FOLLOW-UP REPORT
Technology Services and Department of Finance
GenTax System Audit
April 2018

City and County of Denver

Office of the Auditor
Audit Services Division
City and County of Denver

Timothy M. O'Brien, CPA
Denver Auditor
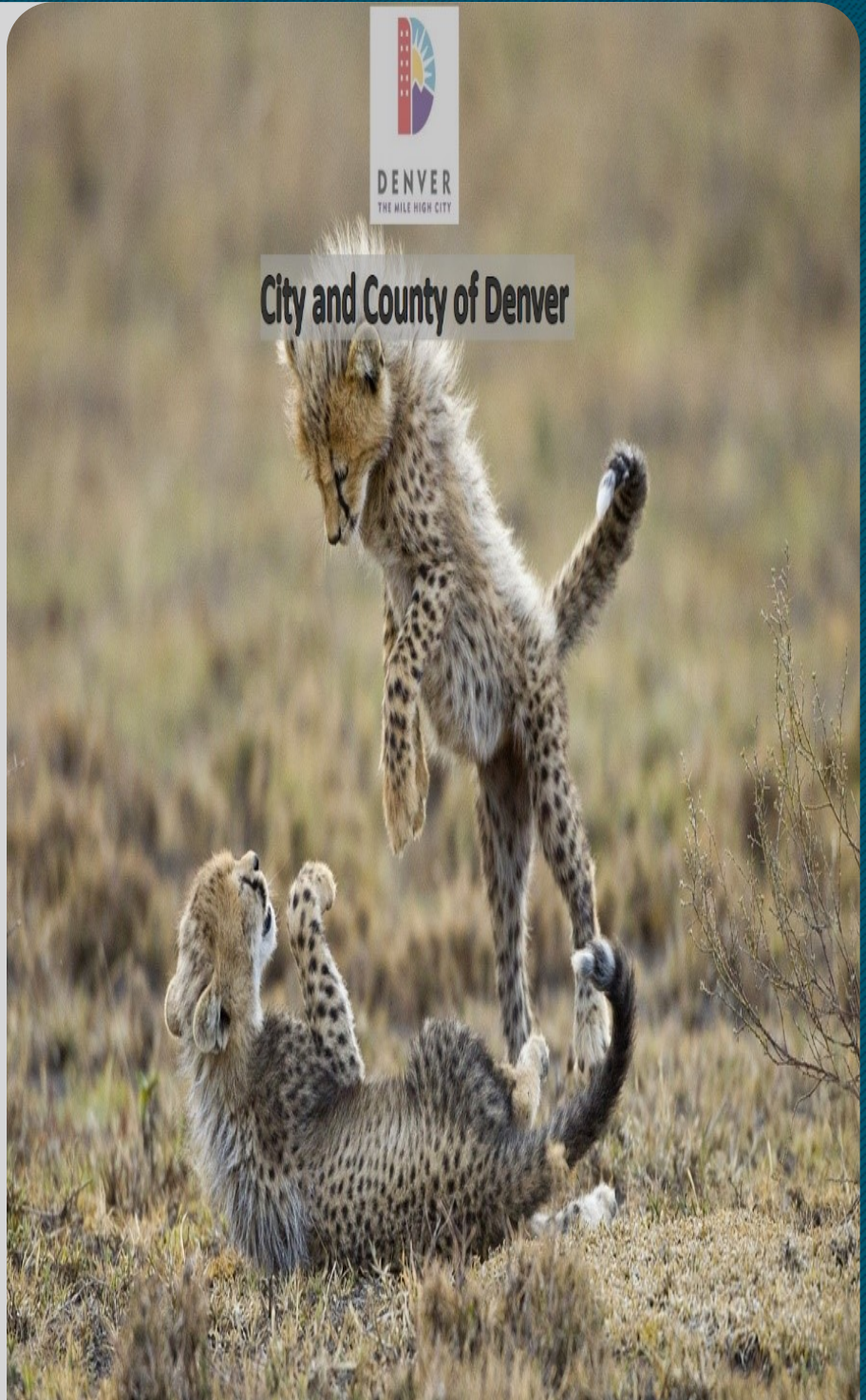
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Audit report year: **2017**

City and County of Denver

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Timothy M. O'Brien, CPA
Auditor

April 5, 2018

Scott Cardenas, Chief Information Officer,
Technology Services
Steve Ellington, Treasurer,
Department of Finance
City and County of Denver

Re: Audit Follow-Up Report

Dear Messrs. Cardenas and Ellington:

In keeping with generally accepted government auditing standards and the Audit Services Division's policy, as authorized by D.R.M.C. § 20-276, our division has a responsibility to monitor and follow up on audit recommendations to ensure findings are being addressed through appropriate corrective action and to aid us in planning future audits.

This report is to inform you that we have completed our follow-up effort for the GenTax System audit issued April 20, 2017. The audit made six recommendations, four to Technology Services and two to the Department of Finance. Our review determined Technology Services has fully implemented two of our four recommendations and partially implemented two others. Meanwhile, the Department of Finance fully implemented both recommendations we made to the agency. As a result of some of our recommendations not being fully implemented, we may revisit these risk areas in future audits to ensure that appropriate corrective action is taken.

For your reference, this report includes a highlights page that provides background and summary information on the original audit and the completed follow-up effort. Following the highlights page is a detailed implementation status update for each recommendation.

This concludes audit follow-up work related to this audit. I would like to express our sincere appreciation to you and to Technology Services and Department of Finance personnel who assisted us throughout the audit and follow-up process. If you have any questions, please feel free to contact me at 720-913-5000 or Shannon Kuhn, Internal Audit Supervisor, at 720-913-5159.

Denver Auditor's Office

Timothy M. O'Brien, CPA
Auditor

GenTax System
April 2018

Status

Technology Services has fully implemented two recommendations but only partially implemented two additional recommendations. The Department of Finance fully implemented two recommendations.

Background

In 2009 the City and County of Denver purchased and implemented GenTax, which is an integrated tax processing software package designed to support almost all aspects of excise tax collection. In 2015, collections through GenTax accounted for approximately $800 million of the City's revenue totals. The system is supported and administered by a third-party vendor, FAST Enterprises, which works as both the City's on-site and remote support team. GenTax is also supported by City employees who work in the Department of Finance and the Technology Services department. These employees manage the hardware, maintenance, databases, and servers associated with GenTax to ensure system uptime and continuity.

Purpose

The purpose of the audit was to determine the extent to which the GenTax application's administrative and systemic controls are designed to ensure data integrity and availability.

REPORT HIGHLIGHTS

Highlights from Original Audit

Our evaluation of the GenTax application found that users of the system were generally satisfied with the functionality and support of the application. However, improvements to the following areas were necessary to strengthen the security of the system.

- **Access to Backup and Storage**—A large number of Technology Services employees had unrestricted access to the backup and storage system associated with GenTax.

- **Service Accounts**—The majority of GenTax service account passwords had never been changed.

- **Architecture Drawing**—The network architecture diagram did not reflect the current GenTax infrastructure.

- **Access Control Process**—A documented process did not exist describing how employees are added to, removed from, or modified in the GenTax application.

- **Periodic Access Reviews**—A documented process did not exist for performing periodic access reviews.

- **Contract Compliance**—An updated insurance certificate was not being actively managed or monitored.

To enhance the existing IT controls surrounding the GenTax system, we offered six recommendations to the Department of Finance and Technology Services.

Findings at Follow-up

Although Technology Services created new network user security groups to manage access to backup and storage (CommVault) and performed a cleanup of user access, the agency has not created a process for ongoing periodic access reviews. Technology Services also documented service account requirements and implemented password changes for GenTax service accounts. In addition, technical staff updated the system architectural diagrams for the GenTax system. The Department of Finance created and published a policy for adding, modifying, and removing GenTax user accounts and for performing periodic user reviews. The Department of Finance has been conducting the reviews on a periodic basis as specified by the policy. Finally, Technology Services developed a Salesforce application to improve contract monitoring, including insurance coverage renewals. However, the most recent insurance renewal was not in compliance with contractual agreements, which suggests there may be additional process improvements needed to address the risk.

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Recommendations: Status of Implementation

Recommendation	Auditee Action	Status
FINDING: The Existing Information Technology Controls Surrounding the City's Tax Collection System Are Operating Effectively; However, Improvements Are Necessary to Further Secure the System and its Data		
1.1 **Review and Clean-up User Accounts**— The Chief Information Officer should ensure that Technology Services performs a review and clean-up of user accounts with access to CommVault. Additionally, Technology Services should create a process for ongoing periodic access reviews for the CommVault system.	Technology Services created new network user security groups to better manage access to CommVault by allowing administrators to more easily track which users are accessing a given function for the application. Technology Services also performed a cleanup of user access. However, Technology Services did not develop a process to periodically review access going forward as specified in the Account Provisioning Policy.	**Partially Implemented** **Original target date for completion: October 2017**
1.2 **Develop a Documented Service Account Policy**— The Chief Information Officer should work with FAST Enterprises to develop a documented service account policy that specifies a detailed description of each service account, what it interfaces with, who the owner is, and includes password length and change requirements. Additionally, Technology Services should work with FAST Enterprises to change the initial service account passwords.	Technology Services revised its account protocols to specify service account requirements, including password standards and naming conventions. The GenTax service accounts have been documented and Technology Services changed all service account passwords.	**Implemented**

Recommendations: Status of Implementation

	Recommendation	Auditee Action	Status
1.3	**Update System Architecture Drawings**— The Chief Information Officer should work with FAST Enterprises to ensure that system architecture drawings are complete and accurate and kept up to date.	Technology Services created updated system architecture diagrams as well as a process to update them annually.	**Implemented**
1.4	**Develop a Policy for Adding, Modifying, and Removing User Accounts**— The City Treasurer should develop, document, and disseminate an access control policy that includes a process for adding, modifying, and removing user accounts for the GenTax application.	The Department of Finance created and published a policy governing the creation, modification, and removal of accounts in GenTax. Tickets are created in ServiceNow to add, modify, and remove GenTax user accounts providing an audit trail for change management.	**Implemented**

Recommendations: Status of Implementation

	Recommendation	Auditee Action	Status
1.5	**Develop an Access Review Policy**— The City Treasurer should establish, develop, document, and disseminate a policy for periodic access reviews.	The Department of Finance established and implemented a periodic access review policy for GenTax user accounts. The Department is conducting access reviews and submitting ServiceNow tickets to remove or modify access as needed.	**Implemented**
1.6	**Improve Contract Monitoring**— The Chief Information Officer should ensure that Technology Services monitors the GenTax contract for insurance compliance and ensures that the City receives updated insurance certificates annually or based on the insurance term provided.	Technology Services developed a Salesforce application to monitor insurance renewals. However, the most recent vendor insurance certificate did not contain professional liability or crime/employee dishonesty coverage as specified in the contract with the City. Although Technology Services created a tool to monitor insurance renewals, the agency needs to confirm vendors are following contractual agreements.	**Partially Implemented** **Original target date for completion: October 2017**

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Conclusion

While Technology Services has fully implemented two recommendations made in the 2017 GenTax System audit report, the agency has only partially implemented two additional recommendations. Meanwhile, the Department of Finance fully implemented the two recommendations for which it was responsible. Despite the efforts of Technology Services and the Department of Finance, auditors determined that the risk associated with the audit team's initial findings has not been fully mitigated. For example, although Technology Services developed a Salesforce application to assist with contract and insurance renewals they still need to verify that insurance documents are in compliance with contractual agreements. Additionally, Technology Services performed a cleanup of access to backup and storage but did not develop a process to ensure on-going access reviews. As a result, the Audit Services Division may revisit these risk areas in future audits to ensure that appropriate corrective action is taken.

On behalf of the citizens of the City and County of Denver, we thank staff and leadership from Technology Services and the Department of Finance for their cooperation during our follow-up effort and their dedicated public service.