

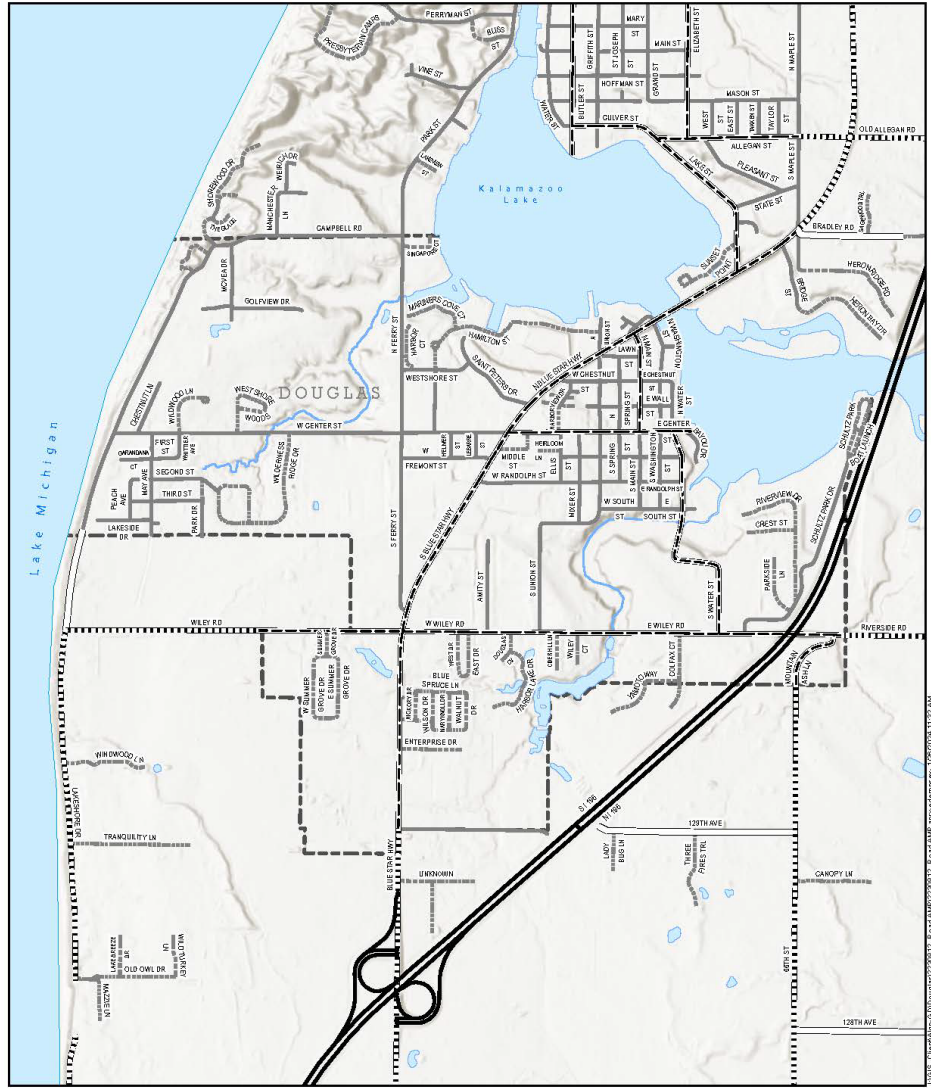


**City of the  
Village of  
Douglas**

February 20, 2024

# 2024 Street Asset Management Plan

Prein&Newhof



16 miles of Asphalt Paved Streets were rated in 2023.

- 5.4 miles of Major Streets
- 9.9 miles of Minor Streets

SCALE: 1" = 1,500'

LEGEND

- |                      |                  |
|----------------------|------------------|
| — Road System        | — County Local   |
| — State Trunkline    | - - - City Major |
| ..... County Primary | ..... City Local |
|                      | - · - · Private  |

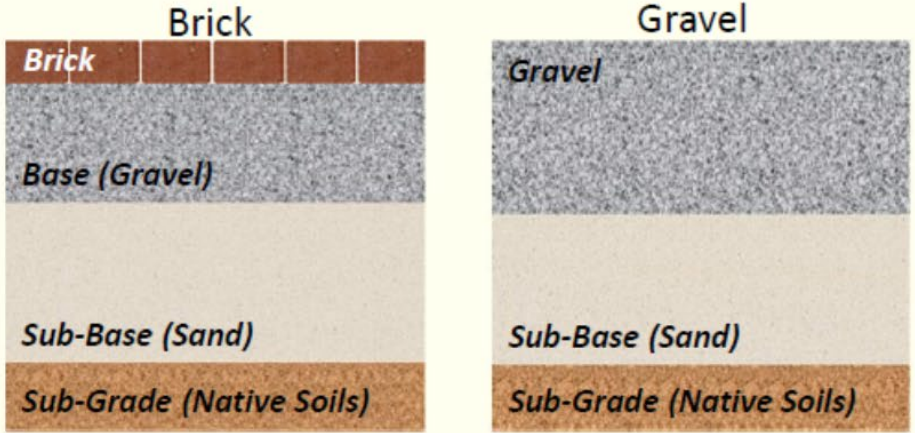
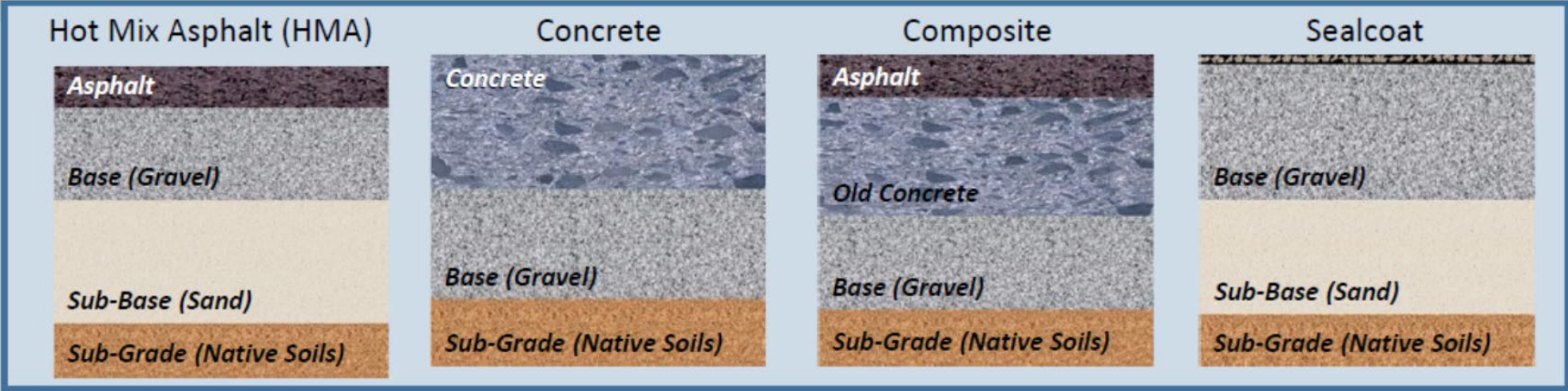
CITY OF VILLAGE OF DOUGLAS  
ALLEGAN COUNTY, MICHIGAN

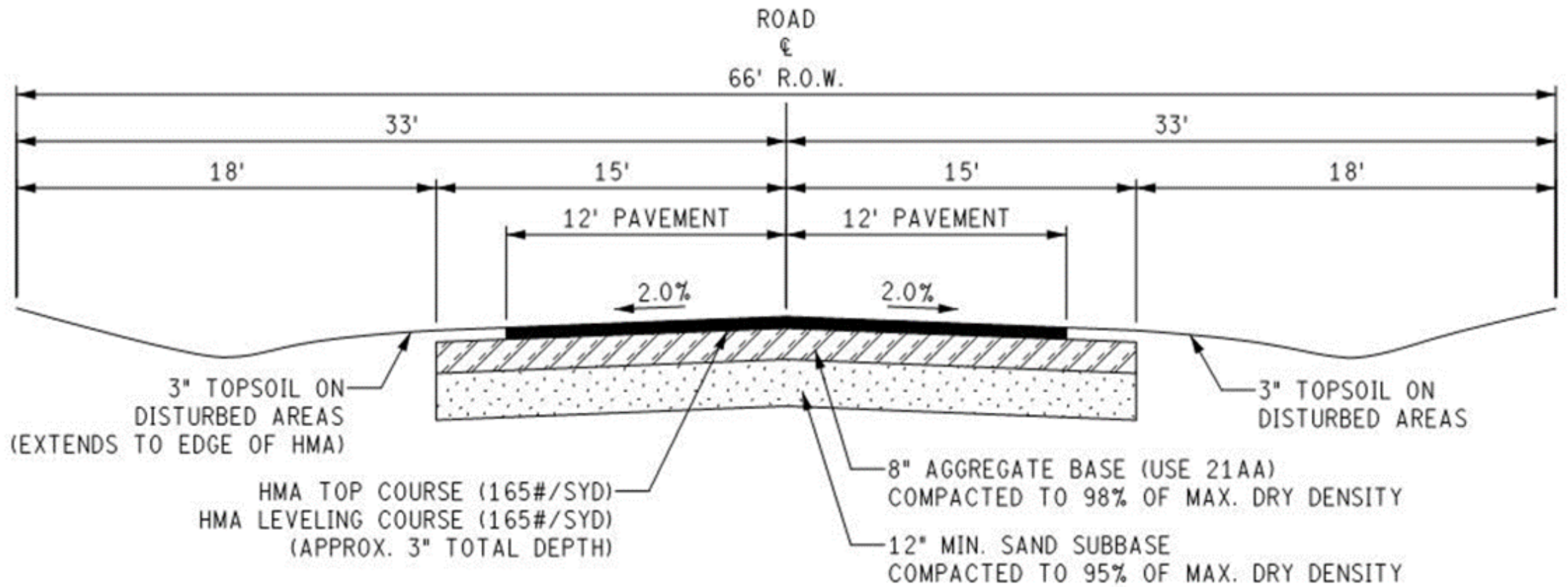
ROAD SYSTEM

Prein & Newhof  
228812



# 6 Major Pavement Types





# Street Cross Section



# PASER RATING SYSTEM

## SURFACE DEFECTS

- Raveling
- Flushing
- Polishing

## CRACKS

- Transverse
- Longitudinal
- Block
- Alligator

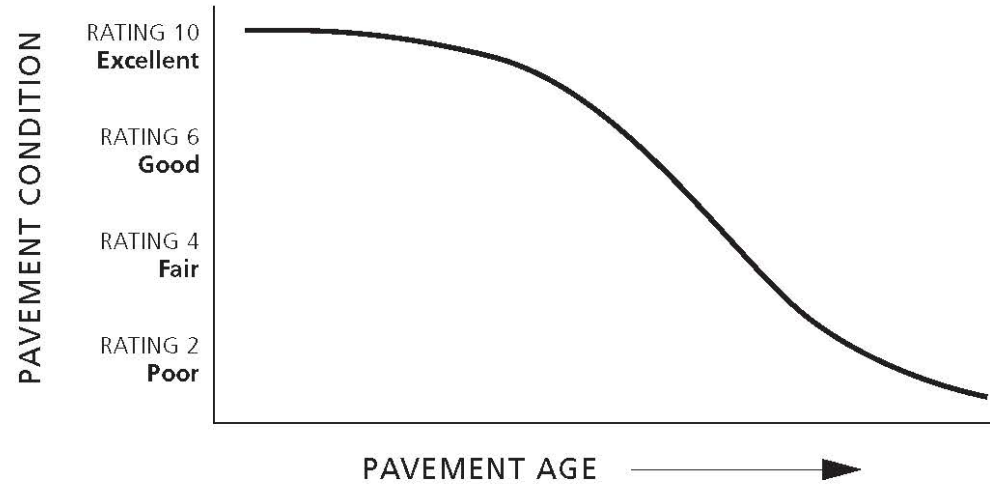
## PATCHES AND POTHOLES



## Rating system

Surface rating	Visible distress*	General condition/ treatment measures
<b>10</b> Excellent	None.	New construction.
<b>9</b> Excellent	None.	Recent overlay. Like new.
<b>8</b> Very Good	No longitudinal cracks except reflection of paving joints. Occasional transverse cracks, widely spaced (40' or greater). All cracks sealed or tight (open less than 1/4").	Recent sealcoat or new cold mix. Little or no maintenance required.
<b>7</b> Good	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' 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.
<b>6</b> Good	Slight raveling (loss of fines) and traffic wear. Longitudinal cracks (open 1/4"-1/2"), some spaced less than 10'. First sign of block cracking. Sight to moderate flushing or polishing. Occasional patching in good condition.	Shows signs of aging. Sound structural condition. Could extend life with sealcoat.
<b>5</b> Fair	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. First signs of longitudinal cracks near pavement edge. 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 thin non-structural overlay (less than 2")
<b>4</b> Fair	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 a structural overlay (2" or more).
<b>3</b> Poor	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 repair prior to major overlay. Milling and removal of deterioration extends the life of overlay.
<b>2</b> Very Poor	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. Pulverization of old pavement is effective.
<b>1</b> Failed	Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction.

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



In addition to indicating the surface condition of a road, a given rating also includes a recommendation for needed maintenance or repair. This feature of the rating system facilitates its use and enhances its value as a tool in ongoing road maintenance.

**RATINGS ARE RELATED TO NEEDED MAINTENANCE OR REPAIR**

<b>Rating 9 &amp; 10</b>	No maintenance required
<b>Rating 8</b>	Little or no maintenance
<b>Rating 7</b>	Routine maintenance, cracksealing and minor patching
<b>Rating 5 &amp; 6</b>	Preservative treatments (sealcoating)
<b>Rating 3 &amp; 4</b>	Structural improvement and leveling (overlay or recycling)
<b>Rating 1 &amp; 2</b>	Reconstruction

<b>Asphalt PASER Ratings PASER Rating</b>	<b>Condition</b>	<b>Treatment</b>
9 & 10	Excellent	No maintenance required
8	Very Good	Little or no maintenance
7	Good	Crack sealing and minor patching
5 & 6	Fair – Good	Preservative treatments (non-structural)
3 & 4	Poor – Fair	Structural renewal (overlay)
1 & 2	Failed	Reconstruction

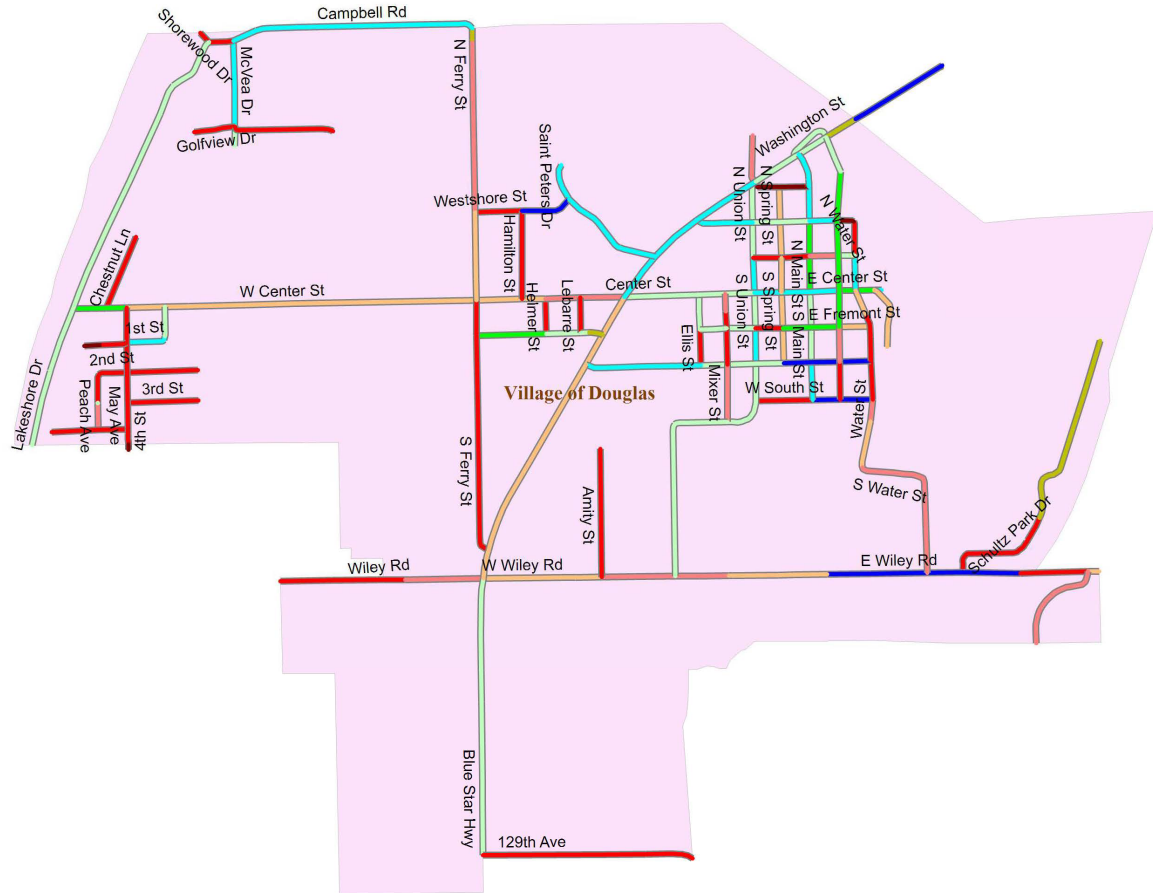
### **Pavement Treatment**

**Typical Treatments depending on PASER Rating**

# Douglas - 2023 Paser

1000 ft

INDIVIDUAL RATINGS FOR EACH STREET





# ASPHALT ROAD RATING GUIDE

## Asphalt PASER

Modified for Michigan TAMC Data Collection

◆ Denotes Priority Distress

	Asphalt 10	Asphalt 9	Asphalt 8
Good	<p>New construction (&lt; 1 year old) No defects <u>Recent base improvement</u> <i>Possible Action:</i> <i>Proactive Preventative Maintenance (PPM)</i></p>	<p>Like new condition (&gt; 1 year old) No defects <u>Recent overlay with or without a crush and shape</u> <i>Possible Action:</i> <i>PPM</i></p>	<p>◆ Transverse cracks: &gt; 40' apart Cracks: tight (hairline) or sealed Longitudinal cracks: few, on joints <u>Recent seal coat or slurry seal (*see below)</u> <i>Possible Action:</i> <i>Crack seal or PPM</i></p>
	Fair	<p>◆ Transverse cracks: 10'-40' apart Cracks: open &lt; 1/4" Crack erosion: none or little Surface raveling: none or little Patches: none or few in excellent condition <u>First signs of wear</u> <i>Possible Action:</i> <i>Maintain with crack seal, fog seal</i></p>	<p>◆ Transverse cracks: &lt; 10' apart ◆ Block cracking: 6'-10' Blocks (large, stable) Cracks open 1/4" - 1/2" Surface raveling: slight Patches: few in good condition Polishing or flushing: slight, moderate <u>Sound structural condition</u> <i>Possible Action:</i> <i>Maintain with sealcoat</i></p>
Poor		<p>◆ Block cracking: &lt; 1' blocks ◆ Wheel-path cracking (longitudinal) ◆ Rutting: 1/2" - 1" deep Transverse cracks: slight erosion Longitudinal cracks: slight erosion Surface raveling: severe Patches: fair condition <u>First signs of structural weakening</u> <i>Possible Action:</i> <i>Structural overlay &gt; 2"</i> <i>Underseal</i></p>	<p>◆ Block cracking: severe (like alligator) ◆ Alligator cracking: initial, &lt; 25% ◆ Rutting: 1" - 2" deep Transverse cracks: extensive erosion Longitudinal cracks: extensive erosion Patches: fair/poor condition Potholes: occasional <i>Possible Action:</i> <i>Structural overlay &gt; 2"</i> <i>Patching &amp; repair prior to an overlay</i> <i>Milling to extend overlay life</i></p>

### General Rating Tips

**Rate surface distress, not ride quality.** Be aware of cracks in the wheel path; they can be hard to see and do not affect the ride.

**Disregard the shoulder.** Rate only the driveable pavement, edge line to edge line.

**Do not ignore reflective cracks.** Rate by assessing the type of crack (e.g. transverse, longitudinal, alligator).

**Rate the current surface condition.** If construction is in progress (i.e., work is active) but you are driving on the old surface, rate the new surface. Some barrels by the roadside is **not** construction in progress.

**Rate the lane with the worst condition** when lanes have differing conditions. For variable surface types, rate the worst lane and select it as the *Surface Subtype*.

**Rate what you see,** not what distresses you think might happen in the future.

**Rate roads with the same scrutiny** regardless of their use, ownership, or functional class.

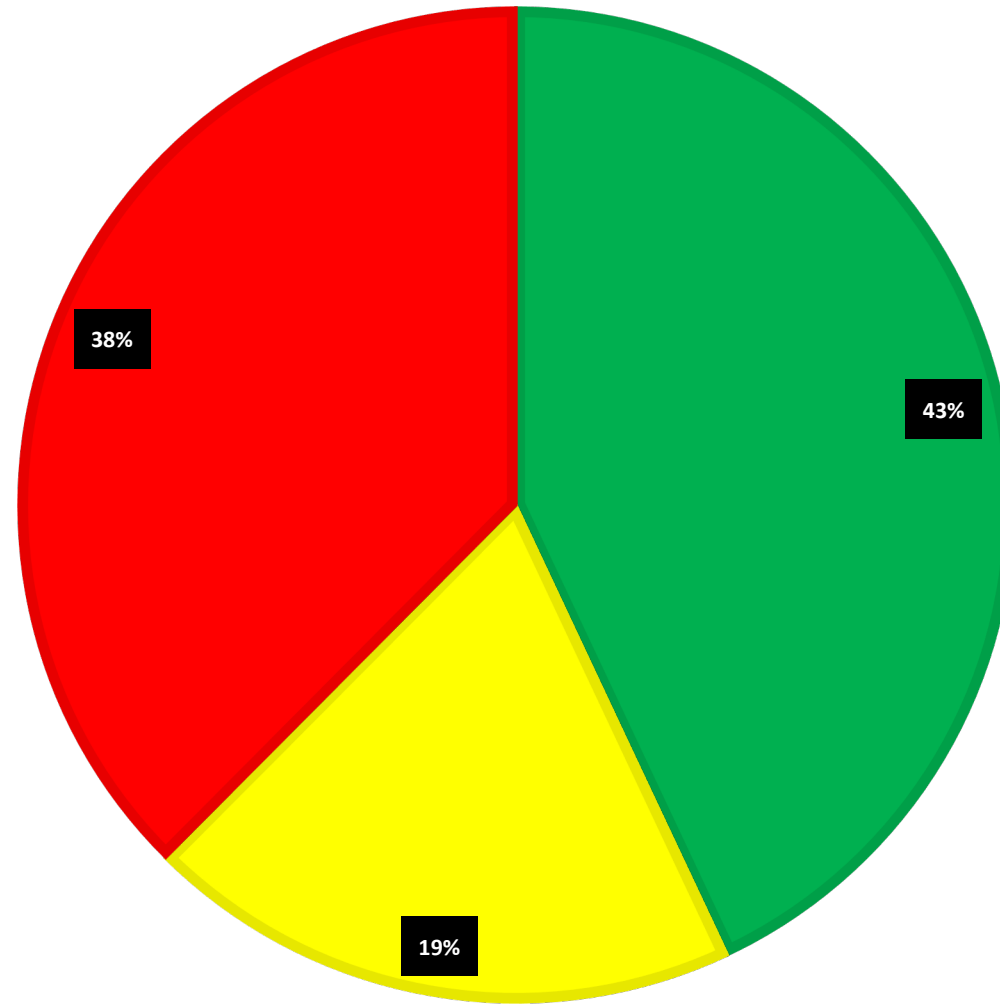
**Rutting** often has visual cues like plow scars. Get out and measure using a straight edge and tape measure. Use caution! Rutting measurement changes are detailed in the *TAMC Data Collection Training Manual's* "Michigan-specific Asphalt Road Rating Guide" section, page 7.

**Composite Pavement** consists of a concrete pavement overlaid with asphalt; rate it based on the uppermost surface (e.g. asphalt); and note the *Surface Subtype* as composite. A repaired concrete pavement's highest rating is a 9. While it may have had concrete joint repairs, no other defects can be present and the condition is "like new". Note, this is **not** likely to occur.

**Sealcoat pavements** are sealcoat over gravel whereas sealcoat treatment is sealcoat applied over asphalt. See pages 6-7 of the TAMC Data Collection Manual for rating sealcoat pavements. \*With proactive sealcoat treatments, do not downgrade an asphalt PASER 9 or 10 (no defects) to an asphalt PASER 8 because of the treatment. Rate it based on the distresses that are visible (see *TAMC Data Collection Training Manual's* "Proactive Sealcoat Treatments on Asphalt PASER 9" section, page 8).

■ Good ■ Fair ■ Poor

- **GOOD**
- **FAIR**
- **POOR**

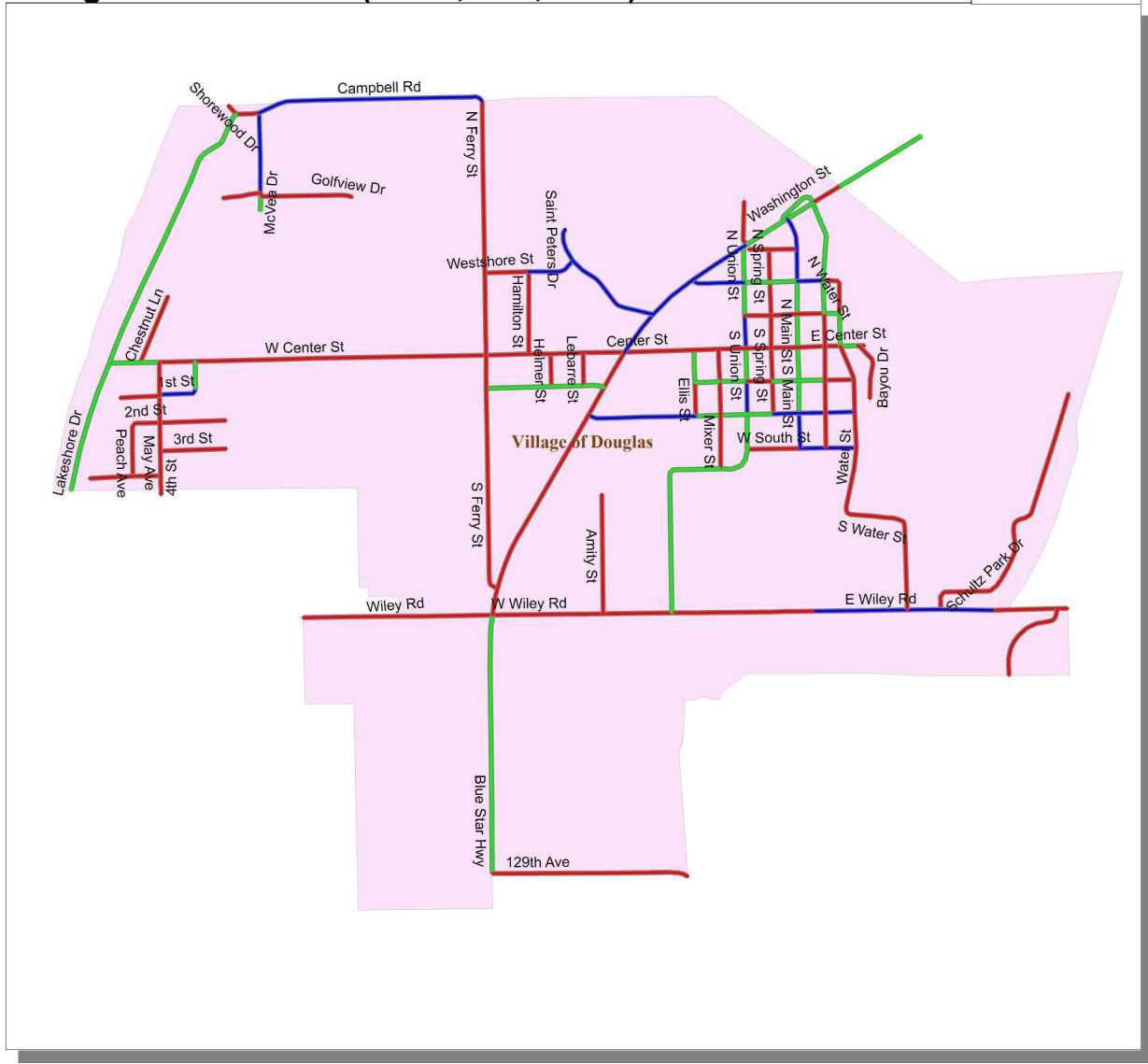


# Douglas - 2023 TAMC (Good, Fair, Poor)

1000 ft

## CATEGORIZED

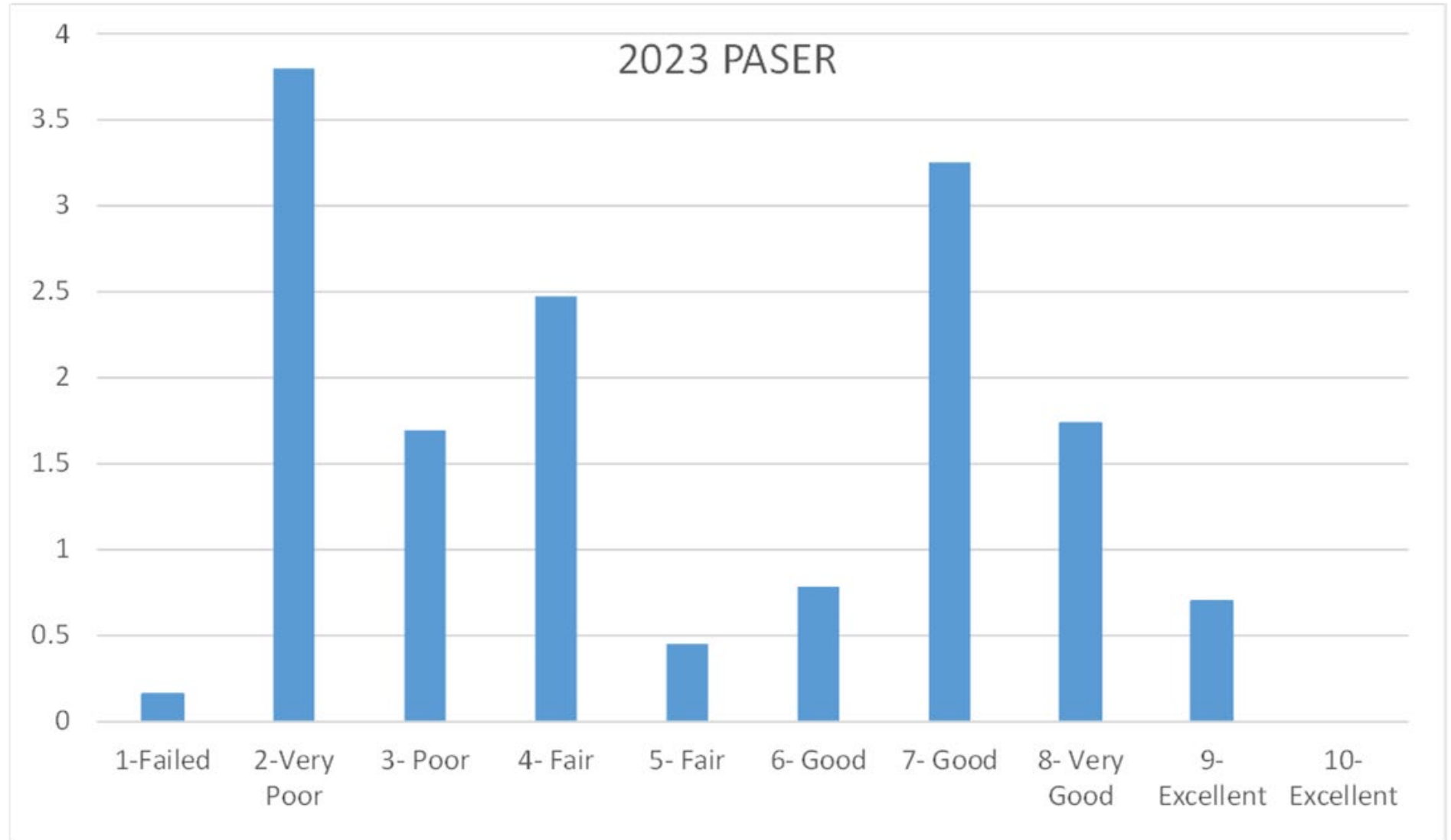
- GOOD
- FAIR
- POOR



Road

- Good (8-10)
- Fair (5-7)
- Poor (1-4)
- default

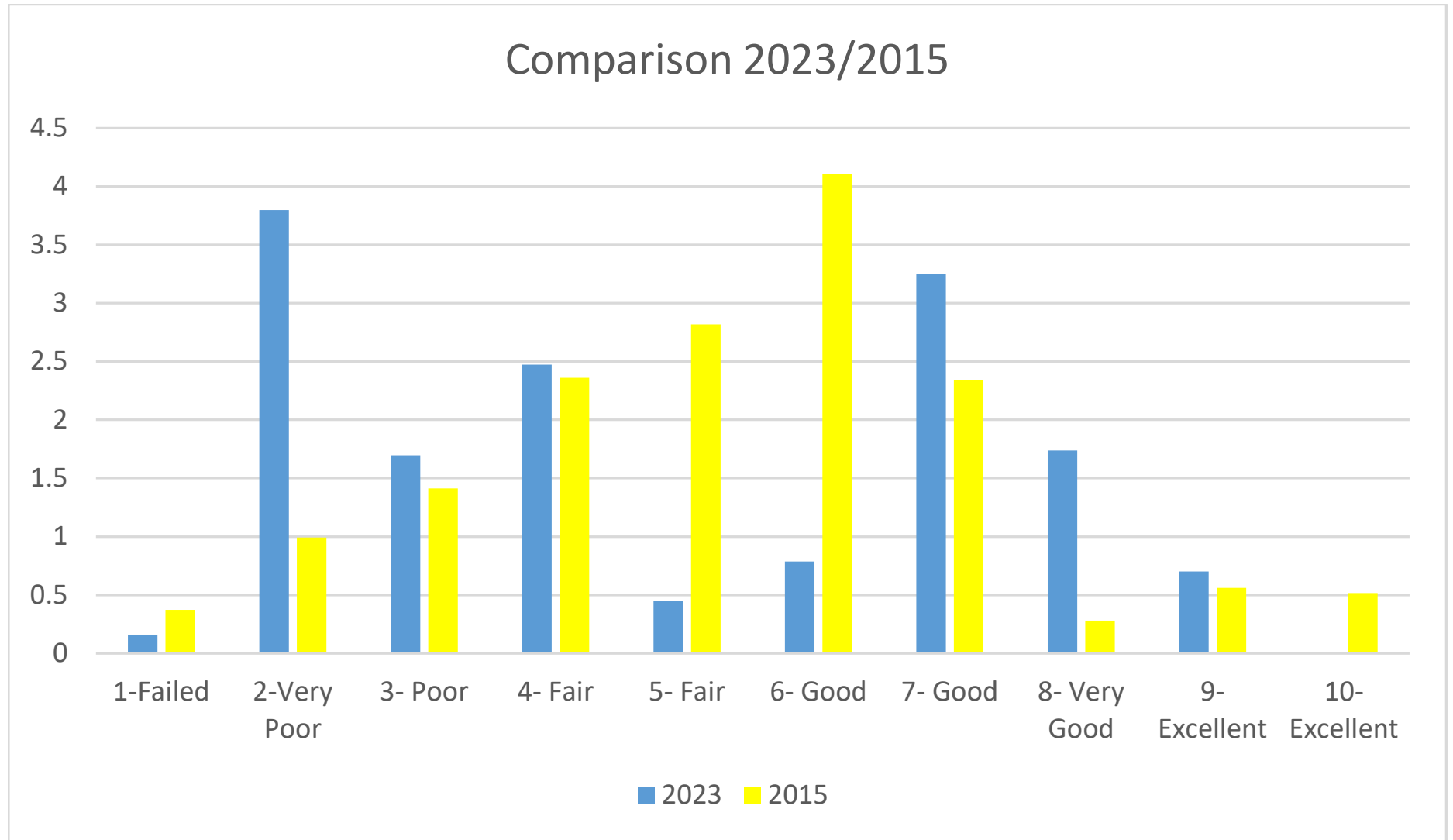
# 2023 CONDITION OF PAVED ROADS



Miles of Roads Per PASER Rating Category (2023)



# 2023 vs 2015 CONDITION OF PAVED ROADS



# Treatment Fixes

## Preventive Maintenance (PM)

- Crack Sealing
- Chip Sealing with Fog Seal
- MicroSurfacing
- Ultra Thin Overlay

## Rehabilitation & Reconstruction

- Mill and Overlay (2" overlay)
- Crush and Shape with Overlay (3" or more)
- Reconstruction

*Each pavement fix has a life expectancy associated with it.*

*Doing the right fix at the right time optimizes your budget.*



# Fixes & Eligible Miles of Roadway

<b>Treatment</b>	<b>PASER Rating Range</b>	<b>Miles in Rating Range 2023</b>	<b>Miles in Rating Range 2015</b>
<b>Mill &amp; Overlay</b>	1 to 3	5.7	4.2
<b>Chip and Fog Seal</b>	4 to 6	3.7	10.4
<b>Crack Seal</b>	7 to 9	5.7	1.5



# Fix Strategies Evaluated

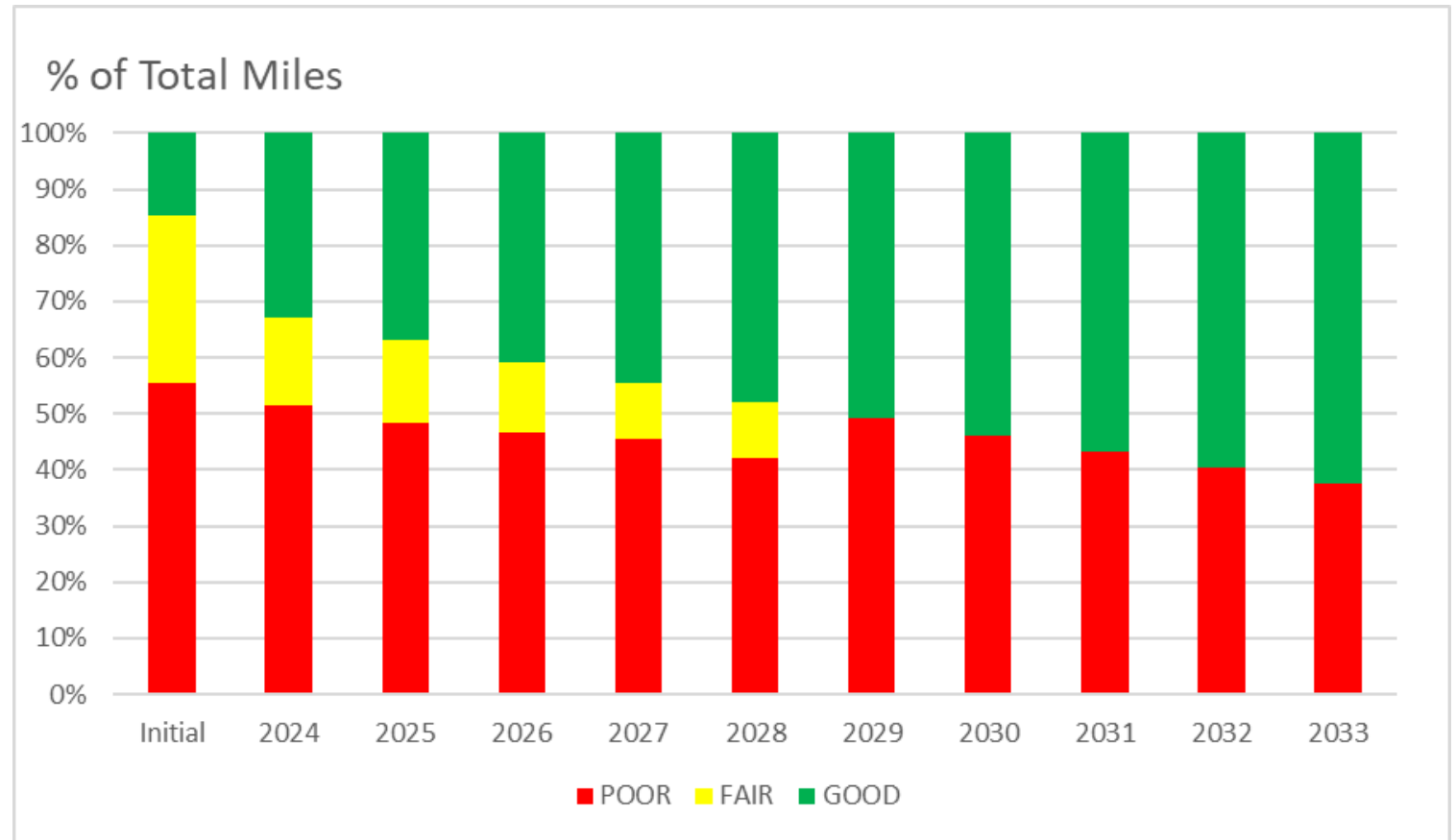
1. **Do Nothing**
2. **2015 Fix Approach & Current Funding Level (\$100,000)**
  - Mill & Overlay and Crack Seal
3. **2015 Fix Approach & Increased Funding Level (\$130,000)**
  - Mill & Overlay and Crack Seal
4. **Optimal Fixes & Current Funding Level (\$100,000)**
  - Mill & Overlay, Chip and Fog Seal, & Crack Seal
5. **Optimal Fixes & Increased Funding Level (\$130,000)**
  - Mill & Overlay, Chip and Fog Seal, & Crack Seal
6. **Optimal Fixes & Doubled Funding Level (\$200,000)**
  - Mill & Overlay 2", Chip and Fog Seal, & Crack Seal





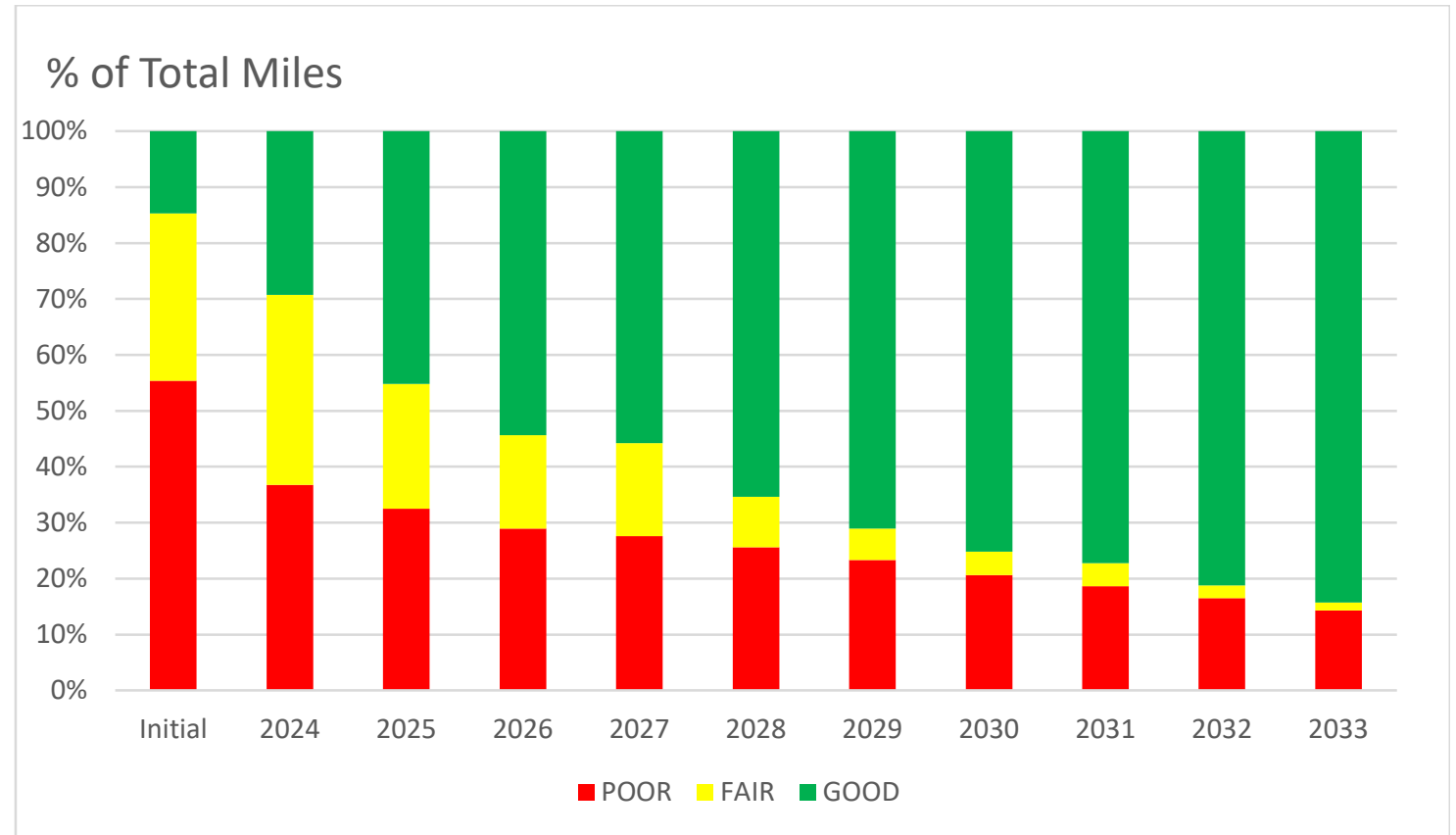
# Optimal Fixes & Current Funding Level (\$100,000)

- Mill & Overlay 1 ½"
- Chip Seal and Fog Seal
- Crack Seal



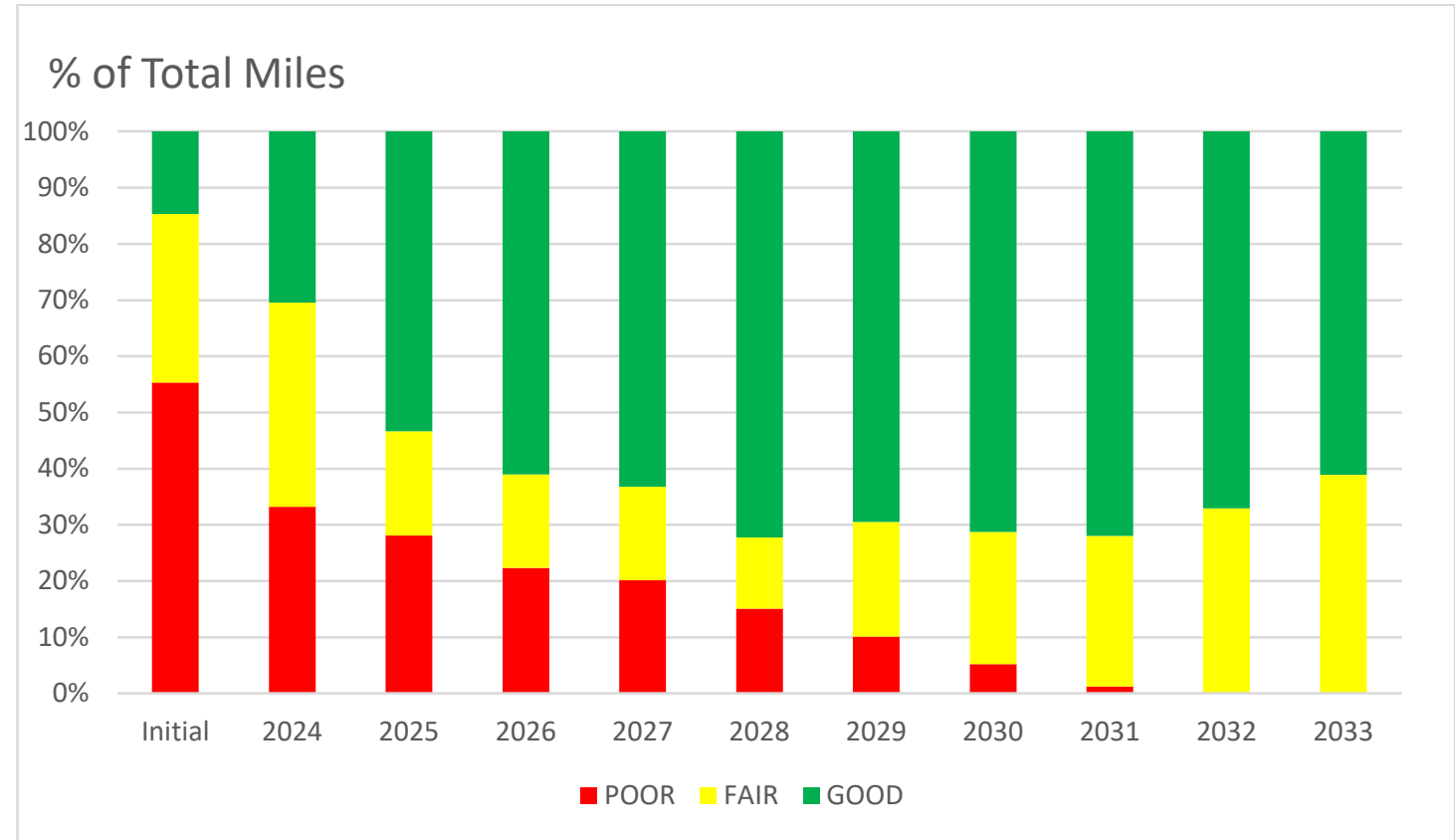
# Optimal Fixes & Increased Funding Level (\$130,000)

- Mill & Overlay 1 ½"
- Chip Seal and Fog Seal
- Crack Seal

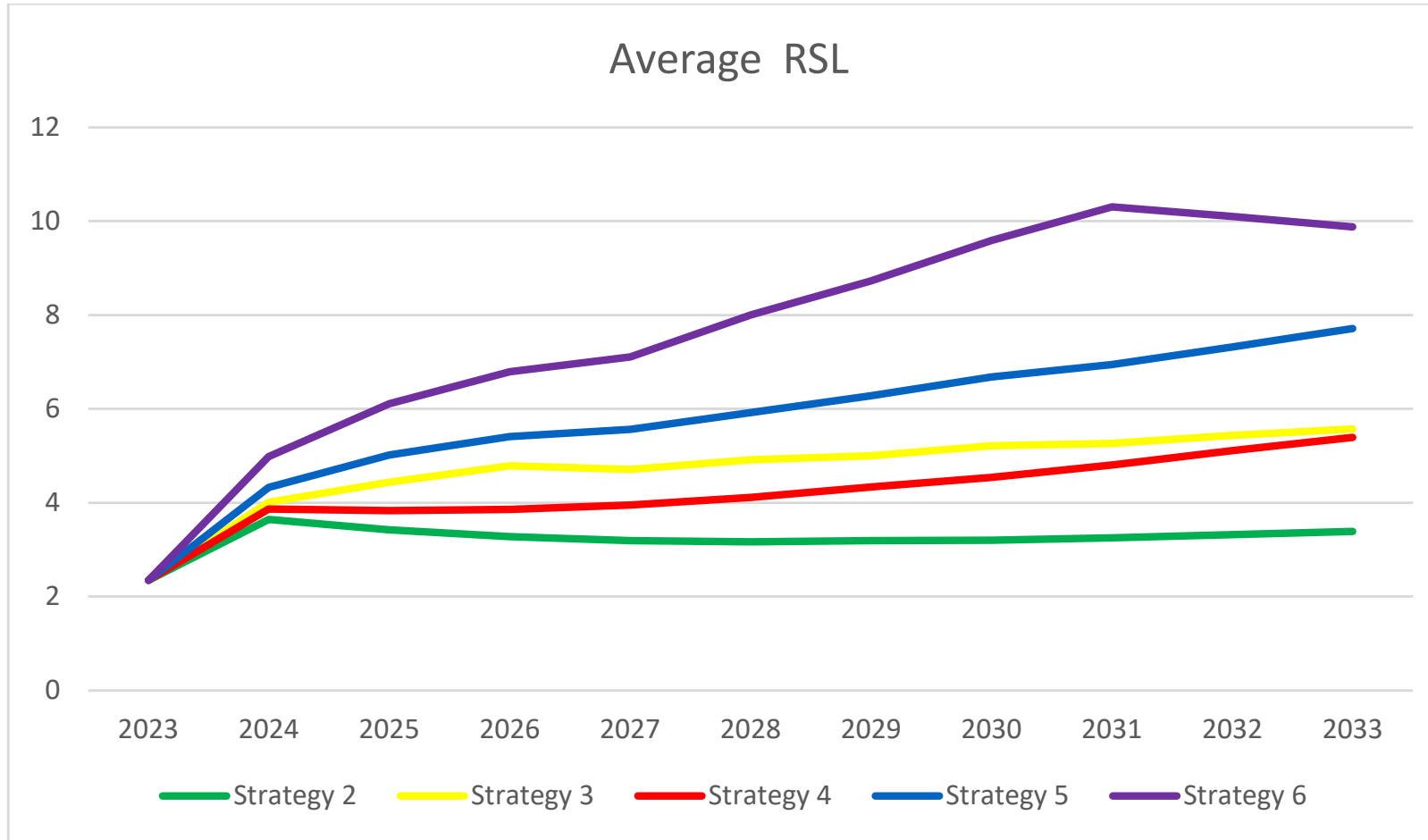


# Optimal Fixes & Doubled Funding Level (\$200,000)

- Mill & Overlay 2"
- Chip Seal and Fog Seal
- Crack Seal



# Average REMAINING SERVICE LIFE (RSL)



# QUESTIONS & DISCUSSION

Thank you!

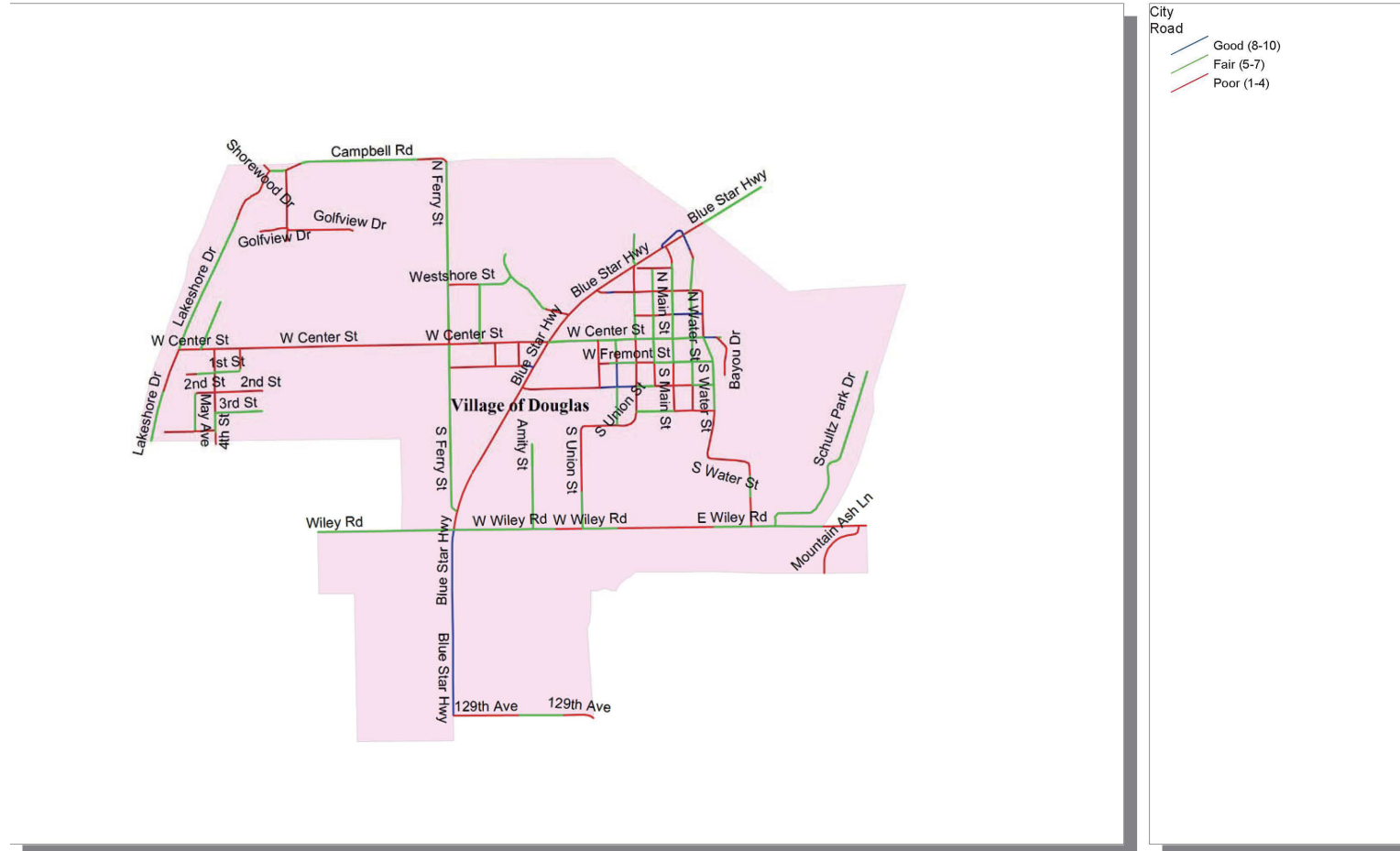
# EXTRA SLIDES

2015 vs 2023



# 2015 CATEGORIZED

- **GOOD**
- **FAIR**
- **POOR**

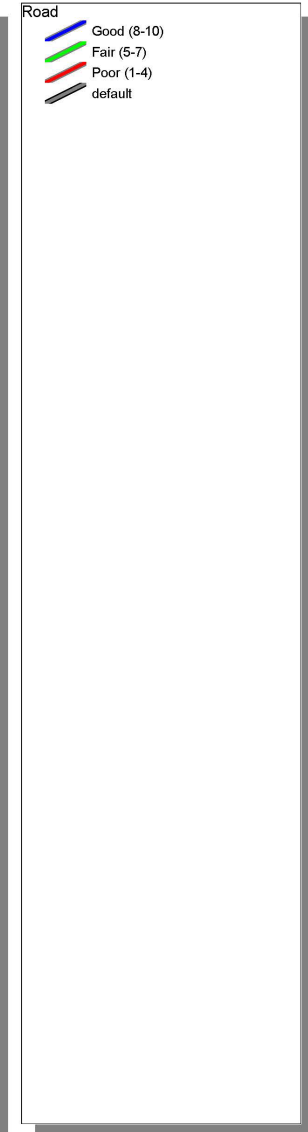
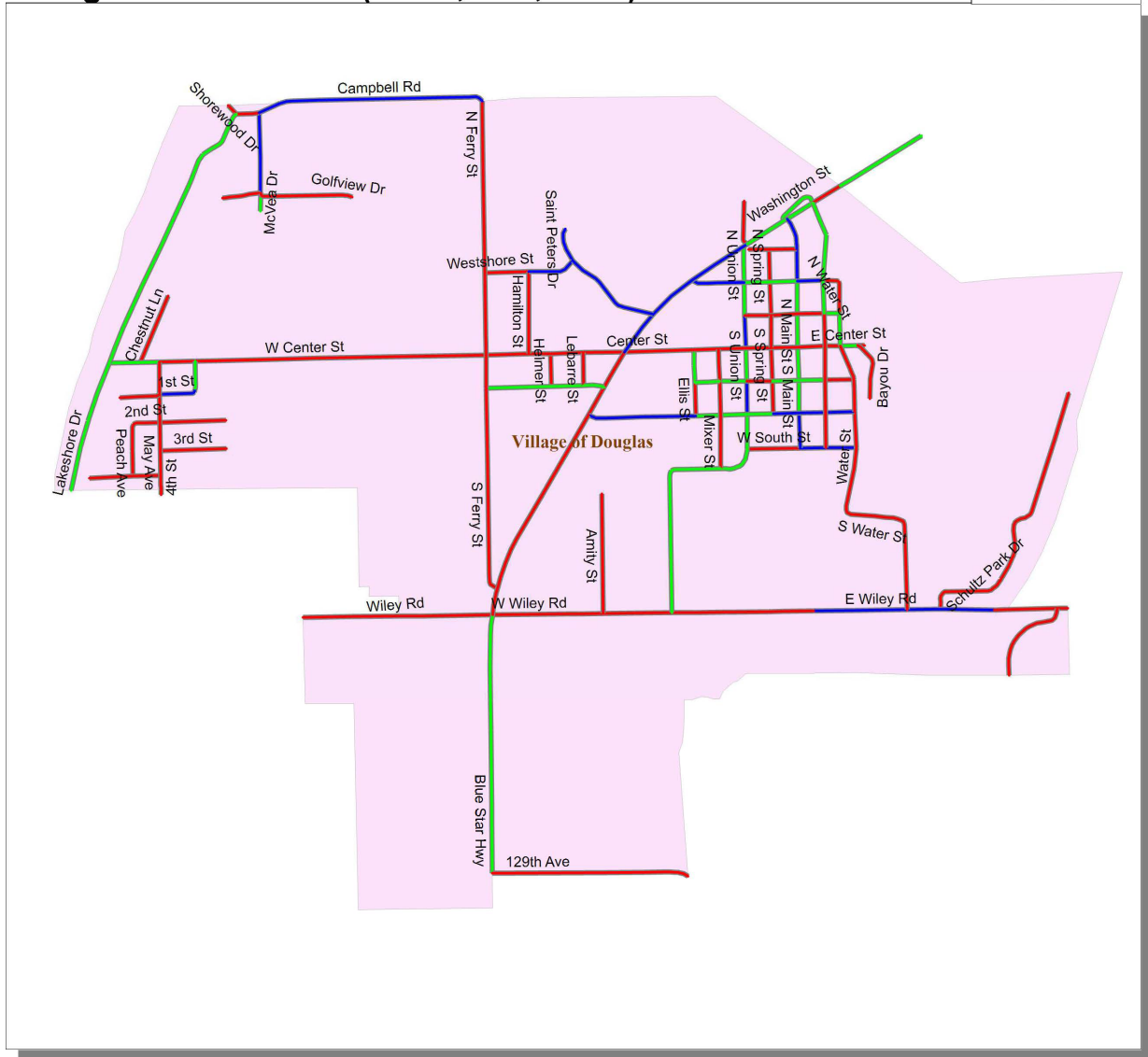


# Douglas - 2023 TAMC (Good, Fair, Poor)

1000 ft

## 2023 CATEGORIZED

- GOOD
- FAIR
- POOR

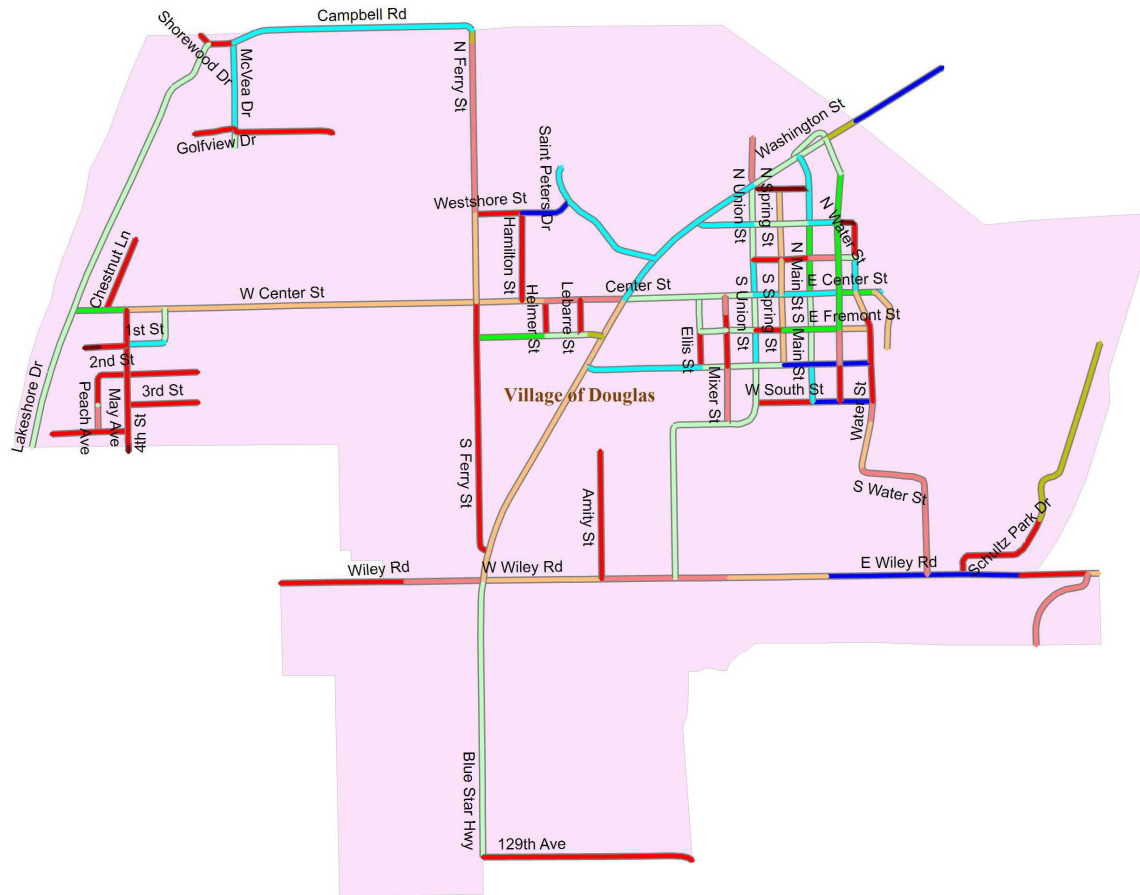




# Douglas - 2023 Paser

1000 ft

INDIVIDUAL RATINGS FOR EACH STREET



- Road
- 10: Excellent
  - 9: Excellent
  - 8: Very Good
  - 7: Good
  - 6: Good
  - 5: Fair
  - 4: Fair
  - 3: Poor
  - 2: Very Poor
  - 1: Failed
  - 0: Not Rated
  - default





• Crack sealing



• Chip Sealing



• Fog Sealing



• Ultra Thin Overlay



• Milling



• Overlaying (Paving)



• Rolling