Office of the Auditor General
Performance Audit Report

IT Project Management Processes

Department of Technology, Management, and Budget

February 2017

State of Michigan Auditor General
Doug A. Ringler, CPA, CIA

071-0585-16

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

OAG
Office of the Auditor General

Report Summary

Performance Audit

IT Project Management Processes

Department of Technology, Management, and Budget (DTMB)

Report Number:
071-0585-16

Released:
February 2017

DTMB established the Project Management Methodology (PMM) as the State's formal IT project management practices to promote on-time, on-budget delivery of projects that meet or exceed customer expectations. DTMB's Enterprise Portfolio Management Office (EPMO) develops, supports, improves, and oversees standardized processes related to project and portfolio management. As of June 29, 2016, EPMO had 130 project manager positions with 88 (68%) filled positions and 42 (32%) vacancies. EPMO also had 41 contracted project managers.

Audit Objective	Conclusion
Objective: To evaluate DTMB's efforts to consistently apply its PMM to manage IT projects.	Not consistently applied

Findings Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
DTMB had not fully implemented its envisioned IT project management organizational structure, resulting in unclear roles and responsibilities, incomplete guidelines and procedures, lack of sharing of best practices, and potential inefficiencies (Finding #1).	X		Agrees
DTMB did not implement controls to ensure continuous process improvement of IT project management, resulting in the deficiencies noted in Findings #3, #5, and #6 (Finding #2).	X		Agrees
DTMB did not consistently execute activities described in the project management plan to ensure high quality projects. Quality assurance activities were not properly conducted and documented for 10 of 12 projects reviewed (Finding #3).	X		Agrees
DTMB did not fully track project performance data to determine whether projects were completed on time, were within budget, and met customer expectations. Of 611 projects recorded in the project portfolio management tool, 254 (42%) completed projects did not have a cost budget and 154 (25%) showed an inaccurate actual cost of $0 (Finding #4).	X		Agrees

Findings Related to This Audit Objective (*Continued*)	Material Condition	Reportable Condition	Agency Preliminary Response
DTMB did not properly initiate and plan IT projects in accordance with the PMM, resulting in unapproved project charters, project management plans, and cost budgets for several projects (Finding #5).		X	Agrees
DTMB did not always perform project closure activities to determine project success and identify opportunities for improvement (Finding #6).		X	Agrees
DTMB should develop and implement an organizational training plan for project managers. Skilled project managers can increase the chance of project success by better managing costs, ensuring that deliverables are completed, and improving stakeholder satisfaction (Finding #7).		X	Agrees

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

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February 24, 2017

Mr. David B. Behen
Director, Department of Technology, Management, and Budget
Chief Information Officer, State of Michigan
Lewis Cass Building
Lansing, Michigan

Dear Mr. Behen:

I am pleased to provide this performance audit report on IT Project Management Processes, Department of Technology, Management, and Budget.

Your agency provided preliminary responses to the recommendations at the end of our fieldwork. The *Michigan Compiled Laws* and administrative procedures require an audited agency to develop a plan to comply with the recommendations and submit it within 60 days of the date above 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,

Doug Ringler

Doug Ringler
Auditor General

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IT PROJECT MANAGEMENT PROCESSES

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AUDIT OBJECTIVES, CONCLUSIONS, FINDINGS, AND OBSERVATIONS

EFFORTS TO CONSISTENTLY APPLY THE PMM

BACKGROUND

IT project management is the process of planning, monitoring, and controlling projects to meet project goals and requirements.

The Department of Technology, Management, and Budget's (DTMB's) Enterprise Portfolio Management Office (EPMO) develops, supports, improves, and oversees standardized processes related to project and portfolio management.

DTMB established the Project Management Methodology (PMM) as the State's formal IT project management practices. The PMM is based on industry best practices and uses *A Guide to the Project Management Body of Knowledge (PMBOK® Guide*) as its authoritative source. The PMM provides guidance to promote on-time, on-budget delivery of projects that meet or exceed customer expectations.

The PMM provides guidance for managing projects throughout the project life cycle, including the initiation, planning, execution, monitoring and control, and closeout phases. Consistent use of the PMM results in repeatable processes and increases the likelihood of successful project completion. The State Unified Information Technology Environment (SUITE) is a DTMB initiative to standardize methodologies, procedures, training, and tools for project management and system development.

Our audit objective was not to evaluate the success of IT projects. However, consistent use of the PMM significantly increases the likelihood of project success. Therefore, the potential impact on the effective use of IT resources is substantial.

AUDIT OBJECTIVE

To evaluate DTMB's efforts to consistently apply its PMM to manage IT projects.

CONCLUSION

Not consistently applied.

FACTORS IMPACTING CONCLUSION

- EPMO has made substantial efforts to improve project management culture across the State. Changing organizational culture is a complex process that takes time to fully achieve the intended benefits.

- In 2014, EPMO implemented a new version of the PMM and distributed best practices for IT project management to streamline project management processes.

- DTMB partially implemented an enterprise-wide project portfolio management tool (Changepoint*) to store, monitor, and communicate project management information to stakeholders.

- Four material conditions* related to full implementation of project management organizational structure, need for controls to ensure continuous process improvement of IT project management, inconsistent execution of project management plans, and improved tracking of project performance data (Findings #1 through #4).

- Three reportable conditions* related to improved project initiation and planning, enhanced project closure, and development of an organizational training plan (Findings #5 through #7).

** See glossary at end of report for definition.*

FINDING #1

Full implementation of envisioned project management organizational structure needed.

DTMB had not fully implemented its envisioned IT project management organizational structure, resulting in unclear roles and responsibilities, incomplete guidelines and procedures, lack of sharing of best practices, and potential inefficiencies.

According to the *PMBOK® Guide,* a project management office (PMO) can operate under various organizational structures. For example, a PMO can function in a supportive role by providing templates, best practices, and training but have limited involvement and control over projects. Conversely, a PMO can directly manage projects with a high degree of control.

In 2012, a third party consultant recommended that EPMO directly manage projects by centralizing all project managers within EPMO to help ensure consistent use of project management methodologies. In response, DTMB consolidated project managers from eight PMOs into EPMO. However, our interviews of management and review of project data disclosed that DTMB did not complete the centralization. The absence of an organizational change management plan likely means the centralization will not be achieved. Lacking an effective organizational structure has contributed to:

a. EPMO's oversight and authority being undefined and inconsistent.

   The degree of control that EPMO has over projects varies by State department. For example, EPMO fully oversees and manages the Michigan Department of Transportation's system development projects. Conversely, the Department of Corrections' projects are managed primarily by contracted project managers with limited involvement of EPMO.

b. No guidelines or procedures for determining when a project control office (PCO) should be established.

   PCOs are independent of EPMO and provide oversight and project management support in a role similar to that of EPMO. At least five State departments use PCOs, and the number continues to increase.

c. PMOs and PCOs working independently and not always effectively sharing best practices.

   As a result, processes and procedures used by project managers are inconsistently utilized, including processes for budgeting and tracking costs, developing project management plans, and documenting project activities.

d. No defined guidelines for determining whether EPMO will manage a project or if a contractor will be hired independently of EPMO.

The decision to use EPMO or hire a contractor is primarily at the discretion of Agency Services and/or the applicable department. Therefore, EPMO resources may not be utilized in the most efficient manner.

DTMB should revisit and implement the third party consultant's recommendation to centralize project managers.

RECOMMENDATION

We recommend that DTMB fully implement its envisioned IT project management organizational structure.

AGENCY PRELIMINARY RESPONSE

DTMB provided us with the following response:

DTMB agrees with the recommendation. As referenced by the Office of the Auditor General (OAG) at the beginning of the audit report, DTMB had, prior to the audit, begun to implement its plans to improve project management controls which included: Implementing its envisioned IT project management organizational structure; and further defining and communicating roles and responsibilities including the relationship between the EPMO and agency PCOs to ensure that DTMB has an effective organization structure for IT project management.

In addition, DTMB has developed an IT governance process that encompasses the executive level and includes various management levels throughout the organization. As new PCOs are established or PCO renewals occur, the following guidelines will be adhered to: The services provided by the PCO will be implemented with the oversight of the DTMB Agency Services Business Relationship Manager in partnership with the DTMB EPMO; the authority structures for PCO resources will follow DTMB responsible authority structures for the associated roles and functions. DTMB's EPMO is ultimately responsible and accountable for program and project management throughout the State of Michigan enterprise.

FINDING #2

DTMB did not implement controls to ensure continuous process improvement of IT project management.

Controls to ensure continuous process improvement needed.

Continuous process improvement includes identifying and developing project management best practices, standards, policies, procedures, and templates.

Continuous process improvement also requires dedicated full-time resources. We determined that DTMB did not reprioritize and reassign staff resources and did not appropriate funding for new positions.

DTMB should:

a. Assign sufficient resources to review projects for compliance with the PMM.

   Prior to 2014, a DTMB team of volunteers reviewed processes and documentation to identify areas of noncompliance with the PMM, provide feedback to project staff and managers, and ensure that the issues were addressed. However, the team was dissolved because of competing priorities. For projects funded through the Information Technology Investment Fund (ITIF), EPMO performs a limited review of project documentation and status. For all other projects, no independent review of compliance occurs. The lack of compliance reviews has resulted in the deficiencies noted in Findings #3, #5, and #6 (see Exhibit #2 for a summary of compliance with the PMM, presented as supplemental information).

b. Reestablish and provide additional support to the Software Engineering Process Group (SEPG).

   SEPG was established in 2008 to facilitate the development and adoption of standardized technical and business processes in areas such as project management, systems and software engineering, and business operations. The purpose of SEPG was to raise the engineering and project management core competencies at DTMB to a higher and more disciplined maturity level in accordance with SUITE initiatives, including the PMM. SEPG ceased to exist in 2014 because of insufficient participation and competing priorities of the volunteer members. EPMO informed us of initiatives to restart SEPG in late 2016 with new volunteers. However, until DTMB establishes project management as a priority and provides funding, the effectiveness of the group will be marginal.

c. Establish a detailed plan to address deficiencies noted in project management processes.

Third party process improvement appraisals (Standard CMMI Appraisal Method for Process Improvement* [SCAMPI]), conducted in 2009 and 2013, provided DTMB with an independent analysis of the maturity of its project management processes. The 2013 appraisal showed some improvements since 2009 but included recommendations to increase the success of projects, such as improving quality assurance processes, using historical data for better estimates, and ensuring additional qualified project managers in a dedicated role.

RECOMMENDATION

We recommend that DTMB implement controls to ensure continuous process improvement of IT project management.

AGENCY PRELIMINARY RESPONSE

DTMB provided us with the following response:

DTMB agrees with the recommendation. As referenced by the OAG at the beginning of the audit report, DTMB has made substantial efforts to improve project management culture across the State. For example, prior to the start of the audit, DTMB had already begun the process to reestablish and mature the SEPG which is responsible for delivering continuous process improvements. In addition, DTMB has conducted a Lean Process Improvement (LPI) for SUITE. Initial teams for both Process & Product Quality Assurance (PPQA) and SEPG have been formed and will be led by an experienced PMO manager who is certified in CMMI, PMP, CSM, ITIL and Six Sigma. The teams are currently developing operating and release plans while completing actions from the SUITE LPI. This will ensure controls are in place, process improvements continue for IT program and project management, areas for improvement are addressed, and independent projects reviews are conducted to ensure compliance.

DTMB will continue to implement controls to ensure continuous process improvement of IT program and project management. DTMB's EPMO will develop recommendations for improvements, with associated funding requests, for presentation to DTMB senior management.

** See glossary at end of report for definition.*

FINDING #3

Consistency needed in executing projects as described in the project management plan.

DTMB did not consistently execute activities described in the project management plan to ensure high quality projects. Not properly executing project activities in accordance with the PMM increases the risk that systems will not function as planned or meet user requirements.

The project execution phase consists of the processes performed to complete the work defined in the project management plan to satisfy the project specifications. Project execution begins immediately after the project management plan is approved by the project sponsors.

The lack of organizational accountability and controls identified in Finding #1, coupled with the lack of controls for process improvement identified in Finding #2, contributed to this exception.

Our review of project execution activities for 12 IT projects (see Exhibit #1 for a description of the 12 projects reviewed, presented as supplemental information) disclosed:

Quality assurance activities not properly conducted and documented for 10 of 12 projects.

a. Quality assurance activities were not properly conducted and documented for 10 of the 12 projects.

   Quality assurance is the set of processes used to measure and ensure that a quality product is delivered at the conclusion of the project. Quality assurance includes activities such as a detailed review of the deliverables by stakeholders to accept or reject the work at various phases, structured walkthroughs, or demonstrations of the software at increments throughout the project. We noted that 6 projects did not have a detailed plan of quality assurance activities to be completed and that 4 projects had detailed plans but lacked documentation that the required activities had been completed. Conducting quality assurance activities throughout the project life cycle may result in fewer system defects and errors.

b. Risk management plans and issue management plans were not properly followed for 4 of the 12 projects.

   Risk mitigation reduces the possibility that a risk will occur or reduces the impact on project scope, schedule, and resources should the risk occur. For the 4 projects, the project manager did not use a risk register and/or issue log or did not document the resolution of all issues. In addition, project managers did not consistently document that they communicated risks and issues to ensure that stakeholders were aware of the risks and issues that could impact the projects.

c. Changes to projects were not fully documented and approved for 7 of the 12 projects.

Budget increases and schedule extensions lacked documented stakeholder approval.

Budget, schedule, and scope of each project should be defined during project planning, and any significant changes after project planning are required to be documented and approved in a change request. Change requests help to ensure that all project changes are approved and that the impact of the changes are fully understood and agreed upon by stakeholders. We noted projects that lacked documented stakeholder approval of budget increases and implementation schedule extensions.

Project status not always accurately reported or acted upon.

d. Project status was not always accurately reported and corrective action plans were not always developed when required.

Project managers report project status as green, yellow, or red according to criteria defined by EPMO. Status reporting ensures that stakeholders are informed of the progress of each project and executive management is aware of and can act upon troubled projects. Projects with a yellow or red status require a corrective action plan for getting the project back on track.

We noted:

(1) At least 5 (42%) of the 12 projects incorrectly reported project status at some point during the project life cycle.

(2) 2 (17%) of the 12 projects did not document and implement timely corrective action plans when the project status was yellow or red.

(3) Schedule variance, cost variance, test progress, earned value, and testing defect rates were not consistently considered and documented when determining project status.

RECOMMENDATION

We recommend that DTMB consistently execute activities described in the project management plan.

AGENCY PRELIMINARY RESPONSE

DTMB provided us with the following response:

DTMB agrees with the recommendation. As referenced by the OAG at the beginning of the audit report, in 2014, EPMO implemented a new version of the PMM and distributed best practices for IT project management. In addition, prior to the start of the audit, DTMB had already begun the process to reestablish and mature the PPQA team which is responsible for mentoring and conducting quality assurance on State of Michigan projects to ensure compliance with activities described in the project management plan. With the assistance of PPQA coaches, projects will be initiated properly in accordance with the project management methodology.

DTMB will enhance existing training and education to ensure staff properly initiate and plan projects in compliance with the methodology.

DTMB will consistently execute activities described in the project management plan. DTMB's EPMO will develop recommendations for improvements, with associated funding requests, for presentation to DTMB senior management.

FINDING #4

DTMB did not fully track project performance data to determine whether projects were completed on time, were within budget, and met customer expectations.

Improved tracking of performance data needed.

EPMO uses Changepoint (a project portfolio management tool) to compile project performance data such as project status, budget and actual costs, planned and actual start dates, and planned and actual completion dates. Information in Changepoint is summarized in charts, graphs, and reports for presentation to key stakeholders, including DTMB management, the Legislature, the Executive Office, and the public.

DTMB did not ensure that Changepoint:

a. Contained all of the State's IT projects.

   Until all projects are reported in Changepoint, DTMB cannot accurately report key performance metrics about the State's investment in IT projects. In addition, when a project is not recorded in Changepoint, there is increased risk of noncompliance with the PMM and lack of awareness by executive management that a project is behind schedule, over budget, or at risk of missing project deliverables.

b. Contained complete and accurate data about IT projects.

   We reviewed Changepoint data for 611 projects that were identified as completed between May 31, 2014 and May 31, 2016 and noted inaccurate and incomplete data, such as:

   (1) 254 (42%) projects without a cost budget.

   (2) 154 (25%) projects with an inaccurate actual cost of $0.

   (3) 20 (3%) projects with an inaccurate project duration of 0 days.

RECOMMENDATION

We recommend that DTMB fully track project performance data to determine whether projects were completed on time, were within budget, and met customer expectations.

AGENCY PRELIMINARY RESPONSE

DTMB provided us with the following response:

DTMB agrees with the recommendation. It is important to note that during the audit period, DTMB had made a purposeful decision that the PMM tool, Changepoint, was not a financial system of record, and tracking budget data in the PPM tool without explicit reconciliation of a financial system of record could create an inaccurate picture of project budget compliance. As a result, DTMB did not require budget data to

be entered into the newly implemented project portfolio management tool. Project budget was tracked and measured utilizing actual financial systems of record. The standard at the time was to capture and document project budget data outside of the tool. DTMB's guidance related to budget tracking in Changepoint was that the system was a communication tool and that it was not to be used to measure actual budget performance. Going forward, DTMB will require budget and/or estimated cost to be in Changepoint for purposes of communication and planning.

As referenced by the OAG, DTMB will continue to expand its efforts in using an enterprise-wide project portfolio management tool to fully track project performance data to determine whether projects were completed on time, were within budget, and met customer expectations. DTMB will enhance existing training and education to ensure staff know how to track the appropriate performance data. Additionally, the newly established PPQA team will conduct audits to ensure compliance so that project performance data is being tracked accurately.

FINDING #5

DTMB did not properly initiate and plan IT projects in accordance with the PMM.

Improved project initiation and planning needed.

Effective planning can help mitigate schedule delays, budget overruns, and unfulfilled system requirements. For 8 of the 9 projects reviewed that had been completed or were nearly completed, the initial project completion dates were not met and were exceeded by 11 months on average.

Project initiation defines a new project and provides the authorization to begin. Project planning addresses all aspects of project management, such as scope, time, cost, quality, communications, human resources, risks, procurement, and stakeholder engagement.

Our review of 12 IT projects disclosed that DTMB did not:

a. Approve the project charter for 5 projects.

   The project charter is required by the PMM and formally initiates project activities. The project charter provides a high level description of the project and initial project planning estimates.

b. Complete or approve a project management plan for 7 projects.

   The project management plan provides a foundation for all management efforts associated with a project. Without a complete and approved project management plan, the project team and stakeholders may not have a clear understanding of the end-product to be accomplished and date to be delivered. In addition, when key components of a project management plan are missing, it is difficult or impossible to determine the overall success of a project, such as whether the project was completed within budget and on schedule, whether all deliverables were achieved, and whether customer expectations were met.

c. Prepare and approve complete project cost budgets. Specifically:

   (1) Three projects did not have a budget.

   (2) Two project budgets did not include all DTMB costs, such as the cost of the project manager and hardware.

   (3) Two project budgets were not formally approved by stakeholders.

   Budget preparation and approval is important to ensure agreement among project stakeholders. Because of the incomplete data in Changepoint, lack of project cost documentation, and inconsistent processes for budgeting

and tracking costs, we were unable to accurately identify budgeted costs and determine whether the projects were completed within budget.

RECOMMENDATION

We recommend that DTMB properly initiate and plan IT projects in accordance with the PMM.

AGENCY PRELIMINARY RESPONSE

DTMB provided us with the following response:

DTMB agrees with the recommendation. DTMB will properly initiate and plan IT projects in accordance with the PMM. DTMB has reestablished and will continue to mature the PPQA team which is responsible for mentoring and conducting quality assurance on State of Michigan projects and ensuring proper initiation and planning take place in accordance with the PMM. DTMB will enhance existing training and education to ensure staff properly initiate and plan projects in compliance with the PMM.

FINDING #6

Enhanced project closure activities needed.

DTMB did not always perform project closure activities to determine project success and identify opportunities for improvement.

The closure process is the last phase of the project management life cycle during which the project manager reviews the project management plan to ensure that all project deliverables have been formally accepted by the stakeholders.

Our review of closure activities disclosed that DTMB did not:

a. Require that an updated return on investment (ROI) analysis be completed after project closeout.

   DTMB and State agencies prepare an ROI analysis when starting a project. The ROI analysis can be an important factor in the decision to move forward with a project because it may identify future operating or maintenance cost savings and the potential for increased revenue. However, DTMB does not have a process to reevaluate the ROI after a project has been implemented and closed. ROI may not be a factor in the decision to start a project because the project may be required for other reasons, such as adhering to new regulations or meeting new program requirements. However, when ROI is an important factor, DTMB should establish a process and time frame for reevaluating the ROI to assess the overall value of the investment.

b. Complete a comprehensive project closure report for 5 (50%) of the 10 completed projects reviewed (at the time of our audit, 2 of the 12 projects reviewed had not been closed).

   Four of the 5 projects did not have a closure report, and 1 project had a closure report but made no reference to unmet deliverables from the contractor. The purpose of a project closure report is to provide a summary of the products delivered, a comparison of baseline plans to actual performance, project metrics, and feedback from stakeholders. The report should also identify outstanding issues and defects, if any. Completing the closure report is an important step in evaluating project success and serves as the official closure of the project.

c. Record and track final project costs for 5 (42%) of the 12 projects reviewed.

   Examples of incomplete records included projects with no tracking of final project costs and invoice amounts that did not reconcile to the tracking sheets. Also, project-related costs incurred by State agencies, such as hours spent designing project specifications or conducting user acceptance testing, are infrequently identified or tracked. These costs can be significant and should be identified to

anticipate resources required for future projects of similar size. In addition, until project costs are appropriately tracked, DTMB, in conjunction with the departments implementing the systems, will not be able to perform an accurate evaluation of ROI.

d. Identify and share lessons learned.

Lessons learned are critical because they serve as a reference for project sponsors and other stakeholders for future projects. One of the first activities that project managers should complete during the initiation phase is to review lessons learned from similar projects.

We noted:

(1) One of the 10 completed projects reviewed did not identify lessons learned.

(2) The database used to share lessons learned is incomplete. EPMO established a searchable lessons learned database in January 2015. However, at the time of our audit, the database included the lessons learned from only 71 projects when over 300 projects had been completed since implementation.

As a result, DTMB cannot ensure that it is learning from the successes and failures of projects and applying those lessons to future projects.

RECOMMENDATION

We recommend that DTMB always perform project closure activities to determine project success and identify opportunities for improvement.

AGENCY PRELIMINARY RESPONSE

DTMB provided us with the following response:

DTMB agrees with the recommendation. DTMB will enhance existing training and education to include training on the importance of project closure activities. In addition the newly established PPQA team will conduct audits to ensure compliance so that closure activities can help determine project success and identify opportunities for improvement.

FINDING #7

Organizational training plan needs further development.

DTMB should develop and implement an organizational training plan for project managers. Skilled project managers can increase the chance of project success by better managing costs, ensuring that deliverables are completed, and improving stakeholder satisfaction.

Project managers are important to a project's success and should possess both technical knowledge and the ability to lead a project team.

We noted:

a. EPMO had not evaluated, at an organization-wide level, the training needs of its project managers.

   EPMO had made some training opportunities available to project managers, such as a project manager certification program, workshops, and other in-house training. However, EPMO had not performed a comprehensive evaluation to determine the most beneficial training.

b. EPMO did not track the training or certifications obtained by its project managers.

   When requested, EPMO could not identify project managers' certifications without obtaining the information from the individuals. Awareness of training history and certifications is important in evaluating the training needs of the organization.

c. EPMO should further encourage certification programs for project managers to increase their knowledge, understanding, and application of effective project management processes. Only 48 (57%) of the 84 project managers within EPMO reported having an industry recognized project management certification.

RECOMMENDATION

We recommend that DTMB develop and implement an organizational training plan for project managers.

AGENCY PRELIMINARY RESPONSE

DTMB provided us with the following response:

DTMB agrees with the recommendation. DTMB recognizes the need to develop and implement an organizational training plan for program and project management staff. DTMB's EPMO will develop recommendations for improvements, with associated funding requests, for presentation to DTMB senior management.

SUPPLEMENTAL INFORMATION

Exhibit #1

IT PROJECT MANAGEMENT PROCESSES
Department of Technology, Management, and Budget

Description of the 12 Projects Reviewed

Project	Abbreviation	Department	Project Description
Bus Inspection System, Commercial Vehicle Enforcement Division		MSP	A system to facilitate and document annual school bus and pupil transportation vehicle inspections throughout the State.
Case Management System	MI-ACTS	LARA	An online reporting system for long-term care providers (nursing homes, county medical care facilities, and hospital long-term care units) to enter facility-reported incidents.
Electronic Medical Business Records System	EMBRS	MDHHS	A system for integrating patient healthcare data from the five State-operated mental health hospitals. EMBRS provides a common process for hospitals to maintain and communicate patient information throughout the State.
Highly Advanced Workers' Compensation System	HAWCS	LARA	A system intended to replace the WORCS system, which is used to input and track applications for workers' compensation benefits. The HAWCS project was canceled and not implemented.
Meal Tracking System		DOC	A Web application used at correctional facilities to track and report offender meals.
Michigan Statewide Automated Child Welfare Information System	MiSACWIS	MDHHS	An automated case management tool designed to meet the needs of all staff involved in foster care and adoption assistance case management. MiSACWIS collects and manages the information necessary to facilitate the delivery of child welfare support services, including family support and family preservation.
MiWaters		DEQ	A Web-based permitting and compliance database that replaced over 25 applications and databases. MiWaters establishes a streamlined electronic permitting process that fulfills federal reporting requirements and provides an online component for access to public information.
Offender Management Legacy Modernization Phase 1	OMS	DOC	A Web-based system that modernized the Department of Corrections' (DOC's) legacy systems into one system. OMS is used to store, retrieve, secure, and utilize offender management information.

This exhibit continued on next page.

Exhibit #1
(*Continued*)

Project	Abbreviation	Department	Project Description
Performance Metrics		DTMB	A system designed to provide transparent performance results of State government for the citizens of Michigan by developing a technology solution for the collection, processing, and reporting of key performance measures.
Sales, Use, and Withholding Legacy System Replacement	SUW	Treasury	A system that integrates sales, use, and withholding tax processing and business taxpayer registration functionality into the Michigan Integrated Tax Administration System and automates the capture of business taxpayer information.
Statewide Longitudinal Data System Program Phase 2	SLDS	DTMB	A system designed to provide the foundation for Michigan's connected education data sources and to provide information on student college and career readiness.
Toll Bridge Software Replacement	TBS	MDOT	A system used to manage tolling-related processes at the Blue Water, International, and Mackinac Bridges.

Source: The OAG prepared this exhibit using information obtained from DTMB's project records and Michigan.gov.

Exhibit #2

IT PROJECT MANAGEMENT PROCESSES
Department of Technology, Management, and Budget

Summary of Compliance With the Project Management Methodology

	Bus Inspection	MI-ACTS	EMBRS	HAWCS	Meal Tracking	MiSACWIS	MiWaters	OMS	Performance Metrics	SUW	SLDS	TBS	Count
Finding #3, part a. - Quality Assurance	X	X	X	X	X		X	X	X		X	X	10
Finding #3, part b. - Risks and Issues	X					X			X		X		4
Finding #3, part c. - Project Changes		X		X	X		X	X	X			X	7
Finding #3, part d. - Project Status				X			X	X	X		X	X	6
Finding #5, part a. - Project Charter	X			X	X				X	X			5
Finding #5, part b. - Project Management Plan	X				X		X	X	X		X	X	7
Finding #5, part c (1) - Project Budget	X								X		X		3
Finding #5, part c (2) - Project Budget			X		X								2
Finding #5, part c (3) - Project Budget								X		X			2
Finding #6, part b. - Closure Reports							X	X	X	X	X		5
Finding #6, part c. - Final Cost Tracking	X				X			X	X		X		5
Finding #6, part d. - Lessons Learned					X								1

X - Exception noted.

DESCRIPTION

DTMB established the PMM as the State's formal IT project management practices. Adherence to the PMM is required for all projects, regardless of size or complexity. Key components of the PMM relate to the following project life cycle phases:

- Initiation - Project initiation is the first phase of the project management life cycle and includes the processes needed to define a new project. Within the initiation phase, project scope is defined and initial resources are committed.

- Planning - Project planning follows project initiation and is often considered the most important phase in project management. The planning phase includes the development of the project management plan, which defines the actions necessary to accomplish project goals and objectives. The project management plan addresses all aspects of project management, including scope, time, cost, quality, risks, and stakeholder engagement.

- Execution - Project execution begins immediately after the project management plan is approved by project sponsors. The execution phase involves carrying out and managing all activities described in the project management plan.

- Monitoring and Control - Project monitoring and control spans all phases of the PMM and includes the processes required to track and review project progress and performance. It also includes the identification of any areas where changes to the plan are required.

- Closeout - Project closeout includes the processes performed to conclude all activities, including reviewing the project management plan to ensure that work is completed, the project has met its objectives, and the customer has accepted the final product.

DTMB is responsible for IT project management practices, including adherence to the PMM. Various divisions within DTMB have significant roles in IT project management, including:

- EPMO provides guidance and establishes policy for IT project management, including the PMM. EPMO is responsible for the administration of Changepoint, which is the State's system for tracking and monitoring project data. EPMO includes project managers who manage some of the State's IT projects. As of June 29, 2016, EPMO had 130 project manager positions with

88 (68%) filled positions and 42 (32%) vacancies. EPMO also had 41 contracted project managers.

- Agency Services acts as the liaison between DTMB and the executive branch departments. Agency Services ensures execution of many of the project activities.

AUDIT SCOPE, METHODOLOGY, AND OTHER INFORMATION

AUDIT SCOPE

To examine the program and other records for IT project management. 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 conclusion based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusion based on our audit objective.

Our audit procedures included an evaluation of 12 projects to determine whether the projects were managed in accordance with DTMB's PMM. The projects were selected from Changepoint, DTMB's database of IT projects. Projects not recorded in Changepoint were not subject to audit.

PERIOD

Our audit procedures, which included a preliminary survey, audit fieldwork, report preparation, analysis of agency responses, and quality assurance, covered IT projects that were in progress between October 1, 2013 and May 31, 2016.

METHODOLOGY

We conducted a preliminary survey of DTMB's processes for managing IT projects to formulate a basis for defining our audit objective and scope. During our preliminary survey, we:

- Interviewed DTMB management to obtain an understanding of the processes used to manage IT projects across the State.
- Reviewed the PMM and other applicable DTMB standards, policies, and procedures.
- Reviewed industry best practices and other documentation related to the initiation, planning, execution, and closure of projects.
- Analyzed Changepoint data.

OBJECTIVE

To evaluate DTMB's efforts to consistently apply its PMM to manage IT projects.

To accomplish this objective, we:

- Interviewed DTMB and agency management to obtain an understanding of the implementation of the PMM.

** See glossary at end of report for definition.*

- Evaluated DTMB controls used to ensure compliance with the PMM.
- Reviewed DTMB's organizational structure for project management.
- Judgmentally selected 12 of 496 projects in Changepoint that met our selection criteria of a large project and reviewed project documentation to determine if the projects adhered to selected PMM requirements. The projects were selected from DTMB's Changepoint database and included projects with planned completion dates between October 2013 and February 2016.
- Evaluated the accuracy, completeness, and consistency of Changepoint data.
- Reviewed EPMO's organizational training plan for project managers.

CONCLUSIONS

We base our conclusions on our audit efforts and any resulting material conditions or reportable conditions.

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

AGENCY RESPONSES

Our audit report contains 7 findings and 7 corresponding recommendations. DTMB's preliminary response indicates that it agrees with all of the 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 an audited agency to develop a plan to comply with the 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.

PRIOR AUDIT FOLLOW-UP

Following is the status of the findings from our August 2011 performance audit of the State Unified Information Technology Environment Project Management and System Development Controls, Department of Technology, Management, and Budget (084-0507-10):

Prior Audit Finding Number	Topic Area	Current Status	Current Finding Number
1a	Resource Allocation	Not in scope of this audit.	
1b	Data Collection and Distribution System* (DCDS) Coding	Not in scope of this audit.	
1c	EPMO Roles and Responsibilities	Rewritten	1
1d	Quality Assurance Staffing	Rewritten	2
1e	Central Repository of Projects	Rewritten	4
2a	Data Collection	Rewritten	2
2b	Project Selection	Rewritten	2
2c	Implementation Date for Assessing Quality	Rewritten	2
2d	SCAMPI-C Remediation	Rewritten	2
3a	Training Plan	Rewritten	7
3b	Training Effectiveness	Rewritten	7
3c	Training Curriculum	Rewritten	7
4	Objectives for Delivering Projects	Rewritten	4

SUPPLEMENTAL INFORMATION

Our audit report includes supplemental information presented as Exhibits #1 and #2.

** See glossary at end of report for definition.*

GLOSSARY OF ABBREVIATIONS AND TERMS

Changepoint	A project portfolio management tool used to track project data.
Data Collection and Distribution System (DCDS)	The State's client/server system that records, assigns, and distributes payroll costs within the accounting system.
DEQ	Department of Environmental Quality.
DOC	Department of Corrections.
DTMB	Department of Technology, Management, and Budget.
EPMO	Enterprise Portfolio Management Office.
IT	information technology.
LARA	Department of Licensing and Regulatory Affairs.
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.
MDHHS	Michigan Department of Health and Human Services.
MDOT	Michigan Department of Transportation.
MSP	Michigan Department of State Police.
OAG	Office of the Auditor General.
PCO	project control office.
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.
PMBOK® Guide	*A Guide to the Project Management Body of Knowledge*.
PMM	Project Management Methodology.
PMO	project management office.
PPQA	Process & Product Quality Assurance.
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.
ROI	return on investment.
SEPG	Software Engineering Process Group.
Standard CMMI Appraisal Method for Process Improvement (SCAMPI)	An appraisal that describes the strengths and weaknesses of an organization's processes based on Standard Capability Maturity Model Integration (CMMI) best practices.
SUITE	State Unified Information Technology Environment.

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