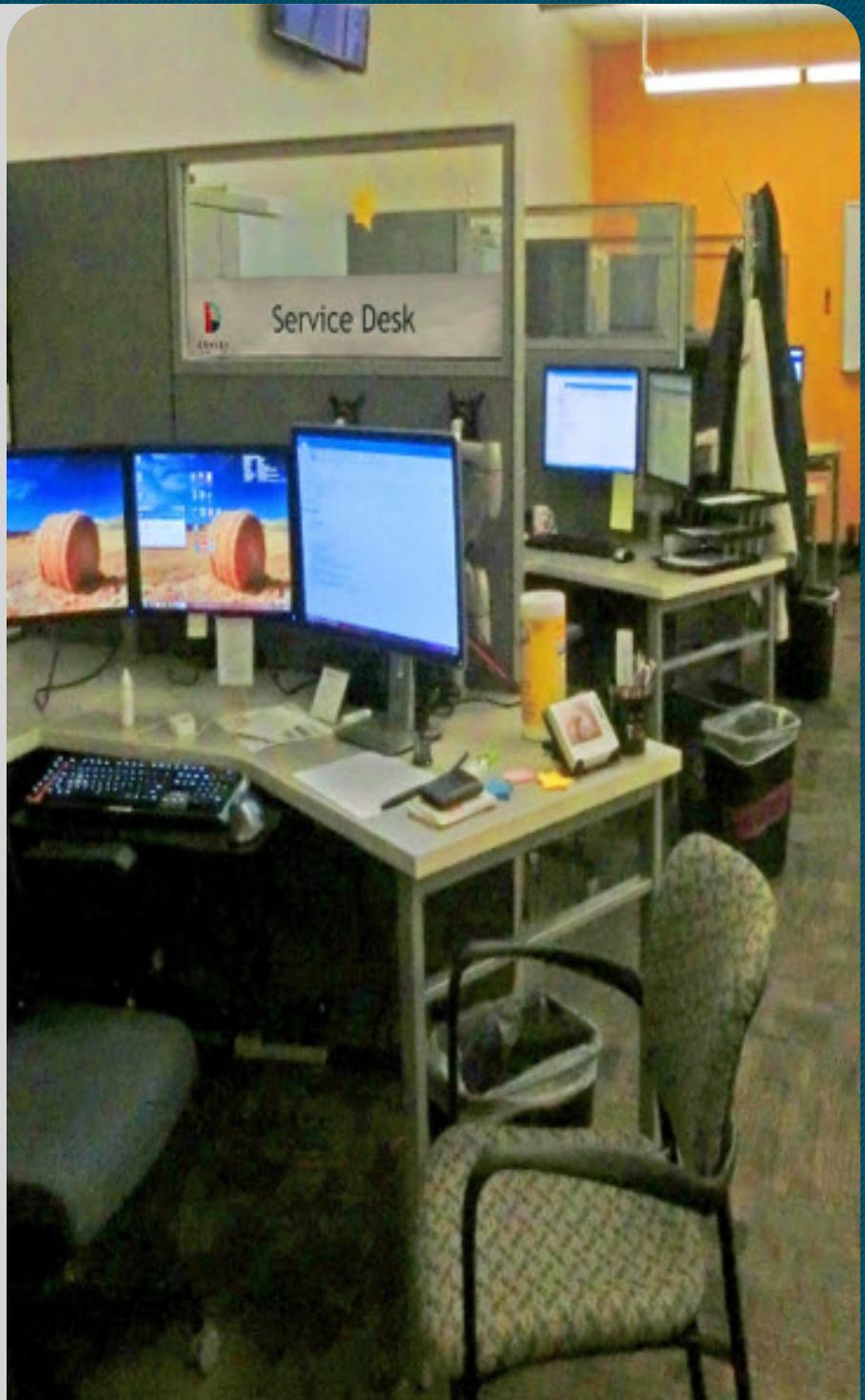# FOLLOW-UP REPORT
Technology Services
IT Service Desk Audit
March 2018

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

Timothy M. O'Brien, CPA
Denver Auditor

The Auditor of the City and County of Denver is independently elected by the citizens of Denver. He is responsible for examining and evaluating the operations of City agencies and contractors for the purpose of ensuring the proper and efficient use of City resources and providing other audit services and information to City Council, the Mayor, and the public to improve all aspects of Denver's government.

The Audit Committee is chaired by the Auditor and consists of seven members. The Audit Committee assists the Auditor in his oversight responsibilities regarding the integrity of the City's finances and operations, including the reliability of the City's financial statements. The Audit Committee is structured in a manner that ensures the independent oversight of City operations, thereby enhancing citizen confidence and avoiding any appearance of a conflict of interest.

Audit Committee

Timothy M. O'Brien, CPA, Chairman

Rudolfo Payan, Vice Chairman

Jack Blumenthal

Leslie Mitchell

Florine Nath

Charles Scheibe

Ed Scholz

Audit Management

Timothy M. O'Brien, CPA, Auditor

Valerie Walling, CPA, CMC®, Deputy Auditor

Heidi O'Neil, CPA, CGMA, Director of Financial Audits

Kevin Sear, CPA, CIA, CISA, CFE, CGMA, Audit Manager

Audit Team

Shannon Kuhn, CISA, Audit Supervisor

Karin Doughty, CISA, Senior Auditor

You can obtain copies of this report by contacting us:

Office of the Auditor

201 West Colfax Avenue, #705

Denver CO, 80202

(720) 913-5000 ◆ Fax (720) 913-5247

Or download and view an electronic copy by visiting our website at: www.denvergov.org/auditor

Audit report year: **2016**

City and County of Denver

201 West Colfax Avenue, #705 • Denver, Colorado 80202

720-913-5000 • Fax 720-913-5253 • www.denvergov.org/auditor

Timothy M. O'Brien, CPA
Auditor

March 1, 2018

Scott Cardenas, Chief Information Officer
Technology Services
City and County of Denver

Re: Audit Follow-Up Report

Dear Mr. Cardenas:

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 that audit 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 IT Service Desk audit issued April 21, 2016. Our review determined that the Technology Services has adequately implemented four of the six recommendations made in the audit report. Despite the Department/Division's efforts, auditors determined that the risk associated with the audit team's initial findings has not been fully mitigated. As a result, the Division 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 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

IT Service Desk
March 2018

Status

Technology Services agreed with each of the six recommendations we made in our April 2016 audit. Our follow-up work revealed that Technology Services has fully implemented four and partially implemented two of the recommendations.

Background

The Information Technology (IT) Service Desk was established to meet the growing technology demands of the City's employees. The Service Desk seeks to streamline communication, provide trackable records to known issues, and resolve problems for City personnel.

Purpose

The purpose of the audit was to assess the effectiveness of the City's IT Service Desk.

Highlights from Original Audit

We found that City employees are generally satisfied with the quality of service provided by the City's IT Service Desk. A large percentage of surveyed users indicated that IT Service Desk technicians are courteous, professional, and knowledgeable and that their technical issues are being resolved. However, our audit found opportunities for further enhancing the IT Service Desk's operations in four areas.

- **Third-Party Contract Improvements—**The contract between the City and a third-party after-hours support team is not being monitored on a regular basis, and the vendor's IT controls have not been evaluated for security integrity.

- **Communicating with Customers about Resolution Status—**Customers are not always notified when an issue is escalated to a different IT team for resolution, which has a negative impact on customer satisfaction.

- **Updating and Securing the Knowledge Base—**The knowledge base that is used internally by the IT Service Desk to relay potential resolutions to known problems is not being updated and reviewed on a regular basis.

- **Increasing Customer Awareness of a Web-Based Tool—**A web-based tool was rolled out to customers in October 2015 to make the IT Service Desk more efficient. However, the features and location of the tool were not sufficiently communicated to City personnel.

Findings at Follow-up

Technology Services (TS) implemented four of the six recommendations. TS implemented both a contract tool and an IT Service Desk SharePoint site with tasks to manage the third-party vendor contract and insurance certificate renewals. TS negotiated a contract amendment requiring cyber liability insurance, and its vendor agreed to produce an attestation report for better security and data confidentiality. TS still must obtain and review the attestation report when issued to fully implement the recommendation. In addition, TS created a campaign to increase awareness of SupportNow, the end-user interface to ServiceNow, and ServiceNow has been modified to provide system-generated emails for ticket updates, which improves communication with clients. However, TS has not established department wide standards for ticket status updates. TS also improved a knowledge base for IT Service Desk staff to allow them to better answer users' questions. The updated knowledge base includes a built-in workflow that ensures review and approval of articles by knowledge base managers.

For a copy of this report, visit www.denvergov.org/auditor or contact the Auditor's Office at 720-913-5000.

Recommendations: Status of Implementation

	Recommendation	Auditee Action	Status
FINDING: The Information Technology Service Desk Provides Quality IT Support, but Opportunities Exist to Further Enhance its Processes			
1.1	Technology Services should continuously monitor the contract between the IT Service Desk and the third-party vendor contract for continued compliance with contractual terms, including verifying that the vendor is maintaining insurance coverage.	The Technology Services IT Service Desk Team utilizes a team SharePoint site with calendars and scheduled tasks to manage the third-party vendor contract and insurance review notifications. Additionally, Technology Services requested a new Salesforce application to assist with contract management. The Salesforce contract management application includes notifications for both insurance certification renewals and contract expirations.	**Implemented**
1.2	If the contract with the third-party vendor is renewed, requirements for cyber-liability insurance should be included in the contract language.	In December 2017, the City executed a contract amendment with the third-party vendor that includes an additional provision for cyber liability insurance. The vendor provided an up-to-date certificate of insurance as evidence of compliance to revised contractual terms.	**Implemented**

Recommendations: Status of Implementation

	Recommendation	Auditee Action	Status
1.3	Technology Services should obtain a copy of the SOC 2 Report from the third-party vendor upon release and review the report.	The December 2017 contract amendment between the City and the third-party vendor acknowledges the City's request for a SOC 2 report. The vendor expects the SOC 2 type 2 compliance report to be completed and available by the end of February 2018. After receiving the SOC 2, Technology Services will need to review the report.	**Partially Implemented** **Original target date for completion: December 30, 2017**
1.4	The IT Director should establish formal operational level requirements between the IT Service Desk and escalated teams, which establish expectations surrounding communication to the client that a ticket was escalated and providing regular updates on when resolution may be expected.	The IT Director established a policy requiring that IT Service Desk staff update clients on the status of their tickets at least every seven days. In addition, enhancements were made to the ticketing system, ServiceNow, to generate emails to the client when a ticket is escalated to another team for resolution or when the ticket is updated. However, no written policies have been put in place nor have there been documented discussions with the escalation teams as to how they must update clients on ticket status.	**Partially Implemented** **Original target date for completion: October 31, 2016**

Recommendations: Status of Implementation

	Recommendation	Auditee Action	Status
1.5	Technology Services should develop a process to have subject matter experts review the TS Wiki, and any other knowledge bases used by the IT Service Desk, to ensure that information is complete, accurate, and up-to-date. Additionally, access to the TS Wiki should be reviewed on a periodic basis in order to monitor access at a more secure level.	The IT Service Desk now uses the ServiceNow knowledge base to assist staff with ticket resolution, replacing the TS Wiki. All staff are encouraged to create and update content as they become more proficient or discover better ways to do their jobs. A knowledge base manager must approve the addition of any content before it is published. A workflow has been created that enforces review of articles every 120 days, and the manager of the IT Service Desk has submitted a request for workflow improvements to assist with compliance and metrics. Finally, since any content in ServiceNow must be approved by knowledge base managers, access concerns present when the TS Wiki was used have been resolved.	**Implemented**

Recommendations: Status of Implementation

	Recommendation	Auditee Action	Status
1.6	Technology Services should develop methods for increasing the user awareness of SupportNow, and develop communication that encourages customers to use the new tool as a means for getting a quicker response and making the IT Service Desk function more effectively.	Technology Services created a marketing campaign to increase user awareness of SupportNow and encourage its use in requesting service desk help. This strategy involved targeted emails/bulletins to introduce SupportNow, frequent mentions in employee bulletins (i.e., "SupportNow Tech Tip of the Week"), and new signature blocks in Service Desk emails that emphasize SupportNow. In the six months prior to the campaign, SupportNow tickets averaged 32 percent of total tickets. In the 11 months since the campaign, SupportNow now accounts for 47 percent of the total tickets.	**Implemented**

Conclusion

While Technology Services has implemented most of the recommendations made in the IT Service Desk audit report, others have yet to be fully implemented. Despite Technology Services' efforts to improve its Service Desk operations, auditors determined that the risk associated with the audit team's initial findings has not been fully mitigated. As a result, the Audit Services Division may revisit these risk areas in future audits to ensure 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 for their cooperation during our follow-up effort and their dedicated public service.