

The State of Michigan Transportation



2023 Pavement Condition Report For Berrien County, Michigan



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For more information visit: www.michigan.gov/tamc

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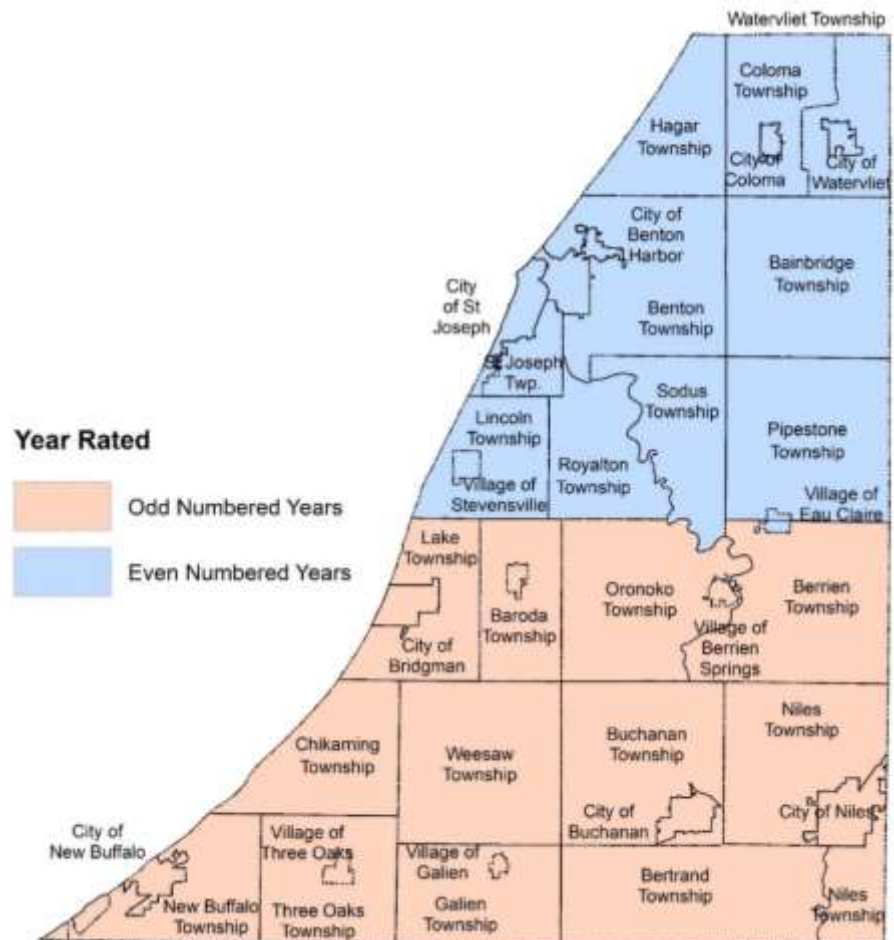
Overview of the PASER Rating Process and System

The Southwest Michigan Planning Commission has partnered with the Berrien County Road Department (BCRD), and the Michigan Department of Transportation (MDOT) to collect pavement condition data on Federal-Aid (FA) eligible roads since 2003. Staff members from each of the agencies are trained and certified annually to use the Pavement Surface Evaluation and Rating system (PASER) by the Transportation Asset Management Council (TAMC).

From 2008-2019 TAMC required ratings for half of each county’s federal aid eligible roads. Due to COVID-19, TAMC dropped rating requirements for 2020. In December 2020, TAMC approved changes to the requirements for the 2021 Federal Aid (FA) PASER data collection on a temporary basis. These changes to the 2021 data collection season and related policy included:

- Moving from 3-member rating teams to 2-member rating teams.
- Modifications to training requirements to help address cancellations of on-site training and certification opportunities due to the Covid-19 pandemic.
- Teams were required to collect 100% of the FA system in 2021 with budget allocations from FY20 and FY21.

In 2022, the requirement to rate half of the county’s federal aid eligible road each year resumed. To show the Pavement condition for the full county requires using ratings from two consecutive years (e. x. 2013 & 2014). Due to no ratings for 2020, the ratings on the southern portion of the county from 2019 will be pared with the 2021 ratings on the northern half of the county, and the Northern ratings from 2022 will be paired with the ratings on the northern half from 2023.



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

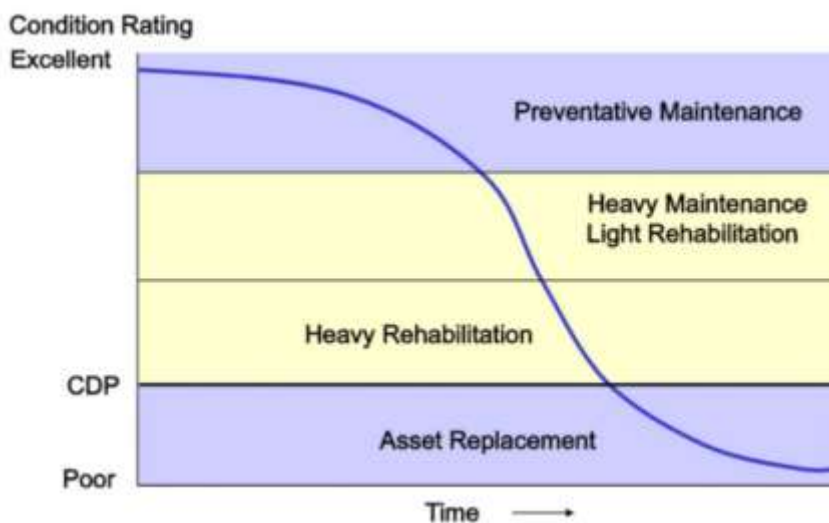
PASER Rating 5-7
Requires Capital Preventative Maintenance



Poor Condition

PASER Rating 1-4
Requires Structural Improvements or Reconstruction

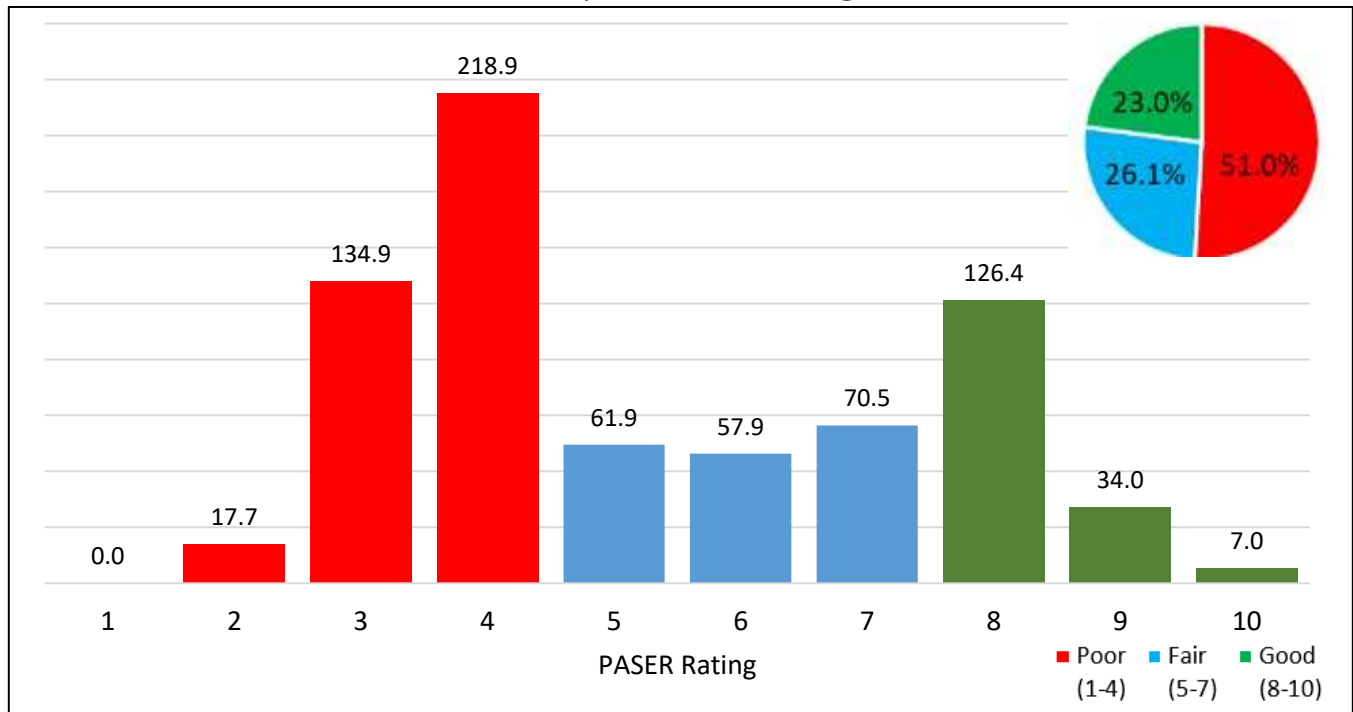
The costs of rehabilitation are exponentially higher than the costs of preventative maintenance, a full reconstruction being the most expensive treatment option. Asset management best practices encourage preventative maintenance to slow decay and reduce costs.



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.

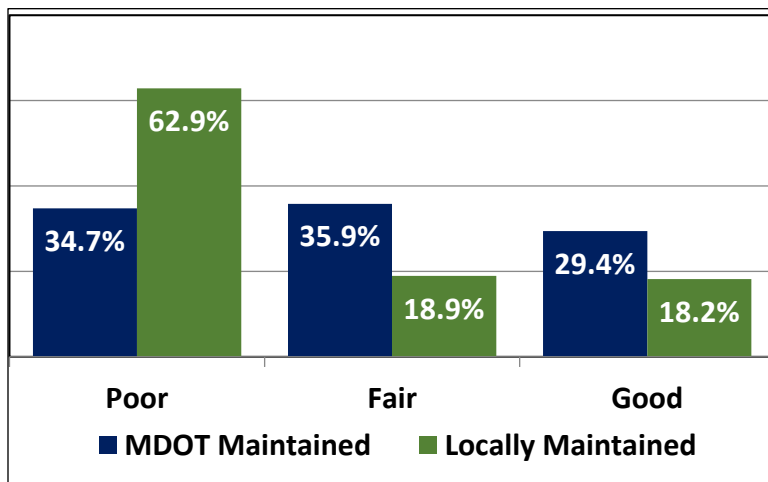
Summary of Berrien County 2022/2023 Ratings

2022/2023 All Federal Aid Miles by PASER Rating



The most common PASER was four, which accounts for approximately 30% 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: 309 miles		
Good	Fair	Poor
90.8	110.6	107.2

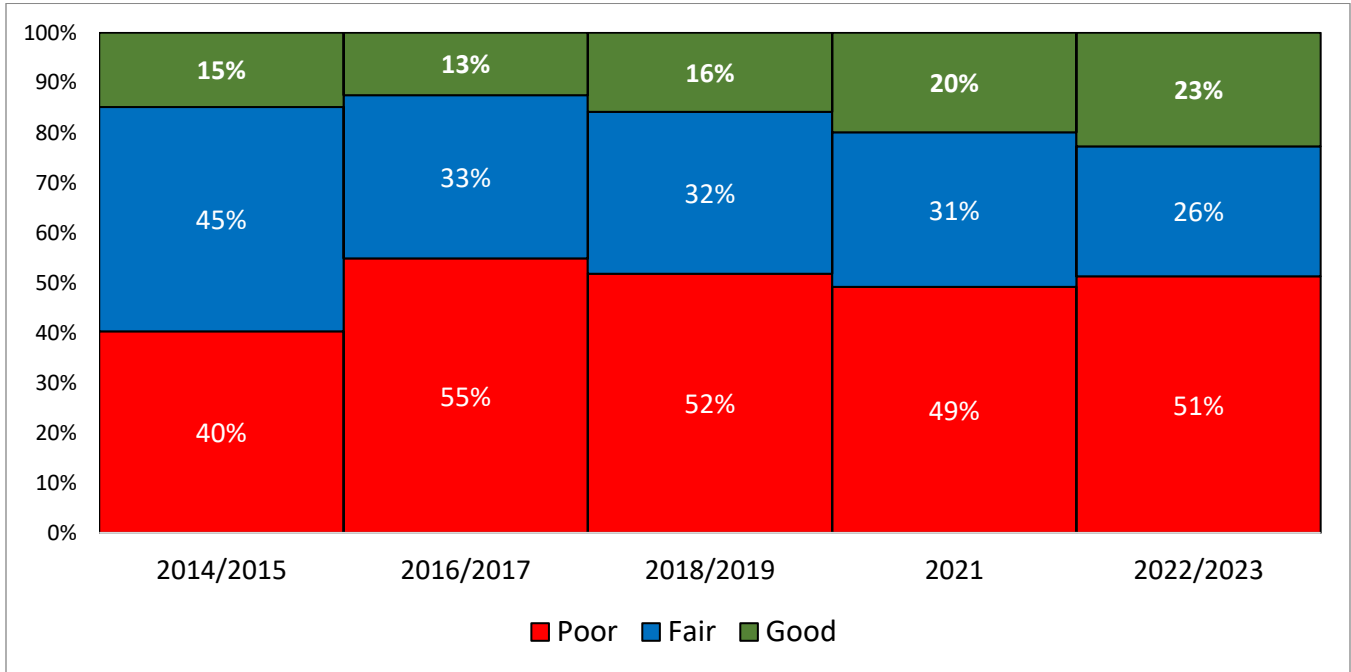
Local: 420 miles		
Good	Fair	Poor
76.5	79.6	264.2

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

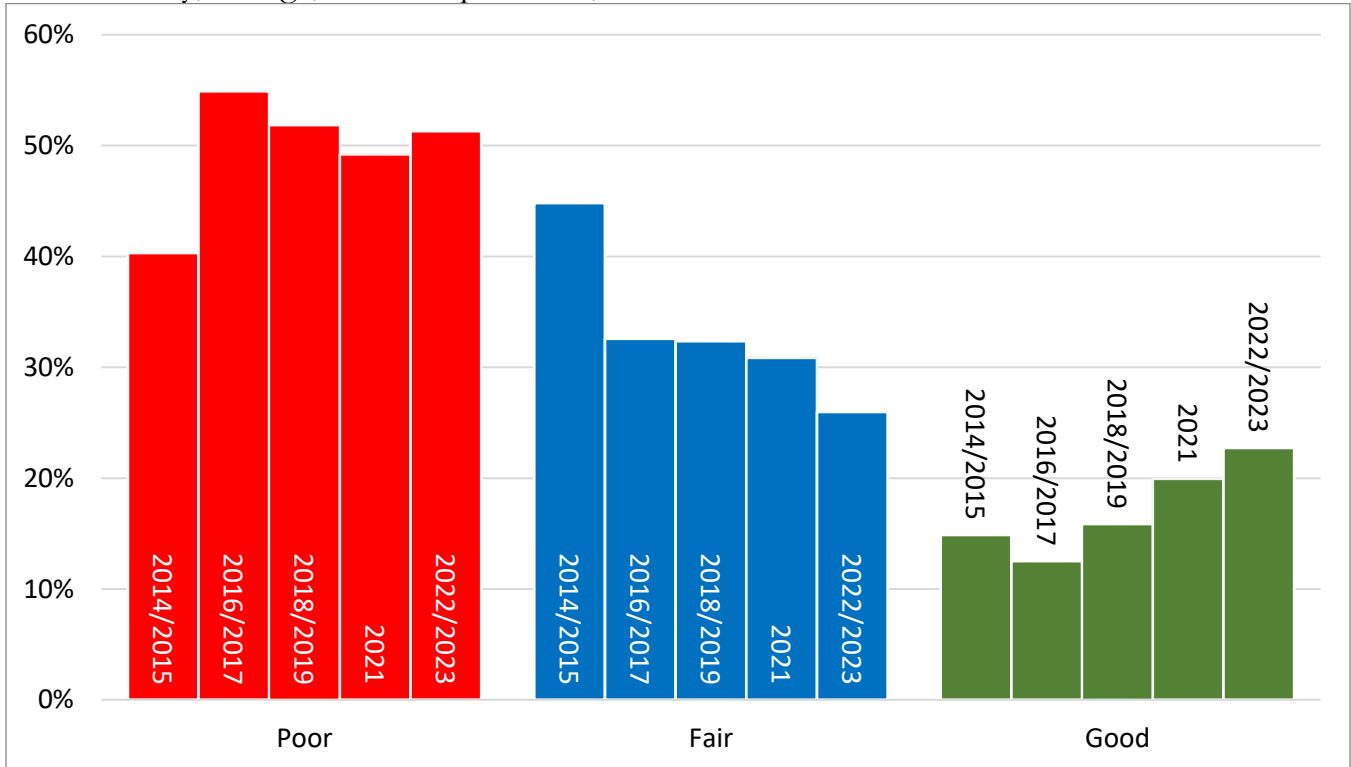
Ten-Year Trend in Countywide PASER Ratings 2014-2023

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



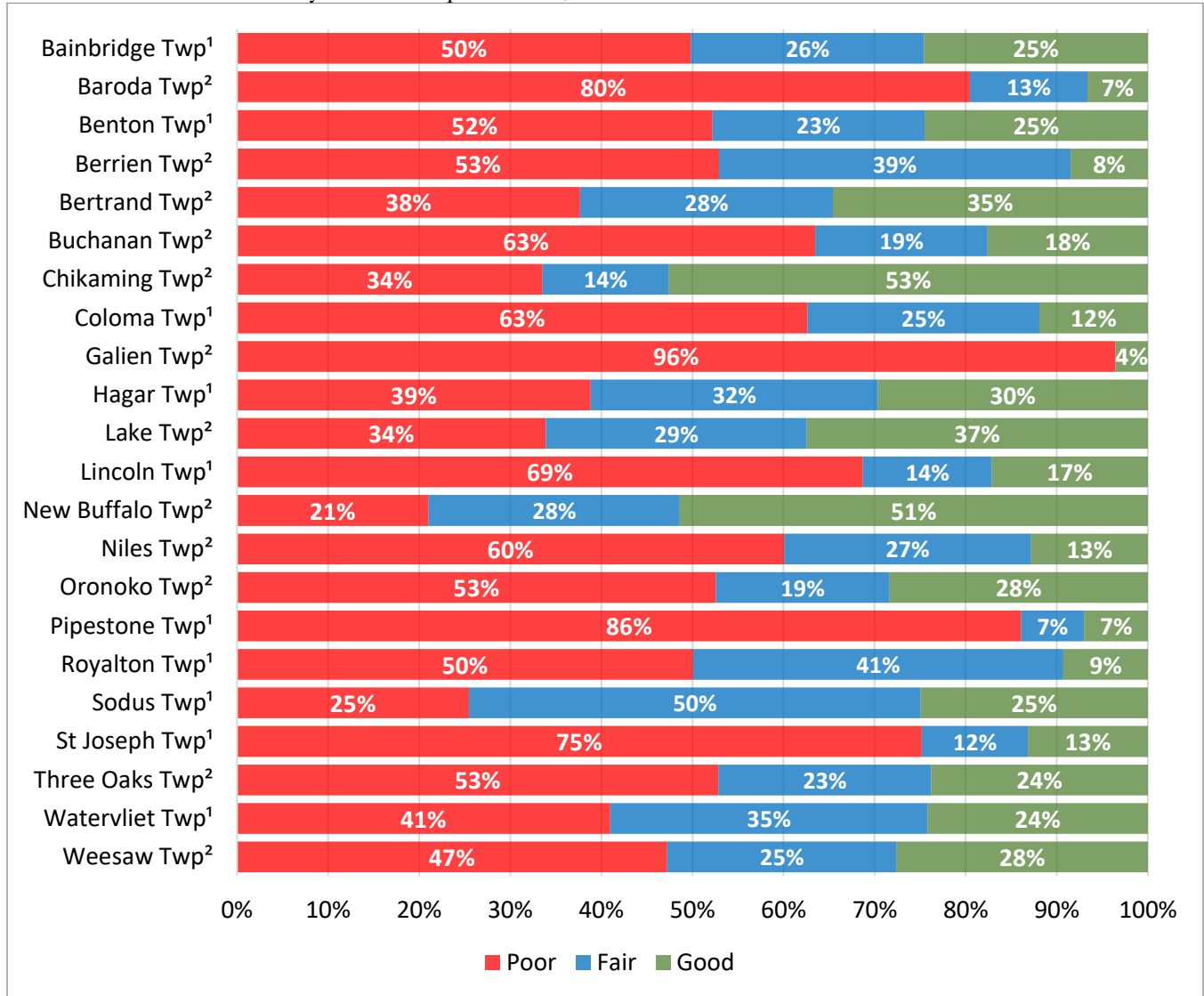
Road Miles within Berrien County

Jurisdiction	Total Miles	Non Federal Aid	Federal Aid		
			Total	Locally Owned	MDOT Owned
Village of Baroda	5.5	4.9	0.6	0.6	0.0
City of Benton Harbor	59.7	41.7	18.0	15.5	2.4
Village of Berrien Springs	12.3	9.0	3.3	2.3	1.0
City of Bridgman	18.7	10.6	8.1	3.8	4.4
City of Buchanan	28.7	22.6	6.1	6.1	0.0
City of Coloma	11.8	8.1	3.6	3.6	0.0
Village of Eau Claire	6.7	4.9	1.8	1.8	0.0
Village of Galien	5.9	4.6	1.3	1.0	0.3
Village of Grand Beach	11.6	11.6	0.0	0.0	0.0
Village of Michiana	8.4	8.4	0.0	0.0	0.0
City of New Buffalo	26.3	23.7	2.6	0.8	1.9
City of Niles	70.8	54.1	16.7	10.7	6.1
Village of Shoreham	4.1	2.3	1.8	0.5	1.4
City of St, Joseph	50.3	30.5	19.8	12.2	7.6
Village of Stevensville	12.1	4.9	7.2	4.6	2.6
Village of Three Oaks	10.4	9.2	1.3	1.3	0.0
City of Watervliet	12.9	9.2	3.7	2.5	1.2
Bainbridge Twp	79.4	53.3	26.1	19.7	6.4
Baroda Twp	48.4	33.4	15.0	15.0	0.0
Benton Twp	193.4	96.2	97.2	46.3	50.9
Berrien Twp	88.8	55.4	33.4	15.2	18.2
Bertrand Twp	87.7	48.7	38.9	14.6	24.4
Buchanan Twp	81.1	59.3	21.7	21.7	0.0
Chikaming Twp	83.5	47.1	36.5	21.4	15.1
Coloma Twp	68.0	44.4	23.6	16.0	7.5
Galien Twp	48.2	39.7	8.5	2.8	5.7
Hagar Twp	88.1	56.5	31.5	9.7	21.8
Lake Twp	56.9	33.7	23.2	13.1	10.0
Lincoln Twp	106.7	70.2	36.5	23.5	13.0
New Buffalo Twp	61.4	30.6	30.9	6.1	24.8
Niles Twp	154.5	94.2	60.3	23.7	36.7
Oronoko Twp	86.6	52.9	33.7	18.2	15.5
Pipestone Twp	78.9	61.5	17.4	10.0	7.4
Royalton Twp	59.6	40.8	18.8	10.7	8.1
Sodus Twp	67.3	30.9	36.4	18.3	18.1
St Joseph Twp	64.2	48.3	15.9	8.9	7.0
Three Oaks Twp	47.0	33.5	13.5	8.5	5.0
Watervliet Twp	47.9	24.5	23.4	10.9	12.5
Weesaw Twp	73.5	51.7	21.8	21.8	0.0
Total	2,127.5	1,367.4	760.2	423.3	336.9

Summary of Ratings by Jurisdiction

2022/2023 All Federal Aid Road Ratings within Townships

Includes Berrien County Road Department, and MDOT Maintained Roads



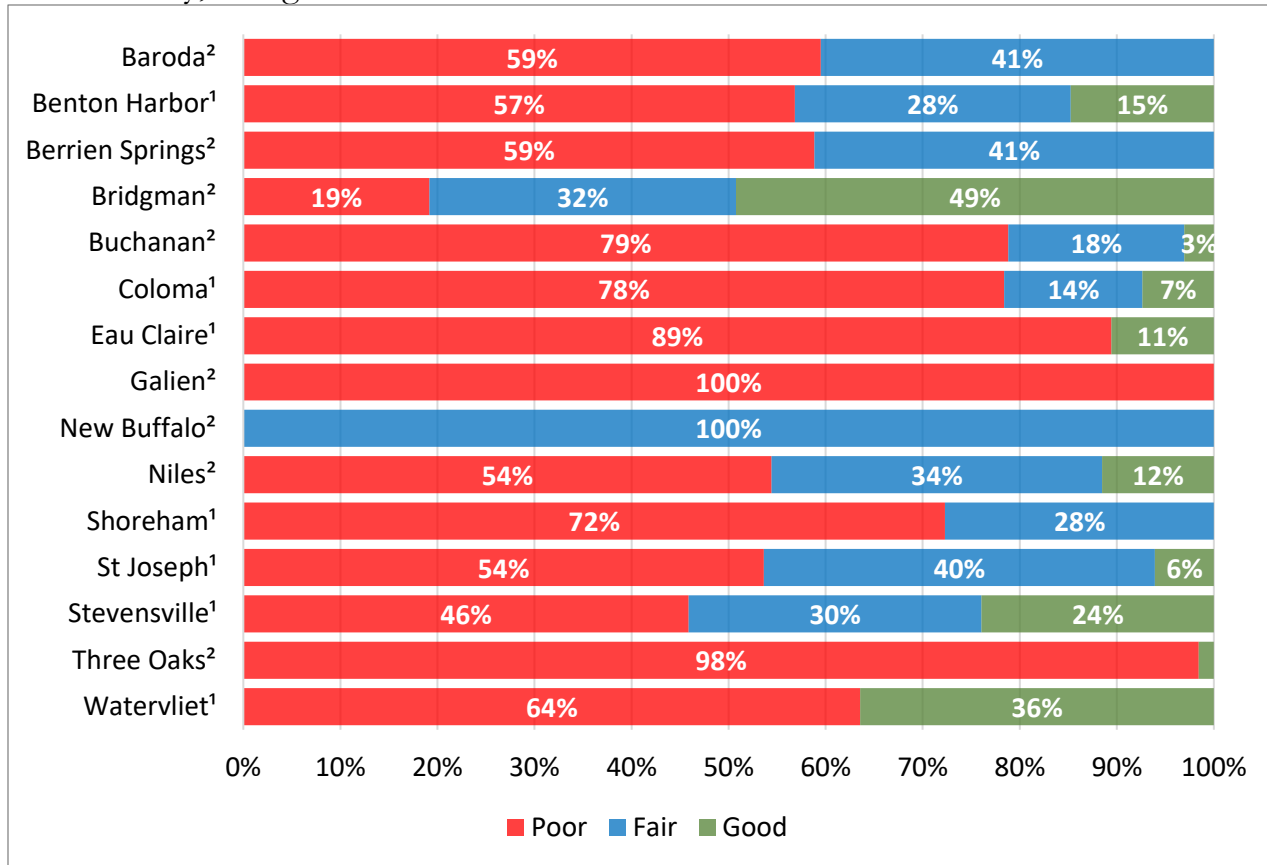
An interactive map showing ratings for all federal aid roads can be found at: www.michigan.gov/tamc

Federal aid eligible roads within Townships

¹ Townships rated in 2022	259 miles
² Townships rated in 2021	375 miles
Total rated in 2021 & 2022	634 miles

2022/2023 All Federal Aid Road Ratings for Cities & Villages

Includes City, Village and MDOT Maintained Roads



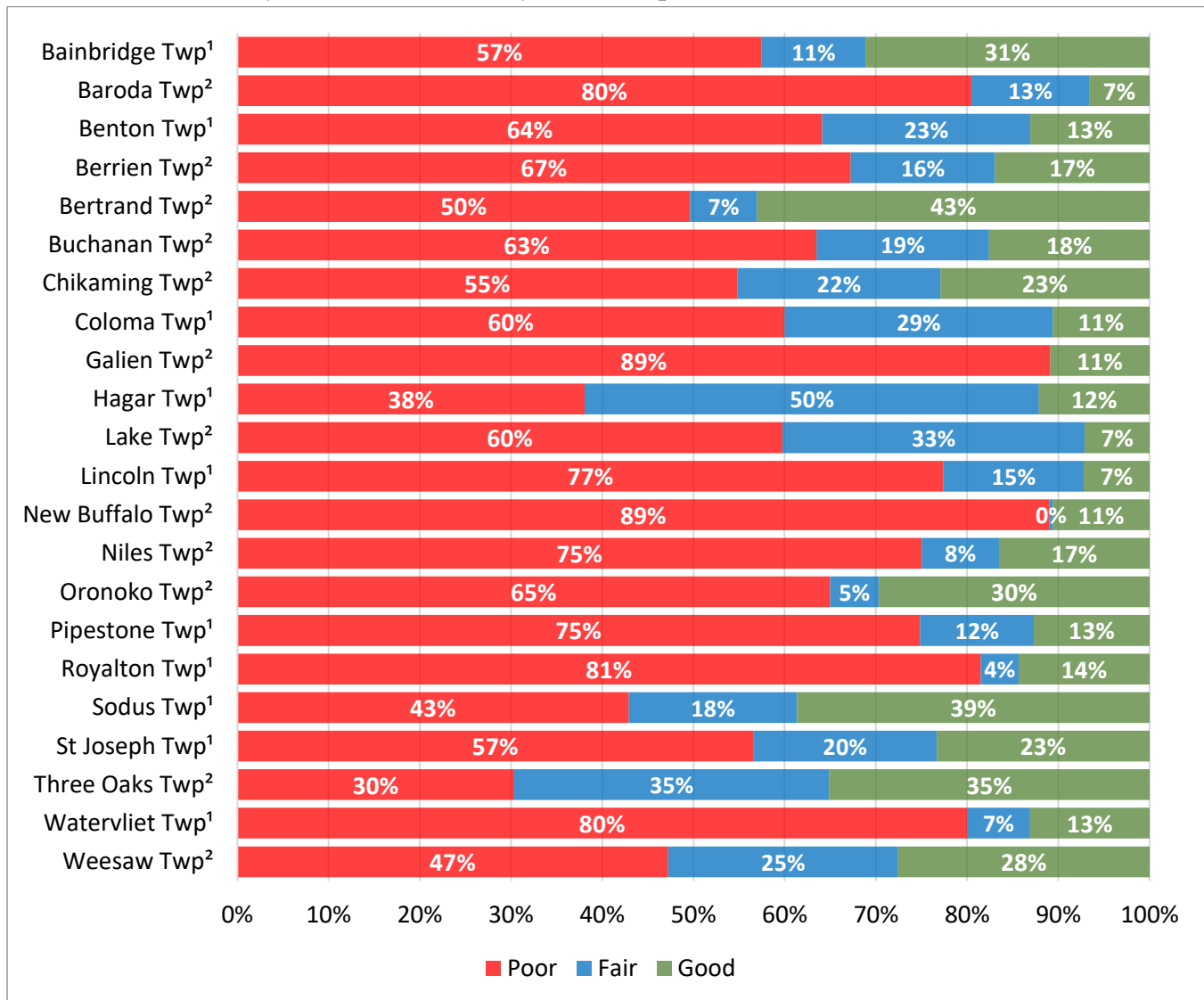
An interactive map showing ratings for all federal aid roads can be found at www.michigan.gov/tamc

Federal aid eligible roads within Cities & Villages

¹ Townships rated in 2022	55.5 miles
² Townships rated in 2023	39.2 miles
Total rated in 2022 & 2023	94.6 miles

2022/2023 Locally Maintained Federal Aid Road Ratings for Townships

Roads Maintained by the Berrien County Road Department

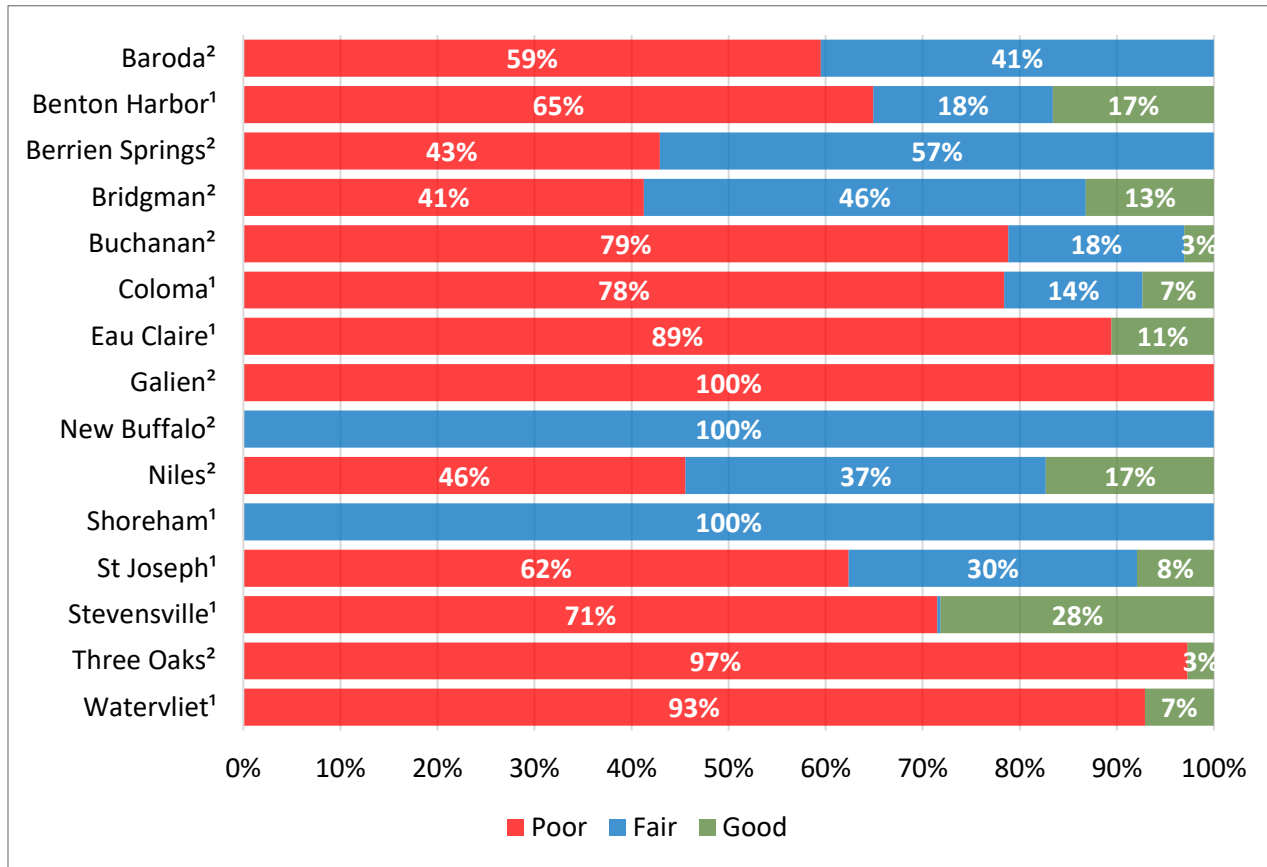


Road Department maintained federal aid eligible roads miles rated

¹ Townships rated in 2022	144.2 miles
² Townships rated in 2023	210.2 miles
Total rated in 2022 & 2023	354.4 miles

2022/2023 Locally Maintained Federal Aid Road Ratings for Cities & Villages

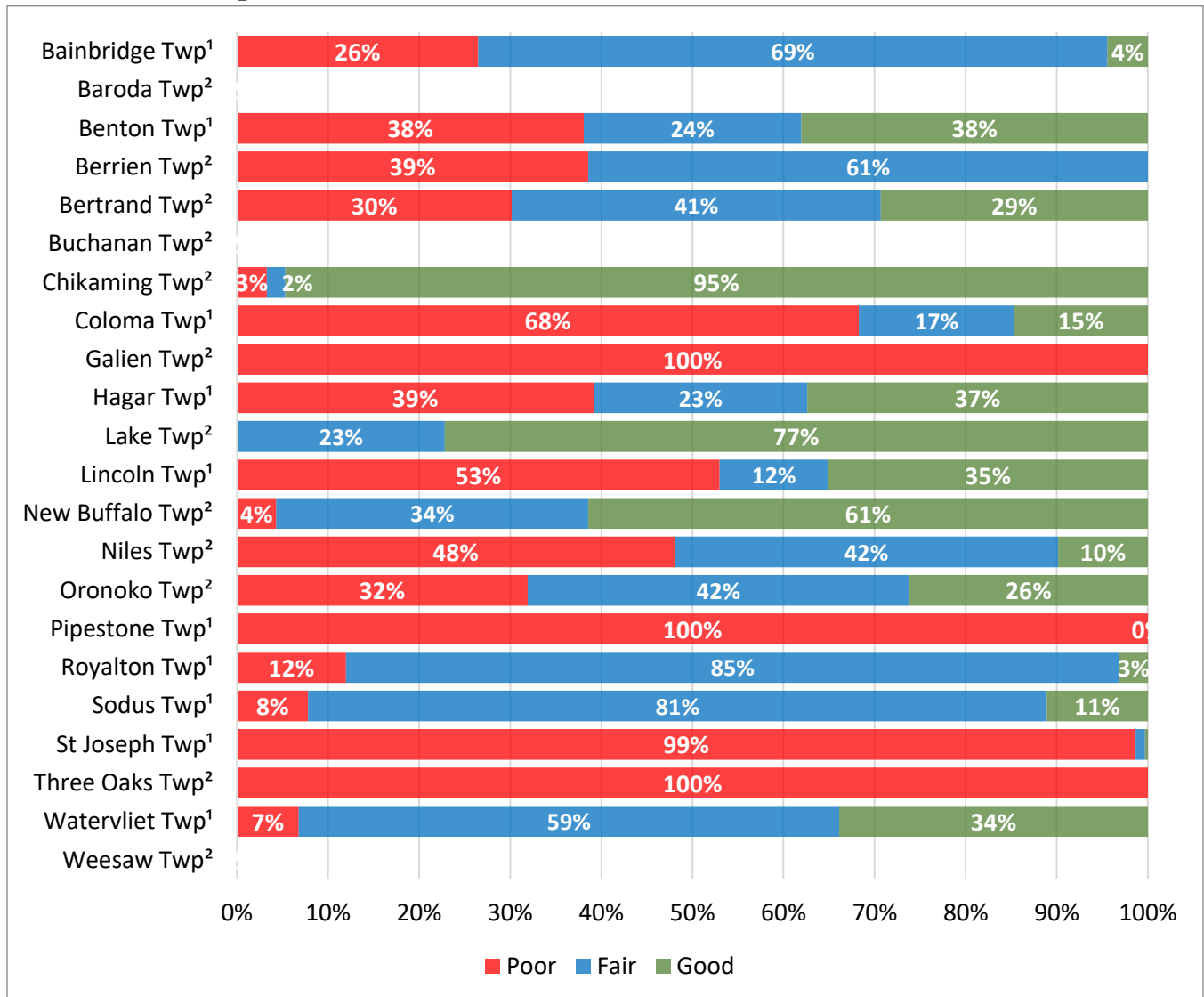
Roads Maintained by City and Village Public Works Departments



City or village maintained federal aid eligible roads miles rated

¹ cities or villages rated in 2022	40.7 miles
² cities or villages rated in 2021	25.3 miles
Total rated in 2021 & 2022	66 miles

2021/2022 MDOT Maintained Federal Aid Road Ratings within Townships

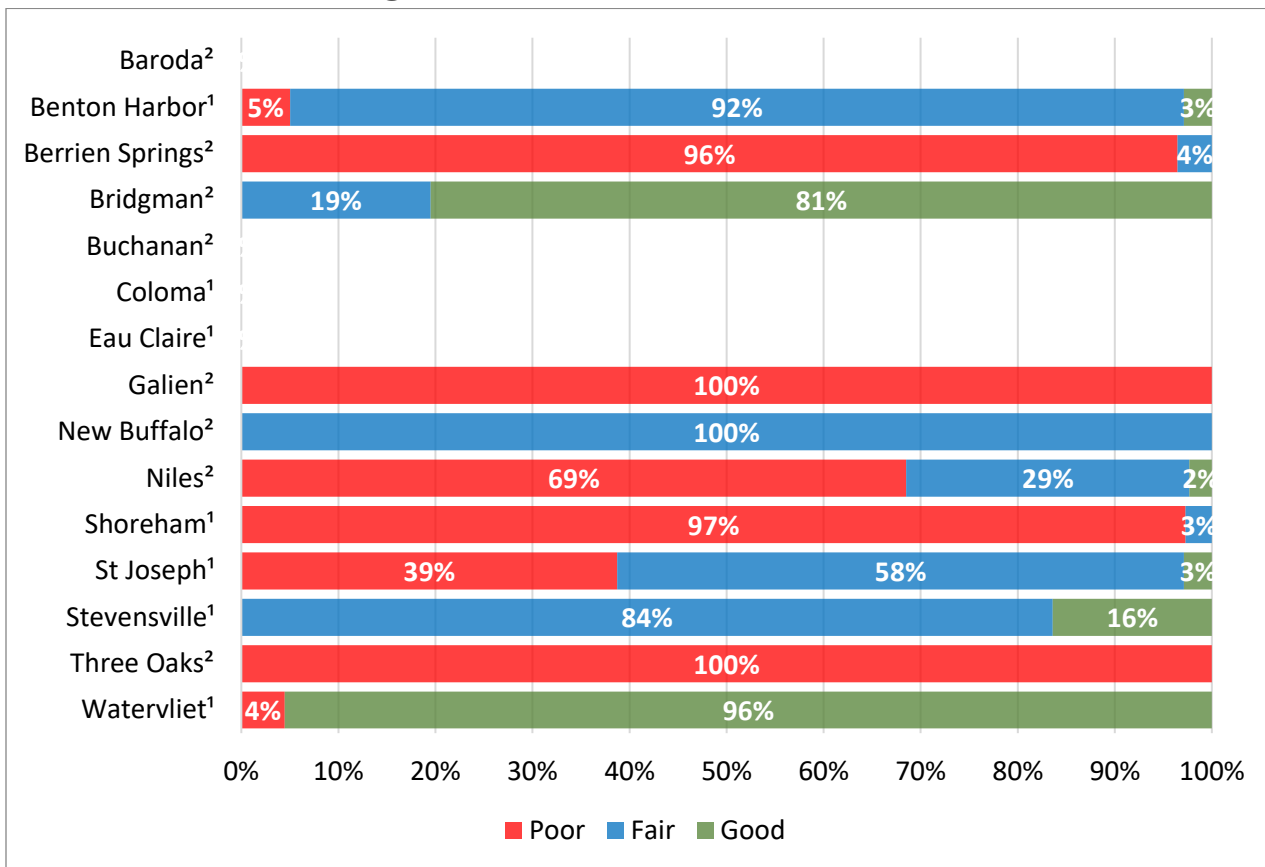


Note: Baroda, Buchanan, and Weesaw Townships do not contain any MDOT maintained roads. MDOT maintains all Interstates (e.g. I-94), US routes (e.g. US-31), and M-routes (e.g. M-60). All MDOT maintained roads are classified as federal aid roads.

MDOT maintained roads miles rated within Townships

¹ Townships rated in 2022	114.9 miles
² Townships rated in 2023	164.4 miles
Total rated in 2022 & 2023	279.4 miles

2022 MDOT Maintained Federal Aid Road Ratings Within Cities & Villages



Note: The Village of Baroda, city of Buchanan, City of Coloma, and Village of Eau Claire do not contain any MDOT maintained roads.

MDOT maintained roads rated with Cities or Villages

¹ cities or villages rated in 2022	14.8 miles
² cities or villages rated in 2023	14.4 miles
Total rated in 2022 & 2023	29.2 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 ¼") due to reflection or paving joints. • Transverse cracks (open ¼") 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 ¼" – ½") due to reflection and paving joints. • Transverse cracking (open ¼" to ½") 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 ½") 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 (½" 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 (¼" wide) longitudinal or transverse joints and more frequent transverse cracks (some open ¼"). 	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.