



MICHIGAN

OFFICE OF THE AUDITOR GENERAL

AUDIT REPORT

PERFORMANCE AUDIT
OF THE

MONITORING OF WARRANTIES AND
ROAD AND BRIDGE CONSTRUCTION PROJECTS

MICHIGAN DEPARTMENT OF TRANSPORTATION

February 2015



Doug A. Ringler, CPA, CIA
AUDITOR GENERAL

The auditor general shall conduct post audits of financial transactions and accounts of the state and of all branches, departments, offices, boards, commissions, agencies, authorities and institutions of the state established by this constitution or by law, and performance post audits thereof.

– Article IV, Section 53 of the Michigan Constitution

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Performance Audit

Monitoring of Warranties and Road and Bridge Construction Projects Michigan Department of Transportation

Report Number:
591-0210-14

Released:
February 2015

The Michigan Department of Transportation (MDOT) monitors warranties applied to road and bridge construction projects. MDOT uses the Statewide Warranty Administrative Database (SWAD) to track warranties and to identify warranties due for an inspection. As of April 16, 2014, MDOT had 481 active road and bridge warranties. MDOT also monitors road and bridge construction projects. Construction project oversight, in part, consists of the verification and approval of contract work performed, materials used, and project payments. For the period October 1, 2011 through March 31, 2014, MDOT oversaw the completion of 1,340 road and bridge construction projects costing \$1.4 billion.

| Audit Objective | | | Audit Conclusion |
|--|--------------------|----------------------|-----------------------------|
| Objective 1: To assess the effectiveness of MDOT's efforts to monitor road and bridge construction project warranties. | | | Not effective |
| Findings Related to This Audit Objective | Material Condition | Reportable Condition | Agency Preliminary Response |
| MDOT did not consistently ensure that contractors completed corrective action or completed it timely for warrantied projects identified as needing repairs. As a result, the responsibility for the cost of road repairs may shift from the contractor to the State (<u>Finding 1</u>). | X | | Agrees |
| MDOT did not ensure that staff inspected or timely inspected all warrantied road and bridge construction projects. Also, MDOT did not maintain documentation to support initial acceptance of warrantied projects, interim and final inspections, and notifications to the contractor that the warranty period was complete. As a result, MDOT may not have the authority to require a contractor to perform corrective action, and the cost of repairing or replacing a road or bridge could lie with the State instead of the contractor (<u>Finding 2</u>). | X | | Agrees |
| MDOT did not ensure the completeness and accuracy of the information recorded in SWAD. Relying on incomplete or inaccurate information can result in the State bearing the cost of repairing roads when they were damaged under warranty (<u>Finding 3</u>). | X | | Agrees |

| Audit Objective | | | Audit Conclusion |
|--|---------------------------|-----------------------------|------------------------------------|
| Objective 2: To assess the effectiveness of MDOT's efforts to secure warranties for road and bridge construction projects. | | | Effective |
| Findings Related to This Audit Objective | Material Condition | Reportable Condition | Agency Preliminary Response |
| None reported. | Not applicable | Not applicable | Not applicable |

| Audit Objective | | | Audit Conclusion |
|---|---------------------------|-----------------------------|------------------------------------|
| Objective 3: To assess the effectiveness of MDOT's efforts to monitor road and bridge construction projects. | | | Effective |
| Finding Related to This Audit Objective | Material Condition | Reportable Condition | Agency Preliminary Response |
| MDOT did not prepare interim and final consultant evaluations in accordance with established procedures. As a result, MDOT's Contract Services Division may not have accurate and up-to-date information regarding consultant performance for consideration on subsequent contracts (<u>Finding 4</u>). | | X | Agrees |

A copy of the full report can be obtained by calling 517.334.8050 or by visiting our Web site at: <http://audgen.michigan.gov>

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February 20, 2015

Mr. Jerrold M. Jung, Chair
State Transportation Commission
and
Kirk T. Steudle, PE, Director
Michigan Department of Transportation
Murray Van Wagoner Transportation Building
Lansing, Michigan

Dear Mr. Jung and Mr. Steudle:

This is our report on the performance audit of the Monitoring of Warranties and Road and Bridge Construction Projects, Michigan Department of Transportation.

This report contains our report summary; a description of process; our audit objectives, scope, and methodology and agency responses and prior audit follow-up; comments, findings, recommendations, and agency preliminary responses; and a glossary of abbreviations and terms.

Our comments, findings, and recommendations are organized by audit objective. The agency preliminary responses were taken from the agency's response at the end of our audit fieldwork. The *Michigan Compiled Laws* and administrative procedures require that the audited agency develop a plan to comply with the audit recommendations and submit it within 60 days after release of the audit report to the Office of Internal Audit Services, State Budget Office. Within 30 days of receipt, the Office of Internal Audit Services 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 this audit.

Sincerely,

A handwritten signature in black ink that reads "Doug Ringler". The signature is written in a cursive, flowing style.

Doug Ringler
Auditor General

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Description of Process

The Michigan Department of Transportation (MDOT) was organized under Act 380, P.A. 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.

Section 247.661(2) of the *Michigan Compiled Laws* provides that MDOT shall, where possible, secure full replacement warranties of not less than five years on State trunkline* projects. Also, MDOT appropriations acts direct MDOT to work with the road construction industry to develop performance warranties* and materials and workmanship warranties* for construction projects. As of April 16, 2014, MDOT had 452 active* road construction warranties and 29 active bridge warranties. The length and type of warranties vary from two- to three-year performance warranties on bridge painting projects and pavement capital preventive maintenance* projects to five-year materials and workmanship warranties on most pavement reconstruction* and rehabilitation* projects.

In 2003, MDOT implemented the Statewide Warranty Administrative Database (SWAD) as its tool for monitoring warrantied construction projects. SWAD was designed to enable management to track warranties and to identify when warranties were due to expire, thus allowing MDOT to schedule final inspections of warrantied projects.

MDOT's central office, 7 regional offices, and 22 transportation service centers are responsible for monitoring road and bridge construction projects. Construction project oversight, in part, consists of working together with contractors and consultants to complete construction and manage projects, reviewing daily project progress reports, monitoring materials usage, performing on-site inspections, reviewing and approving project payments, reviewing and approving contract modifications*, evaluating contractors and project consultants, and performing final inspections and procedures to close out the projects.

For the period October 1, 2011 through March 31, 2014, MDOT oversaw the completion of 1,340 road and bridge construction projects costing \$1.4 billion.

* See glossary at end of report for definition.

Audit Objectives, Scope, and Methodology and Agency Responses and Prior Audit Follow-Up

Audit Objectives

Our performance audit* of the Monitoring of Warranties and Road and Bridge Construction Projects, Michigan Department of Transportation (MDOT), had the following objectives:

1. To assess the effectiveness* of MDOT's efforts to monitor road and bridge construction project warranties.
2. To assess the effectiveness of MDOT's efforts to secure warranties for road and bridge construction projects.
3. To assess the effectiveness of MDOT's efforts to monitor road and bridge construction projects.

Audit Scope

Our audit scope was to examine the processes related to the Michigan Department of Transportation's monitoring of warranties and road and bridge construction projects. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Our audit procedures, which included a preliminary survey, audit fieldwork, report preparation, analysis of agency responses, and quality assurance, generally covered the period October 1, 2011 through June 30, 2014.

Audit Methodology

We conducted a preliminary survey of MDOT's operations as they pertained to warranties and road and bridge construction projects to formulate a basis for developing our audit objectives and defining our audit scope. Our preliminary survey included:

- Interviewing MDOT staff regarding their job functions and responsibilities.
- Reviewing applicable State laws, regulations, policies, procedures, and manuals.

* See glossary at end of report for definition.

- Analyzing available data and statistics.
- Examining reports from various internal audits and other states.

To accomplish our first objective, we:

- Judgmentally selected warrantied projects and conducted tests to determine whether MDOT completed inspections on a timely basis and documented the inspections in the project files.
- Assessed whether MDOT required contractors to perform necessary corrective action work on warranty claims and whether MDOT documented the completion of the corrective action work in the project files.
- Compared documentation in the project files to inspection and warranty information contained in the Statewide Warranty Administrative Database (SWAD) to verify the accuracy of SWAD.
- Compared projects awarded with warranties against the warrantied projects contained in SWAD to determine the completeness of SWAD.
- Assessed whether SWAD contained the required inspections for expired warranties.

To accomplish our second objective, we:

- Identified projects let during the audit period that did not have a corresponding warranty identified in SWAD.
- Assessed the projects that did not have a corresponding warranty identified in SWAD to determine if the project should have secured a warranty.
- Assessed projects that were not State trunkline projects to determine if the project could have secured a warranty.

To accomplish our third objective, we:

- Examined project files at five MDOT transportation service centers and one regional office to assess MDOT's compliance with requirements related to construction project oversight, preparation of contractor and consultant evaluations, completion of final estimate reviews, and claims processing procedures.

- Examined agency records related to Independent Assurance Testing certifications, construction project quality control testing plans, and inspector reports of materials tested.

We based our audit conclusions on our audit efforts as described in the preceding paragraphs and the resulting material conditions* and reportable condition* noted in the comments, findings, recommendations, and agency preliminary responses section. The material conditions are more severe than a reportable condition and could impair management's ability to operate effectively or could adversely affect the judgment of an interested person concerning the effectiveness of the processes used for monitoring warranties. The reportable condition is less severe than a material condition but represents a significant deficiency in internal control*.

When selecting activities or programs for audit, we direct our efforts based on risk and opportunities to improve the operations of State government. Consequently, we prepare our performance audit reports on an exception basis.

Agency Responses and Prior Audit Follow-Up

Our audit report contains 4 findings and 6 corresponding recommendations. MDOT's preliminary response indicates that it agrees with all 6 recommendations.

The agency preliminary response that follows each recommendation in our report was taken from the agency's written comments and oral discussion at the end of our audit fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and the State of Michigan Financial Management Guide (Part VII, Chapter 4, Section 100) require MDOT to develop a plan to comply with the audit recommendations and submit it within 60 days after release of the audit report to the Office of Internal Audit Services, State Budget Office. Within 30 days of receipt, the Office of Internal Audit Services 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 released our prior performance audit of Road and Bridge Construction Project Monitoring, Michigan Department of Transportation (591-0170-09), in September 2010. MDOT complied with 3 of the 7 prior audit recommendations. We rewrote 2 prior audit recommendations for inclusion in Findings 1, 2, and 4 of this audit report and determined that 2 prior audit recommendations were no longer applicable.

* See glossary at end of report for definition.

COMMENTS, FINDINGS, RECOMMENDATIONS,
AND AGENCY PRELIMINARY RESPONSES

EFFORTS TO MONITOR ROAD AND BRIDGE CONSTRUCTION PROJECT WARRANTIES

COMMENT

Background: Section 247.661(2) of the *Michigan Compiled Laws* provides that the Michigan Department of Transportation (MDOT) secure full replacement warranties, where possible, of not less than five years on State trunkline projects. Also, Act 473, P.A. 2014, if voters enact into law, will require county road commissions, cities, and villages to secure pavement warranties for full replacement or appropriate repair for projects whose cost exceeds \$1,000,000.

MDOT's warranties are limited to applicable items within a contract, such as asphalt, concrete, or bridge painting which represent a portion of total contract costs. For example, as noted in Finding 1, the warrantied amount of five contracts reviewed was 16.3% of total contract costs. Also, the cost to perform corrective action represents only a portion of the warrantied cost because the corrective action required is generally a less costly alternative, such as crack filling.

As a result of our performance audit of the Use of Warranties issued in April 2006, MDOT conducted the Warranty Program Effectiveness Evaluation and issued its report in March 2011. MDOT's conclusions included the following statements:

- Based on limited data, no trend could be identified as to whether corrective action restores the pavement to its intended fix life.
- Bridge paint warranties extend the life of the bridge paint system.
- No conclusions can be drawn as to whether there is a net cost savings for the warranty program as a whole.

Audit Objective: To assess the effectiveness of MDOT's efforts to monitor road and bridge construction project warranties.

Audit Conclusion: Not effective

Factors leading to this conclusion included:

- MDOT not consistently verifying the completion of corrective action for projects inspected and identified as needing corrective action prior to the warranty expiration date.
- Final inspections not consistently conducted prior to warranty expiration.
- Warranties not consistently included in the Statewide Warranty Administrative Database (SWAD) because of decentralization.
- Potential additional cost to the State for repairs to warrantied roads and bridges for which corrective action had not been completed prior to the warranties' expiration.
- Material conditions related to the timeliness of corrective action completion, monitoring of road and bridge warranties, and SWAD.

FINDING

1. Timeliness of Corrective Action Completion

MDOT did not consistently ensure that contractors completed corrective action or completed it timely for warrantied projects identified as needing repairs. As a result, the responsibility for the cost of road repairs may shift from the contractor to the State.

MDOT's Guidelines for Administering Warranties on Road and Bridge Construction Contracts Manual recommends that a contractor complete corrective action prior to warranty expiration.

We reviewed 12 construction project files containing 14 warranties that required corrective action. Our review disclosed that the contractor had not completed corrective action for 5 (35.7%) warranties. The following table identifies the

various costs related to these 5 warranties for which the contractor had not completed corrective action:

| Authorized Contract Amount | Warrantied Work | Estimated Corrective Action Cost* |
|-------------------------------|-----------------|--------------------------------------|
| \$61,038,000 | \$9,952,000 | \$314,000 |

* Calculated by MDOT based on costs reported for similar MDOT-performed maintenance projects

- a. For 2 of the 5 warranties, MDOT completed warranty inspections prior to warranty expiration and determined that corrective action was necessary but did not notify the contractor of the deficiencies prior to warranty expiration. Therefore, MDOT could not enforce the warranty provisions. The warrantied amount of the 2 projects totaled \$3.0 million.

MDOT informed us that it repaired the road for one of the projects at an estimated cost of \$54,500. MDOT also informed us that it had not repaired the road for the second project but estimated that the cost would be \$38,300.

- b. For 3 of the 5 warranties, MDOT did not ensure that contractors timely completed corrective action. For the first warranty, although MDOT properly notified a contractor in April 2013 that corrective action was required on a project, the contractor, as of June 30, 2014, had not completed the corrective action. MDOT estimated that this corrective action would cost \$141,000. For the other 2 warranties, although MDOT properly notified the surety* in August 2013 that corrective action was required for warrantied work, the surety, as of June 30, 2014, had not contacted MDOT to finalize the corrective action. MDOT estimated that the cost of corrective action would be \$80,300.

In addition, our review of SWAD identified 48 of 92 expired warrantied projects that needed corrective action (3 of which are identified in part b. of this finding). As of June 30, 2014, 24 of the warranties had been expired for over one year without MDOT having addressed the corrective action.

* See glossary at end of report for definition.

RECOMMENDATION

We recommend that MDOT ensure that contractors complete corrective action and complete it timely for warrantied projects identified as needing repairs.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT concurs with the recommendation.

MDOT uses SWAD for monitoring aspects of the department's warranty program, including corrective action requirements, and recognizes the importance of ensuring that contractors timely complete corrective action. However, in some instances warranty work cannot be performed within the warranty period because of seasonal limitations for certain types of work and/or a pending Conflict Resolution Team (CRT) decision.

MDOT has already taken the following actions regarding timely corrective action:

- MDOT has implemented monthly auto-generated reports, which inform staff that it has been 60 days since a warranty expired and that the contractor was notified that corrective action was required. Also, the distribution of all auto-generated reports has been expanded to provide further oversight at the region senior management level.*
- MDOT has also begun an effort to resolve corrective actions outstanding. MDOT established a 15-month threshold for overdue corrective action. In May 2014, there were 68 warranties with corrective action outstanding. Thirty-three of those, over 48%, have been resolved and data entered into SWAD. MDOT continues to work on the remaining warranties with corrective action outstanding, and continues to monitor these warranties utilizing this 15-month threshold.*

By October 2015, MDOT, in working with the Department of Attorney General, will develop a procedure for non-responsive contractors that have been notified to perform warranty work.

In addition, by March 2016, MDOT will review and strengthen the oversight and monitoring process to ensure that contractors complete warranty work when required by the warranty provisions. For future warranties, MDOT will require its staff to obtain SWAD system administrator approval for not performing corrective action unless it is the result of a CRT decision.

FINDING

2. Monitoring of Road and Bridge Warranties

MDOT did not ensure that staff inspected or timely inspected all warrantied road and bridge construction projects. Also, MDOT did not maintain documentation to support initial acceptance of warrantied projects, interim and final inspections, and notifications to the contractor that the warranty period was complete. As a result, MDOT may not have the authority to require a contractor to perform corrective action, and the cost of repairing or replacing a road or bridge could lie with the State instead of the contractor.

MDOT guidelines require transportation service center (TSC) or region staff to enter project information into the SWAD for each warrantied construction project. After the project is completed, inspected by MDOT field staff, and identified as meeting the contract requirements, the project is accepted and entered into SWAD. SWAD calculates the warranty period and notifies staff to conduct interim and final warranty inspections based on the acceptance date of the project. These inspections determine whether the project meets the warranty thresholds or if the contractor needs to perform corrective action.

We reviewed warranty information recorded in SWAD and warranty documentation for 47 warranties at five TSCs with either active or expired warranties between October 1, 2011 and March 31, 2014. Our review disclosed:

- a. MDOT did not complete or document that it completed 19 (4.3%) of 441 final inspections prior to the warranty expiration. MDOT guidelines direct staff to complete inspections 4 to 6 months prior to the warranty expiration. MDOT paid a consultant \$3,700 to complete one of the inspections and MDOT staff completed six inspections after the warranty expiration. The inspection completed by the consultant identified the need for corrective action, which MDOT estimated would cost \$70,000. Performing these inspections after

the warranty has expired is inefficient because MDOT no longer has the authority to enforce the contractor to perform corrective action, if needed.

- b. MDOT did not maintain documentation of the initial acceptance form for 6 (12.8%) of 47 warranties. The contractor and the project engineer should sign the initial acceptance form of the warranted item indicating agreement as to the start date of the warranty. The initial acceptance date of the warranty and the length of the warranty identified in the specification allows SWAD to generate reminders for interim (if applicable) and final inspections and determines the expiration date for the warranty. Without the initial acceptance form, MDOT does not have documented support for the start date of the warranty and could lose the authority to enforce necessary warranty work.
- c. MDOT did not retain documentation of the interim inspections for 2 (11.8%) of 17 warranties or final inspections for 4 (13.3%) of 30 warranties. MDOT's Guidelines for Administering Warranties on Road and Bridge Construction Contracts Manual requires that MDOT document inspections on the standard inspection form. Without the completed form, MDOT does not have assurance that the inspections occurred and whether or not corrective action was identified and subsequently completed.
- d. MDOT did not notify the contractor at the end of the warranty period whether claims were pending for 11 (36.7%) of 30 warranties. MDOT guidelines require that MDOT notify the contractor when the warranty period is complete. If corrective action is not required, the contractor can notify its surety and the bond can be released. If corrective action is required, the contractor must develop a plan to implement corrections.

We noted an issue similar to part c. of this finding in our prior audit of road and bridge construction project monitoring. In response to that audit report, MDOT stated that it would strengthen its procedures to ensure the completion of inspections.

RECOMMENDATIONS

We recommend that MDOT ensure that staff inspect or timely inspect warranted road and bridge construction projects.

We also recommend that MDOT maintain documentation to support initial acceptance of warrantied projects, interim and final inspections, and notifications to the contractor that the warranty period was complete.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT concurs with the recommendations.

MDOT uses SWAD for monitoring aspects of the department's warranty program, including inspection dates and notifications. By May 2015, MDOT will further strengthen its policies and procedures to ensure that required warranty inspections are timely completed and documented prior to warranty expirations. MDOT will also internally reinforce the necessity of ensuring that all aspects of the warranty program are performed and documented by the applicable MDOT areas that are assigned those functions. By March 2016, MDOT will conduct a full review of the alignment between documentation requirements operating procedures.

In addition, in order to ensure accuracy in SWAD, MDOT will continue to complete final warranty inspections when the warranties have expired. By May 2015, MDOT will provide direction to its personnel for final inspections when warranties have expired prior to inspection.

FINDING

3. Statewide Warranty Administration Database (SWAD)

MDOT did not ensure the completeness and accuracy of the information recorded in SWAD. Relying on incomplete or inaccurate information can result in the State bearing the cost of repairing roads when they were damaged under warranty.

MDOT utilizes SWAD to track and monitor all road and bridge projects with warranties, including warranty inspection dates, warranty expiration dates, the status of roads and bridges in need of corrective action, and the corrective action completed.

Our review of SWAD disclosed:

- a. MDOT did not ensure that SWAD included all warrantied road and bridge construction projects. We obtained lists of warrantied contracts with warranties expiring on or after October 1, 2011 from the Contract Services Division and compared the listing with SWAD. We identified 28 projects with 32 warranties that were not recorded in SWAD. When warranties are not recorded in SWAD, inspection dates are not generated and notifications of inspections due are not sent to the local TSC or region, thereby increasing the likelihood that contractors will not bear the cost of repairs to warrantied roads. MDOT had not conducted the required warranty inspections for two of these projects that expired prior to June 30, 2014.
- b. MDOT did not document in SWAD the final warranty inspection completion dates for 93 (21.2%) warranties. We reviewed 439 road and bridge project warranties recorded in SWAD that expired between October 1, 2011 and March 31, 2014. We supplied the list of these 93 warranties without inspection completion dates to MDOT. The status of the final inspections, according to the responsible TSC, follows:

| Inspection Status | Number of Warranties |
|--|----------------------|
| Inspection not completed | 7 |
| Inspection completed according to notes field | 9 |
| Warranty not applicable (void) | 3 |
| Inspection completed after warranty expired | 6 |
| Inspection date provided | 68 |
| Total warranties with no inspection date entered | 93 |

Without documenting inspection completion dates in SWAD, MDOT could not rely on SWAD to accurately identify projects in need of a final warranty inspection.

- c. SWAD did not accurately identify some warranties that required corrective action. For two projects that originally needed corrective action and no corrective action had been performed, MDOT changed the field in SWAD, which identified if warrantied projects needed corrective action, from "yes" to "no" because MDOT had not notified the contractor of the deficiencies prior

to the expiration of the warranties. This could be misleading to database users when preparing historical statistics on the number of warranties that required corrective action because these two projects are identified as never having needed corrective action.

MDOT informed us that each local TSC or region is required to enter the warranties within their jurisdictions into SWAD. In addition, MDOT informed us that, after the warranty expiration date has passed, MDOT staff cannot enter the warranty inspection date into SWAD. The SWAD administrator must contact the Department of Technology, Management, and Budget (DTMB) to make necessary date entries. After we brought these exceptions to MDOT's attention, MDOT requested DTMB to make corrections to SWAD based on the information provided by the TSCs.

We noted an issue similar to part b. of this finding in our prior audit of road and bridge construction project monitoring. In response to that audit report, MDOT stated that it would evaluate current practices and strengthen its procedures to ensure that inspection dates and corrective action performed were entered into SWAD in a timely manner.

RECOMMENDATION

We recommend that MDOT ensure the completeness and accuracy of the information recorded in SWAD.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT concurs with the recommendation.

MDOT agrees that it could improve the process for entering into SWAD data regarding projects let with warranties. However, many of the projects reported as exceptions in part a. of the finding were still in the process of being completed. As of December 3, 2014, MDOT entered into SWAD 17 of the 28 projects (19 of the 32 warranties) noted in the audit finding.

Starting in January 2015, MDOT will be enhancing the monthly auto-generated "warranties approaching expiration" reports. After the enhancement, the report will show "warranties approaching and past expiration," and will contain both the warranties that will be expiring in the next 90 days that have not had a final inspection date entered on the report and projects that have expired with no final inspection date entered on the report. This revised report will continue to act as a reminder to applicable MDOT employees that SWAD requires updating. The report will also contain instructions on how to enter the date because the entry will be locked if it has expired. The distribution of this report, and other auto-generated reports, has been expanded to provide further oversight at the region senior management level.

Also, by March 2016, the Construction Field Services Division, in working with the Contract Services Division, will develop and implement a process to ensure that MDOT populates SWAD with all projects let with a road or bridge warranty. The process will include a time frame for initially entering project data into SWAD.

In addition, recognizing that there are past projects that required, but did not receive, corrective action, MDOT will develop a process to close these project entries in SWAD so that these past projects do not continue to show up as open or outstanding. Such a process will further ensure the accuracy of both current and historical warranty statistics and reporting.

EFFORTS TO SECURE WARRANTIES

COMMENT

Audit Objective: To assess the effectiveness of MDOT's efforts to secure warranties for road and bridge construction projects.

Audit Conclusion: **Effective**

Factors leading to this conclusion included:

- Projects without warranties appeared to not need them.
- No findings related to this audit objective.

EFFORTS TO MONITOR ROAD AND BRIDGE CONSTRUCTION PROJECTS

COMMENT

Audit Objective: To assess the effectiveness of MDOT's efforts to monitor road and bridge construction projects.

Audit Conclusion: Effective

Factors leading to this conclusion included:

- Oversight included preconstruction meetings with the contractor and consultant, e-mail and telephone communication throughout the course of the project, review of inspector daily reports, and completion of final estimate reviews at the conclusion of the project.
- MDOT's review of final estimate packages* did not identify errors in contractor reimbursement.
- Required paperwork maintained to support appropriate monitoring of the road and bridge construction projects.
- Proper signatures obtained on contract modifications.
- Communications documented between the consultant, contractor, and MDOT.
- Reportable condition related to consultant evaluations.

* See glossary at end of report for definition.

FINDING

4. Consultant Evaluations

MDOT did not prepare interim and final consultant evaluations in accordance with established procedures. As a result, MDOT's Contract Services Division may not have accurate and up-to-date information regarding consultant performance for consideration on subsequent contracts.

MDOT may contract with consultants to perform construction engineering oversight for MDOT road and bridge construction projects. MDOT's 2003 Construction Manual section 101 requires that TSCs complete an interim consultant evaluation each time they visit or drive through a construction site. In addition, section 101 requires that TSCs complete a final consultant evaluation at the completion of the project.

We reviewed 13 closed consultant-managed construction projects with an average project cost of \$2.0 million from 5 TSCs. Our review disclosed:

- a. TSCs did not prepare interim consultant evaluations for any of the 13 projects.
- b. TSCs did not prepare final evaluations for 3 (42.9%) of the 7 consultants that had completed a project.

Evaluations provide consultants with documented feedback on their performance, promote communication between project managers and consultants, document areas of improvement for the consultants, and help to ensure the quality of project oversight. Final evaluation scores may impact the selection of consultants for future projects. Also, because construction projects can continue for several months or over multiple construction seasons, preparation of interim evaluations would enable TSCs to document and communicate any observations and necessary corrective actions to the consultant during the project. MDOT informed us that it does not have adequate controls in place to ensure that TSCs complete final consultant evaluations. In addition, MDOT informed us that it never had any intention for the project manager to perform interim evaluations after every site visit. Interim evaluations are a tool used by project managers to inform consultants of performance issues. MDOT stated that it would review its procedures to evaluate the applicable section(s).

We noted a similar condition in our prior audit of road and bridge construction project monitoring. In response to that audit report, MDOT stated that the Construction Field Services Division, in coordination with the Bureau of Finance and Administration's Contract Services Division, would review and strengthen its procedures to ensure timely completion of consultant evaluations as required.

RECOMMENDATIONS

We recommend that MDOT review its interim consultant evaluation procedures and ensure that they reflect current management philosophy.

We also recommend that MDOT prepare final consultant evaluations in accordance with established procedures.

AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

MDOT concurs with the recommendations.

MDOT informed the Office of the Auditor General that communications and feedback with consultants occur at the preconstruction meetings, progress meetings, and throughout the course of each contract. While interim consultant evaluations are strongly encouraged for consultant performance issues, MDOT does not deem as necessary or valuable mandatory interim consultant evaluations after every field visit.

By December 2016, the Contract Services Division, in coordination with the Construction Field Services Division, will review and evaluate consultant evaluation requirements and update procedures to reflect management philosophy.

GLOSSARY

Glossary of Abbreviations and Terms

| | |
|--------------------------------|--|
| active warranty | A warranty on which MDOT has approved the original construction of the warranted work and the warranty has yet to reach its expiration date or has reached its expiration date but the warranty has not been accepted by MDOT. |
| capital preventive maintenance | Cost-effective treatment to an existing road system that preserves or improves the condition of the system without significantly increasing structural capacity. |
| contract modifications | Increases/decreases to existing bid items, extra work items and adjustments, contract completion time, and other miscellaneous changes to the contract. |
| CRT | Conflict Resolution Team. |
| DTMB | Department of Technology, Management, and Budget. |
| effectiveness | Success in achieving mission and goals. |
| final estimate package | An assembly of MDOT forms with a cover memorandum and checklist signed off by the responsible MDOT construction engineer (and local agency or consultant engineer, if applicable) that signifies that the project work and files are complete and that the project is ready for final payment and closure. |
| internal control | The plan, policies, methods, and procedures adopted by management to meet its mission, goals, and objectives. Internal control includes the processes for planning, organizing, directing, and controlling program operations. It also includes the systems for measuring, reporting, and monitoring program performance. Internal control serves as |

a defense in safeguarding assets and in preventing and detecting errors; fraud; violations of laws, regulations, and provisions of contracts and grant agreements; or abuse.

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.

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.

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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 materials.

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| 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. |
| reportable condition | A matter that, in the auditor's judgment, is less severe than a material condition and falls within any of the following categories: an opportunity for improvement within the context of the audit objectives; a deficiency in internal control that is significant within the context of the audit objectives; all instances of fraud; illegal acts unless they are inconsequential within the context of the audit objectives; significant violations of provisions of contracts or grant agreements; and significant abuse that has occurred or is likely to have occurred. |
| State trunkline | The network of road types (interstate, Michigan, and U.S. routes) that supports the State's commercial activities. |
| STC | State Transportation Commission. |
| surety | An entity that has contracted to be responsible for another, especially one who assumes responsibilities for debts in the event of default. |
| SWAD | Statewide Warranty Administrative Database. |
| TSC | transportation service center. |

