MICHIGAN'S 2021 Roads & Bridges ANNUAL REPORT

Michigan
Transportation Asset
Management Council

Dear Reader: On behalf of the Transportation Asset Management Council (TAMC) it is my pleasure to provide you with this Michigan's 2021 Roads & Bridges Annual Report.

The TAMC was formed under Public Act (PA 499 of 2002) to promote the use of asset management practices among Michigan's road owning agencies; to develop a coordinated, unified effort by the various roadway agencies within the state; and to advise the State Transportation Commission (STC) and Michigan Infrastructure Council (MIC) on statewide asset management strategy.

This report is a culmination of efforts of all road and bridge owning agencies, as well as metropolitan planning organizations working together to understand Michigan's transportation system and implement asset management best practices.

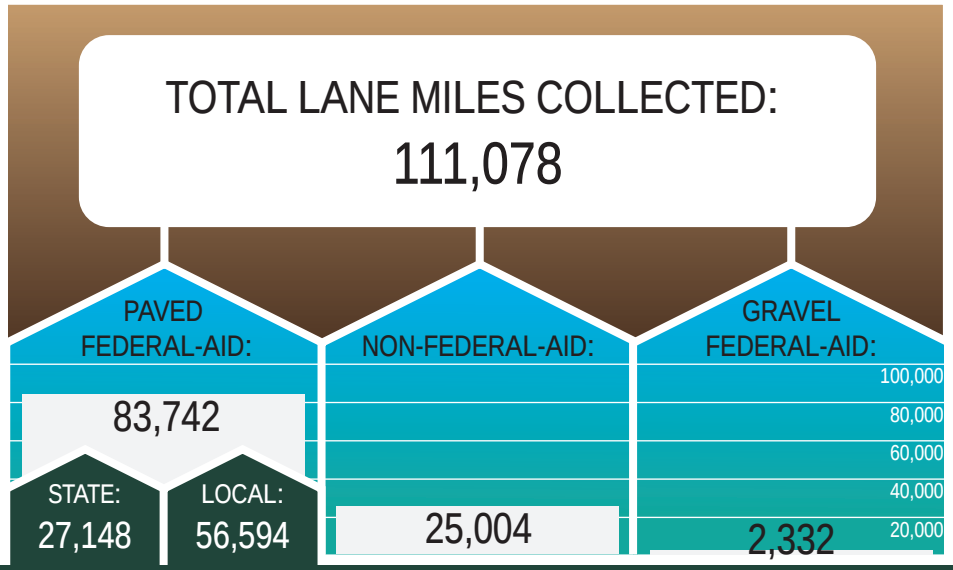
It is with sincere recognition of gratitude for all those who participated in the 2021 Road Condition Pavement Surface Evaluation and Rating (PASER) data collection efforts. Over 111,000 miles of Michigan roads were rated, including nearly the entire federal aid system for the first time since 2007. Thank you on behalf of the TAMC on all the collaboration, teamwork and going above and beyond in statewide data collection to assist with data driven decision making.

If you have any questions, please contact either me or the TAMC Coordinator at ***MDOT_TAMC@michigan.gov***

Sincerely,

Joanna I. Johnson, TAMC Chair

2021 Road Data Collection



INTRODUCTION

Major takeaways from 2021:

Education & Training – TAMC continued its success with another virtual conference and had its third highest year of training participation. 2021 renewed our partnership with the Federal Highway Administration (FHWA).
(See 2021 Year in Review)

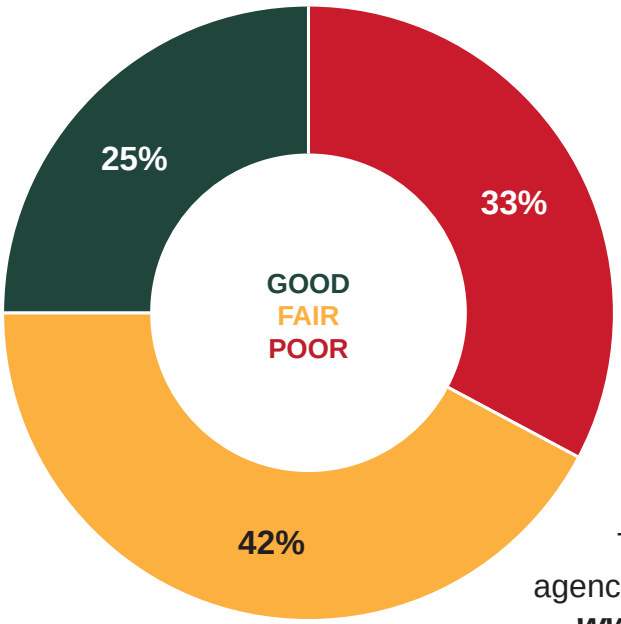
Culverts – Policy developed to assist road agencies culvert asset management and data collection program.
(See 2021 Year in Review)

Roads – A successful year with the most lane miles ever rated, along with the highest percent of roads rated in good condition since 2005.
(See 2021 Road Condition)

Bridges – Bridge conditions continue to decline, as over 19% of all bridges are forecasted to be in the poor or severe condition by 2033.
(See 2021 Bridge Condition)

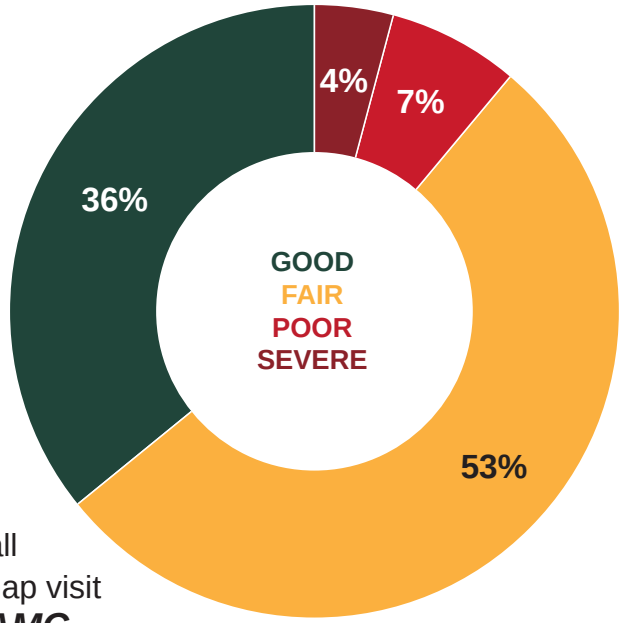
2021 Federal-Aid Pavement Condition

Percent Lane Miles



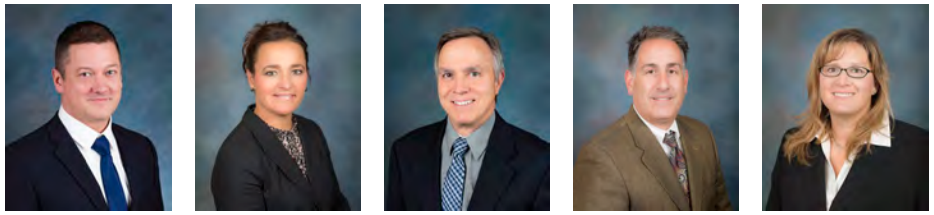
2021 Bridge Condition

All Roadway Bridges



To see dashboards for all agencies and an interactive map visit
www.Michigan.gov/TAMC

TRANSPORTATION ASSET MANAGEMENT COUNCIL (TAMC)



TAMC members for 2021 and the organizations they represent:

Brad Wieferich, P.E., Michigan Department of Transportation

William McEntee (TAMC Vice-Chair), County Road Association of Michigan

Derek Bradshaw, Michigan Association of Regions

Todd White, Michigan Department of Transportation

Kelly R. Jones, P.E., Michigan Association of Counties

Rob Surber, Michigan Department of Technology, Management and Budget (Non-Voting)

Ryan Buck, Michigan Transportation Planning Association

Joanna Johnson (TAMC Chair), County Road Association of Michigan

Robert Slattery Jr., Michigan Municipal League

Gary Mekjian, P.E., Michigan Municipal League

Jennifer Tubbs, Michigan Townships Association

For added background on TAMC, its members and its related legislation, please visit the *About Us* section on the TAMC website at:
www.Michigan.gov/TAMC

To develop and support excellence in managing Michigan's transportation assets by:

- Advising the Legislature, the Michigan Infrastructure Council (MIC), State Transportation Commission, and transportation committees.
- Promote asset management principles.
- Provide tools and practices for road agencies.
- Collaborate and coordinate with the Water Asset Management Council (WAMC).

Special Thanks:

CSS
John Clark
Clint Crick
Nan Ewald
Cheryl Granger
Jeri Kaminski

MTU
Scott Bershing
Tim Collling
Chris Gilbertson
Lindsey Wells

MDOT
Jacob Armour
Roger Belknap
Keith Cooper
Eric Costa
Beckie Curtis
Jesus Esparza
Rob Green
Charles Jarvis
Dave Jennett
Matt Moulton
Gloria Strong

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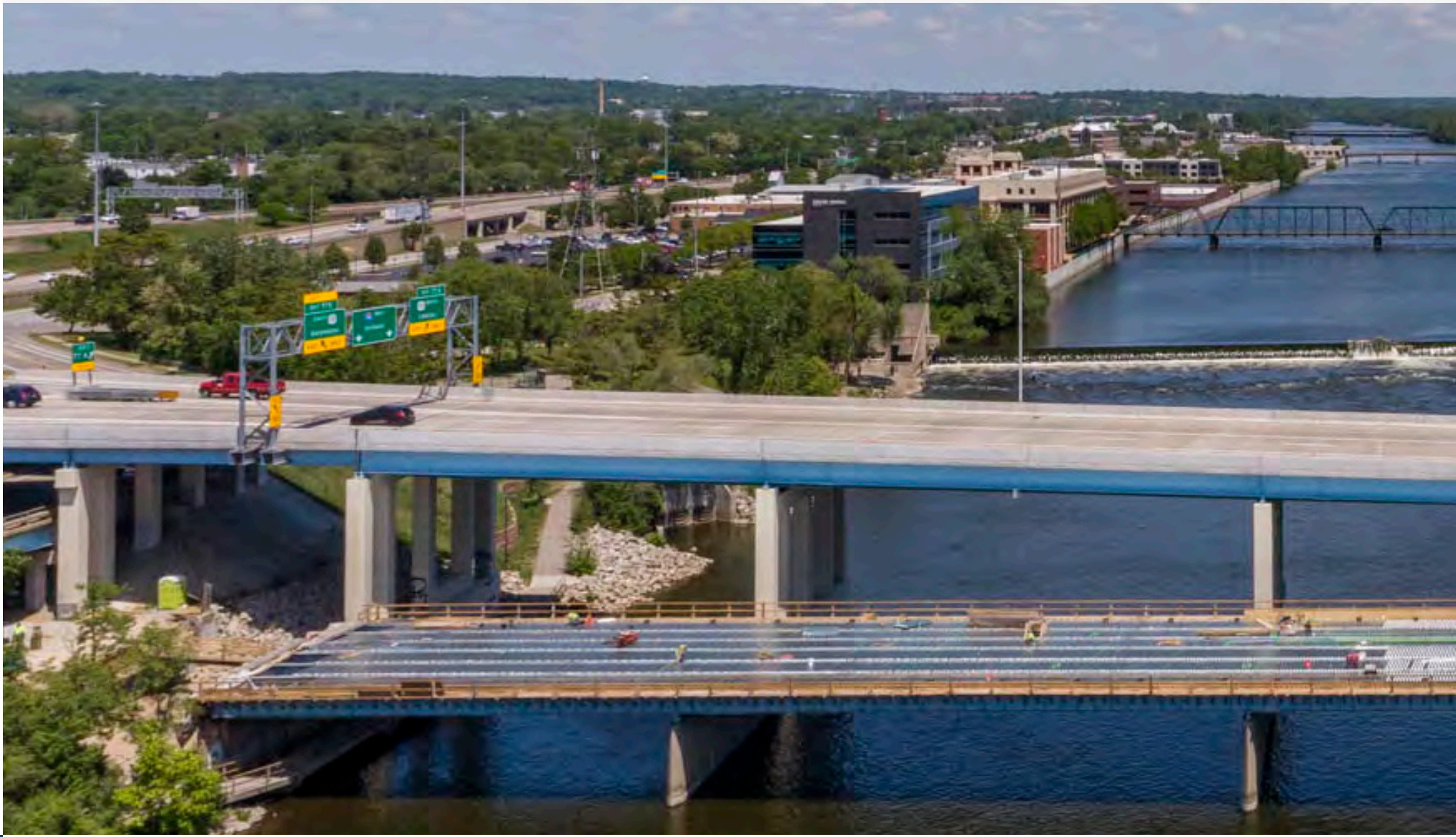


TAMC Highlights and Accomplishments

Building on the successes from last year, TAMC was able to make a lot of progress. The collection of data with 3 member teams was a significant challenge for the data collection agencies to overcome with the ongoing pandemic. TAMC heard the challenges from the data collection agencies and changed the policy to allow 2 member teams. The great news is that it worked! TAMC continued to capitalize on the online formats to provide greater access to training and education.

Virtual Fall Conference "Adapt and Overcome"

COVID-19 still posed challenges in 2021 to hosting an on-site conference. Continuing to build on the success of last year's conference, the TAMC fall conference was once again in the virtual format. This year's focus was on transportation asset management plans for agencies of all sizes. 2021 also allowed us an opportunity to partner with the Federal Highway Administration (FHWA) to gain a better federal perspective on TAMPs.

The conference closed out with a round table session looking 20 years forward and considering ways Michigan can continue to be an industry leader in asset management. The panel consisted of members from TAMC, FHWA, Michigan Department of Transportation (MDOT), and Michigan Technological University (MTU). The format provided an opportunity for attendees to ask questions and gain insight.

Grateful For Your Service

TAMC would like to sincerely thank the following TAMC Members and Coordinator for their service, commitment and dedication to the TAMC and its various committees and program areas:

Christopher Bolt

Assistant County Administrator and Managing Director, Jackson County, representing the Michigan Association of Counties (MAC) served the TAMC from January 2019 through September 2021.

Derek Bradshaw

Director and Coordinator, Genesee County Metropolitan Planning Commission, representing the Michigan Association of Regions, (MAR) served the TAMC from May 2016 through April 2022.

Jonathan Start

Executive Director, Kalamazoo Area Transportation Study (KATS), representing the Michigan Transportation Planning Association (MTPA) served the TAMC from October 2013 through January 2021.

Roger Belknap

TAMC Coordinator, Michigan Department of Transportation (MDOT) served the TAMC from January of 2016 through February 2022.

Culvert Asset Management Program

Public Act (PA) 325 of 2018 requires large road agencies to have an asset management plan that includes culvert assets. During the summer of 2021, the TAMC approved the policy for collection of culvert inventory and condition data which is designed to assist road agencies' culvert asset management program. The culvert program is aimed at non-national bridge inventory (NBI) culvert structures, which are any culvert structures that does not meet the national bridge inspection standards (NBIS) definition.

Along with the policy, the TAMC Culvert Structure Inspection Guide was developed and published in September. Shortly after, the Center for Technology and Training (CTT) hosted our first Culvert Asset Management Training.

Training, Work Program and Budget Overview

TAMC trainings in 2021 continued the 2020 pattern of a primarily virtual format, as COVID-19 uncertainties remained. However, 2021 still marked the third highest year of overall participation. Figure 1 shows the numerous trainings and outreach efforts that are defined in the TAMC strategic work program. TAMC FY2021 Budget is shown in Figure 2 with a breakdown of all area expenses. Note: Administrative staff is provided by MDOT and not included in the TAMC budget.

MTU/CTT - Training Programs	Training Events	Number of Participants
TAMC Conference	1	136
PASER Training	*3 (not including 1 webinar)*	514
Transportation Asset Management and Gravel Road Basics for Local Officials	5	134
Bridge AM Training Series Workshop	*2 (not including 4 webinars)*	18
IBR System™ Training	3	198
Pavement AMP Workshop	*2 (not including 2 webinars)*	22
Culvert AM Webinar	1	80
Compliance Plan Training Webinar	2	32
Total:	**19**	**1134**

Figures provided by MTU's 2021 Training Report

DTMB/CSS - Training Programs	Training Events	Number of Participants
IRT Training	8 webinars	220

Figure 1 Source: TAMC 2021

FY2021 Budget Overview	
Regional Program and Data Collection	$1,116,400
Central Data Agency and Technology	$380,000
Training and Educational Activities	$350,000
Council Expenses	$30,000
Total:	**$1,876,400**

Figure 2 Source: TAMC 2021

Transportation Asset Management Plans (TAMPs)

2020 marked the first round of TAMPs submitted from local road agencies pursuant to PA 325 of 2018. This legislation requires local road agencies with 100 or more miles of certified roads to submit a TAMP. The TAMPs provide local road agencies greater insight into their inventory of assets and future needs. As of April 2022, 85% of agencies TAMPs due on October, 2020 and 60% of agencies TAMPs due on October 2021 have been received.

Note: MDOT was required to submit a TAMP to FHWA that was certified on July 12, 2018, with its next TAMP due July 12 of 2022.

TAMP required elements include:

1. Asset Inventory (roads, bridges, culverts, and signals)
2. Performance Goals
3. Risk of Failure Analysis
4. Anticipated Revenue and Expenditures
5. Performance Outcomes
6. Coordination Clause
7. Proof of Adoption by Governing Body

TAMC has created resources and training opportunities to assist local road agencies in preparing and submitting a successful TAMP. The TAMC created a template that utilizes the agencies' previous data collection efforts and dashboard summaries.

The Investment Reporting Tool (IRT) assists this requirement by enabling local road agencies to upload their TAMPs electronically for feedback from TAMC.

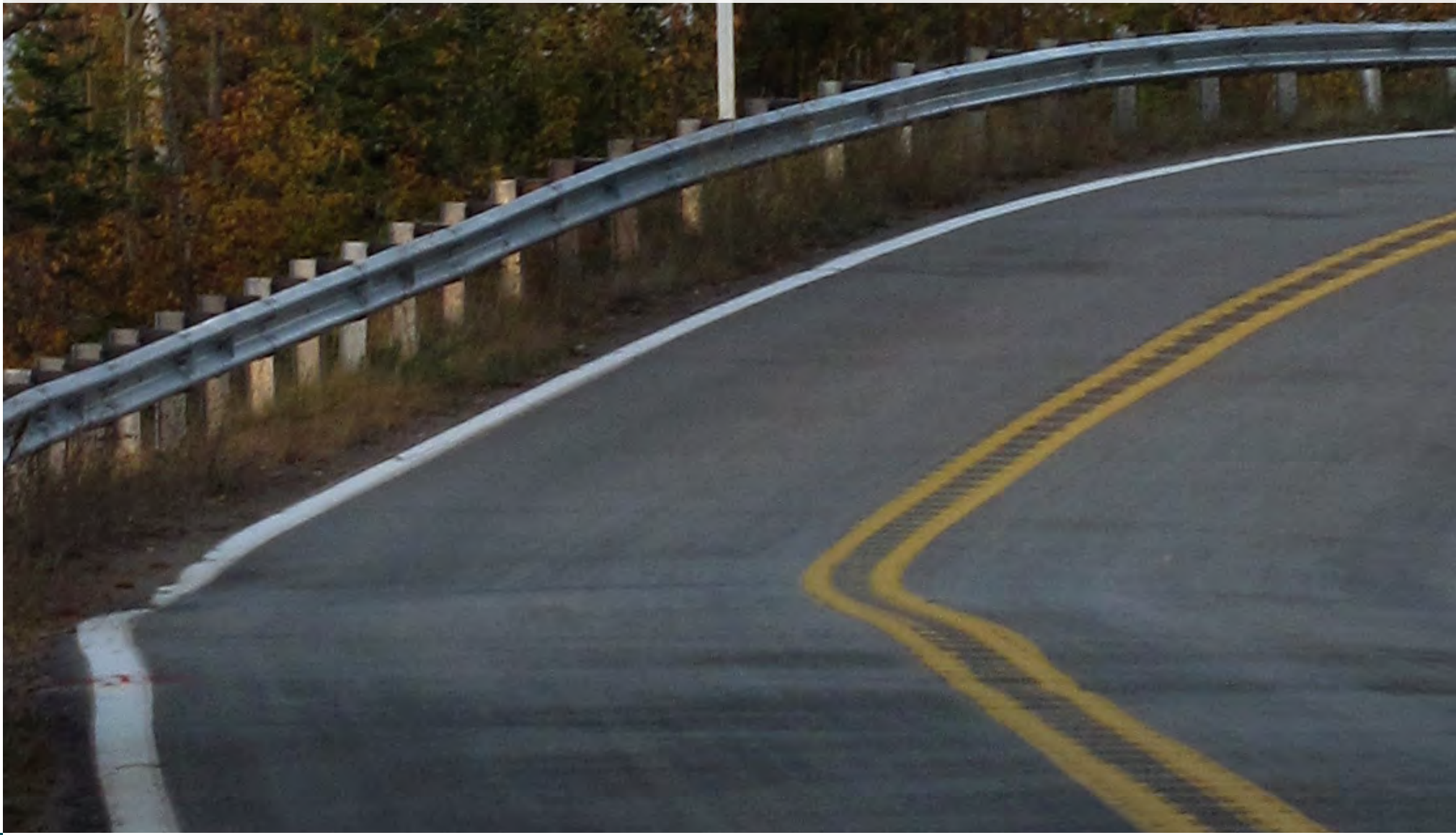
Visit the TAMC website at ***www.michigan.gov/TAMC*** or click on the links below to learn more about this requirement, submission schedule and available resources:

TAMP FAQs

TAMP Due Dates Map

TAMP Training and Asset Management Resources

2021 ROAD CONDITION



One of TAMC's main requirements is to determine the condition of paved federal-aid roads, which account for 1/3 of Michigan roads and carries over 95% of the traffic. Beginning in 2003, MDOT, county, regional, and metropolitan planning agencies joined together to pursue this statewide effort. Under the direction of the TAMC, PASER was the measure chosen to identify the condition of pavements.

In 2021, surface data collection efforts resumed following COVID related restrictions. Having to utilize an estimate forecast for the 2020 condition, the goal was to capture 100% of the federal-aid road network.

As shown in Figure 3, in 2021, 33% of all paved federal-aid roads, or 27,400 lanes miles, are in poor condition. Which is an improvement of 9% of paved federal-aid roads in good and fair condition. This is initially good news. The 2021 improvement in road surface condition may be due in part to a number of factors including a mix of fixes of road surface treatments and increased revenue and types of investment. The reasons for this improvement will be analyzed further and better understood as the 2021 project data becomes available. However, the paved federal-aid roads are expected to continue to deteriorate, outpacing the potential funding available to maintain the network. See the ***Pavement Condition Forecast*** section for more details.

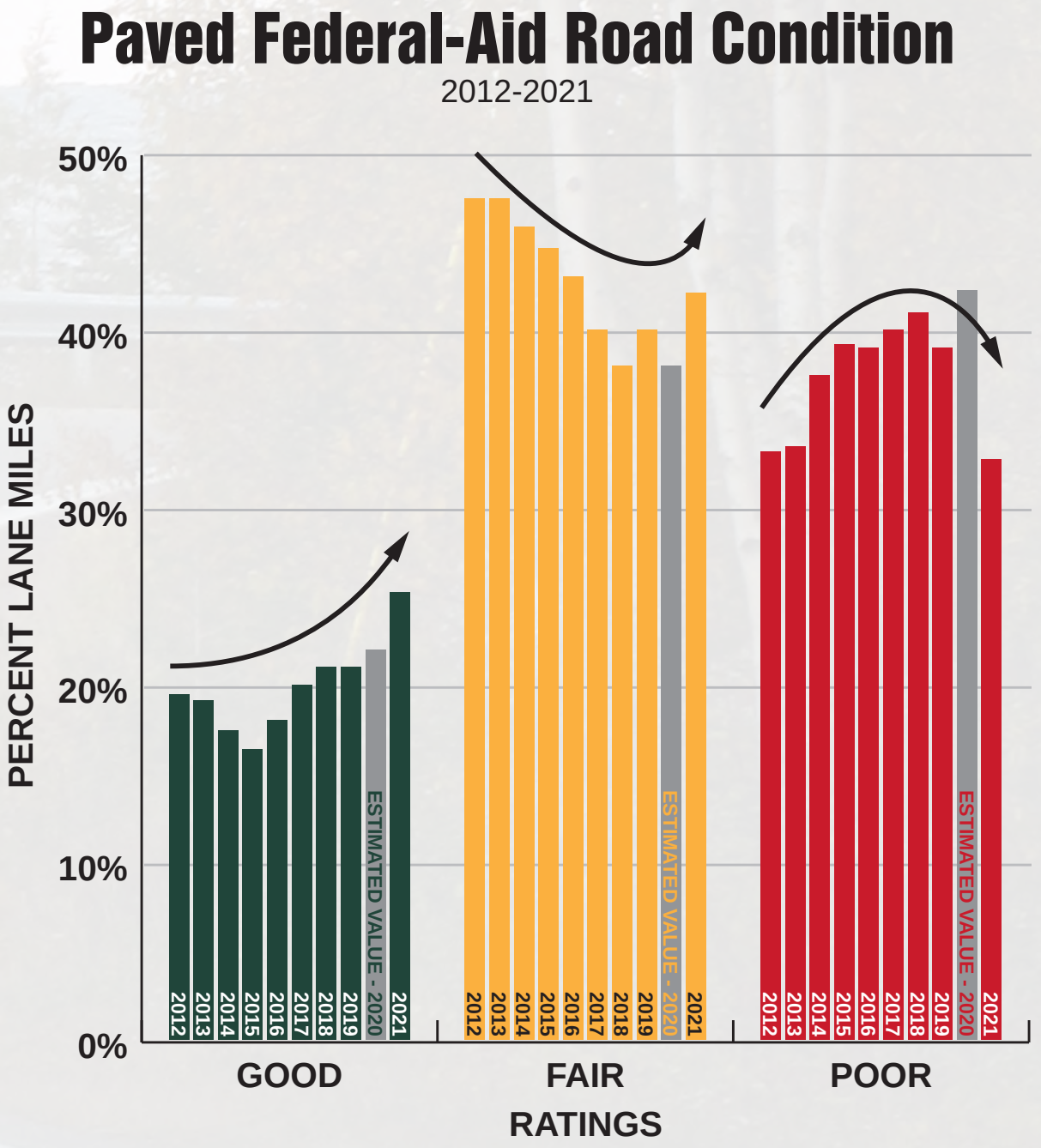


Figure 3

Source: 2012-2021 PASER Data Collection

2021 Federal-Aid Pavement Condition

Percent Lane Miles

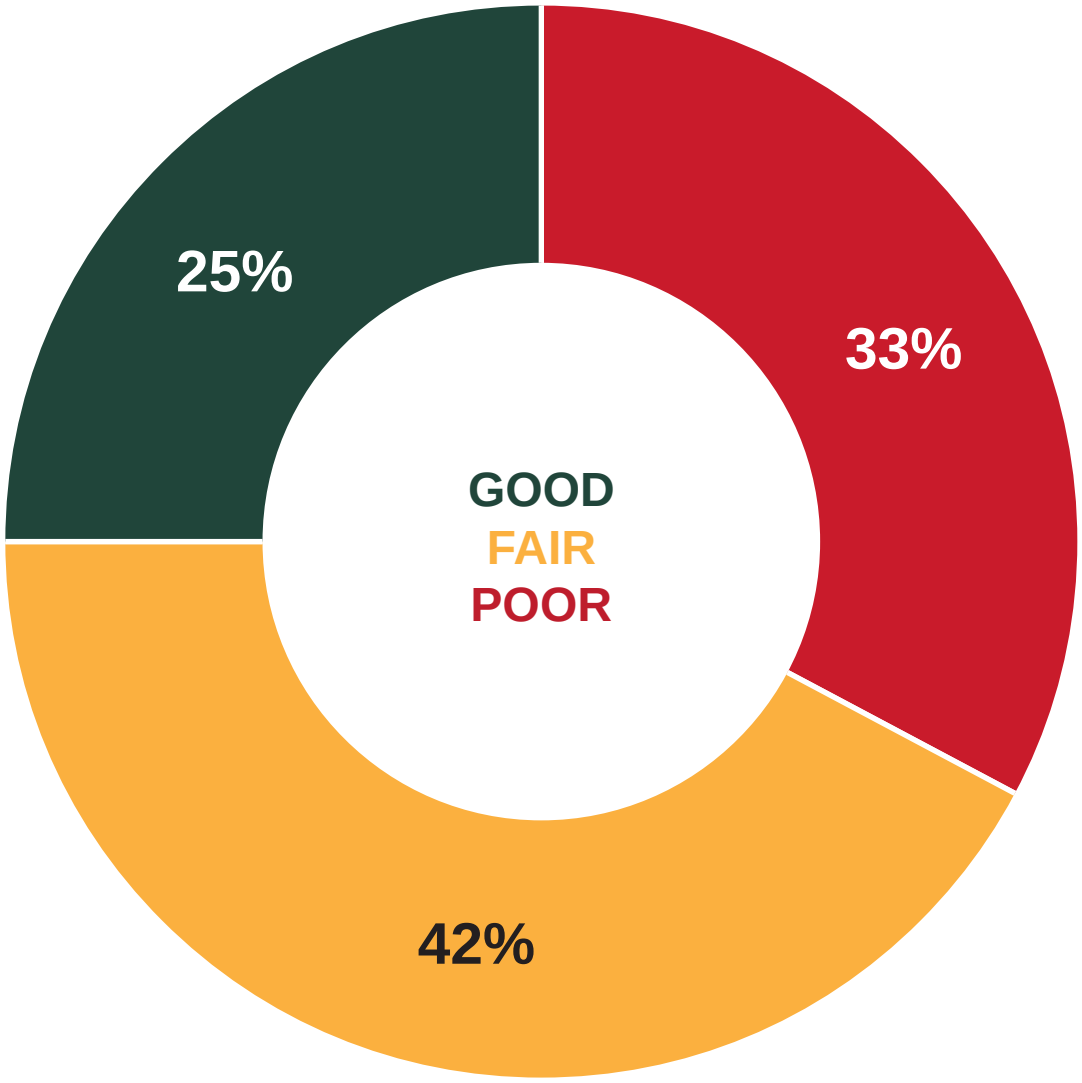


Figure 4 Source: 2021 PASER Data Collection

Figure 5 Source: 2021 PASER Data

Paved Federal-Aid Roads

Road agencies typically report on the condition of all paved federal-aid roads over the course of two years. However, in 2021 the goal was to collect the entire federal-aid network since no condition data was collected in 2020. The goal was nearly met with collecting 96% of the federal-aid network, which is the largest collection effort to date and can be seen in Figure 5.

Figure 4 shows a summary of the 2021 system condition. Compared to the previous year, an increase in roads in good condition and fair condition occurred. Roads in the poor condition fell by 9%, or 7,900 lane miles.

With this reversal in trends, 67% of paved federal-aid roads are in the good and fair condition - which is the highest percentage in 10 years.

Figure 6 Source: 2021 PASER Data

Non-Federal-Aid Roads

There are over 165,000 lane miles of non-federal-aid (NFA) roads in Michigan. The federal government classifies these roads as being “local roads.” Each year, many local agencies choose to rate some or all their NFA roads.

In 2021, the most ever NFA roads were rated at 25,004 lane miles. Figure 6 shows the summary of the 2021 condition, with close to 300 local agencies reporting ratings. Of these roads, 45% were found to be in poor condition as seen in Figure 7.

Local road agencies use ratings on both federal-aid and NFA roads to help manage their road network.

2021 Non-Federal-Aid Road Condition

Percent Lane Miles

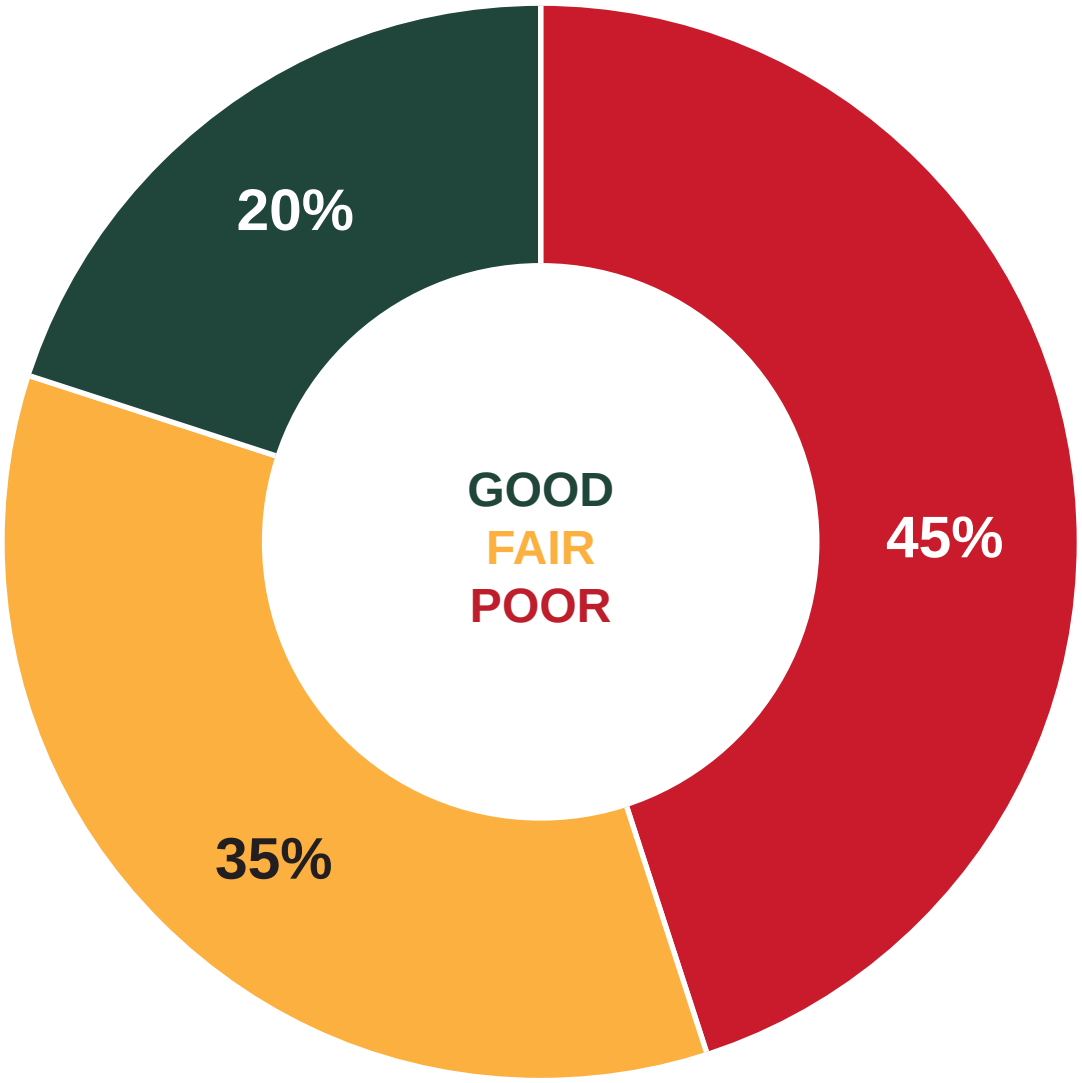


Figure 7 Source: 2021 PASER Data Collection

Team Ratings Minus Quality Management

2021 Weighted by Lane Miles

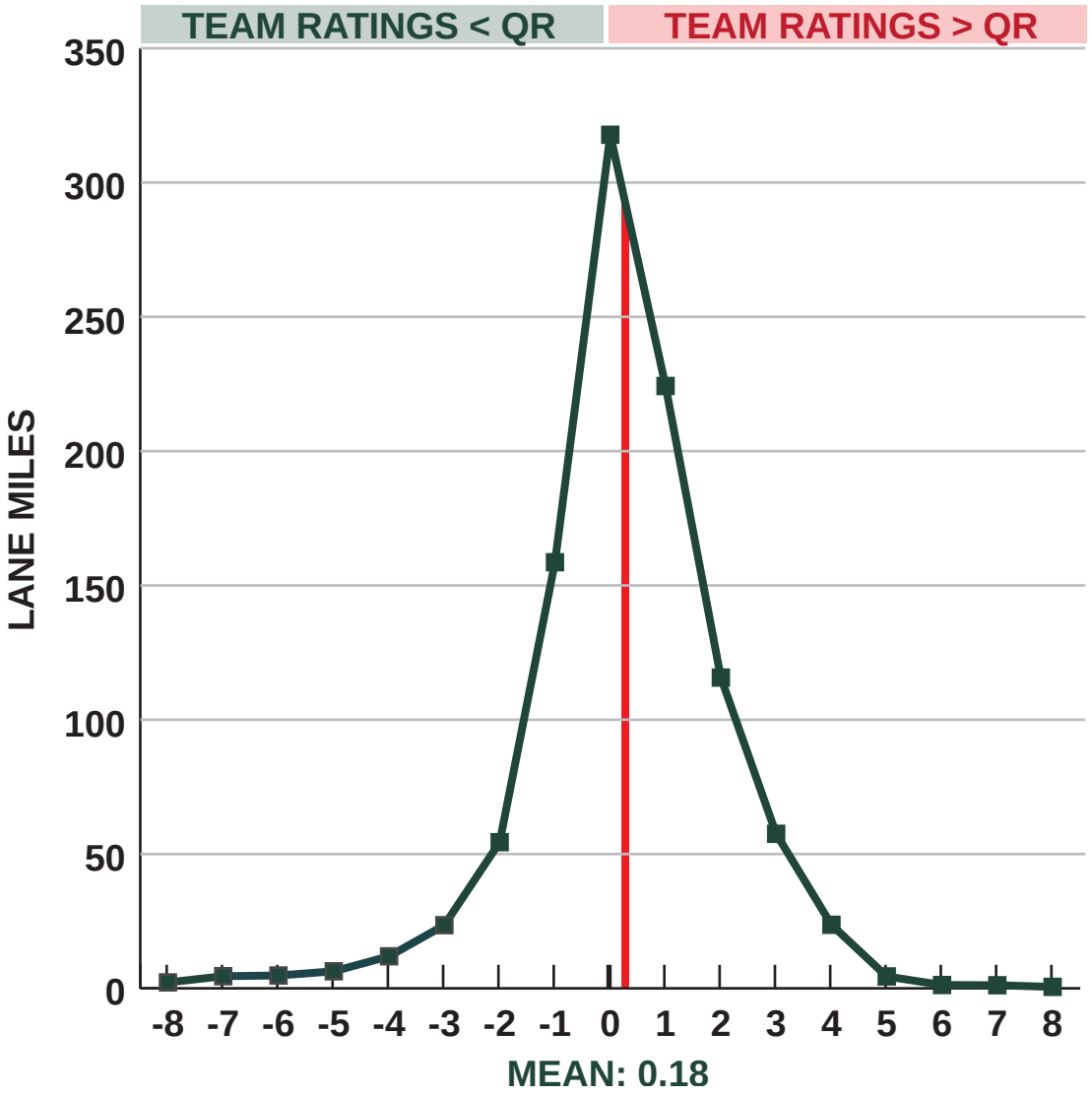


Figure 8

Source: 2021 PASER Data Collection

Quality Management

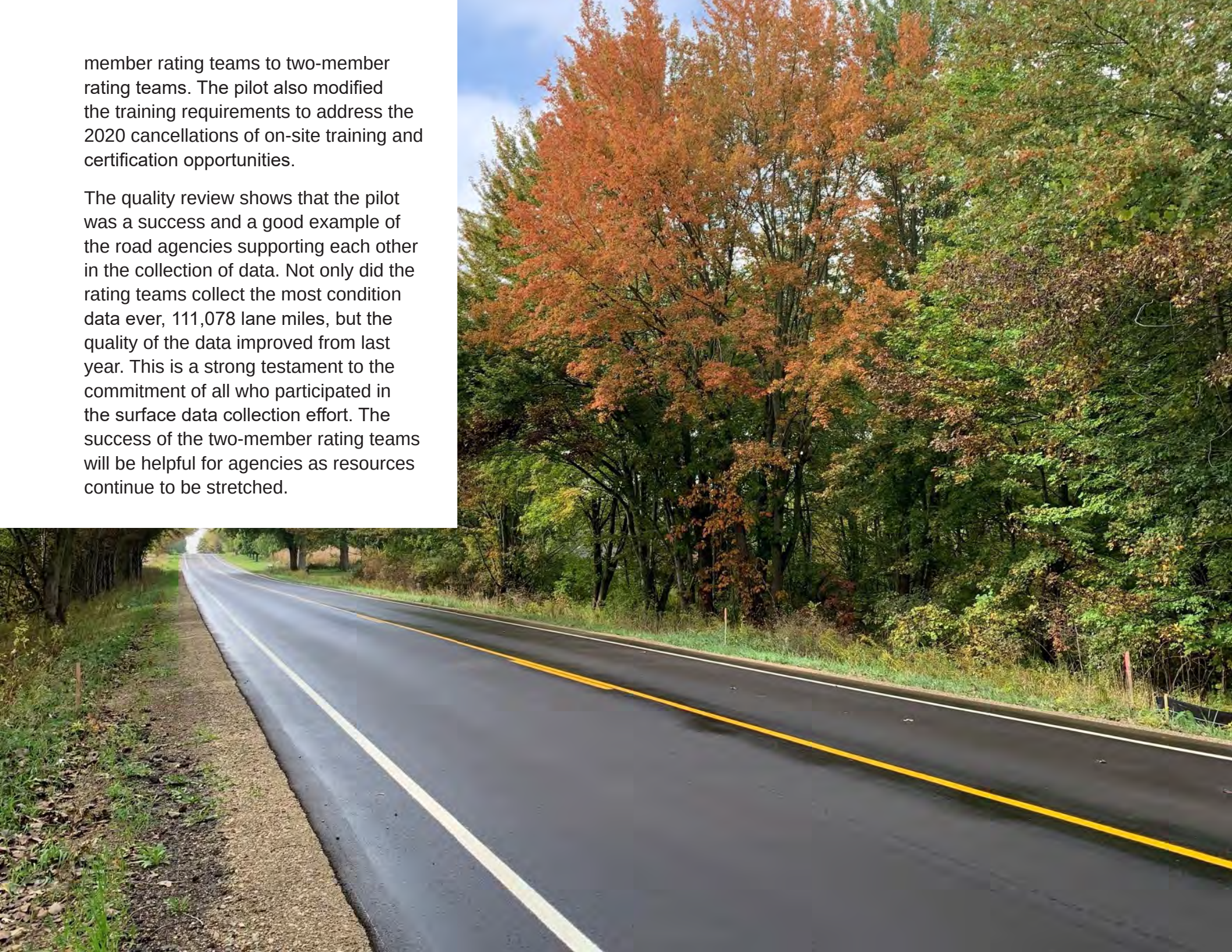
Quality management of road rating data is conducted every fall. A Quality Review (QR) team surveys 1,200 lane miles of paved federal-aid roads and assigns PASER ratings to them. These roads act as samples. Every county in the state contains sample miles. At the close of each year, these samples are compared to the road agencies' ratings. The results of this comparison are shown as a bell curve, seen in Figure 8. As seen by the red line, the road agencies rated their sample roads about 1/6 of a rating higher than the QR team. Much of this small difference can be attributed to the road agencies rating the samples in the fall, near the end of the construction season, after some of the sample roads have been improved.

The consistent surface condition data comes on the heels of COVID restrictions driven pilot policy for collection of roadway surface condition data in 2021. The pilot included moving from three-

PASER Condition Ratings		
8-10	Good Condition	Routine maintenance candidate.
5-7	Fair Condition	Preventative maintenance or rehabilitation candidate.
1-4	Poor Condition	Rehabilitation or reconstruction candidate.

member rating teams to two-member rating teams. The pilot also modified the training requirements to address the 2020 cancellations of on-site training and certification opportunities.

The quality review shows that the pilot was a success and a good example of the road agencies supporting each other in the collection of data. Not only did the rating teams collect the most condition data ever, 111,078 lane miles, but the quality of the data improved from last year. This is a strong testament to the commitment of all who participated in the surface data collection effort. The success of the two-member rating teams will be helpful for agencies as resources continue to be stretched.



Pavement Condition Forecast

Approach for 2023-2033

The Pavement Condition Forecasting System (PCFS) estimates the future condition of pavements. Examples of criteria that support the PCFS include current pavement condition (PASER), road deterioration rates, project costs, expected inflation, fix strategies, and revenues.

Another adjustment to the 2023-2033 forecast takes into consideration that regions across the state have different challenges when it comes to road repairs and improvements.

TAMC began collecting treatment type costs as a part of the Investment Reporting Tool (IRT). This information was used to determine the varying treatment type costs across the state.

Factors that affect the repairs and improvement costs are:

- Size of the project
- Where it is located
- Impact of frost freeze levels
- Exposure to extreme heat

National Functional Class (NFC) was also introduced as a factor because traffic volumes can vary greatly by regions across the state.

All these factors can cause stress to pavement and requires the pavement be constructed and maintained according to its location.

Using these more representative regionally based treatment type costs, individual regional forecasts were developed for 2023-2033. These forecasts were then combined to predict the future condition of pavements across the state.

The statewide pavement forecast indicates a continued decline in the federal-aid roads as seen in Figure 9. By 2033, it is forecast that only 19% of the roads will be in good condition while roads in fair condition will drop to 33%. Over those 10 years the roads in poor condition will reach 48%.

In 2023 roads are expected to deteriorate from the 2021 measured condition. This is primarily due to the increase in costly reconstruction projects which are typically done when additional monies such as

the COVID Relief Act and Infrastructure Investment and Jobs Act (IIJA) are available. This money targets the poorest of pavement but inevitably results in less lane miles being completed.

There is also an across-the-board cost increase for pavement fixes which also contributes to less pavement being improved. It is not known if these are temporary or permanent cost increases, but they do have significantly negative impact on future condition.

Without additional and consistent long-term investment in the billions of dollars, the percent of roads in poor condition will continue to increase, as the increasing construction cost outpaces the ability to fix them.

Pavement Condition Forecast

2023-2033

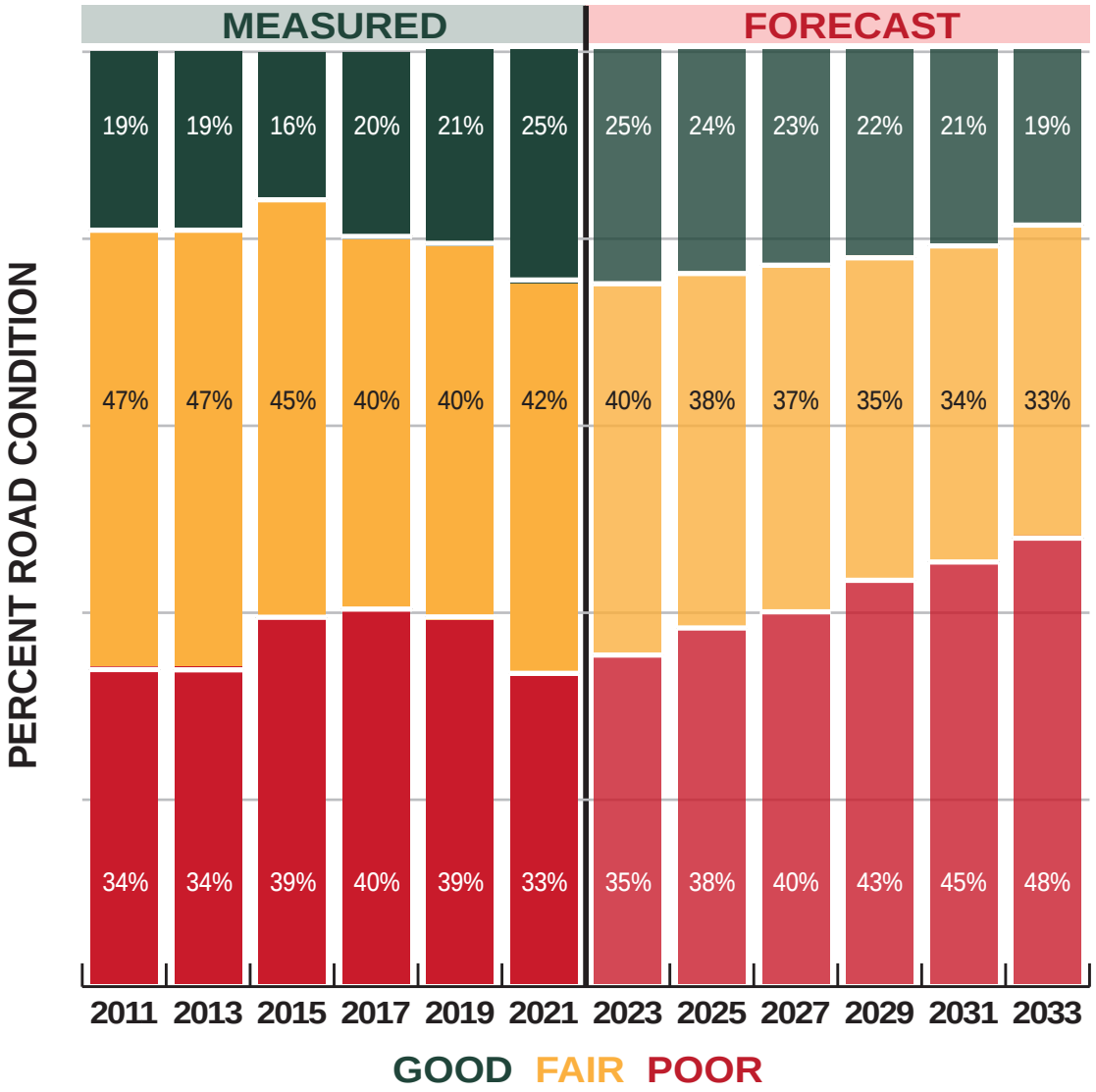
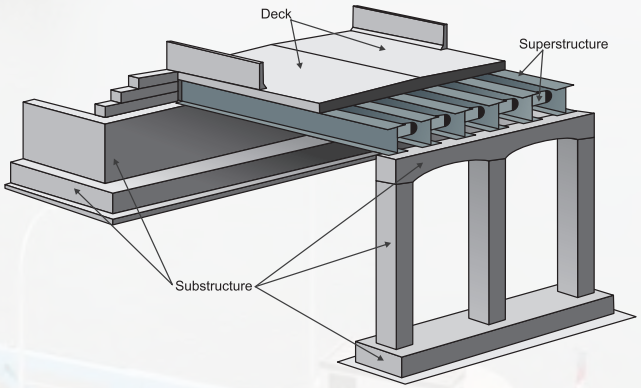


Figure 9

Source: 2021 TAMC

2021 BRIDGE CONDITION

The National Bridge Inspection Standards (NBIS) define a bridge as a structure carrying traffic with a span greater than 20 feet. Condition ratings are based on a 0-9 scale and assigned for each culvert, or the deck, superstructure, and substructure of each bridge. These ratings are recorded in the National Bridge Inventory (NBI) database.



As shown in Figure 10, in 2021 over 1,250 bridges, or 11.2% of NBI structures in Michigan are in poor condition. All the gains in reduction of poor bridges over the last 10 years have now been lost. Given the current rate of bridge deterioration, the percent of bridges in poor condition will continue to rise until significant increases in investment are made.

Statewide Bridge Condition

All Roadway Bridges 2012-2021

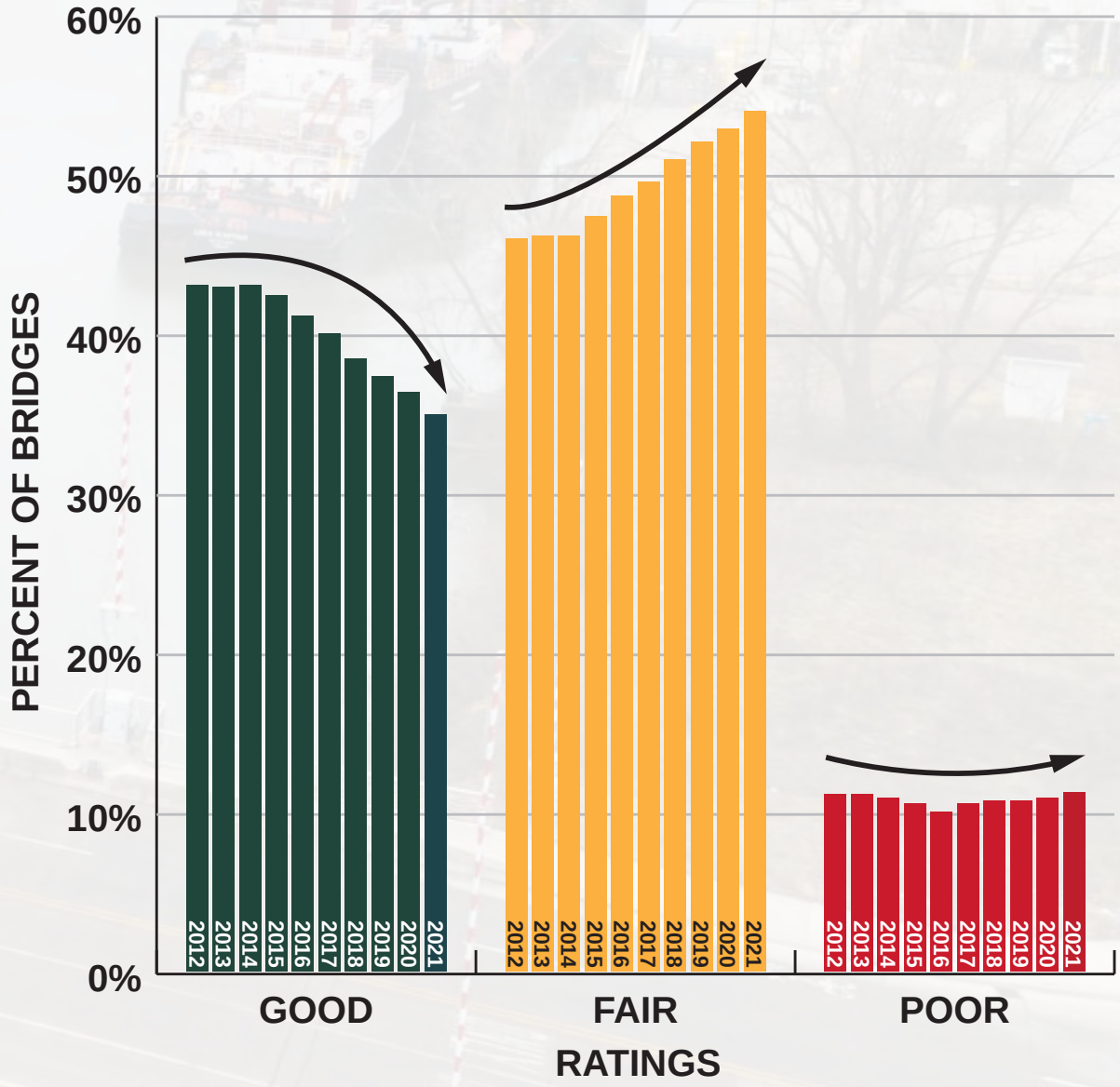


Figure 10

Source: 2012-2021 Michigan Bridge Inventory

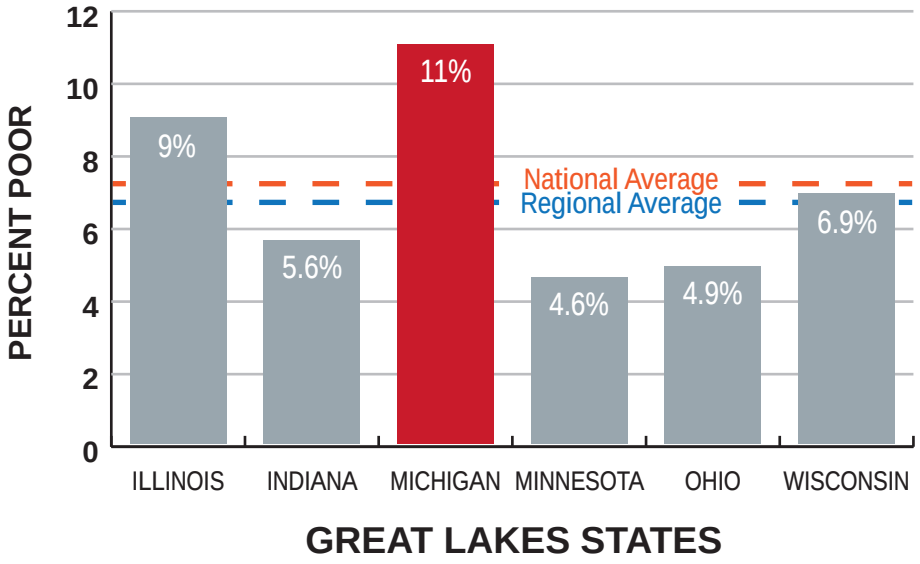
Comparing Bridge Condition

Michigan lags behind its neighboring Great Lakes States in terms of bridge condition. As seen in Figure 11, Michigan has the highest percentage of poor bridges in the Great Lakes Region, and also has significantly more poor bridges than the national average. More concerning, when measuring the bridges in severe condition, or those requiring additional monitoring, immediate action, or at risk of closure, Michigan has double the percentage of bridges with NBI ratings of 3 or less.

NBI Condition Ratings			
7-9	Good Condition		Routine maintenance candidate.
5-6	Fair Condition		Preventative maintenance or minor rehabilitation candidate.
4	Poor Condition		Major rehabilitation or replacement candidate.
2-3	Severe Condition	Serious or Critical Condition	Emergency repair, high priority major rehabilitation or replacement candidate. Unless closely monitored it may be necessary to close until corrective action can be taken.
0-1	Severe Condition	Imminent Failure or Failed	Major rehabilitation or replacement candidate. Bridge is closed to traffic.

2021 Percent Poor Bridges

NBI 4 or Less



2021 Percent Severe Bridges

NBI 3 or Less

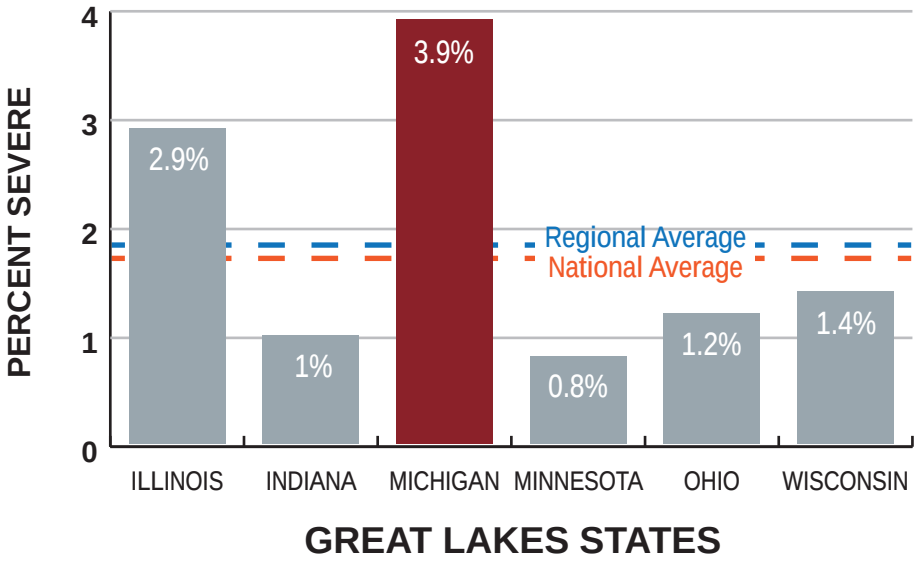


Figure 11

Source: 2021 Michigan Bridge Inventory

MDOT Bridges

Unlike roads, all bridges are considered federal-aid eligible. Figure 12 shows that MDOT has nearly 7% of its bridges in poor or severe condition and 69% of bridges are in fair condition. This large population of bridges in fair condition represents the previous investments in preservation. Until recently, MDOT has been able to maintain the number of bridges in fair condition before they reach the poor category, while increasing the number of bridges in good and fair condition. An aging infrastructure and rising costs along with not enough existing revenue or new revenue to maintain our aging bridges, have reversed some of that progress.

The number of bridges in fair condition has increased, and since 2017 the number of bridges in poor condition has increased as preservation needs exceed available revenues. Maintaining or improving the bridges rated in good or fair condition is imperative to prevent the number of bridges in the poor category from increasing further.

2021 MDOT Bridge Condition

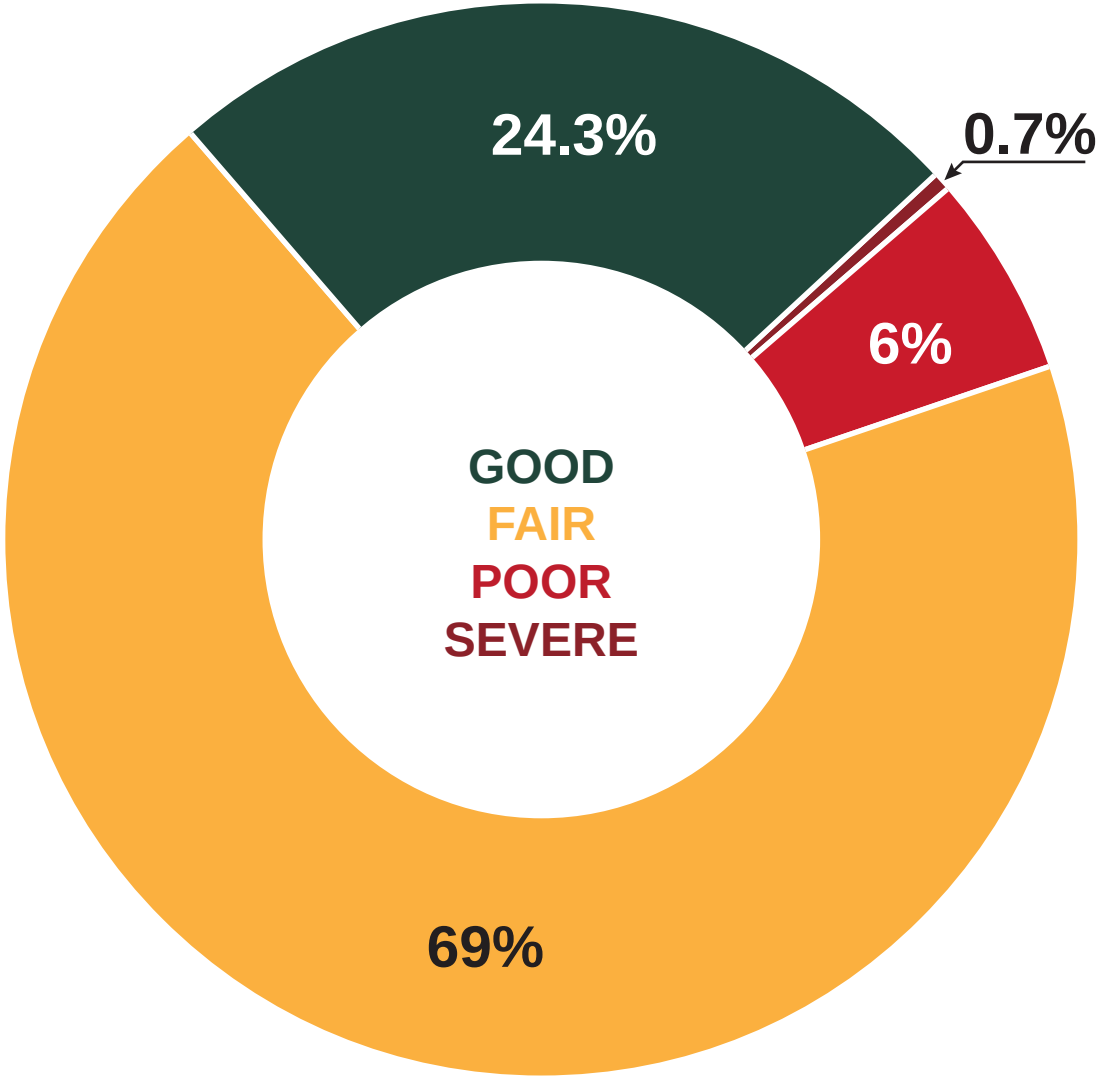


Figure 12

Source: 2021 Michigan Bridge Inventory

2021 Local Agency Bridge Condition

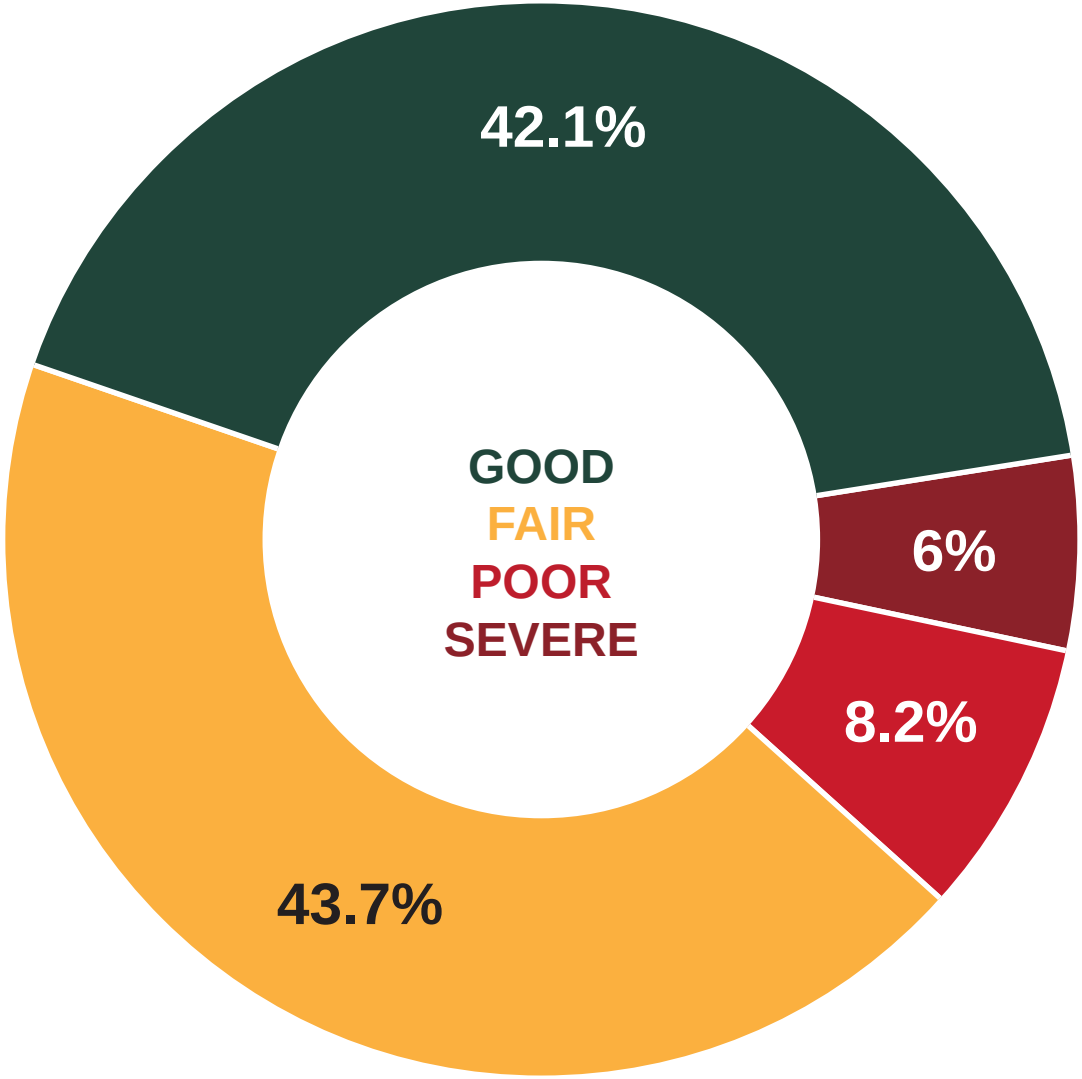


Figure 13

Source: 2021 National Bridge Inventory

Local Road Agency Bridges

Figure 13 shows that local agencies are managing both a larger percentage of good bridges, while also managing a larger percentage of poor and severe bridges. While many local agencies are working to embrace preservation strategies but are prevented by the overwhelming need of the bridges in the worst conditions.

A bridge in poor condition is a candidate for major rehabilitation or replacement. When the bridge no longer has the strength to bear the loads for which it was designed, the bridge must be posted for lower loads in order to maintain safety. A bridge in severe condition often needs expensive emergency repairs, temporary supports, or shoulder closures. Ultimately, the inability to obtain funding will result in a safety risk to the public and the bridge will have to be closed. At the end of 2021, 60 local agency bridges remained closed due to their condition.

Bridge Cycle of Life

Every year, analysts examine the bridge data to determine the extent to which bridges are improved or deteriorate over a 4-year span. This effort tracks how bridges change from between the good, fair, and poor ratings and is referenced as the Bridge Cycle of Life.

Figure 14 shows over 5.5% more bridges have deteriorated than have been improved between 2018-2021.

In simplified terms, bridges are deteriorating faster than the agencies can repair or replace them.

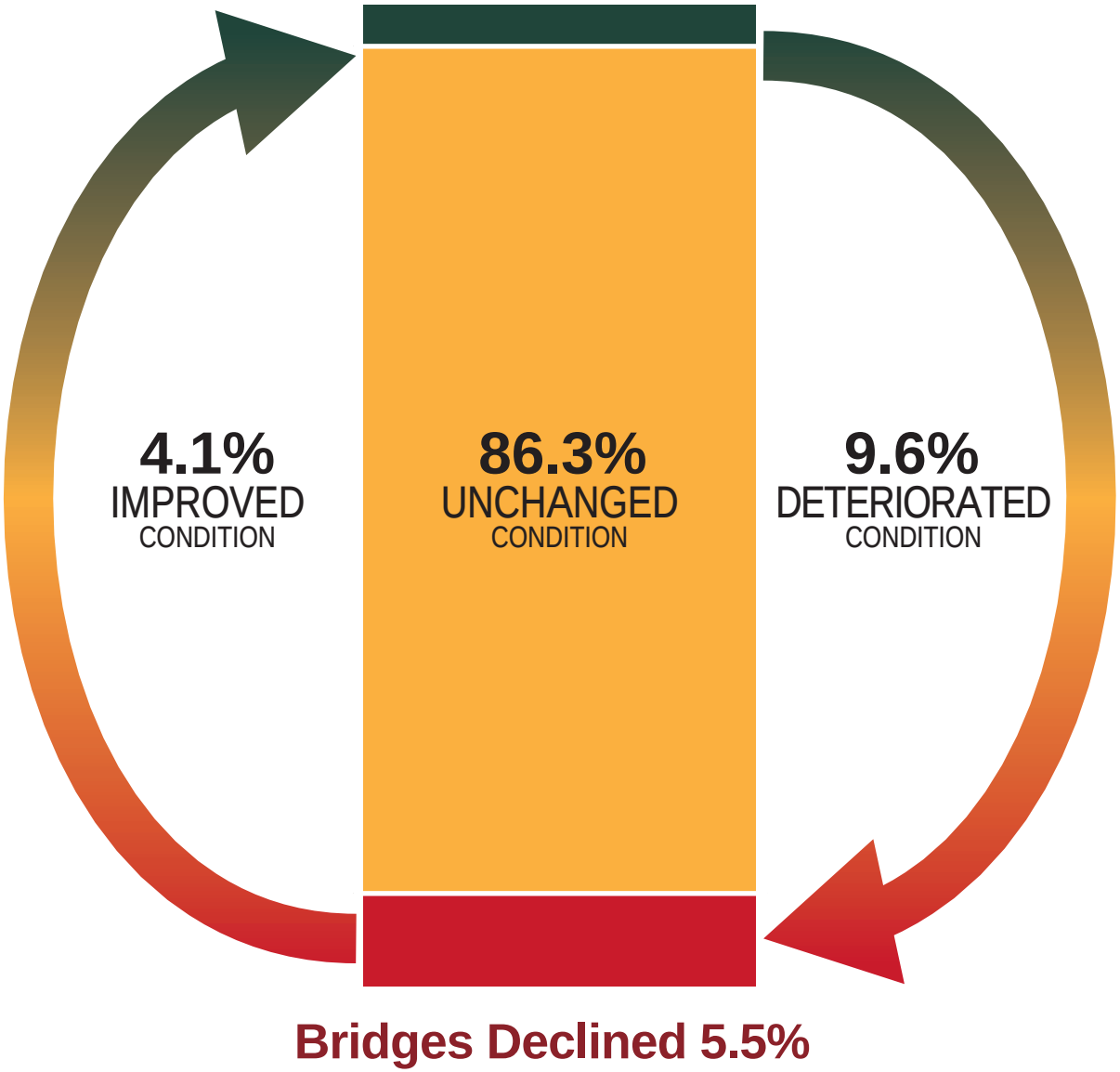


Figure 14

Source: 2018-2021 Michigan Bridge Inventory

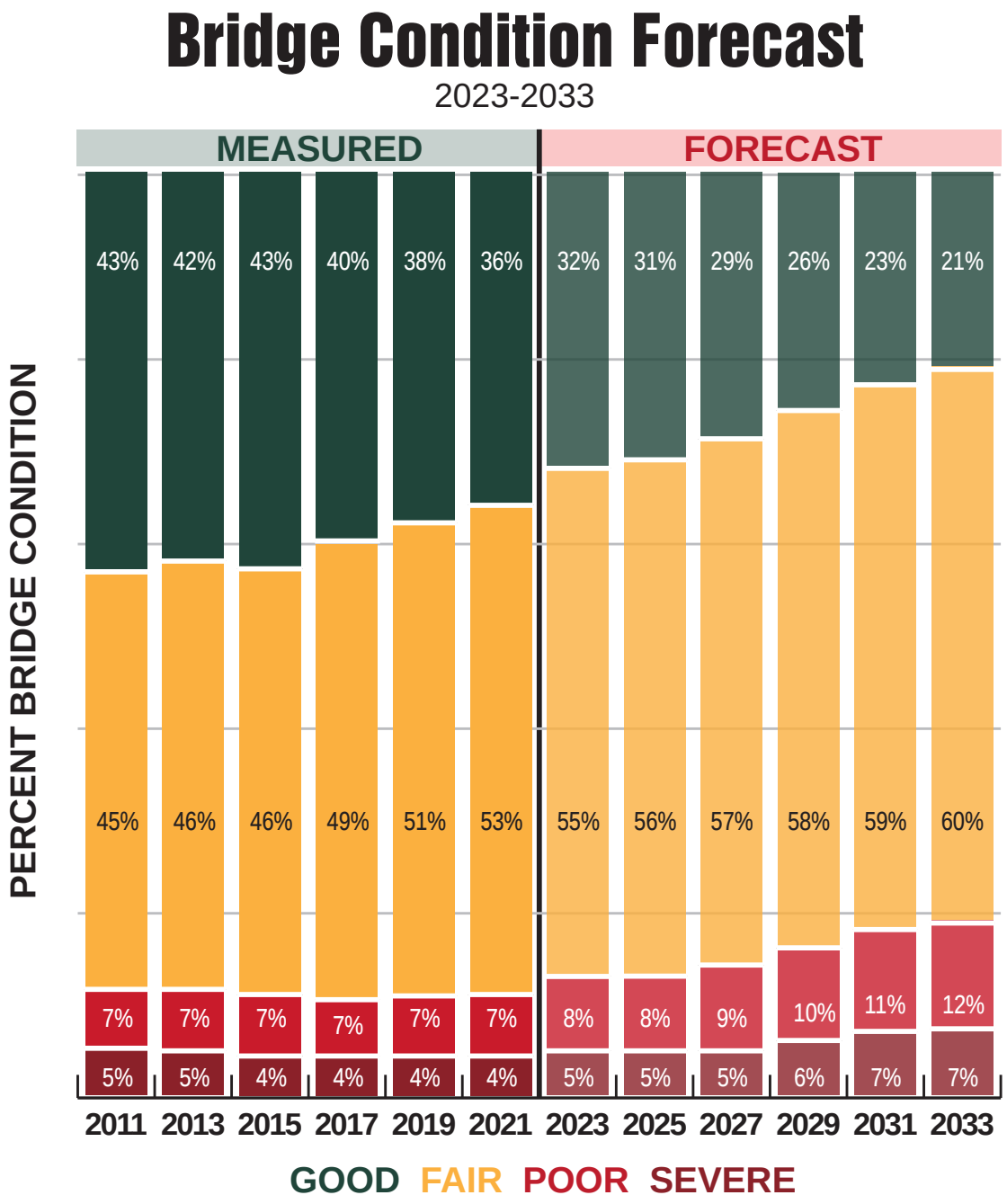


Figure 15

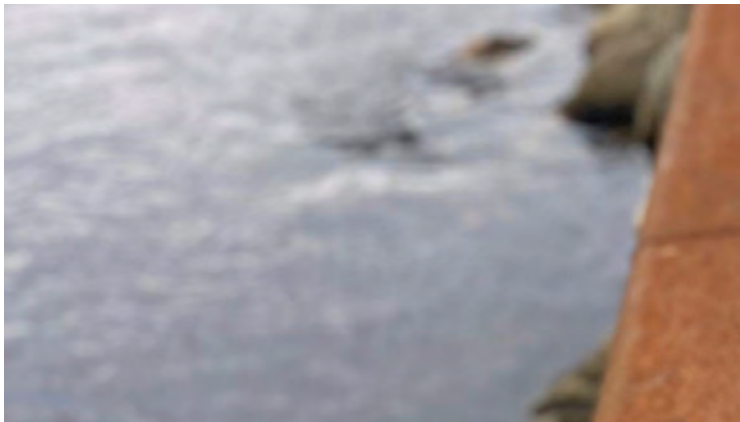
Source: 2021 TAMC

Bridge Condition Forecast

Working from current NBI bridge condition information, bridge deterioration rate, project costs, expected inflation, and fix strategies, the Bridge Condition Forecasting System (BCFS) estimates future condition of bridges. Figure 15 indicates the combined overall bridge condition of all Michigan's bridges is expected to continue to decline.

This analysis includes the bridge funding designated in IIJA for both trunkline and local agencies as well as other bridge program funds.

This forecast also includes the severe condition category that continues to rise. 19% of all bridges are forecast to be in the poor or severe category by the year 2033. This indicates that without additional investment for bridge programs additional bridges will be at high risk and lead to more emergency repairs and closures.




MONDO

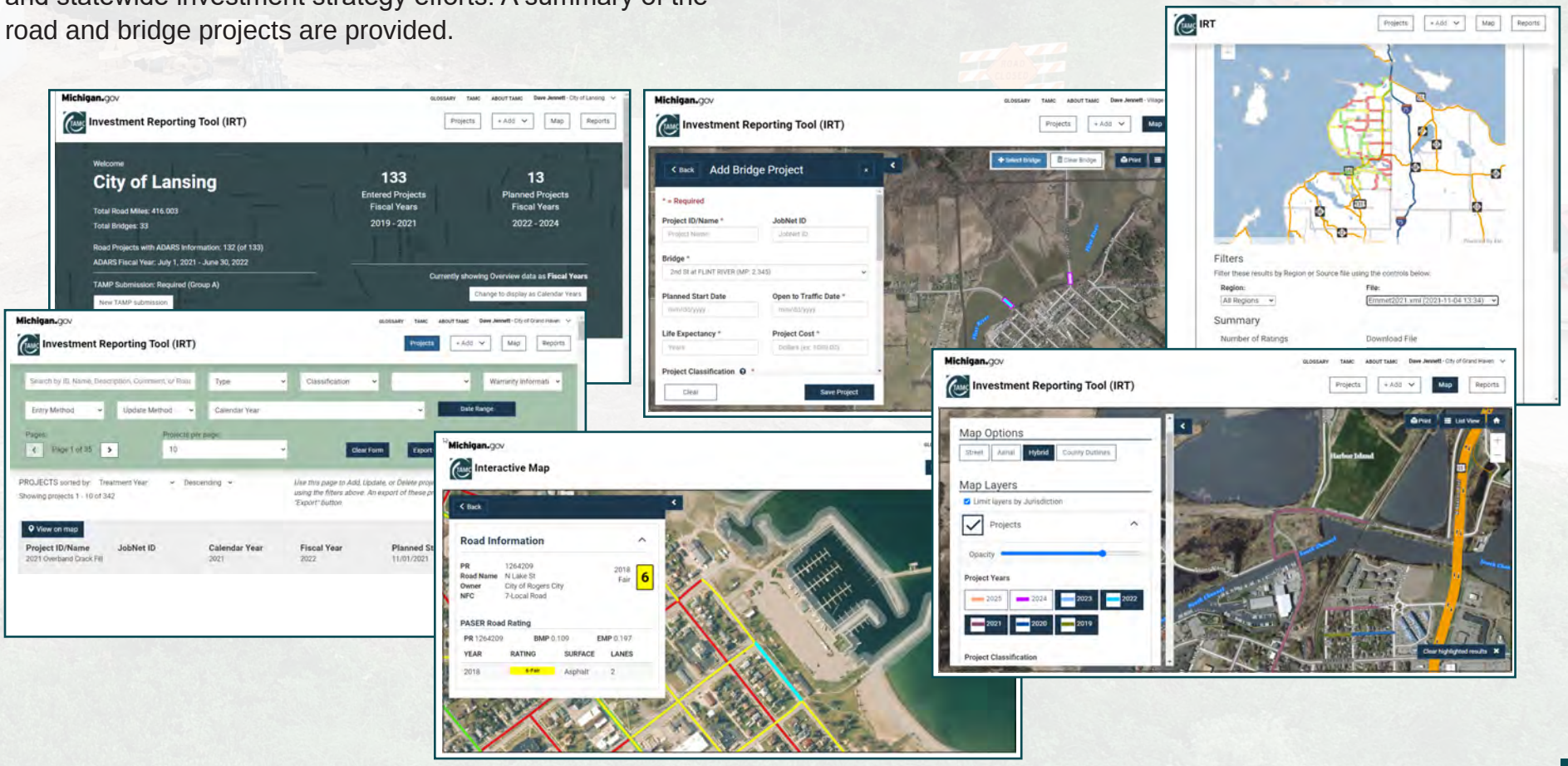
INVESTMENT REPORTING

Investment Reporting Tool (IRT)

The IRT is a free online tool developed to allow all Michigan road owning agencies to meet requirements of Act 51: reporting completed road and bridge projects and those planned in the next three years. A road agency can also use the IRT to manage its road and bridge assets with a dashboard summary, customized maps, data exports, and a variety of reports. The IRT integrates with other software programs such as Roadsoft, Act 51 Distribution and Reporting System (ADARS) and JobNet to assist users in saving time and improving data quality and efficiency. The TAMC uses this data to help refine forecasting and statewide investment strategy efforts. A summary of the road and bridge projects are provided.

Education and training via online webinars, YouTube videos, and Help Desk can assist especially new users to the different areas of the tool and how to satisfy Act 51 reporting requirements.

Another aspect of the IRT is being the central hub for the annual PASER data submission by regional and metropolitan planning coordinators. Enhancements to the IRT and team efforts were critical to ensuring the accuracy of TAMC's largest data collection in 20 years. TAMC welcomes feedback to improve the IRT toward greater data quality, transparency, and collaboration.



Road IRT Project Summaries			
Year	Projects Reported	Total Cost	Total Lane Miles
2019	5,547	$1.82 Billion	19,829
2020	5,342	$1.63 Billion	18,210
2021*	1,952*	$1.14 Billion*	8,011*
Total:	**12,841**	**$4.59 Billion**	**46,050**

Figure 16 Source: 2019-2021 TAMC

Road Project Details

As seen in Figure 16, 2019-2021 road projects submitted to the IRT total roughly 4.59 billion dollars of total investment over the last 3 years.

* IRT reporting is based on each agency's Fiscal Year to sync with Act 51 financial reporting. This correlation is significant as many counties and cities have an annual 2021 reporting deadline of May and June 2022 after this report is released. **A more complete 2021 IRT data set will be available fall of 2022.**

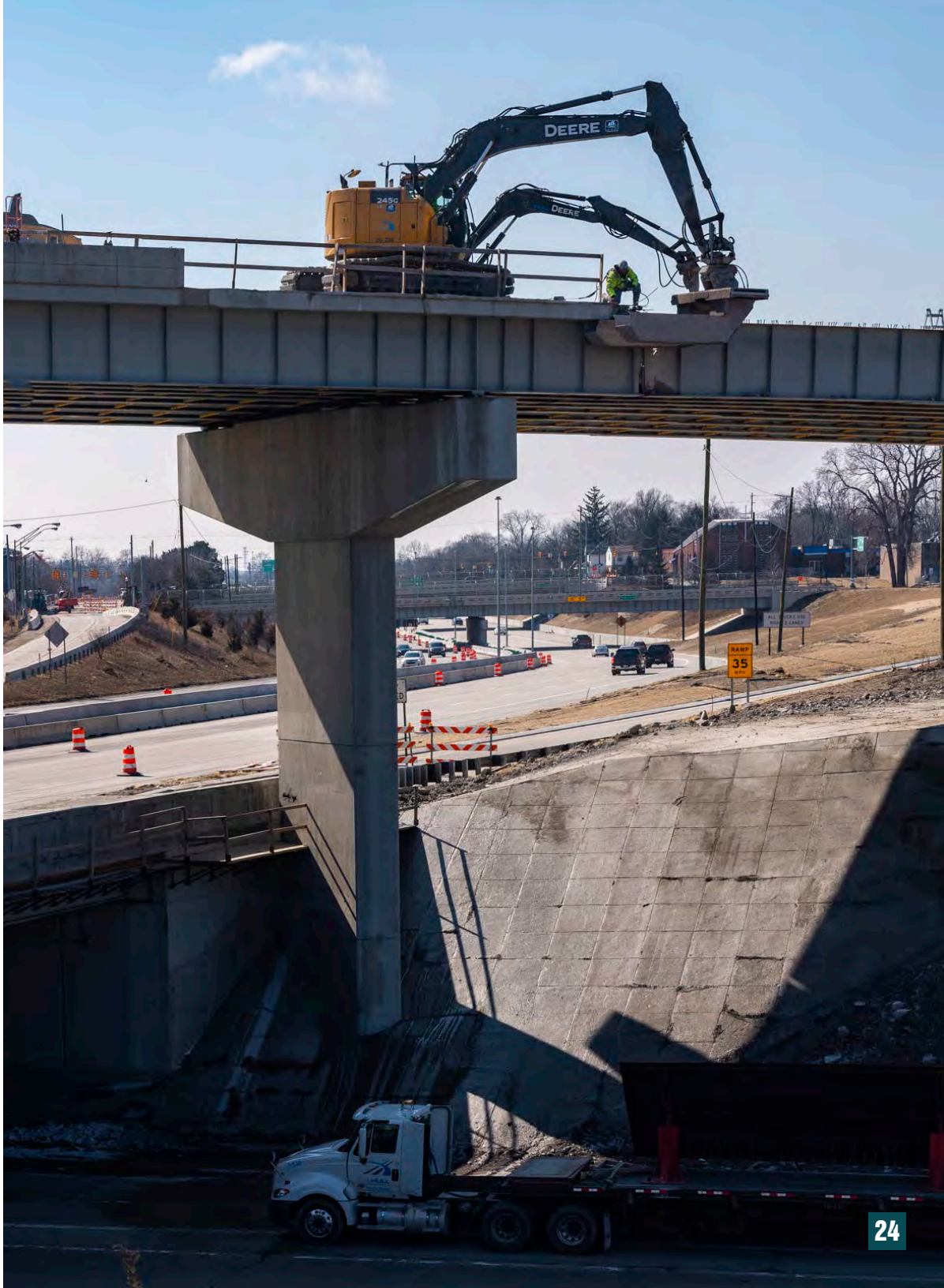
Bridge Project Details

As seen in Figure 17, investment in bridge projects ranged from $234M to $438M with roughly $1.03B reported from 2019-2021. More costly bridge replacements contributed to the sharp increase in total cost for 2021. Bridge Asset Management considerations for individual road owning agencies can greatly impact planning and project considerations. Of Michigan's 617 road agencies, 352 own and maintain bridges. Approximately half of Michigan's 11,000 bridges are owned by local road agencies and the other half by MDOT. Bridges can vary substantially in their length, deck area and other factors. However, replacing a bridge often greatly impacts the local economy as well as emergency services regardless of agency size.

Note: The Rouge River Bridge, Zilwaukee Bridge and other large bridges are not included in statewide totals, since the high cost of this type of project would significantly shift totals and averages.

Bridge IRT Project Summaries		
Year	Projects Reported	Total Cost
2019	257	$362 Million
2020	342	$234 Million
2021*	291*	$438 Million*
Total:	**890**	**$1.03 Billion**

Figure 17 Source: 2019-2021 TAMC



Decision Making and Asset Management

Critical pieces of information in the asset management toolbox is the timing of preventive fixes being applied prior to facing significant costs of roads or bridges reconstruction once they deteriorate into poor condition.

Since PASER ratings are based on a 1-10 scale, the phrase "Saving the 5's" is the goal of maintaining roads that are in fair condition by using preventive maintenance before the need for reconstruction occurs. This is one of the keystones in Asset Management. Figure 18 shows the percent of types of work performed on roads with a PASER 5 Fair Condition rating in 2019 and 2021. (Note: Covid-19 prevented ratings in 2020.) As seen in Figure 18, close to 80% of IRT road projects applied to PASER Rating 5's were Preventive Maintenance.

These type of projects are cost effective in preserving roads in fair condition before they reach the more costly mix of fixes required for roads in poor condition.

Saving The 5's		
Breakdown of Road Projects Applied to Roads With a PASER Rating of 5 (Fair Condition)	**2019**	**2021***
Light Capital Preventive Maintenance	43%	52%*
Heavy Capital Preventive Maintenance	35%	32%*
Rehabilitation	18%	13%*
Reconstruction	4%	3%*

Figure 18 Source: 2021 TAMC

These asset management principles are further represented in Figure 19. It indicates where transitions occur over time and types of improvements to bring a road or bridge back into good condition. Keep in mind, the cost of preventive maintenance and rehabilitation can be in the 4-6 figures of investment. This can often be a balancing act where a “mix of fixes” with both preventive maintenance and rehabilitation projects can prevent reconstruction projects that can reach 6-8 figures.

A smaller road owning agency can feel this strain even greater where the cost to replace a bridge may be more expensive than maintaining all the roads they own. With bridge conditions steadily declining since 2014, more agencies are faced with these types of challenges and added reason why statewide sustained funding and preventive maintenance are also critical for bridges. Many agencies are forced to close bridges due to condition versus repair or replace them. This then can have a cascading effect for both the local road agency owning the bridge and others depending on that key piece of infrastructure.

The good news again is from a combination of increased funding and investment there were gains made in road conditions. The 40% poor road conditions from past years finally swung in the opposite direction with the highest percent of roads rated in good condtion since 2005.

In summary, Michigan must continue to use asset management best practices to save the roads and bridges in good and fair condition. Information presented here is to emphasize that continued increased investment in the billions of dollars is needed to allow for further mix of fixes to address Michigan’s aging and critical infrastructure. TAMC continues to look at all these different elements to develop a statewide investment strategy.

*** Full 2021 IRT data set available fall of 2022.**

Figure 19 Source: 2021 TAMC

ACRONYMS AND ABBREVIATIONS

All references to Act 51 in this document refers to Public Act 51 of 1951, as amended.

ADARS: Act 51 Distribution and Reporting System

APWA: American Public Works Association

BCFS: Bridge Condition Forecasting System

CPM: Capital Preventive Maintenance

CRA: County Road Association (of Michigan)

CSS: Center for Shared Solutions (DTMB)

CTT: Center for Training and Technology (MTU)

DTMB: Department of Technology, Management and Budget

EGLE: Department of Environment, Great Lakes, and Energy

FHWA: Federal Highway Administration

FAST: Fixing America's Surface Transportation Act

IBR: Inventory Based Rating (Gravel Roads)

IIJA: Infrastructure Investment and Jobs Act

IRT: Investment Reporting Tool

MAC: Michigan Association of Counties

MAR: Michigan Association of Regions

MDNR: Michigan Department of Natural Resources

MDOT: Michigan Department of Transportation

MIC: Michigan Infrastructure Council

MML: Michigan Municipal League

MPO: Metropolitan Planning Organization

MTA: Michigan Townships Association

MTPA: Michigan Transportation Planning Association

MTU: Michigan Technological University

NBI: National Bridge Inventory

NBIS: National Bridge Inspection Standards

NFC: National Functional Classification

NHS: National Highway System

PASER: Pavement Surface Evaluation and Rating

RPA: Regional Planning Agency

STIP: State Transportation Improvement Program

TAMC: Transportation Asset Management Council

TAMP: Transportation Asset Management Plan

WAMC: Water Asset Management Council

TAMC was created by Public Act (PA) 499 Of 2002

To act as a resource for independent objective data on the condition of Michigan's roads and bridges and a resource for implementing the concepts of asset management.


“All public roads in Michigan will be managed using the principles of asset management”
- Public Act (PA) 499 of 2002 created the Michigan TAMC
Michigan.gov/TAMC