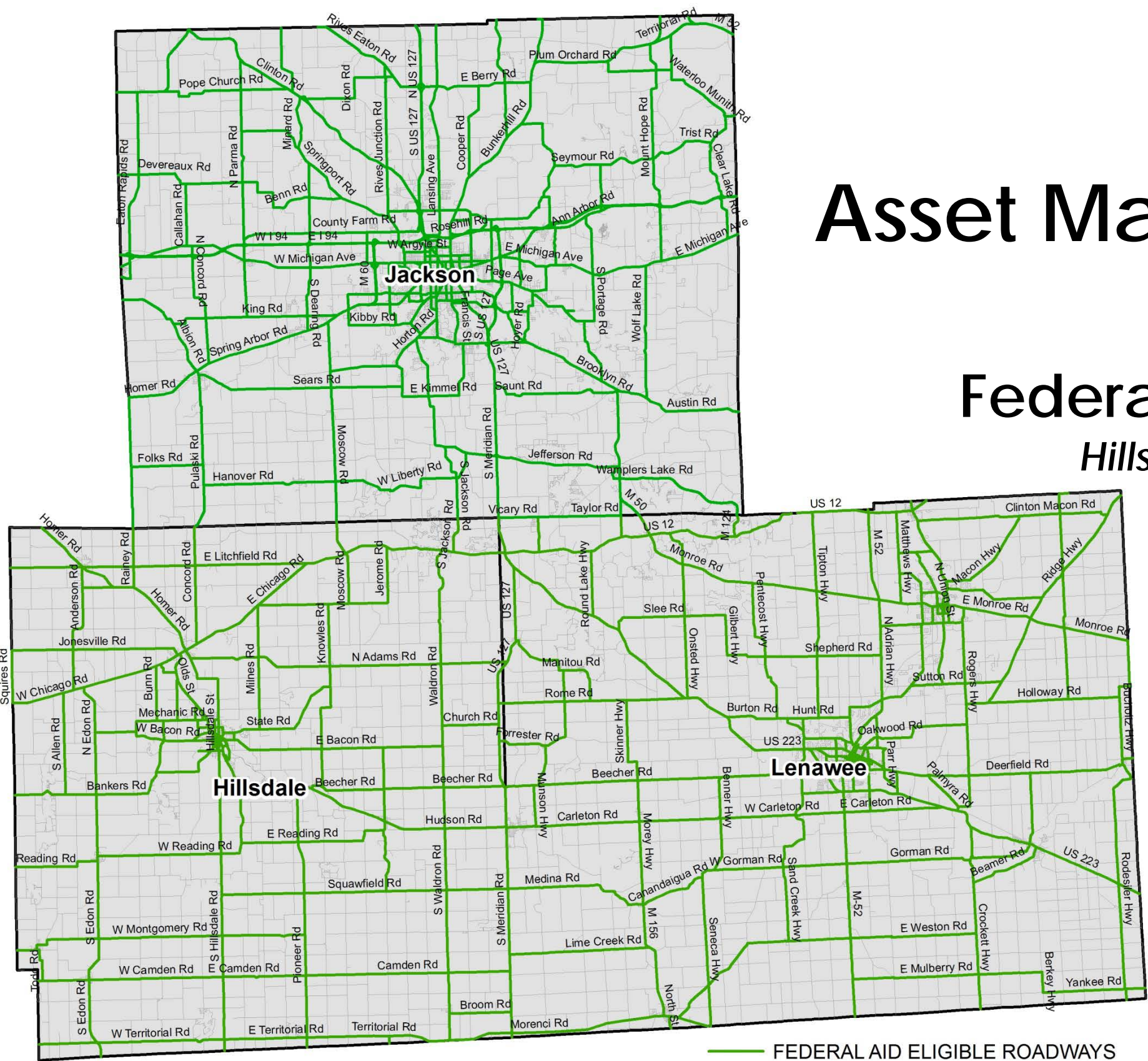


2015-2016 Asset Management Report

Federal-Aid Eligible Roadways
Hillsdale, Jackson, & Lenawee Counties

November 2016

Region 2
Planning Commission
Serving Hillsdale, Jackson and Lenawee Counties



2015-2016 Region 2 Area
Asset Management Report

Federal-Aid Eligible Roadways
Hillsdale, Jackson, & Lenawee Counties

November 2016



The Asset Management Program for Federal-Aid Eligible Roadways in the Region 2 Area (i.e., Hillsdale, Jackson, and Lenawee Counties) is administered by the Region 2 Planning Commission (R2PC) and funded by the Michigan Department of Transportation (MDOT). The 2015-2016 Asset Management Report was prepared by the R2PC.

The Asset Management Program in the Region 2 Area and the rest of Michigan is led by the Transportation Asset Management Council - an eleven (11) member body consisting of representatives from the Michigan Municipal League, Michigan Township Association, Michigan Transportation Planners Association, Michigan Association of Regions, Michigan Association of Counties, the County Road Association of Michigan, and MDOT. The mission of the Transportation Asset Management Council is:

“Advise the State Transportation Commission on a statewide asset management strategy and the necessary procedures and analytical tools to implement such a strategy on Michigan’s highway system in a cost-effective, efficient manner”.





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Introduction

The [Asset Management Program](#) in the Region 2 Area is a continuous effort to monitor the surface conditions of federal-aid eligible roadways in Hillsdale, Jackson and Lenawee Counties. The Program is administered by the [Region 2 Planning Commission](#), with guidance from Michigan’s [Transportation Asset Management Council](#) and in collaboration with the [Michigan Department of Transportation](#) (MDOT), the three county road commissions, and the various cities and villages located in the Region 2 Area. MDOT funds the Program.

The Asset Management Program involves a comprehensive and strategic approach that looks at the entire road network, rather than individual projects, and provides road agencies with a tool to:

- manage road infrastructure in the short term, and
- plan for future improvements in the long term.

The data compiled for the Asset Management Program is gathered in the field and analyzed using a software program known as [RoadSoft-GIS](#)¹. Much of the data pertains to road surface conditions that can be utilized by road agencies to:

- monitor the physical condition of the federal-aid roadway network (excluding bridges), and
- optimize the preservation, improvement, and timely replacement of federal-aid roadways.

Instead of simply accounting for existing infrastructure, the Asset Management Program can be utilized to ensure the proper use and performance of the federal-aid roadway network, a process that involves the continuous assessment of conditions and evaluation of trade-offs between different actions (i.e., a “mix of fixes”).

The data collection effort was originally scheduled to take place over a three-year period, beginning in 2006. However, the program was extended and all of the federal-aid roads in each county have been rated over a two-year period (i.e., one-half of the roadways each year) since 2008. The following county and local road agencies are also utilizing RoadSoft-GIS to rate their local roadway network: the cities of Adrian, Hillsdale, Jackson, Litchfield, and Tecumseh; the Village of Blissfield; and the counties of Hillsdale, Jackson, and Lenawee.

Asset Management strives to gather road ratings that are accurate and consistent. For this reason, it is preferred that the same personnel are used to provide ratings from year-to-year. Also to help ensure consistency, raters are required to attend annual training provided by Michigan Technological University’s Center for Technology and sponsored by the Michigan Department of Transportation.

¹ The Center for Technology ,Michigan Technological University, developed and maintains [RoadSoft-GIS](#)

2015-2016 Asset Management Survey Data Collection

The roadway network is comprised of several types of roadways:

- Principal and minor arterials.** Interstates, other freeways, highways, roads, and streets designed to carry large amounts of traffic and to provide access to important destinations (e.g., employment centers, retail districts, etc.);
- Major/urban Collectors.** Road and streets which function as conduits directing local traffic to arterial roadways and are designed to provide more access to property than arterial; and
- Local roadways.** Road and streets designed to provide access to property and to carry small amounts of traffic.

This data collection effort is limited to federal-aid roadways (i.e., arterials and collectors) although various road agencies throughout the region are also rating local roadways. Federal-aid roads are eligible for federal transportation funding to be spent on their construction, repair, and maintenance. There are currently 1,657 miles of federal-aid eligible roadways in the Region 2 Area:

Hillsdale County	424.6 miles
Jackson County	681.1 miles
Lenawee County	550.9 miles

The highways, roads, and streets which comprise the roadway network are owned and operated by the Michigan Department of Transportation (MDOT), the three road commissions and the various municipalities (i.e., cities and villages) in the Region 2 Area. Consequently, data is collected in each county —on a biennial basis (i.e., half [½] of the network each year)— by teams consisting of officials from MDOT, the county road commission and/or local municipalities:

- Lanes.** The number of lanes in each roadway segment, with freeways and boulevards divided into separate segments by direction.
- Surface subtype.** The surface subtype (i.e., asphalt, sealcoat, composite, concrete, or gravel) for each roadway segment.
- Surface rating.** The condition of those surfaces are rated using the Pavement Surface Evaluation and Rating (PASER) system, according to the scale in Table 1.



Table 1
PASER Rating Scale

Surface Rating		Visible Distress	General Condition/ Treatment Measures
10	Excellent	☞ None	New construction
9	Excellent	☞ None	Recent overlay, like new
8	Very good	☞ No longitudinal cracks (except reflection of paving joints). ☞ Occasional transverse cracks, widely spaced (40 ft. or greater).	Recent sealcoat or new road mix. Little or no maintenance required.
7	Good	☞ Very slight or no raveling, surface shows some traffic wear. ☞ Longitudinal cracks (open ¼ in.) spaced due to reflection or paving joints. ☞ Transverse cracks (open ¼ in.) spaced 10 feet or more apart, little or slight crack raveling. ☞ No patching or very few patches in excellent condition.	First signs of aging. Maintain with routine crack filling.
6	Good	☞ Slight raveling (loss of lines) and traffic wear. ☞ Longitudinal cracks (open ¼ in. – ½ in.) due to reflection and paving joints. ☞ Transverse cracking (open ¼ in. – ½ in.), some spaced less than 10 ft. ☞ Slight to moderate flushing or polishing. ☞ Occasional patching in good condition.	Shows signs of aging, sound structural condition. Could extend life with seal-coat.
5	Fair	☞ Moderate to severe raveling (loss of lines and coarse aggregate). ☞ Longitudinal cracks (open ½ in.) show some slight raveling and secondary cracks. First signs of longitudinal cracks near wheel path or edge. ☞ Transverse cracking and first signs of block cracking. Slight crack raveling (open ½ in.). ☞ Extensive to severe flushing or polishing. ☞ Some patching or edge wedging in good condition.	Surface aging, sound structural condition. Needs sealcoat or non-structural overlay.
4	Fair	☞ Severe surface raveling. ☞ Multiple longitudinal and transverse cracking with slight raveling. ☞ Block cracking (over 25-50% of surface). ☞ Patching in fair condition. ☞ Slight rutting or distortions (1 in. deep or less).	Significant aging and first signs of need for strengthening. Would benefit from recycling or overlay.

(continued)



Table 1
PASER Rating Scale

Surface Rating		Visible Distress	General Condition/ Treatment Measures
3	Poor	<ul style="list-style-type: none">☞ Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion.☞ Block cracking over 50% of surface.☞ Some alligator cracking (less than 25% of surface).☞ Patches in fair to poor condition.☞ Moderate rutting or distortion (1 in. or 2 in. deep).☞ Occasional potholes.	Need patching and major overlay or complete recycling.
2	Very poor	<ul style="list-style-type: none">☞ Alligator cracking (over 25% of surface).☞ Severe distortions (over 2 in. deep).☞ Extensive patching in poor condition.☞ Potholes.	Severe deterioration. Reconstruction with extensive base repair is needed.
1	Failed	<ul style="list-style-type: none">☞ Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction.



Hillsdale County

2015 Asset Management Team	2016 Asset Management Team
<div><div></div><div>Rick Jenkins, MDOT University Region</div></div> <div><div></div><div>Heather Boyd, Hillsdale CRC</div></div> <div><div></div><div>Susan Richardson, R2PC</div></div> <div><div></div><div>Aaron Dawson, R2PC</div></div>	<div><div></div><div>Laurent Fournier, MDOT University Reg.</div></div> <div><div></div><div>Heather Boyd, Hillsdale CRC</div></div> <div><div></div><div>Aaron Dawson, R2PC</div></div>
Survey Dates: September 28-29, 2015	Survey Date: October 24-25, 2016

PASER (Pavement Surface Evaluation and Rating) ratings were gathered during the 2016 reporting period for more than 216 miles of eastern Hillsdale County roadways. Over 204 miles of roadways were rated in the western half of the County in 2015 (Map 1).

Table 2
2015-2016 Hillsdale County PASER Ratings

PASER Rating	2015		2016		2015-2016	
	Miles	Ratio	Miles	Ratio	Miles	Ratio
10	0.0	0.0%	0.0	0.0%	0.0	0.0%
9	9.6	4.7%	13.9	6.4%	23.5	5.6%
8	17.3	8.5%	27.2	12.6%	44.5	10.6%
7	16.8	8.2%	2.2	1.0%	19.0	4.5%
6	11.4	5.6%	45.9	21.2%	57.4	13.7%
5	30.6	15.0%	15.5	7.2%	46.1	11.0%
4	57.4	28.2%	23.5	10.9%	80.9	19.3%
3	44.9	22.0%	84.7	39.2%	129.7	30.9%
2	15.7	7.7%	3.5	1.6%	19.1	4.6%
1	0.0	0.0%	0.0	0.0%	0.0	0.0%
Total	203.8	100.0%	216.4	100.0%	420.2	100.0%

The surveys reveal that of the **federal-aid roadways**:

16.2% are in very good or excellent condition.
29.1% are in fair or good condition.
54.7% are in poor or very poor condition or have failed.

Please see Table 2 and Figure 1 for more detail.

The federal-aid roadway network can be divided into five different types:

State trunkline (i.e., highways) comprise 26.8% of the federal aid-roadway network.

14.8% are in very good or excellent condition. **56.1%** are in fair or good condition. **29.2%** of state highways are in poor or very poor condition or have failed.

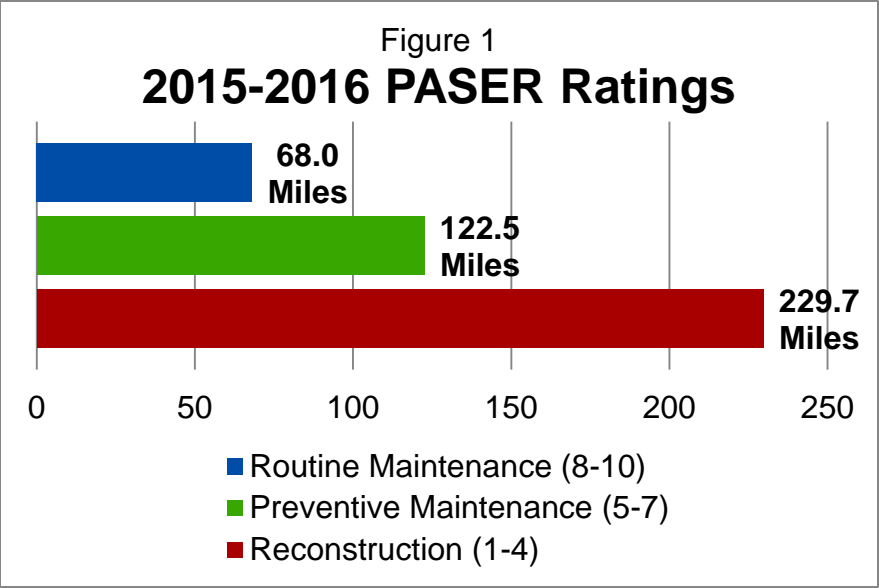
- County primary roads** comprise 66.3% of the federal-aid roadway network. **17.2%** of primary roads are in very good or excellent condition. **18.9%** of primary roads are in fair or good condition. **63.9%** of primary roads are in poor or very poor condition or have failed.
- Local county roads** comprise less than half of one percent of the federal-aid roadway network. This segment of local county road is in poor condition.
- Major streets** in cities and villages comprise 6.5% of the federal-aid roadway network. **11.9%** are in very good or excellent condition. **24.2%** are in fair or good condition. **63.9%** are in poor or very poor condition or have failed.
- Minor streets** in cities and villages comprise less than a half of one percent of the federal-aid roadway network. These segments are poor or have failed.

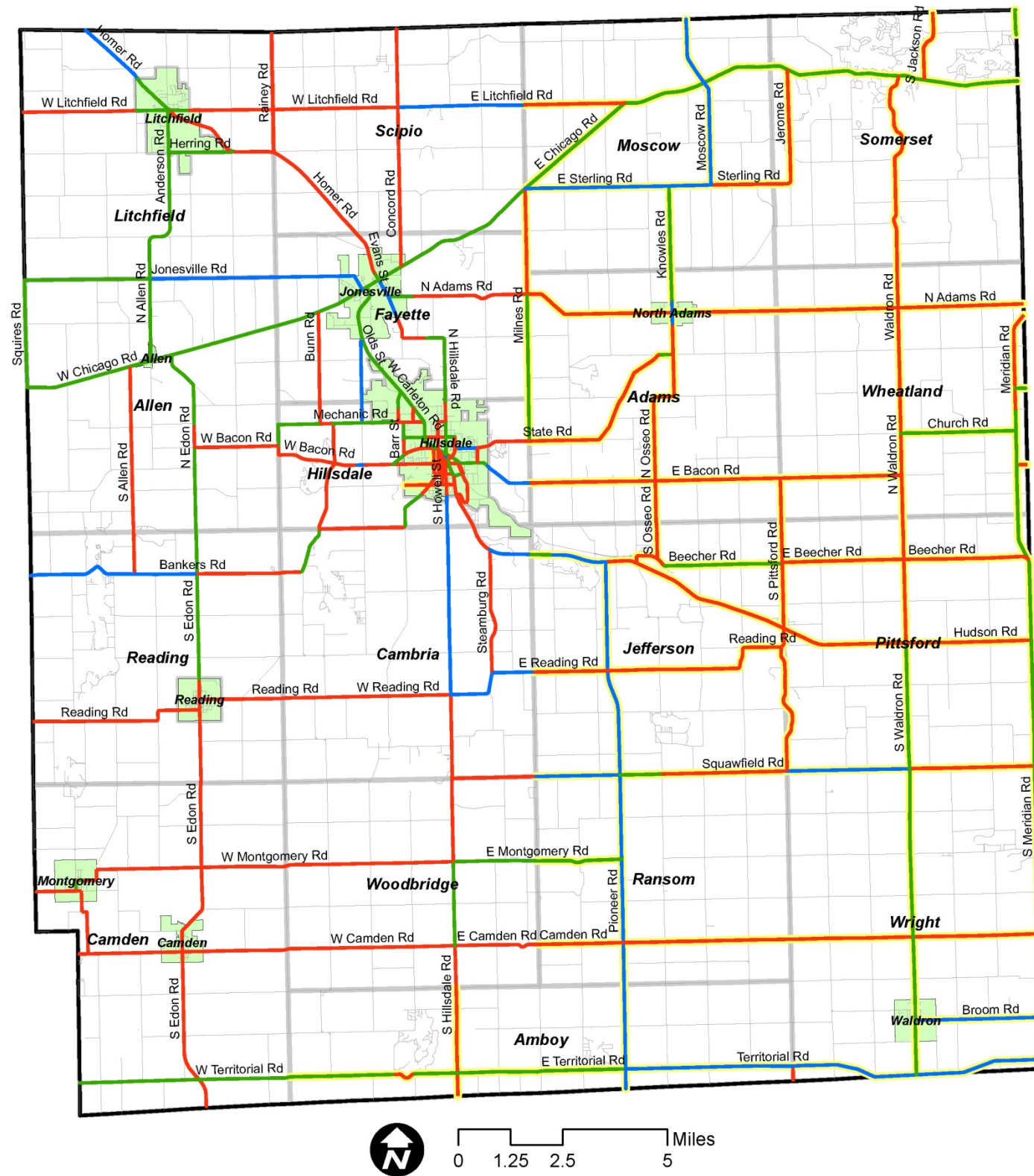
Hillsdale County Ratings History

Table 3 provides the PASER ratings for the federal-aid roadway network from 2006 through the 2015-2016 rating cycle for Hillsdale County:

Table 3
History of Hillsdale County PASER Ratings

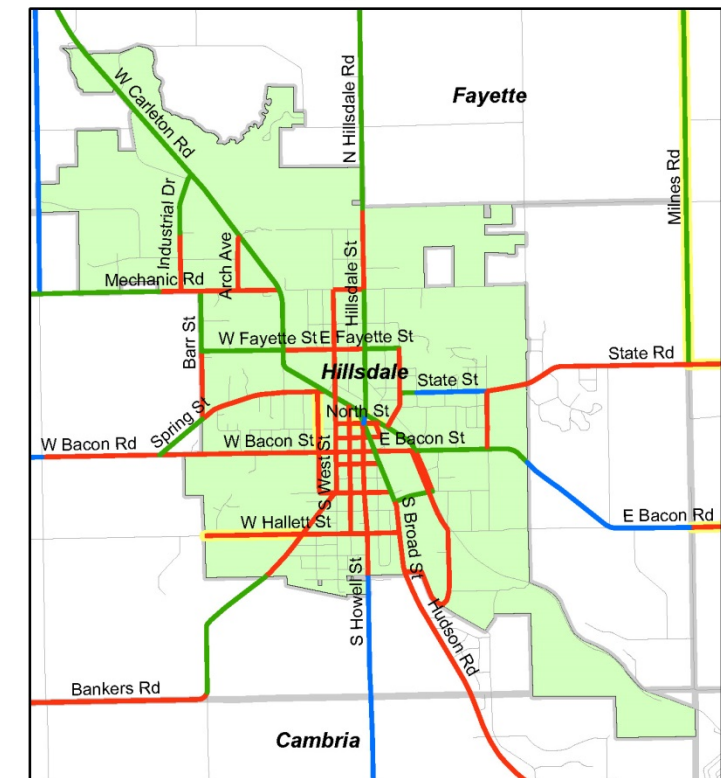
PASER Rating	2006	2007	2008-2009	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
8-10	26.1%	15.6%	40.0%	20.0%	19.7%	19.4%	15.4%	11.2%	16.2%
5-7	61.4%	31.2%	28.1%	54.6%	52.1%	36.5%	38.1%	32.2%	29.1%
1-4	12.5%	53.2%	31.9%	25.4%	28.2%	44.1%	46.5%	56.6%	54.7%





Hillsdale County 2015 - 2016 Asset Management (PASER) Surface Condition Ratings

- 1 - 4 Reconstruction Recommended
- 5 - 7 Preventative Maintenance Recommended
- 8 - 10 No Maintenance Needed
- 2016 Ratings



0 0.5 1 2 Miles

Source: 2015 & 2016 Asset Management Surveys

Region 2
Planning Commission
Serving Hillsdale, Jackson and Lenawee Counties

Map Created: November 2016

Jackson County

2015 Asset Management Team	2016 Asset Management Team
<div><div></div><div>Rick Jenkins, MDOT University Region</div></div> <div><div></div><div>Dan Valdez, Jackson DOT</div></div> <div><div></div><div>Susan Richardson, R2PC</div></div>	<div><div></div><div>Scott Walter, MDOT University Region</div></div> <div><div></div><div>Dan Valdez, Jackson DOT</div></div> <div><div></div><div>Jon Dowling, City of Jackson</div></div> <div><div></div><div>Aaron Dawson, R2PC</div></div>
Survey Dates: September 14-16, 2015	Survey Dates: 9/26/16, 9/27/16, 10/21/16

PASER (Pavement Surface Evaluation and Rating) ratings were gathered during the 2015 reporting period for nearly 301 miles of Jackson County roadways. In 2016, over 354 miles of roadway were rated in the northern half of the county, including the City of Jackson. (Map 2).

The surveys reveal that of the federal-aid roadways:

Table 4
2015-2016 Jackson County PASER Ratings

PASER Rating	2015		2016		2015-2016	
	Miles	Ratio	Miles	Ratio	Miles	Ratio
10	1.8	0.6%	3.1	0.9%	4.9	0.7%
9	26.9	8.9%	17.6	4.9%	44.5	6.8%
8	37.0	12.3%	14.9	4.2%	51.8	7.9%
7	56.7	18.8%	45.3	12.8%	102.0	15.5%
6	36.4	12.1%	110.0	31.0%	146.4	22.3%
5	28.7	9.5%	78.2	22.0%	106.9	16.3%
4	44.8	14.9%	50.6	14.3%	95.4	14.5%
3	55.0	18.3%	30.0	8.5%	85.0	13.0%
2	13.6	4.5%	5.2	1.5%	18.8	2.9%
1	0.0	0.6%	0.0	0.0%	0.0	0.0%
Total	300.9	100.0%	354.7	100.0%	655.7	100.0%

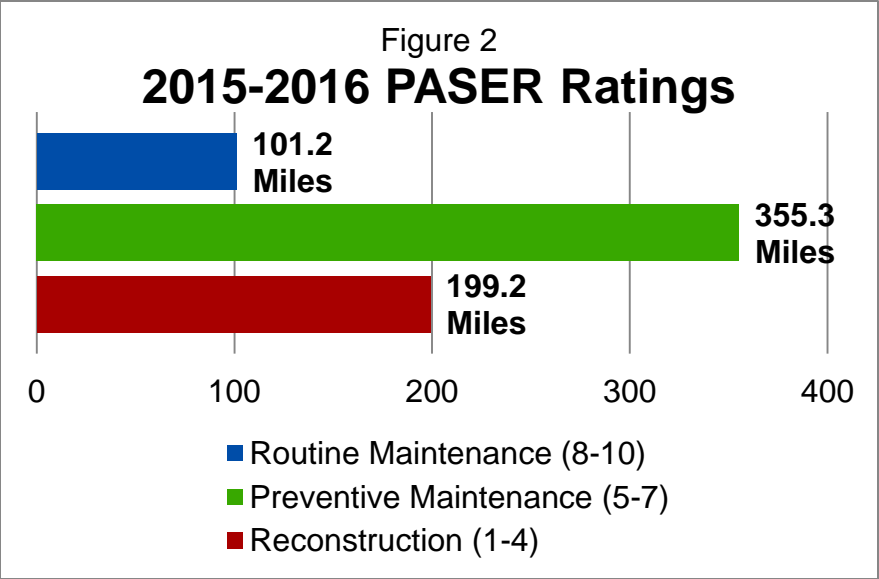
15.4% are in very good or excellent condition.
54.2% are in fair or good condition.
30.4% are in poor or very poor condition or have failed.
Please see Table 4 and Figure 2 for more detail.

The federal-aid roadway network can be divided into five different types:

State trunkline (i.e., highways) comprise 34.8% of the federal aid-roadway network.

24.8% are in very good or excellent condition. **66.8%** are in fair or good condition. And **8.4%** of state highways are in poor or very poor condition or have failed.

- County primary roads** comprise 58.1% of the federal-aid roadway network. **9.7%** are in very good or excellent condition. **47.0%** are in fair or good condition. **43.3%** are in poor or very poor condition or have failed.
- Local county roads** did not comprise any of the ratings for the 2015-2016 collection years.
- Major streets** in cities and villages comprise 7.1% of the federal-aid roadway network. **16.6%** are in very good or excellent condition. **51.0%** are in fair or good condition. **32.4%** are in poor or very poor condition or have failed.
- Minor streets** in cities and villages did not comprise any of the ratings for the 2015-2016 collection years.

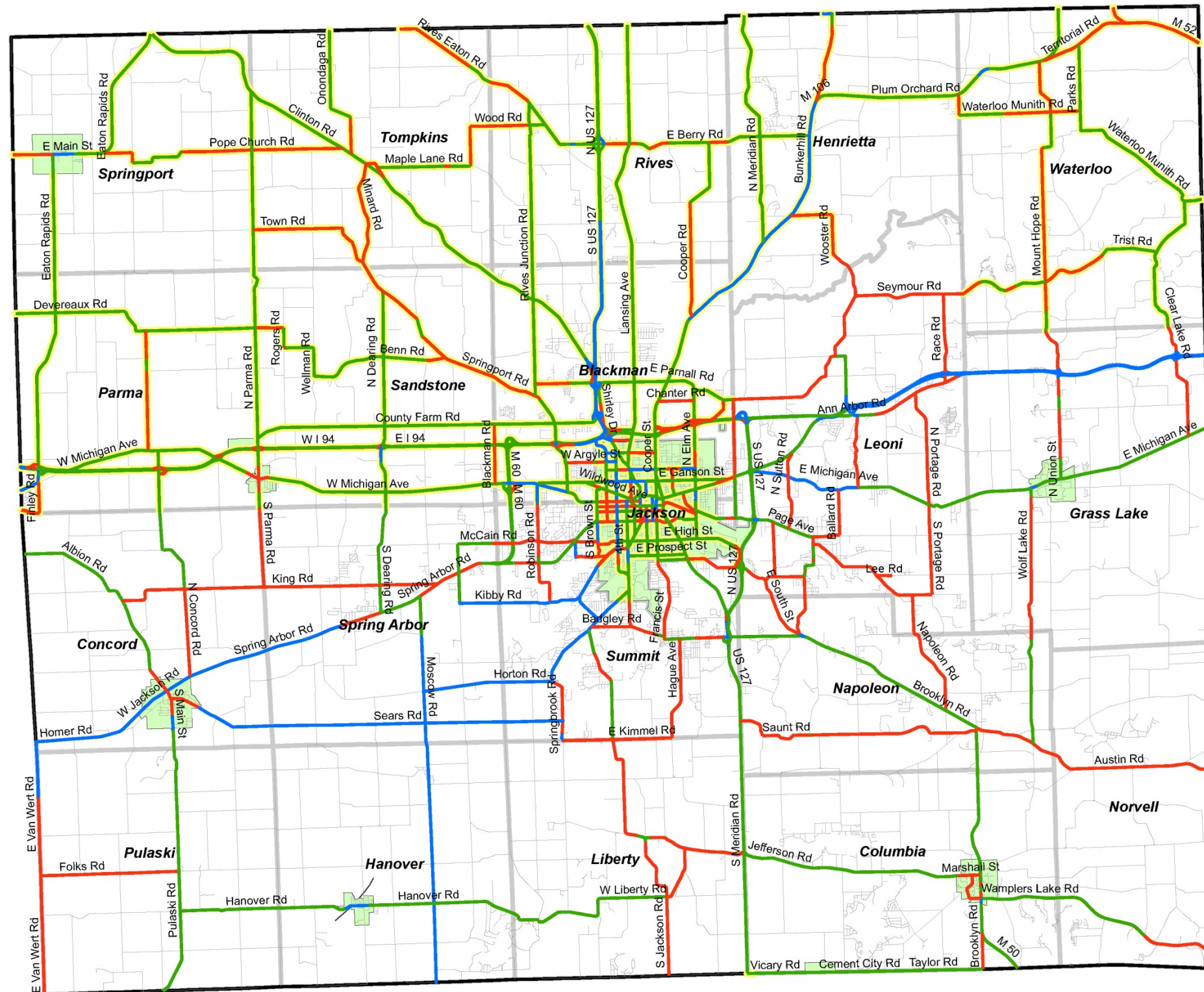


Jackson County Ratings History

Table 5 provides the PASER ratings for the federal-aid roadway network from 2006 through the 2015-2016 rating cycle for Jackson County.

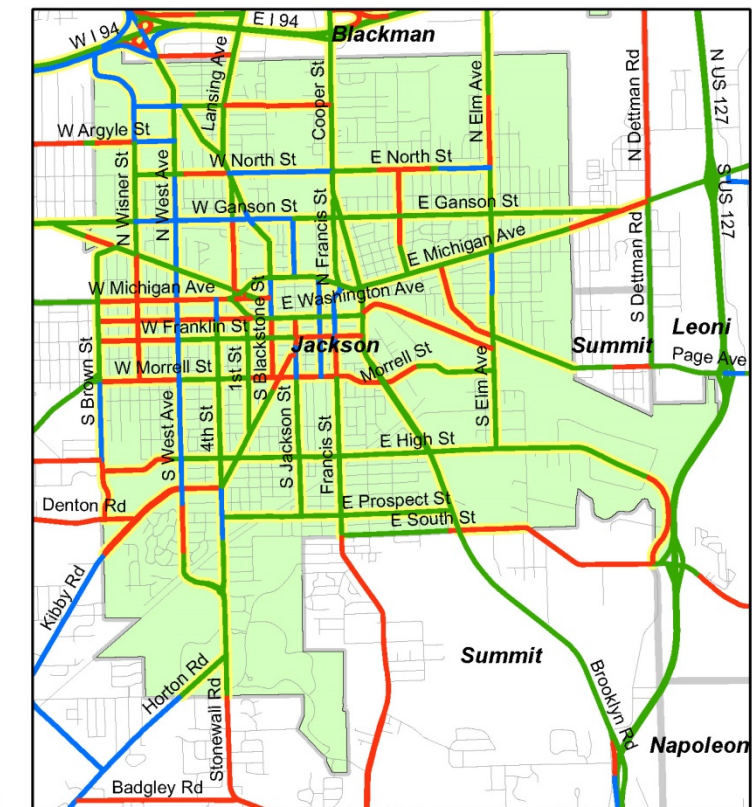
Table 5
History of Jackson County PASER Ratings

PASER Rating	2006	2007	2008-2009	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
8-10	32.6%	31.7%	19.7%	22.1%	15.2%	17.4%	18.4%	16.3%	15.4%
5-7	65.4%	65.2%	57.4%	59.1%	68.1%	59.0%	37.4%	39.1%	54.2%
1-4	2.0%	3.1%	22.9%	18.8%	16.7%	23.6%	44.2%	44.6%	30.4%



Jackson County 2015 - 2016 Asset Management (PASER) Surface Condition Ratings

- 1 - 4 Reconstruction Recommended
- 5 - 7 Preventative Maintenance Recommended
- 8 - 10 No Maintenance Needed
- 2016 Ratings



Source: 2015 & 2016 Asset Management Surveys



Map Created: November 2016

Lenawee County

2015 Asset Management Team	2016 Asset Management Team
<div><div></div><div>Rick Jenkins, MDOT University Region</div></div> <div><div></div><div>Randy Richard, Lenawee CRC</div></div> <div><div></div><div>Susan Richardson, R2PC</div></div>	<div><div></div><div>Laurent Fournier, MDOT University Reg.</div></div> <div><div></div><div>Pete Greenman, Lenawee CRC</div></div> <div><div></div><div>Aaron Dawson, R2PC</div></div>
Survey Dates: 9/24/15; 10/12/15; 10/14/15	Survey Dates: 10/17/16, 10/18/16

PASER (Pavement Surface Evaluation and Rating) ratings were gathered during the 2015 reporting period for more than 290 miles of northern Lenawee County roadways. Over 256 miles of southern Lenawee County were rated in 2016, including Adrian. (Map 3).

Table 6
2015-2016 Lenawee County PASER Ratings

PASER Rating	2015		2016		2015-2016	
	Miles	Ratio	Miles	Ratio	Miles	Ratio
10	5.8	2.0%	0.0	0.0%	5.8	1.1%
9	29.9	10.3%	13.3	5.2%	43.2	7.9%
8	23.1	8.0%	27.2	10.6%	50.4	9.2%
7	50.2	17.3%	12.3	4.8%	62.6	11.4%
6	34.6	11.9%	71.4	27.8%	106.0	19.4%
5	40.6	14.0%	31.0	12.1%	71.6	13.1%
4	46.2	15.9%	36.7	14.3%	82.9	15.2%
3	35.8	12.3%	42.2	16.4%	77.9	14.2%
2	22.0	7.6%	22.6	8.8%	44.5	8.1%
1	2.2	0.8%	0.0	0.0%	2.2	0.4%
Total	290.3	100.0%	256.8	100.0%	547.1	100.0%

The surveys reveal of the federal-aid roads:

18.2% are in very good or excellent condition.

43.9% are in fair or good condition.

37.9% are in poor or very poor condition or have failed.

Please see Table 6 and Figure 3 for more detail.

The federal-aid roadway network can be divided into five different types:

State trunkline (i.e., highways) comprise 29.3% of the federal aid-roadway network.

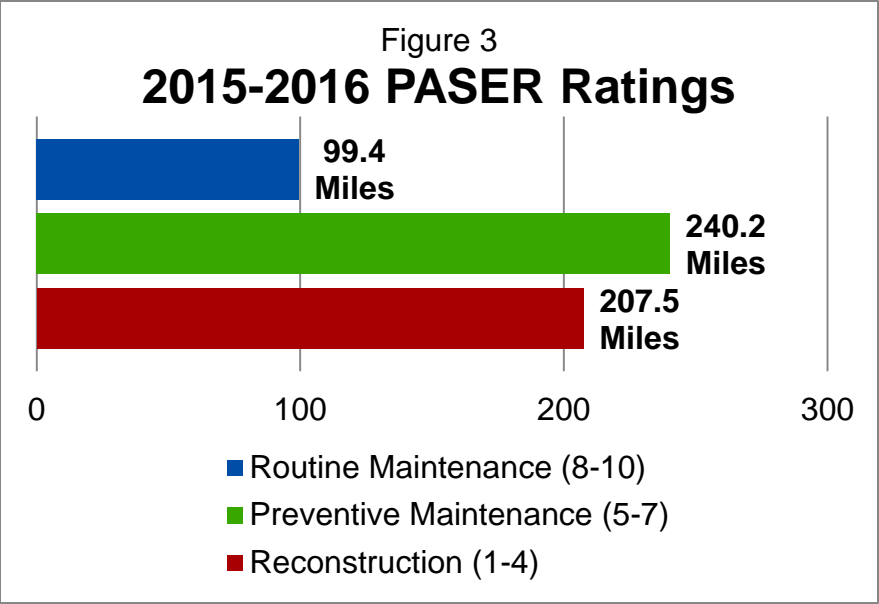
18.3% are in very good or excellent condition. **54.0%** are in fair or good condition. Only **27.7%** are in poor or very poor condition or have failed.

County primary roads comprise 59.6% of the federal-aid roadway network. **17.0%** are in very good or excellent condition. **43.0%** are in fair or good condition. **40.0%** are in poor or very poor condition or have failed.

Local county roads comprise 6.3 miles of the federal-aid roadway network. **35.1%** are in very good or excellent condition. **24.1%** are in fair or good condition. **40.8%** of local roads are in poor or very poor condition or have failed.

Major streets in cities and villages comprise 9.7% of the federal-aid roadway network. **22.6%** are in very good or excellent condition. **22.5%** are in fair or good condition. **54.9%** are in poor or very poor condition or have failed.

Minor streets in cities and villages comprise 1.4 miles of the federal-aid roadway network. **27.8%** are in very good or excellent condition. **12.5%** are in fair or good condition. **59.7%** are in poor or very poor condition or have failed.

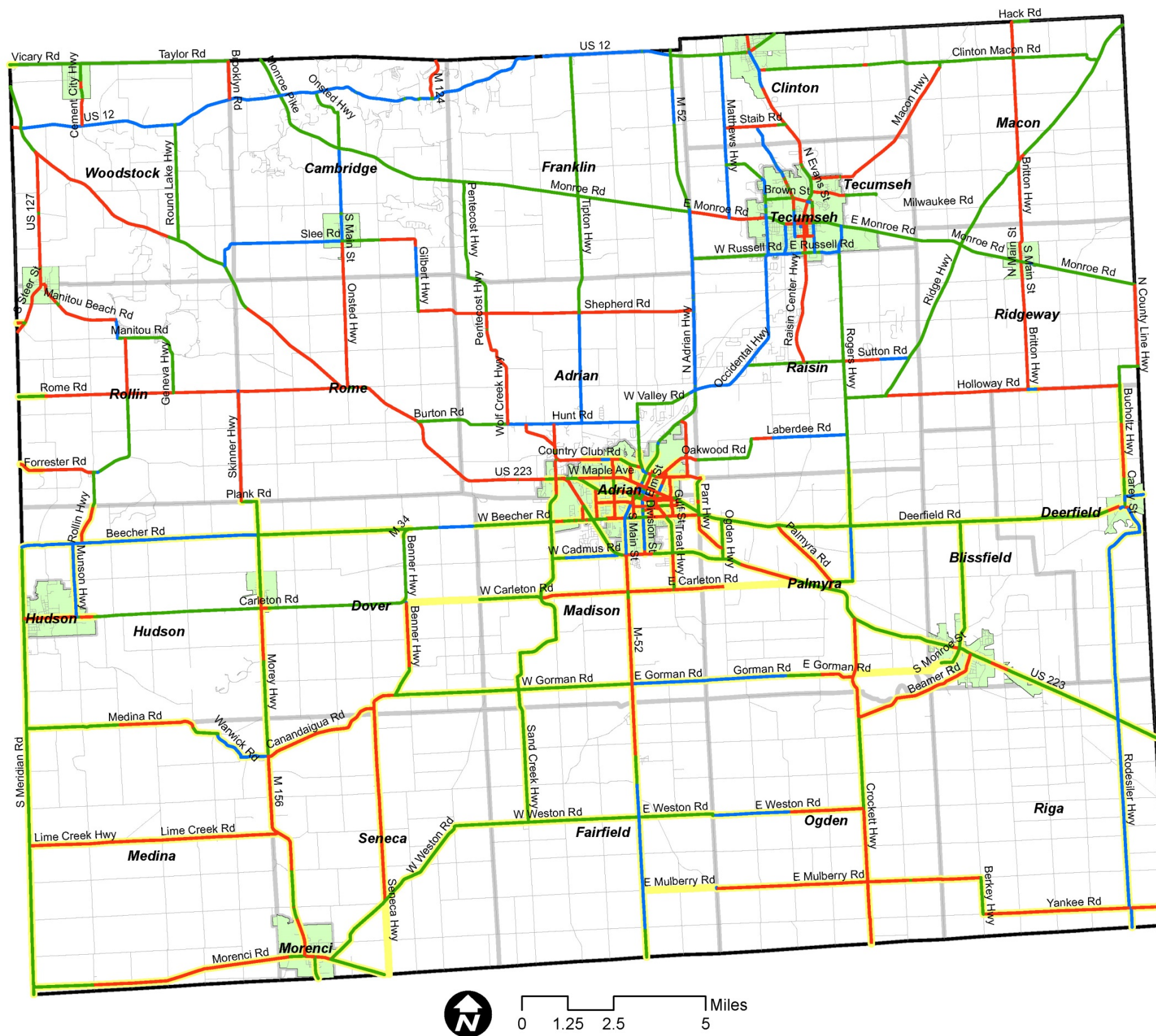


Lenawee County Ratings History

Table 7 provides the PASER ratings for the federal-aid roadway network from 2006 through the 2015-2016 rating cycle for Lenawee County.

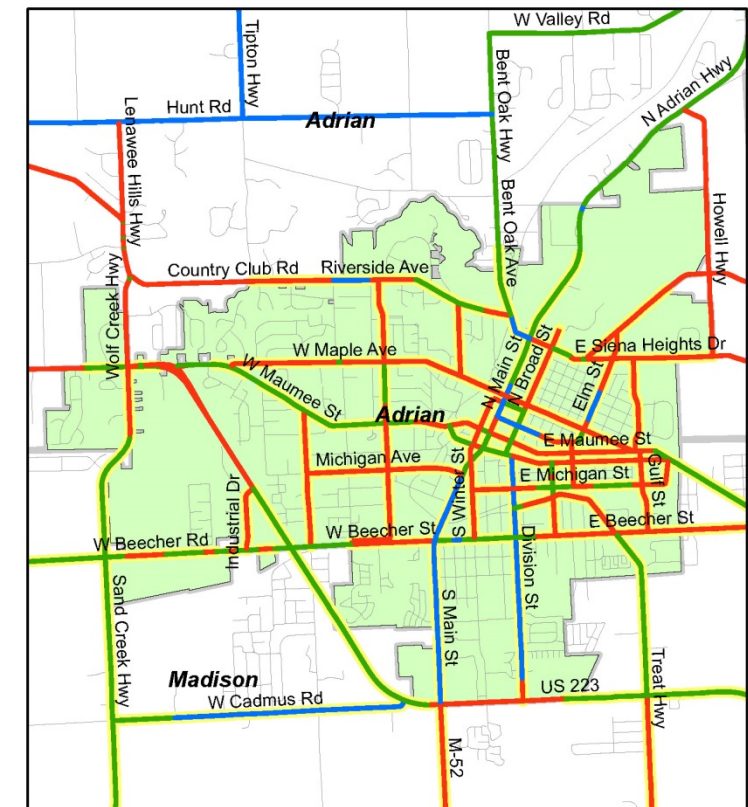
Table 7
History of Lenawee County PASER Ratings

PASER Rating	2006	2007	2008-2009	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
8-10	33.1%	28.9%	28.7%	13.6%	14.7%	20.9%	18.2%	15.5%	18.2%
5-7	60.2%	54.5%	51.5%	55.3%	59.3%	48.4%	45.8%	44.0%	43.9%
1-4	6.7%	16.6%	19.8%	31.1%	26.0%	30.7%	36.0%	40.5%	37.9%



Lenawee County 2015 - 2016 Asset Management (PASER) Surface Condition Ratings

- 1 - 4 Reconstruction Recommended
- 5 - 7 Preventative Maintenance Recommended
- 8 - 10 No Maintenance Needed
- 2016 Ratings



Source: 2015 & 2016 Asset Management Surveys



Map Created: November 2016