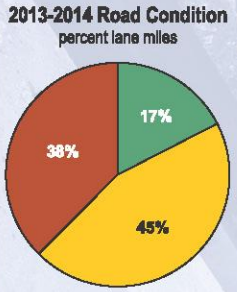
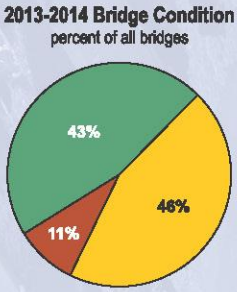




GOOD FAIR POOR

MICHIGAN'S ROADS & BRIDGES 2014 ANNUAL REPORT

"The message from every corner of our state is clear, it's time to fix the roads."
– Governor Snyder

MICHIGAN TRANSPORTATION ASSET MANAGEMENT COUNCIL

I-96 in Metro Region

South Cedar St. at I-96 Bridge South Lansing

TABLE OF CONTENTS

ACRONYMS AND ABREVIATIONS USED IN THIS REPORT

FHWA; FEDERAL HIGHWAY ADMINISTRATION
MAP-21: MOVING AHEAD FOR PROGRESS IN THE 21ST CENTURY
MPO: METROPOLITAN PLANNING ORGANIZATION
NBI: NATIONAL BRIDGE INVENTORY
NFC: NATIONAL FUNCTIONAL CLASSIFICATION
NHS: NATIONAL HIGHWAY SYSTEM
PASER: PAVEMENT SURFACE EVALUATION AND RATING
RPO: REGIONAL PLANNING ORGANIZATION
STP: STATE TRANSPORTATION PROGRAM
TAMC: TRANSPORTATION ASSET MANAGEMENT COUNCIL

Any reference to Act 51 in this document refers to Public Act 51 of 1951

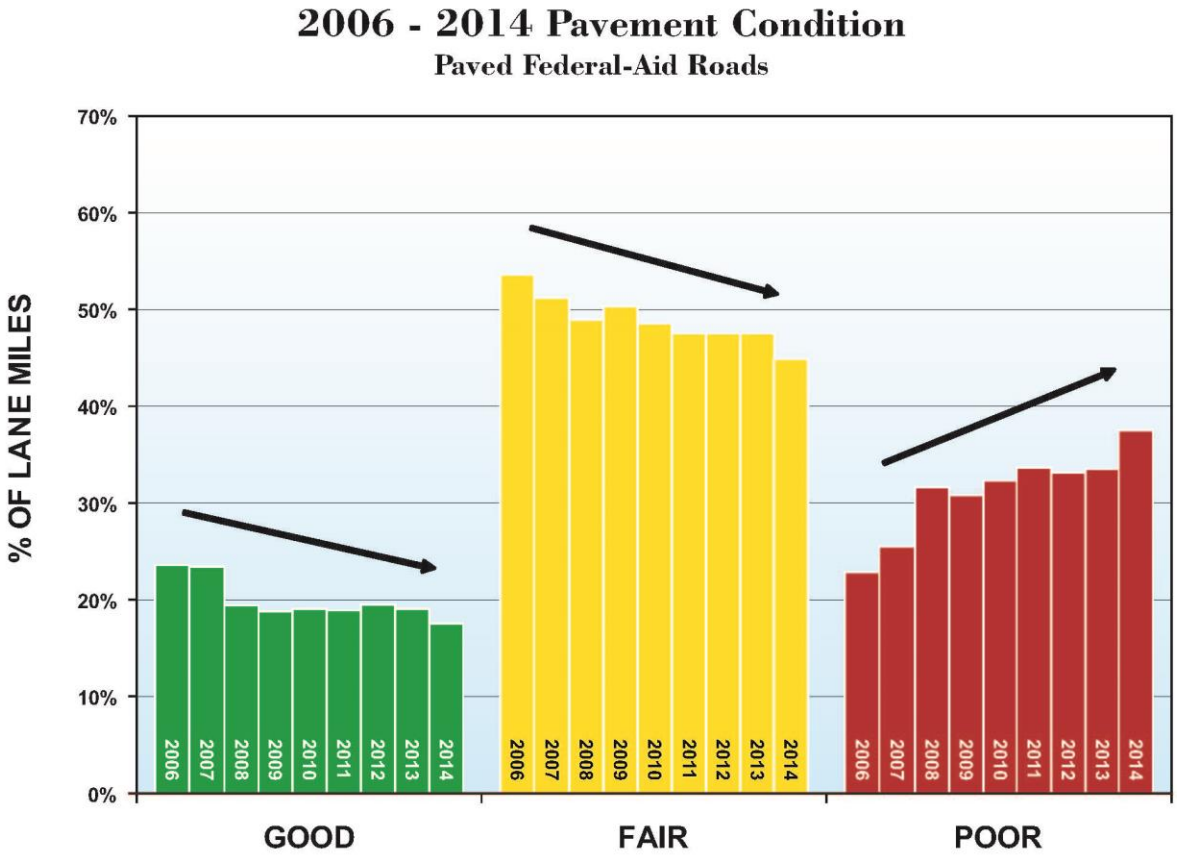
Photo credits: James D. Lemay and Sara J. Martin

US-131 from M-32 north to Boyne City

US-31 in Petoskey Bridge over the Bear River

EXECUTIVE SUMMARY

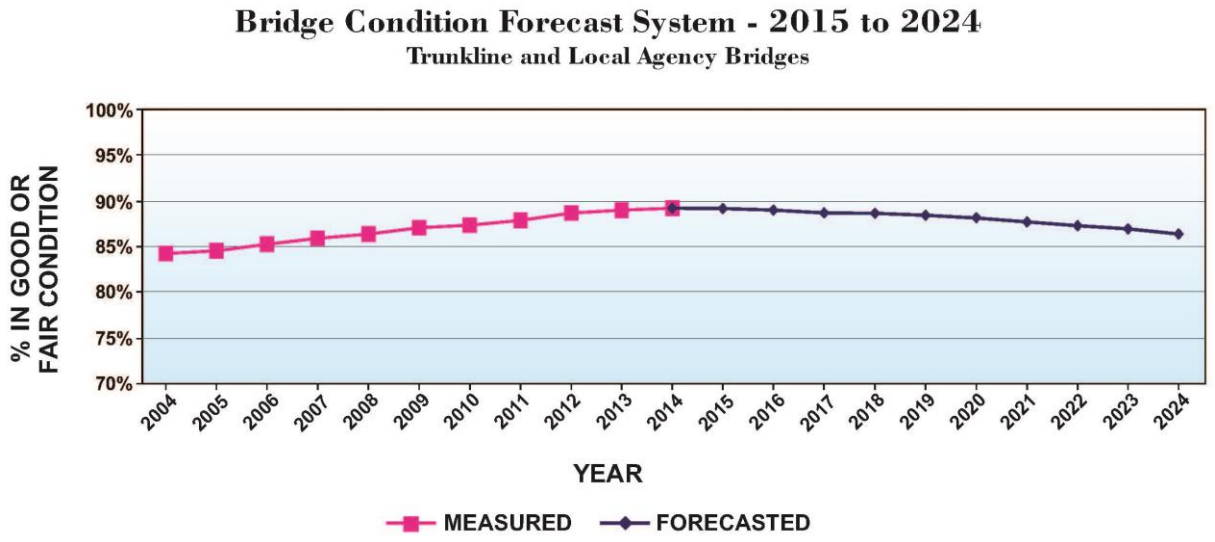
The 2014 condition assessment of Michigan's federal-aid eligible roads continues to show that more than one out of every three miles of road remain rated in "poor" condition. While the rate of decline in pavement condition trends appeared to have slowed in recent years, the 2014 ratings showed a 5 percent increase in roads in "poor" condition, providing significant evidence that the systematic decline in Michigan's roads has not abated. This change represents 3,470 additional lane miles falling into the "poor" category in 2014. It is the largest single-year increase in poor roads in the last seven years and the second largest increase since TAMC began collecting the data in 2006. Forecasts continue to show that the system is expected to deteriorate even further in the future under current funding levels.



Source: 2006 – 2014 PASER Data Collection
Figure 1

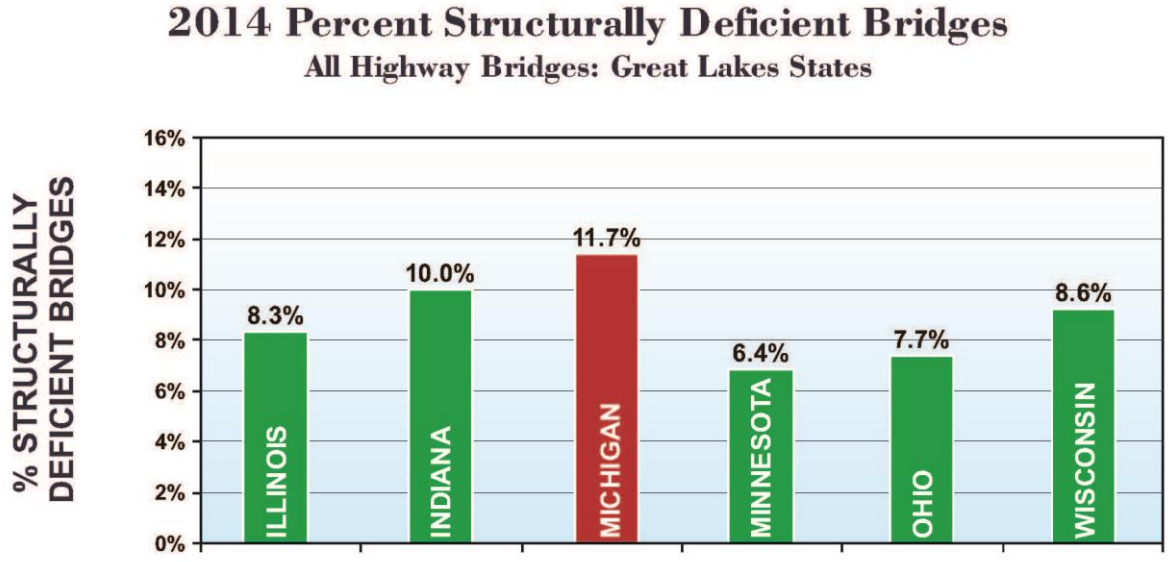
Allowing this trend to continue will have significant financial and economic consequences. For example, the cost of returning a poor road to good condition is four to five times greater than the cost of maintaining a road in fair condition. Allowing more roads to reach poor condition will dramatically increase the future costs of repairing Michigan's road network.

There remains reason for continued concern regarding Michigan's ability to preserve its strategic bridge assets. Progress in reducing the number of structurally deficient bridges under state jurisdiction has plateaued. An analysis of bridge conditions in Michigan shows that state and local bridge decision makers may not be able to continue these trends in the face of rising costs and revenue challenges.



Source: MDOT March 2015
Figure 2

Figure 3 below indicates that Michigan continues to have a significantly higher percentage of structurally deficient bridges than other Great-Lakes states. An analysis of the 2014 NBI submittal shows that 5.8 percent of state-owned bridges and 15.7 percent of county and local bridges were structurally deficient. When all bridges, regardless of ownership, are included, 11.7 percent of Michigan's highway bridges are structurally deficient. The national average is 10.05%.



Source: MDOT March 2015
Figure 3

The TAMC has been instrumental in encouraging more local agencies to implement an approach to preventive maintenance called a "mix of fixes" on bridges. Through the efforts of TAMC, MDOT's Local Agency Program received an allowance from FHWA in December 2011 to use Federal Highway Bridge Program funding to do systematic preventive maintenance of locally owned roadway bridges. Michigan is one of the first states in the nation to be granted this option. In 2014, the Local Agency Bridge Program selected forty seven preventive and rehabilitation maintenance projects, which comprised just over half of all project selections. Additionally, due to the asset management approach promoted by TAMC, MDOT and the Local Agency Bridge Program were granted a waiver on the use of off-system STP funds in MAP-21. This waiver allows greater flexibility in selecting projects based upon greatest need and risk based asset management.

Bridge conditions continue to be a strategic focus on the MiDashboard, Governor Snyder's set of high level performance measures indicating how the state compares with the rest of the nation in key areas. The percentage of Michigan's bridges which are rated structurally deficient is one of the 5 measures of the overall strength of Michigan's economy, and this measure can be accessed online at: **www.michigan.gov/midashboard** .

At current funding levels, the condition of Michigan's transportation infrastructure will continue to deteriorate. This decline in the condition of Michigan's infrastructure affects everyone: businesses that rely on the transportation network to transport goods and services; tourists visiting or traveling through our great state; and our citizens who expect safe and convenient access to work and school. Reinvesting in our transportation system and maintaining these vital public assets are essential to securing a better future for all of Michigan's citizens.

2014 Key Points:

- ✓ **The condition of Michigan's roads continues to decline.**
- ✓ **The condition of Michigan's bridges has plateaued and is projected to decline.**
- ✓ **The 2014 analysis indicates that, at current investment levels, the deterioration of roads will continue and the advancements we have made on bridge conditions will not be sustainable.**
- ✓ **Without increased levels of investment, the cost of improving our roads and bridges will continue to increase each year.**
- ✓ **The longer we postpone increased levels of investment, the longer it will take for the public to begin to see any appreciable improvement in the condition of Michigan's roads and bridges.**

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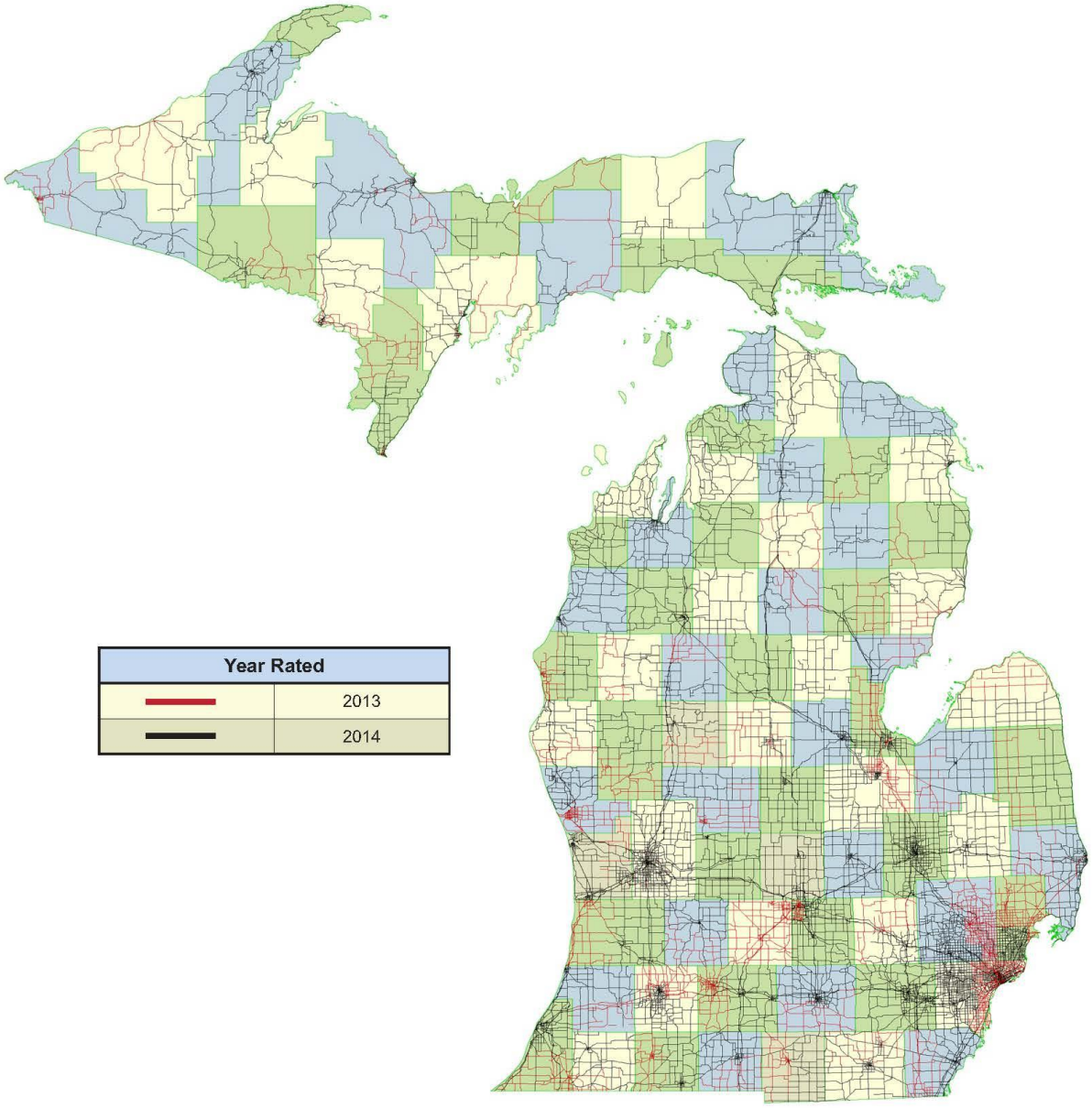
PAVEMENT CONDITION

Federal-Aid Roads

Current policies require road agencies to rate a minimum of 50 percent of the federal-aid eligible roads within their jurisdiction in any given year. In 2014, just over 68 percent of the paved federal-aid eligible roads statewide were rated. The analysis and summaries of pavement condition in this report are based on a combination of ratings conducted in 2013 and 2014. Where roads were not rated in 2014, the ratings from 2013 were used.

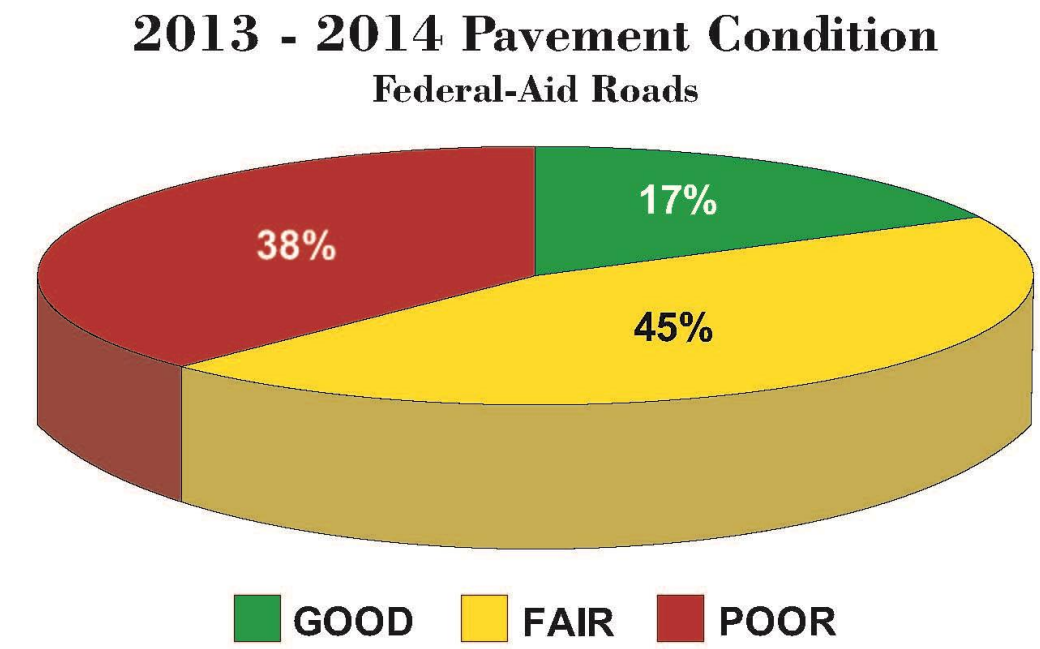
2013 - 2014 Paved Federal-Aid Roads Rated



Michigan's Annual PASER Condition Assessment – A Team Effort: Every year since 2004 TAMC contracts with each of Michigan's twenty-one RPOs and MPOs to coordinate the annual PASER condition assessment of the paved federal-aid road system. A team of three raters composed of a representative from MDOT, RPO/MPO, and a local agency (county, city/village) embark on an effort to rate at least 50 percent of the paved federal-aid road system each year. Over 100 teams of trained raters assess the condition of 86,000 lane miles of paved federal-aid eligible roads once every two years. Individuals must attend PASER training each year before being allowed to rate the roads.

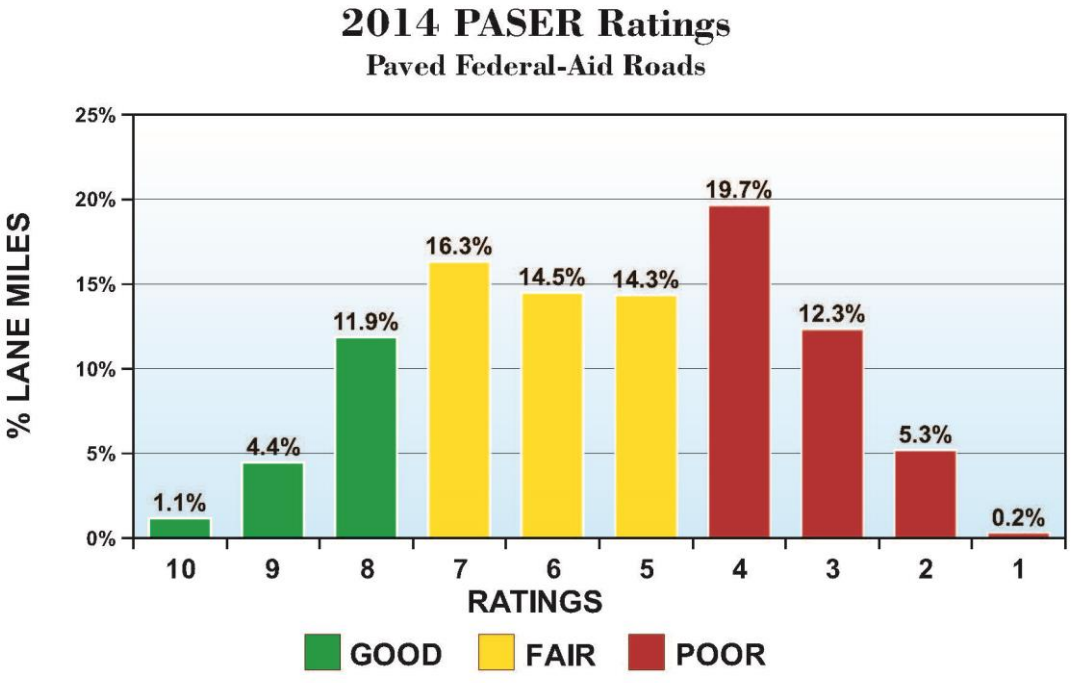
Quality Assurance and Quality Control (QA/QC)

With over 100 teams of trained raters assessing the condition of roads statewide annually, data quality is of utmost importance to TAMC. Accurate PASER ratings depend on the judgment of the raters. Every year raters are required to attend PASER training and review the rating criteria. Various types of pavement distress are shown and there is a discussion on how various types of distress contribute to the appropriate rating for each road segment. The goal is uniform quality: all rating teams should assign the same rating when observing a given segment of road. In order to ensure this uniformity, a qualified transportation technician observes and independently rates over 2,000 road segments scattered throughout the state. These ratings, known as the QC ratings, are later compared to the ratings reported by the teams. The analysis shows that over 75 percent of the team ratings are either identical or within one rating point of the QC rating.

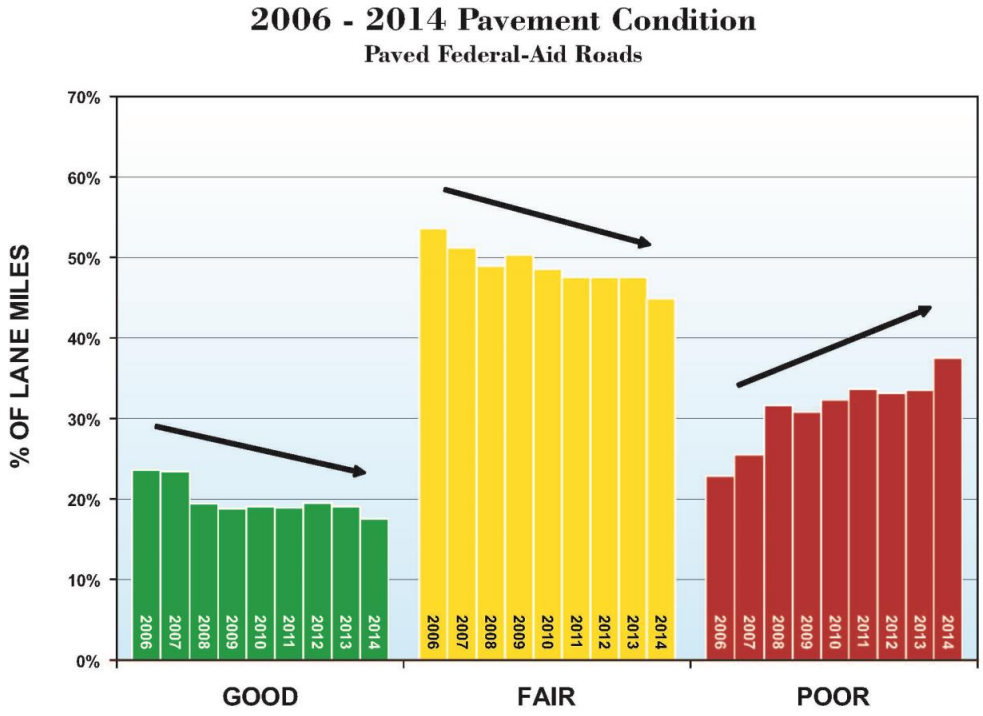


Source: 2013-2014 PASER Data Collection
Figure 4

Figure 4 above summarizes the results of the PASER ratings. In the 2013-2014 rating period, 38 percent of roads were rated in "poor" condition, 45 percent were rated in "fair" condition, and 17 percent were rated in "good" condition. Figure 5 below shows the breakdown of the 2014 pavement condition by lane miles and individual PASER ratings on a scale from 10 to 1.



Source: 2013-2014 PASER Data Collection
Figure 5



Source: 2006 – 2013 PASER Data Collection
Figure 6

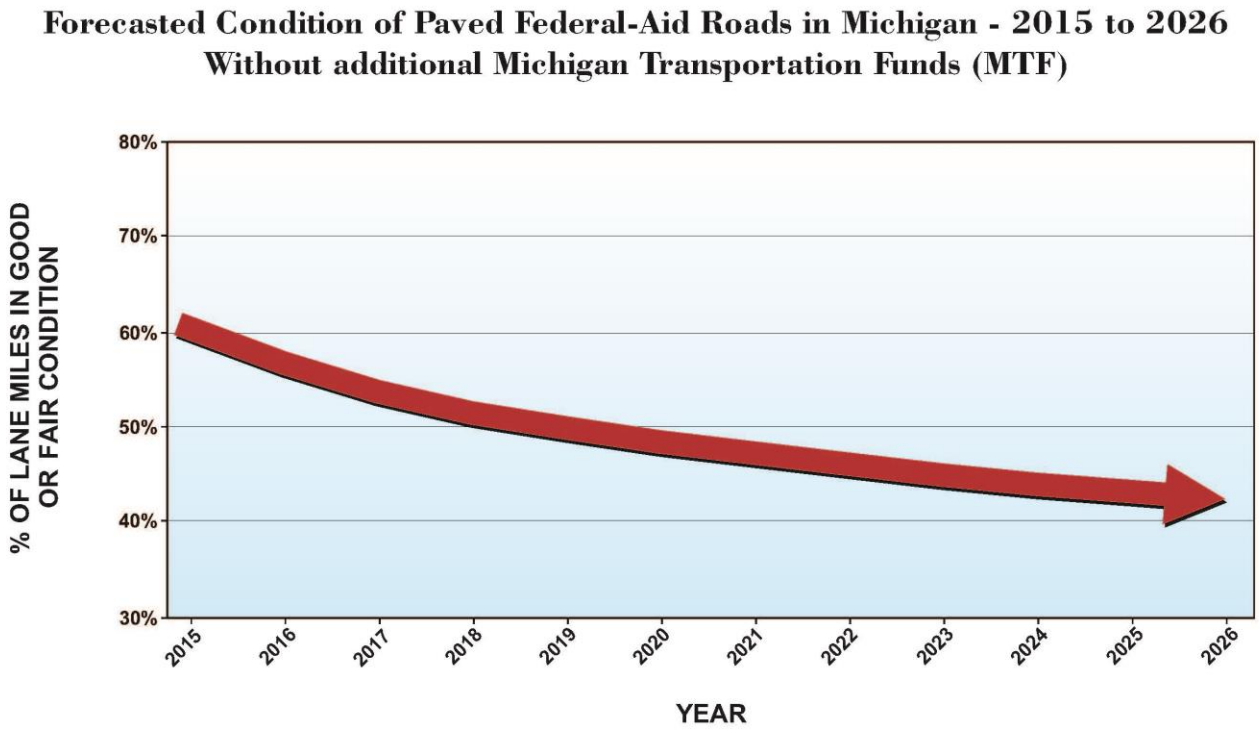
Figure 6 above shows that in 2006, 23 percent of lane miles were identified as being in "poor" condition. By 2014, that number has increased to 38 percent. In 2006, nearly 77 percent of the federal-aid system could be considered in "good" or "fair" condition. By 2014, that figure fell to 62 percent. Clearly, the overall condition of the federal-aid system is getting significantly worse with more miles in poor condition than in good condition. The cost of returning a road that requires structural improvement, i.e., from poor condition to good condition, is four to five times greater than the cost of returning a road requiring capital preventive maintenance (CPM), i.e., from fair condition to good condition. Allowing more roads to reach poor condition will dramatically increase the costs of repairing Michigan's road network.

M-99, Martin Luther King Ave in Lansing. Intersection of MLK and Holmes Rd.

PAVEMENT CONDITION FORECASTS

Road Condition

Figure 7 below shows that, at current funding levels, the condition of paved federal-aid roads will continue on a downward trend over the next 12 years.



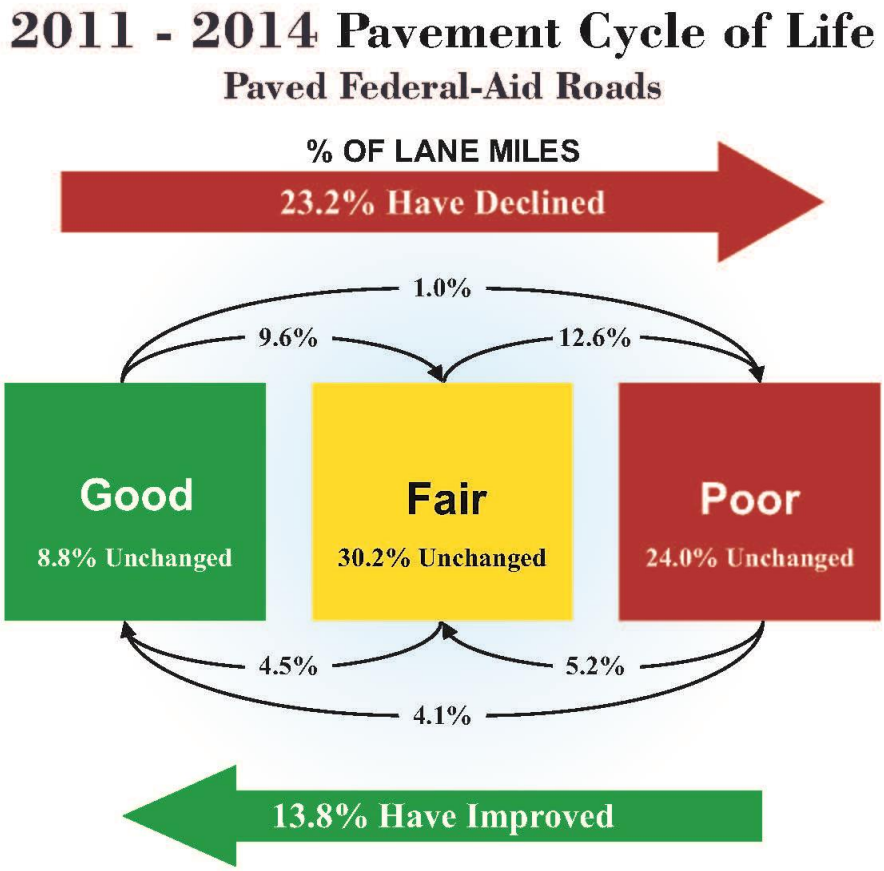
Source: Pavement Condition Forecasting System, March 2015.
Figure 7

Emergency bridge repair crew's working on the University Dr. over I-75 bridge pier.

PAVEMENT CYCLE OF LIFE

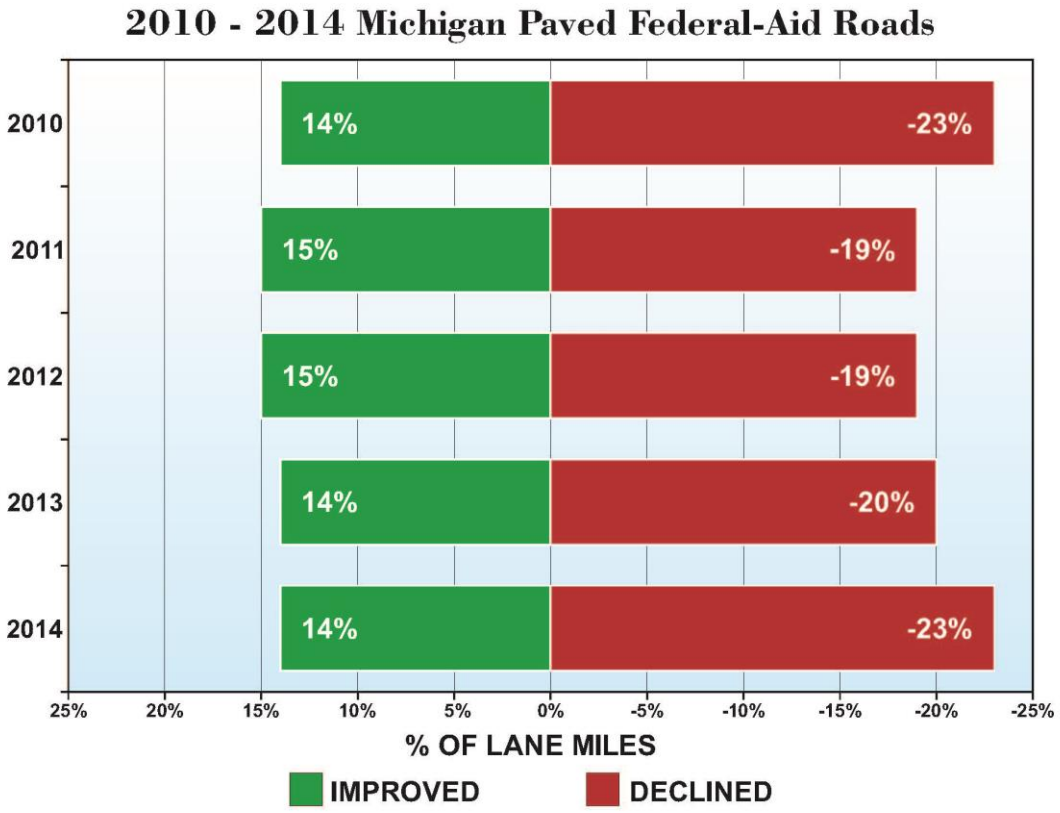
Overall, the PASER ratings from the 2011-2014 rating period showed that over the past 4 years, around 23 percent of the lane miles have deteriorated while less than 14 percent have improved. The message is clear: Michigan's roadway network continues to deteriorate.

Pavements go through a cycle starting from good condition, to fair condition and ultimately to poor condition. This doesn't happen overnight, but the aging process follows a recognizable cycle. There are many places along the cycle where performing some preventive maintenance at a relatively minimal cost can prolong the life of the pavement in a good or fair condition. If an investment can be made at or before the pavement has reached the threshold of poor condition, it will be less expensive and extend the useful life of the asset in good or fair condition. Figure 8 below indicates that agencies are not able to make those investments as often as they would like. The Pavement Cycle of Life charts the life of pavement on the federal aid system in the State of Michigan over the last four years and shows that 37.0 percent of Michigan's roads have improved or deteriorated over that time. During that period, 9.6 percent of the roads went from good to fair, 12.6 percent went from fair to poor, and approximately 1 percent slid all the way from good to poor. In that same four year period, only 13.8 percent of the roads were improved; 4.5 percent went from fair to good, 5.2 percent went from poor to fair and 4.1 percent went from poor to good.



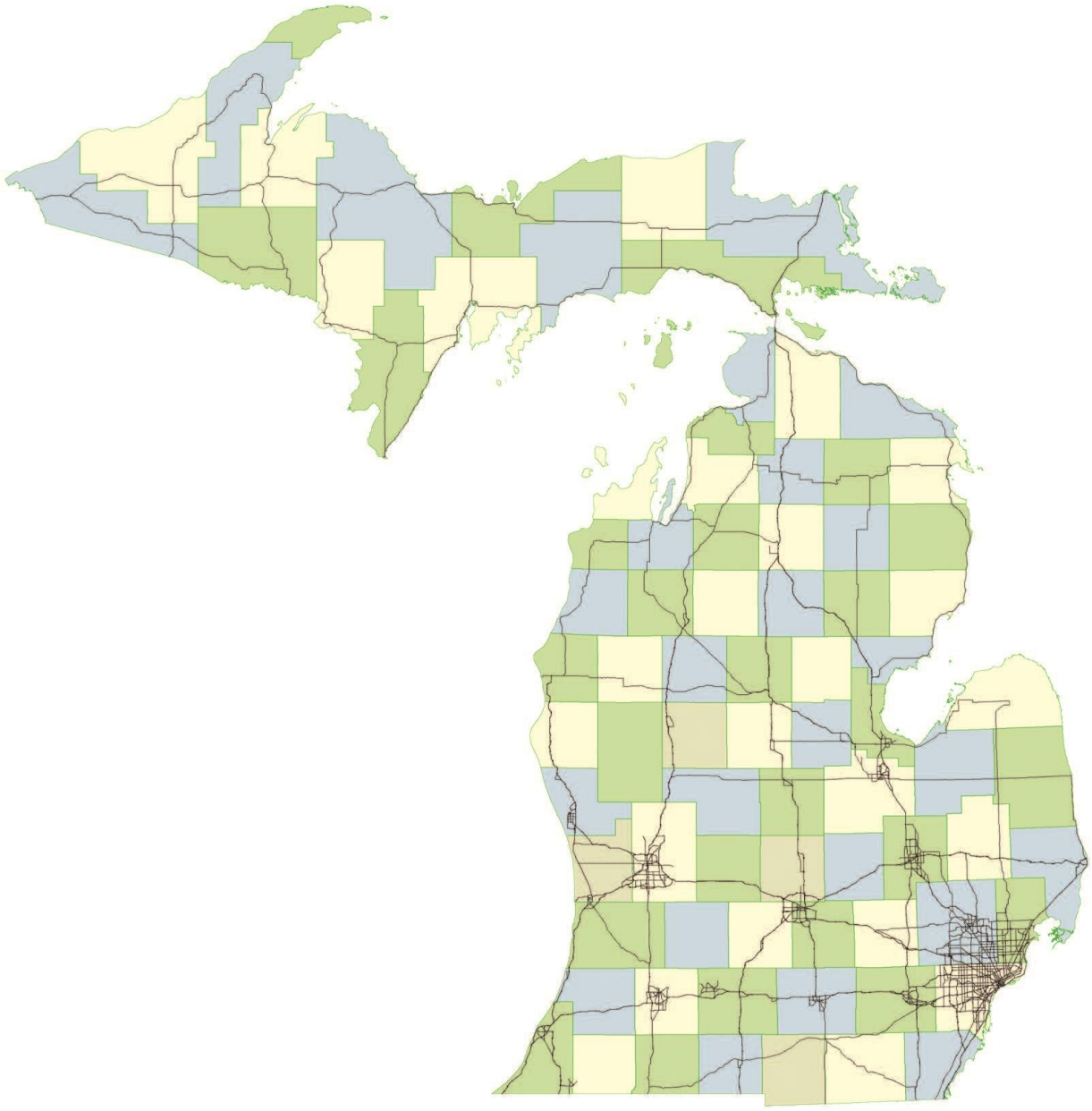
Source: 2011 – 2014 PASER Data Collection
Figure 8

As can be seen in Figure 9 below, in each of the past five years, more roads fell into a lower category than were improved. In 2014, about 20,000 lane-miles of roads declined, while only 12,000 improved, a net decline of 8,000 lane-miles. 2013 saw a net decline of 3,600 lane miles.



Source: 2010 – 2014 PASER Data Collection
Figure 9

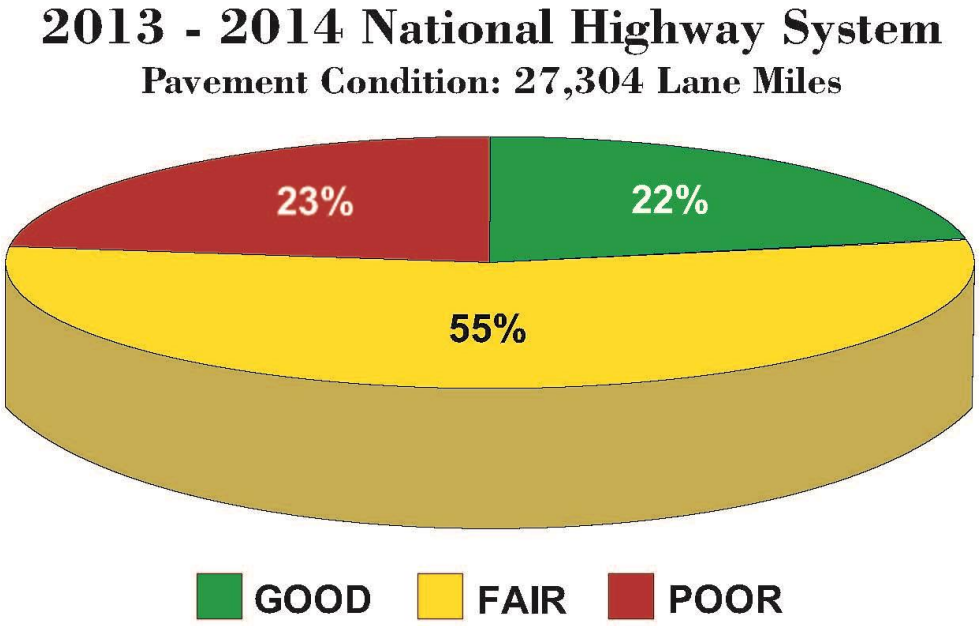
National Highway System (NHS)



Michigan's portion of the NHS network

MAP-21

MAP-21 is the first long-term federal highway authorization enacted since 2005 and was signed into law by President Obama on July 6, 2012. Funding surface transportation programs at over $105 billion for Fiscal Years 2013 and 2014. Each State is required to develop a risk-based asset management plan for the NHS to improve or preserve the condition of the assets and the performance of the system



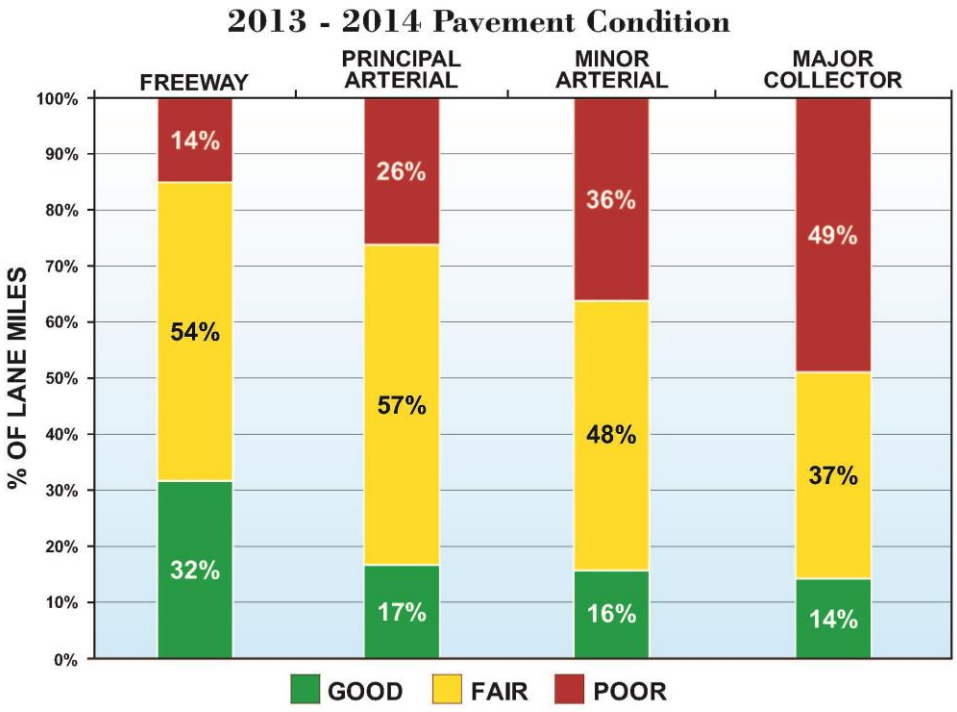
Source: 2013-2014 PASER Data Collection
Figure 10

Similar to the pavement ratings for federal-aid roads, the ratings for NHS roads are reported in lane miles. Figure 10 above reveals that the 2014 ratings 23 percent are in poor condition, 55 percent are in fair condition, and 22 percent are in good condition.

NFC

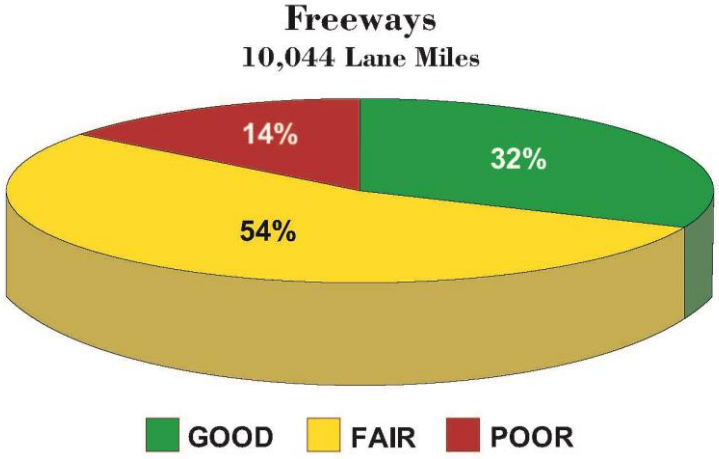
Since its inception, TAMC's primary focus has been on how the transportation system functions. The federal-aid system is subdivided into four major NFC groups, Principal Arterials, Freeways (a subset of Principal Arterials), Minor Arterials and Major Collectors. These groups are determined by the extent to which each provides two essential functions; mobility and accessibility. Figure 11, on page 14 compares the 2014 paved federal-aid PASER ratings broken down by each of these classification groups.

The analyses of the 2014 paved federal-aid PASER condition data by NFC reveals that the highest level system of Principal Arterials is in the best condition of the three NFC systems. This Principal Arterial system is critical to all multi-state, multi-regional, and much intra-regional travel throughout Michigan and typically carries the highest traffic volumes and the longest trips. The PASER condition data shows a larger percentage of poor pavements in the "middle" NFC system of Minor Arterials. The Minor Arterial system is especially important to support inter- and intra- regional travel, and serves relatively high traffic volumes. Finally, this chart reveals that the lowest level of federal-aid roads (Collectors) are also in the poorest condition of the three federal aid systems. Collector roads tend to have lower traffic volumes and serve shorter distance trips and/or the beginning or ending legs for longer distance trips, since they provide more accessibility to homes, businesses, and other attractions. This analysis is evidence that Michigan's road agencies are strategically investing their limited transportation funds in the portion of the system that provides the greatest long-distance mobility and highest traffic volumes. However, most trips utilize some portion of each of the three systems, so in order to have the safest, most efficient federal-aid system possible, funding must be strategically allocated to all three of these NFC systems.



Source: 2013-2014 PASER Data Collection
Figure 11

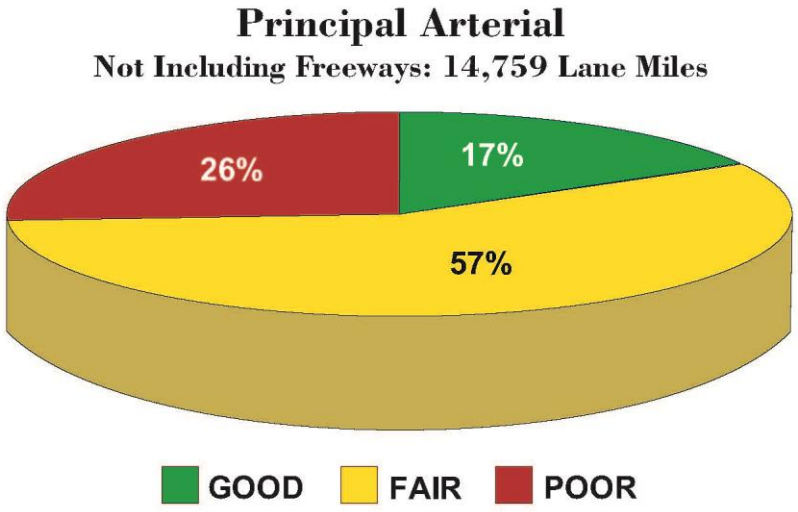
Freeways are a subset of the Principal Arterial system that has limited access: no at-grade intersections with other roads, railroads, or trails. Freeways generally carry the highest volume of traffic. The 2014 rating of the Freeway system reveals that 14 percent were in poor condition, 54 percent were in fair condition, and 32 percent were in good condition.



Source: 2013-2014 PASER Data Collection
Figure 13

Some examples of freeways would be any of the Interstate Highways, M-23 from the Ohio border to Flint in Southeast Michigan, M-6 in the Grand Rapids area, US-131 between Kalamazoo and Cadillac, and US-127 from Jackson to St. Johns, and from Ithaca to Clare.

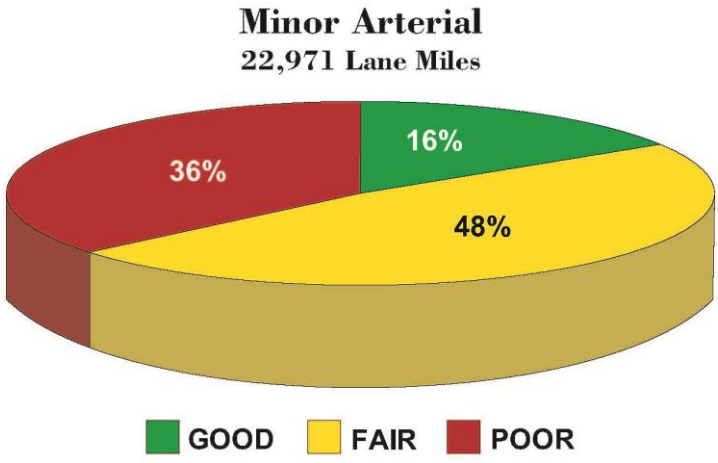
Principal Arterials, as noted above, are at the top of the NFC hierarchical system. Principal arterials generally carry long distance, through-travel movements. They also provide access to important traffic generators, such as major airports or regional shopping centers. The 2014 rating of the Principal Arterial system reveals that 26 percent were in poor condition, 57 percent were in fair condition, and 17 percent were in good condition.



Source: 2013-2014 PASER Data Collection
Figure 12

Some examples of principal arterials from around the state would be M-24 in Southeast Michigan, 28th Street in the Grand Rapids area, M-72 between Traverse City and Grayling, US-31 from Ludington to Mackinac City, US-2 from St. Ignace to Ironwood, and US-41 from Menominee to Houghton.

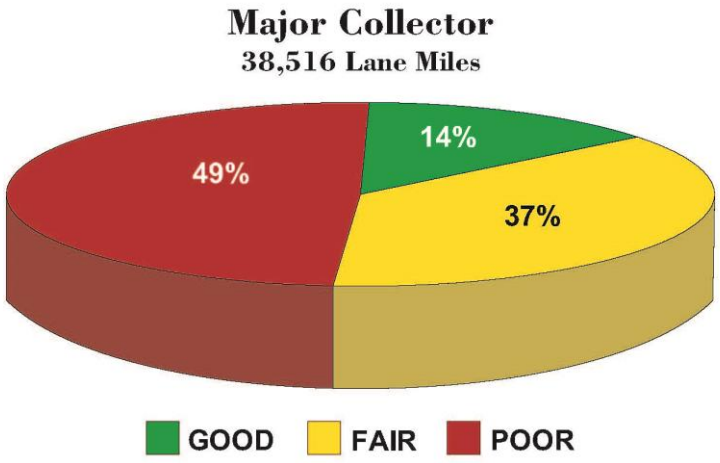
Minor Arterials are similar in function to principal arterials, except they carry trips of shorter distance and to lesser traffic generators. The 2014 rating of the Minor Arterial system reveals that 36 percent were in poor condition, 48 percent were in fair condition, and 16 percent were in good condition.



Source: 2013-2014 PASER Data Collection
Figure 14

Some examples of minor arterials would be the Belle Isle Bridge in Detroit, W. 16th Street/S. Shoreline Drive in Holland, Hagadorn Road in East Lansing, M-55 between West Branch and Tawas City, M-22 between Traverse City and Manistee, US-41 from Houghton to Copper Harbor, and M-35 between Gladstone and Negaunee

Major Collectors tend to provide more access to property than do arterials. Collectors also funnel traffic from residential to rural areas to arterials. The 2013 rating of the Collector system reveals that 49 percent were in poor condition, 37 percent were in fair condition, and 14 percent were in good condition.

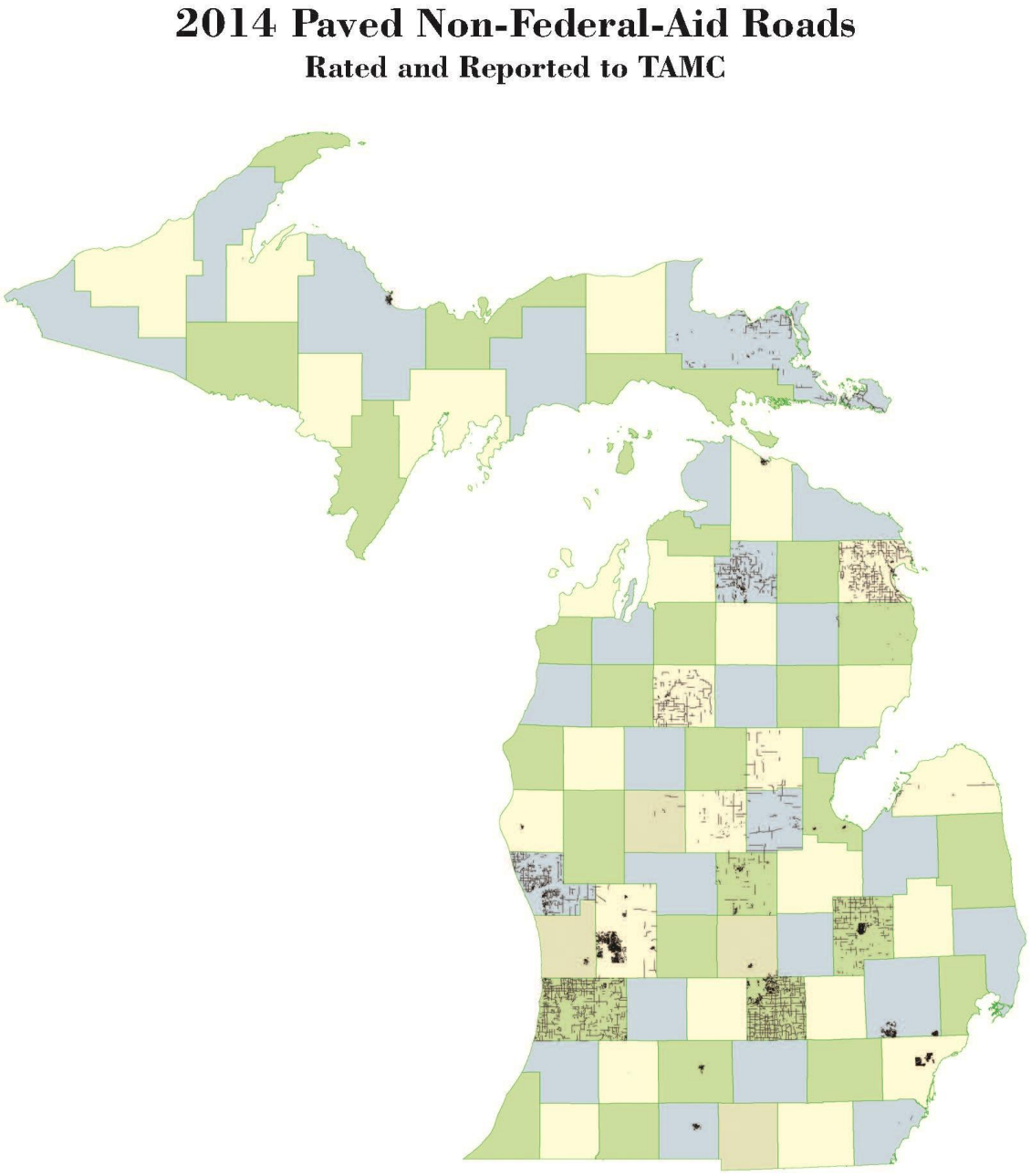


Source: 2013- 2014 PASER Data Collection
Figure 15

Some examples of major collectors would be Montcalm Street between Cass and Brush in Detroit, Capital City Blvd. at the Capital City Airport in Lansing, N. Burdick Street in Kalamazoo, M-37 on Old Mission Peninsula north of Traverse City, Huron Street between US-23 and E. Central Avenue in Mackinac City, Big Bay Road from Marquette to Big Bay, and Canal Street between M-26 and Portage lake in Houghton.

Paved Non-Federal-Aid Roads & Streets

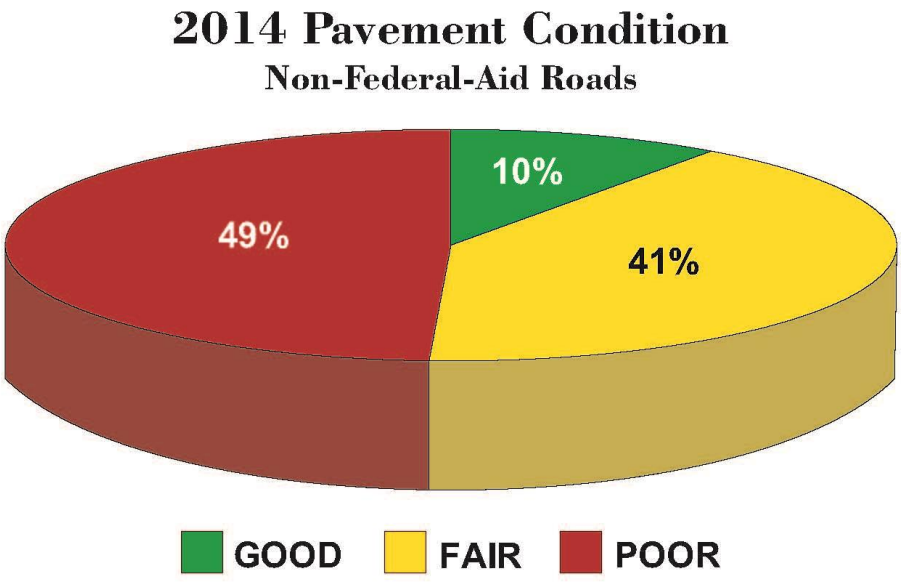
Not all roads in Michigan are eligible for federal aid. Whether a road is eligible for aid or not depends upon its NFC type. In general, non-federal-aid eligible roads are residential streets and lightly traveled county roads. Roughly half of these roads are unpaved.



Map Source: 2014 PASER (Paved Non-Federal-Aid) Data Collection

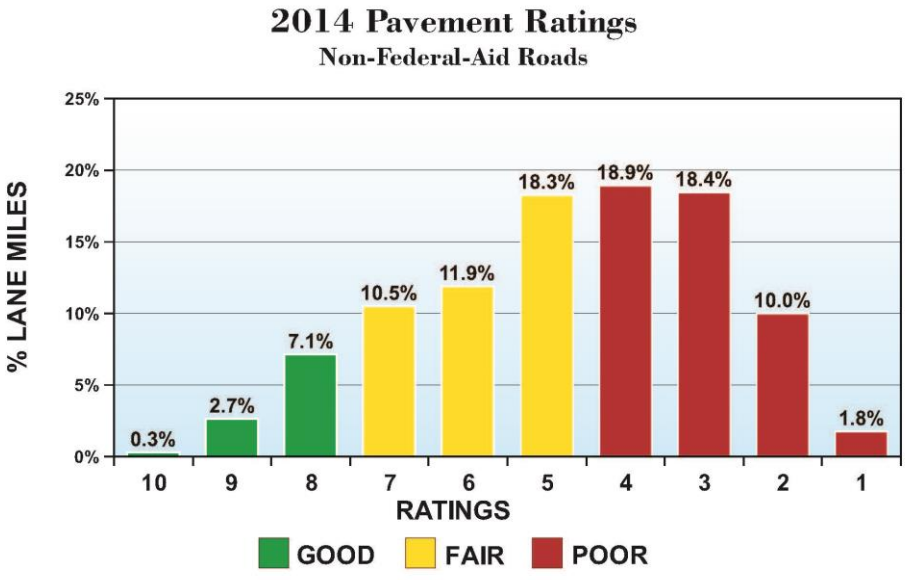
Since its inception, TAMC has focused its attention on the condition of the 39,700 miles of federal aid eligible roads in the state as required by Act 51. In 2008, TAMC expanded its focus to include a major portion of the paved non-federal-aid eligible roads.

There are 80,000 miles of non-federal aid eligible roads in the state. Approximately one-half of this mileage (about 40,000 miles) is paved. Just over 10,200 lane miles of these roads were observed and assigned PASER ratings in 2014 and reported to TAMC. This compares to 6,540 lane miles in 2013, 8,623 lane miles in 2012; 9,766 lane miles in 2011; 4,296 lane miles in 2010; 5,647 lane miles in 2009; and 11,557 lane miles in 2008.



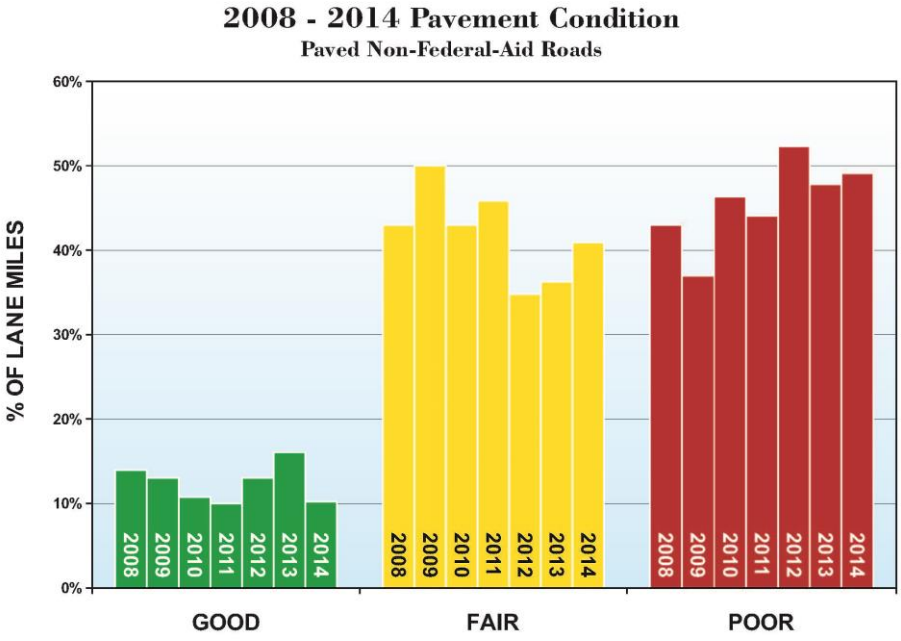
Source: 2014 PASER (Paved Non-Federal-Aid) Data Collection
Figure 16

Similar to the pavement ratings for federal-aid roads, the ratings for paved non-federal-aid roads are reported in lane miles. Figure 16 above indicates that 49 percent of lane miles rated and reported to TAMC are in poor condition, 41 percent are in fair condition, and only 10 percent are in good condition. Figure 17, below, shows the distribution of the ratings for paved non-federal aid roads.



Source: 2014 PASER Data Collection
Figure 5

Figure 18 below summarizes pavement ratings reported from 2008 to 2014.



Source: 2008 to 2014 PASER (Paved Non-Federal-Aid) Data Collection
Figure 18

Due to the small sample size of roads in this group that are reported to TAMC, it is not possible to conduct a meaningful and reliable trend analysis for this data. Some road agencies that collect this data for their own purposes may not be aware that TAMC is also interested in this data. During the coming year, TAMC will be encouraging more road agencies to share available data on non-federal-aid roads, so that a more complete picture of the condition of all roads in the state can be provided in the future

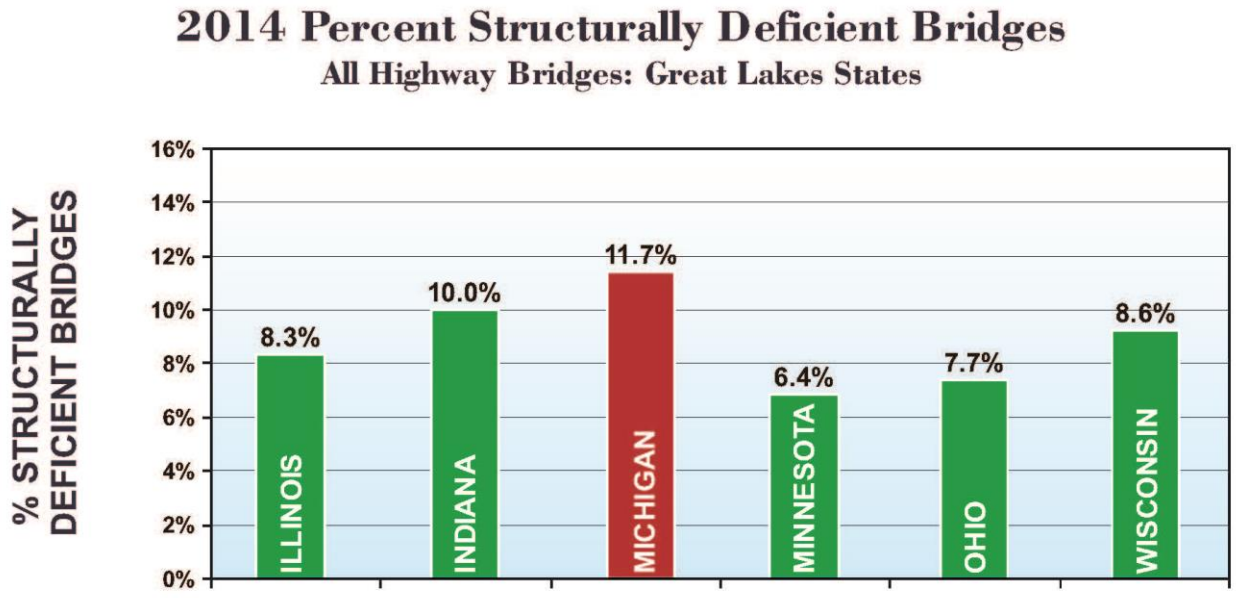
BRIDGE CONDITIONS

An analysis of bridge conditions in Michigan shows that state and local bridge decision makers are continuing to "hold their own" despite rising costs and revenue challenges. From 2004 to 2012, the overall network of bridges in the state saw a slight but steady improvement in overall condition. However, from 2012 to 2014 the improvement in bridge condition has stagnated. This can be attributed to:

1. Progress being made initially in reducing the number of structurally deficient bridges under state jurisdiction.
2. More local agencies are implementing preventive maintenance "mix of fixes" strategies on local bridge systems.
3. Rising costs and an increasing inventory of fair bridges creates a preservation need that exceeds available funding.

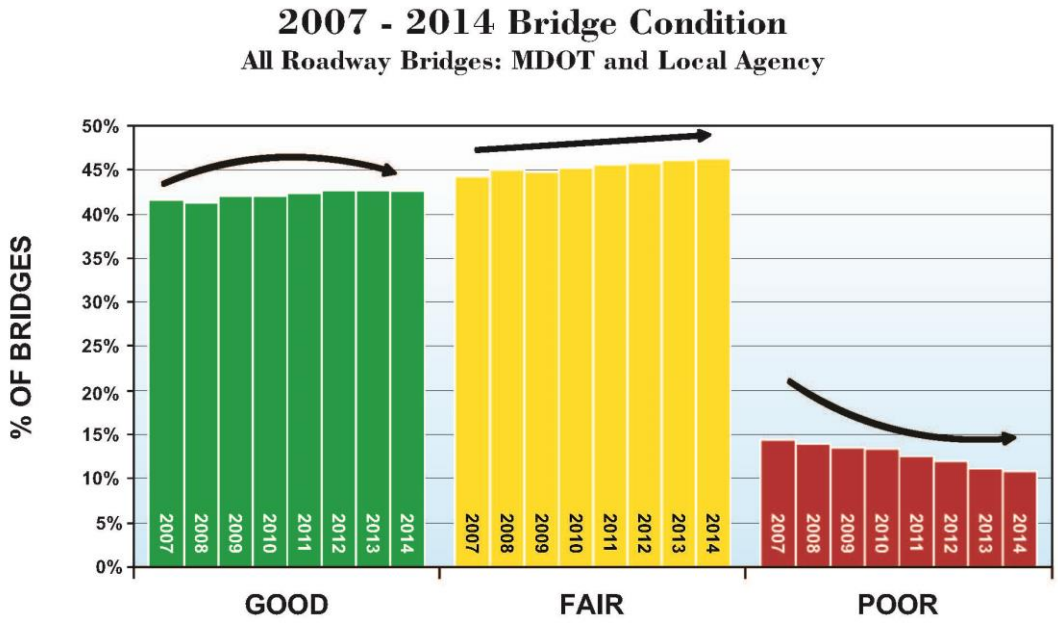
Bridge conditions in Michigan have been given a strategic focus with the development of the MiDashboard, Governor Snyder's set of high level performance measures indicating how the state compares with the rest of the nation in key areas. The percentage of Michigan's bridges which are rated structurally deficient is one of the 5 measures of the overall strength of Michigan's economy, and this measure can be accessed here: www.michigan.gov/midashboard

Comparing Michigan's structurally deficient bridges with the rest of the nation and with our neighboring states highlights the need for continued concern regarding Michigan's ability to preserve its strategic bridge assets. An analysis of the 2014 NBI submittal shows that 5.8 percent of MDOT bridges and 15.7 percent of county and local bridges were identified as structurally deficient. When all the bridges in Michigan are combined, the result is 11.7 percent of all highway bridges in the state in 2014 were structurally deficient. The national average in 2014 was 10.05%.



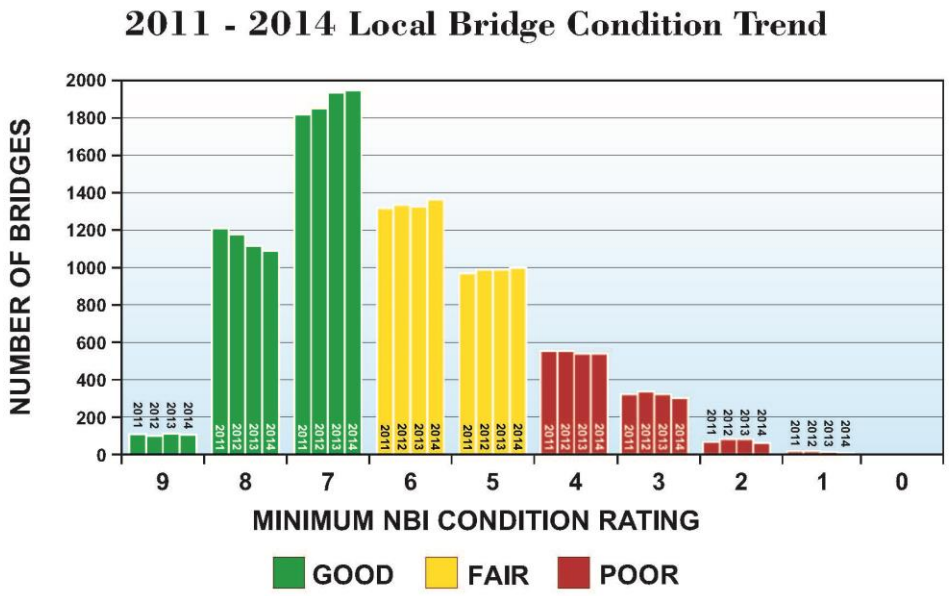
Source: MDOT March 2015
Figure 19

Figure 19 below indicates that Michigan has a significantly higher percentage of structurally deficient bridges than other Great-Lakes states.



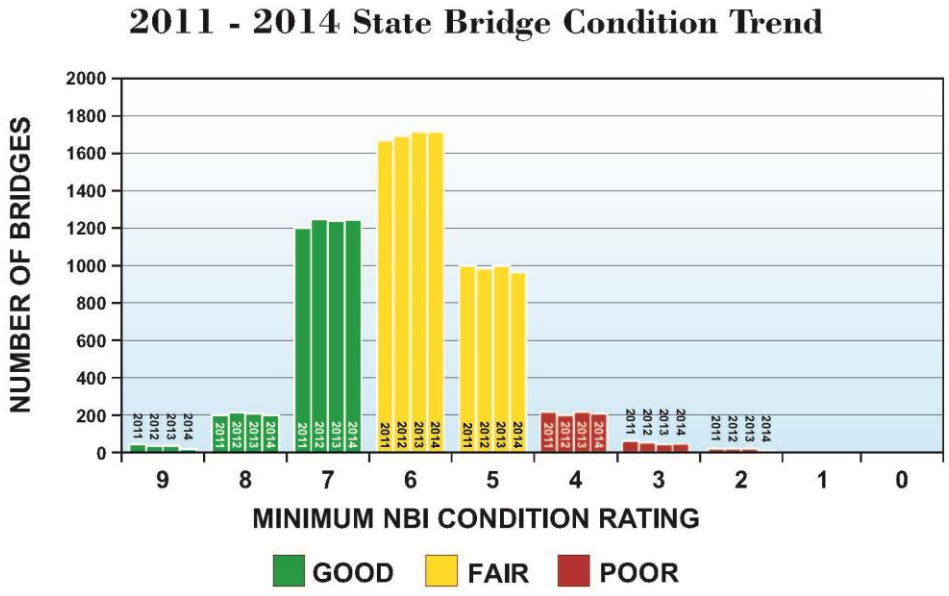
Source: MDOT 2007-14 Michigan Bridge Inventory
Figure 20

Comparing Michigan's progress toward reducing structurally deficient bridges highlights the need for continued concern regarding Michigan's ability to preserve its strategic bridge assets. Figure 20 above summarizes the percentage of Michigan bridges in good, fair, and poor condition for the years 2007-2014. Michigan state and local bridge decision makers have reduced the percentage of bridges in poor condition while increasing the number of bridges in good and fair condition. Although the trend-line for the poor category is decreasing, the good category is plateauing and the fair category is increasing. Without sufficient revenue and implementing an effective preventive maintenance strategy those bridges located on the fair to poor border-line are in danger of dropping into the poor category.



Source: MDOT, 2011-14 Michigan Bridge Inventory
Figure 21

Figure 21 shows that local bridge owners have maintained the number of poor bridges with only slight progress over the last four-years. It is important to apply strategic preventive maintenance strategies to maintain or reduce the number of fair bridges approaching the poor category (NBI Rating <5).



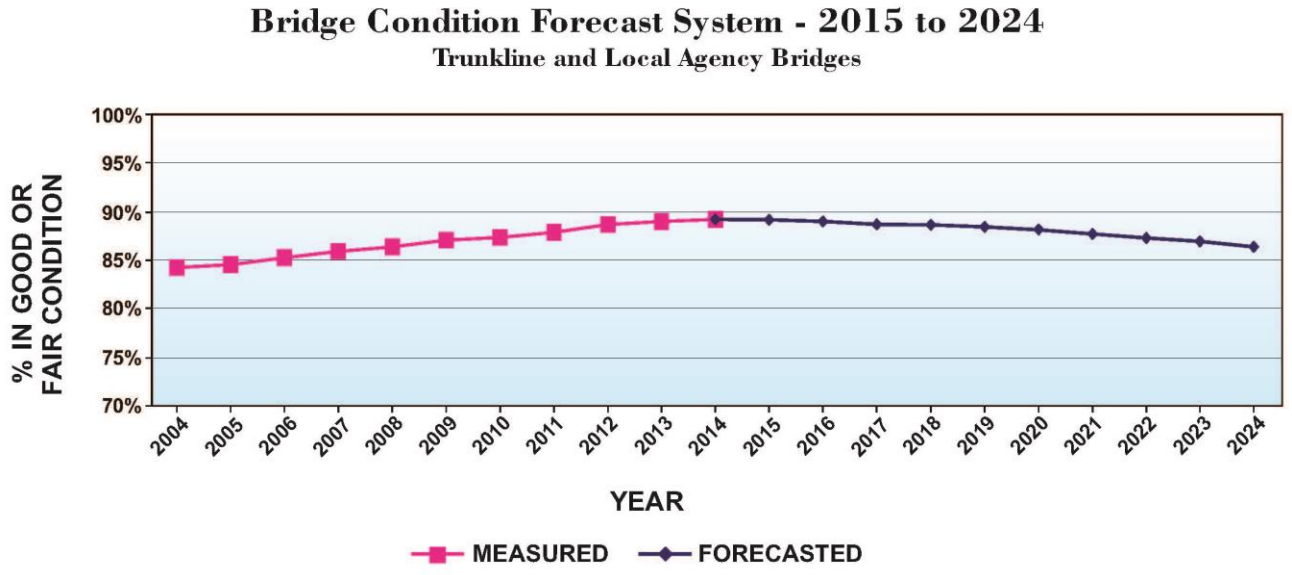
Source: MDOT, 2011-14 Michigan Bridge Inventory
Figure 22

Figure 22 above shows that the state system has made significant progress in reducing the number of poor bridges, accounting for most of the progress statewide, however this progress slowed in 2013. Until recently, the state system has been able to maintain the number of fair bridges before they reach the poor category, while increasing the number of good and fair bridges. An aging infrastructure and rising costs have reversed

some of that progress, and the number of poor bridges has increased as preservation needs exceed available revenues. Maintaining or improving the bridges rated in good or fair condition is imperative to prevent increasing the number of poor bridges (NBI Rating <5) from increasing.

BRIDGE CONDITION FORECASTS

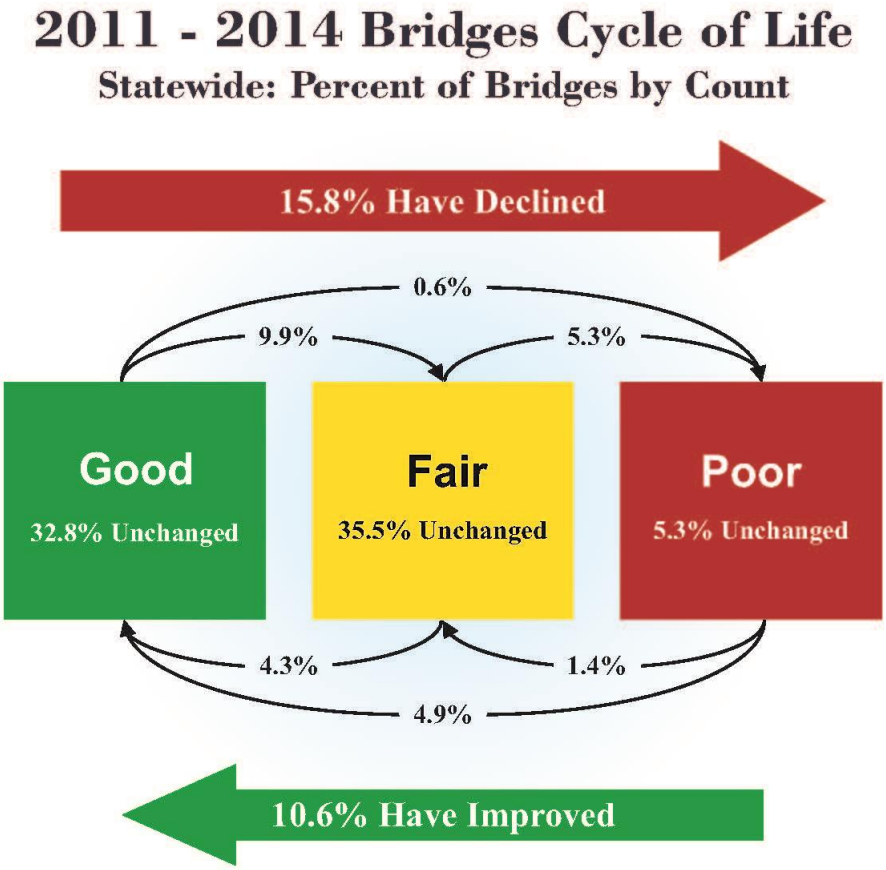
Working from current bridge condition information as reported by the NBI, bridge deterioration rate, project costs, expected inflation, and fix strategies, the Bridge Condition Forecasting System estimates future condition of state and local bridges. Figure 23 below indicates the combined overall condition of all of Michigan's bridges (state and local agency) is expected to decline after 2014 unless additional funding is identified for both state and local bridge programs. By 2024, nearly half of the progress made toward improving bridge conditions since 2004 could be lost. In addition, the condition and forecast data shows the local bridge program could materially benefit from applying capital preventive maintenance strategies.



Source: MDOT March 2015
Figure 23

BRIDGE CYCLE OF LIFE

Figure 24 below shows the percentage of bridges that have improved or deteriorated into each of the major condition categories over the last four years (2011 – 2014). Michigan's overall goal is to reduce the number of poor bridges. Over this time span, 15.8 percent of Michigan's bridges have worsened; 9.9 percent of the bridges went from good to fair, 5.3 percent went from fair to poor, and less than one percent slid all the way from good to poor. In that same three year period, only 10.6 percent of the bridges were improved; 4.3 percent went from fair to good, 1.4 percent went from poor to fair and 4.9 percent went from poor to good.



Source: MDOT April 2015
Figure 24

MICHIGAN'S TRANSPORTATION ASSET MANAGEMENT COUNCIL

FORMATION AND CHARGE

TAMC was formed under Public Act 499 of 2002 (amended by P.A. 199 of 2007) to develop a coordinated, unified effort by the various roadway agencies within the state to advise the State Transportation Commission on a statewide asset management strategy.

Mission Statement: To support excellence in managing Michigan's transportation assets by:

1. Advising the Legislature and State Transportation Commission
2. Promoting Asset Management Principles
3. Providing Tools and Practices for Road Agencies

In 2014, TAMC saw its first change in leadership since it was established. Roger Safford, of MDOT was elected to chair TAMC, replacing Carmine Palumbo of SEMCOG who retired from TAMC. William McEntee was elected to the vice-chair position, replacing Bob Slattery, who remains part of TAMC. In addition, Frank Kelley became the new TAMC coordinator, replacing Brian Sanada, who retired from MDOT in 2014.

TAMC Training and Education:

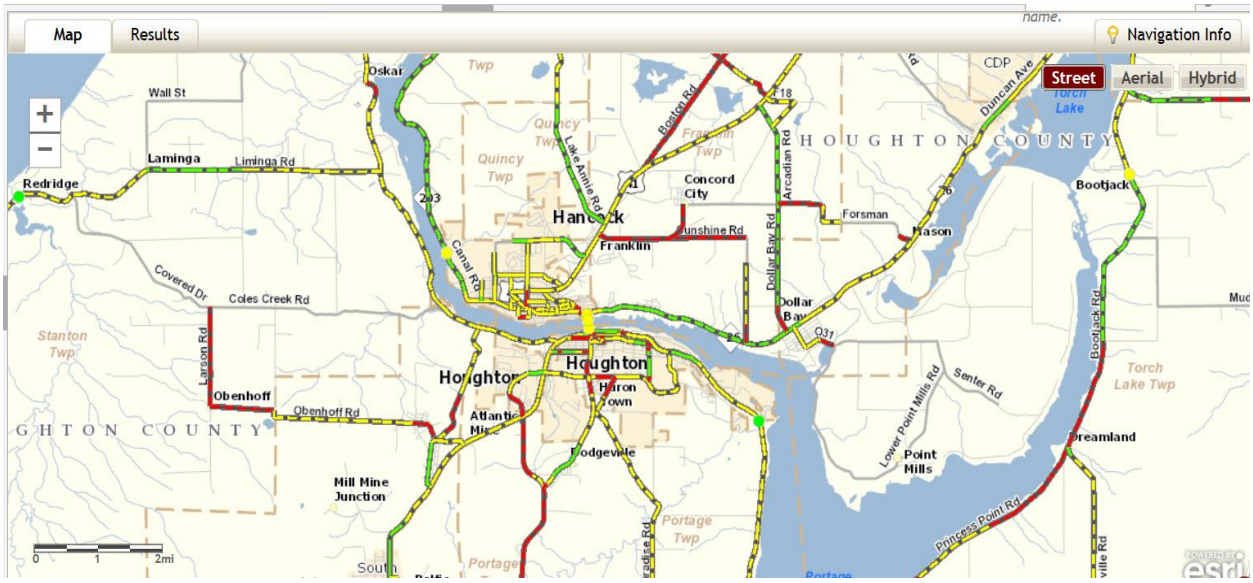
TAMC continues to focus on training and educating local agency staff and elected and appointed officials on the benefits of asset management. Please visit the TAMC's website to download the *2014 TAMC Training Program Results Report*. In 2014 TAMC sponsored:

- Two (2) Asset Management Conferences were held in the spring in Bay City and in the fall in Marquette and had a total attendance of 139 participants.
- Ten (10) Introduction to Asset Management for Elected & Appointed Officials Workshops were held statewide and had a combined attendance of 113 participants.
- Five (5) Asset Management Workshops were scheduled statewide but one was cancelled resulting in a combined attendance of only 49 participants compared to 98 in 2013 when there were six workshops conducted.
- Ten (10) on-site PASER Trainings were held statewide and had 354 participants. In addition, four PASER training webinars were held with an additional 97 participants.
- Two (2) Bridge Asset Management Pilot Training Courses in which 22 specially selected individuals attended training and provided feedback to help TAMC further develop the training material (Two previous Pilot Training Courses were held in 2013 with an additional 22 participants). Three workshops are planned for 2015 with the expectation of training as many as 50 participants. This guidance and training is a first of its kind nationally.

The 2014 TAMC training program had a total of 677 participants in 2014 compared to 789 participants trained in 2013. While recent attendance numbers have been slightly below the highs experienced in 2008-2009, demand for these trainings is still strong. (For a complete copy of the Training Report, please visit the TAMC website: http://www.mcgi.state.mi.us/MITRP/Council/Default_Council.aspx)

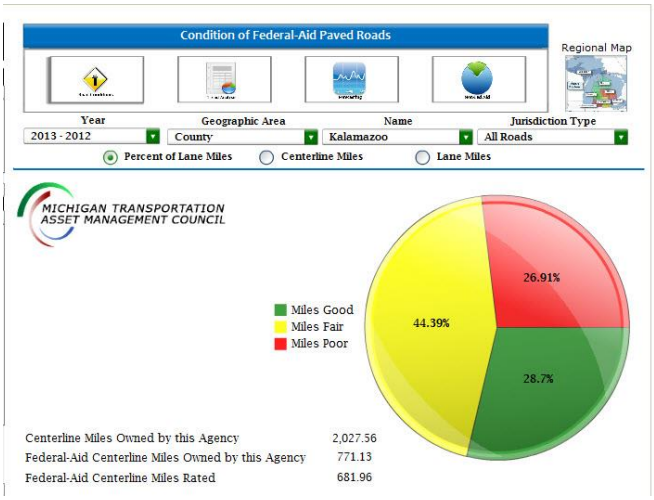
TAMC Interactive Map and Dashboards

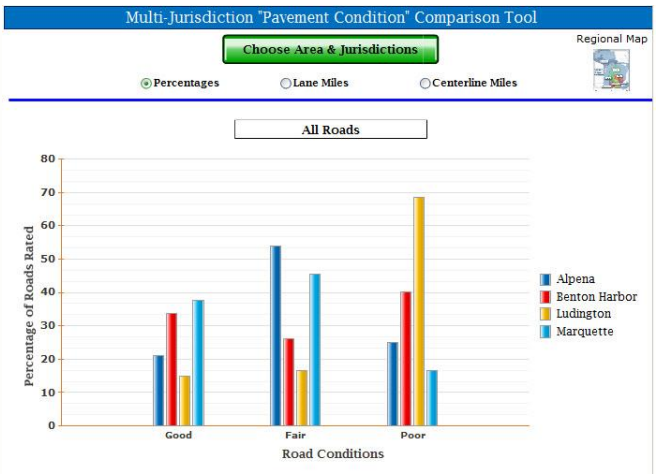
Interactive Map: TAMC maintains a public interactive map that includes historical and most current PASER condition ratings, updated PASER data collection status information, and most current NBI bridge condition information. *Click* graphic below for hyperlink to the Interactive Map.



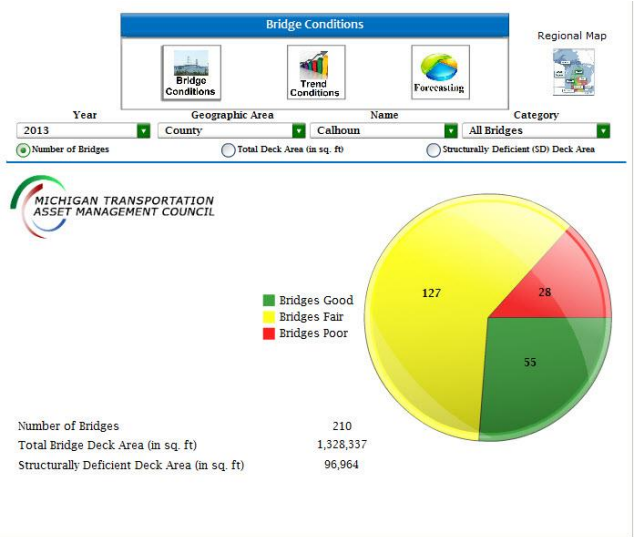
Performance Measure Dashboards: In addition, TAMC has developed and improved upon several Performance Measure Dashboards that show the condition, operation, and investment in Michigan's public road and bridge system. *Click* on each graphic below for hyperlink to the Performance Measure Dashboards.

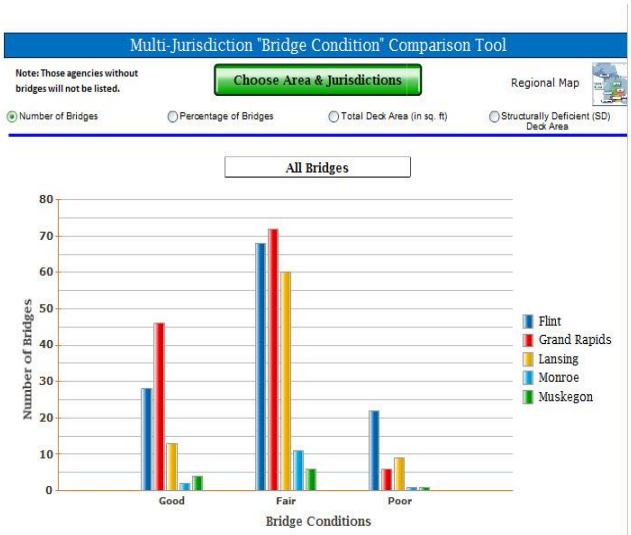
Pavement Condition & Pavement Comparison Dashboards – is based on paved surface ratings for state highways as well as roads under the jurisdiction of Michigan's counties, cities & villages. These dashboards illustrate pavement condition trends and provide the user with the ability to compare system performance with up to eight agencies.



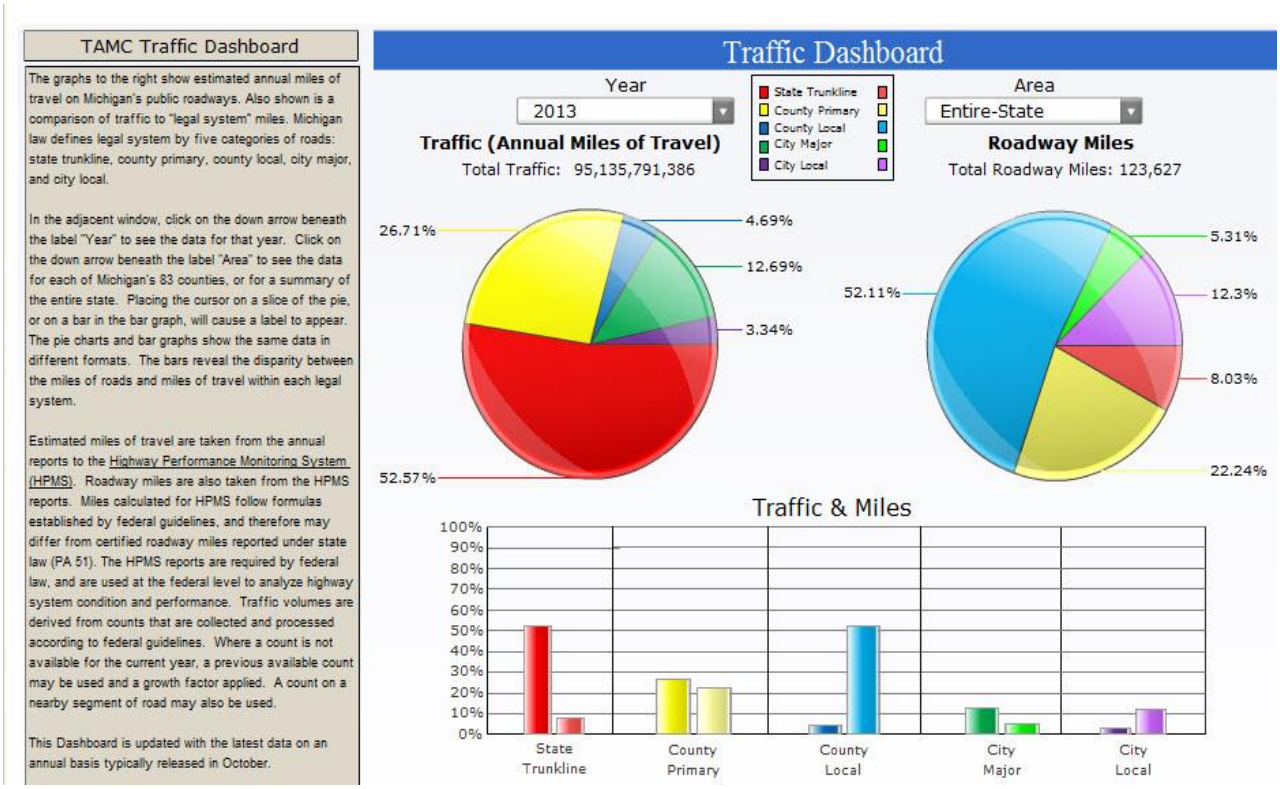


Bridge Condition & Bridge Comparison Dashboards – bridge conditions are based on bi-annual inspections of over 10,000 state, county, city & village owned bridges. These dashboards illustrate bridge condition trends and provide the user with the ability to compare system performance.

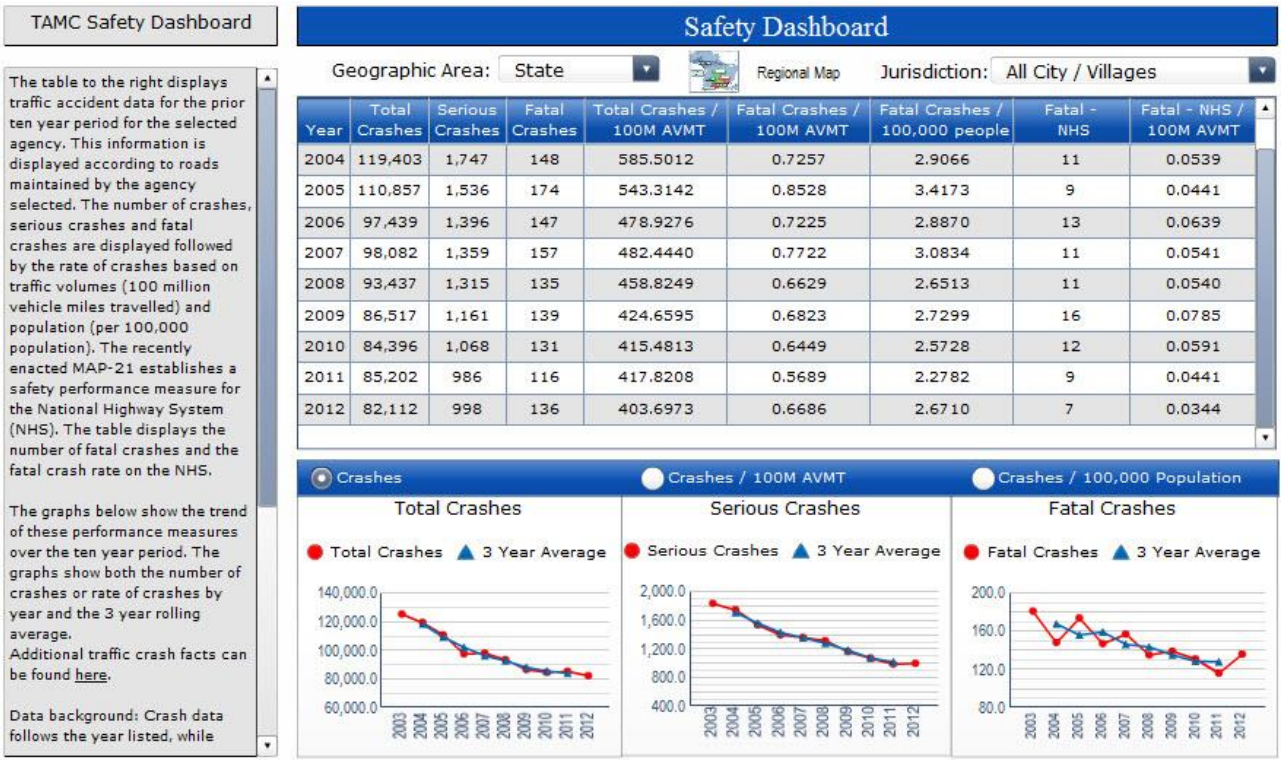




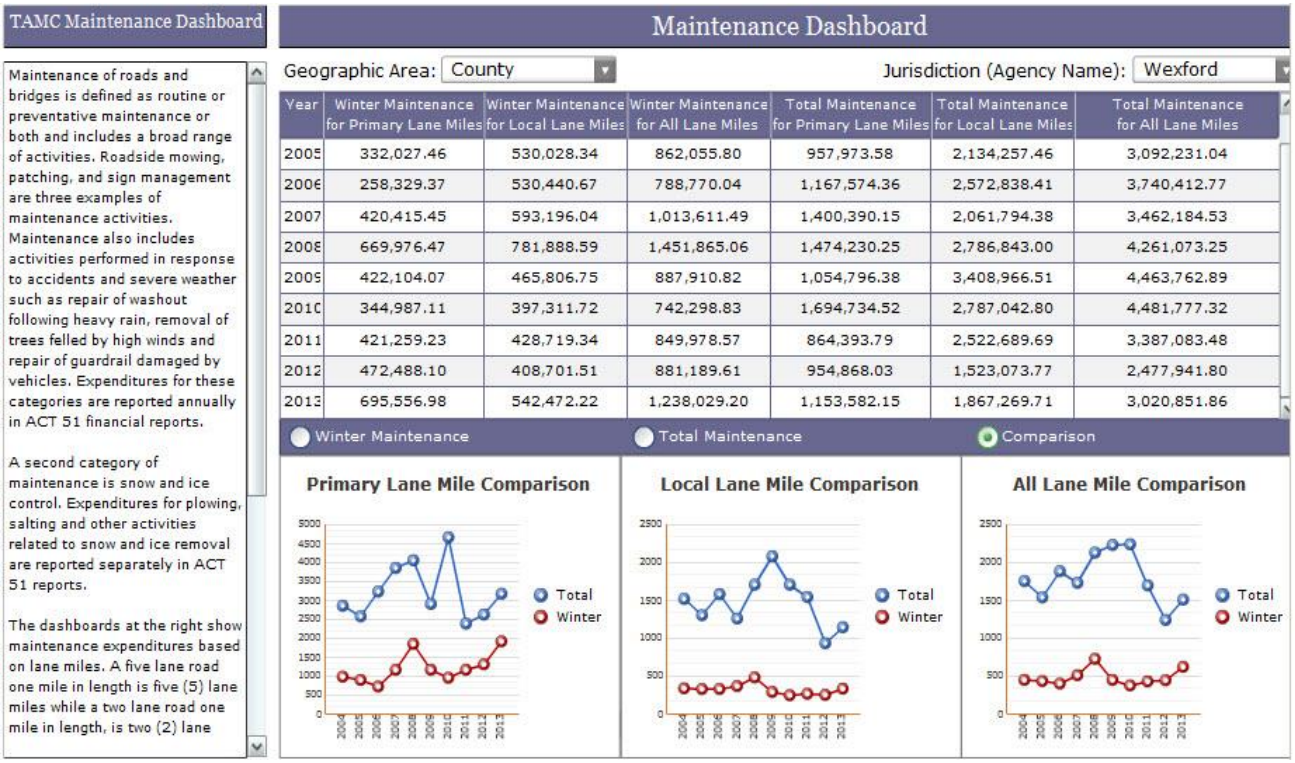
Traffic Dashboard –traffic volumes is a measure of both road use and how effectively the road system is performing. The Traffic dashboard shows estimated annual miles of travel on Michigan's public roadways as well as a comparison of traffic to legal system miles.



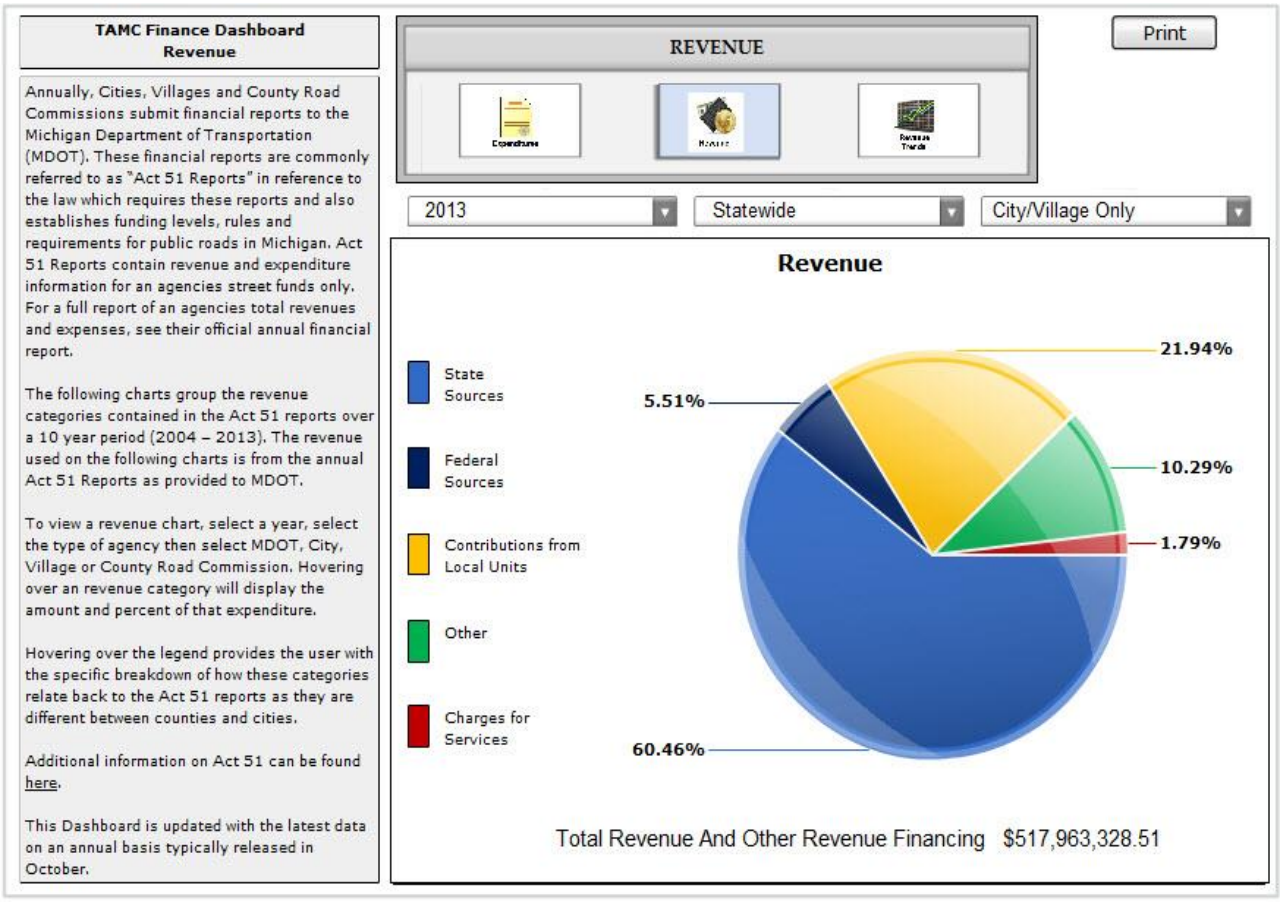
Safety Dashboard – the rate of crashes (fatalities, serious injuries) is a measure of how effectively the road system is performing.



Maintenance Dashboard – is required to keep roads and bridges performing as intended. Anticipated release date: Early 2014.



Finance Dashboard – capital investments are necessary to extend the useful life of any asset including roads and bridges. This dashboard illustrates how MDOT and local agencies are investing Act51 funding into the road and bridge system and the revenues received annually.



TAMC Publications:

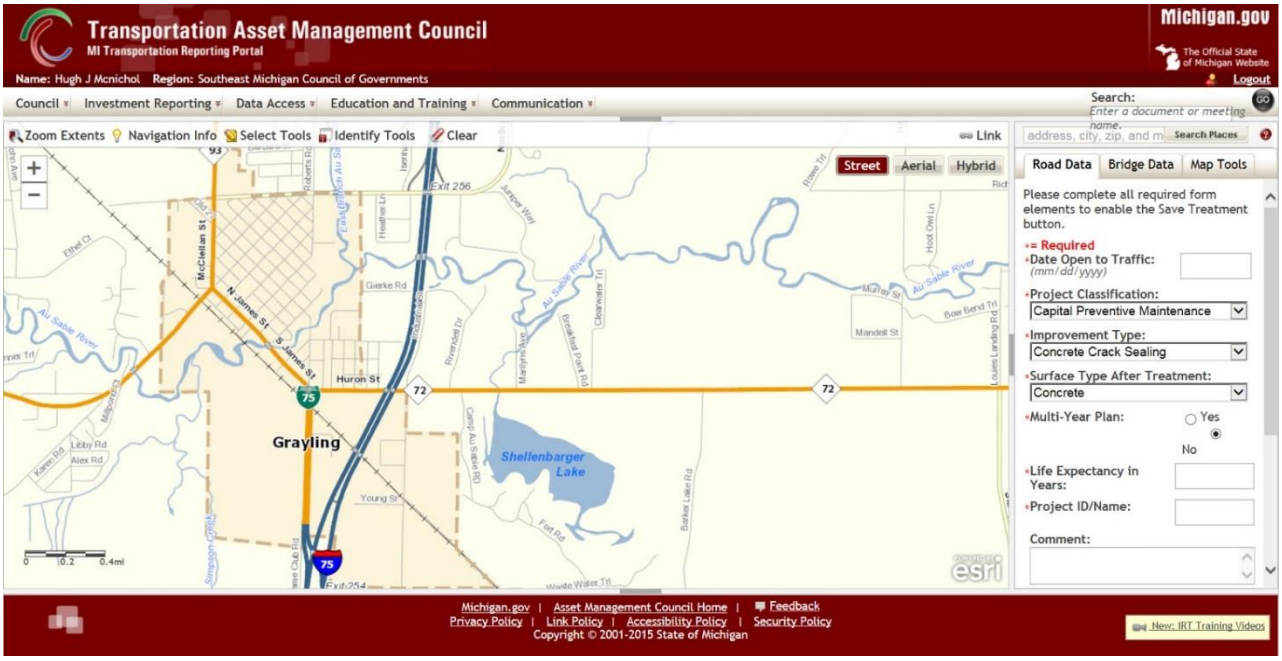
Annual Report: By May 2nd of each year (since 2003), TAMC submits an Annual Report to the State Transportation Commission and Michigan Legislature describing the asset management related efforts and condition of the road & bridge system from the year prior.

***Asset Management Guide / Sample Asset Management Plan*:** Working in conjunction with MDOT, in the spring of 2011 TAMC adopted an updated Local Agency Guide for Developing an Asset Management Process/Plan and developed a new Sample Asset Management Plan. This Guide was designed to lead an agency through the steps of an asset management process with the idea that when applied to 600+ local agencies, one size does NOT fit all. This idea ultimately lead to the creation of a tiered (Basic, Moderate, Advanced Levels) sample asset management plan.

Asset Management Guide for Local Agency Bridges in Michigan/Sample Bridge Asset Management Plan: TAMC has developed an Asset Management Guide for Local Agency Bridges in Michigan. The guide is intended to provide assistance to local agency bridge owners and decision makers in understanding bridge management and preservation. In this regard, the guide provides guidance to decision makers and county bridge or highway engineers in the planning, developing, programming, and implementing of effective and efficient capital programs and maintenance actions to preserve the bridges under their jurisdiction; and information to assist local agencies (1) in understanding their bridge network, (2) in the preparation and implementation of a bridge preservation plan, and (3) to support applications for funding under MDOT's Local Bridge Program.

TAMC Investment Reporting:

Investment Reporting Tool (IRT) & Act 51 Distribution and Reporting System (ADARS): In 2011/12, TAMC partnered with MDOT's Financial Operations Division to add the annual project reporting requirements within the IRT to the newly developed online ADARS. In effect, this effort combines two separate annual reporting requirements of road owning agencies (Counties, Cities & Villages) into one to provide the State Legislature with a much clearer understanding of how Michigan Transportation Funds (MTF) are applied at the project level.



TAMC Recognition:

Awards Program: TAMC adopted an awards program to annually recognize those individuals and organizations that support and promote asset management practices. These awards are announced and presented at the TAMC Spring Conference. The 2015 Spring Conference will be held in Grand Rapids on April 30. To see the 2015 honorees, please visit the TAMC website. http://www.mcgi.state.mi.us/MITRP/Council/Default_Council.aspx

The following individuals and organizations received awards in 2009 – 2014:

Individual Award Winners:

2009 – John Daly III, PHD, Genesee County Road Commission
2009 – Brian Gutowski, Emmet County Road Commission
2010 – Lance Malburg, Oceana County Road Commission
2010 – Rob VanEffen, Delta County Road Commission
2010 – Anamika Laad, East Michigan Council of Governments
2011 – Edward G. Hug, Southeast Michigan Council of Governments
2012 – Jim Snell, Grand Valley Metro Council
2012 – Nathan Fazer, Eastern U.P. Regional Planning & Development Commission
2012 – Rep. Rick Olson, Michigan Legislature
2012 – Kelly Bekken, Missaukee County Road Commission
2013 – Keith Cooper, Michigan Department of Transportation
2013 – Nico Tucker, Northeast Michigan Council of Governments
2013 – Toby Kuznicki, City of Rogers City
2014 – Carmine Palombo, Southeast Michigan Council of Governments

Organization Award Winners:

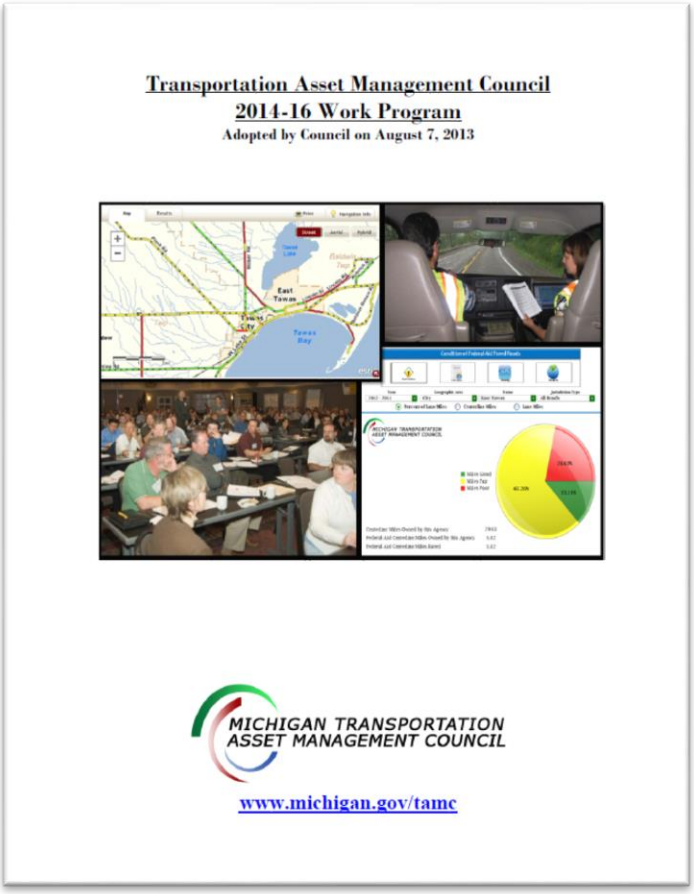
2009 – Michigan Department of Transportation
2009 – Genesee County Metropolitan Planning
2009 – City of Manistee
2009 – City of Marquette
2009 – Alcona County Road Commission
2009 – Kent County Road Commission
2010 – Kalamazoo County Road Commission
2010 – Roscommon County Road Commission
2010 – Genesee County Road Commission
2011 – Ottawa County Road Commission
2012 – Texas Township, Kalamazoo County
2014 – City of Auburn Hills
2014 – Grand Region Bridge Council

FUTURE WORK OF TAMC

2014-2016 Work Program **-** On August 7, 2013 TAMC adopted a new work program that outlines and prioritizes the training & education, data collection, project & investment reporting, publications, recognition, public outreach, advancement of asset management in Michigan, performance measures, and research opportunities for the next three-years. Highlights include:

- ✓ Exploring the possibility of offering a building your own asset management plan pilot training course.
- ✓ Research and develop a web-based "fill-in-the-blank" asset management plan with possible integration with bridge asset management guidance.
- ✓ Develop a strategy for greater use of technology and social media.
- ✓ Develop techniques and tools to inventory and rate unpaved roads.

Click on graphic below for hyperlink to the 2014-2016 Work Program.



A new work program will be developed and adopted during the 2015 calendar year.

TRANSPORTATION ASSET MANAGEMENT COUNCIL MEMBERS AND THE ORGANIZATIONS THEY REPRESENT

Roger Safford (Chair), Michigan Department of Transportation
William McEntee (Vice-Chair), County Road Association of Michigan
Bob Slattery Jr., Michigan Municipal League
Dale Kerbyson, Michigan Municipal League
Joanna Johnson, County Road Association of Michigan
Dave Wresinski, Michigan Department of Transportation
Don Disselkoen, Michigan Association of Counties
John Egelhaaf, Michigan Association of Regions
Jennifer Tubbs, Michigan Townships Association
Jonathan R. Start, Metropolitan Planning Organizations
Rob Surber, Michigan Center for Shared Solutions (Central Data Storage Agency, this is a Non-Voting position)

For full bio and contact information, please visit Council's website: www.michigan.gov/tamc

MICHIGAN TRANSPORTATION ASSET MANAGEMENT COUNCIL

APPENDIX – A

STATE TRUNKLINE HIGHWAY SYSTEM (EXCERPT)
Act 51 of 1951

As Amended by Act No. 199 Public Acts of 2007

247.659a Definitions; transportation asset management council; creation; charge; membership; appointments; staff and technical assistance; requirements and procedures; technical advisory panel; multiyear program; funding; records on road and bridge work performed and funds expended; report.

Sec. 9a. (1) As used in this section:

(a) "Asset management" means an ongoing process of maintaining, upgrading, and operating physical assets cost-effectively, based on a continuous physical inventory and condition assessment.

(b) "Bridge" means a structure including supports erected over a depression or an obstruction, such as water, a highway, or a railway, for the purposes of carrying traffic or other moving loads, and having an opening measuring along the center of the roadway of more than 20 feet between under copings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes where the clear distance between openings is less than 1/2 of the smaller contiguous opening.

(c) "Central storage data agency" means that agency or office chosen by the council where the data collected is stored and maintained.

(d) "Council" means the transportation asset management council created by this section.

(e) "County road commission" means the board of county road commissioners elected or appointed pursuant to section 6 of chapter IV of 1909 PA 283, MCL 224.6, or, in the case of a charter county with a population of 2,000,000 or more with an elected county executive that does not have a board of county road commissioners, the county executive for ministerial functions and the county commission provided for in section 14(1)(d) of 1966 PA 293, MCL 45.514, for legislative functions.

(f) "Department" means the state transportation department.

(g) "Federal-aid eligible" means any public road or bridge that is eligible for federal aid to be spent for the construction, repair, or maintenance of that road or bridge.

(h) "Local road agency" means a county road commission or designated county road agency or city or village that is responsible for the construction or maintenance of public roads within the state under this act.

(i) "Multiyear program" means a compilation of road and bridge projects anticipated to be contracted for by the department or a local road agency during a 3-year period.

The multiyear program shall include a listing of each project to be funded in whole or in part with state or federal funds.

(j) "State planning and development regions" means those agencies required by section 134(b) of title 23 of the United States Code, 23 USC 134, and those agencies established by Executive Directive 1968-1.

(2) In order to provide a coordinated, unified effort by the various roadway agencies within the state, the transportation asset management council is hereby created within the state transportation commission and is charged with advising the commission on a statewide asset management strategy and the processes and necessary tools needed to implement such a strategy beginning with the federal-aid eligible highway system, and once completed, continuing on with the county road and municipal systems, in a cost-effective, efficient manner. Nothing in this section shall prohibit a local road agency from using an asset management process on its non-federal-aid eligible system. The council shall consist of 10 voting members appointed by the state transportation commission. The council shall include 2 members from the county road association of Michigan, 2 members from the Michigan municipal league, 2 members from the state planning and development regions, 1 member from the Michigan townships association, 1 member from the Michigan association of counties, and 2 members from the department. Nonvoting members shall include 1 person from the agency or office selected as the location for central data storage. Each agency with voting rights shall submit a list of 2 nominees to the state transportation commission from which the appointments shall be made. The Michigan townships association shall submit 1 name, and the Michigan association of counties shall submit 1 name. Names shall be submitted within 30 days after the effective date of the 2002 amendatory act that amended this section. The state transportation commission shall make the appointments within 30 days after receipt of the lists.

(3) The positions for the department shall be permanent. The position of the central data storage agency shall be nonvoting and shall be for as long as the agency continues to serve as the data storage repository. The member from the Michigan association of counties shall be initially appointed for 2 years. The member from the Michigan townships association shall be initially appointed for 3 years. Of the members first appointed from the county road association of Michigan, the Michigan municipal league, and the state planning and development regions, 1 member of each group shall be appointed for 2 years and 1 member of each group shall be appointed for 3 years. At the end of the initial appointment, all terms shall be for 3 years. The chairperson shall be selected from among the voting members of the council.

(4) The department shall provide qualified administrative staff and the state planning and development regions shall provide qualified technical assistance to the council.

(5) The council shall develop and present to the state transportation commission for approval within 90 days after the date of the first meeting such procedures and requirements as are necessary for the administration of the asset management process. This shall, at a minimum, include the areas of training, data storage and collection, reporting, development of a multiyear program, budgeting and funding, and other issues related to asset management that may arise from time to time. All quality

control standards and protocols shall, at a minimum, be consistent with any existing federal requirements and regulations and existing government accounting standards.

(6) The council may appoint a technical advisory panel whose members shall be representatives from

the transportation construction associations and related transportation road interests. The asset management council shall select members to the technical advisory panel from names submitted by the transportation construction associations and related transportation road interests. The technical advisory panel members shall be appointed for 3 years. The asset management council shall determine the research issues and assign projects to the technical advisory panel to assist in the development of statewide policies. The technical advisory panel's recommendations shall be advisory only and not binding on the asset management council.

(7) The department, each county road commission, and each city and village of this state shall annually submit a report to the transportation asset management council. This report shall include a multiyear program developed through the asset management process described in this section. Projects contained in the department's annual multiyear program shall be consistent with the department's asset management process and shall be reported consistent with categories established by the transportation asset management council. Projects contained in the annual multiyear program of each local road agency shall be consistent with the asset management process of each local road agency and shall be reported consistent with categories established by the transportation asset management council.

(8) Funding necessary to support the activities described in this section shall be provided by an annual appropriation from the Michigan transportation fund to the state transportation commission.

(9) The department and each local road agency shall keep accurate and uniform records on all road and bridge work performed and funds expended for the purposes of this section, according to the procedures developed by the council. Each local road agency and the department shall annually report to the council the mileage and condition of the road and bridge system under their jurisdiction and the receipts and disbursements of road and street funds in the manner prescribed by the council, which shall be consistent with any current accounting procedures. An annual report shall be prepared by the staff assigned to the council regarding the results of activities conducted during the preceding year and the expenditure of funds related to the processes and activities identified by the council. The report shall also include an overview of the activities identified for the succeeding year. The council shall submit this report to the state transportation commission, the legislature, and the transportation committees of the house and senate by May 2 of each year.

For more information, please contact:
Frank Kelley - Asset Management Coordinator
Phone: 517-373-2111
Email: kelleyf@michigan.gov

MICHIGAN TRANSPORTATION ASSET MANAGEMENT COUNCIL

www.michigan.gov/tamc

Scan the code to the right with your smartphone for a direct link to the TAMC Web site.

2014 Key Points:

- The condition of Michigan's roads continues to decline.
- The condition of Michigan's bridges has plateaued and is projected to decline.
- The 2014 analysis indicates that, at current investment levels, the deterioration of roads will continue and the advancements we have made on bridge conditions will not be sustainable.
- Without increased levels of investment, the cost of improving our roads and bridges will continue to increase each year.
- The longer we postpone increased levels of investment, the longer it will take for the public to begin to see any appreciable improvement in the condition of Michigan's roads and bridges.