Arenac County
Transportation Asset Management Program
FY 2019 PASER Road Survey

Project Overview:

On July 16, 2019, East Michigan Council Of Governments Region 7 staff along with representatives of the Arenac County Road Commission (CCRC) and the Michigan Department of Transportation (MDOT) assessed the condition of Arenac County federal aid eligible roads using the PASER road rating system as requested by the State of Michigan Transportation Asset Management Council (TAMC).

PASER Road Rating System:

The Pavement Surface Evaluation and Rating (PASER) system was developed by the University of Wisconsin-Madison Transportation Information Center to be used as the State of Wisconsin's standard road rating system. PASER is a "windshield" road rating system that uses a 1 to 10 rating scale, with a value of 10 representing a new road and a value of 1 representing a failed road. Condition ratings are assigned by monitoring the type and amount of visual defects along a road segment while driving the segment. The PASER system interprets these observations into a condition rating.

The State of Michigan Transportation Asset Management Council has requested that the information gathered in this survey be reported using the following categories:

- **Roads with PASER ratings of 8-10 require Routine Maintenance.** Routine maintenance is the day-to-day maintenance activities that are scheduled such as street sweeping, drainage clearing, shoulder gravel grading, and sealing cracks to prevent standing water and water penetration.

- **Roads with PASER ratings of 5-7 require Capital Preventive Maintenance.** Capital preventive maintenance is a planned set of cost effective treatments to an existing roadway system and its appurtenances that preserves, retards future deterioration and maintains or improves the functional condition of the system without significantly increasing structural capacity. The purpose of capital preventive maintenance fixes is to protect the pavement structures, slow the rate of pavement deterioration and/or correct pavement surface deficiencies. Surface treatments are targeted at pavement surface defects primarily caused by the environment and by pavement material deficiencies.

- **Roads with PASER ratings of 1-4 require Structural Improvements.** This category includes work identified as rehabilitation and reconstruction which address the structural integrity of a road.

Field Survey Methodology:

Equipment: Staff collected data using a laptop computer with the RoadSoft GIS Laptop Data Collector software installed. A Global Position System (GPS) unit was connected to the laptop to track position and locate road segments. RoadSoft GIS is an asset management software package created and distributed free of charge by the Michigan Technology Institute's Technology Development Group. The current version of the program was designed with a special module to collect PASER rating data.

Staff: The rating team consisted of three members. A driver and a navigator jointly rated the roads. The third team member entered rating information into the laptop computer. For the Arenac County road-rating project there was always one Region 7 representative, one ACRC representative, and one MDOT representative present.

Training: All participants in the survey were required to attend a daylong training session. Participants received an overview of the project and were given instruction on how to use the RoadSoft software and the PASER road rating system for data collection. Once out in the field, experienced staff members taught new participants how to use the RoadSoft program and guided them through the rating process. Most participants felt comfortable after an hour of working the computer and rating the roads.

Results:

A total of 103.922 miles of federal aid eligible roads were rated for this project. The project was completed in approximately 3.28 hours with an average rating speed of 32 miles per hour. **Table 1** and **Figure 1** below summarize the distribution of ratings by mileage and percentage of the total for all roads rated during the project.

Table 1 – Arenac County 2019 PASER Results			
PASER Rating	**Prescribed Fix**	**Mileage**	**Percent of Total Miles Rated**
8 - 10	Routine Maintenance	32.021	31%
5 - 7	Capital Preventive Maintenance	28.805	28%
1 - 4	Structural Improvements	43.096	41%

Figure 1
Arenac County 2019 PASER Results

■ 8 - 10 Routine Maintenance   ■ 5 - 7 Capital Preventive Maintenance   ■ 1 - 4 Structural Improvements
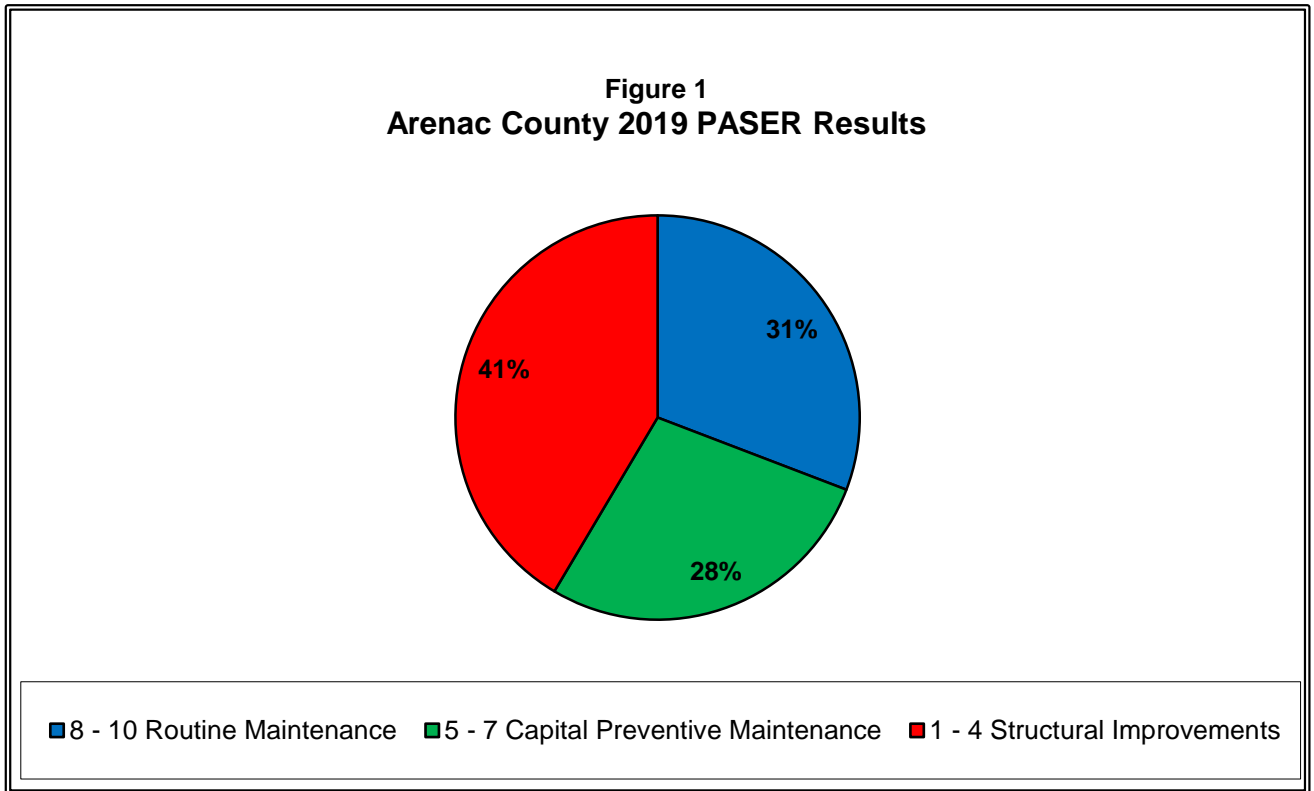
Table 2 below summarizes the PASER ratings and total miles rated for each of the jurisdictions represented in Arenac County, as well as Arenac County as a whole.

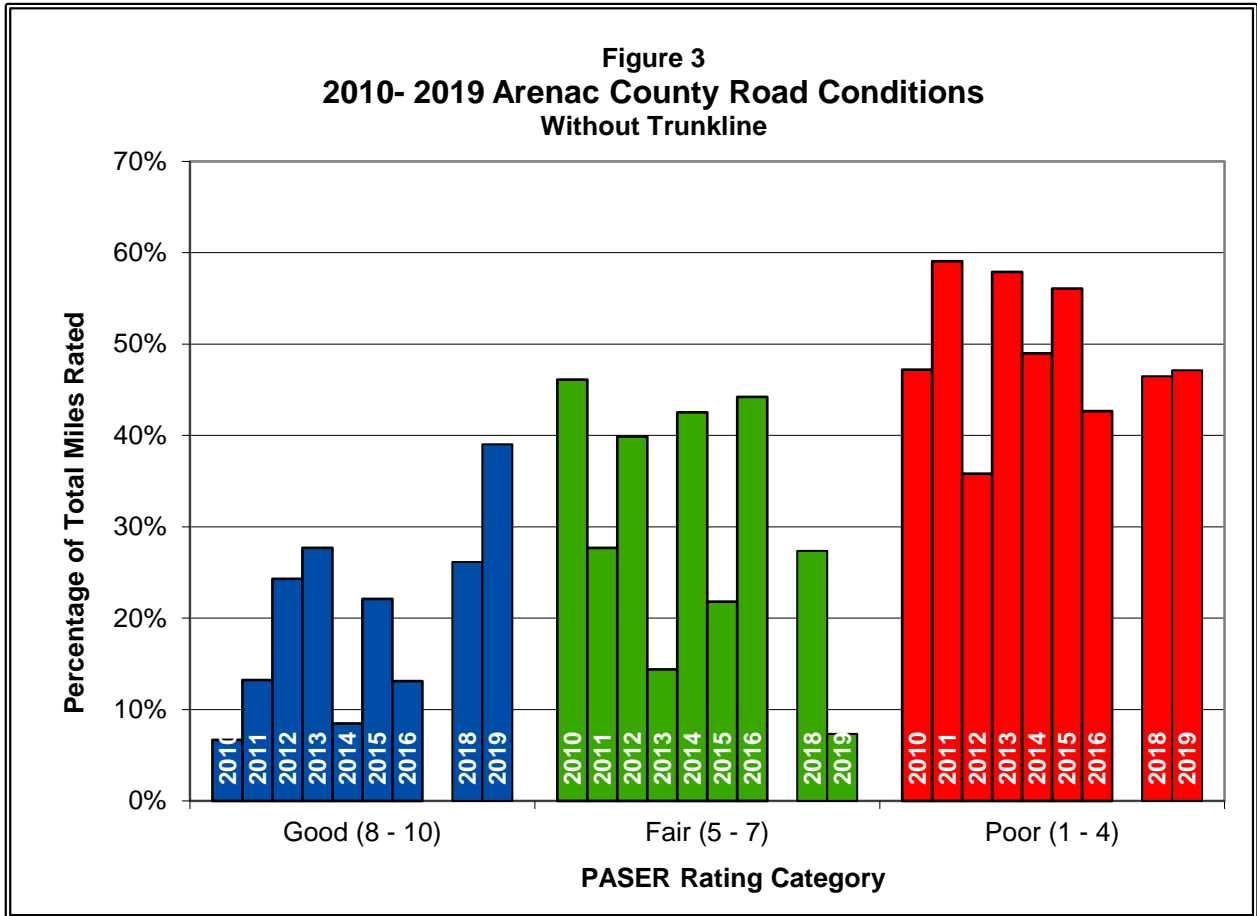| Table 2 - 2019 PASER Results by Jurisdiction				
Jurisdiction	**8 - 10**	**5 - 7**	**1 - 4**	**Total Mileage Rated**
Village of Sterling	0.000	0.000	0.000	0.000
Village of Turner	0.000	0.000	0.000	0.000
Village of Twining	0.000	0.000	0.000	0.000
City of Au Gres	0.000	0.000	0.000	0.000
City of Omer	0.000	0.000	0.000	0.000
City of Standish	0.000	0.000	0.000	0.000
MDOT	2.910	18.495	7.941	29.346
Arenac CRC	29.111	10.310	35.155	74.576
Arenac County	32.021	28.805	43.096	103.922

Multi-Year Comparison of PASER Ratings:

The comparison of PASER ratings from year to year provides a valuable assessment of the effectiveness of current transportation funding and maintenance activities. **Figure 2** below shows a 10-year trend analysis of the paved federal aid road conditions for Arenac County. Due to slight variations in the mileage rated each year, the results have been reported as a percentage of the total miles rated for each given year. Federal Aid Eligible roads were not rated in FY 2017.

Figure 2
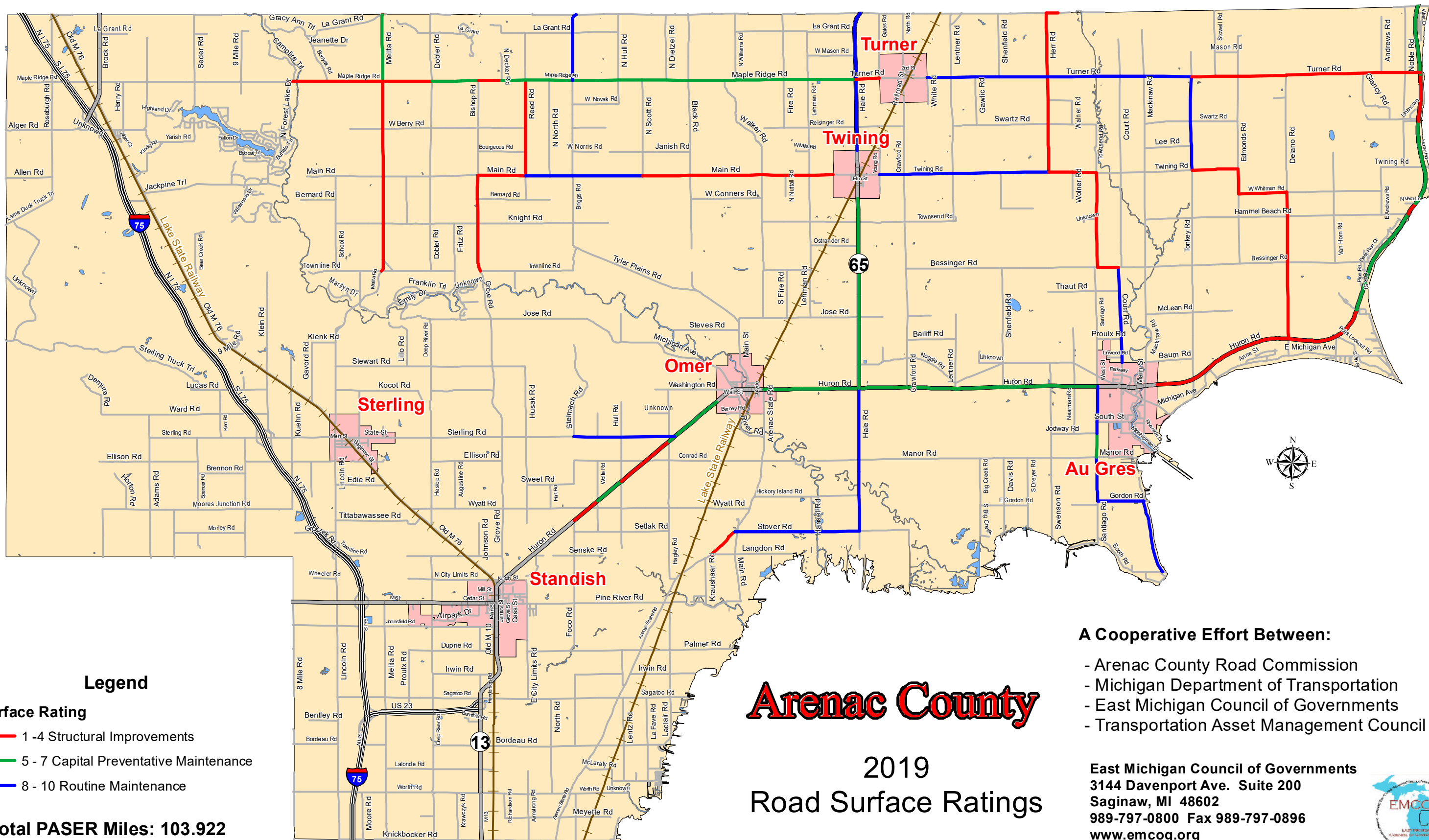**2010 - 2019 Arenac County Road Conditions**
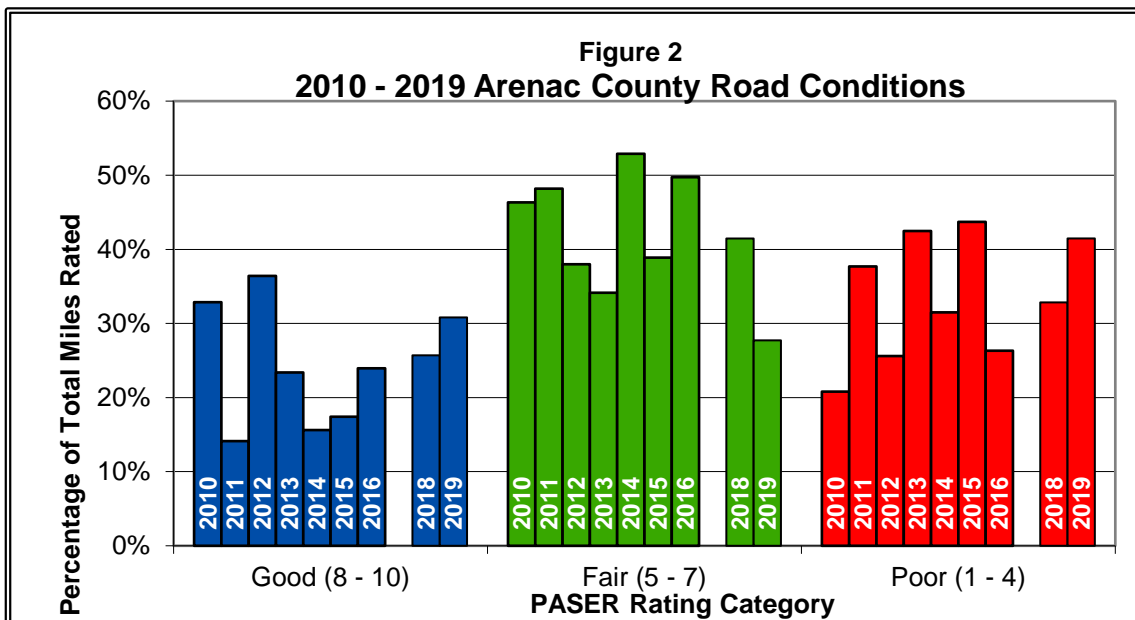
As can be seen in Figure 2, road conditions within the County continue to deteriorate. Roads in the good category have steadily declined while those in the poor category have steadily

increased. The percentage of roads in the fair category appears to be somewhat more stable. This may be an indication that the capital preventive maintenance program at the road commission is effective. Federal Aid Eligible roads were not rated in FY 2017.

Removing the State Trunkline data from this trend analysis paints a more disturbing picture. **Figure 3** shows the 10-year trend analysis with state trunkline data removed. As can be seen, there is now a more dramatic shift towards the poor category. Good roads have been actually increasing in percentage of roadway.   Fair roads show a steady decline, with poor roads steadily increasing. The increase in poor roads may suggest that local road agencies simply do not have the needed funding to perform major rehabilitation or reconstruction of these roads.

Figure 3
2010- 2019 Arenac County Road Conditions
Without Trunkline

Arenac County

2019 Road Surface Ratings

Legend

Surface Rating

— 1 -4 Structural Improvements
— 5 - 7 Capital Preventative Maintenance
— 8 - 10 Routine Maintenance

Total PASER Miles: 103.922

A Cooperative Effort Between:

- Arenac County Road Commission
- Michigan Department of Transportation
- East Michigan Council of Governments
- Transportation Asset Management Council

East Michigan Council of Governments
3144 Davenport Ave. Suite 200
Saginaw, MI 48602
989-797-0800 Fax 989-797-0896
www.emcog.org

EMCOG
EAST MICHIGAN
COUNCIL OF GOVERNMENTS

Created 12/15/2019

Turner
Twining
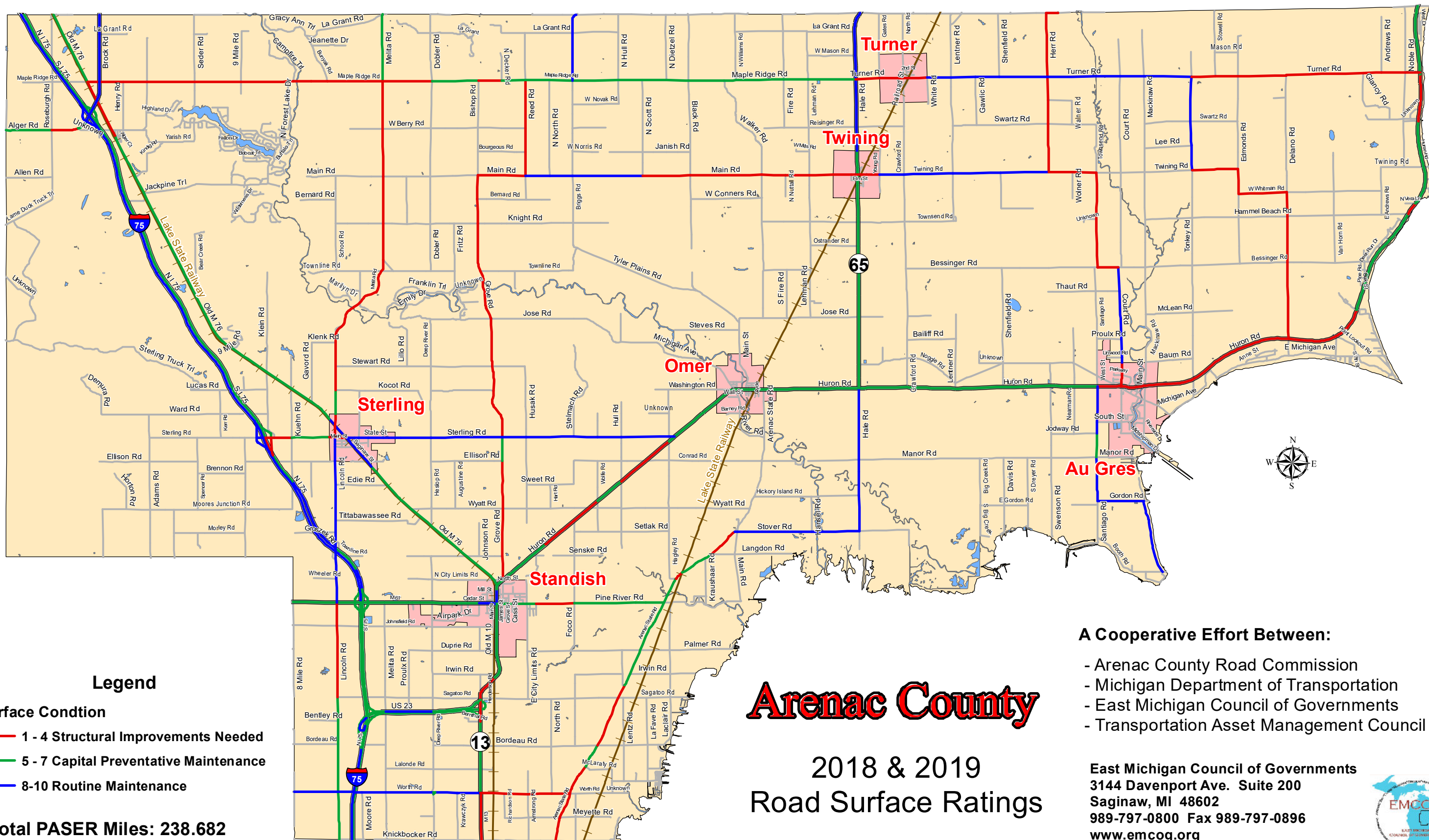Omer
Sterling
Standish
Au Gres

Arenac County

2018 & 2019 Road Surface Ratings

A Cooperative Effort Between:

- Arenac County Road Commission
- Michigan Department of Transportation
- East Michigan Council of Governments
- Transportation Asset Management Council

East Michigan Council of Governments
3144 Davenport Ave. Suite 200
Saginaw, MI 48602
989-797-0800 Fax 989-797-0896
www.emcog.org

Legend

Surface Condtion

- 1 - 4 Structural Improvements Needed
- 5 - 7 Capital Preventative Maintenance
- 8-10 Routine Maintenance

Total PASER Miles: 238.682

Created 12/02/2019