

The State of Michigan Transportation



2023 Pavement Condition Report For Cass County, Michigan



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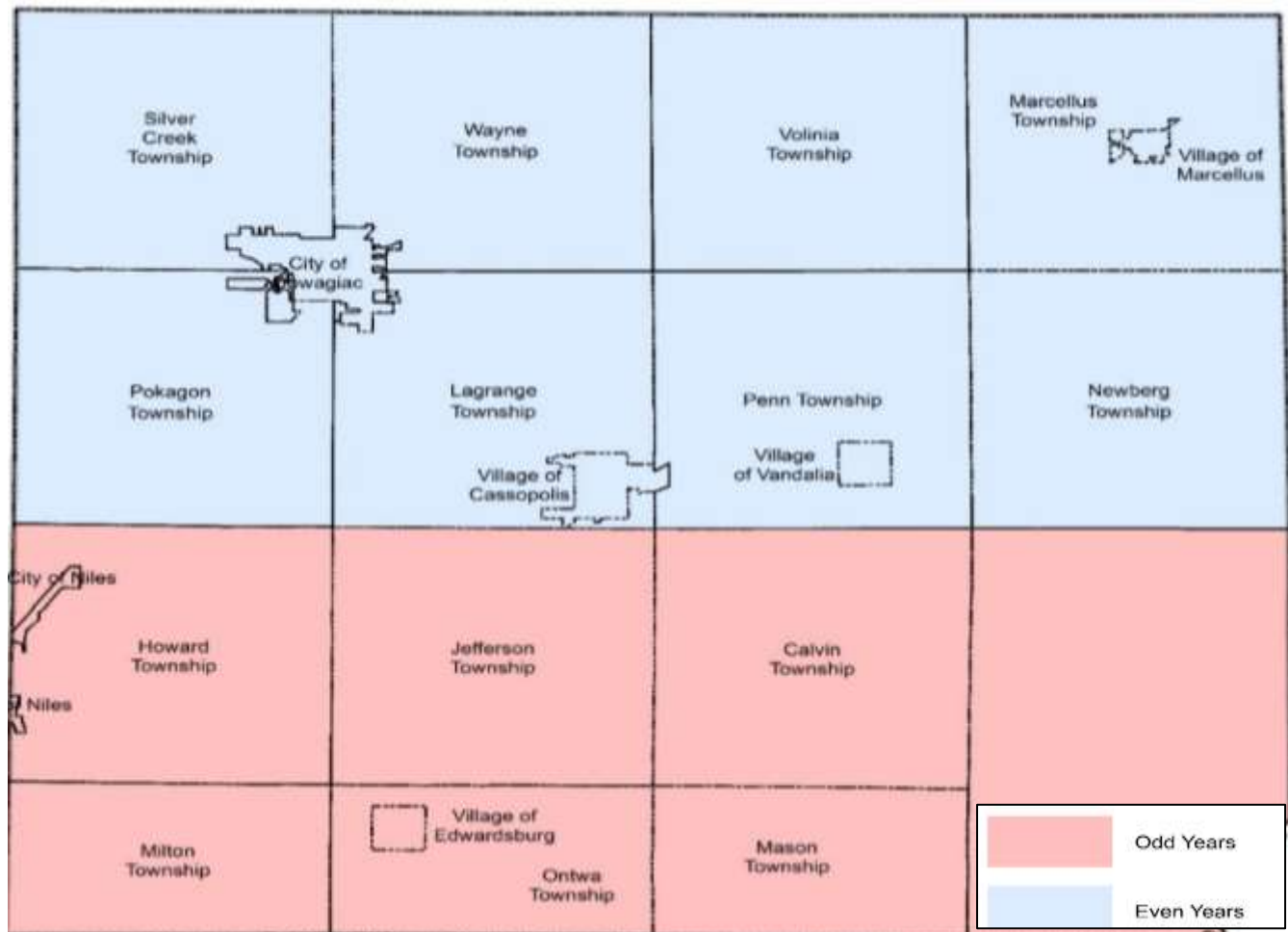
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Overview of the PASER Rating Process and System

Each year, the Southwest Michigan Planning Commission collaborates with the Cass County Road Commission to assess the pavement condition of federal aid eligible roads in Cass County. This evaluation process follows the guidelines established by the Michigan Transportation Asset Management Council (TAMC).

The assessment utilizes the Pavement Surface Evaluation and Rating system (PASER), with TAMC mandating that pavement data be evaluated by teams comprised of a minimum of two certified members. Since 2008, TAMC has required that half of the federal aid eligible roads in each county be rated biennially, with two years of ratings covering 100% of a county's federal aid eligible roads. In response to COVID-19, rating requirements were waived for 2020, with a full assessment conducted in 2021. Half-county ratings resumed in 2022.

In 2023, assessment of the Federal-Aid eligible roads in the southern portion of Cass County took place, while the northern portion was last evaluated in 2022.



Pavement Surface Evaluation and Rating System

The Pavement Surface Evaluation and Rating (PASER) system is a visual survey method for evaluating the condition of roads on a scale of 1 to 10, with 1 being a pavement in a failed condition and 10 being a pavement in excellent condition. Guidelines for rating the pavement surface using the PASER system in Michigan have been developed by the Michigan Transportation Asset Management Council (TAMC). The TAMC groups the 1-to-10 rating scale into three categories (Good 8-10, Fair 5-7, Poor 1-4) based on the type of work that is typically required for each rating grouping (routine maintenance, preventive maintenance, or reconstruction).



Good Condition

PASER Rating 8-10
Requires Routine Maintenance



Fair Condition

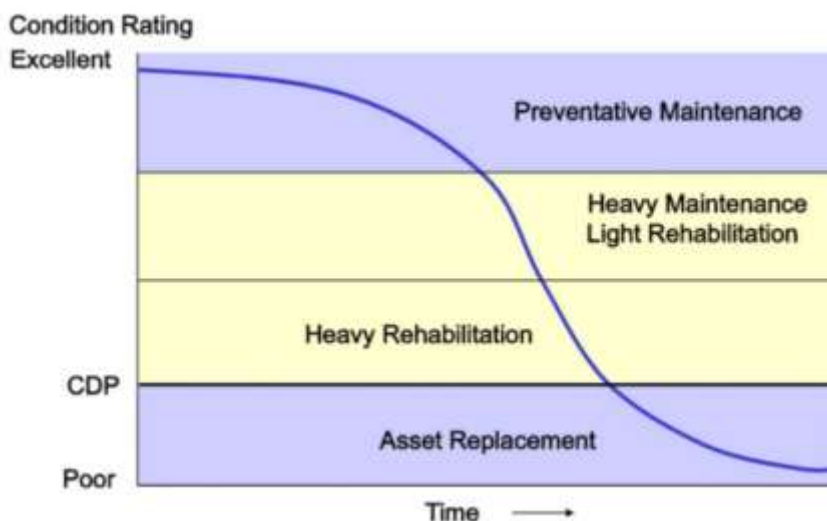
PASER Rating 5-7
Requires Capital Preventative Maintenance



Poor Condition

PASER Rating 1-4
Requires Structural Improvements or Reconstruction

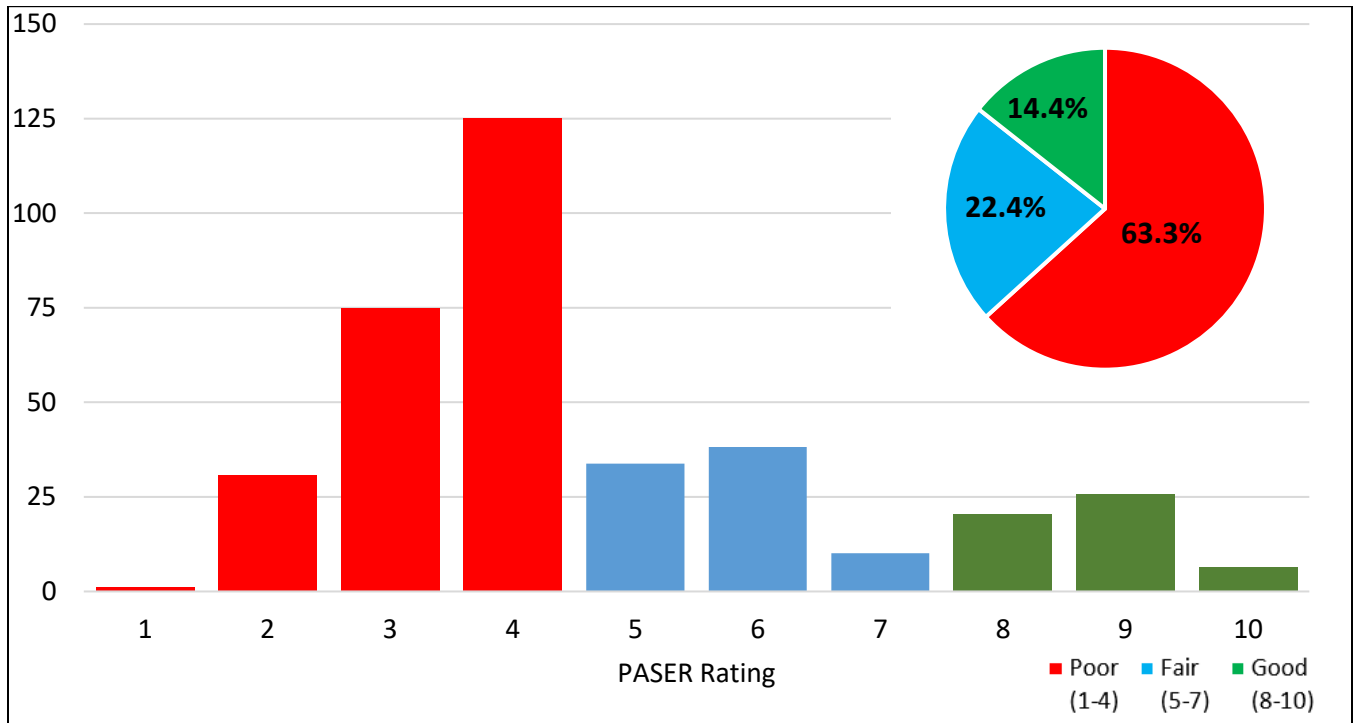
The costs of rehabilitation are exponentially higher than the costs of preventative maintenance, a full reconstruction being the most expensive treatment option. Asset management best practices encourage preventative maintenance to slow decay and reduce costs.



It is necessary to know the pavement condition of roads when planning for future maintenance; this allows for more accurate estimates of the treatment costs and ensures fewer roads reach the critical distress point (CDP) – the point at which maintenance is no longer effective.

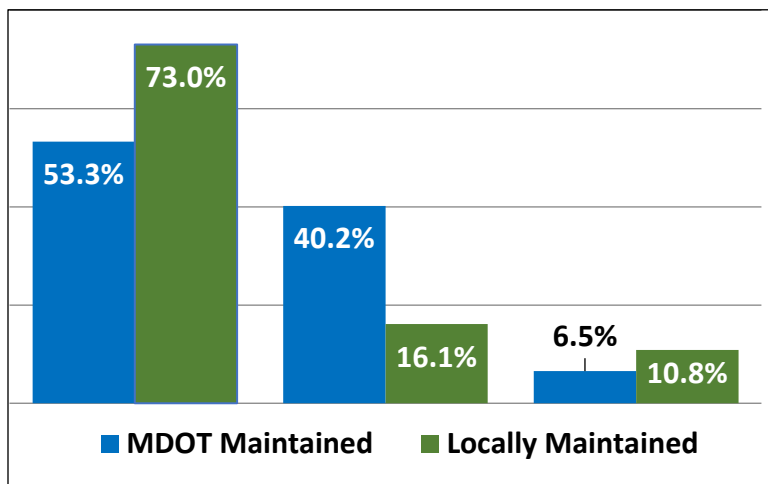
Summary of Cass County 2022/2023 Ratings

2022/2023 All Federal Aid Miles by PASER Rating



The most common PASER was four, which accounts for approximately 36% of all roads. At a rating of four, a structural overlay is recommended, but certain capital preventative maintenance (CPM) treatments can still be performed. Once a road deteriorates below a four, much more costly treatments, such as full reconstruction, are required.

2022/2023 Local and MDOT Maintained Federal Aid Miles by PASER



MDOT: 131 miles		
Good	Fair	Poor
9	52	70

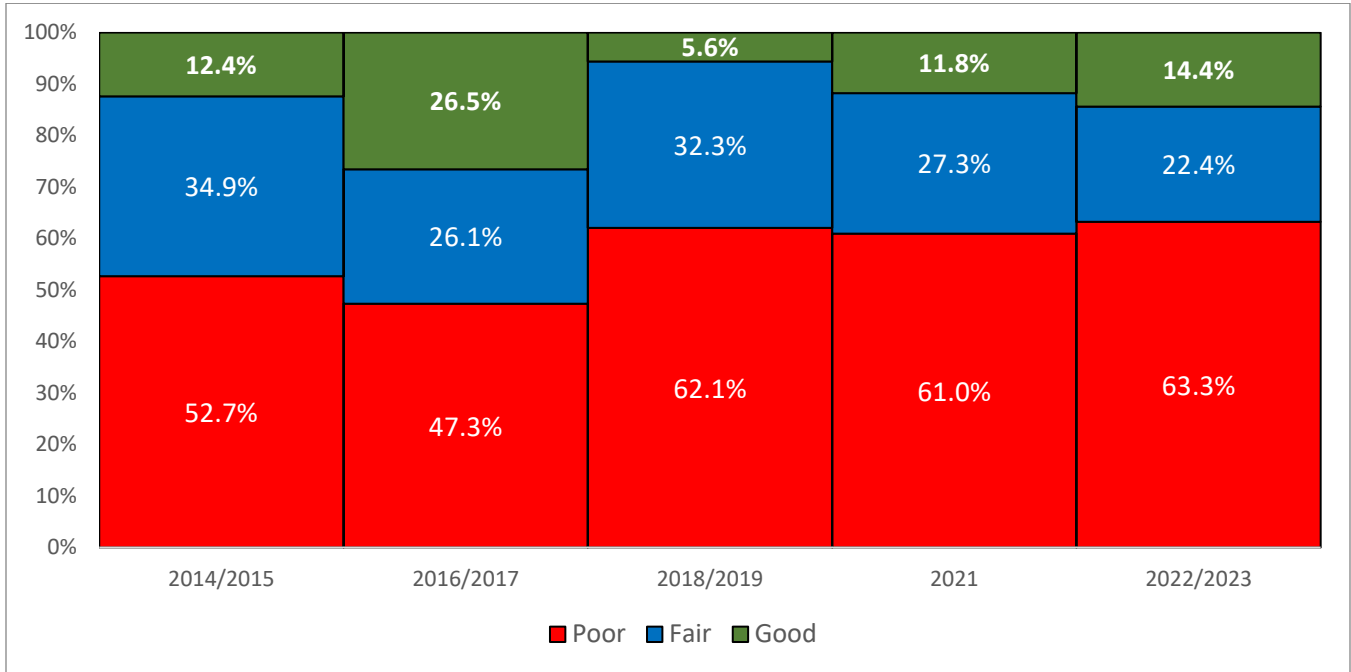
Local: 238 miles		
Good	Fair	Poor
26	38	174

Locally maintained roads are, in general, in worse condition than MDOT maintained roads. This is largely due to federal and state funding being prioritized first for interstate maintenance and then for the other highways and major arterials. These higher traffic roads are primarily maintained by MDOT, compared to the roads classified as minor arterials and collects which are maintained primarily by local road agencies.

Countywide Trends in Pavement Conditions

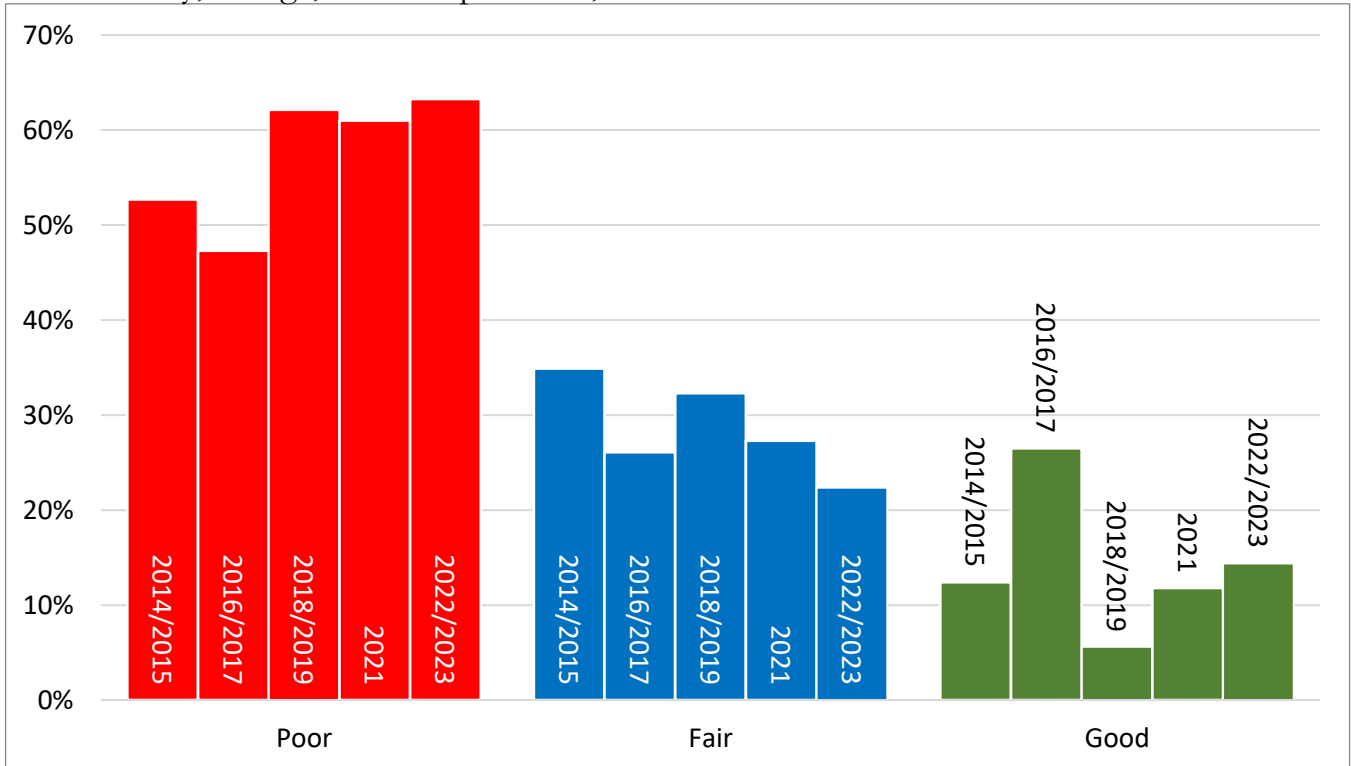
Ten-Year Trend in Countywide PASER Ratings 2014-2023

Includes City, Village, Road Department, and MDOT Maintained Roads



Changes in Good, Fair, and Poor Ratings Over the Last Ten Years

Includes City, Village, Road Department, and MDOT Maintained Roads



Road Miles within Cass County

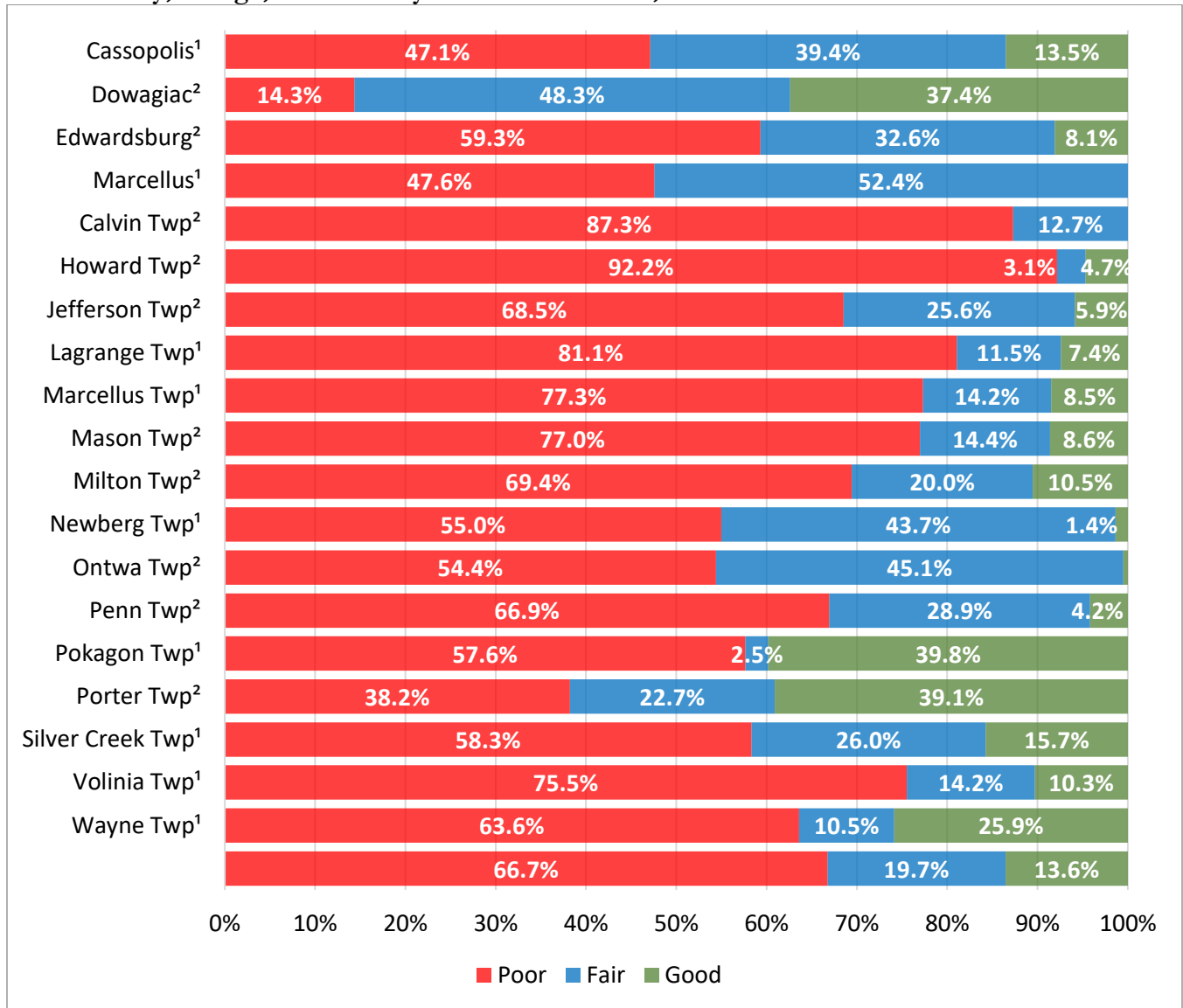
Jurisdiction	Total Miles	Non Federal Aid	Federal Aid		
			Total	Locally Owned	MDOT Owned
City of Dowagiac	42.1	26.7	15.4	12.7	2.7
Village of Cassopolis	15.4	10.8	4.6	1.3	3.4
Village of Edwardsburg	7.9	4.8	3.2	0.9	2.3
Village of Marcellus	7.9	6.3	1.6	0.3	1.3
Village of Vandalia	5.8	4.8	1.0	0.0	1.0
Calvin Twp.	78.5	54.6	23.9	23.9	0.0
Howard Twp.	93.5	60.9	32.6	19.7	13.0
Jefferson Twp.	75.9	46.1	29.8	19.5	10.3
Lagrange Twp.	65.8	39.6	26.2	17.4	8.8
Marcellus Twp.	70.0	49.2	20.8	12.9	7.9
Mason Twp.	50.1	33.2	16.9	8.6	8.3
Milton Twp.	48.6	21.5	27.1	16.3	10.8
Newberg Twp.	79.5	65.8	13.7	1.5	12.2
Ontwa Twp.	62.1	40.2	21.9	13.9	8.0
Penn Twp.	74.9	61.6	13.3	8.4	4.8
Pokagon Twp.	70.7	46.0	24.6	15.7	9.0
Porter Twp.	124.6	95.0	29.6	16.7	12.9
Silver Creek Twp.	84.1	56.1	28.0	14.0	14.0
Volinia Twp.	73.9	56.4	17.5	17.5	0.0
Wayne Twp.	81.4	66.2	15.2	15.2	0.0
Total	1,212.7	845.6	367.1	236.3	130.7

Roads within city and village limits are maintained by the city or village in which they lie, excluding MDOT owned roads. Roads within townships are maintained by the Cass County Road Commission, excluding the MDOT maintained roads. MDOT maintains all Interstates (e.g. I-94), US routes (e.g. US 12), and M-routes (e.g. M-60). Federal Aid roads are classified by the Federal Highway Administration (FHWA) as roads that serve through traffic as opposed to roads that only access properties (similar to, and in many cases the same as, the state designated primary roads). All MDOT maintained roads are classified as federal aid roads.

Summary of Ratings by Jurisdiction

2022/2023 All Federal Aid Road Ratings

Includes City, Village, Cass County Road Commission, and MDOT Maintained Roads

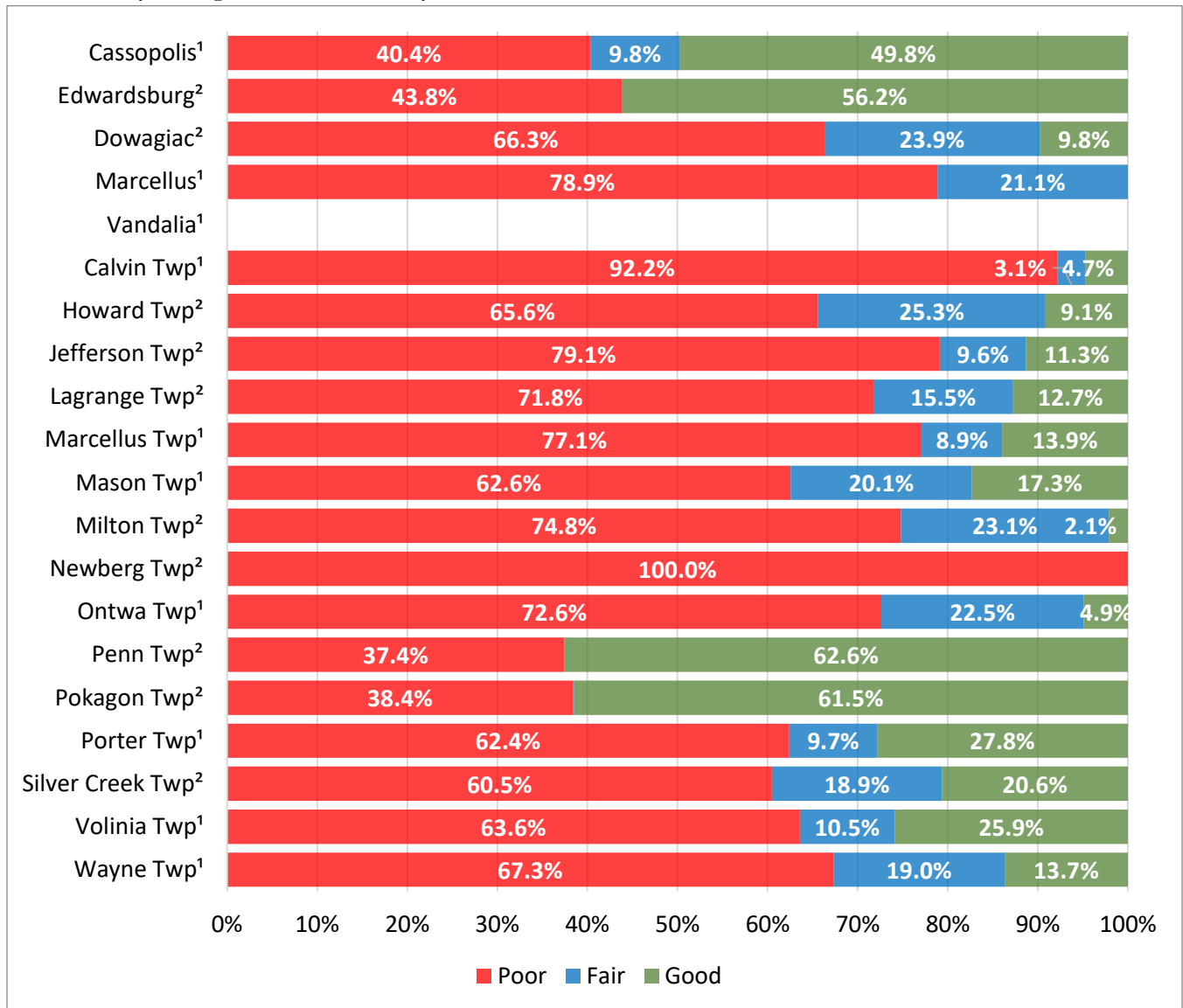


Federal Aid Eligible Roads Miles Rated

¹ Rated in 2022	153.4 miles
² Rated in 2023	213.7 miles
Total rated in 2022 & 2023	367.1 miles

2022/2023 Locally Maintained Federal Aid Road Ratings

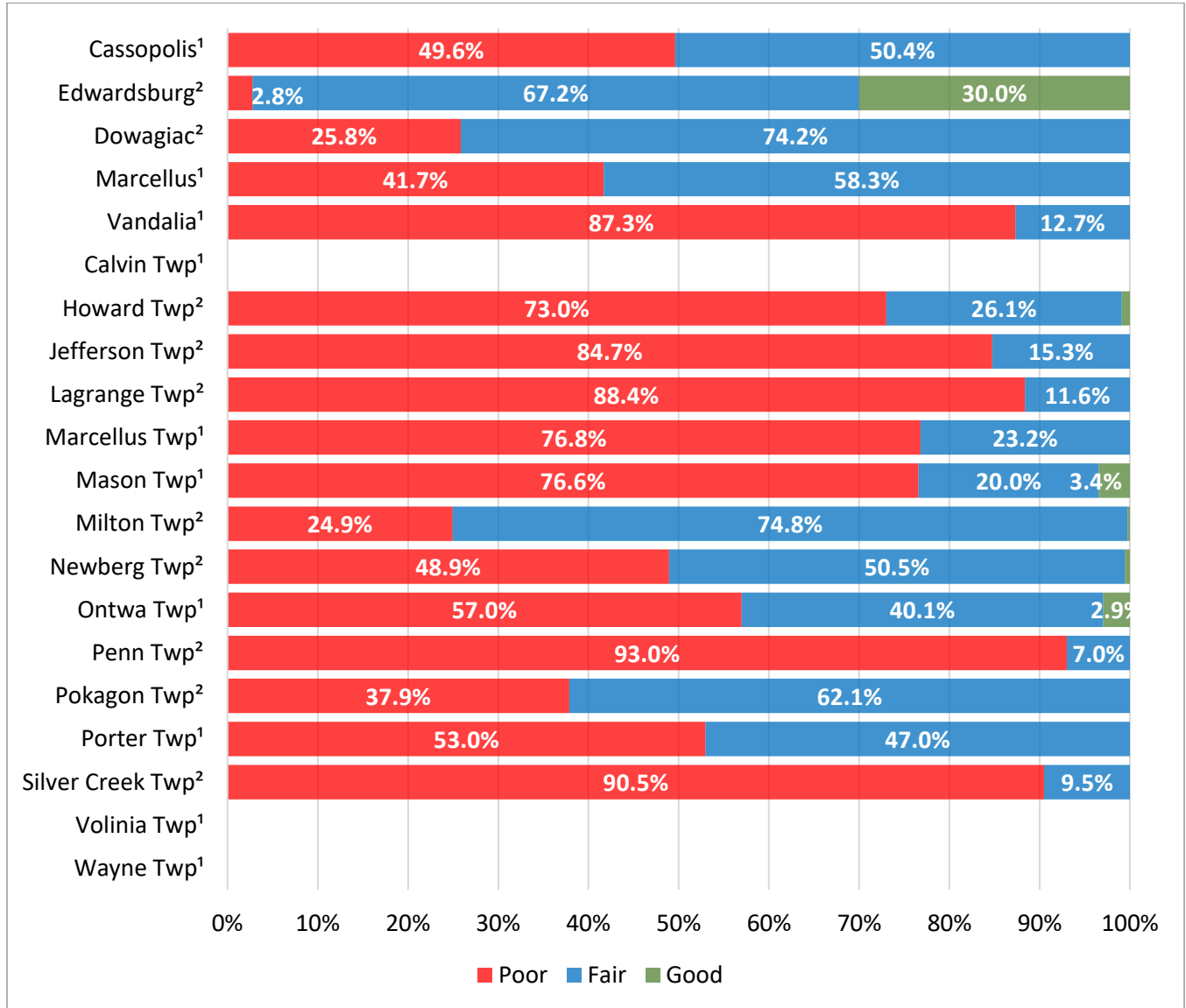
Includes City, Village, and Cass County Road Commission Maintained Roads



Locally Maintained Federal Aid Eligible Roads Miles Rated

¹ Rated in 2022	95.6 miles
² Rated in 2023	140.7 miles
Total rated in 2021 & 2022	236.3 miles

2022/2023 MOT Maintained Federal Aid Road Ratings



MDOT Maintained Federal Aid Eligible Roads Miles Rated

¹ Rated in 2022	56.9 miles
² Rated in 2021	73.8 miles
Total rated in 2021 & 2022	130.7 miles

PASER Asphalt Rating Chart

Surface Rating	Visible Distress *	General Condition/ Treatment Measures
10	None	New construction.
9	None	Recent overlay; like new.
8	<ul style="list-style-type: none"> • No longitudinal cracks except reflection of paving joints. • Occasional transverse cracks, widely spaced (40' or greater). 	Recent sealcoat or new road mix. Little or no maintenance required.
7	<ul style="list-style-type: none"> • Very slight or no raveling, surface shows some traffic wear. • Longitudinal cracks (open 1/4") due to reflection or paving joints. • Transverse cracks (open 1/4") 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	<ul style="list-style-type: none"> • Slight raveling (loss of lines) and traffic wear. • Longitudinal cracks (open 1/4" – 1/2") due to reflection and paving joints. • Transverse cracking (open 1/4" to 1/2") some spaced less than 10 ft. • First sign of block cracking • Slight to moderate flushing or polishing. 	Shows signs of aging, sound structural condition. Could extend life with sealcoat.
5	<ul style="list-style-type: none"> • Moderate to severe raveling (loss of fine and coarse aggregate). • Longitudinal and transverse cracks (open 1/2") show first signs of slight raveling and secondary cracks. • Block cracking up to 50% of surface. • Extensive to severe flushing or polishing. • Some patching or edge wedging in good condition. 	Surface aging, sound structural condition. Needs sealcoat or nonstructural overlay.
4	<ul style="list-style-type: none"> • Severe surface raveling. • Multiple longitudinal and transverse cracking with slight raveling. • Longitudinal cracking in wheel path. • Block cracking (over 50% of surface). • Patching in fair condition. • Slight rutting or distortions (1/2" deep or less). 	Significant aging and first signs of need for strengthening. Would benefit from recycling or overlay.
3	<ul style="list-style-type: none"> • Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion. • Severe block cracking. • Some alligator cracking (less than 25 % of surface). • Patches in fair to poor condition. • Moderate rutting or distortion (1" or 2" deep). • Occasional potholes. 	Needs patching and major overlay or complete recycling.
2	<ul style="list-style-type: none"> • Alligator cracking (over 25 % of surface). • Severe distortions (over 2" deep). • Extensive patching in poor condition. • Potholes. 	Severe deterioration. Needs reconstruction with extensive base repair.
1	<ul style="list-style-type: none"> • Severe distress with extensive loss of surface integrity. 	Failed. Needs total reconstruction.

* Note: Individual pavements will not have all of the types of distress listed for any particular rating. They may have only one or two types.

PASER Concrete Rating Chart

Surface Rating	Visible Distress*	General Condition/ Treatment Measures
10	<ul style="list-style-type: none"> None 	New construction.
9	<ul style="list-style-type: none"> Traffic wear in wheel path. Slight map cracking or pop-outs. 	Recent concrete overlay or joint rehabilitation, like new
8	<ul style="list-style-type: none"> Pop-outs, map cracking, or minor surface defects. Slight surface scaling. Partial loss of joint sealant. Isolated meander cracks and cracks at manholes, well-sealed. 	More surface wear or slight defects. Recent asphalt overlay. Little or no maintenance required.
7	<ul style="list-style-type: none"> More extensive surface scaling. Some open joints. Isolated transverse or longitudinal cracks, tight or well-sealed. Some manhole displacement and cracking. First utility patch, in good condition. First noticeable settlement or heave area. 	First sign of transverse cracks (all tight) or utility patch. More extensive surface scaling. Seal open joints and other routine maintenance.
6	<ul style="list-style-type: none"> Moderate scaling in several locations. A few isolated surface spalls. Shallow reinforcement causing cracks. Several corner cracks, tight or well-sealed. Open (1/4" wide) longitudinal or transverse joints and more frequent transverse cracks (some open 1/4"). 	First signs of shallow reinforcement or corner cracking. Needs general joint and crack sealing. Scaled areas could be overlaid.
5	<ul style="list-style-type: none"> Moderate to severe polishing or scaling over 25% of the surface. High reinforcing steel causing surface spalling. Some joints and cracks have begun spalling. First signs of joint or crack faulting (1/4"). Multiple corner cracks with broken pieces. Moderate settlement or frost heave areas. 	First signs of joint or crack spalling or faulting. Grind to repair surface defects. Some partial depth joint repairs needed.
4	<ul style="list-style-type: none"> Severe polishing, scaling, map cracking or spalling, > 50% of area Joints and cracks show moderate to severe spalling. Pumping and faulting of joints (1/2") with fair ride. Several slabs have multiple transverse or meander cracks with moderate spalling. Spalled area broken into several pieces. Corner cracks with missing pieces or patches 	Needs some full depth repairs, grinding, and/or asphalt overlay to correct surface defects.
3	<ul style="list-style-type: none"> Most joints and cracks are open, with multiple parallel cracks, severe spalling or faulting. D-cracking is evident. Severe faulting (1") giving poor ride. Extensive patching in fair to poor condition. Many transverse and meander cracks, open and severely spalled. 	Needs extensive full depth patching plus some full slab replacement.
2	<ul style="list-style-type: none"> Extensive slab cracking, severely spalled and patched. Joints failed. Patching in very poor condition. Severe and extensive settlements or front heaves. 	Recycle and/or rebuild pavement.
1	<ul style="list-style-type: none"> Restricted speed. Extensive potholes. Almost total loss of pavement integrity. 	Total reconstruction.

* Note: Individual pavements will not have all of the types of distress listed for any particular rating. They may have only one or two types.