



County Road Association
OF MICHIGAN

2025 Michigan County Road Investment Plan:

*A comprehensive 83-county overview
of investment requirements to restore
Michigan's county road system.*

**County Road Association of Michigan
by JI Squared, LLC**

September 2025

TABLE OF CONTENTS

Pg. 2 | Author Credentials
Pg. 3 | *County Road Investment Plan* Work Group
Pg. 3 | Information Sources Utilized
Pg. 3 | Survey Timeframe
Pg. 4 | Executive Summary
Pg. 4 | *2025 County Road Investment Plan Report*
Pg. 11 | Chart 1-1: Fiscal Summary Sheet for 2025 County Road Investment Plan

Author Credentials

The author of the analysis utilized in this Plan is JI Squared, with co-principals James Iwanicki, PE, and Joshua Iwanicki.

James M. Iwanicki, a licensed Michigan Professional Engineer (PE) since 1995, is an expert consultant and part owner of JI Squared, LLC. Jim worked 25 years (1998-2023) for the Marquette County Road Commission (MCRC), including 20 years as its managing director. He was responsible for managing preventative maintenance and road construction projects on 1,300 miles of paved and unpaved roads, along with 94 bridges on a \$20 million budget. He retired from MCRC in 2023 and is currently Engineering Services Division Director for Jasper County, South Carolina.

Jim served on the 16-member Board of Directors, including as President, for the County Road Association (CRA) of Michigan from 2008-2023, representing Upper Peninsula county road agencies, and was president in 2016-2017. He is a graduate of Michigan Technological University.

Joshua Iwanicki, a data scientist and part owner of JI Squared, LLC, graduated *Summa Cum Laude* with a Bachelor of Science in business analytics from Northern Michigan University (NMU). His undergraduate research focused on data and analytics, and he was honored with the NMU Business Analytics Scholar Award in 2023 for academic excellence.

Subsequently, Joshua earned a master's degree in data science at the University of Michigan. Currently, he works as a data scientist supporting the US Army and Department of Defense, where he applies advanced analytics to drive mission-critical insights.



County Road Investment Plan Work Group

The CRA *County Road Investment Plan* Work Group guided creation of this report and included:

Larry Brown, PE, commissioner of the Allegan County Road Commission (ACRC) (40 years at ACRC, 48 years as PE)

Dirk Heckman, PE, engineer-manager of the Mackinac County Road Commission (24 years with road commissions, 22 years as a PE)

Dennis Kolar, PE, managing director of the Road Commission for Oakland County (RCOC) (40 years with RCOC, 36 years as PE)

Douglas Mills, PE, engineer-manager of the Baraga County Road Commission (BCRC) (32 years with BCRC, 23 years on the statewide Local Bridge Advisory Board, 15 years on the state Critical Bridge Committee, 35 years as PE)

Steven Puuri, PE, CRA engineering specialist and retired managing director of the Washtenaw County Road Commission (WCRC) (25 years with WCRC, 11 years at CRA, 42 years as PE)

Denise Donohue, chief executive officer, County Road Association of Michigan

Ed Noyola, chief deputy and legislative director, County Road Association of Michigan

Information Sources Utilized

The study and data included in the Executive Summary were compiled from numerous sources:

- Interviews and correspondence with all 83 Michigan county road commissions and departments (collectively: “road agencies”);
- Reports from the Local Technical Assistance Program (LTAP) and the Center for Technology & Training, both at Michigan Technological University;
- Data and reports from the Michigan Department of Transportation (MDOT) and the Michigan Transportation Asset Management Council (TAMC);
- 2023 Public MTF Reports of 2023;
- and the Michigan County Road Commission Self-Insurance Pool.

Survey Timeframe

This survey represents the best available data from January 2025 through August 2025. It was adopted by the CRA Board of Directors in September 2025.

2025 Michigan County Road Investment Plan Report:

A comprehensive 83-county overview of appropriate investment requirements to restore Michigan's county road system.

Executive Summary

From January through July, the County Road Association (CRA) of Michigan and its engineer-consultant JI Squared compiled multiple primary and published data, sources and surveys of all 83 Michigan county road agencies into the *2025 Michigan County Road Investment Plan*. This is an update of the *Plan* that was first released in May 2019, updated in May 2021 and December 2023. Countywide data on paved roads has been available only in piecemeal fashion since 1984 when the last MDOT-commissioned *Highway Needs Study* was published.

The intent of the *Michigan County Road Investment Plan* is to establish an estimated level of annual revenue required for all county road agencies in Michigan to meet their statutory mandate to provide and maintain a safe, efficient county road and bridge system, including stewardship of the county road right-of-way in Michigan. This study represents a “snapshot” of the current target investment need for all 83 county road agencies across the state.

The *Investment Plan* has monetized needs on the county system and finds that nearly **\$2.4 billion additional dollars annually** should be invested in the county road and bridge system to work toward 90% good/fair ratings on counties' 22,744 centerline miles of federal aid-eligible roads; and to achieve 60% good/fair ratings on counties' 30,716 miles of paved nonfederal aid-eligible (primary and local) roads. The counties' 37,024 miles of unpaved roads are not rated; however, the report includes the cost of gravel road surface replenishment. The study addresses only investments to preserve and restore the current system, and does not contemplate system improvements (e.g., additional lanes, roundabouts or paving gravel roads).

The Total Statewide County Road Agency Additional Needs identified in this 2025 *Plan* (p. 11), which utilizes the same methodology and sources as the last three biennial *Plans*, have increased by \$16 million – notably in the **Bridges category where the unmet need is up 32% in the last two years.**

Tracking needs on Michigan's county road system.

From 1948-1985, the State of Michigan looked formally and comprehensively at the needs of all three road jurisdictional entities: County road agencies (75% of road miles), municipalities (17%) and the Michigan Department of State Highways, later MDOT (8%). Each entity had seats on the coordinating committee that produced a periodic ***Michigan Highway Needs Study*** under the direction of consultant Wilbur Smith & Associates.

The *Needs Study* summarized and monetized needs of road surfaces, bridge conditions, road agency facilities and equipment. The 1972 Study (4th in the series) reported a \$30 billion plan over 20 years “to improve all highways, roads and streets in Michigan to tolerable standards.” The studies were funded off-the-top of the Michigan Transportation Fund (MTF). The final *Highway Needs Study* in the series was released in 1985.

Getting a Comprehensive Overview Today.

In 2018, CRA undertook its own study of the financial needs to preserve, maintain and restore Michigan’s county road system – part of the fourth-largest local road and bridge network in the US. This *2025 Investment Plan* provides actionable, peer-reviewed information drawn from primary data sources to ensure the needs of the county road and bridge system are accurately depicted and considered in legislative, gubernatorial and media discussions of properly funding and restoring Michigan’s transportation infrastructure for the benefit of Michigan residents and industries.

Our intent is to establish a level of annual revenue for the 83 county road agencies in Michigan that allows meaningful progress toward restoring Michigan to a safe, efficient system of local roads and bridges – which is the statutory mandate of county road agencies.

The *2025 Investment Plan* provides a “snapshot” of the current target investment need for all county road commissions and road departments (collectively: agencies) in the state. Information from all 83 county road agencies was analyzed to determine a statewide funding target. The *Plan* considers bridges, federal aid-eligible roads (called primary roads), nonfederal aid-eligible roads (called local roads) paved and unpaved separately, as each of these assets are in very different condition. It also considers buildings/maintenance facilities and equipment necessary to perform this work, as well as road/bridge maintenance costs.

Contents of the 2025 County Road Investment Plan.

This *Plan* compiled numerous published, third-party data sources and vetted them with interviews and correspondence with all 83 county road agencies. The *Plan* looked at the current financial needs of maintenance and capital investment on 90,484 miles of paved and unpaved primary and local roads (federal aid-eligible and nonfederal aid-eligible); routine preservation/replacement costs for 5,868 bridges; as well as buildings, facilities and equipment needed to run an efficient county road agency that provides a safe, efficient local road system. The comprehensive analysis is contained in this *Plan*; the survey and individual county data will remain the proprietary intellectual property of CRA.

The *Plan* recognizes that there is a backlog of demands on time, funds and resources to restore county road infrastructure, and further recognizes that there are real limits to improvements imposed by available roadwork material and human resources; what the traveling public will tolerate insofar as roadwork; and a realistic funding level.

Performance Goals. That said, goal setting is important to ensure Michigan is aiming for appropriate restoration of the county road and bridge system. Each county road agency per PA 325 of 2018 provides its agency performance goals in an ongoing process of maintaining, preserving, upgrading and operating physical assets cost effectively, based on a continuous physical inventory, condition assessment and estimated investment needed to achieve established performance goals.

For this *Investment Plan*, the CRA Board of Directors has established the same restoration goal for federal aid-eligible county roads as MDOT is utilizing:

- **90% good/fair for federal aid-eligible roads.** These roads currently have an average rating of 66% good/fair across all counties. (*good/fair = PASER 5-10*)

For the local road system CRA has set the following goal:

- **60% good/fair for local, nonfederal aid-eligible roads.** These roads currently have an average rating of 46% across all counties.

Additional assumptions are noted on pages 8-10.

Commentary

The 2025 County Road Investment Plan identifies that the necessary level of investment into the county road and bridge system to meet its performance goals is \$4,466,251,000 annually. It is up from \$4,104,689,000 in the 2023 *Investment Plan*. Subtracting the annual MTF-documented dollars (\$2,096,460,000) spent in all 83 counties in the six categories, the **Total Statewide County Road Agency Additional Needs has grown by \$16,217,000 (1%) to reach \$2.37 B since the 2023 Investment Plan.**

While the pandemic-fueled cost increases have slowed, the funding gap did grow, and the current analysis makes it clear that Michigan's county road and bridge system is not on the path to 90% and 60% good roads.

The headline of the 2025 *Investment Plan* is the **bridge category**, which shows a 32% increase (\$85 million) in the 2025 annual cost v. 2023 for bridges, using a 50-year amortization schedule for replacement costs. This 32% increase in routine bridge replacement does not take into account the \$1 B local bridge backlog of 398 bridges currently in closed/critical/serious condition competing for \$50 M annually available in the Local Bridge Program. These 398 bridges should be fixed immediately and then would be covered by a normal 50-year amortization schedule.

Adding to the bridge challenge, in the last 10 years *153 new county bridges have been added* due to modern engineering requirements and environmental mandates including up-sizing culverts, which turns them into bridges. "Up-sized" bridges are needed for more robust, resilient drainage structures due to increased water flow, potential for scour damage to supports and upstream development. Such additions are very costly, and the culvert-to-bridge conversion is ineligible for funds from Michigan's Local Bridge Program.

Ratings on Nonfederal Aid-eligible Roads.

Michigan has a specific protocol for rating roads: The Pavement Surface Evaluation & Rating system (PASER). PASER ratings are required for all federal aid-eligible roads but *not required* for nonfederal aid-eligible roads (local roads). That said, many county road agencies are rating their paved local roads to better manage these transportation assets. Because very poor roads are often viewed as unworthy of rating efforts, the good/fair data on p. 6 may be even worse than shown.



Investment Plan Definitions and Baseline Assumptions

The analysis for this study was based on the best available data in the first six months of 2025.

The target level of investment for each county was based on the following six categories:

1) Bridges – A list of all county road agency bridges was obtained from the Michigan Transportation Asset Management Council (TAMC) and is identical in composition to the MDOT bridge data used in 2023. The list included the structure number, county and deck area. For this study, a straight-line depreciation method was used to determine the required annual investment for replacement.

A 50-year lifespan was used, as specified in the “Uniform Accounting Procedures” for concrete bridges. The estimated cost of demolition and replacement were obtained from the MDOT 2025 Local Agency Program Bridge Scoping Cost Estimate Worksheet. Demolition and replacement cost was set at \$583/sq. ft. of deck and approach work was estimated at \$450,000 per structure. Replacement deck areas were assumed to increase by 20% of the existing structures. Based on this 2023 Bridge Worksheet, costs of 10% contingency + 10% mobilization + 15% engineering were added to each structure.

2) Buildings, Maintenance Facilities – The existing county road agency buildings and facilities were obtained for each county road agency either from the Michigan County Road Commission Self-Insurance Pool (MCRCSIP) or for non-MCRCSIP members through direct contact with the agency. The 2023 *Investment Plan* data was used and adjusted for inflation for a few counties that did not provide information in 2025.

Straight-line depreciation of 40 years was assumed for all facilities based on experience from county road agencies to determine the required annual investment. Replacement costs used for buildings are: Administration buildings (\$294/sq. ft.); equipment maintenance and heated storage (\$294/sq. ft.); cold storage (\$125/sq. ft.); and salt storage (\$125/sq. ft.). These costs are based on reported replacement costs cited by MCRCSIP, which has experience with structural replacement costs for the vast majority of county road commissions.

Fuel, brine and emulsion storage facilities were assigned a replacement value established by insurance companies. A life span of 20 years was assumed for these types of facilities.

3) Total Maintenance – The best data available for the current level of maintenance funding for county road agencies is the annual MTF report, line 116, of 2023. An increase of 20% was used for the target investment, which was the assumption used in the 2023 and 2021 *County Road Investment Plans*, and in the last *Needs Study* performed by the State of Michigan in 1983. It is standard practice.

Work includes winter and non-winter maintenance, patching, guardrail replacement, tree/brush removal, culvert replacement, grading unpaved roads, shoulder maintenance, drainage, sign replacement and related tasks. This work has become deferred maintenance at many county road agencies, but is necessary to maintain a safe and efficient road system. The included 20% increase is appropriate for most activities; however, it will not fully cover the cost of culvert replacement and other complicated activities. Limited data exists to calculate these specific expenses.

4) Equipment – 2025 equipment values were established using information from county road agencies, equipment dealers, internet research and MCRC SIP data. Straight-line depreciation was used to determine the annual target investment for equipment. The same equipment life span values from the 2023, 2021 and 2019 *Investment Plans* were used in this analysis and adjusted for inflation. Equipment lists were obtained for each county agency either from the Michigan County Road Commission Self-Insurance Pool (MCRC SIP) or for non-MCRC SIP members through direct contact with the agency. The 2023 *Investment Plan* data was used and adjusted for inflation for a few counties that did not provide information in 2025.

5) Federal Aid-Eligible Road Investment (*a.k.a., primary roads*) – The level of investment for this category was determined by using the number of centerline miles of paved and unpaved (gravel) roads eligible for federal aid. The work group limited the project to assuming that only 15% of this work could be completed each year, due to limitations on contractor capacity and potential traffic disruptions. *[Note: In all cases, this Plan cites centerline miles rather than lane miles.]*

The annual investment level required on a **paved primary road** was determined using the Pavement Surface Evaluation and Rating (PASER) system. As required by federal aid provisions, each road agency reported its current PASER rating by centerline mile through the Roadsoft Program, maintained at the Michigan Technological University (MTU) Center for Technology & Training.

The annual investment level for a mile of **unpaved primary road** requires an average of 1,000 cu. yds. of aggregate every seven years (approx. equal to the 15% per year goal established).

Michigan Transportation Asset Management Council (TAMC) information was used to establish improvement costs for primary roads. Construction data was collected from a representative sample of counties: Allegan, Kent, Marquette, Oakland and Wexford. Engineering judgment was then applied to develop a statewide average cost.

6) Nonfederal Aid-Eligible Road Investment (*a.k.a., local roads*) – As with federal aid-eligible roads, the level of investment for nonfederal aid-eligible roads was determined by using the number of centerline miles of unpaved and paved roads. Again, it was assumed that no more than 15% of this work could be addressed in a single year due to contractor capacity limits and traffic disruptions.

The annual investment level required on a **paved local road** was determined using the PASER system. The nonfederal-aid eligible PASER ratings were established by having each county road agency compute its current PASER rating by centerline mile through the Roadsoft Program. Construction costs for nonfederal aid roads were assumed to be the same as for the federal aid system roads.

The annual investment level required on an **unpaved local road** is an average of 1,000 cu. yds. of aggregate per mile every seven years (approx. equal to the 15% per year goal established).

The cost per mile for the treatments listed for the nonfederal aid-eligible paved (HMA, seal coat/chip seal and composite surfaces) system were obtained from a statewide survey from Michigan Technological University's Local Technical Assistance Program in 2017 and adjusted for inflation for all four *County Road Investment Plans*.

The type of fix needed for each different PASER rating is based on whether the rated pavement was asphalt or concrete, which was established by Michigan Technological University's Local Technical Assistance Program in 2017. The cost for each *type of fix* was gathered from Allegan, Kent, Marquette, Oakland and Wexford counties in 2025 to develop a statewide average cost, which was then applied to the PASER rating data to obtain the statewide revenue need.

These six categories cover the majority of the required annual investment for county road agencies. Totals for each category are shown in Chart 1-1. Each category had an 8% administrative charge applied, which is slightly less than the 8.5% administrative charge MDOT allows.

The *2025 County Road Investment Plan* does not include funding for new construction or capacity improvements. Its intent is to show the required investment to make significant progress in restoring the existing county road system as of September 2025.

Chart 1-1: Fiscal Summary Sheet for 2025 County Road Investment Plan

Following is the summary of fiscal needs for the six categories that are critical to improving Michigan's county road system. Annual costs for these categories used in compiling the *2025 County Road Investment Plan* come from data for paved and unpaved county primary and local roads, as well as bridges, in the first half of 2025.

Need Category	Annual Cost
Bridges	\$ 350,147,000 ↑
Buildings, Maintenance Facilities	\$ 54,527,000 ↑
Maintenance	\$1,006,192,000 ↑
Equipment	\$ 201,591,000 ↑
Federal Aid-Eligible Roads	\$ 701,880,000 ↓
Nonfederal Aid-Eligible Roads	\$2,151,914,000 ↑
Annual County Road Investment Needs	\$4,466,251,000 ↑
Less county road revenue documented in 2023 MTF Report <small>*Total revenue is Line 97 minus Lines 77 & 78 from PA 51 Reports of 2023.</small>	- <u>\$2,096,460,000*</u> ↑
Total Statewide County Road Agency Additional Needs	\$2,369,791,000 ↑

Note: All Annual Costs in this table have been rounded to the nearest \$1,000.

County Road Association of Michigan **Board of Directors 2025-2026**



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