPLAN PROJECT SUBMISSION FORM FY 2020 – 2023

Additional Comments/Project Justification/Regional Significance

Table 13 shows a listing of projects obligated in FY2019. These projects support the commitment and investment by the WestPlan MPO to work with member agencies toward addressing and meeting the adopted performance measure targets.

Table 13: Obligated Projects in the WestPlan MPO from FY2019

WESTPLAN MPO
2019 OBLIGATED PROJECTS LIST

Local Construction Projects

Fiscal Year	Job#	County	Responsible Agency	Project Name	Project Description	Fed Obligated Amount	State Obligated Amount	Local Obligated Amount	Total Obligated Amount	Fed Estimated Amount	State Estimated Amount	Local Estimated Amount	Total Estimated Amount
2019	130795	Ottawa	Ferrysburg	Northshore Drive	Reconstruct	$0	$0	$638,670	$638,670	$0	$0	$541,000	$541,000
2019	130778	Ottawa	Grand Haven	North Shore Drive	Reconstruct	$493,724	$0	$1,269,000	$1,762,724	$403,090	$0	$1,036,046	$1,439,136
2019	130796	Muskegon	City of Muskegon	Lakeshore Drive	Reconstruct	$0	$0	$5,206,780	$5,206,780	$0	$0	$4,374,333	$4,374,333
2019	129302	Muskegon	Muskegon County	Blackmer Road	Preventative maintenance	$10,478	$1,965	$655	$13,098	$16,000	$3,000	$1,000	$20,000
2019	129302	Muskegon	Muskegon County	Blackmer Road	Preventative maintenance	$79,635	$14,931	$4,977	$99,543	$121,600	$22,800	$7,600	$152,000
2019	130496	Muskegon	Muskegon County	Ellis Rd	Reconstruct	$0	$301,448	$0	$301,448	$0	$281,821	$0	$281,821
2019	130496	Muskegon	Muskegon County	Ellis Rd	Reconstruct	$2,747,904	$0	$385,529	$3,133,432	$2,568,989	$0	$360,427	$2,929,416
2019	130781	Muskegon	Muskegon County	Giles Road	Resurface, add 5' paved shoulders	$678,254	$0	$396,797	$1,075,052	$683,729	$0	$400,000	$1,083,729
2019	133052	Muskegon	Muskegon County	Fruitvale Road	Preventative maintenance	$0	$74,705	$3,932	$78,636	$0	$64,600	$3,400	$68,000
2019	133052	Muskegon	Muskegon County	Fruitvale Road	Preventative maintenance	$0	$53,062	$2,793	$55,855	$0	$45,885	$2,415	$48,300
2019	133052	Muskegon	Muskegon County	Fruitvale Road	Preventative maintenance	$0	$80,198	$4,221	$84,419	$0	$69,350	$3,650	$73,000
2019	133052	Muskegon	Muskegon County	Fruitvale Road	Preventative maintenance	$0	$101,620	$5,348	$106,969	$0	$87,875	$4,625	$92,500
2019	133052	Muskegon	Muskegon County	Fruitvale Road	Preventative maintenance	$0	$126,339	$6,649	$132,988	$0	$109,250	$5,750	$115,000
2019	205903	Muskegon	Muskegon County	River Rd	Crush and Shape and Asphalt resurfacing	$697,977	$0	$174,494	$872,471	$640,000	$0	$160,000	$800,000
2019	130782	Muskegon	Muskegon Heights	Hackley Avenue	Resurface	$240,176	$0	$127,710	$367,886	$220,368	$0	$117,177	$337,545
2019	130801	Muskegon	Norton Shores	Broadway Ave	Reconstruct existing 4 lane HMA	$561,699	$0	$1,114,208	$1,675,907	$550,000	$0	$1,091,000	$1,641,000
2019	202854	Muskegon	Norton Shores	Seminole Road	Pedestrian Improvements	$42,005	$0	$10,501	$52,507	$29,600	$0	$7,400	$37,000
2019	130785	Ottawa	Ottawa County	Comstock St	Resurface existing width, restore shoulders	$352,920	$0	$280,824	$633,744	$420,000	$0	$334,200	$754,200
2019	201121	Ottawa	Ottawa County	Leonard St	Construct Non-motorized trail from 120th/Leonard to 112th/Cass	$1,431,800	$0	$551,382	$1,983,183	$1,540,318	$0	$593,172	$2,133,490
2019	126424	Ottawa	Spring Lake	North Bank Trail	Nonmotorized Path	$64,420	$0	$14,285	$78,705	$64,411	$0	$14,283	$78,694
2019	126424	Ottawa	Spring Lake	North Bank Trail	Nonmotorized Path	$1,080,945	$0	$476,586	$1,557,531	$1,080,789	$0	$476,517	$1,557,306

WESTPLAN MPO
2019 OBLIGATED PROJECTS LIST

State Construction Projects

Fiscal Year	Job#	County	Responsible Agency	Project Name	Project Description	Fed Obligated Amount	State Obligated Amount	Local Obligated Amount	Total Obligated Amount	Fed Estimated Amount	State Estimated Amount	Local Estimated Amount	Total Estimated Amount
2019	127479	Ottawa	MDOT	M-104	Center Left Turn Lane	$96,583	$21,417	$0	$118,000	$96,583	$21,417	$0	$118,000
2019	200348	Kent	MDOT	Regionwide	Traffic Signal Modernizations; connected vehicle installations.	$5,000	$0	$0	$5,000	$0	$0	$0	$0
2019	203017	Kent	MDOT	Grand Region longitudinal pavement	Application of longitudinal pavement markings	$2,391,164	$265,685	$0	$2,656,849	$218,312	$24,257	$0	$242,569
2019	203018	Kent	MDOT	Grand Region special pavement markings	Application of special pavement markings	$493,303	$54,811	$0	$548,114	$1,125	$125	$0	$1,250
2019	203508	Kent	MDOT	Regionwide	Pavement marking retroreflectivity readings and condition assessment	$14,009	$1,557	$0	$15,566	$951	$106	$0	$1,057
2019	206572	Kent	MDOT	TSC wide	Traffic Signal Modernization; connected vehicle installations	$504,792	$0	$0	$504,792	$56,088	$0	$0	$56,088
2019	208617	Muskegon	MDOT	US-31 & US-31 BR	Study Strategies for Port Expansion	$41,337	$10,335	$0	$51,672	$41,338	$10,334	$0	$51,672
2019	118165	Muskegon	MDOT	M-120	Rubblize	$1,148,730	$257,602	$0	$1,406,332	$987,111	$218,889	$0	$1,206,000
2019	122641	Muskegon	MDOT	US-31	Widen paved shoulder	$251,176	$27,909	$0	$279,085	$292,500	$32,500	$0	$325,000
2019	207972	Muskegon	MDOT	M-46	Milling and One Course Asphalt Overlay	$295,820	$65,597	$0	$361,418	$180,070	$39,930	$0	$220,000
2019	123326	Muskegon	MDOT	M-120	Addition of Center Left Turn Lane	$632,420	$140,237	$0	$772,657	$931,453	$206,547	$0	$1,138,000
2019	123328	Muskegon	MDOT	M-120	Addition of Center Left Turn Lane	$877,946	$97,550	$0	$975,496	$900,000	$100,000	$0	$1,000,000
2019	126477	Muskegon	MDOT	N US 31/S BR US 31 RAMP	Extend US-31 NB Ramp to US-31 BR SB	$286,046	$63,430	$0	$349,476	$286,475	$63,525	$0	$350,000
2019	127478	Ottawa	MDOT	US-31	Indirect Left Turn Lanes	$163,700	$36,300	$0	$200,000	$163,700	$36,300	$0	$200,000
2019	203378	Ottawa	MDOT	US-31 N	Freeway lighting upgrade	$176,364	$39,108	$0	$215,472	$184,163	$40,838	$0	$225,000
2019	205134	Muskegon	MDOT	US-31 S	Extend exit ramp decel length	$63,843	$14,157	$0	$78,000	$63,843	$14,157	$0	$78,000
2019	205134	Muskegon	MDOT	US-31 S	Extend exit ramp decel length	$348,148	$77,201	$0	$425,349	$331,493	$73,508	$0	$405,000
2019	205137	Muskegon	MDOT	Sternberg/US-31 N Ramp	Widen entrance ramp for additional lane	$27,011	$5,990	$0	$33,000	$27,011	$5,990	$0	$33,000
2019	205137	Muskegon	MDOT	Sternberg/US-31 N Ramp	Widen entrance ramp for additional lane	$274,955	$60,970	$0	$335,925	$292,205	$64,796	$0	$357,000
2019	207749	Ottawa	MDOT	US-31 N	Enhanced linear delineation on concrete barrier wall	$42,822	$4,758	$0	$47,580	$42,822	$4,758	$0	$47,580

WESTPLAN MPO
2019 OBLIGATED PROJECTS LIST

Transit Projects

Fiscal Year	Job#	County	Responsible Agency	Project Name	Project Description	Fed Obligated Amount	State Obligated Amount	Local Obligated Amount	Total Obligated Amount	Fed Estimated Amount	State Estimated Amount	Local Estimated Amount	Total Estimated Amount
2019	207082	Muskegon	American Red Cross of West Michigan	Webster Ave	Replacement Vehicles (6)	$158,400	$39,600	$0	$198,000	$158,400	$39,600	$0	$198,000
2019	203203	Ottawa	Harbor Transit	Transit Operations	Areawide	$20,000	$1,000	$0	$5,000	$20,000	$5,000	$0	$25,000
2019	205886	Ottawa	Harbor Transit	Transit Capital	440 North Ferry Street, Grand Haven, Michigan 49417	$25,000	$1,250	$0	$6,250	$25,000	$6,250	$0	$31,250
2019	205893	Ottawa	Harbor Transit	N Ferry St	440 North Ferry Street, Grand Haven, Michigan 49417	$28,578	$1,429	$0	$7,145	$28,578	$7,145	$0	$35,723
2019	205928	Ottawa	Harbor Transit	Transit Capital	Areawide	$256,000	$12,800	$0	$64,000	$256,000	$64,000	$0	$320,000
2019	207907	Ottawa	Harbor Transit	N Ferry St	Areawide	$256,000	$12,800	$0	$64,000	$256,000	$64,000	$0	$320,000
2019	202947	Muskegon	Muskegon Area Transit System	Transit Capital	FY19 CMAQ - Bus replacement	$390,000	$19,500	$0	$97,500	$390,000	$97,500	$0	$487,500
2019	202967	Muskegon	Muskegon Area Transit System	Transit Capital	FY 19 CMAQ - Marketing	$50,000	$2,500	$0	$12,500	$50,000	$12,500	$0	$62,500
2019	205814	Muskegon	Muskegon Area Transit System	6th St	Support Equipment	$99,129	$4,956	$0	$24,782	$99,129	$24,782	$0	$123,911
2019	205815	Muskegon	Muskegon Area Transit System	6th St	Operating assistance for the delivery of non-urban transit	$7,590	$7,590	$0	$15,179	$15,179	$32,101	$37,048	$84,328
2019	205817	Muskegon	Muskegon Area Transit System	Mobility Management	Funding for mobility management activities	$140,000	$35,000	$0	$175,000	$140,000	$35,000	$0	$175,000
2019	205821	Muskegon	Muskegon Area Transit System	Transit Operations	Funding for operating assistance.	$1,731,034	$1,109,163	$621,871	$3,462,068	$1,731,034	$1,109,163	$621,871	$3,462,068
2019	203359	Muskegon	Pioneer Resources	Wesley Ave	Funding for operating assistance.	$46,585	$46,585	$0	$93,170	$46,585	$46,585	$0	$93,170
2019	204686	Muskegon	Pioneer Resources - Muskegon	Wesley Ave	To provide operating assistance.	$79,530	$0	$79,530	$159,060	$79,530	$0	$79,530	$159,060
2019	206925	Muskegon	Pioneer Resources - Muskegon	Wesley Ave	2 medium duty replacement buses	$176,898	$44,224	$0	$221,122	$176,898	$44,224	$0	$221,122