

# MICHIGAN'S ROADS & BRIDGES

2009  
AMENDED  
ANNUAL REPORT



MICHIGAN TRANSPORTATION  
ASSET MANAGEMENT COUNCIL



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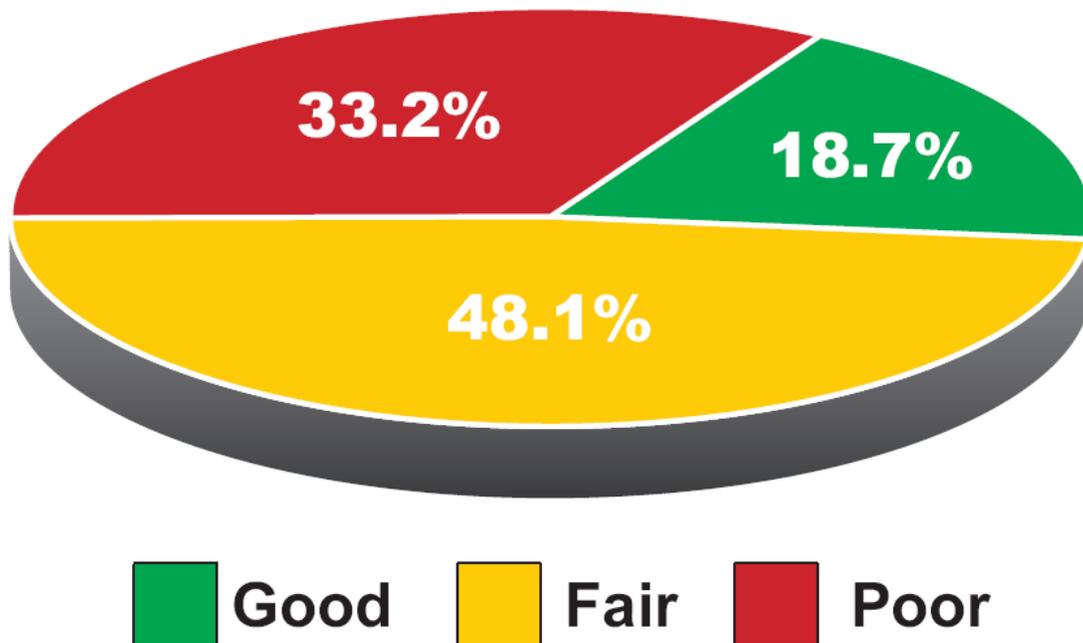
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## EXECUTIVE SUMMARY

Michigan's roads are deteriorating at an increasingly rapid rate. This is the conclusion of the Michigan Transportation Asset Management Council after reviewing the 2009 pavement condition data. One out of every three miles of road on the federal aid eligible road system is now in poor condition. What is worse is that there is no evidence that this trend is going to reverse itself, in fact, the Council projects that the situation will only get worse in the coming years.

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 costs of repairing Michigan's road network.

## 2009 ROAD CONDITION IN LANE MILES



Source: TAMC 2009 PASER Data Collection  
Figure 1

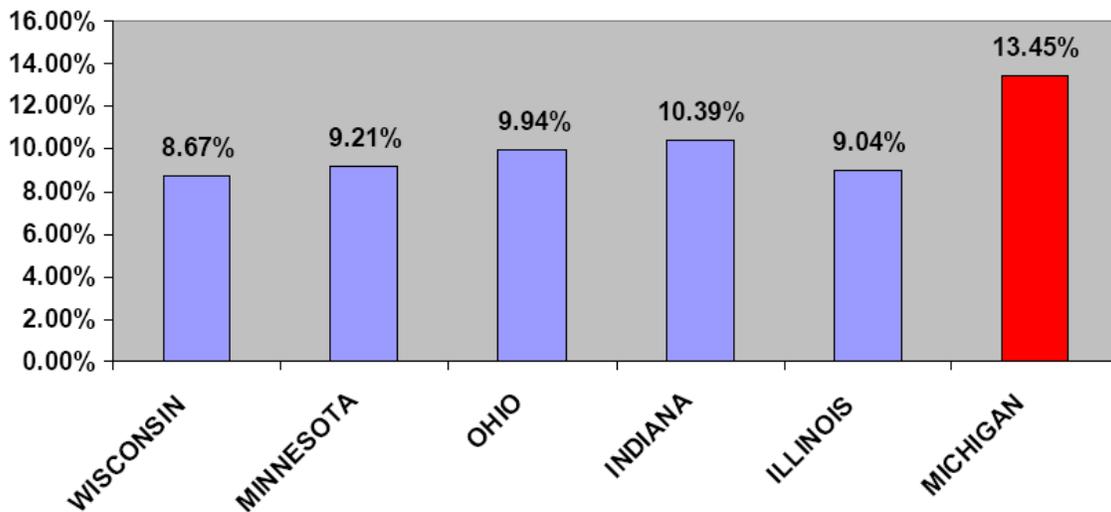
The results of the 2009 rating reveal that 33.2% (18,411 lane miles) were in poor condition, 48.1% (26,729 lane miles) were in fair condition, and 18.7% (10,328 lane miles) were in good condition.



With respect to bridges, progress has been made in reducing the number of poor bridges under state jurisdiction, and there has been a significant increase in the number of bridges rated fair. The trend for local agency bridges is somewhat different. While the number of local bridges in poor condition has remained constant, there is a trend of good bridges moving into the fair category. The ARRA stimulus money was helpful but a steady source of funds is needed to continue to make progress. Without additional funds, the progress on trunkline bridges will quickly be lost, MDOT will not be able to match Federal funds, and some local agencies may not be able to match federal funds.

The condition of the state trunk line bridges is expected to peak at about 92 percent good or fair in 2010, but afterwards trunkline bridge condition will decrease rapidly. Local agency bridges are also expected to decline. Part of the reason for the current condition differences between the state-owned bridges and local bridges is that the Michigan Department of Transportation (MDOT) has an aggressive preventive maintenance program (18 percent of its total budget).

**Percent Structurally Deficient Bridges  
All Highway Bridges  
Great Lakes States**



Source: MDOT April 2010  
Figure 4

Figure 4 indicates that Michigan has a significantly higher percentage of deficient bridges than the average of other Great Lake states. In 2009, 8 percent of state-owned bridges and 17 percent of county and local bridges were structurally deficient, resulting in Michigan having 13 percent of all highway bridges structurally deficient. If Michigan's bridges are to be at least equal of its neighboring states, sound asset management practices must continue to be followed and greater dedicated resources must be found.

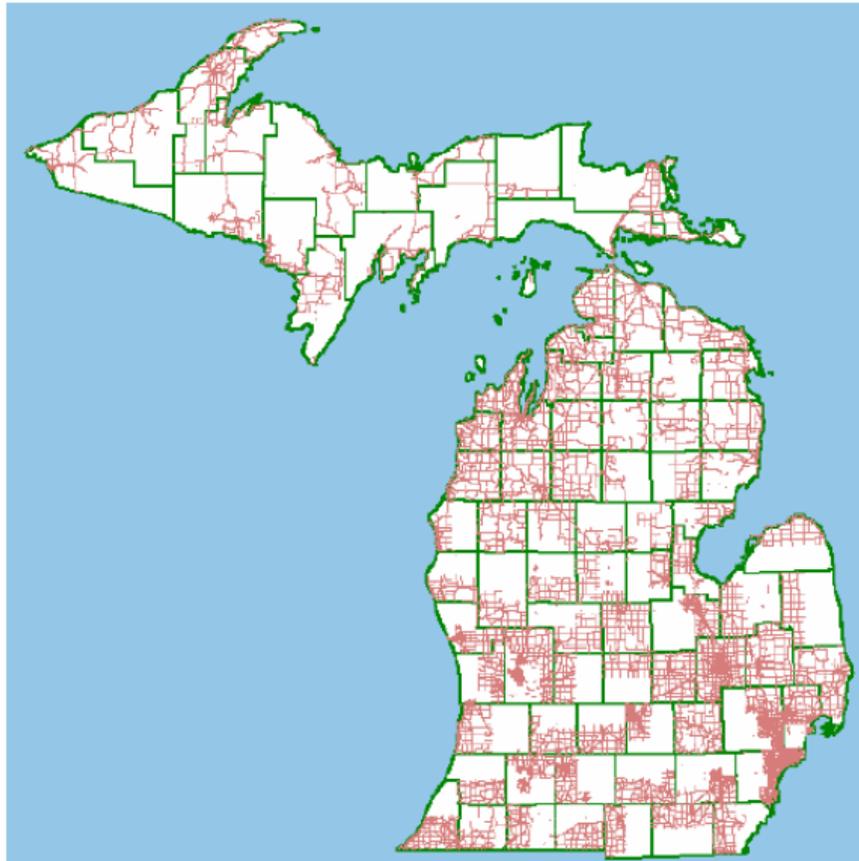
## CONDITION OF THE SYSTEM: 2009

### ***Federal-Aid Roads Rated in 2009***

In 2009, the Council required that only 50 percent of the paved federal-aid eligible roads be rated, with the other 50 percent having been rated in 2008.

Even though agencies were only required to report 50 percent, approximately 67 percent of these roads were rated and reported in 2009 and 65 percent reported in 2008. Analysis of the data collected indicated that while 67% of the system condition was collected, it was statistically representative of the entire system. Over 100 teams of trained raters assessed the condition of 55,468 lane miles of paved federal-aid eligible roads. The collection of roadway condition data by the Council is a cooperative effort involving teams of county, city, state and regional planning staff members. Individuals must attend PASER training each year before being allowed to rate the roads. This effort was coordinated by the 21 regional planning and metropolitan planning organizations.

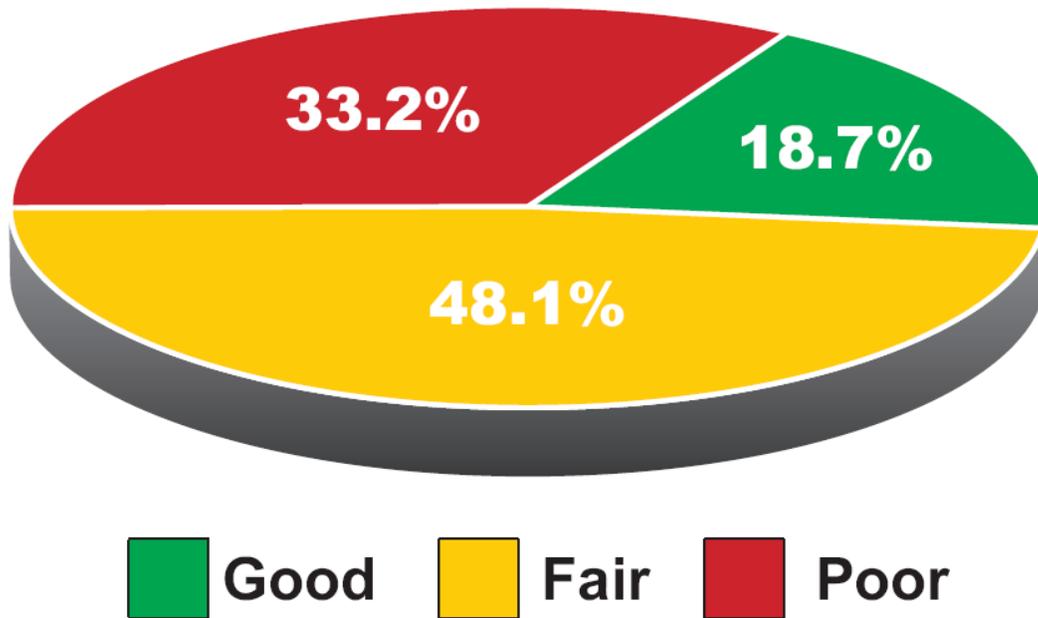
### **Paved Federal Aid Eligible Roads rated in 2009**



Source: TAMC 2009 PASER Data Collection - Figure 5

The data is reported in lane miles. A lane mile is determined by multiplying the number of lanes by the length of the road. For example, if you were surveying five miles of two-lane road, you would be rating ten lane miles. If it were a four-lane road, then you would have twenty lane miles.

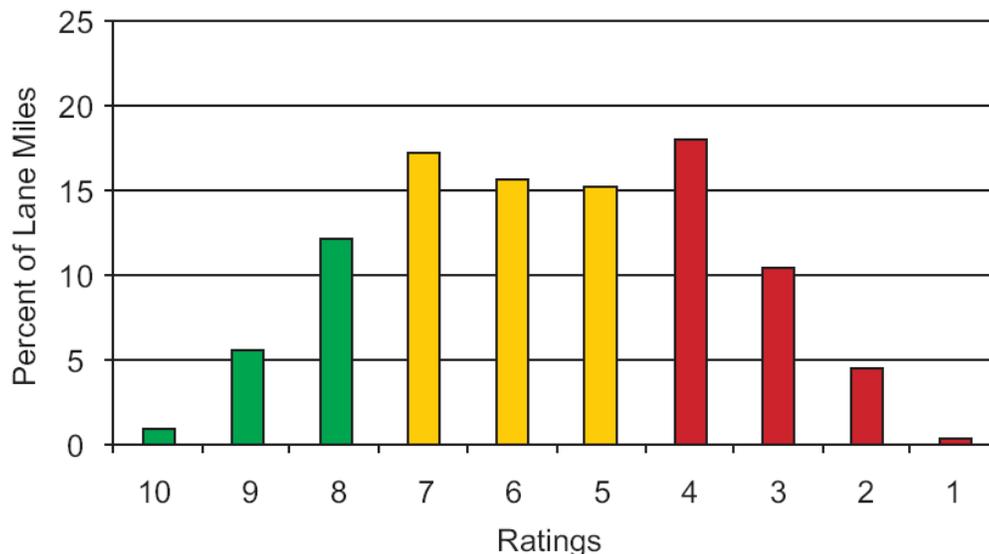
## 2009 ROAD CONDITION IN LANE MILES



Source: TAMC 2009 PASER Data Collection  
Figure 1

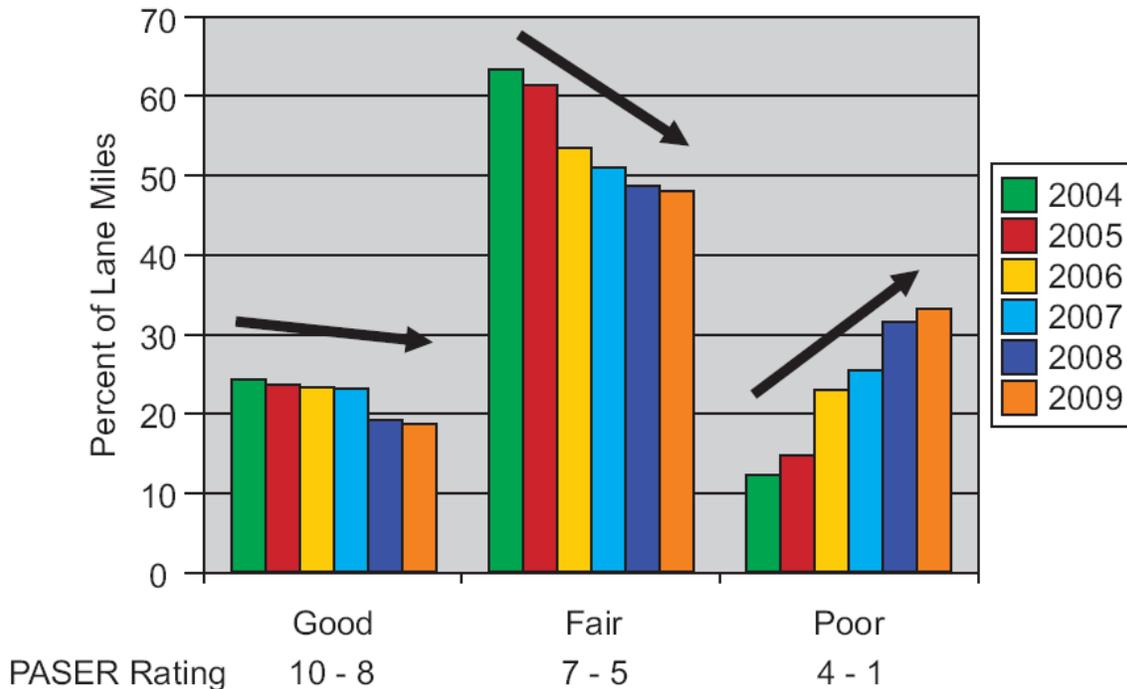
The results of the 2009 rating reveal that 33.2% (18,411 lane miles) were in poor condition, 48.1% (26,729 lane miles) were in fair condition, and 18.7% (10,328 lane miles) were in good condition.

## 2009 PASER Ratings for Paved Federal Aid Eligible Roads



Source: TAMC 2009 PASER Data Collection  
Figure 6

## 2004-2009 Pavement Condition of Federal Aid Eligible Roads



Source: TAMC 2004 – 2009 PASER Data Collection  
Figure 7

The data shown in Figure 7 indicates that after six years of pavement ratings, it is clear that Michigan’s roads are deteriorating faster than they can be maintained. There has been a dramatic increase in the number of lane miles needing structural improvement (rehabilitation and reconstruction). These are roads in “poor” condition. In 2004, 13.6 percent of lane miles were identified as needing structural improvement. By 2009, that number had more than doubled to 33.2 percent. In 2004, nearly 88 percent of the federal-aid system could be considered in good or fair shape. By 2009, that figure fell to 66.8 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 poor road to good condition is four to five times greater than the cost of returning a fair road to good condition. Allowing more roads to reach poor condition will dramatically increase the costs of repairing Michigan’s road network. Unfortunately, the current trend is for more roads to lapse into a poor condition.

**National Functional Classification (NFC)**

National Functional Classification (NFC) is a planning tool which federal, state and local transportation agencies have used since the late 1960's. The Federal Highway Administration (FHWA) developed this system of classifying all streets, roads and highways according to their function.

*Principal Arterials* 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. *Minor Arterials* are similar in function to principal arterials, except they carry trips of shorter distance and to lesser traffic generators. *Collectors* tend to provide more access to property than do arterials. Collectors also funnel traffic from residential to rural areas to arterials. All arterials and collectors are grouped by rural or urban because of their different travel characteristics.

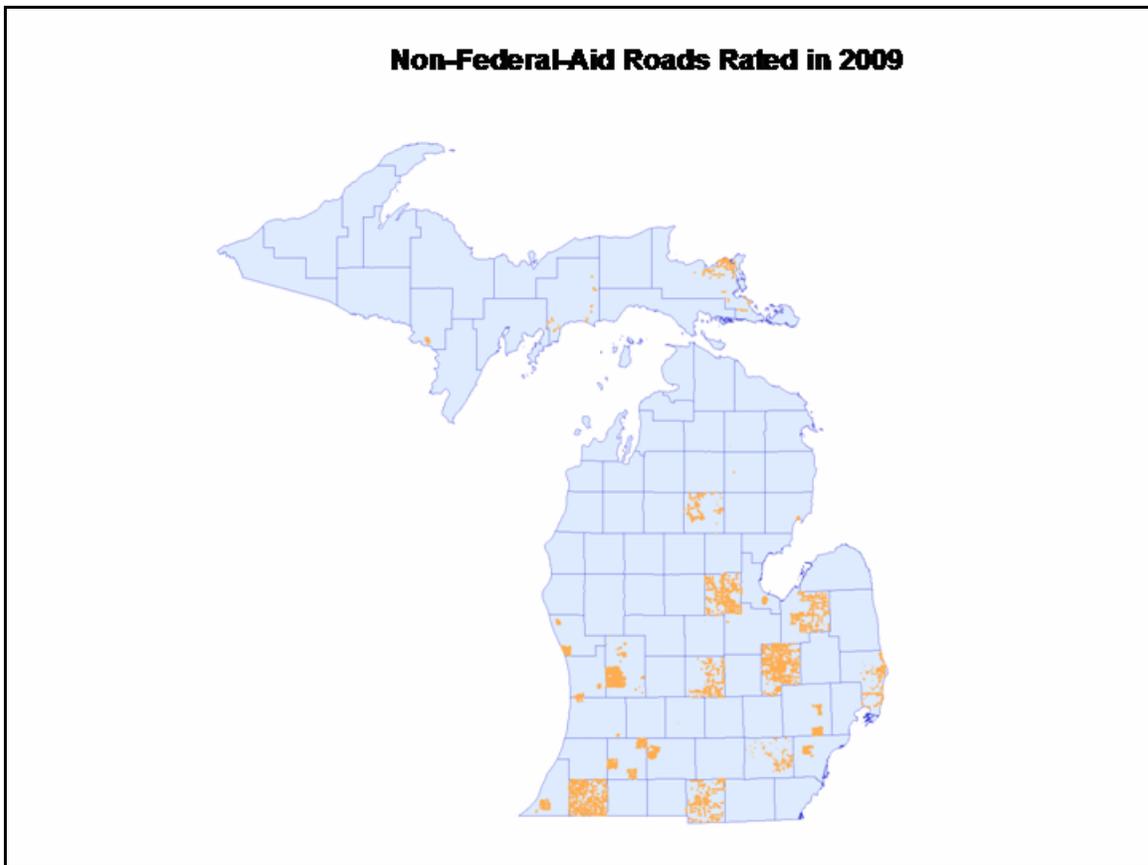
**Pavement Condition by National Functional Classification Groups**

	Good			Fair			Poor			Total	
	Lane Miles	Percent of All Lane Miles		Lane Miles	Percent of All Lane Miles		Lane Miles	Percent of All Lane Miles		Lane Miles	Percent
		Percent of NFC	Percent of NFC		Percent of NFC	Percent of NFC					
Freeway	2,146.81	3.87%	38.65%	2,885.76	5.20%	51.95%	522.64	0.94%	9.41%	5,555.20	10.02%
Principal Arterial	2,116.13	3.82%	24.44%	4,741.04	8.55%	54.75%	1,802.96	3.25%	20.82%	8,660.14	15.61%
Minor Arterial	2,630.05	4.74%	19.35%	6,994.79	12.61%	51.47%	3,964.62	7.15%	29.17%	13,589.46	24.50%
Collector	3,435.12	6.19%	12.42%	12,107.02	21.83%	43.77%	12,121.51	21.85%	43.82%	27,663.65	49.87%
<b>Total</b>	<b>10,328.12</b>	<b>18.62%</b>		<b>26,728.61</b>	<b>48.19%</b>		<b>18,411.72</b>	<b>33.19%</b>		<b>55,468.44</b>	<b>100.00%</b>

Source: Asset Management Council Pavement Assessments 2004 – 2009 Date: April 2010  
Figure 8

### ***Non-Federal-Aid Roads and Streets***

Not all roads in Michigan are eligible for federal aid. Whether a road is eligible for aid or not depends upon its national functional classification. FHWA developed this system of classifying roads according to the predominant type of traffic and the traffic volume a road carries. All public roads in Michigan have an NFC designation. MDOT and local officials work cooperatively to functionally classify roads. The results of this joint process are submitted to FHWA for final approval. In general, non-federal-aid eligible roads are residential streets and lightly-traveled county roads. Roughly half of these roads are unpaved.

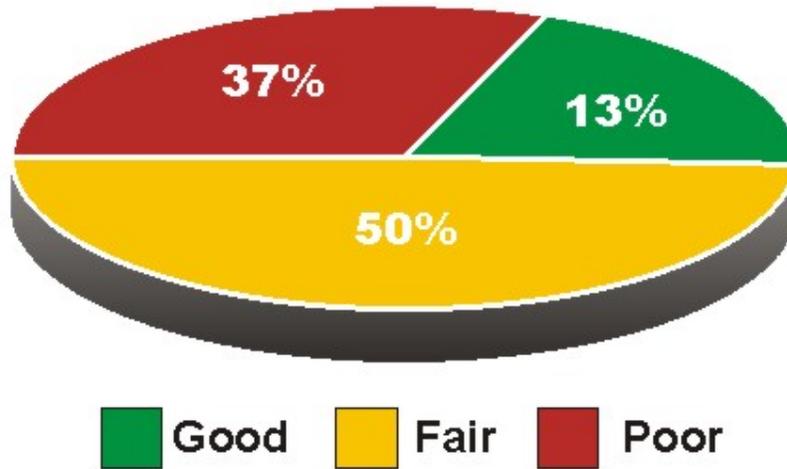


Source: TAMC 2009 PASER Data Collection  
Figure 9

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

There are 79,395 miles of non-federal-aid eligible roads in the state. Approximately one half of this mileage (about 40,000 miles) is paved. Just over 5,600 miles of these roads were observed and assigned PASER ratings in 2009.

## NON-FEDERAL AID PAVEMENT CONDITION



Source: TAMC 2009 PASER Data Collection  
Figure 10

Similar to the pavement ratings for federal-aid roads, the ratings for non-federal-aid roads are reported in lane miles. Figure 10 indicates that 5,600 miles of non-federal-aid roads were rated in 2009 comprising 11,314 lane miles. The 2009 ratings reveal that 37% (4,168 lane miles) are in poor condition, 50% (5,710 lane miles) are in fair condition, and 13% (1,436 lane miles) are in good condition.

## ***Bridges***

Bridges have their own federal rating system. Bridges can be classified as “structurally deficient” or “functionally obsolete.” These classifications are determined by the National Bridge Inventory (NBI) database. Federal law requires that bridges be inspected at least once every two years. Condition ratings are based on a 0-9 scale and assigned for the superstructure, the substructure, and the deck of each bridge. A condition of 4 or less classifies the bridge as being “poor” condition.

**Structurally Deficient:** Generally, a bridge is structurally deficient if any major component is in “poor” condition. If any one or more of the following are true, then the bridge is structurally deficient.

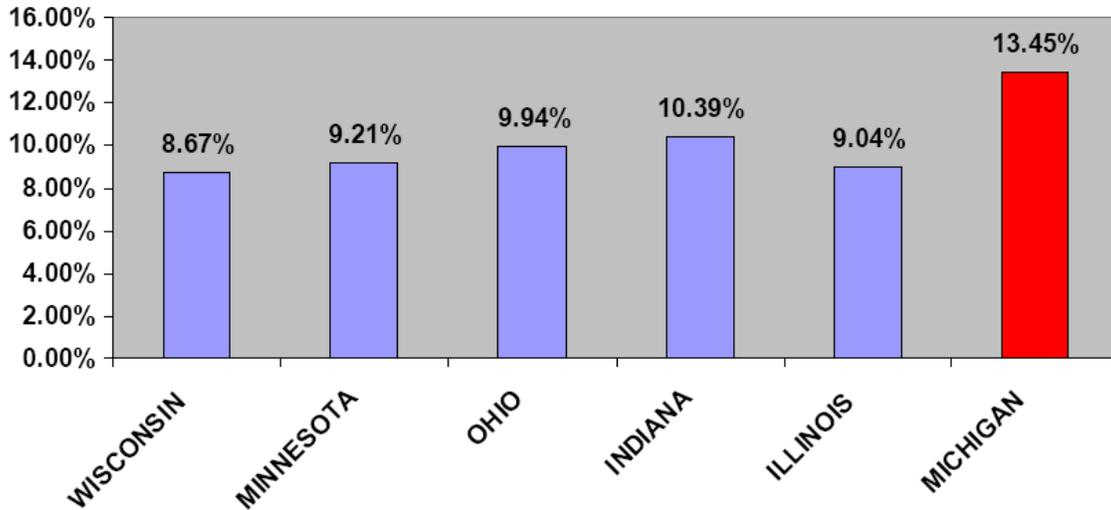
- Deck Rating is less than 5
- Superstructure Rating is less than 5
- Substructure Rating is less than 5
- Culvert Rating is less than 5
- Structural Evaluation is less than 3

**Functionally Obsolete:** Generally, a bridge is functionally obsolete if it is NOT structurally deficient AND its clearances are significantly below current design standards for the volume of traffic being carried on or under the bridge. More specifically, if the bridge is NOT structurally deficient AND any one or more of the following are true, then the bridge is functionally obsolete.

- Structural Evaluation = 3
- Deck Geometry is less than 4
- Underclearance is less than 4 and there is another highway under the bridge
- Waterway Adequacy = 3
- Approach Roadway Alignment is less than 4
- Waterway Adequacy is less than 3

A bridge cannot be classified as both structurally deficient and functionally obsolete. If a bridge qualifies for both, then it is reported as structurally deficient. While functionally obsolete bridges represent needed improvements if the overall system is to achieve maximum operating efficiency, the bridges rated as structurally deficient require more immediate attention.

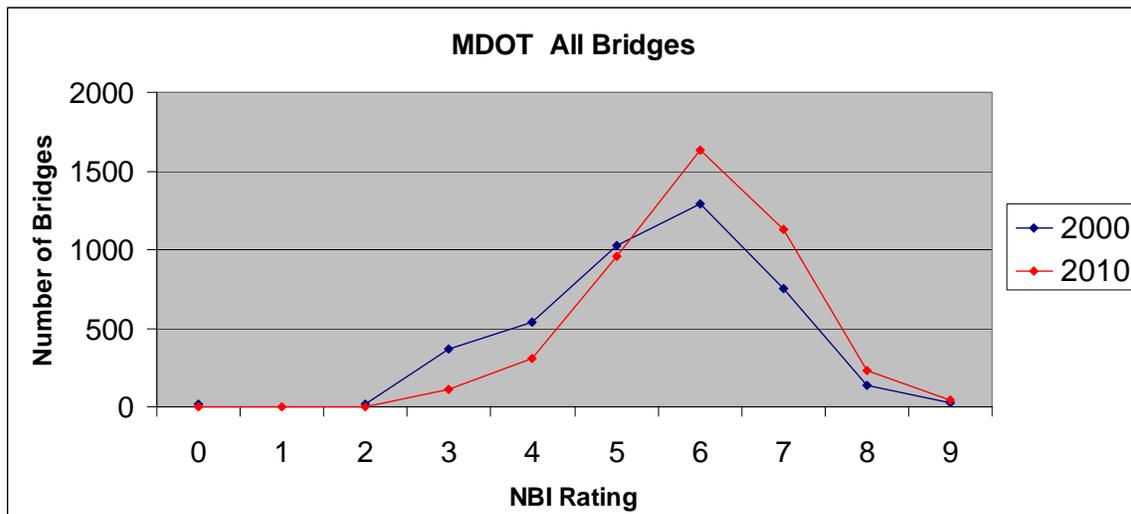
**Percent Structurally Deficient Bridges  
All Highway Bridges  
Great Lakes States**



Source: MDOT April 2010  
Figure 4

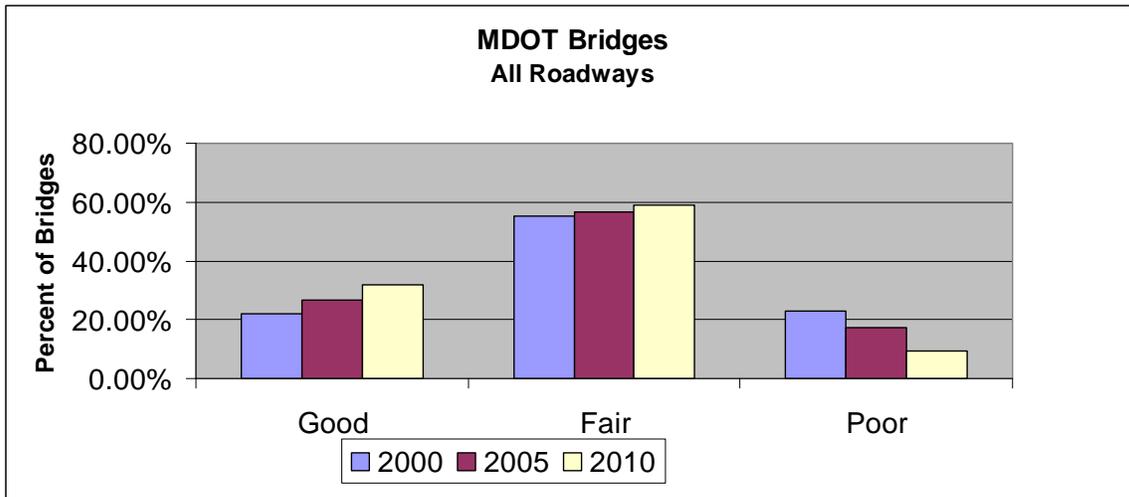
Figure 4 indicates that Michigan has a significantly higher percentage of deficient bridges than the average of other Great Lake states. In 2009, 8 percent of state-owned bridges and 17 percent of county and local bridges were structurally deficient, resulting in Michigan having 13 percent of all highway bridges structurally deficient. If Michigan’s bridges are to be at least equal of its neighboring states, sound asset management practices must continue to be followed and greater dedicated resources must be found.

**Bridges under State Jurisdiction**



Source: MDOT April 2010  
Figure 11

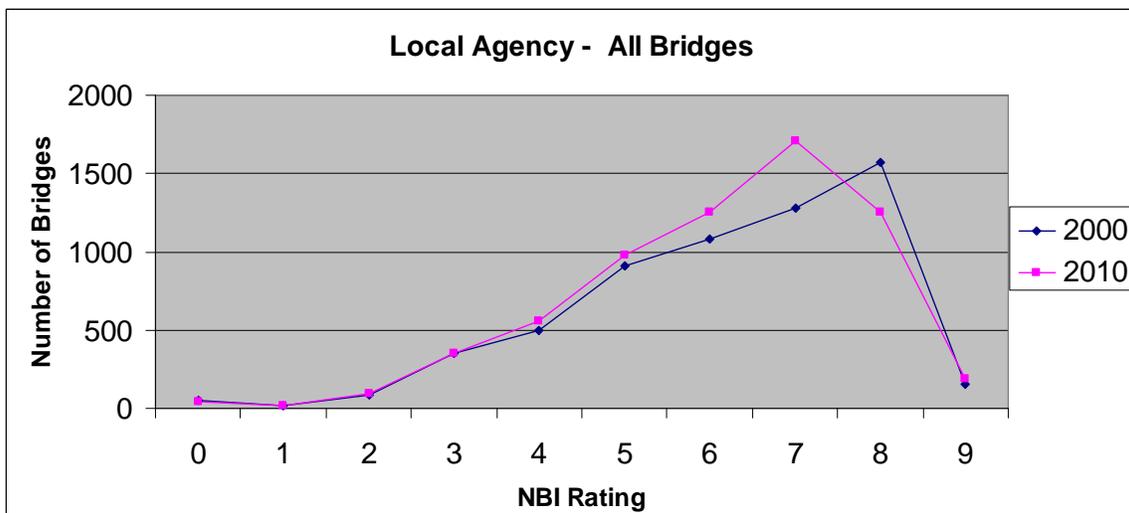
Figure 11 compares the number of bridges in each condition state, from 2000 to 2010 in a line graph. If you compare the area under the line, you can see the overall change in condition for the ten-year time frame. There are more bridges in 2010 than in 2000, but progress has been made in reducing the number of bridges rated 4 or less and there has been a significant increase in the number of bridges rated good and fair.



Source: MDOT April 2010  
Figure 12

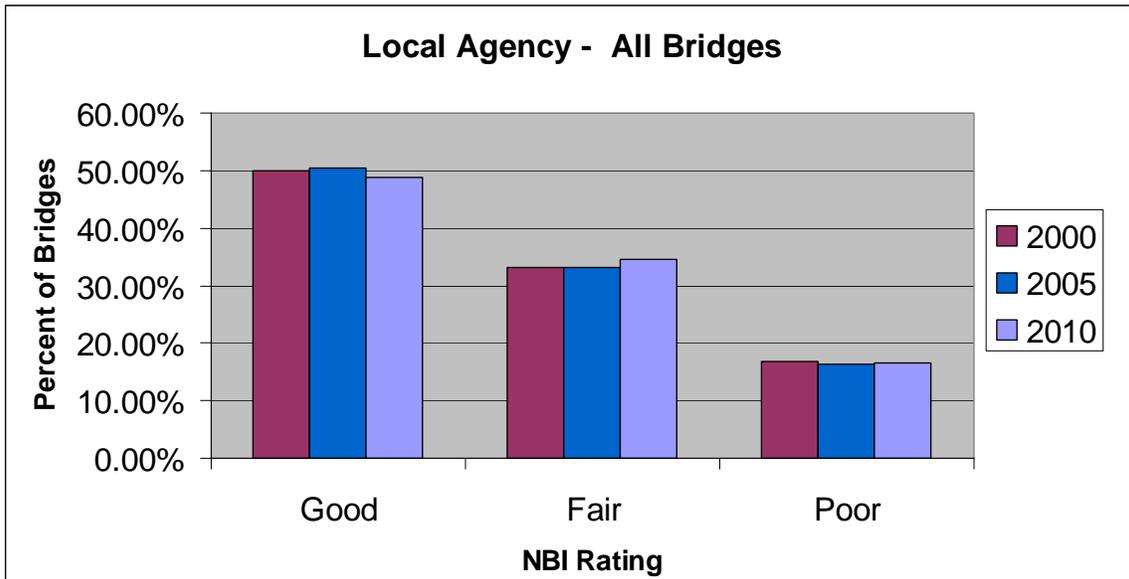
Figure 12 compares the percentage of bridges in good, fair, and poor condition every five years (2000, 2005, and 2010). MDOT has significantly reduced the percentage of bridges in poor condition while increasing the percentage of bridges in fair and good condition.

#### Bridges under Local Jurisdiction



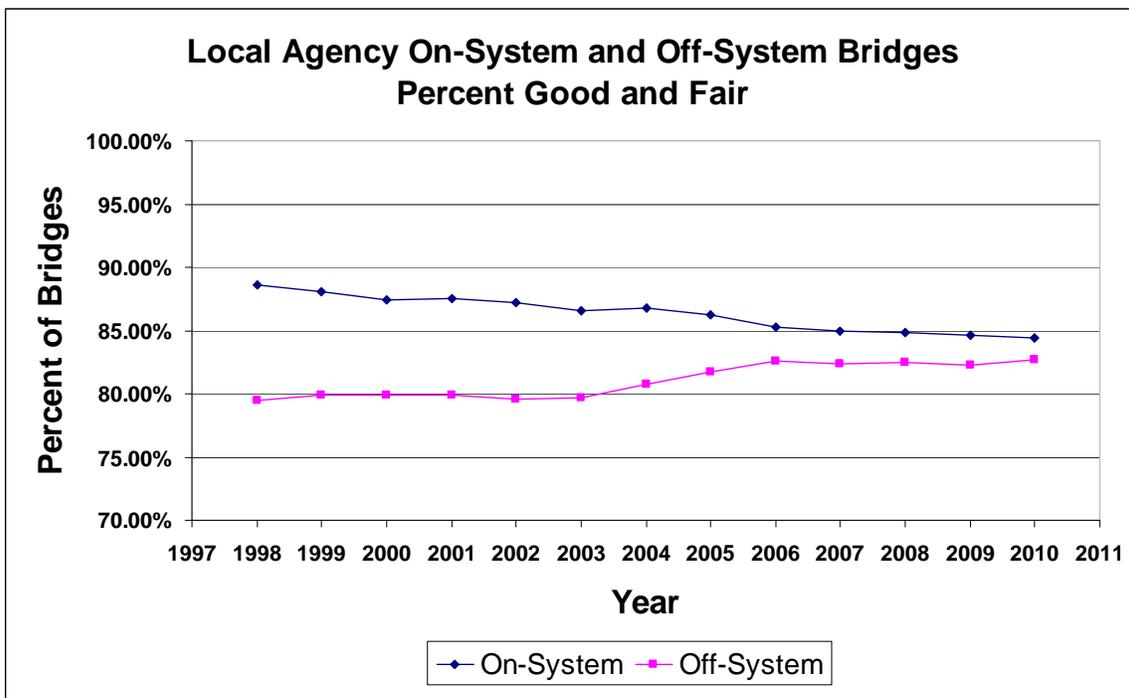
Source: MDOT April 2010  
Figure 13

Figure 13 compares the number of bridges in each condition state, from 2000 to 2010 in a line graph. If you compare the area under the line, you can see the overall change in condition in the ten year time frame. In this chart, we can see that there has been little change in condition of local agency poor bridges, and we can see that there is a trend in the local agency bridge network of good bridges moving into the fair categories. This is reasonable since the network is aging, but it does show the importance of preventive maintenance for local agency bridges. By increasing the number of rehabilitation projects on poor bridges, the local agencies will be able to reduce the number of poor bridges also.



Source: MDOT April 2010  
Figure 14

Figure 14 compares the percentage of bridges in good, fair, and poor condition every five years (2000, 2005, and 2010). Again, it can be seen that there is little change in the number of poor bridges.



Source: MDOT April 2010  
Figure 15

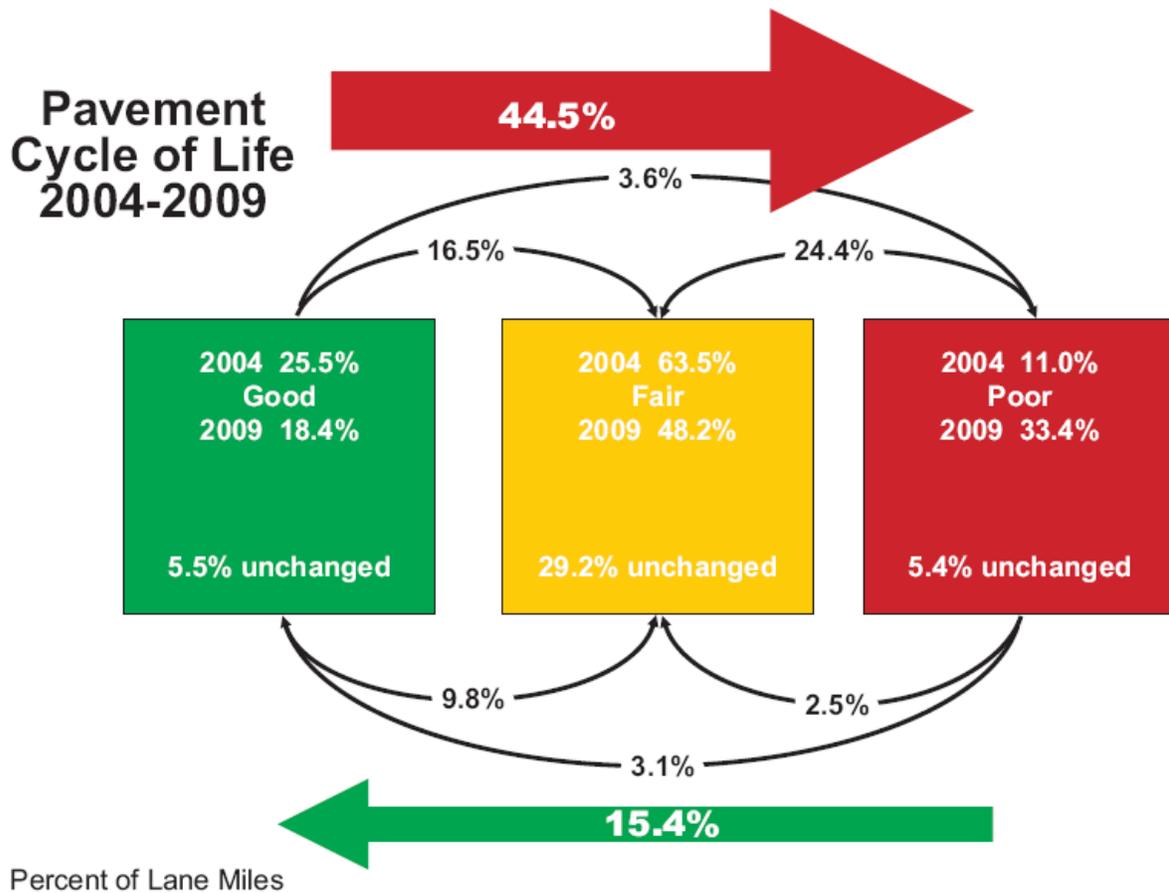
Figure 15 compares the condition state changes for local agency on-system (eligible for federal funds) and off-system (not eligible for federal funds) bridges. It can be seen that while the off-system bridge condition has been steadily improving, the on-system network bridge population has been deteriorating, however, the on-system bridge condition is still better than off-system.

SIX YEAR TREND ANALYSIS

**Roads**

Figure 16 below shows that 44.5 percent of Michigan’s roads have deteriorated over the last six years (2004 – 2009). During that period, 16.5 percent of the roads went from good to fair, 24.4 percent went from fair to poor, and 3.6 percent slid all the way from good to poor. In that same five year period, only 15.4 percent of the roads were improved: 9.8 percent from fair to good, 2.5 percent from poor to fair and 3.1 percent from poor to good.

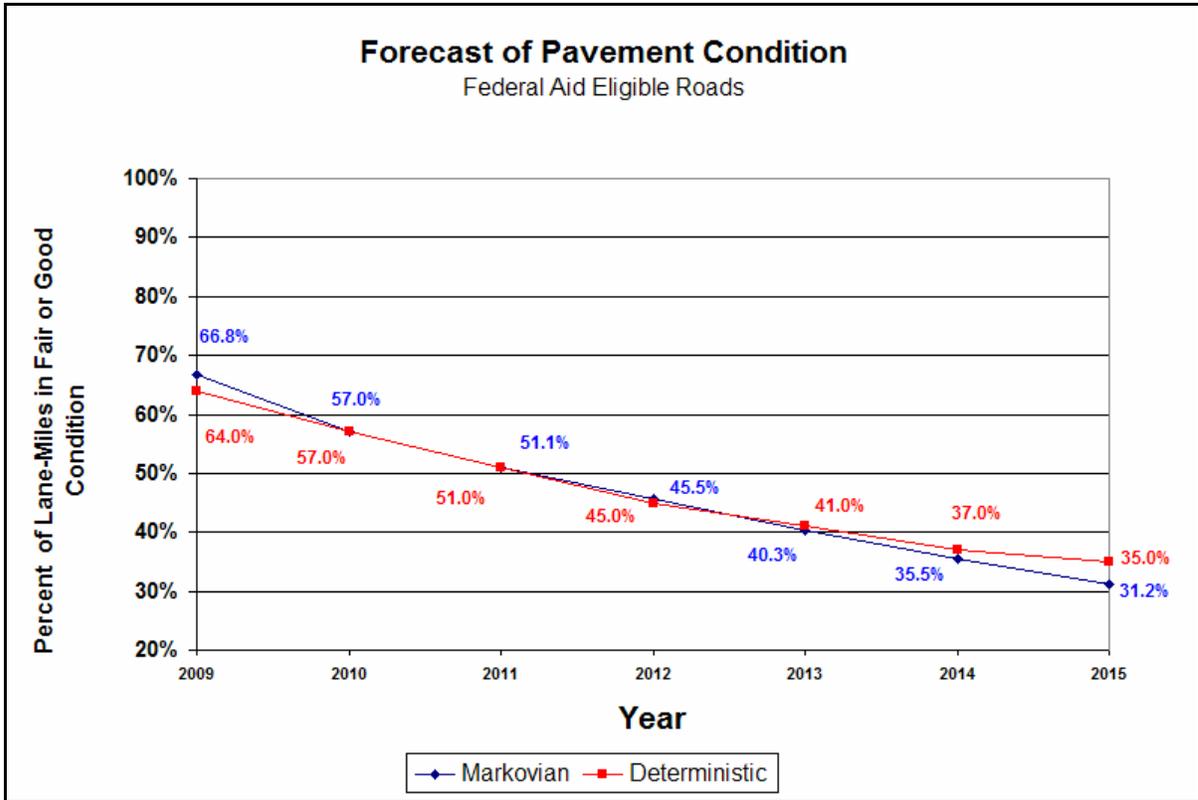
**Road Deterioration: 2004 – 2009 Chart**



Source: TAMC 2004 - 2009 PASER Data Collection  
Figure 16

### Future Road Condition

Forecasts for statewide road condition indicate alarming results. The number of roads rated in Poor Condition could double within the next five years.



Source: MDOT April 2010  
Figure 17

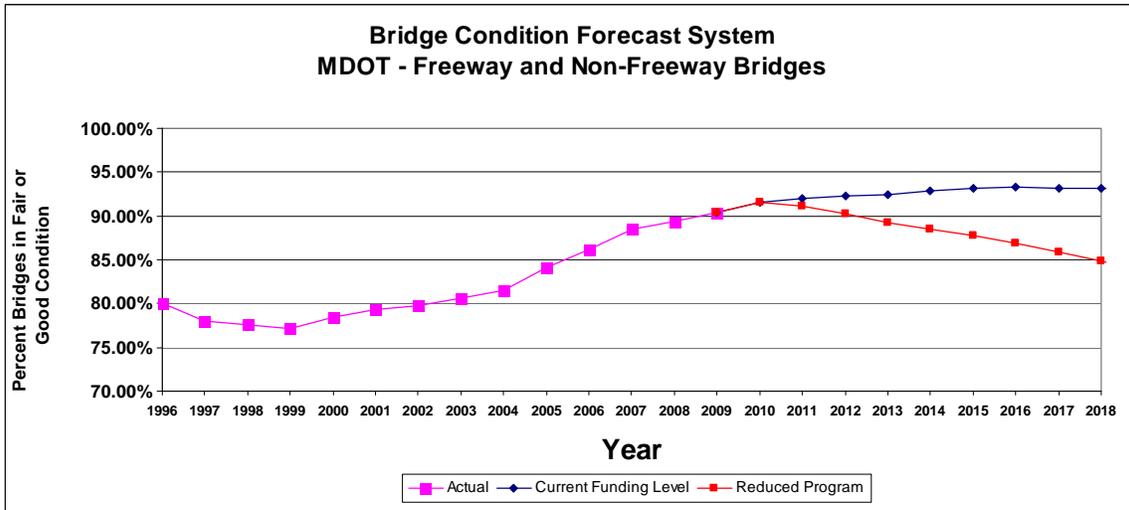
Two separate and distinct models were built in order to forecast pavement conditions on Michigan's paved federal-aid eligible roads. Figure 17 shows the results of both analyses, the Markovian model (shown in blue) uses only historical pavement data and the resulting probability that any segment of road will deteriorate or be improved during the course of a year. Improvements are limited by forecasted revenues. The Deterministic model (shown in red) uses multiple variables, such as surface type, pavement life cycles, pavement management strategies, and revenues available for construction and maintenance. The results of the two models—while somewhat different in degree—forecast a trend of worsening pavement conditions over the next five years.

**Bridge Condition Forecasting System**

Working from current bridge condition information (National Bridge Inventory Data), bridge deterioration rate, project costs, expected inflation, and fix strategies, the Bridge Condition Forecasting System (BCFS) estimates future condition of trunkline and local bridges.

As can be seen in Figure 18 the condition of the state trunkline bridges has been rising and is expected to peak at 92 percent in 2010. If State matching funds are identified to avoid significant program reductions beginning in 2011, then the state trunk line bridge conditions are forecasted to be stable in the short term.

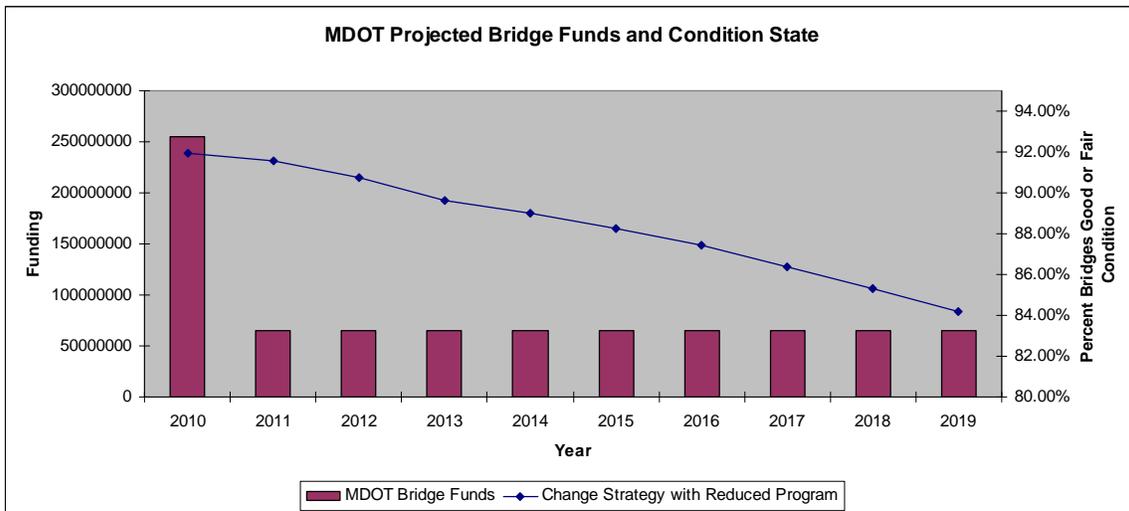
On the other hand, if MDOT is forced to implement a reduced investment program in FY 2011, Figure 18 shows that the state bridge conditions will reduce sharply thereafter.



Source: MDOT Date: April 2010

Figure 18

Figure 19 shows future projections for MDOT bridge conditions and funding levels if additional revenues are not identified.

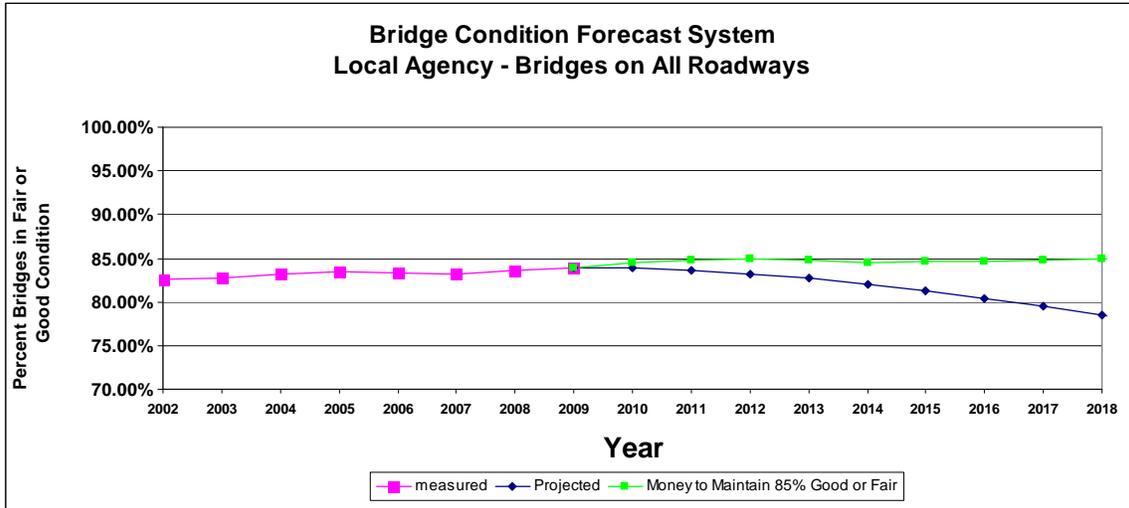


Source: MDOT Date: April 2010

Figure 19

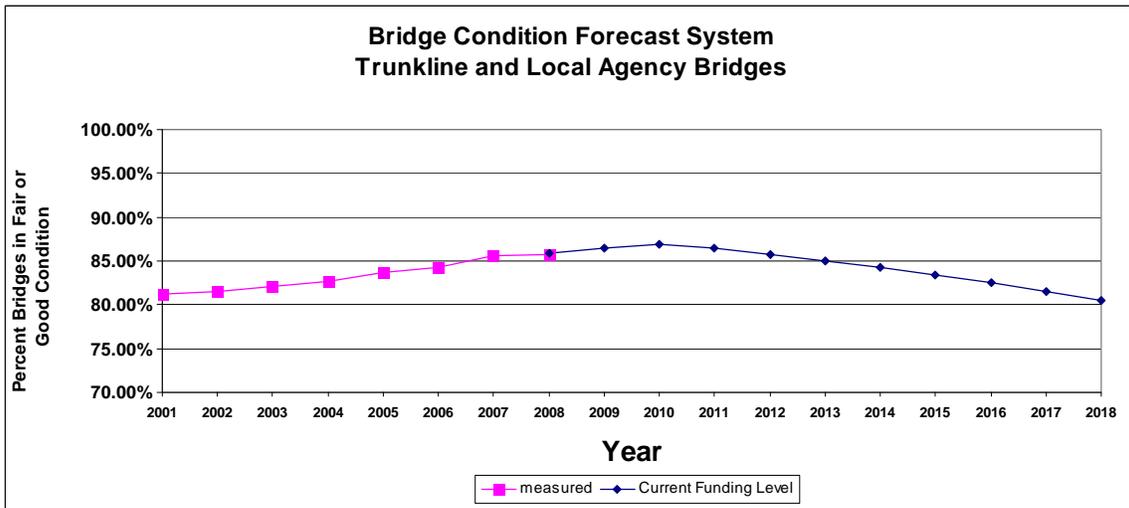
**Local Bridges**

At current funding levels, the condition of local bridges is also projected to decline. In 2006, 83 percent of the bridges were rated as good or fair. By 2016 this number is projected to be 80 percent. If local agencies were able to spend federal bridge money on capital preventive maintenance, we would expect to see a general increase in the condition of their bridges over time.



Source: MDOT Date: April 2010  
Figure 20

The Bridge Condition Forecast System (BCFS) chart (Figure 20) shows the measured trends in local agency bridge condition from 2002 to 2009 and projected condition from 2010 to 2018. It can be seen that at current funding levels, local agency bridge condition will begin to decline.



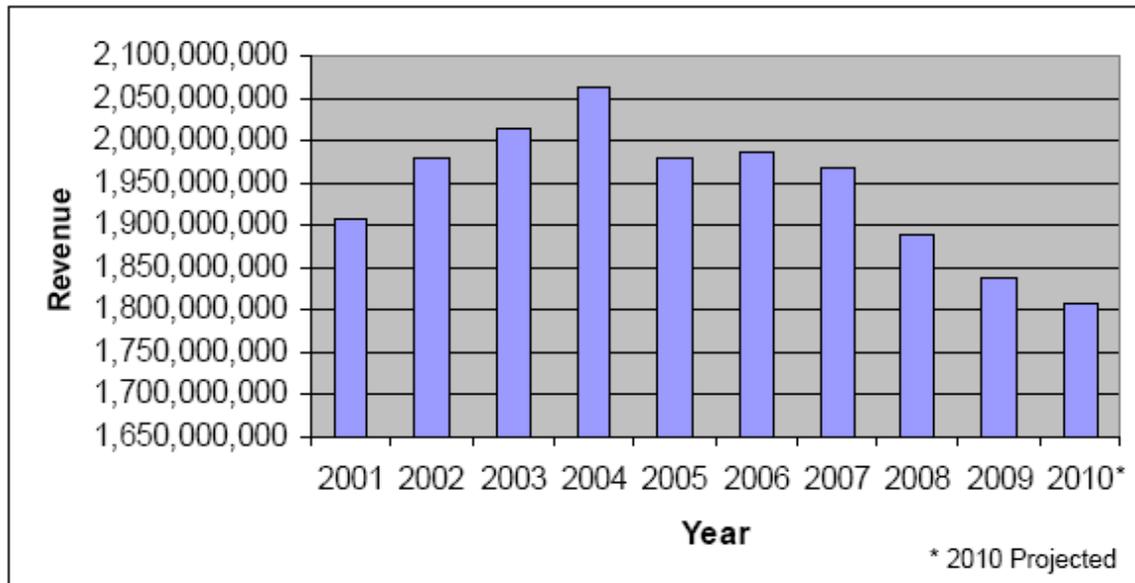
Source: MDOT Date: April 2010  
Figure 21

Figure 21 indicates the combined overall bridge condition of all the state’s bridges (Trunkline and local agency) is expected to decline after 2011 unless additional funding is identified for both state and local bridge programs. In addition, the condition and forecast data shows the local bridge program could materially benefit from applying capital preventative maintenance strategies.

## INVESTMENTS IN THE SYSTEM

Michigan's public highways and bridges collectively represent the state's single largest publicly-owned asset. While accurate figures for all local roads and bridges are not readily available, consider that the state government of Michigan owns some \$19 billion in assets of which MDOT owns \$15.1 billion, or 79 percent of all assets owned by the State. Of that \$15.1 billion, \$12.1 billion is in roads and bridges. If you consider MDOT owns only eight percent of the total mileage of public roads, the total value of all roads is significantly higher. Consequently, the public roads and bridges in Michigan constitute a tremendously valuable public asset.

### MTF Total Gross Revenue: 2001 – 2010



Source: MDOT Date: April 2010

Figure 22

### *Transportation Funding Crisis*

Figure 22 shows the Michigan Transportation Fund (MTF) total gross revenue levels between the time periods of 2001 – 2009 showing a significant decline in revenue since 2004. Since the 1960's, Michigan has been in the bottom ten states for state and local transportation funding. Michigan's gas tax revenue dedicated to roads and bridges has decreased \$200 million in the past six years and at current funding levels, the condition of Michigan's transportation infrastructure will continue to decline. It is projected that 2010 is the last year Michigan will be able to fully match available federal funding. If this occurs, the unmatched federal gas tax collected in Michigan will go to other states. In 1996, only 64 percent of the state highways were in good or fair condition. In 2007, Michigan's goal of 90 percent of all state highways in good or fair condition was achieved. By 2014, it is predicted that these gains could be significantly decreased, if not completely lost.

***The American Recovery and Reinvestment Act of 2009 – Impact on Michigan Infrastructure***

The American Recovery and Reinvestment Act (ARRA) was intended to be a one-time opportunity for the United States to kick start the nation's economy and put citizens back to work. Michigan received approximately \$850 million for roads and bridges. This one-time investment was sorely needed by Michigan's road agencies to provide a one-time boost to a rapidly deteriorating infrastructure. But it was not the cure and did not solve the structural transportation funding problems in Michigan.

***Conclusion***

At current funding levels, the condition of Michigan's transportation infrastructure is rapidly deteriorating. This alarming decline in condition of Michigan's roads and bridges affects everyone; from businesses that rely on the transportation network to transport goods and services, to tourists visiting or traveling through our great state, to our citizens who expect safe and convenient access to work and school. Re-investing in our transportation system and maintaining these vital public assets is essential to secure a better future for all of Michigan's citizens.

## TRANSPORTATION ASSET MANAGEMENT COUNCIL ACTIVITIES

### *2009 Activities & Accomplishments:*

- The Council adopted a policy that sets a goal of observing and assigning PASER ratings to 100% of the paved non-federal aid system once every three years or 1/3 of the system per year.
- The Council adopted an awards program to annually single out those individuals and organizations that support and promote asset management practices. The following individuals and organizations were recognized in 2009:
  - Individual
    - John Daly III, PHD
    - Brian Gutowski
  - Organization
    - City of Manistee
    - City of Marquette
    - Alcona County Road Commission
    - Kent County Road Commission
    - Genessee County Metropolitan Planning
    - Michigan Department of Transportation
- The Council created a Bridge Committee to develop and implement a plan to promote and support bridge asset management practices.
- The Council has revised and updated the Transportation Asset Management Council's website/data portal to improve content and streamline the reporting process.
- The Council held two (2) annual conferences in East Lansing and Marquette reaching 167 attendees.
- 2009 Training & Education Activities:
  - Five (5) Asset Management Workshops - 113 Attendees
  - Eleven (11) Elected & Appointed Officials Workshops - 306 Attendees
  - Ten (10) PASER Trainings - 379 Attendees
  - Fourteen (14) Investment Reporting Tool Trainings - 226 Attendees

### Future Activities:

- Create a sample asset management plan to provide guidance for the development of local asset management plans.
- Consolidate local agency reporting requirements by Modifying Act 51 reporting to include Council related requirements.
- Continue to emphasize education and training opportunities.

## 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.

## Appendix B:

### ASSET MANAGEMENT COUNCIL MEMBERS

**Carmine Palombo, Chair:** Carmine is the Director of Transportation Programs for the Southeast Michigan Council of Governments. He is in his second term on the Council and has served as the Chair since the Council's first meeting in October 2002. He represents the Michigan Transportation Planners Association.

**Robert D. Slattery, Jr., Vice-Chair:** Bob is the Mayor of Mt. Morris, a position he has served in since 1991. Bob is in his first full-term on the Council and represents the Michigan Municipal League.

**John Egelhaaf:** John has served as the Executive Director of the Southwest Michigan Planning Commission (SWMPC) since 2003. John is in his first term on the Council and represents the Michigan Association of Regions.

**Don Disselkoen:** Don currently serves on the Ottawa County Board of Commissioners and represents the 8th district of Ottawa County, which is most of the city of Holland. Don also represents the Michigan Association of Counties.

**William McEntee:** Bill is the Director of the Permits & Environmental Concerns of the Road Commission for Oakland County. He has served in that position since 1992. Bill is in his third term on the Council and represents the County Road Association of Michigan.

**Susan Mortel:** Susan is the Director of Transportation Planning for the Michigan Department of Transportation. She has been in that position since 2002. Susan has been a member of the Council since 2002 and represents MDOT.

**Spencer Nebel:** Spencer is the City Manager for Sault Ste. Marie. He has been in that position since 1992. Spencer is in his first term on the Council and represents the Michigan Municipal League.

**Gerald Richards:** Jerry is the Manager of Meridian Charter Township. He has been in that position since 1995. Jerry is in his second term on the council. He represents the Michigan Townships Association.

**Kirk T. Steudle:** Kirk is the Director of the Michigan Department of Transportation. He was appointed to that position by Governor Granholm in March of 2006. Kirk has served on the council since 2002 and represents MDOT.

**Rob Surber:** Rob is the Deputy Director of the Center for Shared Solutions (CSS), formally the Center for Geographic Information (CGI). The Center serves as the Council's data storage agency and is a non-voting member. Rob has been a member of the council since 2004.

**Steve Warren:** Steve is the Deputy Director of the Kent County Road Commission. He has served in that position since 1988. Steve is in his second term on the Council. He represents the County Road Association of Michigan.

## Appendix C:

### DEFINITION OF TERMS

**Asset Management:** as defined in Michigan is “an ongoing process of maintaining, upgrading and operating physical assets cost-effectively, based on a continuous, physical inventory and condition assessment.” [MCL 247.659(a)]

**Bridge Replacement:** Removing the old bridge and constructing a new bridge at the same location.

**Bridge Recondition or Repair:** All types of major repairs including the replacement of the deck.

**Capital Preventive Maintenance:** Capital preventive maintenance means a planned strategy of cost-effective treatments to an existing roadway system and its appurtenances that preserve assets by retarding deterioration and maintaining functional condition without increasing structural capacity. Work activities and actions that are included as a capital preventive maintenance activity are those that extend the life of the asset, but do not change the original design, function, or purpose of the asset; the primary purpose of the work is to repair the incremental effects of weather, age, and use; the useful service life or benefits extend beyond the next fiscal year; and the work may restore some structural capacity of the road but, it does not substantially increase the loading allowed.

**Construction:** Construction is the building of a new road, street or bridge on a new location, and the addition of lanes to increase the capacity for through traffic. It is the improving of an existing road or street by correcting the grade, drainage structures, width, alignment, or surface. It is the building of bridges or grade separations, and the repair of such structures by strengthening, widening, and the replacement of piers and abutments. It is the initial signing of newly constructed roads or streets, major resigning of projects, and the installation, replacement, or improvement of traffic signals.

**Heavy Maintenance:** The improving of an existing road or street by correcting the grades, drainage structures, width, alignment, surface, and the hard surfacing of gravel roads. It also includes the rebuilding of existing bridges or grade separations, and the repair of such structures by strengthening, and the replacement of piers and abutments.

**Maintenance:** According to Act 51, “maintenance” means routine maintenance or preventive maintenance, or both. Maintenance does not include capital preventive treatments, resurfacing, reconstruction, restoration, rehabilitation, safety projects, widening of less than one-lane width, adding auxiliary turn lanes of one-half mile or less, adding auxiliary weaving, climbing, or speed-change lanes, modernizing intersections, or the upgrading of aggregate surface roads to hard surface roads.

**Reconstruction:** Any construction where the road is totally reconstructed by reditching, new subgrade, subbase, and surface at the same location.

**Resurfacing:** Resurfacing pavements with minor base repair, minor widening, and resurfacing the existing width. This would include any double or triple seal coating.

**Routine Maintenance:** Routine maintenance includes actions performed on a regular or controllable basis or in response to uncontrollable events upon a roadway. Work activities or actions considered to be routine maintenance are those where the benefit or effective service life of the work does not last beyond the next fiscal year; the work would not significantly change the surface rating of the road; or the work would rarely require acquisition of right-of-way or site specific design.

**Structural Improvement:** Structural improvement includes any activity that is undertaken to preserve or improve the structural integrity of an existing roadway. The structural improvement category includes those work activities where the safety or structural elements of the road are improved to satisfy current design requirements. Structural improvement does not include new construction on a new location of a roadway; a project that increases the capacity of a facility to accommodate that part of traffic having neither an origin nor destination within the local area; widening of a lane width or more; or adding turn lanes of more than one-half mile in length.

