Status of Audit Recommendations for the Technology Services Division

Date: October 19, 2021
To: Audit Committee
From: Chief Technology Officer
Wards: All

REASON FOR CONFIDENTIAL INFORMATION

The confidential attachments to this report involve the security of the property of the City of Toronto.

SUMMARY

This report is pursuant to an Audit Committee motion on Item AU9.6, "Auditor General's Status Report on Outstanding Recommendations", at its meeting on July 7, 2021. At this meeting, the Audit Committee directed the Chief Technology Officer to report to the November 2, 2021 meeting of the Audit Committee with an update on the status of completed and uncompleted recommendations and explanations for why recommendations have not been completed.

In 2020, the Auditor General's Office (AGO) introduced an online audit management system, which allows Divisional management to view the audit recommendations assigned to their Divisions. Audit Management System includes all recommendations that are not fully implemented by the Division. Audit recommendations, closed as fully implemented prior to introduction of Audit Management System, are not part of Audit Management System.

Technology Services Division (TSD) has been assigned 87 recommendations in Audit Management System. These audit recommendations include recommendations directly assigned to TSD as well as those that are assigned to other Divisions with TSD in a supporting role. Table 1 below provides a summary of all the audit recommendations assigned to TSD in Audit Management System.

Table 1: Number of audit recommendations based on the assigned Division as of October 1, 2021

Audit Recommendations assigned to TSD (as part of TSD Audit Reports)	73
Audit Recommendations supported by TSD (as part of Other Divisions'* Audit Reports)	14
Total Audit Recommendations for TSD in Audit Management System	87

* Other Divisions include PMMD, People and Equity, Toronto Water, Financial Planning Division, Toronto Court Services, SSHA, and Toronto Transit Commission.

This report focuses on a status update and analysis of 73 audit recommendations assigned to TSD as part of TSD Audit Reports. Details of the 14 audit recommendations where TSD is in a supporting role are provided in Confidential Attachment 2. Audit recommendations assigned solely to Office of Chief Information Security Officer are not included in this report, as they are not assigned to TSD in Audit Management System.

RECOMMENDATIONS

The Chief Technology Officer recommends that:

1. City Council direct that Confidential Attachments 1 and 2 remain confidential in their entirety, as they involve the security of the property of the City of Toronto.

FINANCIAL IMPACT

The recommendations contained in this report do not have any financial impact. However, the implementation of the Auditor General's recommendations from audits and investigations referred to in this report may result in financial implications which will be presented in future year budget requests and/or future staff reports for consideration and approval.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

On July 7, 2021, Audit Committee requested the Chief Technology Officer to report to the November 2, 2021 meeting of the Audit Committee with an update on the status of completed and uncompleted recommendations and explanations for why recommendations have not been completed.
http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.AU9.6

COMMENTS

The AGO's online audit management system has three different status for audit recommendations:

1. **Fully Implemented, not verified by AG:** When management is satisfied that adequate actions have been taken to implement the recommendation, the recommendation is submitted to AGO for verification. This recommendation is called as 'Fully Implemented, not verified by AG'.

2. **Fully Implemented, verified by AG:** The Auditor General's Office verifies the status of the submitted recommendations. Once verified to AGO's satisfaction, these recommendations are closed as 'Fully Implemented, verified by AG'

3. **Not Fully Implemented:** All other open recommendations that are in progress are called 'Not Fully Implemented' recommendations.

The summary of 73 TSD audit recommendations based on the above defined statuses is provided in the table below.

Table 2: Summary of TSD recommendations based on recommendation status and priority as of October 1, 2021

Total audit recommendations directly assigned to TSD = 73				
Recommendation status	**Public**	**Confidential**	**Total**	**Priority***
Fully Implemented, verified by AG	6	1	7	High priority = 6
				Other = 1
Fully Implemented, not verified by AG	23	4	27	High priority = 18
				Other = 9
Not Fully Implemented	25	14	39	High priority = 28
				Other = 11
Total	54	19	73	

*Priority of an audit recommendation is set by the AGO based on following factors:
1. Health & Safety
2. Outstanding for more than 5 years
3. Savings

In 2020 and 2021, TSD submitted 34 audit recommendations (46 percent) as 'Fully Implemented', out of which 7 audit recommendations have been reviewed and accepted by AGO as 'Fully Implemented, verified by AG'. Of the 34 audit recommendations submitted by TSD, AGO is working on verifying 27 audit recommendations. Of the total 73 audit recommendations assigned to TSD, there are 39 audit recommendations (54 percent) that are in progress and not fully implemented yet.
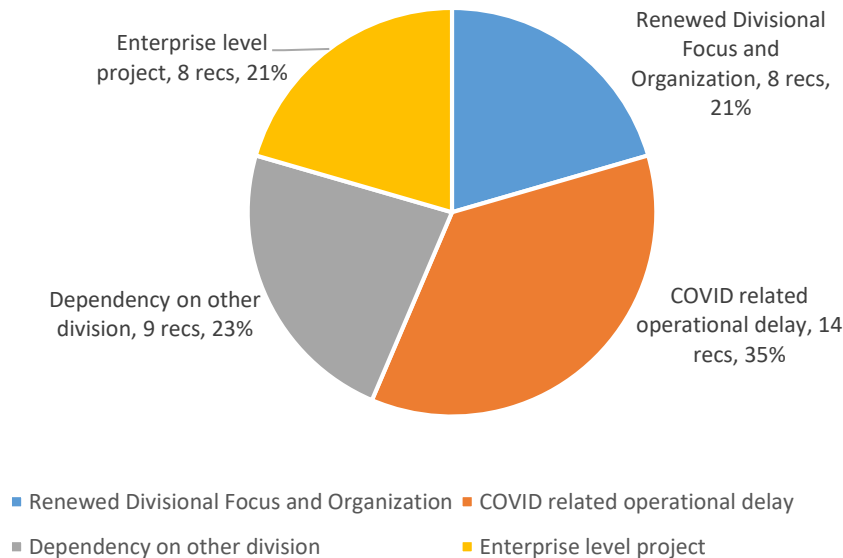
Reasons for delay in closure of audit recommendations

There are various factors that affect the completion of audit recommendations and its closure. Some of the factors are detailed below:

1. Renewed Divisional Focus and Organization- Following the appointment of the Chief Technology Officer in October 2019, TSD conducted a detailed assessment to identify an improved approach of addressing the audit work in an organized Divisional manner and utilize the collective efforts of TSD staff to enable the implementation and completion of audit recommendations. TSD adopted a risk-based approach to address the audit recommendations and to protect the City from any undue risks. The next section of this report elaborates the actions taken from October 2019 to improve the Divisional focus on completing audit recommendations.

2. COVID related operational delays - During 2020, operational delays such as redeployment of resources, reassigning resources to critical priority activities supporting remote work support, digitization of services and the hiring slow down, impacted the completion timelines for several recommendations. As the City transitioned to recovery, TSD has resumed the increased pace of activities to complete the audits.

3. Dependency on other Divisions - Nine (9) TSD audit recommendations are applicable to City-wide solutions and infrastructure and TSD staff work closely with other Divisions to close these recommendations. Dependencies on multiple stakeholders can delay the timelines for these audit closures.

4. Enterprise-level projects - Audit recommendations assigned to TSD can become enterprise-level projects (initiatives modernizing services and programs for various decisions across the City) which are delivered by TSD staff. These projects can also include procurement of technology or resources. These projects require extensive planning, design and implementation which extends into multiple years, resulting in delayed closure of the audit recommendations.

Summary of the 39 'Not Fully Implemented' audit recommendations, as per the reason for delay, is provided in the chart below.

Figure 1: Summary Not Fully Implemented audit recommendations, based on the reason for delay, as of October 1, 2021

Enterprise level project, 8 recs, 21%
Renewed Divisional Focus and Organization, 8 recs, 21%
Dependency on other division, 9 recs, 23%
COVID related operational delay, 14 recs, 35%

- Renewed Divisional Focus and Organization
- COVID related operational delay
- Dependency on other division
- Enterprise level project

Efforts to close audit recommendations

To balance the required efforts to respond to the pandemic and completing the audits, TSD adoption of a risk-based approach provided an opportunity to focus on addressing the high priority recommendations. TSD has a clear action plan and has taken several initiatives supporting the closure of audit recommendations.

There are four pertinent audit process improvements undertaken by TSD as listed below.

1. Formation of a Technology Audit Implementation Board (TAIB)
The TAIB, formed in January 2020, constitutes of the TSD-Senior Management Team (TSD-SMT) and functional experts. It provides increased oversight on all audit recommendations by tracking for completion and ensuring accountability of TSD-SMT supporting staff responsible for closure of audit recommendations. The TAIB meets monthly to review the audit recommendations assigned to all TSD functional Directors and Managers so that they can provide their status updates and seek guidance from TAIB on any roadblocks impacting the closure of audit recommendations. Providing regular updates to TSD-SMT through TAIB, has increased the accountability of Directors/ Managers to achieve closure of audit recommendations assigned to them.

2. Reporting into Office of CTO
Assigning a dedicated staff position reporting into Office of CTO to provide coordination and compliance management role to support Divisional efforts with a focus on audit recommendation closures and assessing risks associated with audit. This position provides by-weekly updates directly to the Chief Technology Officer and seeks assistance as required to provide Divisional Head leadership to accelerate progress of audit completions.

3. TSD Audit SharePoint

In addition to AGO's online audit management system, TSD is utilizing SharePoint, set up in June 2020 and managed by Office of the Chief Technology Officer (CTO), to collaborate and centralize the tracking of all audit recommendations within the division. Functional Directors and Managers provide monthly updates on the Audit SharePoint which are assessed by Office of the CTO. This SharePoint site provides a collaborative and accurate central source of all information related to audit recommendations. Various teams can collaborate and show progress on the SharePoint site.

4. Collaboration with Office of CISO

TSD staff regularly meet with staff from the Office of Chief Information Security Officer (CISO) to collaborate on the cyber recommendations and expedite the implementation of the recommendations.

TSD recognizes that there were opportunities to improve the earlier process of audit management. Implementation of the above described process improvement initiatives have increased the efficiency and accuracy of audit closures. With regular checkpoints and focus on implementation, TSD has been able to submit 34 of 73 audit recommendations (46 percent) for completion in the last 2 years.

Noteworthy implemented recommendations

AU 13.17: Improvement Needed in Managing the City's Wireless Telecommunication Contracts, June 2018[1]

The 2018 audit report included five recommendations to consider inter-governmental procurement, evaluated a 'Bring Your Own Device' (BYOD) program for the City, and improve management of the City's wireless telecommunication contracts. The audit report is available at:
https://www.toronto.ca/legdocs/mmis/2018/au/bgrd/backgroundfile-117983.pdf

During AGO's follow-up review, AGO verified that TSD had implemented three out of five recommendations. In response to these recommendations, the Division negotiated a reduced monthly service rate on an existing wireless service plan with the City's preferred vendor. The rate reduction became effective as of March 2019. Furthermore, the City adopted the agreement under the Province of Ontario's Vendor of Record ("VOR") program. The Division is currently moving the City's wireless lines in stages to a new vendor through the VOR program. By implementing these recommendations, the City has realized approximately $2.7 million in savings between 2019 and 2020 and will further realize savings of approximately $8 million between 2021 and 2023.

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[1]As per Auditor General's Status Report on Outstanding Recommendations, June 2021 Audit Committee

AU 4.1: Cyber Safety: A Robust Cybersecurity Program Needed to Mitigate Current and Emerging Threats (Confidential Report) - October 2019

The 2019 audit report, which is confidential, included 12 cyber audit recommendations which covered various aspects such as network segmentation, password policy, cyber training, vulnerabilities in the system etc. An initial report from AGO was issued to TSD before finalization of the audit report. TSD acted promptly on many recommendations even before the final audit report was issued. Some examples of prompt action include change of password policy, change of default passwords, launch of city-wide cyber training and fixing the vulnerabilities and configuration of the Wireless Intrusion Detection System. Given the wide scope of cyber recommendations, only 3 recommendations have been submitted as Fully Implemented not verified by AG. But the interim processes are in place and continuous improvement actions are taken to protect City from external and internal risks.

AU 11.3: IT Infrastructure and IT Asset Management Review: Phase 1: Establishing an Information Technology Roadmap to Guide the Way Forward for Infrastructure and Asset Management - March 2018

The 2018 audit report included 15 recommendations, including recommendations on establishing a strategy roadmap for TSD. The report is available at: http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2018.AU11.3

The Auditor General recommended establishing a strategic technology roadmap to modernize and transform the Information Technology environment. This strategic roadmap was developed by TSD and highlighted Divisional priorities. TSD executed this audit recommendation by documenting the roadmap and having regular planning meetings to meet the strategic roadmap. In order to align with the strategic roadmap, TSD also conducted prioritization exercise with all Division Heads and is establishing a governance framework to prioritize projects from all other Divisions.

Conclusion:
TSD acknowledges the delay in completion of the audit recommendations pertaining to multiple factors. In order to expedite the implementation of audit recommendations, TSD has implemented several process improvements through formation and implementation of the Technology Audit Implementation Board and the centralized SharePoint site to track and review all TSD audit recommendations. TSD is focussed on closing most of the audit recommendations by the end of 2022.

TSD expresses appreciation for the inputs and support provided by the AGO which helps to close the audit recommendations. TSD also acknowledges the co-operation of all other Divisions in implementing the city-wide audit recommendations.

CONTACT

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SIGNATURE

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Chief Technology Officer

ATTACHMENTS

Attachment 1: Technology Services Division - Fully Implemented Audit Recommendations (Verified by the Auditor General)

Attachment 2: Technology Services Division - Fully Implemented Audit Recommendations (Not Verified by the Auditor General)

Attachment 3: Technology Services Division - Not Fully Implemented Audit Recommendations

Confidential Attachment 1: Technology Services Division - Fully Implemented and Not Fully Implemented Confidential Audit Recommendations

Confidential Attachment 2: Other Divisions Audit Recommendations - Supported by Technology Services Division