

The logo for the City of Edmonton, featuring the word "Edmonton" in white text on a dark blue square background.

Edmonton

OFFICE OF  
THE CITY AUDITOR

**REPORT**  
IT ASSET  
MANAGEMENT AUDIT

**AUGUST 31, 2023**

# Report Summary

## BACKGROUND

Information technology asset management is used to optimize spending and support lifecycle management and strategic decision-making related to IT hardware and software (IT assets). The IT asset management lifecycle includes procurement, deployment, maintenance, and disposal of IT assets.

Through the Asset Management Office, the Open City and Technology Branch (OCT) manages the City's IT assets and maintains an inventory of its IT assets. Asset managers in each of the City's business areas are the primary contact to help the Asset Management Office keep the City's inventory records current. Asset users are individuals who use or interact with IT assets to do their job.

The City's IT asset expenses in 2021 totaled \$66 million and remained consistent in 2022, at a total of \$65 million.

## AUDIT OBJECTIVES & SCOPE<sup>1</sup>

The objective of this audit was to determine if OCT is managing IT assets to optimize the use of resources and safeguard these assets.

We reviewed IT hardware and software assets under OCT's control, including those managed by a third party IT asset service provider.

## WHAT WE FOUND

Overall, we found that OCT is managing the City's IT assets to optimize the use of resources and safeguard them. This includes:

- Providing guidance on IT asset management practices to promote consistency across the City. This includes having:

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<sup>1</sup> We conducted this engagement in conformance with the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing*.

- IT asset management standards (*Device Standards*) for repairing and replacing some IT hardware.
- Procedures for requesting new hardware and software and managing software.
- Defined roles and responsibilities for asset managers.
- Using IT asset management tools to track:
  - IT hardware inventory information, which informs hardware purchases, replacements, and redeployments.
  - Software licensing and contract information, which informs software purchases, cancellations, or renewals.

However, we found that OCT can improve its guidance on IT asset management. Specifically:

- The *Device Standards* do not include replacement rates for some types of IT hardware.
- There is a lack of some procedures specific to providing IT assets to new employees, returning IT assets from employees that leave, and redeploying IT assets to another user.
- The roles and responsibilities for the Asset Management Office and asset users are not clearly documented.

We also found that some data in the software asset management tool is not updated in a timely manner.

## RECOMMENDATIONS

- Recommendation 1      We recommend that the Open City and Technology Branch improve its standards and procedures to clearly define roles, responsibilities, and processes for IT asset management.

**Recommendation 2**

We recommend that the Open City and Technology Branch maintain accurate software license data to efficiently manage inventory.

**WHY THIS IS IMPORTANT**

Unclear roles, responsibilities, and processes may lead to ineffective IT asset management.

Poor software inventory tracking may lead to inefficient decision making.

# IT Asset Management Details

## IT ASSET MANAGEMENT

Information technology asset management is used to optimize spending and support lifecycle management and strategic decision-making related to IT hardware and software (IT assets).

The IT asset management lifecycle includes:

- Procurement where IT assets are purchased, leased, or licensed.
- Deployment which involves moves, setup, and installation for the asset to be provided to the user.
- Maintenance which are provisions made to maintain, upgrade, or repair to correct issues and enhance functionality.
- Disposal where assets are retired and data is wiped.

## IT ASSET MANAGEMENT ROLES

The Open City and Technology Branch (OCT), through the Asset Management Office, manages the City's IT assets and maintains an inventory of IT assets.

The Asset Management Office relies on asset managers to be the primary contact for their business area's IT assets and to help keep inventory records current. Asset users are individuals who use or interact with assets to do their job.

The City also uses a third-party service provider to manage the IT asset lifecycle for leased IT assets.

## IT ASSET MANAGEMENT TOOLS

OCT uses an IT asset management tool to keep track of the City's IT hardware inventory. This tool houses device details such as the name, type, model, network location, expiry date, lease payment, and applications installed. It also tracks ownership details such as the department, branch, asset manager, and asset user.

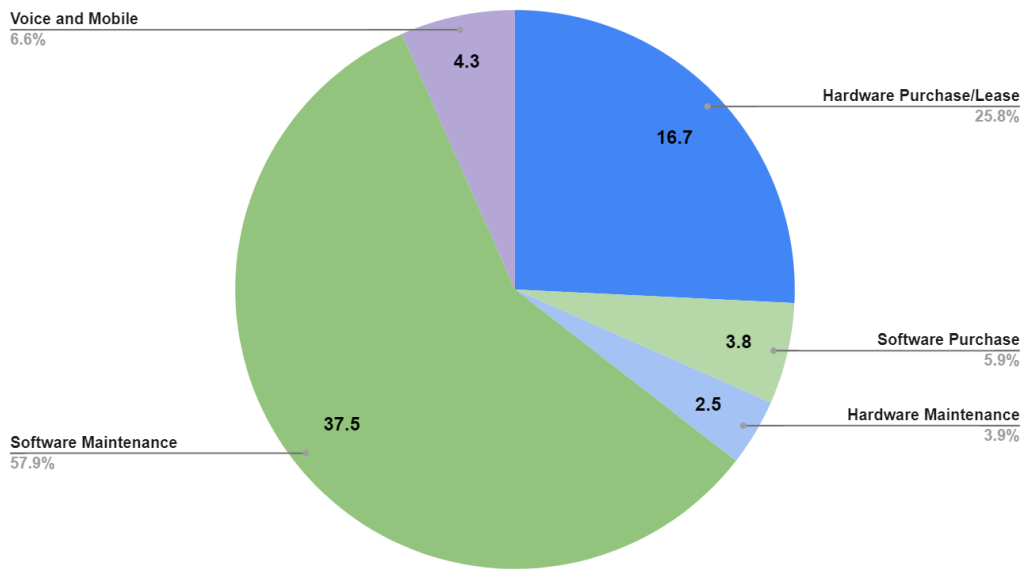
OCT uses a software asset management tool to track information relating to the City's software. This tool contains software contract information, licensing details, licensing counts, and ownership details.

**IT ASSET EXPENSES**

The City's IT asset expenses in 2021 totaled \$66 million and remained consistent in 2022, totaling \$65 million<sup>2</sup>.

IT asset expenses are costs related to the purchase, lease, or maintenance of IT hardware and software. Voice and mobile assets such as cell phones and phone plans are also included.

**2022 IT Asset Expenses (in millions of \$)**



<sup>2</sup> Software maintenance expenses include software subscription fees.

# Improve IT Asset Management Guidance

## KEY FINDINGS

OCT has documented IT asset management standards for replacing and repairing some IT hardware. It also has procedures for requesting new hardware and software and managing software.

The City's internal website also defines the roles and responsibilities for asset managers and has policies that include general responsibilities of City employees related to IT assets. For example:

- The employee *Code of Conduct* mandates employees to safeguard City assets and restrict their use for business purposes.
- The *Acceptable Use of Communication Technology Administrative Procedure* requires employees to use communication technology professionally and responsibly for business activities.

However, we also found the following gaps in OCT's standards and procedures:

- The *Device Standards* do not include replacement rates for some types of IT hardware.
- OCT does is lacking some specific procedures for:
  - Providing IT assets to new employees
  - Returning IT assets from employees who leave their employment with the City
  - Redeploying IT assets to another user
- The documented roles and responsibilities for the Asset Management Office and asset users are not clear.

**MISSING REPLACEMENT RATES IN DEVICE STANDARDS**

The *Device Standards* provide information on the devices supported by OCT, including the device type, operating system, and replacement rates. Replacement rates set the frequency for asset replacement to ensure optimal performance and cost effectiveness.

We found that OCT specifies the device type and operating system for all IT assets, but does not specify replacement rates for some devices. The *Device Standards* define replacement rates for smartphones, tablets, Windows laptops, and Windows desktops. However, rates are not documented for:

- Peripherals, such as monitors
- Apple laptops and desktops

Without documented replacement rates, these types of IT assets may become outdated and require additional resources for IT support or repair.

**UNSPECIFIED IT ASSET PROCEDURES**

We found that OCT does not have some procedures specific to providing IT assets to new employees, returning IT assets from employees who leave, and redeploying IT assets to another employee.

**Procedures for Providing and Returning IT Assets**

Asset signout procedures help keep track of IT assets given to an asset user and termination notifications to the Asset Management Office for support both help make sure that assigned IT assets are returned when an employee leaves the organization.

Such procedures are not fully documented. For example, OCT does not have a procedure for new employees to sign off on the list of IT assets they received. If business areas are not doing this, supervisors might not be able to confirm that an ex-employee has returned all the assets that were assigned to them during their employment.

The lack of detailed procedures for returning assets when offboarding employees has led to the Asset Management Office



not always receiving termination notifications. Without this notification, the Asset Management Office cannot support supervisors with asset recovery activities.

### **IT Asset Redeployment Procedures**

IT asset redeployment is when an asset manager assigns an idle or underused asset to another user. These procedures are not fully documented. This has led to inconsistencies in whether asset managers let OCT know to update the asset management tool when they redeploy assets. Consequently, the asset management tool may have inaccurate asset information, such as asset user or location.

### **UNDOCUMENTED ROLES AND RESPONSIBILITIES**

OCT has documented roles and responsibilities for the asset managers. These are clearly communicated on the City's internal website and include:

- Ensuring that IT inventory records are kept current
- Making changes to the IT inventory
- Acting as the primary contact for the business area's hardware inventories, including asset replacement cycles, request for information, and purchases
- Maintaining and updating asset user profiles

However, OCT has not clearly defined and communicated roles and responsibilities for the Asset Management Office and asset users.

The Asset Management Office's internal procedures contain some information on their roles and responsibilities. However, this information is not available to others involved in IT asset management to understand the entire process.

Examples of Asset Management Office roles and responsibilities that asset managers or users may need to be aware of include who is responsible to:

- Oversee non-standard procurements (e.g., assess software and IT environment compatibility, propose any existing options available)

- Perform data wipes
- Perform a cost analysis to decide whether to repair or replace an asset
- Review and follow up on notifications when devices leave the country

For asset users, some of their roles and responsibilities are contained in several different documents or locations. This makes it more difficult for them to find the information and fully understand their responsibilities for IT asset management. Examples of unclear roles and responsibilities for asset users include whether they should:

- Notify the asset manager before they take a device out of the country
- Inform OCT of software subscription purchases, including if there is no charge or it is purchased using a corporate credit card

### WHY THIS IS IMPORTANT

Without complete asset management standards and procedures, including clear roles and responsibilities, the City's IT asset management processes may not be effective.

### RECOMMENDATION 1

Improve standards and procedures to clearly define roles, responsibilities, and processes for IT asset management.



#### Responsible Party

Branch Manager, Open City and Technology Branch



Accepted by Management

**Management Response**

OCT will perform a review of the existing set of asset management policies and standards. OCT will add or revise information and procedures to better define roles, responsibilities and processes for IT asset management as needed, including the specific examples highlighted by OCA in their report.

**Implementation Date**

September 30, 2024

# Improve Software License Data Accuracy

## KEY FINDINGS

OCT uses a software asset management tool to track information relating to all the software City staff use. It contains contract information, licensing details, licensing counts, and ownership details. As well, the software asset management tool scans all City devices and automatically removes selected software the asset user has not used in 90 days.

However, we found that the data in the software asset management tool is not updated in a timely manner. We found discrepancies between the actual number of licenses purchased and used by the City and the data in the software asset management tool. As well, the tool has inaccurate data for software subscriptions.<sup>3</sup>

## UNTIMELY UPDATE OF SOFTWARE LICENSE TOOL DATA

Software licenses allow organizations to provide a group of users access to the software. Up-to-date software license counts can help OCT monitor the compliance of their licensing agreements and identify the optimal number and types of licenses required based on usage.

### Traditional Software Licenses

Currently, OCT updates license counts manually in the software management tool, either when the contract is due for renewal or on an ad-hoc basis. This includes follow-up with the software provider to confirm actual software license numbers. The number of licenses in the tool is inaccurate until OCT updates the information and reconciles it to the renewed license contracts.

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<sup>3</sup> Software subscriptions allow users to access software on a subscription basis via the internet, instead of having it installed on their computer. Examples are Zoom and Survey Monkey.

We found instances where the software management tool shows more licenses used than purchased, suggesting that this data is inaccurate. For example:

- For QuestToad for Oracle, the software management tool shows the number of licenses City employees are using as 43 and the number the City has purchased as 0, which does not reflect actual purchased and used licenses.

### Software Subscriptions

We also found software subscription data is not current in the software management tool. For example:

- For Zoom Video Communications, the software management tool shows the number of licenses City employees are using as 0 and the number the City has purchased as 50, which does not reflect actual purchased and used licenses.

The tool itself does not have the technical capability to connect directly to subscription providers to automatically update data fields. Because of this, OCT has to follow up with the subscription provider to confirm the license numbers before manually updating software subscription information in the tool. This is done on an ad-hoc basis. As a result, the tool shows incomplete data for software subscription types.

### WHY THIS IS IMPORTANT

Software license tool data cannot be relied on to efficiently make informed decisions on software purchases, cancellations, or renewals.

### RECOMMENDATION 2

Maintain accurate software license data to efficiently manage inventory.



#### Responsible Party

Branch Manager, Open City and Technology Branch



Accepted by Management

#### **Management Response**

OCT will reallocate resources to assist in maintaining the currency of software license tool data. Additionally, OCT will implement an annual review process to verify that the high-risk software data is accurate. The review will highlight variances between the number of software licenses purchased and those used by City employees. OCT will follow up with software vendors when needed to ensure data is accurate and up-to-date.



#### **Implementation Date**

December 31, 2024

### **ACKNOWLEDGEMENT**

We would like to thank the staff in OCT and the business area IT asset managers for their cooperation during the audit.