



# Transportation Asset Management Council Update and Bridge Asset Management Guide

Steve Warren, Kent County Road Commission

Roger Safford, Michigan Department of Transportation

## Michigan Bridge Conference

Howell, Michigan

March 21, 2012



## I. Background

- Jurisdiction & Funding
- Legislative Foundation

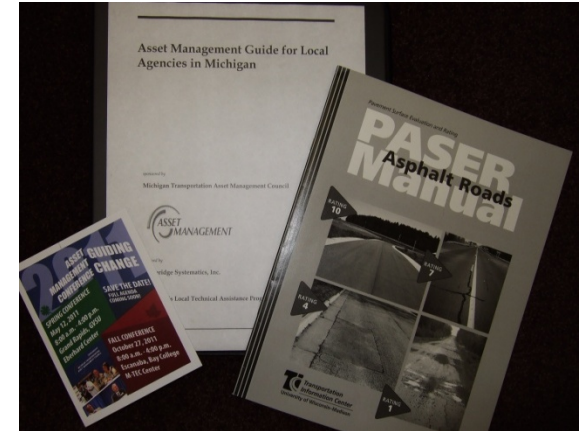
## II. Best Practice

- Road Condition Rating
- Capital Preventive Maintenance

## III. Performance Reporting

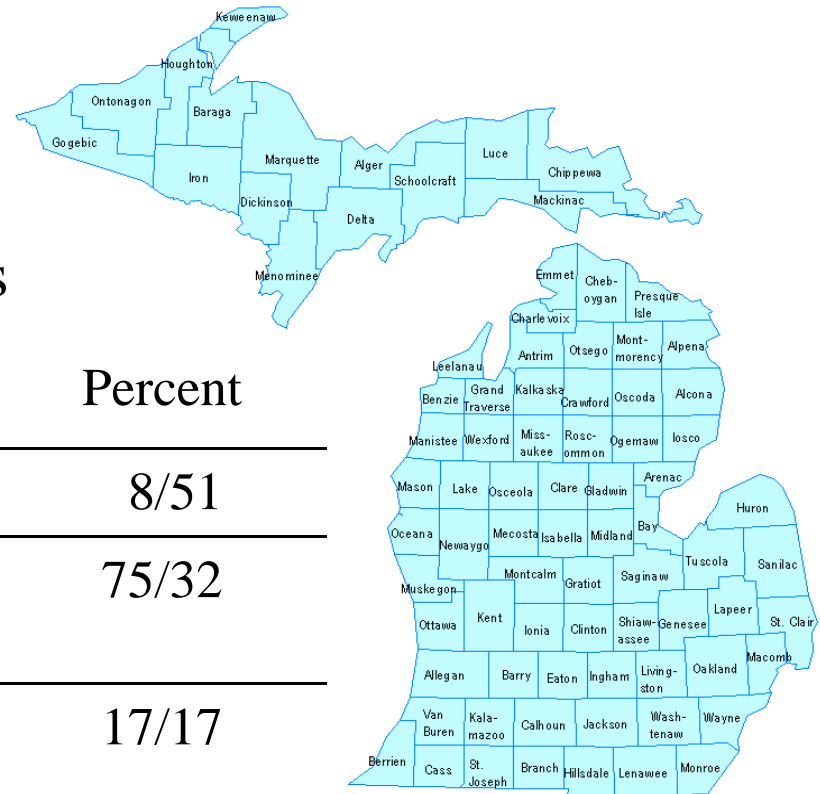
- Annual Report
- 2011 Education & Training
- TAMC Dashboard

## IV. Bridge Committee



# Jurisdiction and Funding

- 617 road agencies – 120k mi.
- 80k paved / 40k federal-aid eligible
- 123 (20%) manage 92% of the roads



Jurisdiction	Miles	Traffic	Percent
MDOT	9,700	49.8M	8/51
<b>83</b> County Road Agencies	91,000	31.0M	75/32
<b>533</b> Cities & Villages	21,000	16.8M	17/17

- Gas tax (1997) ... \$.19/g. gas & \$.15/g. diesel
- Act 51 Study Committee of 1998 ... consider alterations to Act 51 distribution formula



# Legislative Foundation

## Act 51 Study Committee of 1998

- ...a long-term planned asset management process for statewide use
- consistent approach needed... based on how roads function rather than jurisdiction

## Act 499 of 2002

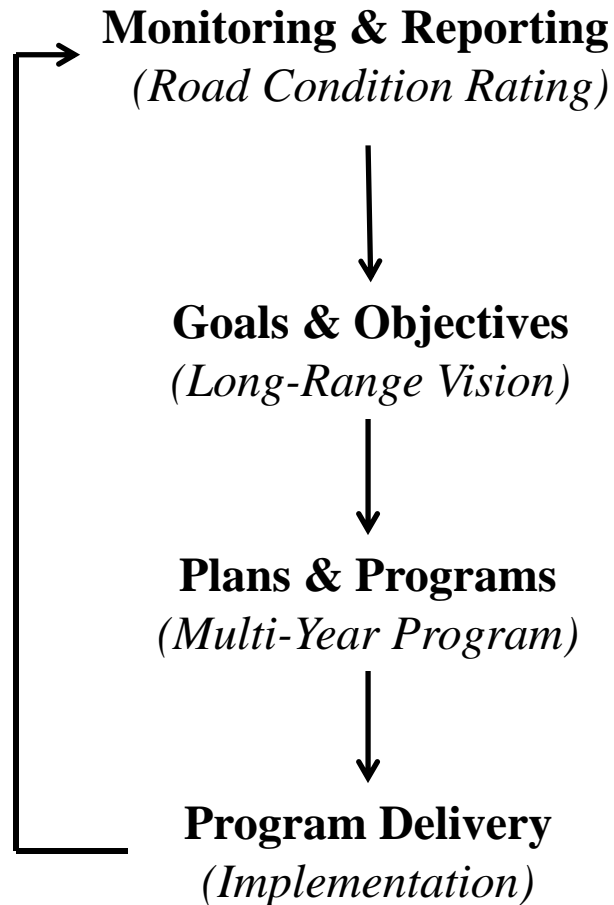
- Transportation Asset Management Council established
- Advise STC and Legislature – statewide asset management strategy

## Primary functions

- Best Practice – Tools, Training, and Education
- Performance Reporting – Annual Report to the STC and Legislature
- Dashboard Support



## A. M. Process



## TAMC Support

PASER: common road rating method – all agencies

- state, county, city/village
- Federal and non-federal aid roads

Training & Education

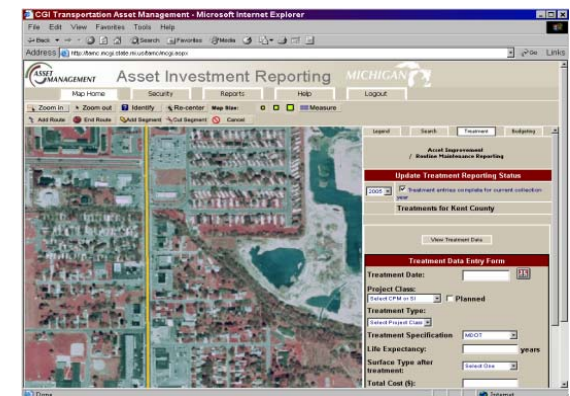
- staff and local officials
- involve stakeholders

Capital Preventive Maintenance (CPM)

- “right fix at the right time”

Agencies report - **ADARS**  
*(Act 51 Dist. & Rep. System)*

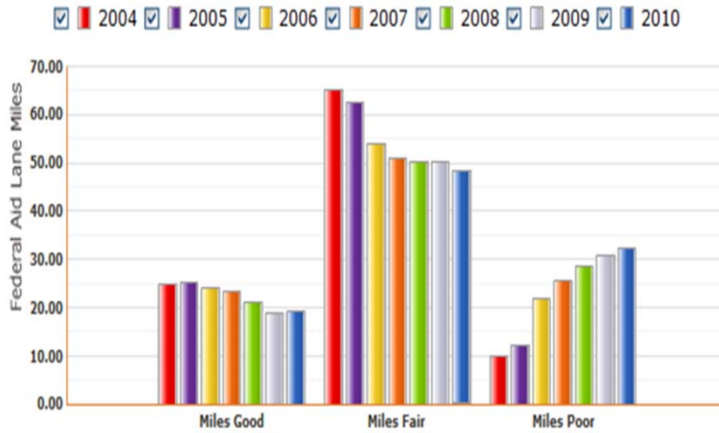
- completed improvements
- planned projects



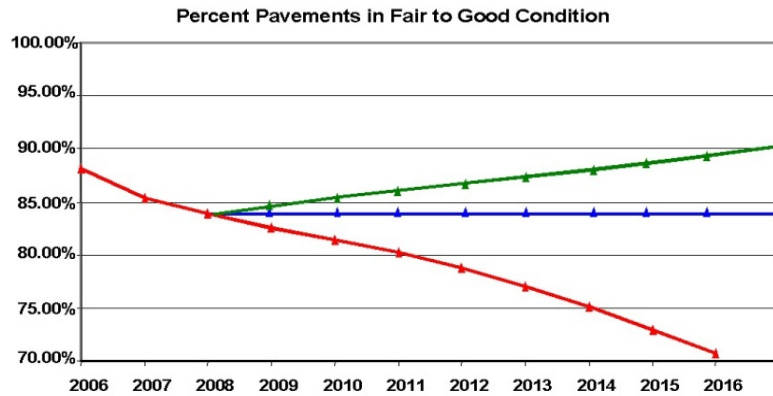


# Performance Reporting

**Pavement Condition by Year**



**Pavement Condition Forecast System  
Federal Aid System**



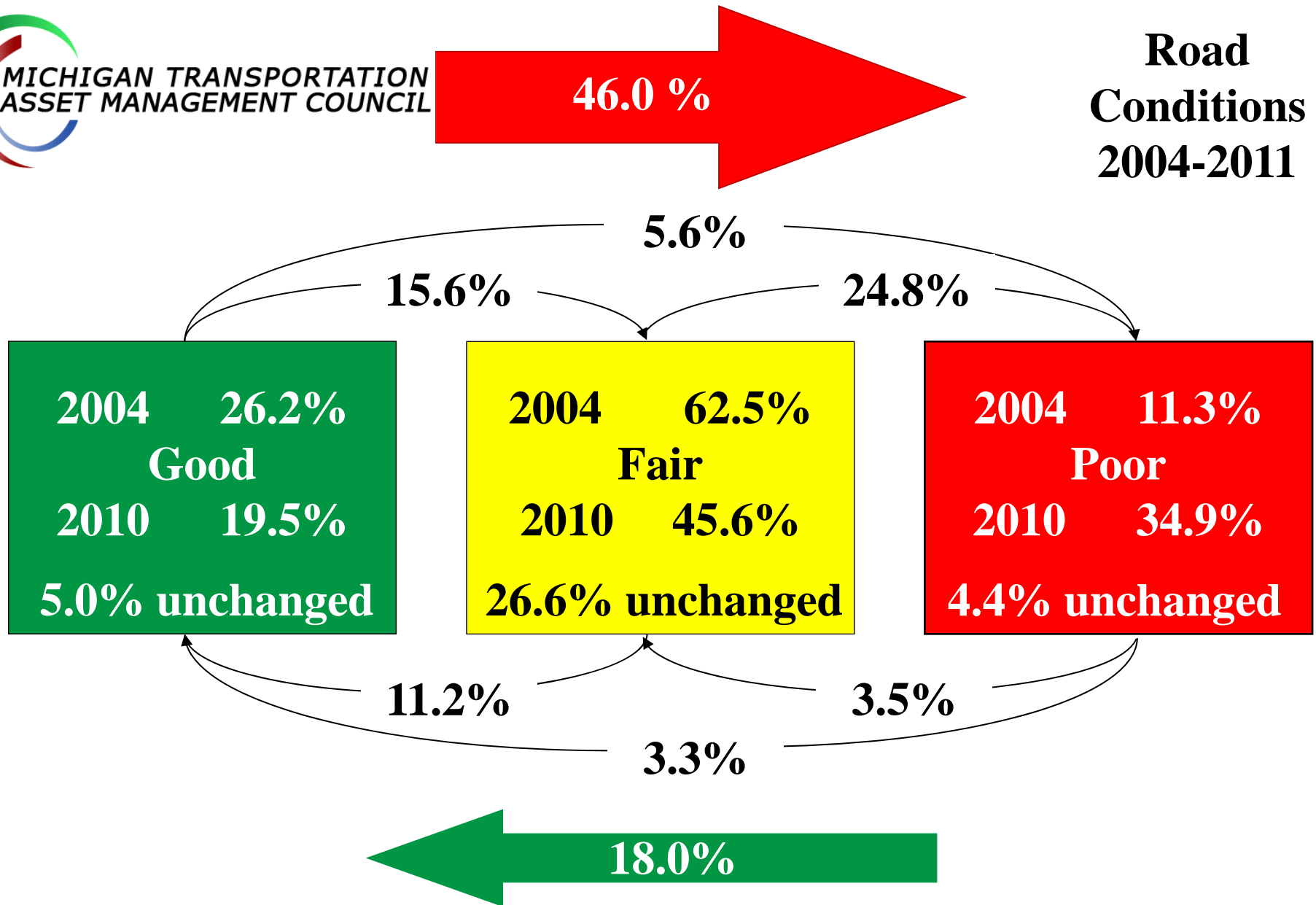
2006 to 2016





MICHIGAN TRANSPORTATION  
ASSET MANAGEMENT COUNCIL

# Road Conditions 2004-2011



Source: Transportation Asset  
Management Council

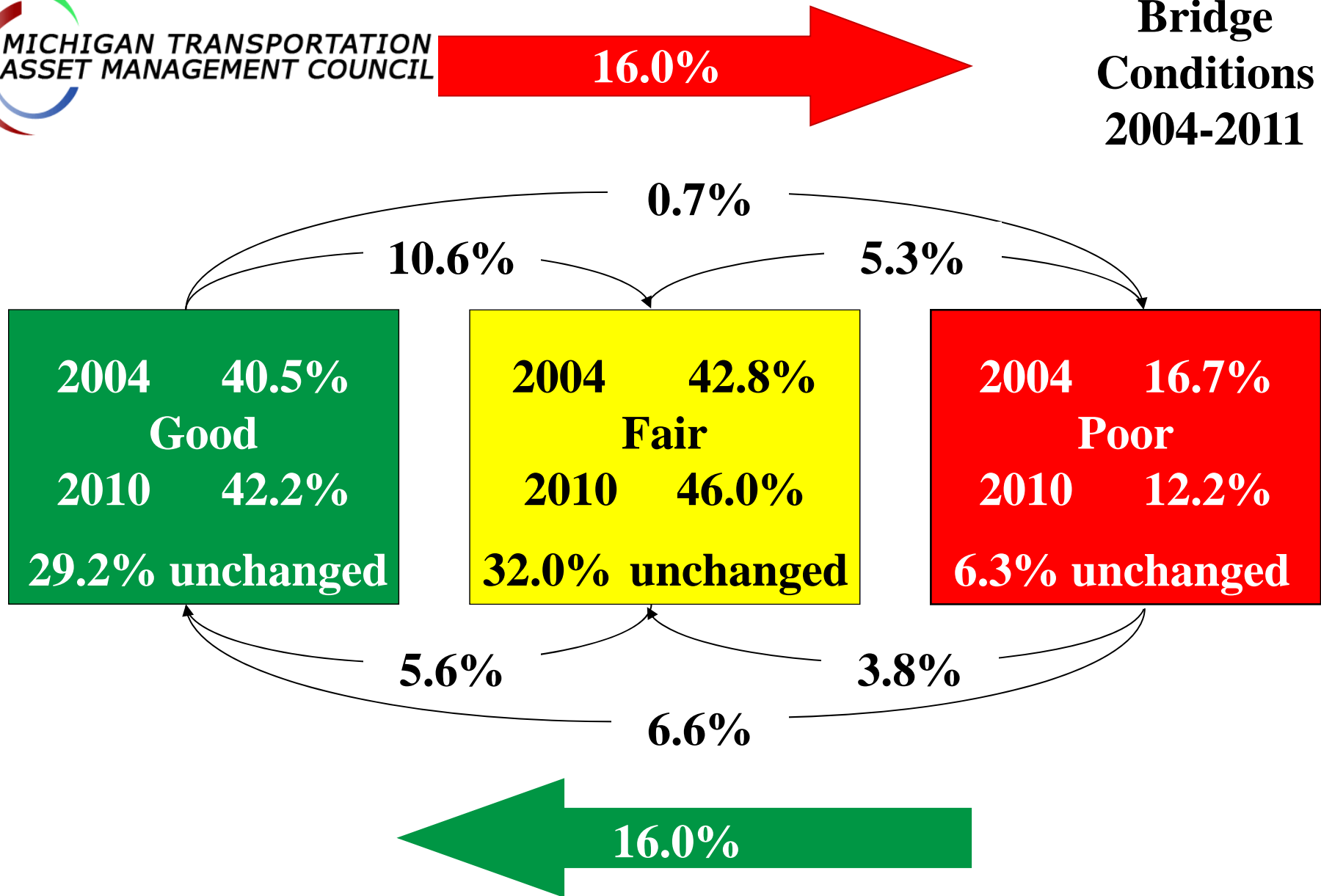
DRAFT: 2011 Annual Report

**Percent of Total Lane Miles**



MICHIGAN TRANSPORTATION  
ASSET MANAGEMENT COUNCIL

# Bridge Conditions 2004-2011



Source: Transportation Asset  
Management Council

DRAFT: 2010 Annual Report

Percent of All Bridges



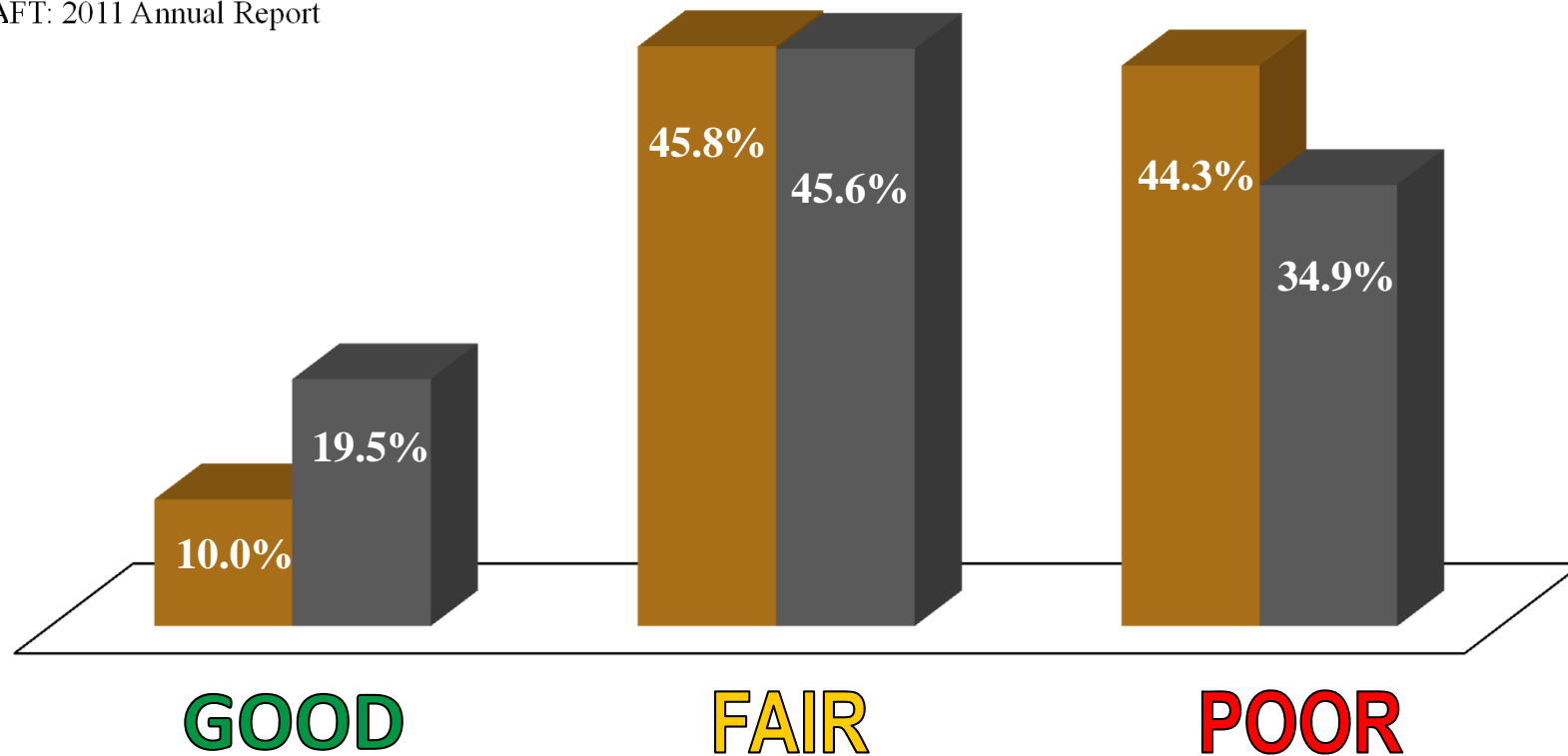
# 2011 Road Conditions

■ Non Fed-Aid ■ Fed-Aid

Percent Lane Miles

Source: Transportation Asset  
Management Council

DRAFT: 2011 Annual Report



TRANSPORTATION  
ASSET MANAGEMENT  
CONFERENCE

LEVERAGING  
BEST PRACTICES

April 25, 2012  
SPRING  
CONFERENCE

Schoolcraft College  
VisTaTech Center,  
Room 500 C & D  
18600 Haggerty Road  
Livonia, Michigan



Complimentary Parking

ENHANCED AGENDA

Tuesday, April 24, 2012

4:00 – 6:00 p.m. Transportation Asset Management  
Council Meeting/Public Invited –  
VisTaTech Center

Wednesday, April 25, 2012

TRANSPORTATION  
ASSET MANAGEMENT CONFERENCE

*Morning Session*

7:30 – 8:00 a.m. Registration and Breakfast

8:00 – 8:10 a.m. Welcome/Opening Comments  
*Carmine Palombo,  
SEMCOG/TAMC Chair*

8:10 – 9:00 a.m. Legislative Update  
*Rep. Rick Olson*

9:00 – 9:45 a.m. The Governor's Infrastructure Message  
*Bill Rustem, Director of Strategy  
Office of the Governor*

9:45 – 10:15 a.m. Asset Management Guide  
for Bridges  
*Roger Safford, MDOT  
Keith Cooper, MDOT*

10:15 – 10:30 a.m. BREAK

10:30 – 11:00 a.m. Bridge Preservation/Best Practices  
*Dave Juntunen, MDOT  
Rebecca Curtis, MDOT*

11:00 – 12:00 p.m. Gravel Roads/Best Practices  
*Richard Reid, Associate Dean of  
Engineering and Director  
South Dakota State University LTAP*

*Lunch*

12:00 – 12:45 p.m. 2012 TAMC Awards Presentation

*Afternoon Session*

1:00 – 1:45 p.m. Keynote Speaker  
*Kirk Steudle, Director, MDOT*

1:45 – 2:45 p.m. Our Roads, Our Legacy  
*Andrew Lemer, National Academy  
of Sciences/The Matrix Group, LLC*

2:45 – 3:15 p.m. International Study  
*Tim Colling, MTU  
Roger Safford, MDOT*

3:15 – 3:45 p.m. 2011 Annual Report/Current  
and Future TAMC Efforts  
Closing Comments  
*Carmine Palombo,  
SEMCOG/TAMC Chair*

*Evening Reception*

5:00 – 7:00 p.m. Michigan Municipal League  
Reception – VisTaTech Center

*Please join the Michigan Municipal League (MML)  
for a casual evening of networking and refreshments at  
this League Meet Up. This is a FREE event open to all!  
Visit MML on the Web at: [www.mml.org](http://www.mml.org).*

Thursday, April 26, 2012

9:00 – 12:00 p.m. Workshop: "Introduction to  
Transportation Asset  
Management for Elected  
and Appointed Officials" –  
VisTaTech Center

*This workshop is designed specifically with city,  
county, and township elected and appointed officials in  
mind. All local elected and appointed officials who have  
an interest in transportation projects or facilities should  
attend. No engineering background is required.*



Additional Information: Brian Sanada: (517) 373-2220....sanadab@michigan.gov



# TAMC Dashboard

<http://mcgiwebuat.mcgi.state.mi.us/MI/TRP/Data/PaserDashboard.aspx>

## 1. Paved Road Conditions (PASER)

- ✓ Condition of federal-aid network
- ✓ Trend analysis (2004 – 2011)
- ✓ Non federal-aid network (statewide)
- Agency Comparison Chart

## 2. Bridge Conditions (NBI)

- Percent structurally deficient
- Bridge deck ratings
- Link to MBIRS and MBIS

## 3. Traffic & Safety

- Traffic Volumes
- Total Crashes
- Total Personal Injury
- Total Fatal Crashes
- ❖ Rate/100m VMT
- ❖ 3 yr. rolling average

## 4. Road Maintenance

- Total cost per lane mile
- Winter maintenance cost per lane mile
- Salt usage – tons per lane mile

## 5. Finance

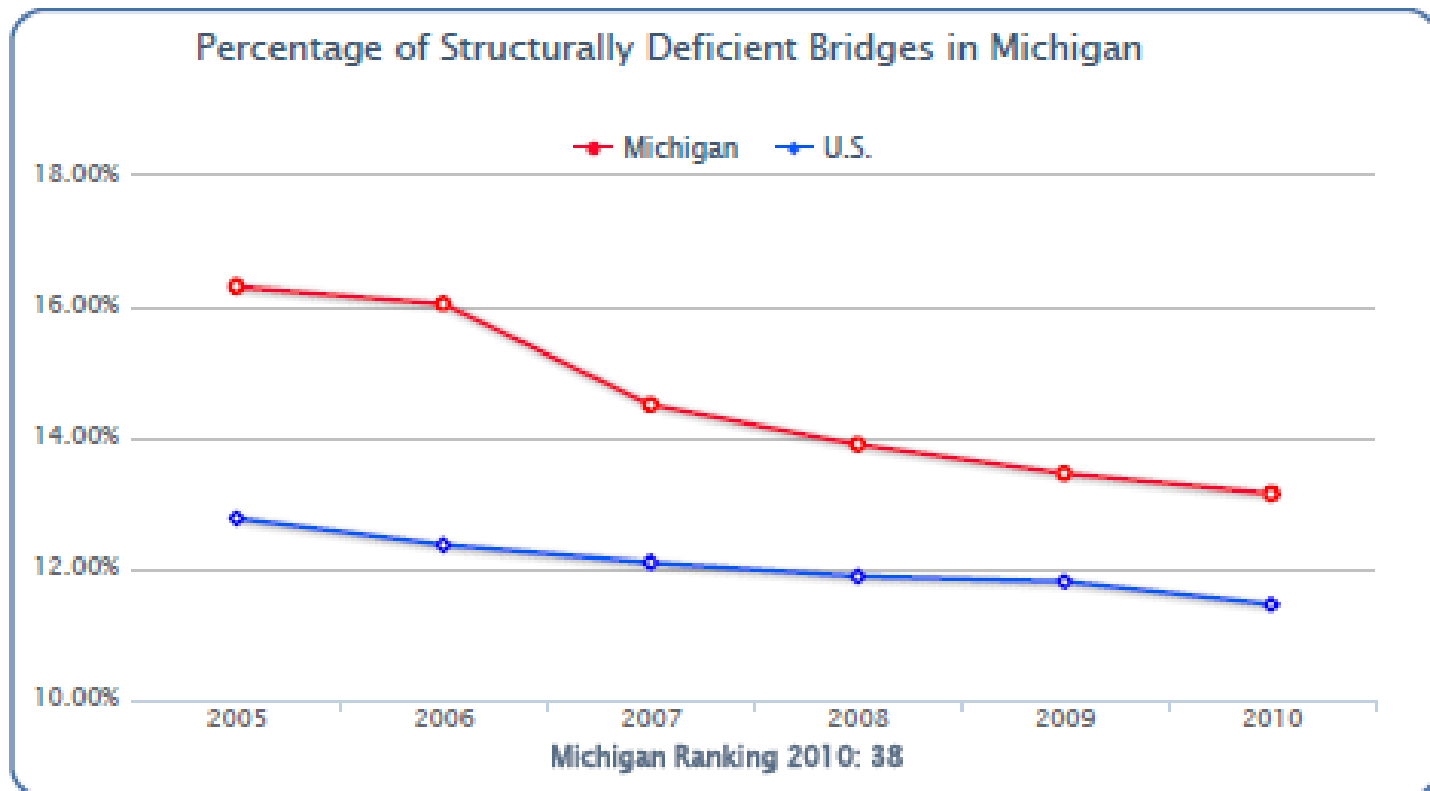
- MTF revenue trend
- Total revenue trend
- Employee cost (wages and benefits)
- Work performed by CRC vs contractor
- Other post employment benefits \*
- Unfunded pension liability \*
- Fringe factor
- Total Administrative cost vs total revenue



# Bridge Asset Management Guide and Sample Preservation Bridge Plan for Local Agencies

Michigan Bridge Conference  
March 21, 2012

## Bridges Are A Strategic Asset in Michigan





## **TAMC Strategic Initiative on Bridges:**

“Develop and implement a plan to promote and support bridge asset management practices on Michigan bridges, and integrate this plan with pavement asset management approaches.”

To that end, TAMC:

- Established a Bridge Asset Management Committee –June 2009
- Approved a Work Plan for Bridge Asset Management
- Aim is to promote and support Bridge Asset Management Practices in Michigan



## **Local Bridge Asset Management**

- Review of current practices in Michigan
- Input from Federal Highway Administration
- Survey done with local agencies in January of 2010 –results are incorporated into Guide
- Analyze and develop policy/best practice guide –rolled out 5/2011



## **MDOT Local Agency Bridge Program:**

Determines the 3-year bridge program that replaces, rehabilitates (including preventive maintenance), that maintains the local bridge inventory.

### **Working Groups:**

- Local Bridge Advisory Board, LBAB
- Region Bridge Councils, RBC's
- MDOT's Local Bridge Unit



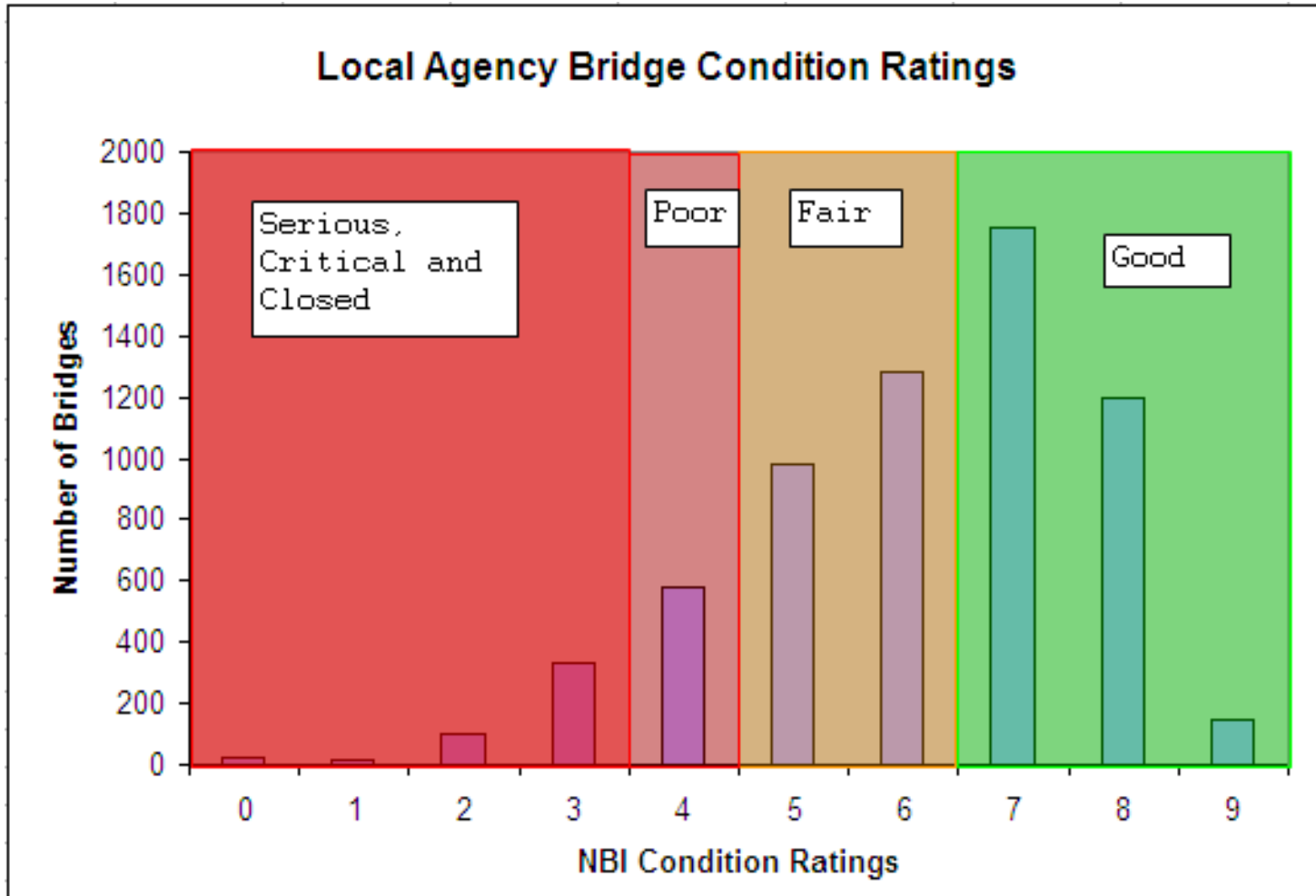


## **Funding of Local Bridge Preventive Maintenance**



- Local Bridge Advisory Board has allowed Preventive Maintenance for five years. Previously, the program could only use state funds for PM
- FHWA now allows Federal Bridge funds for PM projects on local bridges
- Measures to be developed to assess program effectiveness

# Managing Local Agency Bridges



# Asset Management Guide for Local Agency Bridges in Michigan



*sponsored by* Michigan Transportation Asset Management Council

*prepared by* TranSystems Corporation

May, 2011





# Local Bridge Asset Management Guide

## Purpose



- Provide assistance in understanding bridge condition, maintenance, repair strategies, and costs
- Provide guidance to decision makers in planning, developing, programming and implementation of effective capital programs and maintenance actions



# **Local Bridge Asset Management Guide**

1.0 Introduction

2.0 Bridge Asset Management in Michigan

3.0 MDOT Local Agency Programs

4.0 Bridge Condition Assessment

5.0 Developing an Optimum Bridge Preservation  
Strategy

Appendices - including Sample Plan



# **Local Bridge Asset Management Guide**

## **2.0 Bridge Asset Management in Michigan** **Elements of a Systematic Plan**

- Identify system needs
- Prioritize needs
- Define the goal(s)
- Demonstrate cost effectiveness
- Identify and dedicate resources
- Annual reporting of actions



# **Local Bridge Asset Management Guide**

## **2.0 Bridge Asset Management in Michigan**

Benefits of developing and implementing a systematic plan

- Increases knowledge and understanding of bridge network
- Assists owners in planning for maintenance actions for the entire system
- Setting goals will help develop optimal strategies
- Tracking progress will help to ensure that goals and strategies are being met



# Local Bridge Asset Management Guide

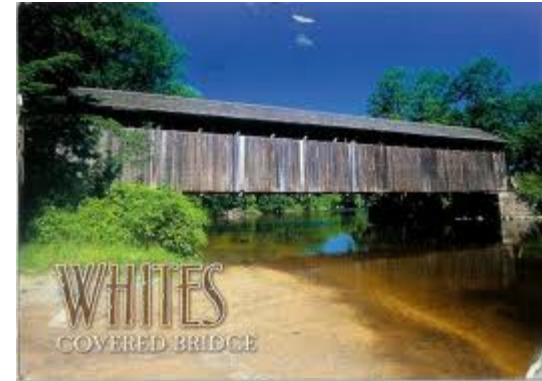
## 4.0 Bridge Condition Assessment

- Bridge Safety Inspections –biennial
  - Inspector Recommendations for repairs / work items
  - Structure Evaluation / Load Rating
  - Detailed inspections –extent of repair
- Bridge Condition and Appraisal
  - Condition Ratings



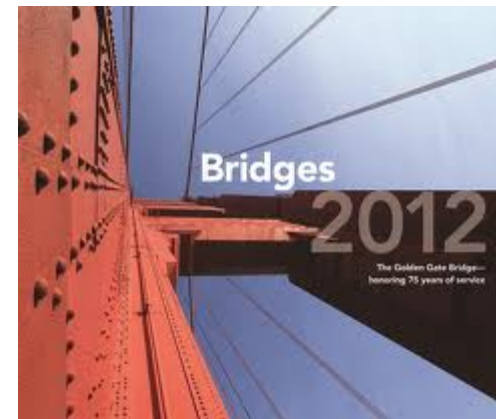


# Local Bridge Asset Management Guide



## 5.0 Developing an Optimum Bridge Preservation Strategy

- ‘Mix of Fixes’ utilizing replacement, rehabilitation, preventive maintenance and scheduled maintenance to maintain/improve the overall bridge condition
- Consult the MDOT bridge scoping cost estimating worksheet



## **Local Bridge Asset Management Guide**

### **5.0 Developing an Optimum Bridge Preservation Strategy (cont.)**

- Prioritize repairs once types of repairs are determined and cost estimates are completed
- Coming Soon---MBRS and MBIS tools for agencies on TAMC Dashboard

## Preservation Plan for Genesee County Local Bridges



Dr 2719 Alton Road over Kearsley Creek



Dr 2726 Colby Road over C&O Railroad



Dr 2735 Demour Road over Shiawassee River



Dr 2746 Fenton Road over Swift Creek

May, 2011





# Sample Local Bridge Preservation Plan

## Purpose

- Provide sample document for local agencies that are interested in developing their own bridge preservation plan
- Sample Preservation Plan was developed for Genesee County Road Commission based on their priorities and funding





## Sample Local Bridge

## Preservation Plan

### Benefits

- Identification and understanding of bridge condition in the network
- Develop a defined program of rehabilitation, replacement, and preventive maintenance to restore functionally or degraded bridge elements
- Dedicate local resources and increased opportunity to obtain additional funding





## **Sample Local Bridge**

## **Preservation Plan**

Goal Preservation of the County's  
bridge network

### Objectives

- Establish the current condition of the bridges
- Develop “Mix of Fixes”
- Prioritize programmed actions within available funding
- Have 80% of bridges rated fair /good in 10 years





## Asset Management Guide for Local Agency Bridges in Michigan



sponsored by Michigan Transportation Asset Management Council

prepared by TranSystems Corporation

May, 2011



[http://tamc.mcgi.state.mi.us/MITRP/  
Council/Default\\_Council.aspx](http://tamc.mcgi.state.mi.us/MITRP/Council/Default_Council.aspx)



## **TAMC Bridge Committee Update**

- Committee meets monthly – see TAMC Website for more information
- Supporting TAMC Dashboard Initiative
- Planned TAMC Pilot Training - 2013







# Pilot Training Template

- 1-day session
- Introduction and Overview – Systematic Approach
- Bridge Condition – Evaluating and Assessing Needs
- Available Maintenance Options
- Working Lunch – Case Studies
- Cost Estimating
- Optimizing Bridge Preservation Actions
- Developing a Local Bridge Preservation Plan



## Key Messages

- Use the tools and take necessary steps to adopt a systematic approach to bridge preservation
- Share your successes and challenges with the TAMC and each other
- Become a champion of bridge asset management in your area of influence



## Next Steps

- Continued education and training to promote use of these tools
- Continued monitoring of statewide bridge conditions
- Bridge dashboard elements with links to MBRS and MBIS planned



# Transportation Asset Management Council Update and Bridge Asset Management Guide

Steve Warren, Kent County Road Commission  
Roger Safford, Michigan Department of Transportation

## Questions?

*Image by  
Michael Eastn  
(616) 406-78*