



# Audit of Software Acquisition and Licence Management

**Managing and Optimizing Value from Software Licences**

**December 2, 2024**

Tara Anderson, CPA, CA, CFE, CIA, BAcc  
Auditor General

**AUDITOR  
GENERAL**  

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**TORONTO**

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# Executive Summary

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The Auditor General’s 2024 Work Plan<sup>1</sup> included an audit on how the City acquires and manages its applications, corporate-wide software licences and cloud subscriptions. To keep pace with technology modernization, digitization, and the building of a connected city, the Technology Services Division is moving to new enterprise-wide cloud solutions.

The Technology Services Division provides the City-wide strategy, planning, and delivery of technology solutions and services with a mission to “*deploy flexible technology architecture and solutions to deliver seamless services, connect the public and businesses, and empower employees.*”

**City spent \$44 million on software acquisitions and \$34 million on software maintenance in 2023**

In 2023, the City spent \$44 million on software acquisitions and \$34 million on software maintenance. Over the last five years from 2019 to 2023, the City’s total expenditures for software acquisition, maintenance and support were approximately \$235 million. The City currently uses over 7,500 software titles; over 1,200 titles are paid software.

This audit focused on assessing the management of software licences and cloud subscriptions and licence utilization, including whether tracking of software licences, cloud subscriptions, and maintenance is accurate, and that unused software licences and subscriptions are identified and addressed in a timely manner.

**We estimated the cost of the unused licences was almost \$11 million for the selected software applications examined**

The audit scope included seven selected software applications that are used across the City. Based on our audit findings, we estimated that the cost associated with unused licences for five of the software applications was almost \$11 million. This is the accumulated cost of the software licences and subscriptions that remain unused or underutilized for various periods of time, mostly during the periods of 2020 to 2024. The details of specific applications are discussed in sections A and B. Please refer to **Table 1**.

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<sup>1</sup> <https://www.toronto.ca/legdocs/mmis/2023/au/bgrd/backgroundfile-240792.pdf>

**Table 1: Summary of the Cost of Unused Licences**

Software	Cost of Unused Subscriptions/ Licences (Refer to Section A)	Cost of Licences Assigned to Former Staff/Employees on Long-Term Leave (Refer to Section B)	Total Cost of Unused Licences
Microsoft M365	\$6,896,597	\$1,046,795	\$7,943,392
SAP S/4 HANA	\$1,932,376	--	\$1,932,376
SAP ECC on-premises*	\$20,080	\$296,341	\$316,421
Public Digital Access (PDA)	\$657,177	--	\$657,177
Adobe Acrobat	\$119,800	\$14,550	\$134,350
<b>Total Cost</b>	<b>\$9,626,030</b>	<b>\$1,357,686</b>	<b>\$ 10,983,716</b>

\* Equivalent cost of purchasing new licences plus one year of annual renewal maintenance fees.

**The Auditor General has raised concerns about software acquisition and licence management in prior reports**

Software acquisition and licence management has been the subject of several Auditor General’s reports. It is important that acquired software is managed properly to optimize their usage and to achieve the expected benefits in a timely manner. The issues identified in this report have been raised by the Auditor General in previous reports as well (refer to **Appendix 2**).

**12 recommendations from prior Auditor General reports are still in progress, many over 5 years old**

There are 12 related recommendations from these reports that are still in progress, and many are more than five years old (refer to **Appendix 2**). Benefits from Auditor General recommendations can only be realized when they are implemented in a timely manner.

**Summary of Findings**

**Management advised that they have leveraged bulk purchasing as a procurement strategy**

The detailed findings are discussed in the Audit Results section of this report. Management advised that they leveraged bulk purchasing as a procurement strategy to acquire certain software licences to obtain upfront discounts offered by the vendors. While bulk purchasing can result in significant cost savings, the financial benefits are eroded when a project is delayed, and licences are not utilized.

The City must improve on project planning and stakeholder coordination to ensure timely deployment of licences when making bulk purchases. This includes careful planning, management, and accurate forecasting to avoid purchasing licences that are not ready to be deployed. The Auditor General has recommended that management explore if contracts can include terms for deferring purchase of licences to meet implementation schedules, while maintaining the contracted bulk discounts.

In summary we identified the following areas that require improvement:

#### **A. Software licence acquisition, management, and utilization**

##### Microsoft 365 (M365) Licences

- Bulk purchase of M365 licences for 10,000 users was made despite the technology architecture not being ready for their deployment. Of the total number of licences purchased, over 90 per cent were not used for one year and over 50 per cent through nine months in the second-year costing \$6.9 million.
- The expected benefits from M365 implementation are based on a third-party impact study in a staff report; these benefits were not measured and were not achieved for the period of the delay.

##### SAP Licences

- Project implementation delays due to various reasons, including complexity in integrating with other applications, resulted in unused SAP S/4 HANA subscriptions amounting to \$1.9 million.

##### PDA Licences

- Additional PDA software licences were acquired before the proof of concept was completed, and compliance issues with the Accessibility for Ontarians with Disabilities Act (AODA) were fixed. As of September 2024, over 98 per cent of the licences that were purchased remain unused, costing \$657,177.
- Credits or compensation available through contract terms and conditions should be pursued.

##### Other Unassigned Licences

- We also identified over \$139,000 in licences that were purchased in advance and not assigned to users, or more than one licence was assigned to one user.

##### Reporting on Project Delays to Improve Governance

- Improved reporting on project delays and their impact is needed to improve governance, transparency, and accountability.

**B. Former employees' licences are not terminated or re-assigned in a timely manner**

- The Technology Services Division needs to explore other cost-effective options for archiving former employees' emails rather than continuing to assign full M365 licences. The related cost for 1,554 employees will be \$1.05 million if these licences are not reassigned until December 31, 2024.
- Improved process is needed for terminating and re-assigning software licences belonging to former employees. In addition to the above M365 licences, we found that other licences costing \$311,000 were assigned to staff who had left the City.

**C. Strengthen Governance over IT Asset Management**

- Lack of a clearly defined data strategy and plan to manage the City's software licences and subscriptions.
- Lack of clear guidelines for oversight, monitoring, and governance of IT asset management.

**D. Explore Further Cost Saving Opportunities**

- The City and its agencies and corporations should collaborate to identify cost saving opportunities on common software products. The Toronto Public Service has over 75,000 employees that may be using common software applications, such as M365 and Adobe Acrobat, among others.

**Conclusion**

The management of software acquisition and their utilization needs improvement, to ensure that tracking of software licences, subscriptions, and maintenance is accurate. The undeployed or underutilized software is not always identified and addressed in a timely manner. Based on our audit findings of the seven selected software applications, we estimated that the cost of the unused licences was \$10.98 million.

We have made ten recommendations. In our view, the implementation of the recommendations contained in this report will maximize the value of the City's investment in software and licences, and improve the City's governance, management, and processes related to software acquisition and utilization.

While the issues identified and resulting recommendations in this report are related to the selected seven applications, these recommendations should be considered for other software and applications used in the City.

**Thank You**

We express our appreciation for the co-operation and assistance we received from management and staff of the Technology Services Division, Office of the Chief Information Security Officer, Pension, Payroll and Employee Benefits Division, as well as the People and Equity Division.

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## Background

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### **City has a strategy for digital infrastructure including software licensing**

The City's Digital Infrastructure Strategic Framework<sup>2</sup> is a corporate-wide strategy that provides direction and guidance for all the City's digital infrastructure initiatives. Some examples of digital infrastructure include the software licences and subscriptions used in technology systems that support the City's operations and provide services to the public.

In 2023, the City spent \$78 million on software licences and maintenance costs. This is a significant expenditure and was nearly double the amount spent in 2019. As the City transitions from on-premises software<sup>3</sup> to the Software as a Service (SaaS) licensing model,<sup>4</sup> it is important that subscription licences are deployed in a timely manner. With a subscription licence, the City pays a monthly or yearly fee regardless of usage over the term of the contract. For example, the City has purchased Microsoft 365 subscription licences and ForgeRock Identity Cloud Licences to align with the City's strategic direction of a well-run city.

Since 2006, the City has implemented two IT asset management (ITAM) systems. The current solution, Micro Focus Asset Manager, is reaching its end-of-life cycle and is being replaced by ServiceNow, on a cloud-based SaaS platform.

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<sup>2</sup> <https://www.toronto.ca/wp-content/uploads/2022/03/9728-DISFAcc2.pdf>

<sup>3</sup> On-premises software runs on the City's own computer hardware and infrastructure.

<sup>4</sup> SaaS is a cloud-based service, where the provider owns and hosts the software application over the internet.

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# Audit Results

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## A. Improvements Required For Software Licence Acquisition, Management, And Utilization

The audit scope included seven selected software applications that are either used across the City or being acquired for a broader use across various divisions at the City (see Audit Objectives, Scope and Methodology section for details). Section A provides our audit findings on these selected systems; the lessons learned can be applied to all City systems. The total costs related to these software licences and subscriptions not being used totalled \$9.6 million and is shown in **Table 2** below.

**Table 2: Summary of Unused licences and subscriptions**

Software applications	Cost of unused licences
Microsoft M365	\$6,896,597
SAP S/4 HANA	\$1,932,376
SAP ECC on-premises	\$20,080
Public Digital Access (PDA)	\$657,177
Adobe Acrobat	\$119,800
<b>Total Cost</b>	<b>\$9,626,030</b>

In general, the reasons for these unused software licences and subscriptions included:

- Delayed project implementations that caused the software not to be deployed in a timely manner and related licence subscriptions were not cancelled or deferred
- Contract terms and conditions did not allow the software procurement schedule to be modified when the project implementation was delayed
- Software was purchased to obtain upfront discounts, but a significant portion of the savings were lost as the software was not deployed in a timely manner
- Licences purchased in advance were not assigned to users, or more than one licence was assigned to a user

### A. 1. Underutilized Microsoft Office 365 Subscription Licences

Microsoft 365 (M365) is a cloud-based subscription service that provides users with access to its productivity applications, such as Word, Excel, PowerPoint, and Outlook. In December 2016, the City started a pilot of Microsoft cloud products, which included M365 for a three-year period. Based on the outcomes from the pilot, the [staff report \(GL10.9\)](#) in November 2019 to the General Government and Licensing Committee recommended that the City move forward with the enterprise Microsoft licensing strategy.

**Bulk M365 licences were acquired despite the technology architecture not being ready for deployment**

In March 2021, a staff report on [Leveraging Provincial Agreement to acquire Microsoft 365 Cloud Licenses, Implementation and Support Service](#), was tabled to obtain authority from City Council to complete the enterprise rollout which included M365.

**Licences acquired despite known technical issues preventing timely deployment**

There were scalability and performance issues that were known as early as July 2018. At that time, Microsoft estimated that the City’s network could only support up to 6,000 users. A presentation deck prepared in April 2020 by the project team during the pilot noted that *“The City network architecture needs to be reviewed for scalability and performance before the enterprise solution is rolled out across the City”*.

Despite knowing the constraints of the City’s network architecture, an agreement was signed with Microsoft to purchase M365 licences for an initial 10,000 users effective June 1, 2021. The M365 subscription package includes 10,000 enterprise licences and two product add-ons for a total of 30,000 licences.

The annual cost of the initial 10,000 users was \$5.14 million and \$25.7 million over the five-year term. Management advised that the City entered into an agreement with Microsoft as they obtained a favourable discount on the enterprise licence; there would also be productivity benefits realized from the implementation of the M365 platform. According to management, the City will have saved approximately \$2.8 million by the end of the contract term in May 2026 from the discounted pricing.

We found that at the end of the first year of the agreement, only 2,250 or 7.5 per cent of subscription licences were deployed, however, by the end of the second year all the licences were deployed. The cost of unused licences during the two years was \$6.9 million.

Management advised they were not able to fully deploy the balance of the licences ordered in a timely manner due to the constraints of the network architecture. Other challenges cited by management included the reprioritizing of the M365 rollout during the COVID-19 pandemic and high staff turnover in 2022 which affected Technology Services Division staffing levels.

**Table 3: Summary of M365 Unused Licence Subscriptions**

Subscription Period (Bulk purchase, licences for 10,000 users)	Total Cost of M365 Subscriptions	% usage*	Cost of Unused Subscriptions
Year 1: June 2021 – May 2022	\$5,140,800	7.5%	\$4,755,240
Year 2: June 2022 – Feb 2023**	\$3,855,600	44.5%	\$2,141,357
<b>Total</b>	<b>\$8,996,400</b>		<b>\$6,896,597</b>

\* Rounded to nearest tenth

\*\* As of March 2023, more than 10,000 users had been assigned M365 licences.

**Expected implementation benefits not achieved for period of delay and mechanism to track benefits is not available**

In the March 15, 2021 staff report (GL21.17), [Leveraging Provincial Agreement to acquire Microsoft 365 Cloud Licenses, Implementation and Support Services](#),<sup>5</sup> it stated that:

*As a result of the implementation of the Microsoft 365 Platform, the City is positioned to realize productivity benefits...*

*and "...the total estimated productivity savings, for a period of the five (5) year contract (2021-2026) could be up to \$27 million."*

The Auditor General has recommended improved tracking of realized benefits when projects are implemented, and reporting on the financial impact of project delays, including forgone benefits (refer to Recommendation 5 in this report).

**A. 2. SAP S/4 HANA subscription licences and related services**

**City's financial software approaching end of life in 2027**

The City's current financial software, SAP ERP Central Component (ECC<sup>6</sup>), is over twenty years old and will no longer be supported by the vendor at the end of 2027. As part of the City's Financial Systems and Transformation program, the SAP S/4 HANA, a cloud-based platform, is being implemented to address the City's current and future business needs. In September 2022, the City entered into a non-competitive contract with SAP Canada for SAP S/4 HANA Cloud licences and services for \$14.3 million over a five-year period.

<sup>5</sup> The City is currently enrolled in the Province of Ontario's volume licensing agreement that allows for organizations in the broader public sector to purchase in bulk and thereby obtain discounts.

<sup>6</sup> SAP ERP Central Component (SAP ECC) is an enterprise resource planning system that is hosted locally on-site.

**Implementation Delays Resulted in Unused SAP S/4 HANA Software Subscriptions**

In this contract, the City agreed to purchase software subscriptions in accordance with the volumes set out in the procurement schedule. From October 2022 to April 2024, the City purchased 136 licence units for system development. Starting on April 17, 2024, this was increased to 1,001 licence units to prepare for the planned June 2024 go-live date.

Due to the project implementation delay that was caused by various reasons, such as complexity in integrating other applications, the revised go-live date was rescheduled for October 2025. In November 2023 management started exploring options with the vendor on whether it was possible to delay the scheduled purchase of the additional 865 licences, as the go-live date had shifted. According to management, the vendor explained that it would be extremely difficult to maintain the rest of the terms and conditions if the contract was amended to defer the licence purchases.

Management advised that the City negotiated approximately \$4.4 million in cost savings when the S/4 HANA contract was signed in 2022. However, since there was no option to change the purchasing schedule without incurring additional fees, these cost savings will be significantly reduced.

**Cost of the unused licences and services due to the 16-month delay is \$1.9 million**

In accordance with the purchasing schedule, the City must continue paying for the licenses irrespective of their usage. The cost of the unused licences and services due to the 16-month delay from July 2024 to October 2025 is approximately \$1.9 million as shown in Table 4 below.

**Table 4: Summary of SAP S/4 HANA unused licences and related Costs**

Licence Description/ Service Category	Annual Cost of Underutilized Licences and Services	Comments
Annual subscription cost of 865 licences	\$969,441	Due to the project delay, these additional 865 licences purchased in April 2024 (increased from 136 to 1001) were not used.
4-hour Recovery Time Objective Service	\$114,173	These charges are part of the contract but not needed as the project was delayed.
Disaster Recovery Services	\$365,667	Disaster recovery services are part of the contract but not needed as the project was delayed.
<b>Total</b>	<b>\$1,449,281</b>	<b>Annualized cost of above licences and services</b>
<b>Total costs pro-rated from July 2024 to October 2025</b>	<b>\$1,932,376</b>	<b>Total cost for 16 months when the licences are not being used</b>

**Recommendations:**

- 1. City Council request the Chief Technology Officer in consultation with the Chief Procurement Officer and the City Solicitor to:**
  - a. Evaluate whether the cost of unused software licences identified in this report can be reduced or deferred to future periods to align with changes in the deployment dates for projects that are still in progress.**
  - b. Identify other technology projects that are delayed and evaluate whether the cost of the unused software licences can be reduced or deferred to future periods to align with changes in the project rollout dates.**
  
- 2. City Council request the Chief Technology Officer in consultation with the Chief Procurement Officer and the City Solicitor, to evaluate whether future software subscription contracts can include provisions to allow the City to defer the licence purchases or adjust the contracted volume of software subscriptions, in situations where:**
  - a. Projects are delayed, or**
  - b. Requirement for software subscription volume changes.**

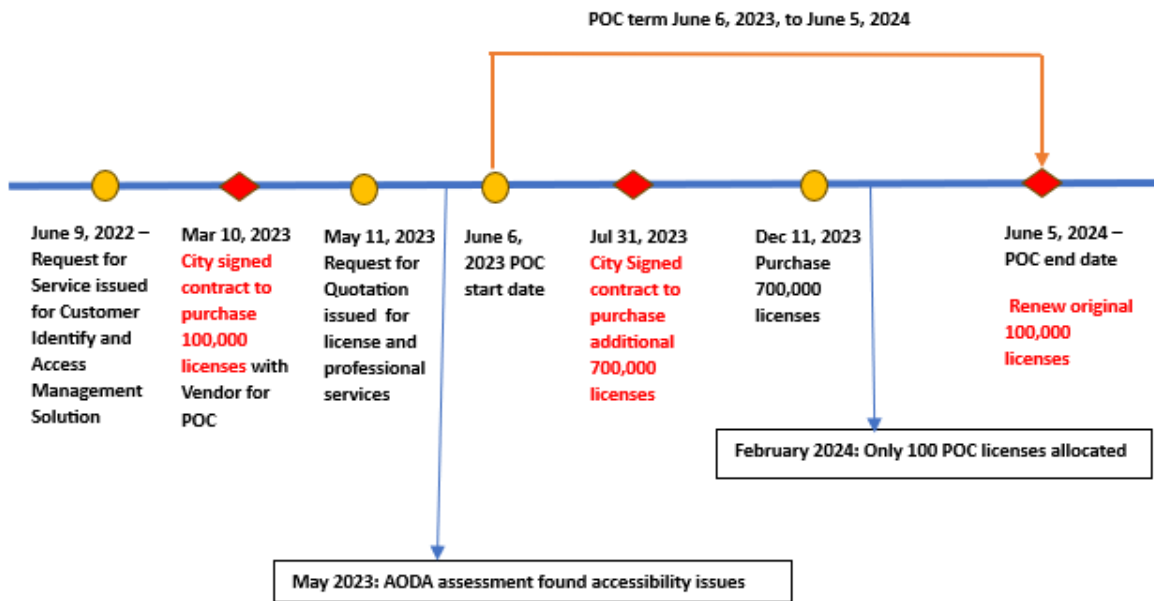
**A. 3. ForgeRock Licences For Public Digital Access (PDA) Solution**

The Public Digital Access (PDA) solution is a centralized login platform for public facing City websites, applications, and digital services. At its [May 10, 2023 meeting \(GG3.17\)](#), City Council authorized *“the Chief Information Security Officer to create a centralized login platform for City websites, applications, and digital services...”*. This project was initiated by the Office of the Chief Information Security Officer, and starting in April 2024 it was transferred to the Technology Services Division.

Over 98 per cent of the acquired licences continue to remain unused costing \$657,177

We found that the City signed a contract to make an advanced purchase of ForgeRock Identity Cloud licence subscriptions during the proof of concept<sup>7</sup> (POC) period, and over 98 per cent of the acquired licences remain unused. **Figure 1** provides the timeline with key dates. The cost of the licences up until September 2024 is \$657,177 (**Table 5**). The unused cost of licences will continue to increase if these licences remain undeployed.

Figure 1: Software Licences Purchased in Advance Prior to Completion of Proof of Concept and Prior to Vendor’s Compliance with AODA Requirements



In March 2023, the City signed a one-year contract with KeyData Associates Inc. to provide 100,000 ForgeRock Identity licences starting in June, 2023 for a proof of concept.

According to management, the City’s internal AODA team completed their assessment on May 30, 2023, and found that the out-of-the-box<sup>8</sup> PDA solution was non-compliant with the Accessibility for Ontarians with Disabilities Act (AODA). According to the contract signed with KeyData Associates Inc., the ForgeRock licences were required to comply with the AODA by September 30, 2023. This deadline was subsequently moved to December 2023 to allow enough time for the vendor to address the usability issues and defects identified.

<sup>7</sup> A proof of concept (POC) is a demonstration of the solution’s feasibility and how it will meet the City’s requirements.

<sup>8</sup> Out-of-the-box software refers to software that is ready to install for general use and has not been customized.

**An additional 700,000 licences purchased prior to completion of the proof of concept**

Even though the proof of concept was not completed, and the accessibility issues were not yet fixed, the City signed a contract in July 2023 to purchase an additional 700,000 licences effective from December 11, 2023 for a three-year period. Management advised that the purchase of bulk licences was made to secure the volume discount offered by the vendor.

Completing the proof of concept prior to the purchase would have provided an opportunity for the project team to identify any technical or design issues that may hinder the success of the project.

Management advised that the usability and AODA issues were later resolved in February 2024. The Children’s Services division then proceeded with a pilot of 100 client users for their My Child Care Account (MCCA) platform in February 2024. Due to lack of available information and documentation we were not able to determine what was assessed during the proof-of-concept testing.

**Limited consultation with divisional users of the software prior to licence acquisition**

Management advised that as of September 25, 2024, 15,331 licences out of 800,000 were in use. The forecasted usage of PDA and implementation dates have not been agreed to by all the divisions before issuing the request for quotation. The current licences purchased were based on estimates tied to the City’s census figures rather than existing divisional systems that are expected to leverage PDA in the future. Confirming the expected number of licences with each division should be performed to ensure an appropriate number of licences are procured at the right time.

**Table 5: Summary of Unused Forge Rock Licence Subscription, September 24, 2024**

Subscription Period	Number of Licences Purchased/ Renewed	Total Subscription and Support Cost	Unused cost Prorated to Sept. 24, 2024
Proof of concept: June 6, 2023 - June 5, 2024	100,000*	\$475,200	See comment below**
Dec 11, 2023 - Dec 10, 2024	700,000	\$648,312	\$511,918
June 6, 2024 - Dec 10, 2024 (*renewed 100,000 licences acquired in June 2023)	--	\$244,715	\$145,259
<b>Total</b>	<b>800,000</b>	<b>\$1,368,227</b>	<b>\$657,177</b>

\*\* Only 100 licences were assigned to Children Services division during Proof of Concept (POC) in February 2024.

### Credits available through contract should be pursued

The Master Cloud Services Agreement allows the City to hold back payment for failure to comply with any requirements of the agreement. Given the project implementation delays and related unused licence costs were caused in part by the solution not being in compliance with AODA standards, management should consult with Legal Services division about what options it can potentially pursue for financial compensation.

#### Recommendations:

3. City Council request the Chief Technology Officer and the Chief Information Security Officer, in consultation with the Chief Procurement Officer and the City Solicitor, to evaluate whether:
  - a. Financial compensation can be obtained for non-compliance with expected product features required under the contract.
  - b. The cost of unused software licences can be reduced or deferred to future periods to align with changes in the project rollout dates.
4. City Council request the Chief Technology Officer to improve on the project planning and coordination for the remaining phases of implementing the Public Digital Access Solution.

### A. 4. Other Unassigned, Unused Licences and Licences Assigned in Duplicate

We also found other types of unused licences, such as licences assigned in duplicate or in error, or which had been purchased but not assigned, as summarized in **Table 6**. Recommendation 7 addresses this observation.

**Table 6: Underutilized Licences unassigned, unused, or assigned in duplicate / error**

Application	Number of licences	Total Cost	Notes
SAP ECC on-premises	68	\$20,080	SAP accounts assigned in duplicate / error to be disabled. Various accounts unused from 2012 to 2024.
Adobe Acrobat	251	\$119,800	Adobe licences purchased in advance by Divisions, but not assigned to an end-user. Various accounts unassigned/unused during the period from October 2020 to May 1, 2024.
Total		\$139,880	



## **A. 5. Improved Reporting on Project Delays and Financial Impact Needed to Improve Governance, Transparency and Accountability**

Technology projects are often complex and require careful planning, stakeholders' involvement and input, and ongoing oversight. As shown in our findings above in Section A, software licences purchased in advance, without contract flexibility, may limit the City's ability to adapt to changing needs and could result in underutilized licences.

Prior to acquiring and implementing major enterprise technology solutions, we noted that often City staff present an expected benefits report to City Council. However, the mechanism to track the benefits is not always developed, and the benefits presented are mostly high level and can be difficult to track. Similarly, if the projects are delayed, a mechanism to report on the impact of delays to City Council does not currently exist.

To improve transparency and reporting on major IT project delays, the Auditor General in her 2018 report entitled *Information Technology Infrastructure and Asset Management Review: Phase 2: Establishing Processes for Improved Due Diligence, Monitoring and Reporting for Effective IT Projects and Asset Management*<sup>9</sup> recommended:

*“City Council request the Chief Information Officer to develop a reporting mechanism and criteria for reporting to the Executive Modernization Committee and respective Executive Project Sponsors on project implementation delays and unused software licences with reports to include as a minimum:*

- a. Accumulated financial impact of delays*
- b. Unused assets, licences and solutions*
- c. Forgone benefits as a result of project implementation delays*
- d. Plans in place to mitigate the impact of delays.”*

In response to this recommendation, the report was initially produced by the Technology Services Division and later stopped after the Executive Modernization Committee was dissolved. As a result, the Auditor General is issuing a new recommendation in this report to address this gap and improve reporting to City Council on IT project delays and their financial impact, thereby improving governance, transparency, and accountability.

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<sup>9</sup> [Information Technology Infrastructure and Asset Management Review: Phase 2: Establishing Processes for Improved Due Diligence, Monitoring and Reporting for Effective IT Projects and Asset Management – Auditor General \(torontoauditor.ca\)](https://www.torontoauditor.ca/Information%20Technology%20Infrastructure%20and%20Asset%20Management%20Review%20Phase%202%20Establishing%20Processes%20for%20Improved%20Due%20Diligence%20Monitoring%20and%20Reporting%20for%20Effective%20IT%20Projects%20and%20Asset%20Management)

The Auditor General has also included a recommendation in her report entitled *Reinforcing the Importance of Openness, Fairness and Transparency in City Procurement: An Audit of the Procurement and Implementation of the Paylt Unsolicited Proposal*<sup>10</sup> tabled at the October 15, 2024 Audit Committee, to improve the IT governance framework. The Auditor General recommended:

*“City Council request the City Manager to develop and implement a governance framework and methodology to improve ownership and accountability of the planning, procurement, contracting, and delivery of City-wide technology projects (or projects that span across multiple divisions). This would include creating mandates for each project which would include:*

- a. Identifying which Division has overall ownership and accountability of the project, obtaining buy-in from all stakeholders, identifying and addressing risks and opportunities, and measuring and reporting of key performance measures and outcomes achieved*
- b. Developing a multi-faceted/cross divisional steering committee, that would collaborate to govern and oversee the project and contract compliance*
- c. Reporting progress and material changes to the strategy, project scope, budget, and timelines to City Council.”*

**Recommendation:**

- 5. City Council request the City Manager in coordination with the Chief Technology Officer to develop a reporting mechanism and criteria for reporting on City-wide technology projects (or projects that span across multiple divisions) to the General Government Committee of City Council by the appropriate City officials, on project implementation delays and related accumulated financial impact or costs from the delays, including unused software licences, with reports to include as a minimum:**
  - a. Accumulated financial impact of project delays, including forgone benefits**
  - b. Cost of unused software licences, and solutions**
  - c. Plans in place to mitigate the impact of delays, and**
  - d. How the expected benefits will be measured once the project or contract is fully completed.**

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<sup>10</sup> [Reinforcing the Importance of Openness, Fairness and Transparency in City Procurement: An Audit of the Procurement and Implementation of the Paylt Unsolicited Proposal – Auditor General \(torontoauditor.ca\)](#)

## B. Former employees' licences are not terminated or re-assigned in a timely manner

This audit included examining whether any software licences were assigned to employees no longer with the City. It is important to terminate or re-assign these licences in a timely manner to avoid potential unnecessary costs and it is also an important part of the controls for offboarding of staff. The total cost of licences assigned to former staff or employees on long-term leave is \$1.36 million as shown in **Table 7** below.

**Table 7: Licences assigned to former staff/employees on long-term leave**

Software applications	Cost of licences assigned to former staff/employees on long-term leave
Microsoft 365	\$1,046,795
Adobe Acrobat	\$14,550
SAP ECC on-premises	\$296,341
<b>Total Cost</b>	<b>\$1,357,686</b>

### B. 1. Explore other cost-effective options for retaining former employees' emails

The City's records retention schedule requires that all email accounts assigned to City staff be retained for a specific period.<sup>11</sup> As of June 2024, approximately 28,500 M365 standard subscription licences were assigned to users which also included the Outlook email application.

#### **1,554 former employees had a M365 licence subscription**

We found there were 1,554 former employees that still had a M365 licence subscription. If these licences are not reassigned until December 31, 2024, the total subscription costs paid for these unused licences will be \$1,046,795. These former employees left the City ranging from two months to more than two years ago.

At the time of our fieldwork the City did not reassign the M365 subscription licence to another user after an employee leaves the City, because the procedure for terminating email accounts had not been finalized.

After we communicated our audit findings, management advised that a new monthly reconciliation process was recently initiated to deactivate M365 licences assigned to former employees. After the licence has been reclaimed it is added back to the licence pool so it can be assigned to a new user. Management advised that the M365 procedure for terminating email accounts will be finalized by December 2024.

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<sup>11</sup> [TORONTO MUNICIPAL CODE CHAPTER 217, RECORDS, CORPORATE \(CITY\) SCHEDULE A - RECORDS RETENTION SCHEDULE Code I0345 - Refer to page 185](#)

**Recommendation:**

6. **City Council request the Chief Technology Officer evaluate the current email back-up procedure to:**
  - a. **Finalize the related procedure and guidelines to ensure M365 licences assigned to employees who leave the City are terminated in a timely manner; and**
  - b. **Terminate or re-assign, as needed, active M365 licences of former staff identified in this report.**

**B. 2. Improve process to re-assign software licences that are not being used**

In August 2023, the Technology Services Division launched the ServiceNow Technology Self-Service (TSS) portal which replaced the legacy IT service management tools. The self-service delivery platform is intended to be a one-stop shop for City staff to request a technology service or report IT issues.

The Pension, Payroll and Employee Benefits Division administers the City's payroll, employee pension plans, and maintains employee information. When an employee ends their employment with the City, their manager is responsible for processing the employee's departure in SAP SuccessFactors, the City's human resources application.

The People and Equity Division has an employment separation checklist for managers that is intended to ensure that all the necessary steps and actions are taken, so nothing is missed. However, we found that this checklist has not been updated since ServiceNow TSS was implemented.

**A need to integrate, standardize, and automate the employee offboarding process**

There is a need to integrate, standardize, and automate service requests for disabling all software licences when an employee leaves the City as part of the employee offboarding process.

Ideally, the licence deactivation process should be automated and should start as soon as the employee's separation notice is processed by the Pension, Payroll and Employee Benefits Division. We have provided some examples of the current process, which is manually intensive and prone to omissions:

- For deactivating an Outlook email account, a self-service request is submitted by the respective manager
- For Cisco Jabber (video and voice communication tool), the Division's telecommunication coordinator submits the request through the self-service portal

- SAP application licences deactivation takes place either when a request goes to SAP account management support or through a daily automated SAP termination program
- Division specific applications are taken care of by the respective application coordinators

When access to software and related licences is not de-activated in a timely manner, it presents risks, including financial and cybersecurity. Once a licence has been disabled it can be redeployed to another user who needs it and avoids additional costs of purchasing new licences.

In three out of the five applications sampled, we found former employees that still had active software licences costing a total of \$1.36 million. **Table 8** summarizes the aging of active licences assigned to former employees, and the total costs.

The remaining two software applications (Cisco Jabber and WebEx) are on a fixed price agreement which specifies the maximum number of licences that can be deployed. If the City's licence utilization exceeds this threshold, there is an additional cost per licence. It is important that licences assigned to former employees be disabled to avoid exceeding the City's entitlement which would result in additional cost.

**Table 8: Aging Analysis of Former Employees/Employees on Long-Term Leave with Active Licences**

Software Name	Less than 2 years	2 to 5 years	More than 5 years	Total Licences	Total Cost	Comments
Microsoft M365	1,375	179	0	1,554	\$1,046,795	Outlook migration and software termination policy under review. The aging amount assumes the subscription to continue up to December 31, 2024.
SAP ECC on-premises	206	251	69	526	\$296,341	Deactivation program was not working properly. This includes users on extended leave whose accounts also qualified for deactivation. Based on data provided by Division as of November 12, 2024.
Adobe Acrobat	36	3	0	39	\$14,550	Various reasons, including staff offboarding issues due to manual processes. These licences continue to be renewed although being dormant for few years or where staff left the City. Data provided by Technology Services Division as of May 1, 2024.
Cisco Jabber	384	461	21	866	-	Cisco Jabber licences are at a flat rate and no incremental cost is currently incurred. Account aging is included for reference; future renewals could be affected by excessive usage figures. Data provided by Technology Services Division as of October 11, 2024.
WebEx	673	265	20	958	-	Like Cisco Jabber, Webex is a flat-rate product, however, future renewals could be affected by excessive usage figures. Calculated by the Auditor General's Office as of November 12, 2024. Out of 958 licences, 529 have never been used.
<b>Total</b>					<b>\$1,357,686</b>	

**Recommendation:**

- 7. City Council request the Chief People Officer and Chief Financial Officer and the Chief Technology Officer to develop an automated process for employee offboarding, including to:**
  - a. Integrate and update the employment separation checklist with the current Information Technology Service Management process to identify and disable unused accounts of employees who leave the City, in a timely manner.**
  - b. Conduct periodic automated comparisons of active licences with inactive or dormant accounts and ensure unused licences or licences assigned to former employees or employees on long-term leave are disabled or re-assigned in a timely manner, and**
  - c. Unassigned or unused licences identified in this report are re-assigned or terminated as needed.**

## **C. Strengthen Governance over IT Asset Management**

### **C. 1. Lack of a Clearly Defined Data Strategy and Plan to Manage the City's Software Assets**

Since 2006, the City has implemented two IT asset management (ITAM) applications. The current solution, Micro Focus Asset Manager, is reaching its end-of-life cycle and is being replaced. The ServiceNow Software Asset Management (ServiceNow SAM) application was implemented in May 2024. The initial go-live focused on obtaining and loading data from various sources for M365 and Oracle only.

The City has approximately 1,200 paid software licence titles in use. A data migration plan helps to ensure that the right data is transferred accurately and completely, minimizing the risk of data loss, and helps to avoid additional costs. The integration of data from Micro Focus and other software titles to ServiceNow was not in scope for this audit since it has not been developed yet.

There are known issues with the integrity of the data in the Micro Focus system. The Auditor General raised concerns about incomplete and inaccurate data in a previous report issued in June 2018, *Information Technology Infrastructure and Asset Management Review: Phase 2*.<sup>12</sup>

Like the previous findings in the 2018 report, we found that:

- Approximately 200,000 accumulated lines of IT software and hardware purchases from the daily SAP financial system data feed to Micro Focus have failed due to data incompatibility issues. This means that many licences are not being properly updated and tracked. The list of exceptions continues to grow every day as the exceptions are not being resolved.
- Legacy software titles acquired over 20 years ago that are no longer used are shown as being active.

**The City's ITAM system still does not have accurate and reliable information**

As discussed above, after two ITAM system implementations, the City still does not have accurate, complete, and reliable information. This shows that a new solution will not solve the issue of data reliability – it must be addressed by management. It is critical that the Technology Services Division have a clear and accurate understanding of the nature of the data when developing a data strategy and migration plan for ServiceNow SAM. This includes, but is not limited to, considering the following:

- Identifying which software assets, vendor agreements/contracts should be loaded to ServiceNow SAM
- Defining data ownership, validating, and cleansing the data from Micro Focus and other sources with respective owners to identify and remove inaccurate, duplicate, or corrupt records
- Mapping the current data fields to the new database to reduce potential errors
- Formatting the data so it will work with the new solution

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<sup>12</sup> [Information Technology Infrastructure and Asset Management Review: Phase 2: Establishing Processes for Improved Due Diligence, Monitoring and Reporting for Effective IT Projects and Asset Management – Auditor General](#)



**Recommendation:**

**8. City Council request the Chief Technology Officer to:**

- a. Establish criteria to identify and select software titles that should be managed through the Information Technology Asset Management System
- b. Develop a data strategy and migration plan for managing the City's software licences and subscriptions
- c. Develop a plan to decommission the existing system, and
- d. Evaluate whether the existing data import process from the financial system is required for the new system and fix the data accuracy and reconciliation issues if the data are to be used.

**C. 2. Lack of Clear Guidelines for Oversight and Monitoring of IT Assets**

**ITAM policy, guidelines and procedures are outdated**

We found that the Technology Services Division's Information Technology Asset Management (ITAM) policy and guidelines are not current. The policy and guidelines were last reviewed eight or more years ago. The purpose of the ITAM policy is to establish the accountability and responsibility for the management of IT assets at the City, including software. The guideline describes the processes that divisions should follow for managing software assets, including the roles and responsibilities.

The ITAM steering committee was comprised of senior staff from across City divisions, who met regularly to assist with the review and implementation of various processes related to ITAM across the City. It was dissolved in 2021 for various reasons while the ServiceNow platform was undergoing an initial assessment. One of the goals of the committee was to ensure accountability of IT assets and accuracy of ITAM data. Management advised that the ITAM policy and guidelines will be updated once the Technology Services Division has a better understanding of the overall ServiceNow ITAM program.

Without having an established governance structure to lead and manage the ITAM program across City divisions, there are several risks, including:

- underutilized software licences and related costs not being identified in a timely manner
- lack of policies, procedures, and processes to support software asset management, and
- lack of clarity of the roles and responsibilities for maintaining the integrity of the IT assets' data.

**Recommendation:**

9. **City Council request the Chief Technology Officer to develop and implement a governance framework to improve ownership and accountability of the Information Technology (IT) asset management process. This should include:**
  - a. **Updating policies, guidelines and procedures on IT asset management, ensuring appropriate reporting and staff roles are established to facilitate ongoing monitoring of IT assets through the new system**
  - b. **Developing reports, to monitor the accuracy and completeness of data updated in the new IT Asset Management system.**

## **D. Explore Further Cost Saving Opportunities**

### **D. 1. The City and its agencies and corporations should collaborate to identify cost saving opportunities on software products in common**

**City's agencies and corporations represent an opportunity for consolidating software purchases to achieve cost savings**

The City and its agencies and corporations have over 75,000 employees, who may be using common software applications. This represents a potential source for cost savings if volume discounts can be achieved for the same software programs being purchased separately by the City's agencies and corporations.

Setting up a large competitive consolidated software purchase including all City divisions, agencies, and corporations would require effort and coordination. Key considerations may include synchronizing contract renewal timing and ensuring the compatibility of software versions in use.

There are already elements in place at the City that can facilitate coordinated purchasing of commonly used software and applications:

- The City's Cooperative Purchasing Group has representatives from the City's Procurement and Materials Management Division and their counterparts in City agencies and corporations, who meet to exchange information. However, this coordination needs to be leveraged to explore opportunities to pool purchase of software where possible.
- The City's procurement by-law enables the Chief Procurement Officer to make arrangements with one or more public bodies for co-operative purchasing where there are economic advantages.
- The City is leveraging the Province of Ontario's volume licensing agreement with Microsoft for cloud-based software subscriptions for volume licensing. While this enterprise agreement is only with a single vendor, it represents a significant common technology platform used by most organizations.

Software licensing represents a significant opportunity where the Cooperative Purchasing Group members can collaborate to systematically identify and track software programs in common, and the end-dates of existing purchasing contracts. Better information sharing will allow for improved planning, which can in turn lead to unifying future contract negotiations for the same common software products.

An external study was conducted for the City by a third-party professional services firm in 2021 to promote creating a Cooperative Purchasing Group representing municipalities across the Greater Toronto Area and Hamilton. This represents an even larger potential pool for volume discounts on common software licences, which could be considered as a next step, once the City has succeeded at pooling its internal software purchasing.

**Recommendation:**

**10. City Council request the City Manager to coordinate the work of the City's agencies and corporations with the City's Chief Procurement Officer and Chief Technology Officer to explore joint purchasing on key software programs to achieve volume discounts and savings for the City as a whole.**

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## Conclusion

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The management of software acquisition and utilization needs improvement, to ensure that tracking of software licences, subscriptions, and maintenance is accurate. The undeployed or underutilized software is not always identified and addressed in a timely manner. As a result of our audit, there is an estimated potential cost identified for the City of almost \$11 million in unused software licences.

**We have made ten recommendations to improve software acquisition and management**

We have made ten recommendations. In our view, the implementation of the recommendations contained in this report will maximize the value of the City's investment in software and licences, and improve the City's governance, management, and processes related to software acquisition and utilization, including:

- Eliminating or reducing maintenance fees and subscription costs where software is not being deployed or used as intended
- Improving governance, transparency, and accountability on the reporting of technology project implementation delays and potential loss of expected benefits
- Strengthening strategic direction on implementing the new software solution
- Providing accurate and reliable data in the IT asset management system to better manage and make decisions related to software acquisition and utilization.

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## Audit Objectives, Scope and Methodology

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### **Audit included in the 2024 Work Plan**

The Auditor General's 2024 Audit Work Plan included an audit on how the City acquires and manages its corporate-wide software licences, including cloud subscriptions.

### **Audit Objectives**

The objectives of this audit were to assess whether the City:

- ensures accurate tracking of software licences, subscriptions, and maintenance; and
- identifies unused software in a timely manner.

### **Scope**

The audit focused on how the City acquires and manages its software licences, including cloud subscriptions. The audit covered software licences purchased from 2019 to 2024.

The audit scope included the following seven selected software applications that are used across the City:

- Microsoft 365
- SAP S/4 HANA
- SAP ECC on-premises
- Public Digital Access (PDA)
- Adobe Acrobat
- Cisco Jabber
- WebEx

We selected the on-premises software licences and cloud subscriptions according to the total contract value, volume of licences purchased, and usage across the City.

The following areas were not covered within the scope of this audit:

- completeness and accuracy of Micro Focus records, as the City is implementing the ServiceNow platform
- compliance with end user licence agreements
- project management and implementation of selected cloud applications and ServiceNow

## **Limitations**

At the time our audit, several key senior management and project management office staff involved in the procurement decisions, pilot, proof of concept, and software deployment plan had left the City. There was a lack of documentation retained for some key decisions made in prior years. As a result, some of the causes of the findings were limited to the records and information provided by management. However, this did not limit our conclusion on the overall objectives and determination of underused software.

The ServiceNow Software Asset Management solution was implemented in May 2024. For the initial go-live, the data for two software subscriptions was obtained from various sources and uploaded into ServiceNow. The data migration from Micro Focus to ServiceNow has not started yet so we did not review the accuracy and completeness of the information in the new solution.

## **Audit Methodology**

The audit methodology included:

- Reviewing information technology asset management policies, guidelines, and procedures
- Reviewing Technology Service Division's budget, strategic plans and governance framework
- Interviewing staff from the Technology Services Division, Office of the Chief Information Security Officer, Pension, Payroll and Employee Benefits Division and People & Equity Division
- Selecting a sample of software applications, reviewing software contracts, project plans, and timelines to determine its utilization.
- Reviewing the effectiveness of the offboarding process for disabling the software licences for employees who had left or were no longer actively working for the City
- Reviewing correspondence and other records

## **Compliance with generally accepted government auditing standards**

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.

## Appendix 1: Management's Response to the Auditor General's Report Entitled: "Audit of Software Acquisition and Licence Management: Managing and Optimizing Value from Software Licences"

**Recommendation 1:** City Council request the Chief Technology Officer in consultation with the Chief Procurement Officer and the City Solicitor to:

- a. Evaluate whether the cost of unused software licences identified in this report can be reduced or deferred to future periods to align with changes in the deployment dates for projects that are still in progress.
- b. Identify other technology projects that are delayed, and evaluate whether the cost of the unused software licences can be reduced or deferred to future periods to align with changes in the project rollout dates.

<b>Management Response:</b> <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree
<b>Comments/Action Plan/Time Frame:</b>  Management agrees with the recommendation.  Part a. Evaluation of unused software identified in this report has been completed and will continue to be performed as part of regular program governance as well as a monthly reconciliation process.  Specifically on the Microsoft licenses, which represent the bulk of the unused licenses - the City entered into an Enterprise Agreement with Microsoft and successfully negotiated and executed a contract with a substantial bulk discount, which led to significant savings but required upfront commitment in 2019. The deployment of M365 licenses was delayed due to staff being re-deployed during the COVID-19 pandemic. The M365 licenses that have been identified as unused in this report have been deployed as of April 2023.  Part b. The program governance regularly tracks and reports on any schedule delays. Legal contracts do not allow for a change in agreed upon terms, but TSD will work with PMMD and Legal Services to evaluate TSD technology projects with substantial risk of costs related to unused software licenses and pursue opportunities to mitigate.  Estimated timeline - Q2 2026

**Recommendation 2:** City Council request the Chief Technology Officer in consultation with the Chief Procurement Officer and the City Solicitor, to evaluate whether future software subscription contracts can include provisions to allow the City to defer the licence purchases or adjust the contracted volume of software subscriptions, in situations where:

- a. Projects are delayed, or
- b. Requirement for software subscription volume changes.

<b>Management Response:</b> <input checked="" type="checkbox"/> <b>Agree</b> <input type="checkbox"/> <b>Disagree</b>
<b>Comments/Action Plan/Time Frame:</b>  Management agrees with the recommendation.  TSD will continue to work with PMMD and Legal Services to pursue contract terms that best balance procurements with up front, bulk contract savings and potential risk of unused licenses due to delays in projects and/or volumes.  Estimated timeline – Q1 2025

**Recommendation 3: City Council request the Chief Technology Officer and the Chief Information Security Officer, in consultation with the Chief Procurement Officer and the City Solicitor, to evaluate whether:**

- a. **Financial compensation can be obtained for non-compliance with expected product features required under the contract.**
- b. **The cost of unused software licences can be reduced or deferred to future periods to align with changes in the project rollout dates.**

<b>Management Response:</b> <input checked="" type="checkbox"/> <b>Agree</b> <input type="checkbox"/> <b>Disagree</b>
<b>Comments/Action Plan/Time Frame:</b>  Management agrees with the recommendation.  The City will collaborate with its Vendor to explore cost recovery options without impacting the efforts to support the ongoing deployments. As per 2025 roadmap provided to AG, remaining licenses are projected for deployment by the end of 2025.  Estimated completion timelines: Q4 2025  <b>Comments regarding Cost Savings:</b>  To optimize costs, the City negotiated a substantial volume discount based on a commitment to procure 800,000 licenses per year for the first three years. By procuring additional licenses, the <b>City of Toronto saved over \$1.4M.</b>  While some of the additional licenses obtained upfront are not yet fully utilized, the volume discount provided to the City aligns with long-term cost savings. This strategic procurement is supporting future growth as additional applications are onboarded to the Centralized Login Platform, ultimately increasing the license utilization rate. Despite current lower utilization levels, the City’s proactive approach ensures significant overall savings for the City to scale effectively as implementation progresses.



**Comments regarding the outcomes of the Proof of Concept:**

The outcomes of the proof of concept were focused on the following:

- AODA and useability testing
- Additional use cases

These outcomes were integrated into the RFQ, including the accessibility clause. Regarding sign off, as per the previous statement above, the timelines had shifted from Dec 2023 to Feb 2024.

The AODA team had provided sign off in Feb 2024 to proceed with the launch which satisfied the conditions from the proof of concept and the additional usability findings from the project implementation.

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**Recommendation 4: City Council request the Chief Technology Officer to improve on the project planning and coordination for the remaining phases of implementing the Public Digital Access Solution.**

**Management Response:**  Agree  Disagree

**Comments/Action Plan/Time Frame:**

Management agrees with the recommendation.

As part of the remediation actions following the EWMS audit in December 2023, the overall project management framework and governance for all technology projects, including the Public Digital Access project, have been enhanced. Key improvements include:

- Improved document management—ensuring that essential project documents are identified, maintained, and retained throughout the project’s lifecycle, as part of the standardized technology project governance and gating process,
- Enhanced progress reporting—implementing robust reporting mechanisms to accurately measure project progress against budgets and timelines, and
- Consistent governance for steering committees—standardizing the structure of steering committee meetings, with a focus on capturing key decisions and actions and ensuring coordination with business units

Technology Services remains committed to delivering improvements to the management of both new and in-flight technology projects at the City of Toronto.

Estimated timeline to complete: Q1 2025

**Recommendation 5: City Council request the City Manager in coordination with the Chief Technology Officer to develop a reporting mechanism and criteria for reporting on City-wide technology projects (or projects that span across multiple divisions) to the General Government Committee of City Council by the appropriate City officials, on project implementation delays and related accumulated financial impact or costs from the delays, including unused software licences, with reports to include as a minimum:**

- a. Accumulated financial impact of project delays, including forgone benefits
- b. Cost of unused software licences, and solutions
- c. Plans in place to mitigate the impact of delays, and
- d. How the expected benefits will be measured once the project or contract is fully completed.

<p><b>Management Response:</b> <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree</p>
<p><b>Comments/Action Plan/Time Frame:</b></p> <p>Management agrees with the recommendation.</p> <p>The City has established robust project governance to support the planning and delivery of City-wide technology projects, in response to the Auditor General’s report on the Audit of the <i>Enterprise Work Management Solution (EWMS)</i> <a href="#">EWMS Audit Link</a>; <i>Lessons Learned for Future Large Information Technology Projects</i>. A similar recommendation was also issued via the Auditor General’s report on <i>Reinforcing the Importance of Openness, Fairness and Transparency in City Procurement: An Audit of the Procurement and Implementation of the PayIT Unsolicited Proposal (My Toronto Pay)</i>.</p> <p>Specifically, the City has:</p> <ul style="list-style-type: none"> <li>• Established a centralized governance structure, with the Technology Services Division, to ensure alignment with the City’s strategic objectives and mechanisms for reporting progress, changes in strategy, scope, budget, and timelines to City Council, and outcomes.</li> <li>• Developed a cross-divisional steering committee for large scale projects to govern the project, ensuring contract compliance and effective collaboration across divisions. The process includes sharing of key milestones, regular reporting, and checkpoints requiring sign off from authorized business head units prior to advancing to the next stage of the project. Through this structure, the committee maintains transparency and accountability, and ensures opportunities and risks, including project delays, on large projects are surfaced in a timely manner and appropriately addressed.</li> <li>• Established an Enterprise Program Leadership Table (partnering with senior divisional leaders) to provide visibility and governance over technological strategic investments in partnership with the City Manager’s Office.</li> </ul> <p>Staff will continue to report to City Council on large scale projects via the capital and operating variance reports and will continue to provide this information to City Council on an ongoing basis.</p> <p>Estimated timeline for completion: Q4 2026</p>

**Recommendation 6: City Council request the Chief Technology Officer evaluate the current email back-up procedure to:**

- a. **Finalize the related procedure and guidelines to ensure M365 licences assigned to employees who leave the City are terminated in a timely manner; and**
- b. **Terminate or re-assign, as needed, active M365 licences of former staff identified in this report.**

<b>Management Response:</b> <input checked="" type="checkbox"/> <b>Agree</b> <input type="checkbox"/> <b>Disagree</b>
<b>Comments/Action Plan/Time Frame:</b>  Management agrees with the recommendation.  Part a. Review of M365 licenses has been completed, and action has been taken to reclaim licenses from former City of Toronto employees for reassignment.  Part b. On-going process for monthly reconciliations of M365 licenses have been put in place as of October 2024. Once reclaimed, licenses are automatically added back to the license pool, increasing the number of available licenses to be assigned. After the reconciliation, the respective mailboxes become inactive, however the data can be retained until required under policy.  Estimated timeline for completion: <b>Completed</b>

**Recommendation 7: City Council request the Chief People Officer and Chief Financial Officer and the Chief Technology Officer to develop an automated process for employee offboarding, including to:**

- a. **Integrate and update the employment separation checklist with the current Information Technology Service Management process to identify and disable unused accounts of employees who leave the City, in a timely manner.**
- b. **Conduct periodic automated comparisons of active licences with inactive or dormant accounts and ensure unused licences or licences assigned to former employees or employees on long-term leave are disabled or re-assigned in a timely manner, and**
- c. **Unassigned or unused licences identified in this report are re-assigned or terminated as needed.**

<b>Management Response:</b> <input checked="" type="checkbox"/> <b>Agree</b> <input type="checkbox"/> <b>Disagree</b>
<b>Comments/Action Plan/Time Frame:</b>  Part a. Updates to the Property Retrieval/Access Cancellation Checklist will be carried out by People & Equity, in consultation with TSD. The checklist will ensure clear and consistent guidance to people leaders with respect to delimiting user access in a timely manner.  In addition, a ServiceNow catalogue item is being enhanced to facilitate the TSD technology offboarding workflow to assign tasks to specified product license administrators to disable

accounts and reclaim licenses as applicable. The ServiceNow catalogue item enhancement is estimated for Q4 2025.

Part b. A process will be established in Q4, 2024 to reconcile active licenses for systems identified in this report against SuccessFactors employee statuses. Opportunities for automation will be reviewed in 2025.

Part c. Unassigned or unused licenses identified in this report have been re-assigned or terminated by TSD.

Status - **Completed**

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**Recommendation 8: City Council request the Chief Technology Officer to:**

- a. **Establish criteria to identify and select software titles that should be managed through the Information Technology Asset Management System**
- b. **Develop a data strategy and migration plan for managing the City's software licences and subscriptions**
- c. **Develop a plan to decommission the existing system, and**
- d. **Evaluate whether the existing data import process from the financial system is required for the new system and fix the data accuracy and reconciliation issues if the data are to be used.**

**Management Response:**  **Agree**  **Disagree**

**Comments/Action Plan/Time Frame:**

Noting this recommendation is also captured under [AU1.17: Software Licenses - Managing the Asset and Related Risks \(Feb 2015\)](#). TSD is already pursuing plans to implement the recommendation as submitted in the 2025 Budget. The program will work towards:

- a. Establishing criteria to prioritize software titles that should be managed through Software Asset Management platform.
- b. Evaluating data requirements and sources in order to meet the intended outcomes.
- c. Decommissioning legacy systems and processes.
- d. Reconciliation of financial data. This is a duplicate of ongoing recommendation AU 13.14 #1.

Estimated completion timeline: Q4 2026

**Recommendation 9: City Council request the Chief Technology Officer to develop and implement a governance framework to improve ownership and accountability of the Information Technology (IT) asset management process. This should include:**

- a. Updating policies, guidelines and procedures on IT asset management, ensuring appropriate reporting and staff roles are established to facilitate ongoing monitoring of IT assets through the new system
- b. Developing reports, to monitor the accuracy and completeness of data updated in the new IT Asset Management system.

<b>Management Response:</b> <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree
<b>Comments/Action Plan/Time Frame:</b>  Management agrees with the recommendation.  As per program plan to resolve <a href="#">AU1.17: Software Licenses - Managing the Asset and Related Risks (Feb 2015)</a> , a governance model will be set up and will work towards: <ul style="list-style-type: none"><li>a. Updating the ITAM Policy after due diligence on ITAM program.</li><li>b. Developing and monitoring standard reports for accuracy and completeness of data captured in ITAM system.</li></ul> Estimated completion timeline: Q4 2026

**Recommendation 10: City Council request the City Manager to coordinate the work of the City's agencies and corporations with the City's Chief Procurement Officer and Chief Technology Officer to explore joint purchasing on key software programs to achieve volume discounts and savings for the City as a whole.**

<b>Management Response:</b> <input checked="" type="checkbox"/> Agree <input type="checkbox"/> Disagree
<b>Comments/Action Plan/Time Frame:</b>  The City Manager will request and support the Chief Procurement Officer and Chief Technology Officer to explore joint purchasing of key software programs to achieve volume discounts and savings for the City, agencies and corporations where feasible. This will be explored within the City's authorities in Toronto Municipal Code Chapter 195, Procurement. Agency and corporation unique business and governance models will be taken into consideration as part of this exploration.  Contracts currently have a piggyback clause that allow agencies and corporations to take advantage of negotiated pricing, including any volume discounts. Agencies and corporations are also made aware of applicable market calls (RFQs, RFSQs, and RFPs).  As well, there is broad visibility to key programs and contracts through the quarterly Technology Strategic Roundtable, comprised of CIOs across the City, agencies and corporations. This was re-established in Q4 2023 to share resources and learnings across the City, including strategic contractual relationships.  Estimated completion timeline: Q2 2026

## Appendix 2: Previous Auditor General's Reports on IT Asset Management (2014-2024)

1. 2015: Software Licenses - Managing the Asset and Related Risks  
<https://www.toronto.ca/legdocs/mmis/2015/au/bgrd/backgroundfile-76330.pdf>
2. 2018: IT Infrastructure and IT Asset Management Review: Phase 1: Establishing an Information Technology Roadmap to Guide the Way Forward for Infrastructure and Asset Management  
<https://www.toronto.ca/legdocs/mmis/2018/au/bgrd/backgroundfile-112383.pdf>
3. 2018: Information Technology Infrastructure and Asset Management Review: Phase 2: Establishing Processes for Improved Due Diligence, Monitoring and Reporting for Effective IT Projects and Asset Management  
<https://www.toronto.ca/legdocs/mmis/2018/au/bgrd/backgroundfile-117904.pdf>
4. 2021: City Needs to Improve Software License Subscription Tracking, Utilization and Compliance  
<https://www.toronto.ca/legdocs/mmis/2021/au/bgrd/backgroundfile-168699.pdf>
5. 2021: Supplementary Report: City Needs to Improve Software License Subscription Tracking, Utilization and Compliance  
<https://www.toronto.ca/legdocs/mmis/2021/cc/bgrd/backgroundfile-169301.pdf>

**List of In Progress Recommendations as of November 30, 2024**

Auditor General's Reports	Report Date	Years Outstanding	In Progress
2015: Software Licenses - Managing the Asset and Related Risks	02/04/2015	9.8	3
2018: IT Infrastructure and IT Asset Management Review: Phase 1: Establishing an Information Technology Roadmap to Guide the Way Forward for Infrastructure and Asset Management	01/30/2018	6.9	4*
2018: Information Technology Infrastructure and Asset Management Review: Phase 2: Establishing Processes for Improved Due Diligence, Monitoring and Reporting for Effective IT Projects and Asset Management	06/28/2018	6.4	2
2021: City Needs to Improve Software License Subscription Tracking, Utilization and Compliance	06/23/2021	3.4	2
2021: Supplementary Report: City Needs to Improve Software License Subscription Tracking, Utilization and Compliance	07/13/2021	3.4	1
<b>Total</b>			<b>12</b>

\* Includes Recommendation #1 from IT Infrastructure and IT Asset Management Review: Phase 1, reported by management as Fully Implemented on August 30, 2024 and is yet to be verified by the Auditor General

**Report Title: Software Licenses - Managing the Asset and Related Risks, 2015**

No.	Recommendation
<i>In Progress (Outstanding almost 10 years)</i>	
#1	City Council request the Chief Information Officer to ensure there is a software owner identified for all software assets and activities to ensure compliance with software licensing agreements are performed in accordance with the divisional policy.  <b>High Priority</b>
#10	City Council request the Chief Information Officer to ensure software owners perform annual software reconciliations and report the results to the Information and Technology Division.  <b>High Priority</b>
#11	City Council request the Chief Information Officer to ensure that the inventory of software is completed as soon as possible and that software usage reports be developed and distributed to software owners for their review. Software owners should report back on license usage to the Chief Information Officer so that proper decisions can be made in relation to City software assets.  <b>High Priority</b>

**Report Title: IT Infrastructure and IT Asset Management Review: Phase 1: Establishing an Information Technology Roadmap to Guide the Way Forward for Infrastructure and Asset Management, 2018**

No.	Recommendation
<i>In Progress as of April 2024 at the planning stage, Reported by Management as Fully Implemented in August 2024 and Not Yet Verified by Auditor General</i>	
#1	City Council request the City Manager, in consultation with the Chief Information Officer, to establish appropriate governance and accountabilities to ensure that divisions with Information Technology services operating independently from the Information and Technology Division follow Corporate Information Technology policies, procedures, and standards in acquiring and managing Information Technology services.  <b>High Priority</b>
<i>In Progress (Outstanding almost 7 years)</i>	
#2	City Council request the Chief Information Officer to: <ol style="list-style-type: none"> <li>a. ensure that the inventory in the Corporate Information Technology asset management system is updated (including assets directly managed by the Information and Technology Division, as well as assets managed by other City divisions);</li> <li>b. perform periodic reviews and reconciliations of data captured within the Corporate Information Technology asset management system to ensure the system is accurate and complete;</li> <li>c. implement available tools and reporting functionality within the Corporate Information Technology asset management system to support ongoing asset monitoring; and</li> <li>d. use the data available within the corporate asset management system to inform strategic technology planning, including maximizing the use of assets and managing the costs to maintain them throughout their lifecycle.</li> </ol>



	<b>High Priority</b>
#4	<p>City Council request the Chief Information Officer, in consultation with all relevant divisions, to:</p> <ul style="list-style-type: none"> <li>a. develop a comprehensive list of applications and identify those applications and systems that have the potential to be consolidated and modernized, eliminating the need to procure, implement, and maintain duplicative systems in the future; and</li> <li>b. review existing decentralized Information Technology services and, where possible, consolidate these services with the Information and Technology Division.</li> </ul> <p><b>High Priority</b></p>
#13	<p>City Council request the Chief Information Officer, in consultation with the City Clerk, the City Solicitor, and where needed, the City’s Accountability Officers, to include in the data governance model:</p> <ul style="list-style-type: none"> <li>a. guidance on the City’s enterprise-wide data strategy to provide direction for lifecycle management and classification of data in alignment with the Municipal Code; and</li> <li>b. a special case data retention policy and procedure to address scenarios where archiving specific data is required, such as litigation needs.</li> </ul> <p><b>High Priority</b></p>

**Report Title: Information Technology Infrastructure and Asset Management Review: Phase 2: Establishing Processes for Improved Due Diligence, Monitoring and Reporting for Effective IT Projects and Asset Management, 2018**

No.	Recommendation
<i>In Progress (Outstanding over 6 years)</i>	
#1	<p>City Council request the Chief Information Officer to:</p> <ul style="list-style-type: none"> <li>a. Develop a process to ensure timely synchronization of IT asset purchases recorded in SAP with IT Asset Management (ITAM) System records.</li> <li>b. Expedite reconciliation of network assets and update them in the ITAM System.</li> <li>c. Develop secure communication mechanisms (or an alternate process) to allow for the update of segregated networks’ IT assets in the ITAM System.</li> <li>d. Provide ITAM System access to other City divisions (where required) including adequate training to assist them in understanding the system.</li> </ul> <p><b>High Priority</b></p>
#2	<p>City Council request the Chief Information Officer to:</p> <ul style="list-style-type: none"> <li>a. Develop a process for monitoring and reporting of "in stock" assets and their respective costs. Reporting should be made available within the I&amp;T Division and other City divisions to review the availability and age of IT assets for consideration of deployment before making new purchases.</li> <li>b. Ensure that all high-volume purchases of IT assets are supported with an appropriate deployment plan.</li> <li>c. Develop a process for performing a periodic review with City divisions that have IT assets which are not deployed or assigned to users to address any excess inventory.</li> </ul> <p><b>High Priority</b></p>

**Report Title: City Needs to Improve Software License Subscription Tracking, Utilization and Compliance, 2021**

No.	Recommendation
<i>In Progress (Outstanding over 3 years)</i>	
#1	City Council request the Chief Technology Officer to: <ul style="list-style-type: none"> <li>a. identify agreements that require license tracking and reporting; and</li> <li>b. implement procedures to monitor compliance and address any issues identified in a timely manner.</li> </ul> <p><b>High Priority</b></p>
#2	City Council request the Chief Technology Officer to improve the existing software procurement process to ensure: <ul style="list-style-type: none"> <li>a. software subscriptions are thoroughly evaluated before purchasing; and</li> <li>b. all software subscriptions are deployed in a timely manner so there are no excessive software subscriptions.</li> </ul> <p><b>High Priority</b></p>

**Report Title: Supplementary Report: City Needs to Improve Software Licence Subscription Tracking, Utilization and Compliance, 2021**

No.	Recommendation
<i>In Progress (Outstanding over 3 years)</i>	
#1	City Council request the City Manager, in consultation with the Chief Procurement Officer, to review all instances of settling or resolving contract non-compliance or contract disputes that have occurred in the past and to recommend changes to the Financial Control By-law and Purchasing By-law to consider a requirement for City divisions to report to City Council, through the General Government and Licensing Committee, on financial transactions to settle or resolve contract non-compliance or vendor disputes exceeding delegated signing authorities. <p><b>High Priority</b></p>

**AUDITOR  
GENERAL**  

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**TORONTO**

