

**New Jersey State Legislature
Office of Legislative Services
Office of the State Auditor**

Information Technology Project Management

July 1, 2015 to March 31, 2016

**Stephen M. Eells
State Auditor**

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Enclosed is our report on the audit of the Information Technology Project Management for the period of July 1, 2015 to March 31, 2016. If you would like a personal briefing, please call me at (609) 847-3470.

A handwritten signature in black ink, appearing to read "Stephen M. Eells".

Stephen M. Eells
State Auditor
August 29, 2016

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Scope

We have completed an audit of Information Technology Project Management for the period July 1, 2015 to March 31, 2016. Our audit included all information technology projects sponsored by any agency, commission, or authority in the Executive Branch of government, regardless of the funding source. The scope included projects at any stage of completion, including post-completion reviews of finished projects, which required us to review projects started as far back as a decade ago. Any or all aspects of a particular project were reviewed as needed. Specifically excluded from this review was the Judicial Branch.

Objective

The objective of our audit was to determine the adequacy of the statewide IT Project Management process. This audit was conducted pursuant to the State Auditor's responsibilities as set forth in Article VII, Section I, Paragraph 6 of the State Constitution and Title 52 of the New Jersey Statutes.

Methodology

Our audit was conducted in accordance with *Government Auditing Standards*, issued by the Comptroller General of the United States. 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Additional guidance for the conduct of the audit was taken from *A Guide to the Project Management Body of Knowledge*, 5th Edition, issued by the Project Management Institute, the leading not-for-profit professional membership association for the project, program, and portfolio management profession.

In preparation for our testing, we studied legislation, agency and statewide policies and procedures, and industry standards and best practices for project management. Provisions we considered significant were documented and compliance was verified by interviews of key personnel, review of project management documentation, and performance of other tests we considered necessary.

A non-statistical sampling approach was used. Our samples were designed to provide conclusions on our audit objective as well as internal controls and compliance. Sample items were judgmentally selected for testing. The six projects selected for an in-depth review were selected based on their impact to the state and its agencies as well as factors such as size, cost, and level of completion.

Conclusions

We found that the Office of Information Technology's (OIT) Project Management Office and

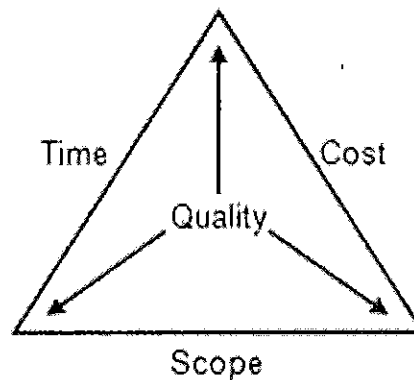
the individual state agencies understand the importance of strong project management practices and have made strides toward implementing such practices. However, we noted areas where improvement is needed in order to advance project management in the state and create a sustainable and repeatable project management and oversight process.

Background

Overview of Project Management Concepts

The Project Management Institute (PMI) defines a project as “a temporary endeavor undertaken to create a unique product, service, or result. The temporary nature of projects indicates that a project has a definite beginning and end. The end is reached when the project’s objectives have been achieved or when the project is terminated because its objectives will not or cannot be met, or when the need for the project no longer exists.” The same organization defines project management as “the application of knowledge, skills, tools, and techniques to project activities to meet project requirements.” Managing a project typically includes, but is not limited to: identifying requirements, addressing stakeholder needs, establishing and maintaining effective communication, creating project deliverables, and balancing competing project constraints.

The following diagram best depicts the competing project constraints:



Time represents the chronological period allotted for the project in the original project plan. Cost represents the budgeted amount of money the project is given at initiation. Scope represents the overall size, features, and functionality of the particular IT project. Quality is the expected level of quality or success of the project. In order for the level of quality to be maintained, a project manager must control the three competing constraints. For example, if the scope of the project increases because additional functionality is required, the other two constraints must also be adjusted to accommodate. If the project cost budget cannot be changed, then the length of time needed to complete the project must be extended to accommodate the additional functionality required. Conversely, if the time budget cannot be increased, then additional resources (manpower or financial) will be needed to complete the additional functionality in the original time frame.

Information Technology Project Management in the State of New Jersey

In the past decade, there have been large-scale information technology projects that have failed and cost the state approximately \$50 million in development and oversight costs in the process. Although strong project management is not a guarantee of project success, it is a critical factor in the identification of difficulties and the assessment of overall project health throughout the life cycle of a project. The following represents the history and current state of statewide project management initiatives and practices during the past decade.

In 2007, the Legislature passed The Office of Information Technology Reorganization Act (Act) because, as stated in the Act, "Despite its achievements, OIT has been restrained by a lack of accountability, control, and monitoring in planning, developing, and conducting departmental and agency information technology projects," and that "the lack of oversight has contributed to disorganization and economic inefficiencies, while also restricting growth, limiting innovation, and discouraging creative input within OIT." In response to these declarations, the Legislature established the Office of Information Technology (OIT) in, but not of, the Department of the Treasury, but further stated that "Notwithstanding this allocation, the office shall be independent of any supervision or control by the State Treasurer, or the department, or by any division, board, office, or other officer thereof." The Act also establishes the New Jersey Information Technology Project Review Board, which "shall be responsible for the review, approval, and monitoring of large-scale information technology projects in the Executive Branch of State Government." The Governor "shall define the extent of large-scale information technology projects and establish a monetary threshold for information technology projects requiring the review and approval of the Project Review Board." Finally, the Act states that "All Executive Branch departments and State agencies are directed to cooperate fully with the Office of Information Technology and the Chief Technology Officer to implement the provisions" of the Act.

The OIT has within it a Project Management Office (OIT PMO). Currently, the OIT PMO would be categorized as a "Supportive PMO" by the PMI, "which provides a consultative role to projects by supplying templates, best practices, training, access to information and lessons learned from other projects. This type of PMO serves as a project repository. The degree of control provided by the PMO is low." Using this model, the responsibility for providing direct project management on a particular agency project falls on the agency who initiates the project. The OIT PMO currently maintains the Tactical Plan, which lists all of the reported projects that agencies have open at any given time. This plan is updated by the agencies on a continuous basis as necessary.

The OIT has a System Architecture Review (SAR) process, which it defines as "a process that brings sponsors, administrators and technologists together to help ensure that technology solutions for the State of New Jersey are conceived, designed, developed, and deployed in an effective and efficient manner, to maximize the benefits and functionality of the technology and align IT investments with business needs at the Enterprise level, while minimizing its cost and risk. The SAR ensures compliance with existing standards and practices, controlled introduction

of new technologies and services, and appropriate reuse of existing technology, to increase returns on investment and decrease total costs of ownership.” A member of the OIT PMO co-chairs the initial meeting of the SAR process, called the Business Case Review (BCR), and also the final meeting of the process, the Implementation Review (IR). However, none of the information required for any of the SAR meetings addresses project management needs or requirements, and the OIT PMO itself acknowledges that the SAR process does not address project management for an agency’s project, nor does the SAR process evaluate the health of a project or its viability except from a purely technological standpoint. It should be noted that in the Fiscal Year 2012 budget hearings the previous OIT management stated, when asked about projects monitored by the aforementioned Project Review Board, that “the PRB meets quarterly to review projects over \$5 million. All other projects go through the SAR process.” Based on this statement, it is reasonable to understand why agencies believe that the OIT uses the SAR process to monitor projects.

In 2011, under the authority provided in the Act, the OIT passed a statewide policy requiring all agencies to obtain approval from the OIT before it can release an IT-related Request for Proposal (RFP). A Request for Proposal is a solicitation, often made through a bidding process, by an agency interested in procurement of a commodity, service, or asset, to potential suppliers to submit business proposals. OIT will review the RFP for its technical approach, clarity, alignment to the enterprise’s strategic direction, and its potential impact on OIT resources. The initial contact for this process is the OIT PMO, who will facilitate the BCR. After the BCR is conducted, the agency can complete the RFP template, and the OIT PMO will provide guidance as necessary. The Deputy Chief Technology Officer (DCTO) will oversee the process from that point forward, working with the agency to develop the RFP and involving OIT units as necessary. The OIT PMO serves as the OIT RFP Coordinator. The RFP Coordinator is responsible for managing the final review and approval of the RFP by OIT, including the Chief Technology Officer’s approval. Although the OIT PMO did include standard language about project management and project management deliverables in the RFP template appendices, the RFP approval does not represent monitoring of projects by the OIT PMO.

In 2012, a joint circular was put forth by the Office of Management and Budget and the OIT which stated that Information Technology purchases greater than \$2,500 (now \$5,000) were subject to a moratorium unless an exception was approved by the OIT. Going through the Tactical Plan and the SAR process is the best way for agencies to ensure that purchases will not have their exceptions delayed because the OIT PMO will be aware of the project and its status before the purchase order is provided to them. However, approval of purchases does not represent project management oversight of projects by the OIT PMO or the OIT.

Project Review Board

The state does not have a Project Review Board as required by legislation.

There is currently no formal Project Review Board (PRB) as required by The Office of Information Technology Reorganization Act. There is an informal group of Office of Information Technology (OIT) upper management that meets periodically to discuss projects with heavy impact on OIT resources. However, this informal group does not meet the requirements of the legislation in the following ways.

- The group is not “comprised of between three and five Executive Branch officials, selected by the Governor.” As of March 31, 2016, no one had been appointed to serve on the PRB.
- The group does not exercise the responsibility for “the review, approval, and monitoring of large-scale information technology projects in the Executive Branch of State Government.”
- The Governor has not defined the extent of large-scale information technology projects by establishing a monetary threshold for information technology projects requiring the review and approval of the PRB.

It is difficult to determine why no one has been appointed to the PRB. However, we found references in previous legislative hearings to the existence of a PRB when it seemed that no board existed. Not one person we spoke to, including those at the OIT, had knowledge of this body existing at any point. Without the legislatively-mandated PRB in place, there is no independent oversight group monitoring large-scale projects and the accountability intended in the law is not occurring.

Recommendation

We recommend a Project Review Board be established as required by the legislation and that the Governor define the extent of large-scale information technology projects by establishing the monetary threshold for information technology projects requiring the review and approval of the PRB.



Project Management Practices

The OIT is not exercising its authority to define and enforce project management practices in the state.

The Office of Information Technology Project Management Office (OIT PMO) currently has no statewide Information Technology Circular Letter defining or enforcing any of its project management best practices. This is important because our interviews with agency IT personnel

revealed a lack of consistency in the definition of key aspects related to project management such as determining what constitutes a project, the process for notifying the Office of Information Technology (OIT) of a new project, and the criteria for oversight by the Project Review Board (PRB). This leads to inconsistent practices throughout the state.

The OIT PMO disseminates information through the Project Management User Group (PMUG), but that organization has no authority to pass or enforce policy. Agencies throughout the state were participating in the PMUG meetings, but recognize it as a body with no authority. They also stated that they had little or no direct contact with the OIT PMO during the life cycle of their projects, and the six in-depth reviews we performed found little or no involvement by the OIT PMO in the projects.

As the OIT PMO moves from a supporting role to a controlling role, where some direct support and compliance is required through various means, then it must implement policy to define key aspects of project management and requirements for compliance. Compliance may involve adopting project management frameworks or methodologies; using specific templates, forms or tools; or conforming to governance. During our audit, the OIT PMO drafted a policy codifying and requiring the use of certain project management tools for all agency projects, and still others for projects classified as large. Included in this policy is the standardization of many of the items that are inconsistent throughout the state.

In discussions with OIT management, it was expressed that the OIT PMO has not been more forthright because of a perceived lack of authority to provide oversight to other agencies' IT projects. However, The Office of Information Technology Reorganization Act (Act) expressly provides the OIT, through the PRB, the responsibility for "the review, approval, and monitoring of large-scale information technology projects in the Executive Branch of State Government." Further, the Act states that "All Executive Branch departments and State agencies are directed to cooperate fully with the Office of Information Technology and the Chief Technology Officer to implement the provisions" of the Act. The OIT recognizes the authority given to them by the Act to pass statewide policy because they have passed over forty policies since 2008 citing that authority over statewide IT operations.

The lack of a policy and procedure leads to inconsistencies between agencies and the OIT when they are expected to work together on information technology projects. In addition, not implementing a statewide policy regarding project management will continue to minimize the role of the OIT in the oversight process and, in turn, make monitoring of projects more difficult for the PRB once it is operational.

Recommendation

We recommend the statewide policy on project management practices be reviewed, revised, and enacted as soon as possible to enable the OIT to exercise the proper authority over information technology projects with consistency and clarity.



Project Managers and Business Analysts

Qualified project managers and business analysts who represent the state's interests are often not in place on state projects.

During our in-depth review of six projects, we found three projects that lacked a qualified project manager representing the interests of the state. In two cases, the state relied on the vendor to provide the project manager and designated the state contract manager in the role of state project manager. In the third case, there was a state project manager; however, the person did not have the appropriate experience and training in project management. The first two projects were never completed, and the third completed with a fifteen percent budget overage that could be traced to issues in the design process.

To determine the current career path for project managers and business analysts in the state, we first reviewed the current civil service structure for project managers. The only Project Manager title we found is geared toward programming team leaders and does not require the experience, certification, and training that are in line with industry standards for project managers. There are no business analyst titles in the current civil service structure. The International Institute of Business Analysis (IIBA) defines business analyst as "a liaison among stakeholders in order to understand the structure, policies, and operations of an organization, and to recommend solutions that enable the organization to achieve its goals." The Office of Information Technology (OIT) uses the Government Representative title for the project managers and business analysts in the Office of Information Technology Project Management Office (OIT PMO), which enables the OIT to write a job description which is consistent with industry standards for these employees. However, analysis of 174 non-OIT Government Representative titles found that only six had a functional title of Project Manager or Business Analyst, therefore, agencies are not using the Government Representative title in the same capacity.

We then compared this structure with both private industry and neighboring states. Private industry job descriptions for both project managers and business analysts are similar to those used by the OIT PMO. In addition, both New York and Pennsylvania's civil service structures include project manager and business analyst title series that are in line with the private industry and OIT PMO job descriptions. Although the OIT PMO's titles are in line with industry best practice, they have no progressive steps for employees to follow as they gain experience and knowledge.

The Civil Service Commission offers two training classes on project management which may be beneficial to anyone who is filling the role of a project manager. One provides an overview on project management and the other prepares users to be certified in project management. We recognize that there are multiple paths of training and certification that would qualify a person to be a project manager in addition to the courses offered by the Civil Service Commission.

Industry standards for project management state that a project manager must have knowledge on the tools and techniques of the discipline of project management as part of the skillset

necessary to be effective. The lack of career path for project managers and business analysts means that there are no job descriptions that accurately reflect the necessary training in these tools and techniques. In addition, the lack of descriptions and requirements allows the state to assign any employee to fill the role of project manager, regardless of knowledge or experience. The OIT PMO currently has no oversight of the qualifications of project managers for any state projects.

Recommendation

We recommend the OIT PMO work with the Civil Service Commission to create a career path for project managers and business analysts which includes industry standard job descriptions and requirements. For existing employees serving in a project management capacity on projects falling under the purview of the Project Review Board (once created), we recommend the OIT PMO coordinate with agencies to ensure these employees receive a minimum level of training and are approved by the Project Review Board.



Project Scopes

Project scopes must be better controlled to avoid additional cost and time on projects and to ensure that projects are successful through implementation.

Four of the six projects we performed in-depth reviews on had issues related to scope management. These issues fell into two categories: project scopes that increased because of change orders, and initial scopes that may have been too expansive. For the projects whose scope expanded because of change orders, we found that some of these changes could have been avoided with better planning and design during the initial phases of the project.

For the two projects with expansive initial scopes, both were considered modernization projects, which attempted to encompass most or all of an agency's operations in a single project. For example, one project had over 5,300 individual requirements that had to be met in order to include all the necessary functionality identified in the design phase. Both of these modernization projects were unsuccessful and resulted in millions of dollars spent with no usable product in the end. Despite this fact, more modernization projects are included in the state's Tactical Plan.

A Guide to the Project Management Body of Knowledge defines scope control as the "process of monitoring the status of the project and product scope and managing changes to the scope baseline." The key benefit of this process is it allows the scope baseline to be maintained throughout the project. The uncontrolled expansion to project or product scope without adjustments to time, cost, or resources is referred to as scope creep. Change is almost inevitable; therefore some type of formal change control process is mandatory for every project.

An improperly planned or managed scope makes a project less likely to be completed

successfully. Even if the project is completed, many times it will exceed the budget in both cost and time. In the absence of a functioning Project Review Board, there is no independent monitoring of large-scale projects which could provide an agency with guidance on defining the scope of their project and limiting scope creep once a project has started. As a centralized monitoring function, they would also have knowledge of issues encountered by other projects that could be shared with an agency, especially when dealing with a large modernization project.

Recommendation

We recommend the initial scope of all projects meeting the criteria for oversight by the Project Review Board be approved by the Board prior to project commencement. In addition, the Board should require that all changes increasing cost or time in excess of a fixed percentage set by the Board, be reviewed and approved by the Board.



Cost-Benefit Analysis

Agencies are not performing cost-benefit analyses for most projects.

We requested information on 52 judgmentally sampled projects from various state agencies and of those projects, only 18 had any type of cost-benefit analysis performed as part of the project life cycle. Of those, 5 had a cost-benefit analysis expressed in monetary savings, while the other 13 represented increased efficiency and/or improved work flow. Interviews with agency personnel at 14 agencies found that only 4 prepared a cost-benefit analysis prior to a project beginning and only one stated that any type of follow-up analysis was performed to verify the accuracy of the initial analysis. Multiple agencies mentioned that a condition of many Federally-funded projects is that a cost-benefit analysis be performed prior to and after a project, but that no requirement exists for projects with other funding sources.

A Guide to the Project Management Body of Knowledge states that a cost-benefit analysis should be contained in the business case for a project, along with the business need. This information forms the basis for the Project Charter, a document that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities. There is currently no requirement that projects of any size perform a cost-benefit analysis, whether the measurable outcome is monetary or not. It should be noted that many projects are based on legislative mandate and are tasked with serving the public interest; however, even these types of non-monetary benefits can be measured.

Failure to perform a cost-benefit analysis reduces the ability to measure the level of success of a project's goals and it deprives decision-makers of valuable information for future initiatives.

Recommendation

We recommend all projects meeting the criteria for monitoring by the Project Review Board require a cost-benefit analysis be completed prior to the project's start and that a follow-up analysis be performed after the project is completed to measure the outcome of the project's goals.



Process Automation

The state has not automated aspects of the project management process that could provide better communication and information sharing.

Currently, all projects tracked by the Office of Information Technology Project Management Office (OIT PMO) are done so manually. As such, the OIT PMO does not have a full portfolio of statewide information technology projects. The OIT PMO began implementing project management software in April 2016. When the Project Review Board is in place, the artifacts captured in this system would serve as a repository for the Board. However, currently the software will be storing only limited documentation.

In addition, although the System Architecture Review (SAR) is not formal project management by the OIT, delays in the completion of action items from the SAR process on either the OIT or agency side adversely affects the project timeline, quality, and cost. Interviews with agency personnel, as well as observations of the SAR process, found that action items on both the OIT and agency sides are not held in a central electronic repository accessible by the necessary persons from each area. Many agencies expressed frustration with the lack of accountability in the process and would like the SAR process to become digitized to allow for transparency.

Industry best practice in project management is to use software to manage project deliverables to ensure the best possible information is available to users and management. Without automation of the project management process, there is a lack of information that flows to management as well as to project participants that can cause issues with progress, as well as the inability to identify difficulties experienced by a project.

Recommendation

We recommend the OIT PMO complete the implementation of the project management software package and work to build up the repository of artifacts in that system. In addition, we recommend the SAR process be automated.



Observations

Project Review Board Composition

As previously stated, The Office of Information Technology Reorganization Act (Act) established the Project Review Board and charged them with “the review, approval, and monitoring of large-scale information technology projects in the Executive Branch of State Government.” According to the Act, the Board will consist of “between three and five Executive Branch officials, selected by the Governor.” Discussions with OIT upper management expressed concern that three to five members is too small of a number to obtain sufficient participation and buy-in from the major Executive Branch agencies and to have the proper expertise on the Board, and that for these reasons the Board size should be expanded.

Once the Board has been established per the existing Act, if the Board feels that expansion is necessary to achieve the goals set out in the Act then the Legislature should consider amending the law to increase the Board size based on that need.

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Advanced Project Cost Monitoring

One of the most important factors in project management in the public sector is cost control. With limited funding available for initiatives, projects must work within a strict framework of project deliverables and payments. We analyzed the current budgeting process for large-scale multi-year IT projects, as well as the environment under which Request for Proposals (RFPs) handle payment for deliverables.

According to discussions with the Office of Management and Budget (OMB), they rely on the OIT to fully vet a project before the initial funding request for that project, including a Business Case Review if necessary. However, the OIT specifically states about the Business Case Review in the SAR documentation: “It is NOT the purpose of this stage to have the business justify its business case – that is an agency activity that should be accomplished through the agency’s internal budgeting and prioritization sessions.” The Business Case Review is a technological discussion only, representing the handing off of the project from business to information technology. So there is a question as to the effectiveness of this vetting process prior to the initial funding request.

For projects spanning multiple fiscal years, the OMB stated that increased funding needs or significant deviation from original timelines would be emphasized in subsequent years’ budget discussions. However, of the six projects we reviewed in depth, all of which ran over budget on either cost or time, there was no mention in any subsequent years’ budget discussion about the project’s health or feasibility after these overruns occurred.

Another area where agencies can attempt to implement strict payment controls is at the Request for Proposal (RFP) stage. This is the stage at which the agency puts the project out to bid and can specify whatever requirements they feel are appropriate. We reviewed the RFPs as part of the in-depth project reviews, and found that only two addressed any kind of match between project deliverable completion and payment. One specifically required state approval of the deliverable before payment, with 10 percent of the payment being held for an additional 30 days in case issues with the deliverable were missed during the initial approval. The other project required the vendor to provide a status report which utilized an advanced project cost management technique called Earned Value Management (EVM). EVM is a methodology that combines scope, schedule, and resource measurements to assess project performance and progress. It is a commonly used method of performance measurement for projects. It integrates the scope baseline with the cost baseline, along with the schedule baseline, to form the performance measurement baseline, which helps the project management team assess and measure project performance and progress. One of the projects we reviewed did require an EVM be performed. When we asked for copies of the EVM reports we were told that the EVM report was "deferred" until later in the project, but the analysis was never done and the project never completed.

The state, utilizing the Project Review Board, the budget process, and the RFP payment schedule, should develop a comprehensive system for analyzing projects costs and deliverables and matching those to vendor payments. This would help to ensure that vendors receive payment only for approved deliverables where the value of the deliverable was earned, and in the case of failed projects, limit the amount paid to the vendor prior to the end of the project.

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August 23, 2016

John J. Termyna
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Dear Mr. Termyna,

Thank you for the opportunity to respond to the draft Information Technology Project Management Audit.

The New Jersey Office of Information Technology (NJOIT) is committed to exercising its statutory authority of defining and enforcing project management practices across the Executive Branch. I'm confident that the formation of the New Jersey Information Technology Project Review Board will greatly strengthen the role on NJOIT's Project Management Office (PMO) as it relates to governance and oversight.

As such, please find the enclosed responses to each of the recommendations contained in the Audit.

Very Respectfully,

A handwritten signature in cursive script that reads "David J. Weinstein".

Dave Weinstein
Chief Technology Officer

Information Technology Project Management Audit

Recommendations:

Project Review Board – The state does not have a Project Review Board as required by legislation.

Recommendation: We recommend a Project review Board be established as required by legislation and that the Governor define the extent of large-scale information technology projects by establishing the monetary threshold for information technology projects requiring review and approval by the PRB.

OIT Response: We are in agreement with this recommendation. On July 19, 2016, Governor Christie selected the following members of the Project Review Board:

- Jeanne Ashmore, Deputy Chief Administrator Motor Vehicles Commission
- Christopher Bailey, Assistance Commissioner, Department of Human Services
- Gary Hasenbalg, Chief of Staff, Department of Labor and Workforce Development
- Beth Leigh Mitchell, Assistant Attorney General, Department of Law and Public Safety
- David Ridolfino, Acting Director, Office of Management and Budget, Department of the Treasury

The inaugural meeting of the Project Review Board was held on August 12, 2016. The criterion for projects to be considered to require review and approval by this Board is the first order of business and the recommendations will be sent to the Governor by mid-September, 2016. The monetary threshold is one of several criteria with additional expectations being set by the Board.

Project Management Practices – The OIT is not exercising its authority to define and enforce project management practices in the state

Recommendation: We recommend the statewide policy on project management practices be reviewed, revised, and enacted as soon as possible to enable the OIT to exercise the proper authority over information technology projects with consistency and clarity.

OIT Response: We are in agreement with this recommendation. The OIT PMO drafted a Project Management Policy that was vetted through the State's Project Management User Group and submitted to the OIT Policy and Planning Unit on July 18, 2016.

Project Managers and Business Analysts – Qualified project managers and business analysts who represent the state's interests are often not in place on state projects.

Recommendation: We recommend the OIT PMO work with the Civil Service Commission to create a career path for project managers and business analysts which includes industry standard job descriptions and requirements. For existing employees serving in a project management capacity on projects falling under the purview of the Project review Board (once created), we recommend the OIT PMO coordinate with Agencies to ensure these employees receive a minimum level of training and are approved by the Project Review Board.

OIT Response: We are in agreement with this recommendation. The OIT PMO with the OIT Chief of Staff will provide a recommendation to the Civil Service Commission with the appropriate job description and career path for state project managers and business analysts. The OIT PMO has also reviewed the project

management classes offered through the State Learning Management System and developed a recommended curriculum for OIT employees serving in a project management capacity. The OIT PMO is piloting this training through select OIT employees. The pilot is looking to see the effectiveness of this curriculum. Additional participants are being selected to continue this pilot. If proven to be effective, the training will be mandatory for all OIT employees serving in a project management capacity, and the OIT will work to extend this to other state Executive Branch agencies.

Project Scopes – Project Scopes must be better controlled to avoid additional cost and time on projects and to ensure that projects are successful through implementation.

Recommendation: We recommend the initial scope of all projects meeting the criteria for oversight by the Project Review Board be approved by the Board prior to project commencement. In addition, the Board should require that all changes increasing the cost or time in excess of a fixed percentage set by the Board, be reviewed and approved by the Board.

OIT Response: We are in agreement and will present this recommendation to the Project Review Board.

Cost Benefit Analysis –Agencies are not performing cost-benefit analyses for most projects.

Recommendation: We recommend all projects meeting the criteria for monitoring by the Project Review Board require a cost-benefit analysis be completed prior to the project's start and that a follow-up analysis be performed after the project is completed to measure the outcome of the project's goals.

OIT Response: We are in agreement and will present this recommendation to the Project Review Board.

Process Automation – The state has not automated aspects of the project management process that could provide better communication and information sharing.

Recommendation: We recommend the OIT PMO complete the implementation of the project management software package and work to build up the repository of artifacts in that system. In addition, we recommend the SAR process be automated.

OIT Response: We are in agreement with this recommendation. The OIT PMO is currently piloting the CAPPm software for project portfolio management. In addition, requirements are being developed for the selection of a standardized project management tool. The OIT is currently looking at options for automating the SAR process.