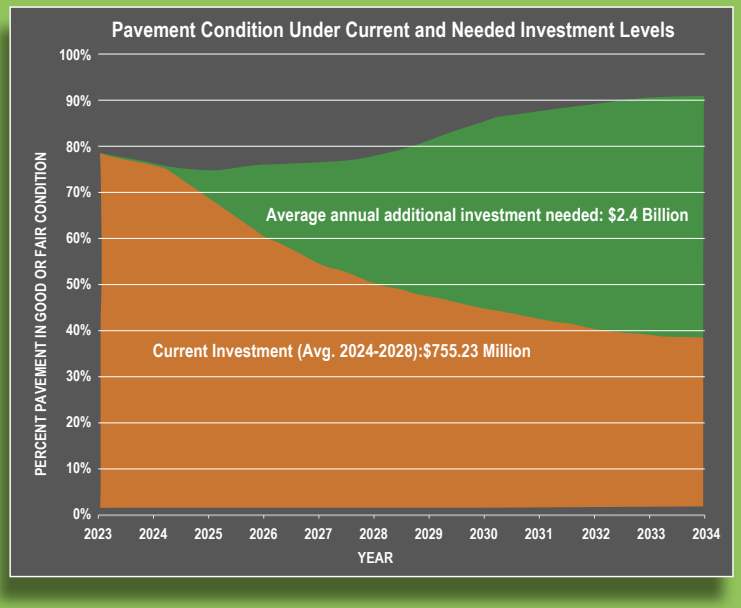
Which Roads to Fix?

MDOT Pavement Condition Goal

MDOT's current statewide pavement condition goal, as directed by the State Transportation Commission (STC), is to have 90 percent of all pavements in good or fair condition based on the Remaining Service Life (RSL) measure. Due to current and projected pavement conditions and available revenues, MDOT will not be able to meet or sustain this goal.

- ***The green area represents 90 percent of the system condition rated good or fair by 2033. To achieve this, annual funding would need to increase by $2.4 billion more than current levels.***
- ***The orange area represents forecasted pavement condition based on current investments, and shows pavement condition deteriorating.***



Current Average Annual Investments for FY 2024 - 2028 (in Millions)	
Reconstruction	$477
Resurfacing	$203
Preventive Maintenance	$75
Total Annual Budget	$755

The Challenge

MDOT applies a "mix of fixes" asset management approach to keep as many roads in good or fair condition as possible with the resources available by applying the right fix, in the right place, at the right time. Through the Capital Preventive Maintenance (CPM) and Rehabilitation & Reconstruction (R&R) programs, fixes are evaluated and applied depending on pavement distress and other data. CPM treatments are intended to preserve the system, while the R&R program is designed to rebuild and rehabilitate pavements that are significantly distressed.

MDOT prioritizes projects based on:

Safety
Road Condition
Traffic Volume
Public Input
Maintenance Costs
Geographic Equity

This graphic simplifies a complex analysis and demonstrates the expected future needs of the pavement network by forecasting the investment needed to apply a "mix of fixes" asset management approach, while accounting for inflation and expected construction cost increases based on historical trends.

To achieve the STC goal of 90 percent of all pavements in good or fair condition, MDOT would need to invest an additional $2.4 billion annually in the CPM and R&R programs.

MDOT
Michigan Department of Transportation

Serving and connecting people, communities, and the economy through transportation.

www.Michigan.gov\MDOT

How does the Michigan Department of Transportation (MDOT) select which roads to fix?

1. Current Condition

MDOT is responsible for all I, US, and M routes. The department collects and analyzes the following pavement data to develop and RSL value for each pavement segment:

- ***Ride Quality (International Roughness Index)***
- ***Cracking, including type and severity***
- ***Rutting (asphalt pavements)***
- ***Faulting (concrete pavements)***

In addition, MDOT staff review historic project information and conduct visual assessments to determine if pavements are performing as expected. This information is used to update system-generated RSL values as needed.

2. Forecasted Condition

MDOT forecasts pavement conditions with the Road Quality Forecasting System (RQFS), which takes into account:

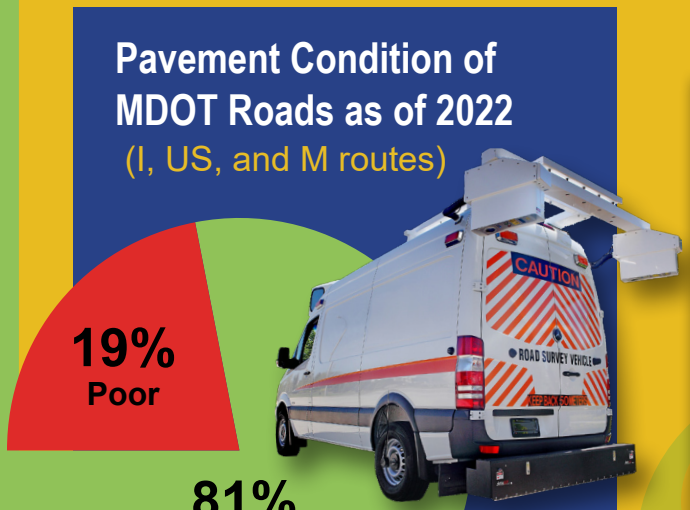
- ***Current road condition***
- ***Projected pavement deterioration***
- ***How long a proposed fix will last***
- ***Types of fixes***

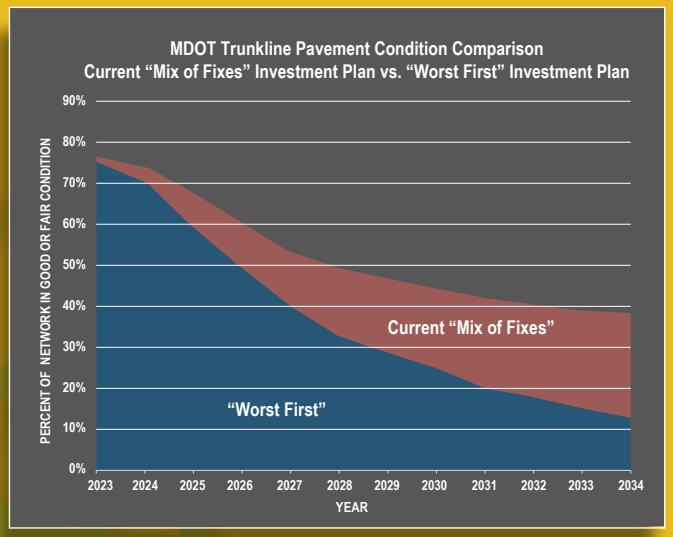
3. Strategy

MDOT monitors and manages the condition of the entire network, not just focusing on fixing the worst roads first. To maximize limited resources, MDOT uses a mix of fixes (reconstruction, resurfacing, and preventive maintenance).

Pavement Condition of MDOT Roads as of 2022

(I, US, and M routes)





MDOT selects road construction projects that are the right fix, at the right time, on the right road.

Preventive Maintenance Fixes

- ***Patch concrete or seal surface***
- ***Lasts 3-10 years***
- ***Used for roads in good or fair condition***
- ***Least expensive***

(about $0.15 million per lane mile)

Resurfacing Fixes

- ***Repair or replace surface***
- ***Lasts 10-15 years***
- ***Used for roads in fair/poor condition***
- ***Mid-price***

(about $0.95 million per lane mile)

Reconstruction Fixes

- ***Repair the surface and base under the road***
- ***Lasts 18-26 years***
- ***Used for roads in poor condition***
- ***Most expensive***

(about $4 million per lane mile)

MDOT Graphic Design:Bureaus\Transportation Planning\Intermodal Policy\brochures\Which Roads\2023.indd Updated12/23 BW