



State of Nevada
Governor's Finance Office
Division of Internal Audits

Audit Report

**Department of Administration
Enterprise IT Services
Technology Investment Request**

Report No. 17-04
June 20, 2017

EXECUTIVE SUMMARY

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Broadening the TIR review to include subject matter experts ensures individuals with essential knowledge review TIRs for potential IT risk and technology direction of agencies. This also guarantees TIR objectives are aligned with the Governor's goals and priorities, and linked to the agency's strategic and business plans. EITS TIR reviews are not comprehensive. The TIR Administrator is the only employee reviewing and approving technical elements of all TIRs and program elements of some TIRs. Other subject matter experts in EITS are not involved in the review process.

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Formalizing policies and procedures for TIRs will ensure that all necessary elements of the review have been defined and documented; there is consistency in the reviews, and continuity of knowledge. EITS has no documented policies or procedures for TIR reviews and approvals. TIR reviews are based on institutional knowledge of the TIR Administrator. It would be difficult for other staff to assist or finish a review without documented policies or procedures. The TIR Administrator has never denied a TIR and issues a TIR approval memorandum documenting only the impact on EITS resources. The lack of policies and procedures provides no guidance for denying TIRs and no evidence TIR reviews consider potential IT risk and the technology direction of the agencies.

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Updating the Nevada Revised Statutes, Nevada Administrative Code, and the State Administrative Manual sections related to TIRs, and EITS TIR Instructions will ensure agencies understand when to submit a TIR and what information is required. Agencies do not always submit TIRs when implementing IT projects, which may be due, in part, to inconsistent interpretations of NRS, NAC, SAM, and EITS TIR instructions.

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Collecting summary data to identify enterprise-wide opportunities will help avoid duplication of efforts and systems, and help determine a consistent, overall technology direction for the state. EITS maintains limited summary data from TIRs for IT projects that agencies intend to implement. Lack of data makes it difficult for EITS to determine if agencies are requesting same type systems that could be incompatible with, or a duplication of, other state systems.

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INTRODUCTION

At the direction of the Executive Branch Audit Committee, the Division of Internal Audits conducted an audit of the Department of Administration (department), Enterprise IT Services (EITS) – Agency IT Services.

Our audit focused on the effectiveness of the Technology Investment Request process. The audit's scope and methodology, background information, and acknowledgements are included in Appendix A.

Our audit focused on the following objective:

- ✓ Can EITS improve the Technology Investment Request process?

Enterprise IT Services Division Response and Implementation Plan

We provided draft copies of this report to the department and EITS officials for their review and comments. Their comments have been considered in the preparation of this report and are included in Appendix B. In its response, EITS accepted our recommendations. Appendix C includes a timetable to implement our recommendations.

NRS 353A.090 specifies within six months after the final report is issued to the Executive Branch Audit Committee, the Administrator of the Division of Internal Audits shall evaluate the steps EITS has taken to implement the recommendations and shall determine whether the steps are achieving the desired results. The administrator shall report the six month follow-up results to the committee, department, and EITS officials.

The following report contains our findings, conclusions, and recommendations.

Can EITS Improve the Technology Investment Request Process?

EITS can improve the Technology Investment Request (TIR) process by:

1. Broadening the TIR review to include subject matter experts;
2. Formalizing policies and procedures for TIRs;
3. Updating Nevada Revised Statutes (NRS), Nevada Administrative Code (NAC), and the State Administrative Manual (SAM) sections related to TIRs, and EITS TIR Instructions; and
4. Collecting summary data to identify enterprise-wide opportunities.

Broadening the TIR review to include subject matter experts will ensure individuals with essential knowledge review TIRs for potential IT risk and technology direction of agencies. This will also guarantee TIR objectives are aligned with the Governor's goals and priorities, and linked to the agency's strategic and business plans.

Formalizing policies and procedures for TIRs will ensure that all necessary elements of the review have been defined and documented, and there is consistency in the reviews and continuity of knowledge.

Updating NRS, NAC, SAM, and EITS TIR Instructions will ensure agencies understand TIR requirements.

Collecting summary data to identify enterprise-wide opportunities will help avoid duplication of efforts and systems, and determine the overall technology direction for the state.

Overview of TIR

TIRs are used to document agencies' requests for IT projects. TIRs consist of three elements – technical, program, and budget:

- Technical elements consist of specifications for the overall system and application characteristics. These characteristics may include types of system platforms, data processing capacity, and storage parameters.
- Program elements consist of a description of the rationale, objectives, scope, anticipated results of the project, and any alternate courses of action. TIR objectives should also be aligned with the Governor's goals and priorities, and linked to the agency's strategic and business plans.
- Budget elements consist of cost components including vendor and EITS resources.

TIR Review Process

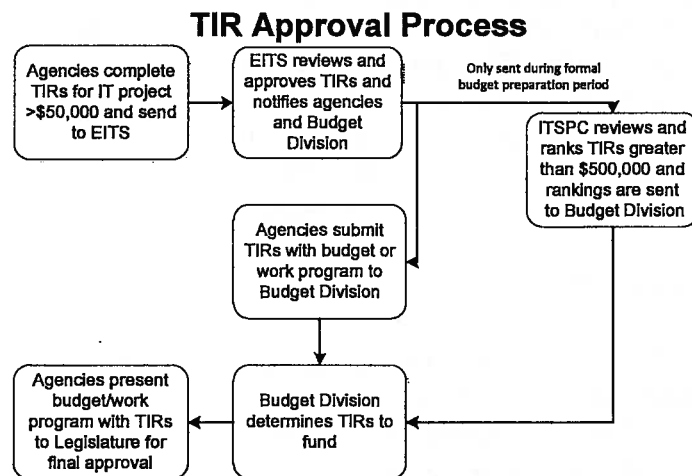
Agencies must submit TIRs for IT projects greater than \$50,000 to EITS for review and approval. TIRs can be submitted during the budget preparation period and the interim budget period.

The EITS TIR Administrator conducts the technical review and issues an approval memorandum to the agency, EITS management, and the Governor's Finance Office/Budget Division for all approved TIRs.¹

During the budget preparation period, TIRs \$500,000 or greater are forwarded to the IT Strategic Planning Committee (ITSPC) for a program review. The ITSPC is comprised of executive branch department directors and the State Chief Information Officer (CIO). ITSPC reviews and ranks TIRs based, in part, on the project's operational necessity, internal efficiencies, and alignment with the Governor's strategic priorities. EITS approval memorandums and ITSPC rankings are forwarded to the Budget Division as part of the TIR budget review. Approved TIRs are submitted to the Legislature with the Governor Recommends Budget for final approval.

During the interim period, the ITSPC does not meet. Consequently, TIRs \$500,000 or greater do not receive a program review by ITSPC. TIRs submitted during this period are reviewed by the Budget Division during the work program review for funding purposes and submitted to Interim Finance Committee (IFC) for final approval.² See Exhibit I.

Exhibit I



¹ EITS Management consists of the State CIO/Division Administrator, Deputy Administrator, and four Section Chiefs – Communications, Computing, Information Security, and Agency IT Services.

² Interim budget period is the timeframe when work programs, documents used to request changes to legislatively approved budgets, are required for funding changes to agencies' budgets.

Broaden TIR Review to Include Subject Matter Experts

EITS should broaden the TIR review process to include subject matter experts to perform comprehensive technical and program element reviews. This will ensure individuals with essential knowledge review TIRs for potential IT risk and technology direction of agencies. This will also guarantee TIR objectives are aligned with the Governor's goals and priorities, and linked to the agency's strategic and business plans.

EITS TIR Reviews Are Not Comprehensive

EITS TIR reviews are limited to the TIR Administrator. The TIR Administrator is the only employee reviewing and approving technical elements of all TIRs and program elements of some TIRs. Other subject matter experts in EITS are not involved in the review process.

EITS' Subject Matter Experts Do Not Perform Technical Reviews

EITS is divided into four main sections – Communications, Computing, Security, and Agency IT Services. The EITS TIR Administrator is part of Agency IT Services and cannot stay current on ever evolving technologies in each section. Experts from each section should perform the technical review of TIRs to determine the potential effect on IT infrastructure and EITS resources.

TIR Administrator to Manage the Expanded TIR Process

The TIR Administrator could be better used to manage TIR reviews and approvals. The TIR Administrator would manage the review process, ensuring agencies comply with EITS TIR instructions and forwarding to the applicable experts for the technical review. The TIR Administrator would obtain documented approval or denial of the TIR from the experts. A memorandum would be issued informing the agency, EITS management, and the Budget Division of the approval or denial of the technical portion of the TIR.

All TIRs Need Program Review

TIRs under \$500,000 do not receive a program review. Additionally, TIRs \$500,000 and greater submitted during the interim budget period do not receive a program review. ITSPC members are best positioned to perform program reviews. The ITSPC is comprised of executive branch department directors, who are members of the Governor's Cabinet, and the CIO. They have a thorough understanding of the Governor's goals and priorities and their agencies' strategic and business plans. They are also aware of and can discuss potential projects their agencies are considering. These discussions could lead to enterprise-wide opportunities for the state.

The ITSPC needs to meet more often to ensure timely review of all TIRs submitted during the budget preparation period and the interim budget period. While this would be an increase in time commitment by ITSPC members, it is counterbalanced by the expertise applied to the program reviews, ensuring that TIR objectives are aligned with the Governor's goals and priorities, and linked to agencies' strategic and business plans.

Broadening the TIR review to include subject matter experts will ensure individuals with essential knowledge review TIRs for potential IT risk and technology direction of agencies. This will also guarantee TIR objectives are aligned with the Governor's goals and priorities, and linked to the agency's strategic and business plans.

Recommendation

1. Broaden the TIR review to include subject matter experts.

Formalize Policies and Procedures Regarding TIR Reviews

EITS should formalize policies and procedures for TIR technical reviews. This ensures that all necessary elements of reviews have been defined and documented. In addition, this will help ensure consistency in reviews and continuity of knowledge among the EITS staff and management.

Policies and Procedures Are Not Documented

EITS has no documented policies or procedures for TIR reviews and approvals. The TIR Administrator determines the necessary technical elements of each review and performs without assistance. During the review, the TIR Administrator might request additional information from agencies, but there are no policies and procedures to determine when additional information is necessary. TIR reviews are based on institutional knowledge of the TIR Administrator. It would be difficult for other staff to assist or finish a review without documented policies or procedures.

Additionally, the TIR Administrator represents that he has never denied a TIR. There are no policies and procedures to document why a TIR should not be approved and any subsequent actions for agencies upon denial.

TIR Review Appears to be Limited to the Impact on EITS Resources

The lack of policies and procedures provides no evidence TIR reviews consider potential IT risk and technology direction of agencies. The TIR approval memorandum only documents the impact on EITS resources.

Formalizing policies and procedures for TIR reviews ensure that all necessary elements of the review have been defined and documented. In addition, this ensures there is consistency in the reviews and continuity of knowledge. Documented policies and procedures assist with training additional staff and allow processes to be standardized. This ensures staff from different sections of EITS will apply the same procedures when they perform TIR reviews.

Recommendation

2. Formalize policies and procedures for TIRs.

Update NRS, NAC, SAM, and EITS TIR Instructions

EITS should update NRS, NAC, SAM and EITS TIR Instructions to reflect changes in policies and procedures and better define requirements for agencies. This will ensure agencies understand when to submit a TIR and what information is required.

When agencies implement IT projects without TIRs, there is a possibility that projects may cause increased IT risk, be incompatible with state infrastructure, result in inefficient use of resources, and not be aligned with the Governor's goals and priorities and the direction of IT technology for the state.

TIRS Not Always Submitted For IT Projects

Agencies do not always submit TIRs when implementing IT projects for various reasons. Agencies may assume:

- the agency is statutorily exempt because they are not required to use EITS services and equipment;³
- certain projects do not require a TIR; or
- reallocation of internal resources without requesting new funding does not require a TIR.

Inconsistent Interpretation of Statute

Agencies may assume that TIRs are unnecessary due to inconsistent interpretations of statute. NRS 242 lists specific agencies that are not required to use services and equipment provided by EITS.

Some of these agencies have interpreted this to mean they are not required to submit TIRs. However, NRS 242 requires the CIO approve all information systems costing \$50,000 or more. Agencies are not complying with this section of the statute.

³ NRS 242.131 exempts the following agencies from using EITS' services and equipment:

- (a) The Court Administrator;
- (b) The Department of Motor Vehicles;
- (c) The Department of Public Safety;
- (d) The Department of Transportation;
- (e) The Employment Security Division of the Department of Employment, Training and Rehabilitation;
- (f) The Department of Wildlife;
- (g) The Housing Division of the Department of Business and Industry;
- (h) The Legislative Counsel Bureau;
- (i) The State Controller;
- (j) The Nevada Gaming Control Board and Nevada Gaming Commission; and
- (k) The Nevada System of Higher Education.

Outdated and Incomplete Regulations and Guidelines

NAC 242 states agencies are to comply with the Nevada Information Systems Policies and Standards Manual when completing the TIR. This manual no longer exists. However, the information in the manual has been distributed to applicable sections of the EITS website, such as the state security policies and procedures.

SAM 1618 contains a short, high-level overview of the TIR process with no link or reference where agencies can obtain more detailed information. The EITS TIR Instructions list specific projects that may require a TIR and projects that do not require a TIR. Software upgrades do not require a TIR; however, some software upgrades can contain significant changes, which might affect EITS resources or systems. Consequently, software upgrades that may have a significant impact should require a TIR.

The lack of updated and detailed TIR instructions has led to IT inefficiencies by some agencies. For example, the Department of Health and Human Services purchased and implemented Microsoft Office 365, which was a software upgrade of their existing Microsoft Office application. Microsoft Office 365 runs on a cloud platform and the state's IT infrastructure cannot ensure a sufficient level of security for all cloud applications.⁴ EITS has disallowed the use of the Microsoft Office 365 email functionality until it upgrades the state's security infrastructure.

Criteria for TIR Waivers Not Formalized

NAC 242 and SAM 1618 reference TIR waivers which are issued by EITS. However, NAC, SAM, and the EITS TIR Instructions do not offer guidelines when a TIR waiver may be issued.

Some agencies request funding for IT projects without submitting a TIR or requesting a TIR waiver. EITS may issue waivers to agencies eliminating the need to submit a TIR. However, the TIR waiver process is not formalized, and agencies may not be aware of the process. The waiver process should be formalized through policies and procedures to include criteria for when a waiver will be issued. Agencies should be required to submit a waiver request if they do not believe they need to submit a TIR.

EITS should update the NRS, NAC, SAM, and the EITS TIR instructions to reflect changes in TIR policies and procedures and better define requirements for agencies. This will ensure agencies understand when to submit a TIR and what information is required.

⁴ Cloud platform refers to storing and accessing data and programs over the internet instead of from a network server or computer's hard drive. Griffith, Eric "What is Cloud Computing" *PC Magazine* May 2016. Web April 26, 2017.

Recommendation

3. Update NRS, NAC, SAM sections relating to TIRs, and EITS TIR Instructions.

Collect Summary Data to Help Identify Enterprise-wide Opportunities

EITS should collect summary data from all TIRs and TIR waivers to help identify enterprise-wide opportunities. This would help avoid duplication of efforts and systems and help determine the overall technology direction for the state.

EITS Maintains Limited Summary Data

EITS maintains limited summary data from TIRs for IT projects that agencies intend to implement. Lack of data makes it difficult for EITS to determine if agencies are requesting same type systems that could be incompatible with, or a duplication of, other state systems.

Additional data such as vendor name, application version number, system platform, and agency-defined significant application features should be maintained. This data would assist EITS in comparing TIRs across the state.

TIR Data Not Sufficiently Summarized

The TIR Administrator does not summarize data for TIRs submitted during the interim budget period. Additionally, TIR data summarized during the budget preparation period is insufficient to identify enterprise-wide opportunities. The TIR Administrator maintains electronic files of all individual TIRs but does not prepare a sufficient summary that can be used to identify enterprise-wide opportunities.

Maintaining limited data related to TIRs makes it difficult for EITS to know if agencies are requesting same type systems that could be incompatible with, or a duplication of, other state systems. Collecting summary data would help identify enterprise-wide opportunities, avoid duplication of efforts and systems, and help determine the overall technology direction for agencies and the state.

Recommendation

4. Collect summary data to help identify enterprise-wide opportunities.

Appendix A

Scope and Methodology, Background, Acknowledgements

Scope and Methodology

We began the audit in January 2017. In the course of our work, we interviewed department and EITS staff and discussed processes inherent to their responsibilities. We reviewed EITS records, applicable NRS's, and other state guidelines. We concluded fieldwork and testing in April 2017.

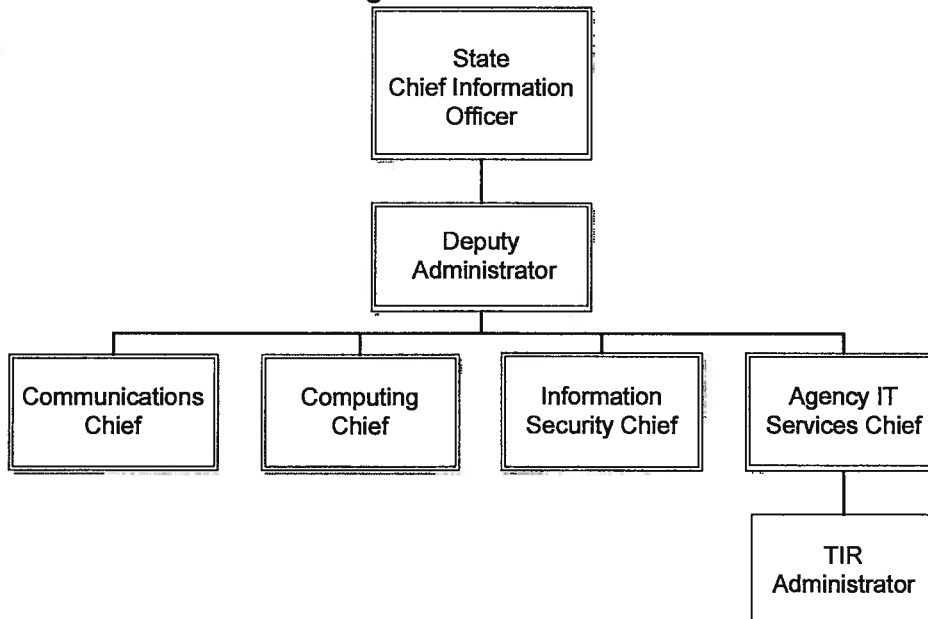
We conducted our audit in conformance with the *International Standards for the Professional Practice of Internal Auditing*.

Background

Enterprise IT Services (EITS) is one of 10 divisions in the Department of Administration and is funded by state agency service fees, transfers, and allocations. EITS is comprised of four sections – Communications, Computing, Information Security, and Agency IT Services, headed by section chiefs. See Exhibit II.

Exhibit II

Enterprise IT Services
Organizational Chart



Acknowledgments

We express appreciation to the department director, CIO, EITS deputy administrator, and EITS staff for their cooperation and assistance throughout the audit.

Contributors to this report included:

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Appendix B

Enterprise IT Services Division Response and Implementation Plan

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Governor



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TO: Steve Weinberger, Administrator Governor's Finance Office, Division of Internal Audits

FROM: Shannon Rahming, Department of Administration, Administrator EITS

SUBJECT: Executive Branch Audit of the Technology Investment Request Process

The Division of Enterprise Information Technology Services (EITS) thanks the Division of Internal Audits staff for their time and assistance in conducting the audit of the Technology Investment Request process. The division always appreciates the feedback from external agencies to improve our practice, enhance efficiencies and ensure fiscal transactions are prudent. The following are the division's response to your recommendations:

Recommendation 1: Broaden the TIR review to include subject matter experts.

EITS agrees that the TIR process should include subject matter experts from the requesting agency, as well as staff from Enterprise IT Services to ensure that requirements can be met within the State's current available technologies. If a request will impact the entire state via enterprise constraints, it is imperative that EITS has the opportunity to review and explain the limitations and assist the agency in finding a solution; which may include EITS requiring an upgrade or purchase for enterprise systems.

Anticipated Implementation Date:

The Division will create and document the guidelines for review by Subject Matter Experts by the end of December 2017 and put it in place.

Recommendation 2: Formalize policies and procedures to TIR's.

EITS agrees with this recommendation and through our own strategic planning will work with enterprise units to determine what information is most valuable for their review as subject matter experts. A formal policy and procedure will be helpful to internal and external customers but would need to be followed by all State entities; ITSPC and GFO will not exempt agencies or projects from review.

Anticipated Implementation Date:

The Division will create and document policies and procedures for TIR's by December 2017.

Recommendation 3: Update NRS, NAC, SAM sections relating to TIRs, and EITS TIR instructions.

EITS agrees with this recommendation. An update to statutory requirements would be necessary with formalizing policies and procedures for TIRs. The policies and procedures would coincide with the updated NRS, NAC, and SAM sections and would ensure that agencies are aware of all statutory requirements for TIR processing; ITSPC and GFO would not exempt agencies or projects from review.

Anticipated Implementation Date:

The Division will create draft NRS, NAC, and SAM changes to implement the policies and procedures by December 2017. These drafts will be subject to approval processes of the BOE, Legislative Commission, and 2019 Legislature as applicable, delaying full implementation until July 2019.

Recommendation 4: Collect summary data to help identify enterprise-wide opportunities.

EITS agrees with this recommendation. This recommendation can be partially implemented at the end of December 2017 as part of recommendations #1 and #2, which will be used to identify those data elements that are necessary for decision making. Compilation, analysis and reporting of this data is likely to require additional staffing within the agency. All efforts will be made to repurpose personnel and technology towards this effort, but full implementation may be delayed until the 2019 Legislature to request additional resources. It also may be necessary to enact the NRS changes discussed in recommendation #3 to enforce compliance from all state agencies.

Appendix C

Timetable for Implementing Audit Recommendations

In consultation with the Department of Administration (department) and Enterprise IT Services (EITS), the Division of Internal Audits categorized the recommendations contained within this report into two separate implementation time frames (i.e., *Category 1* – less than six months; *Category 2* – more than six months). The department and EITS should begin taking steps to implement all recommendations as soon as possible. The department and EITS target completion dates are incorporated from Appendix B.

Category 1: Recommendation with an anticipated implementation period of less than six months.

<u>Recommendations</u>	<u>Time Frame</u>
1. Broaden the TIR review to include subject matter experts. (page 5)	December 2017
2. Formalize policies and procedures for TIRs. (page 6)	December 2017

Category 2: Recommendations with an anticipated implementation period exceeding six months.

<u>Recommendations</u>	<u>Time Frame</u>
3. Update NRS, NAC, SAM sections relating to TIRs, and EITS TIR Instructions. (page 9)	July 2019
4. Collect summary data to identify enterprise-wide opportunities. (page 10)	July 2019

The Division of Internal Audits shall evaluate the action taken by EITS concerning the report recommendations within six months from the issuance of this report. The Division of Internal Audits must report the results of its evaluation to the committee, department, and EITS.