

Office of the Auditor General
Follow-Up Report on Prior Audit Recommendations

Use of Warranties
Michigan Department of Transportation

December 2022

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Report Summary

Follow-Up Report

Use of Warranties

Michigan Department of Transportation (MDOT)

Report Number:
591-0320-20F

Released:
December 2022

We conducted this follow-up to determine whether MDOT had taken appropriate corrective measures in response to the two material conditions noted in our March 2021 audit report.

Prior Audit Information
Finding 1 - Material condition Oversight of road and bridge warranty corrective action needs improvement. Agency agreed.
Finding 2 - Material condition Evaluation needed to determine the overall value of warranties on road and bridge construction projects. Agency partially agreed.

Follow-Up Results		
Conclusion	Finding	Agency Preliminary Response
Complied	Not applicable.	
Partially complied	Material condition still exists. See Finding 2 .	Partially agrees

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December 13, 2022

Mr. Todd Wyett, Chair
State Transportation Commission
and
Paul C. Ajegba, PE, Director
Michigan Department of Transportation
Murray D. Van Wagoner Building
Lansing, Michigan

Dear Mr. Wyett and Mr. Ajegba:

This is our follow-up report on the two material conditions (Findings 1 and 2) and two corresponding recommendations reported in the performance audit of the Use of Warranties, Michigan Department of Transportation. That audit report was issued and distributed in March 2021. Additional copies are available on request or at audgen.michigan.gov.

Your agency provided the preliminary response included in this report. The *Michigan Compiled Laws* and administrative procedures require an audited agency to develop a plan to comply with the recommendations and to submit it to the State Budget Office upon completion of an audit. Within 30 days of receipt, the Office of Internal Audit Services, State Budget Office, is required to review the plan and either accept the plan as final or contact the agency to take additional steps to finalize the plan.

We appreciate the courtesy and cooperation extended to us during our follow-up. If you have any questions, please call me or Laura J. Hirst, CPA, Deputy Auditor General.

Sincerely,

Doug Ringler
Auditor General

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INTRODUCTION, PURPOSE OF FOLLOW-UP, AND AGENCY DESCRIPTION

INTRODUCTION

This report contains the results of our follow-up of the two material conditions* (Findings 1 and 2) and two corresponding recommendations reported in our performance audit* of the Use of Warranties, Michigan Department of Transportation (MDOT), issued in March 2021.

PURPOSE OF FOLLOW-UP

To determine whether MDOT had taken appropriate corrective measures to address our corresponding recommendations.

AGENCY DESCRIPTION

MDOT was organized under Public Act 380 of 1965 (Sections 16.450 - 16.458 of the *Michigan Compiled Laws*). MDOT is governed by the State Transportation Commission (STC), which is composed of six members who are appointed by the Governor with the advice and consent of the Senate. STC is responsible for establishing departmental policies. MDOT's director, who is appointed by the Governor, is responsible for organizing and administering MDOT and implementing the policies established by STC.

MDOT began using warranties on pavement projects in 1996. Michigan Public Act 79 of 1997 provided that MDOT shall, where possible, secure full replacement warranties of not less than five years on State trunkline projects. Subsequent appropriations acts have contained language directing MDOT to work with the road construction industry to develop performance warranties* and materials and workmanship warranties* for construction projects. Public Act 175 of 2015 reduced the mandate for warranties and required MDOT to secure pavement warranties for full replacement or appropriate repair for contracted construction work on pavement projects whose cost exceeds \$2 million and projects for new construction or reconstruction*.

From July 1, 2021 through June 30, 2022, MDOT awarded 276 State trunkline road and bridge construction contracts with a total contract award amount of \$1.7 billion:

Warranty Included	Total Contract Award Amount	Total Number of Contracts
Yes	\$1,447,023,070	110
No	255,184,613	166
Total	\$1,702,207,683	276

* See glossary at end of report for definition.

For each warranty, MDOT required the contractor to obtain a warranty bond from a surety* for the length of the warranty period to protect MDOT if the contractor failed to provide corrective action when necessary. Bond costs vary by project and are different based on factors including a company's size, a credit rating, and the number of long-term bonds being carried at any given time. According to the Statewide Warranty Administration Database (SWAD), the total bond amount for contracts with warranties expiring from April 1, 2020 through June 30, 2022 was \$183.9 million. Bond amounts for warranties ranged from \$1,000 to \$3,188,755, averaging \$505,352.

From July 1, 2021 through June 30, 2022, MDOT had 747 active warranties in SWAD. Types of warranties included performance warranties on bridge coating projects and pavement capital preventative maintenance* projects and materials and workmanship warranties on pavement rehabilitation* and new reconstruction or reconstruction projects:

<u>Project Type</u>	<u>Warranty Type</u>	<u>Treatment Type</u>
Bridge Coating	Performance	Bridge coating
Capital Preventative Maintenance	Performance	Hot Mix Asphalt (HMA) crack treatment Single chip seal Double chip seal Paver placed surface seal Micro-surfacing Ultra-thin HMA overlay HMA overlay
Rehabilitation	Materials and Workmanship	HMA crush and shape base HMA over rubblized concrete Multiple course HMA overlay
New Construction or Reconstruction	Materials and Workmanship	Jointed plain concrete pavement Jointed reinforced concrete pavement

* See glossary at end of report for definition.

PRIOR AUDIT FINDINGS AND RECOMMENDATIONS; AGENCY PLAN TO COMPLY; AND FOLLOW-UP CONCLUSIONS, RECOMMENDATION, AND AGENCY PRELIMINARY RESPONSE

FINDING 1

Audit Finding Classification: Material condition.

Summary of the March 2021 Finding:

MDOT needed to improve how it oversees road and bridge corrective action via warranty work. Specifically, we noted MDOT did not:

- Always notify contractors corrective action was required prior to warranty expiration.
- Consistently or timely send a second corrective action notification letter to the contractor and surety and notify the Department of Attorney General (AG) and Contractor Performance Evaluation Review (CPEER) Team of unresponsive contractors.
- Have an effective process to establish time frames for corrective action completion when circumstances necessitated contractors to complete corrective action outside of the warranty period.
- Provide inspector's daily reports (IDRs) to support the project engineers' review and acceptance of the corrective action.

Recommendation Reported in March 2021:

We recommended that MDOT improve its oversight of roads and bridges requiring corrective action via warranty work.

AGENCY PLAN TO COMPLY*

On May 20, 2021, MDOT indicated it would review its warranty administration processes, procedures, and associated manual and revise and enhance its requirements to ensure value is provided and duplicative efforts are eliminated. MDOT also indicated it would review opportunities to provide warranty training to enhance staff understanding of warranty administration and would complete and implement these actions by March 31, 2022.

FOLLOW-UP CONCLUSION

Complied.

Our follow-up noted MDOT:

- Provided training to staff emphasizing the importance of adequate and timely follow-up with contractors with

* See glossary at end of report for definition.

warranties requiring corrective action, including guidance on requirements for when to:

- Send a second notification letter to the contractor.
- Notify the AG and CPER Team with the second notification.
- Notified contractors of required corrective action prior to warranty expiration for all 12 sampled warrantied segments expiring in calendar year 2022.
- Obtained contractor responses within 30 days of first notification for all 12 sampled warrantied segments expiring in calendar year 2022.
- Increased communication with contractors, including requesting contractors to schedule corrective action.
- Developed and implemented a new process for completion of IDRs when a project is financially closed.

FINDING 2

Audit Finding Classification: Material condition.

Summary of the March 2021 Finding:

MDOT should reestablish its efforts to evaluate the overall value of warranties on road and bridge construction projects. Specifically, we noted MDOT did not:

- Fully develop a process for the evaluation of the effectiveness of its pavement warranty program to help ascertain if its warranty program has resulted in higher quality pavement construction or determine whether the added cost of administering the warranty program is offset by reduced pavement construction and maintenance costs. MDOT's March 2011 Warranty Program Effectiveness Evaluation was inconclusive.
- Adjust its practices to use available data and obtain additional necessary data to assess the overall value of requiring warranties on pavement and bridge projects after its March 2011 Warranty Program Effectiveness Evaluation was inconclusive.
- Evaluate the overall value of requiring warranties when not mandated.

Recommendation Reported in March 2021:

We recommended that MDOT reestablish its efforts to evaluate the overall value of warranties on road and bridge construction projects.

AGENCY PLAN TO COMPLY

MDOT indicated in May 2021 it agreed an evaluation of the warranty program could be beneficial. However, MDOT stated given the Legislature's keen interest to retain and expand the warranty program, as evidenced by revisions to Public Act 51 of 1951, inconclusive results of previous reviews, and limited resources, MDOT does not believe there is sufficient justification to commit the resources that would be necessary to evaluate the program's value. MDOT further stated the National Cooperative Highway Research Program's 2020 Performance-Based Pavement Warranty Program Practices report also showed mixed results on the value of pavement warranty programs, which MDOT said demonstrates it is difficult to reach a conclusive result regarding the value of warranties. Therefore, based on current legislative interest in warranties, the statutory requirements, and previous inconclusive results from other analyses, MDOT considers any reevaluation of the warranty program a low priority and does not agree to prioritize limited resources for further evaluation at this time.

FOLLOW-UP CONCLUSION

Partially complied. A material condition still exists.

Our follow-up noted MDOT's position has not changed regarding a comprehensive evaluation of the warranty program. However,

MDOT informed us it commenced a review and reported in November 2021 to the State Transportation Commission it would eliminate warranties on Single Course Hot Mix Asphalt Overlays for projects under \$2 million. MDOT informed us it considered factors since 2011 including the total number of warranties by project and project fix type, the percentage of warranties requiring corrective action, and the average corrective action value. MDOT had not taken any additional corrective action.

**FOLLOW-UP
RECOMMENDATION**

We again recommend that MDOT reestablish its efforts to evaluate the overall value of warranties on road and bridge projects.

**FOLLOW-UP
AGENCY
PRELIMINARY
RESPONSE**

MDOT provided us with the following response:

MDOT partially agrees with the recommendation.

Given the Legislature's keen interest and requirement to retain the warranty program, inconclusive results from previous reviews, and limited resources, MDOT does not believe there is sufficient potential benefit to commit the resources that would be necessary to evaluate the warranty program's value.

As referenced in the findings and by MDOT, the Office of Auditor General (OAG) best practice review of other states and the National Cooperative Highway Research Program's 2020 Performance-Based Pavement Warranty Program Practices report both showed mixed results on the value of pavement program warranties. It is also important to note that since inception of the warranty program, warranty projects have been based on project type and project fix type and not cost. For example, in response to the initial legislative requirements (Public Act 79 of 1997), MDOT's warranty program was based on project type (i.e., road reconstruction and rehabilitation, bridge, capital preventive maintenance, and one-course overlays) and project fix type (i.e., materials/workmanship and performance), and this has also been the basis since the updated legislative requirements (Public Act 175 of 2015).

Although MDOT does not support the performance of an overall evaluation of the value of warranties, MDOT aligned some of its actions with the OAG's finding. Specifically, MDOT has reviewed warranty project type and fix type as it relates to the total number and percentage of warranties, the project type call back rate (i.e., the frequency or percentage of corrective action needed), and the duration of the fix life. As a result, road reconstruction and rehabilitation, bridge, and capital preventive maintenance warranty project types were retained, and warranties for one course mill and/or Hot Mix Asphalt (HMA) overlay projects under \$2,000,000, as referenced in Public Act 175 of 2015, were eliminated. This is predominantly because MDOT determined that one-course overlay projects typically have a short fix life and

represent the highest percentage of warranties and lowest percentage of call backs.

Based on the current legislative interest in warranties, the statutory requirements, and previous inconclusive results from other analyses, MDOT considers an in-depth evaluation of the warranty program to be a low priority and, therefore, does not agree to use limited resources for further in-depth evaluation at this time. However, MDOT does plan to continue its review and monitoring of warranty project type and project fix type for future considerations.

**AUDITOR'S
COMMENTS TO
AGENCY
PRELIMINARY
RESPONSE***

The finding was not reported in an attempt to address known or inferred legislative intent for the warranty program. We continue to believe the finding recommends a sound business practice.

MDOT informed us of its review of warranties and determinations subsequent to our fieldwork. As a result, we did not assess the sufficiency or validate the results of MDOT's review. However, MDOT's decision to eliminate some warranties with project costs under \$2 million aligns with our recommendation that a more comprehensive evaluation would help MDOT determine whether warranties result in cost savings or improve the quality of road and bridge construction. Such conclusions would provide meaningful insight to the Legislature for future policy decisions concerning the warranty program in Michigan.

As depicted in pages 14 through 16 of our March 2021 performance audit report, the National Cooperative Highway Research Program's 2020 Performance-Based Pavement Warranty Practices report noted 13 (48.1%) of the 27 states previously using warranties no longer use them on pavement projects. Five (38.5%) of the 13 states indicated they were not cost effective.

* See glossary at end of report for definition.

FOLLOW-UP METHODOLOGY, PERIOD, AND AGENCY RESPONSES

METHODOLOGY

We reviewed MDOT's corrective action plan and updated guidelines for administering warranties on road and bridge construction contracts. Also, we:

- Interviewed MDOT management to:
 - Obtain information regarding MDOT's processes and procedures to monitor warranties requiring corrective action.
 - Identify any action MDOT had taken to evaluate the overall value of warranties on road and bridge construction projects.
- Reviewed training MDOT provided to its staff during our coverage period.
- Reviewed all 12 warrantied segments with expiration dates between April 1, 2022 and June 30, 2022 requiring corrective action to determine whether MDOT:
 - Notified contractors of required corrective action before warranty expiration.
 - Followed its Corrective Action Required Notification Sub-Process.
- Reviewed all 11 warrantied segments with expiration dates between April 1, 2022 and June 30, 2022 having corrective action completed as of August 31, 2022. We also judgmentally selected 1 additional warrantied segment expiring prior to April 1, 2022 but had corrective action completed on April 7, 2022. We determined whether MDOT required contractors to perform necessary corrective action work on warranty claims and documented the inspection and acceptance of the corrective action work in the project files.

PERIOD

Our follow-up generally covered April 1, 2022 through June 30, 2022.

AGENCY RESPONSES

Our follow-up report contains 1 recommendation. MDOT's preliminary response indicates it partially agrees with the recommendation.

The agency preliminary response following the follow-up recommendation in our report was taken from the agency's written comments and oral discussion at the end of our fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and the State of Michigan Financial Management Guide (Part VII,

Chapter 4, Section 100) require an audited agency to develop a plan to comply with the recommendations and to submit it to the State Budget Office upon completion of an audit. Within 30 days of receipt, the Office of Internal Audit Services, State Budget Office, is required to review the plan and either accept the plan as final or contact the agency to take additional steps to finalize the plan.

GLOSSARY OF ABBREVIATIONS AND TERMS

AG	Department of Attorney General.
agency plan to comply	The response required by Section 18.1462 of the <i>Michigan Compiled Laws</i> and the State of Michigan Financial Management Guide (Part VII, Chapter 4, Section 100). The audited agency is required to develop a plan to comply with Office of the Auditor General audit recommendations and to submit the plan to the State Budget Office upon completion of an audit. Within 30 days of receipt, the Office of Internal Audit Services, State Budget Office, is required to review the plan and either accept the plan as final or contact the agency to take additional steps to finalize the plan.
auditor's comments to agency preliminary response	Comments that the OAG includes in an audit report to comply with <i>Government Auditing Standards</i> . Auditors are required to evaluate the validity of the audited entity's response when it is inconsistent or in conflict with the findings, conclusions, or recommendations. If the auditors disagree with the response, they should explain in the report their reasons for disagreement.
capital preventative maintenance	Cost-effective treatment to an existing road system that preserves or improves the condition of the system without significantly increasing structural capacity.
CPER	Contractor Performance Evaluation Review.
HMA	Hot Mix Asphalt.
IDR	inspector's daily report.
material condition	A matter that, in the auditor's judgment, is more severe than a reportable condition and could impair the ability of management to operate a program in an effective and efficient manner and/or could adversely affect the judgment of an interested person concerning the effectiveness and efficiency of the program. Our assessment of materiality is in relation to the respective audit objective.
materials and workmanship warranty	A road and bridge construction warranty in which the contractor is responsible for correcting defects in work elements within the contractor's control (materials and workmanship) during the warranty period.

MDOT	Michigan Department of Transportation.
performance audit	An audit that provides findings or conclusions based on an evaluation of sufficient, appropriate evidence against criteria. Performance audits provide objective analysis to assist management and those charged with governance and oversight in using the information to improve program performance and operations, reduce costs, facilitate decision-making by parties with responsibility to oversee or initiate corrective action, and contribute to public accountability.
performance warranty	A warranty on pavement construction in which the contractor assumes full responsibility for pavement performance during the warranty period and is responsible for materials selection, workmanship, and certain aspects of design. The contractor is responsible for deficiencies under his or her control.
reconstruction	Complete removal and replacement of the existing pavement structure. Reconstruction may include new and/or recycled material.
rehabilitation	Structural enhancements that extend the service life of an existing pavement and/or improve its load-carrying capability. Pavement rehabilitation techniques include restoration treatments and structural overlays.
STC	State Transportation Commission.
surety	An entity who has become legally liable for the debt, default, or failure in duty of another.
SWAD	Statewide Warranty Administration Database.



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