# CITY OF SAN ANTONIO

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October 18, 2019

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SUBJECT: Follow-Up Audit Report of ITSD Hardware and Software Lifecycle Management Process

Mayor and Council Members:

We are pleased to send you the final report of the Follow-Up Audit of Information Technology Service Department (ITSD) Hardware and Software Lifecycle Management Process. Management's verbatim response is included in Appendix B of the report. The Information Technology Service Department management and staff should be commended for their cooperation and assistance during this audit.

The Office of the City Auditor is available to discuss this report with you individually at your convenience.

Respectfully Submitted,

Kevin W. Barthold, CPA, CIA, CISA
City Auditor
City of San Antonio

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# CITY OF SAN ANTONIO

# OFFICE OF THE CITY AUDITOR

Follow-Up Audit of Information Technology Services Department

Hardware and Software Lifecycle Management Process

Project No. AU18-F04

October 18, 2019

Kevin W. Barthold, CPA, CIA, CISA
City Auditor

# Executive Summary

As part of our annual Audit Plan approved by City Council, we conducted a follow-up audit of the recommendations made in the *Audit of Information Technology Services Department Hardware and Software Lifecycle Management Process* report dated October 17, 2016. The objective for this follow-up audit is:

**Determine if prior audit recommendations are successfully implemented and working as intended.**

We determined that one of four action plans was successfully implemented. Information Technology Services Department (ITSD) has implemented a process to ensure that ITSD personnel review IT related purchase requests for accuracy and completeness prior to management approval.

Additionally, two recommendations were partially implemented:

- ITSD has made progress with their inventory process; however, further effort is needed to address discrepancies between the physical counts and the IT asset records in the Remedy system.

- ITSD performed a review of privileged users with access to modify IT assets in the Remedy system; however, ITSD has not yet implemented asset management subgroups, which would limit users to modifying only the type of assets they are responsible for.

The fourth recommendation was not successfully implemented. ITSD's reconciliation of capital IT assets between SAP and the Remedy system is not complete.

ITSD Management agreed with the audit findings and has developed positive action plans to address them. Management's verbatim response is in Appendix B on page 7.

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# Background

In October 2016, the Office of the City Auditor completed an audit of ITSD's hardware and software lifecycle management process. The objective of the audit was as follows:

Determine if current processes for managing the lifecycle of hardware and software for general office use throughout the City are appropriate and meeting the needs of City staff.

The Office of the City Auditor concluded that internal controls need improvement to ensure that the lifecycle of hardware and software are effectively managed.

- A control to ensure that information needed to effectively monitor IT related purchase requests did not exist.

- A standard process for performing periodic physical inventories did not exist. ITSD had not performed a physical inventory of assets since September of 2014.

- Privileged users with access to modify IT assets in the Remedy system were not being reviewed for appropriateness. Additionally, critical changes to the status (i.e. disposals or end of life) of IT assets were not being monitored.

- Disposed capital assets were not accurately accounted for in SAP.

ITSD management agreed with the conclusions and developed action plans to address the audit recommendations.

# Audit Scope and Methodology

The audit scope was limited to the recommendations and corrective action plans made in the original report for the time frame from May 2017 through July 2018. When testing the inventory process, we also reviewed physical counts that occurred between January 2017 and March 2017.

We interviewed ITSD personnel to gain an understanding of ITSD's processes related to the hardware and software lifecycle management process. Testing criteria included ITSD policies and procedures, Administrative Directive 8.7 *Financial Management of Capital Assets and Tracked Property*, and Administrative Directive 7.8d *Access Control*.

We relied on computer-processed data in SAePS, the City's procurement system; SAP, the City's financial and accounting system; and Remedy, ITSD's system for managing changes and assets. Our reliance was primarily based on performing direct tests on the data rather than evaluating the system's general and application controls. We do not believe that the absence of testing general and application controls had an effect on the results of our audit.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

# Prior Audit Recommendations and Status

## A. IT Hardware and Software Procurement

*Prior Recommendation:*

The Chief Technology Officer should establish a control to ensure that each IT related purchase request is reviewed in detail by ITSD personnel prior to obtaining ITSD senior management's review and approval. IT personnel should ensure that IT purchase requests include vital information needed and that approved purchases are recorded in the Remedy system.

**Status: Implemented**

Information Technology Services Department (ITSD) has implemented a process to ensure that ITSD personnel review IT related purchase requests for accuracy and completeness prior to management approval. ITSD personnel verify that all critical information, which will eventually flow into the Remedy system, is captured in the City's procurement system, SAePS.

We verified that all IT purchase orders between May 2017 and July 2018 were processed by ITSD personnel and that all items purchased were successfully transferred into the Remedy system.

## B. Physical Inventory of Assets

*Prior Recommendation:*

The Chief Technology Officer should implement a standard process for conducting periodic physical inventories of IT assets to include identification of physical locations for all IT assets.

**Status: Partially Implemented**

ITSD and HR staff coordinated with departments to inventory approximately 9,500 IT assets between January and March 2017. Subsequently, between August 2017 and July 2018, ITSD staff inventoried approximately 26,000 IT assets, including the addition of over 6,000 VoIP phones and 6,000 monitors.

Consistent descriptions were used for location when updating the IT asset records in the Remedy system. However, further effort is needed to address discrepancies between the physical counts and the IT asset records. ITSD has started this process by providing departments with their asset records to verify for accuracy and completeness. ITSD also plans to incorporate additional inventory procedures

to correct any remaining records that are incomplete or inaccurate (e.g. no location, no inventory date).

**Recommendation**

The Chief Information Officer should ensure the prior recommendation is fully implemented by verifying that discrepancies between periodic physical counts and the IT asset records are addressed. Also, maintain up-to-date policies and procedures to provide guidance to ITSD staff, coordinating HR staff, and end-user departments.

### C. Asset Management Access Controls

*Prior Recommendation:*

The Chief Technology Officer should establish controls to ensure periodic reviews of Remedy system users with elevated privileges. Additionally, because the Remedy system does not have the ability to create asset management subgroups, critical changes to the status of IT assets should be monitored for appropriateness.

**Status: Partially Implemented**

ITSD performed a review of privileged users with access to modify IT assets in the Remedy system. Access is limited to employees who require the Asset Admin group permissions to perform their job duties.

However, ITSD has not yet implemented asset management subgroups, which would limit users to modifying only the type of assets they are responsible for. Currently, all users who belong to the Asset Admin group have the ability to decommission and dispose of any IT asset. Additionally, no process has been implemented to monitor the appropriateness of changes to ensure that users have not modified assets beyond the scope of their designated area.

**Recommendation**

The Chief Information Officer should ensure the prior recommendation is fully implemented by enforcing Remedy system user access controls by subgroups. Additionally, ITSD should continue to perform periodic reviews of user access.

### D. Disposal of Capital Assets

*Prior Recommendation:*

The Chief Technology Officer should perform a reconciliation of capital IT assets on a quarterly basis between SAP and the Remedy system.

**Status: Not Implemented**

ITSD's reconciliation of capital IT assets between SAP and the Remedy system is not complete. ITSD is researching discrepancies to identify why they occurred (e.g. asset numbers were changed in SAP, but not correctly updated in the Remedy system).

**Recommendation**

The Chief Information Officer should ensure the prior recommendation is fully implemented by regularly performing reconciliations of IT capital assets between SAP and the Remedy system.

# Appendix A – Staff Acknowledgement

Gabe Trevino, CISA, Audit Manager
Rebecca Moulder, CIA, CISA, Auditor in Charge
Dan Kuntzelman, CIA, Auditor

# Appendix B – Management Response

CITY OF SAN ANTONIO

SAN ANTONIO TEXAS 78283-3966

October 9, 2019

Kevin W. Barthold, CPA, CIA, CISA
City Auditor
San Antonio, Texas

RE: Management's Acknowledgment and Corrective Action Plan for the Follow-Up Audit of Information Technology Services Department Hardware and Software Lifecycle Management Process

☒ Fully Agree (provide detailed comments)

☐ Agree Except For (provide detailed comments)

☐ Do Not Agree (provide detailed comments)

Information Technology Services Department has reviewed the audit report and has developed the Corrective Action Plans below for the three updated recommendations.

| Recommendation | | | | | |
|---|---|---|---|---|---|
| # | Description | Audit Report Page | Accept, Decline | Responsible Person's Name/Title | Completion Date |
| 1 | **Physical Inventory of Assets**<br><br>The Chief Information Officer should ensure the prior recommendation is fully implemented by verifying that discrepancies between periodic physical counts and the IT asset records are addressed. Also, maintain up-to-date policies and procedures to provide guidance to ITSD staff, coordinating HR staff, and end-user departments. | 4 | Accept | Benito Medrano / Assistant Director Customer Relations | September 2020 |

| Recommendation | | | | | |
|---|---|---|---|---|---|
| # | Description | Audit Report Page | Accept, Decline | Responsible Person's Name/Title | Completion Date |
| | **Action plan:**<br>Per policy, ITSD completes physical inventories annually and will improve processes by incorporating more frequent reconciliation throughout the inventory cycle. Additionally, ITSD periodically provides each Department Head a listing of their technology assets in Remedy (called a Directors Asset List) and works with each department to ensure accuracy of the asset inventory held by ITSD.<br><br>Revised Director's Asset Lists will be completed by November 2019. ITSD will assist the departments with additional review and reconciliation of the asset inventory before conducting another physical inventory scheduled from September 2019 to September 2020. | | | | |
| 2 | **Asset Management Access Controls**<br><br>The Chief Information Officer should ensure the prior recommendation is fully implemented by enforcing Remedy system user access controls by subgroups. Additionally, ITSD should continue to perform periodic reviews of user access. | 4 | Accept | Benito Medrano / Assistant Director Customer Relations | November 2019 |
| | **Action plan:**<br>ITSD is modifying Remedy to restrict permissions to assets based on user roles (implements access controls by subgroup). This will control user access to only assets that are pertinent to their job duties. ITSD will review user access quarterly to ensure that roles have the appropriate permissions.<br><br>In order to grant elevated user access, Directors/Assistant Director's must provide approval through a new Remedy Request Form. ITSD is implementing quarterly reviews to ensure appropriateness of updates made to assets by all those with elevated permissions. Both will be completed in November 2019. | | | | |
| 3 | **Disposal of Capital Assets**<br><br>The Chief Information Officer should ensure the prior recommendation is fully implemented by regularly performing reconciliations of IT capital assets between SAP and the Remedy system. | 5 | Accept | Benito Medrano / Assistant Director Customer Relations | July 2020 |

| Recommendation | | | | | |
|---|---|---|---|---|---|
| # | Description | Audit Report Page | Accept, Decline | Responsible Person's Name/Title | Completion Date |
| | **Action plan:**<br>It was determined that there are multiple reasons capital assets may not match between SAP and Remedy; for example, assets purchased in bundles and created in SAP as capital assets for cost reasons, may not truly be capital assets by definition.<br><br>Finance now provides an SAP asset file quarterly to ITSD Asset Management to reconcile in Remedy. Upon completion of this one-time manual reconciliation, IT Asset Management will provide feedback to Finance regarding assets that need to be updated in SAP and make any revisions to Remedy. ITSD will have the review and reconciliation of all older assets completed by December 2019.<br><br>This process will be performed quarterly going forward to reconcile Remedy and SAP. IT Asset Management will address any future reconciliation inconsistencies via process changes and will certify the reconciliation process and data integration by July 2020. | | | | |

We are committed to addressing the recommendations in the audit report and the plan of actions presented above.

Sincerely,

R. Craig Hopkins Jr.
Craig Hopkins
Chief Information Officer
Information Technology Services Department

9 Oct 2019
Date

Ben Gorzell
Ben Gorzell
Chief Financial Officer
City Manager's Office

10/9/19
Date