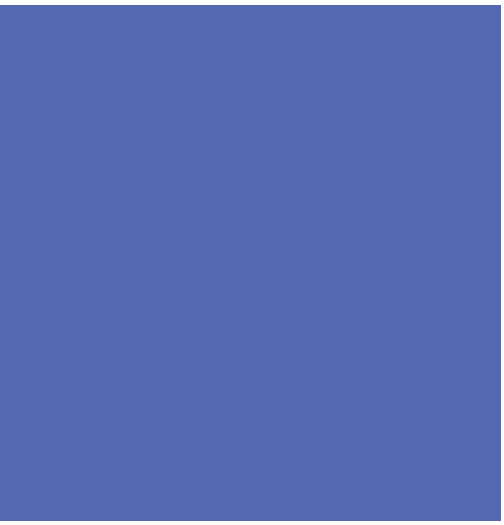
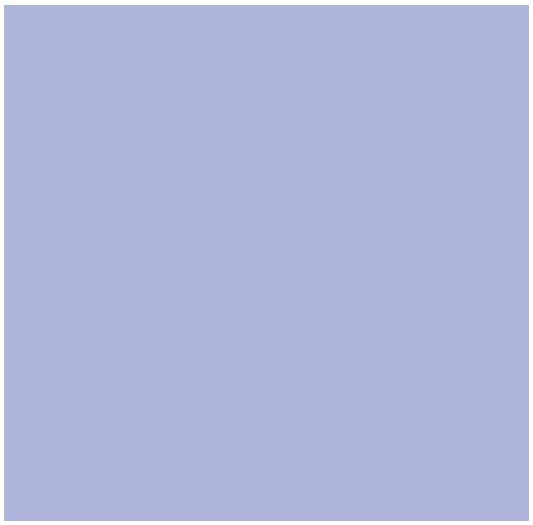
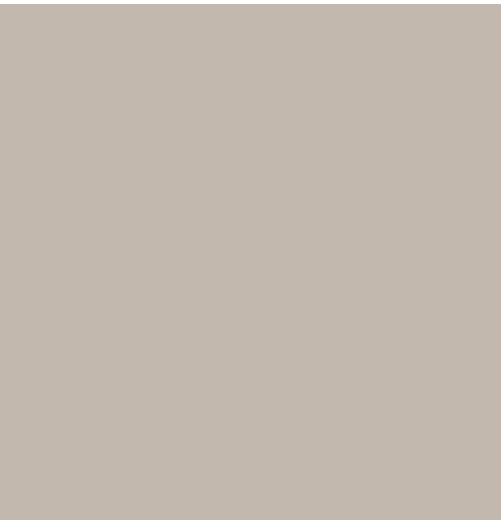
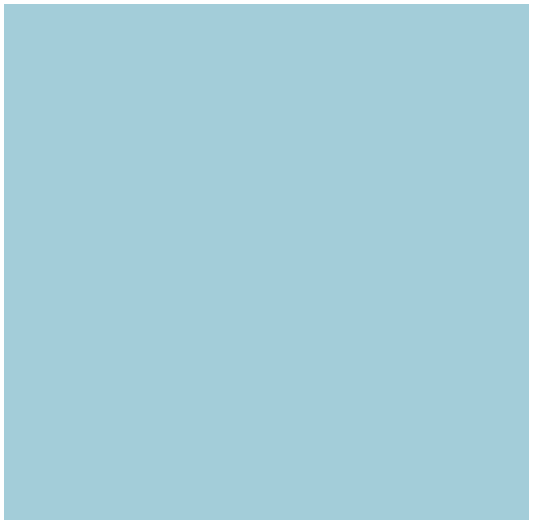
APRIL 2022

IT Asset Management Audit


City Internal Auditor's Office
City of College Station

FILE#: 22-01

Executive Summary

Why We Did This Audit

Effective information technology asset management (ITAM) keeps information updated, reduces waste, and improves utilization. It saves money by helping avoid unnecessary purchases and cutting licensing and support costs. Increased control also enforces compliance with security and legal policies and reduces risks. The positive implications on costs and productivity benefit the entire organization. Based on the direction given by the Audit Committee, an audit of ITAM was included in the Fiscal Year 2022 Audit Plan.

What We Found

There is room for the Information Technology (IT) Department to improve policies, procedures, and processes related to how technology assets are tracked and managed. Specifically, we found the following areas of potential improvement related to the purchasing, deployment, storing, and disposal of personal computers (PCs):

Purchasing records and processes need improvement. It is difficult to accurately identify PC purchases – which complicates tracking PCs throughout their asset life cycle. In addition, timely entry of the receipt of PCs into the City's financial system when they are delivered does not consistently occur. Finally, although most PCs are purchased centrally through IT, we identified a handful that were not and the justification for this deviation from City policy was not well-documented.

Asset tracking practices and tools are inadequate. The approach for tracking PCs does not account for assets that are not connected to the City's network. As a result, technology asset records maintained by IT did not reconcile with purchasing records. We found purchasing records of 191 PCs which were unaccounted for in IT's asset records.

Assets are not being efficiently deployed and managed. IT has not updated their ITAM related policies for several years. As a result, these polices do not reflect current IT processes and procedures. In addition, we found the following indicators that PCs are not being effectively deployed and managed across City Departments: (1) employees commonly being assigned multiple computers, (2) computers not being timely deployed to end-users, and (3) computers utilized by end-users that are well beyond their scheduled replacement dates.

Methods for maintenance and retirement of PCs could be enhanced. The City does not have adequate systems or processes to take a proactive approach to computer maintenance. In addition, the City's computer replacement and disposal processes are not timely, well-organized, and accurately recorded. The City's policy does not provide clear, precise timeframes for replacing and disposing of old assets. However, the data security risk of the disposed assets is low due to using data encryption and hard drive shredding practices.

Summary of Audit Recommendations

To address the audit findings, there are a few improvements the City could make to better track and manage its IT assets. They are encompassed in the following audit recommendations:

1. The City should develop a policy stating when it is appropriate to use a purchasing card to make technology purchases. In addition, a process should be developed to efficiently identify the purchasing records in Munis of all technology assets.

2. IT should develop a policy and procedure to inspect and receive ordered items in Munis when they are delivered.

3. There may be a business justification for a technology purchase to not be centralized. In these instances, the business justification for purchasing an item outside city policy should be clearly documented. Alternatively, the City could implement a policy establishing the criteria for when Departments are allowed to make their own technology purchases.

4 .The City should develop new strategies for tracking technology assets at every stage of the asset life cycle. In developing this strategy, the City should consider new systems, processes, and policies to plan for technology replacement efficiently and effectively.

5. To get the most output from technology assets, IT should be continuously evaluating user technology utilization through robust processes and systems. Once IT can accurately track and collect these data, they should update hardware standards, policies, and procedures to ensure these assets are being utilized efficiently and effectively – including timely deployment and replacement.

6. IT should develop policies and procedures for computer replacement and disposal which provide guidelines for (1) determining the disposal method, (2) improving documentation of replaced and disposed computer assets, and (3) providing objectives related to the timeliness of replacement, storage, and disposal.

Table of Contents

Introduction

The Office of the City Internal Auditor conducted this performance audit of the City of College Station's management of personal computer (PC) assets pursuant to Article III Section 30 of the College Station City Charter, which outlines the City Internal Auditor's primary duties.[1]

A performance audit is an objective, systematic examination of evidence to assess independently the performance of an organization, program, activity, or function. The purpose of a performance audit is to provide information to improve public accountability and facilitate decision-making.[2] Performance audits encompass a wide variety of objectives, including those related to assessing program effectiveness and results; economy and efficiency; internal control; compliance with legal or other requirements; and objectives related to providing prospective analyses, guidance, or summary information. A performance audit of information technology asset management (ITAM) was included in the Fiscal Year 2022 Audit Plan based on the direction given by the Audit Committee.

Audit Objective

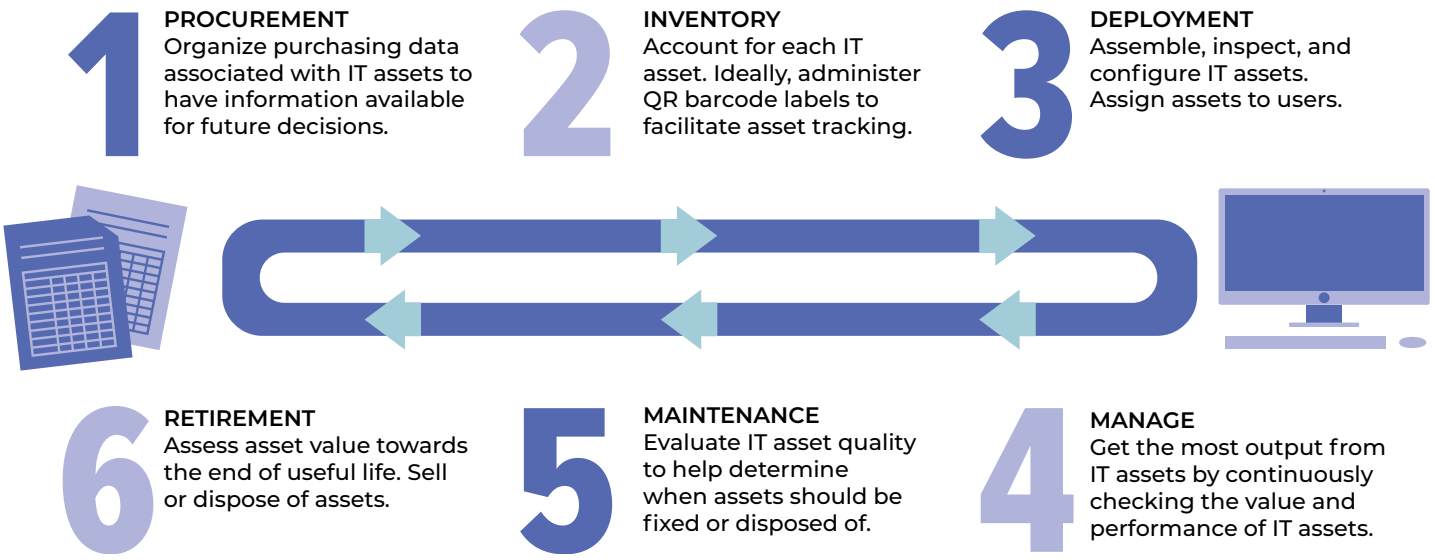
This audit aims to provide management with assurance that PC inventory and records are complete and accurate and to evaluate the internal controls throughout the PC life cycle.

Information Technology Asset Management Offers Significant Benefit

ITAM is the process of ensuring an organization's assets are appropriately accounted for, deployed, maintained, upgraded, and disposed. IT assets include hardware, software systems, or information the City of College Station values. This most commonly includes but is not limited to computer related hardware and software licenses.

IT assets have a finite period of use. To maximize the value the City generates from them, the IT asset lifecycle should be managed. This generally includes (1) procurement, (2) inventory, (3) deployment, (4) management, (5) maintenance, and (6) retirement (see **Figure 1** below). An important part of ITAM is applying a consistent process across all lifecycle stages to understand the total cost of ownership and optimize the use of assets.

Figure 1: IT Asset Life Cycle



Source: Roots Tim (2020), Asset Life Cycle Management: Stages to Success.

[1] *City of College Station, TX, "Code of Ordinances," § 30 (2017), 12.*

[2] *U. S. Government Accountability Office, "Government Auditing Standards 2018 Revision (GAO-18-568G)" (2018), 10–17.*

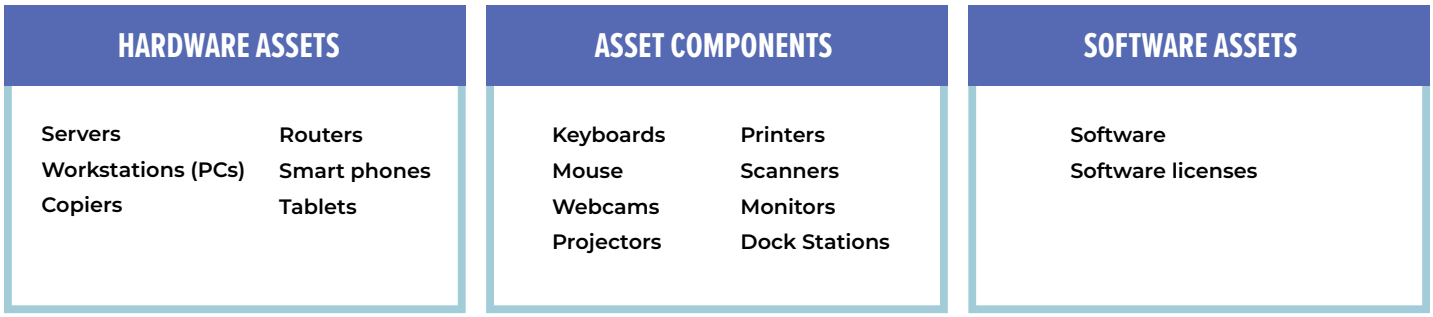
The primary goal of ITAM is to establish and maintain a centralized asset repository that contains a complete, current, and accurate inventory of all the IT assets in the City. This information helps City officials understand: (1) what systems and software exist, (2) where components reside, (3) how they are used, (4) what they cost, (5) to what they are connected, (6) the current phase of their lifecycle, and (7) how they impact IT and business services.

Best practices suggest leveraging ITAM processes, tools, and operational functions to drive long-term value and ITAM-related projects to make targeted improvements to the City's technology asset management maturity. Therefore, an effective ITAM function should include an asset management repository, data on both hardware and software components, and a set of processes for maintaining that data. At the most basic level, an ITAM function must perform the following activities: (1) asset discovery and data capture, (2) tracking asset changes, (3) asset-lifecycle management, and (4) asset reporting and alerting.

Our Review of ITAM Focused on City Personal Computers (PCs)

The City should be tracking and managing technology assets which have value, require ongoing support, or could create potential risk to the City if the necessary documentation that shows proper ownership or licensure is lacking. The first step in managing technology assets is to be able to identify every technology asset owned by the City. These assets are typically classified into three sections depicted below (see **Figure 2**).

Figure 2: Information Technology Asset Classification



Source: ManageEngine ServiceDesk Plus (2020), 7 Step Guide to IT Asset Management Success

Compared to all other IT assets, our preliminary review found that IT asset records, processes, policies, and procedures related to PCs[3] to be the best documented. Given this preliminary finding, we decided to focus our review on examining only PCs based on the following logic: if the City has not implemented ITAM principles to track and manage PCs, then the risk that these best practices are not being used to manage other technology assets is high.

[3]For the purpose of this report, personal computers (PC) refer to workstation, desktop computers, laptops, tablets, portable devices, and Toughbooks (which were all within the scope of our review).

Findings and Analysis

We examined each aspect of the asset life cycle for City of College Station PCs and compared the City's processes, policies, and procedures to ITAM best practices. This report summarizes our findings within each aspect of the technology asset life cycle: (1) procurement, (2) inventory, (3) deployment and management, and (4) maintenance and retirement.

The Process to Acquire PCs Could Be Improved

Our examination of the process by which PCs are acquired found a few areas of possible improvement. First, it can be challenging to accurately identify all technology purchases. Second, IT personnel do not always timely enter that they have received PCs into the City's financial system when they are delivered. Finally, although most PCs are purchased centrally through IT, we identified a handful that were not and the justification for this deviation from City policy was not well-documented.

It is difficult to accurately identify technology purchases. In an efficient and effective ITAM system, all technology purchases are easy to identify and reconciled to any technology assets at any stage of the asset life cycle. There are two ways IT purchases can be tracked. First, IT purchases are made either with a City credit card or through the purchase order (PO) process – thereby creating a record in the City's financial system (Munis). Because various accounts are used to acquire IT assets, compiling a complete list of all PC purchases through Munis can be challenging. Second, some PC purchases can be identified through vendor websites. Although data from vendor websites were helpful, relying completely on this data has the following disadvantages (1) it is limited to only certain vendors, (2) it is only able to access purchases made by the IT Department, and (3) it requires the asset's serial number which may not be available.[4]

***Risk (medium):** The full benefits of ITAM cannot be realized if purchasing records of all technology assets cannot be easily identified and reconciled to IT asset records. In addition, purchases made through the PO process generally have stronger internal controls than those made on City credit cards.*

***Recommendation:** The City should develop a policy stating when it is appropriate to use a purchasing card to make technology purchases. In addition, a process should be developed to efficiently identify the purchasing records in Munis of all technology assets.*

PCs are not always being timely received in Munis. Once an ordered computer is delivered by a vendor, IT personnel should enter the receipt quantity and amount as soon as possible in the City's financial system (Munis)[5]. The receipt of quantities ordered is part of the "three-way match" internal control of the accounts payable process. Three-way match in accounts payable allows you to match vendors' invoices with POs and received quantities of goods or services before the invoices are processed and paid. It automates the verification of these documents to ensure that an invoice should be paid.

We did not find any instances where invoices were paid prior to IT entering the receipt in Munis; however, there are still some risks associated with not timely entering the receipt of delivered items into Munis. Although Munis allows the user to receive separate quantities ordered as they are delivered, IT personnel often wait until all items on a PO are delivered before they make the receiving entry in Munis. As a result, computers are often deployed prior to the receiving entry being made.

***Risk (high):** Because IT currently does not have an asset management system capable of effectively tracking the asset through the entire life cycle of the asset, there is a risk that receipt information could be inaccurate. This could result in the City paying for technology assets which have not actually been delivered.*

***Recommendation:** IT should develop a policy and procedure to inspect and receive ordered items in Munis when they are delivered.*

[4]*On the Dell website, an account holder can also use purchase order number which can be helpful.*

[5]*Munis 2017.1 Manual, Receiving Training Manual, P.2*

Most PCs are purchased centrally through IT. We found 32 computers and iPads purchases between 2015 and 2021 which were not acquired by IT staff. To put this into perspective, we identified 1,996 PC purchases during this same period.

Per City policy, Departments are required to coordinate all technology or software-related purchase requests with the IT Department. Once reviewed and agreed upon, technology purchases should be initiated by the IT Department. This policy has the potential to help ensure that (1) acquired technology assets are compatible with City standards and existing infrastructure, (2) all costs are properly considered, (3) unnecessary duplication of capabilities is avoided, and (4) the proposed equipment or software does not interfere with the operation of existing systems or create any undue risk to City resources.

The value of the policy depends on the (1) efficacy by which it is being enforced, and (2) extent to which the other ITAM best practices have been implemented. The exceptions we found are described in **Table 1.**

Table 1: PC and iPad Purchases not Made by IT

Department	Make & Model	Purchase Date	Qty	Unit Price	Total Amount	Canceled Amount	Cancel Qty
Fire Department	HP Pavilion	1/21/16	1	430	430	-	-
Electric	Toshiba Satellite	2/23/16	1	1,030	1,030	-	-
Fire Department	Microsoft Surface	7/13/16	1	500	500	-	-
Fire Department	Apple iPad	1/21/16	1	590	590	-	-
Fire Department	Apple iPad	9/20/17	2	528	1,056	-	-
Finance	Apple iPad	1/7/22	1	330	330	-	-
Communications	Apple iMac	3/29/21	1	3,863	3,863	-	-
Electric	Dell XPS 15	12/14/21	1	1,799	1,799	-	-
Electric	HP EliteBook 850	7/14/16	2	1,796	3,592	3,592	2
Electric	IBM Lenovo ThinkPad	3/10/20	3	1,003	3,009	-	-
Electric	IBM Lenovo ThinkStation	1/27/21	9	1,203	10,831	-	-
Electric	IBM Lenovo ThinkStation	1/27/21	7	1,269	8,881	-	-
Electric	IBM Lenovo ThinkPad	1/27/21	2	1,283	2,567	-	-

Source: Purchase Orders obtained from Munis

***Risk (low):** Over 98% of computers purchased between 2015 and 2021 were centrally purchased by IT. Of the less than 2% that were purchased by other Departments, 78% were purchased by the Electric Department. Although there may be good justification for Electric or other Departments to operate outside the City's technology purchasing guidelines, this justification was not well documented in purchasing records we were able to identify.*

***Recommendation:** There may be a business justification for a technology purchase to not be centralized. In these instances, the business justification for purchasing an item outside City policy should be clearly documented. Alternatively, the City could implement a policy establishing the criteria for when Departments are allowed to make their own technology purchases.*

The Process to Account for PCs Inventory Has Room for Improvement

We found the City's IT assets tracking approach is not effective since it does not account for assets that are not connected to the City network. As a result, technology asset records maintained by IT did not reconcile with purchasing records.

Asset management practices and tools are inadequate to account for IT assets throughout their life cycle. Since April 2021, the City has used an ITAM solution called Lansweeper to gather hardware and software information of computers and other devices on the City's network. Although IT's utilization of this tool has resulted in significant improvement in their tracking of technology assets, the use of Lansweeper as the primary method to plan for computer replacement has limitations because it only tracks assets which have touched the City's network. Therefore, the following technology assets may not be accounted for through Lansweeper:

1. Assets which have been purchased and delivered but not yet deployed.
2. Assets which have been replaced but have not been timely disposed.
3. Assets which have been deployed but have not been used on the City's network.

Given the limitations described above, we found that identifying all technology assets within the City's current system and processes is time-consuming, labor-intensive, and incomplete.

IT does not have accurate and complete records of deployed PCs. This is confirmed because PC purchases do not perfectly reconcile to IT asset records. Documentation obtained from the City's financial system (Munis) appears to indicate that there were significantly more purchases of PCs than what can be identified through asset records maintained by IT.[6] **Table 2** summarizes these results.

Table 2: Asset Purchases That Do Not Reconcile to IT Asset Records (rounded to hundredth)

Make & Model	Qty	Estimated Unit Purchase Cost			Estimated Total Purchase Cost		
		Average	Min	Max	Average	Min	Max
Apple iMac	2	5,400	3,900	6,800	10,800	7,800	13,600
Apple iPad	16	700	300	2,000	11,200	4,800	32,000
Apple MacBook	1	2,500	2,300	2,800	2,500	2,300	2,800
Dell Latitude	28	1,400	1,000	2,300	39,200	28,000	64,400
Dell Optiplex	16	700	700	1,000	11,200	11,200	16,000
Dell Precision	3	1,800	1,000	2,500	5,400	3,000	7,500
Dell XPS	1	1,900	1,800	2,000	1,900	1,800	2,000
HP EliteBook	51	1,300	800	3,000	66,300	40,800	153,000
HP EliteDesk	28	800	700	1,000	22,400	19,600	28,000
HP Z4 Workstation	6	1,800	1,800	1,900	10,800	10,800	11,400
HP Zbook	3	2,100	1,600	2,900	6,300	4,800	8,700
IBM Lenovo	20	1,200	1,000	1,300	24,000	20,000	26,000
Microsoft SurfaceBook	6	1,500	500	2,500	9,000	3,000	15,000
Panasonic Toughbook	10	3,500	2,500	4,600	35,000	25,000	46,000
Total:	**191**	**26,600**	**19,900**	**36,600**	**256,000**	**182,900**	**426,400**

Source: Purchase Orders obtained from Munis

[6]*Although Lansweeper is the primary repository of technology asset records, we were also able to obtain some records from vendor websites.*

Potential causes for the results summarized in **Table 2** are as follows:

- Dell, HP, and Microsoft computers make up 74.3% of the computers summarized in Table 2. These computers were either (1) disposed without having adequate documentation of the disposal, (2) deployed without having ever logged onto the network, or (3) lost or stolen.
- Apple products, summarized in **Table 2**, make up 10% of the computers. Apple products cause issues with the City's network due to their platform security and operating system. As a result, IT has made a business decision to not have these computers connected to the City's network.
- IBM Lenovo computers make up 10.5% of the computers summarized in **Table 2**. These computers were purchased by the Electric Department for their SCADA system, which manages the City's electric utility infrastructure. To protect from the threat of cyberattack on this critical infrastructure and to comply with federal energy regulations, these computers are not on the City's network.
- Panasonic Toughbooks make up 5.2% of the computers summarized in **Table 2**. As of January 2022, we were able to identify 97 Toughbooks purchased between 2017 and 2021. Ten of these computers were purchased in 2017. Given the nature and use of these computers, it is not unreasonable to assume that 10 Toughbooks were disposed of slightly before their planned replacement (i.e., 5-year useful life).

***Risk (high):** The risk that technology assets are lost, stolen, or non-optimally utilized significantly increases if technology assets cannot be tracked efficiently and accurately. There are also potential risks related to data security if technology assets fall into the wrong hands. These security risks are somewhat mitigated due to City computers being locked out of the system if they have not logged onto the City's network in the past 90 days.*

***Recommendation:** The City should develop new strategies for tracking technology assets at every stage of the asset life cycle. In developing this strategy, the City should consider new systems, processes, and policies to plan for technology replacement efficiently and effectively.*

Deployment and Management of PCs Could Be Improved

Because technology rapidly changes, the City should be frequently reviewing and updating computer hardware standards. When done effectively, these policy and procedures updates are based on information obtained through proper analysis of how PCs are deployed and utilized throughout the City.

The City's hardware standards, policies, and procedures need to be updated. The Department of Information Technology end-user hardware and software standards for all City users of PCs are documented in a policy last updated in 2016. Some of the stated goals of these standards are as follows: (1) Aid in the alignment, consistency, and modernization in the selection and design of business solutions across the City. (2) Control costs associated with software licensing and maintenance, hardware, services, training, and integration. (3) Ensure designated technology will be supported by IT as applicable, and that the selection is in alignment with IT goals, objectives, and strategic direction. (4) Reducing the number of platform configurations in use to enable allocated resources to better support the information systems under management.

The benefits which can be achieved when ITAM best practices are implemented align with these stated objectives. However, the City's hardware standards need to be updated. Not only do they reference hardware that is no longer acquired but it also is deficient in some areas. For example, it lacks (1) an inventory management policy, (2) criteria specifying exceptions to policy, or (3) a deployment and maintenance strategy.

There are indicators that PCs are not being efficiently deployed and managed. For example, we found the following: (1) employees commonly being assigned multiple computers, (2) computers not being timely deployed to end-users, and (3) computers used by end-users that are well beyond their scheduled replacement dates.

1. *Employees assigned multiple computers.* We identified 52 employees assigned more than one computer when the assigned computers were still within the 3-year warranty date. However, there are several active computers on the system that fall out of this range. Therefore, the actual number of users with more than one assigned computer is likely much larger. Within the past year, IT has implemented an informal strategy of replacing desktops with laptops with the goal of reducing the number of employees assigned to multiple computers.

2. *Computers not timely deployed.* Adequate records to determine the length of time it takes for computers to be deployed to end-users are not available for most currently deployed PCs. However, we were able to analyze the deployment of 142 Dell computers–which are among some of the most recent computer acquisitions. Of these computers, 42 had been deployed while 100 were sitting in storage waiting to be deployed (as of February 2022). For the 42 computers which had already been deployed, only 1 computer took longer than 2 months to be deployed. For the 100 Dell computers waiting to be deployed, there were 10 which had been sitting in storage for over three months (see **Table 3** below for a more detailed breakdown). It takes on average approximately 10 days to deliver items to the buyer after it is shipped, and three-year warranties on these computers begin once they are shipped. The primary causes of these delays are the prioritizing service requests on deployed computers and the inefficiency of the deployment process.

Table 3: Dell Computer Deployment
(Time between date delivered and date first seen in Lansweeper)

	Deployed			Not Deployed		
Range (In Days)	Number of Computers	Percent of Total	Average Days	Number of Computers	Percent of Total	Average Days
91 to 120	0	0%	0	10	10%	110
61 to 90	1	2.4%	64	18	18%	77
31 to 60	26	61.9%	47	71	71%	47
1 to 30	15	36.7%	17	1	1%	24
Total:	**42**	**100%**	**37**	**100**	**100%**	**58**

Source: Dell Website and Lansweeper as of 02/24/22

3. *Computers not timely replaced.* Excluding the Panasonic Toughbooks used primarily in public safety vehicles, City policy dictates that computers should be replaced every four years. As of February 24, 2022, there are 245 City computers which appear to not have been timely replaced. A breakdown of these computers categorized by the year in which they were purchased is detailed in **Table 4**. Most of these computers seem to be actively used by employees across City Departments.

Table 4: Deployed Computers Purchased Prior to 1/1/18

Date Last Seen in Lansweeper				Breakdown by Computer Category			
Purchase Year	9/2021 – 12/2021[7]	1/2022	Total	Assigned to Employees	Not Assigned[8]	Locked per Policy	Total
2011	1	2	3	2	1	0	3
2012	1	0	1	1	0	0	1
2013	1	3	4	1	2	1	4
2014	0	13	13	12	1	0	13
2015	2	21	23	19	2	2	23
2016	9	53	62	61	0	1	62
2017	15	124	139	102	25	12	139
Total:	**29**	**216**	**245**	**198**	**31**	**16**	**245**

Source: Lansweeper as of 02/24/22 includes HP, Dell, Lenovo PCs

Risk (high): *Capturing and analyzing data related to technology assets is essential to developing appropriate hardware and software standards, policies, and procedures. Because IT does not track assets throughout their entire life cycle, they are unable to effectively analyze the effectiveness and efficiency of asset acquisition and deployment across the entire City. This has resulted in computer assets not only being deployed untimely but also not being timely replaced.*

Recommendation: *To get the most output from technology assets, IT should be continuously evaluating user technology utilization through robust processes and systems. Once IT can accurately track and collect these data, they should update hardware standards, policies, and procedures to ensure these assets are being utilized efficiently and effectively – including timely deployment and replacement.*

Deployment and Management of PCs Could Be Improved

The City does not have adequate systems or processes to take a proactive approach to computer maintenance. In addition, the City's computer replacement and disposal processes are not timely, well-organized, and accurately recorded. However, the data security risk of the disposed assets is low due to using data encryption and hard drive shredding practices.

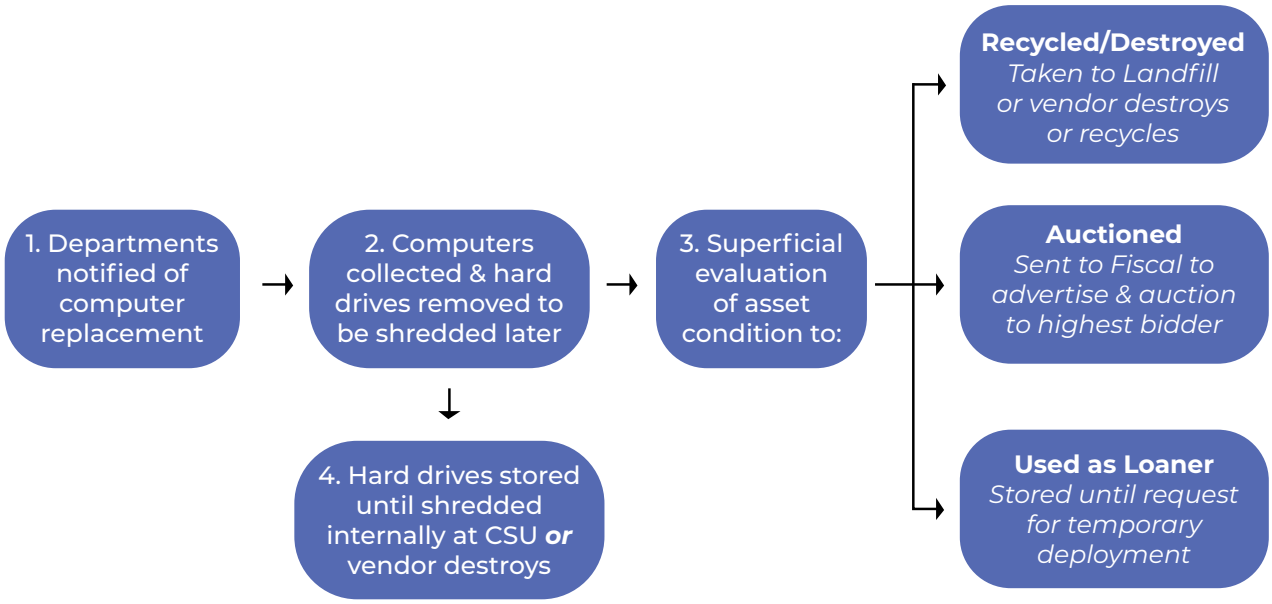
IT's ability to maintain technology is largely reactive. Computers connected to the City's network receive periodic software updates to reduce security vulnerabilities, to fix bugs or crashes, and to ensure compatibility with other updated technologies. Outside of these periodic updates, maintenance technology assets appear to be mostly reactive. Issues with software or hardware are reported by end-users through IT's ticketing system. IT's system and processes are not currently designed for proactive monitoring – which means identifying potential issues within IT infrastructure and applications before users notice and complain and initiating actions to avoid the issue from becoming user noticeable and operational impacting.

[7] *Only one PC was last time seen in April 2021*
[8] *Examples of computers not assigned to employees include workstations in the College Station Library, Fire Stations, Emergency Operation Center, Utility Substations, HR Training room, CMO meeting room, and Dispatch.*

IT does not maintain an accurate replacement schedule for major technology assets. According to City policy, IT should be centrally managing and budgeting for the replacement and maintenance of technology assets citywide. The purpose of replacement schedules is to balance both the business needs and budget capacity of the City. According to current policy, Panasonic Toughbook computers (primarily utilized in public safety vehicles) should be replaced every five years while all other computers should be replaced every four years.

City policy dictates that IT is responsible for disposing of technology assets. According to City policy, computers should be replaced regardless of their condition at the end of their predetermined useful lives. The replacement schedule is generated from the Lansweeper dataset, and the process is initiated and managed fully by IT. Departments, only in rare cases, request the replacement of damaged assets through IT's ticketing process. **Figure 3** describes the IT asset replacement and disposal process.

Figure 3: IT Asset Replacement of Disposal Process



Source: Interviews with IT staff and asset disposal guideline

IT should ensure timely, transparent, and cost-efficient disposal of computer assets. According to City policy, technology assets should be disposed of in one of five ways: (1) recycled, (2) auctioned, (3) traded-in, (4) destroyed, or (5) donated to charity. IT is responsible for choosing the most cost-effective and environmentally friendly method to dispose of technology assets. However, IT does not have clearly defined procedures to determine the most optimal disposal method. For example, we found that (1) the condition of replaced computers are not evaluated upon return, (2) asset disposals are often untimely, (3) disposal records are incomplete, and (4) disposal method determinations are inconsistently applied. **Table 5** summarizes how IT managed 2019 to 2021 replaceable assets.

Table 5: PC Replacement Process

Scheduled Replacement	Auctioned	Recycled/ Destroyed	Still in Use	Stored	Unidentified	Total
2019	6	21	12	20	140	199
2020	2	24	7	16	96	145
2021	0	0	143	12	36	191
Total	**8**	**45**	**162**	**48**	**272**	**535**

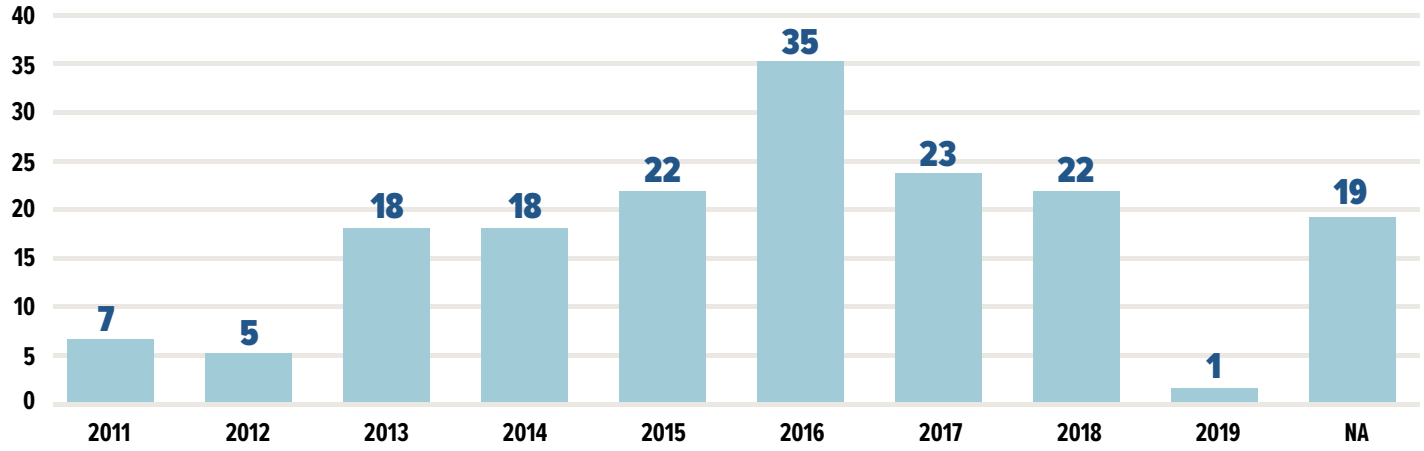
Source: Multiple data sources obtained from IT and through conducting assets inventory

Replacement and disposal records are incomplete and inaccurate. Between 2019 and 2021, IT planned to replace 535 computers that were purchased before 2018. Replacement records do not indicate which assets were auctioned, recycled/destroyed, or kept in the storage. In addition, we found that systems and processes for tracking computer replacement and disposal to be inadequate which resulted in inaccurate or incomplete records. Therefore, we were unable to verify the disposal of 272 computers from the replacement schedule.

We were unable to verify an adequate chain of custody process when computers are replaced and collected for disposal. The only document that confirms whether the asset was returned to the IT department is the replacement schedule. However, we also identified at least 13 computers[9] actively being used by Departments when IT records appeared to indicate that they had been replaced and returned to IT. Moreover, IT does not have guidelines that would define how long Departments are allowed to keep old computers after replacing them with new ones.

Computers are not being timely disposed. As of January 2022, we found 309 computers and tablets in storage waiting to be disposed. Only 121 of those assets were documented on the replacement schedules between 2019 and 2021. We were unable to identify the exact purchase year of all these assets. However, a breakdown of HP computers stored for disposal can be seen in **Figure 4**.

Figure 4: HP Computers Stored for Disposal by Purchase Year (as of January 2022)



Source: Asset inventory results and HP website

Shredding of hard drives does not occur timely. IT removes hard drives from all computers identified for disposal. Hard drives are stored until they are either shredded internally by IT personnel or a vendor is employed to perform this service. In both cases, IT creates a list of shredded or physically destroyed hard drives. However, since there was no complete list of owned hard drives, we were not able to confirm whether the records of shredded hard drives were complete. Besides, IT does not have a policy that would define the timeline of hard drive physical destruction. We discovered multiple boxes of hard drives in the storage room that were not accounted for by IT.

***Risk (low):** Although there is a risk that computers scheduled for disposal can be lost or stolen, the value of these assets may be immaterial due to their age.[10] Therefore, data security is a greater potential risk. However, these risks are mitigated because IT encrypts the hard drive of all City computers. In addition to encryptions, IT physically destroys hard drives to avoid data leakage from the City.*

***Recommendation:** IT should develop policies and procedures for computer replacement and disposal which provide guidelines for (1) determining the disposal method, (2) improving documentation of replaced and disposed computer assets, and (3) providing objectives related to the timeliness of replacement, storage, and disposal.*

[9]*We verified that these 13 computers are not being used as loaner computers.*

[10]*On average, PCs are sold on auction for less than $100.*

Scope

The City Internal Auditor's Office conducted this performance audit in accordance with Generally Accepted Government Auditing Standards (GAGAS). Those standards require that the audit team 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.

Audit fieldwork was conducted from November 2021 through February 2022. The audit scope encompassed PC inventories and IT asset management practices in place as of February 2022. More precisely, we studied all deployed PCs as of February 24, 2022, PC purchase transactions from 2015 to 2022, stored PCs as of January 31, 2022, and replaced and disposed computers between 2019 and 2021. The audit's focus is on systems and practices used in the governance, management, control, and oversight of PCs throughout their lifecycle.

Methodology

To meet the audit objective, we performed the following steps:

- Researched leading practices related to ITAM.
- Reviewed policies and procedures related to ITAM and compared them to the best practices.
- Interviewed staff from the IT Department to obtain a detailed understanding of their ITAM practices.
- Performed data analytics, by combining data from applicable sources such as Munis, PC manufacturers' official websites, and the IT Department to identify inaccurate records and opportunities for improvements.
- Performed walkthroughs of PC acquisition, deployment, storing, and retirement processes to gain an understanding of the function and to evaluate the design and effectiveness of the processes and internal controls. More precisely, we performed a detailed analysis of the mentioned areas and created corresponding asset records:

    - **Acquisition** – created the list of all PC purchases made on a pcard and on a Purchase Order (PO) by IT and other Departments from 2015 to 2022. To identify the number of missing PCs, we reconciled the obtained list with deployed, stored, and disposed PCs' datasets. To check the completeness and accuracy of the created list of Dell PC purchases made from 2020 to 2022, we compared it with the purchases data generated from the Dell website.

    - **Deployment** – to check the timeliness of the PC deployment, we compared the actual delivery dates to the date when PCs first time were connected to the City network. We did this test for selected Dell computers deployed since April 2020.

    - **Inventory** – conducted a physical inventory of the PCs kept in old and new storage rooms and created the inventory records as of January 27, 2022 and January 31, 2022, respectively.

    - **Replacement and Disposal** – analyzed 2019-2021 PC and MDT replacement schedules and created from these datasets the list of potentially disposed assets by reconciling it with existing incomplete disposed asset records, and also, with stored, deployed, and auctioned datasets. Besides, analyzed in more detail old assets auction practices.

Appendix A: Management Response Summary

The following summarizes the recommendations issued throughout this report. The auditors found that staff and the Department were receptive and willing to make improvements to controls where needed. Management has provided their response to each recommendation.

Management Response Summary

Risk: Medium	1. The City should develop a policy stating when it is appropriate to use a purchasing card to make technology purchases. In addition, a process should be developed to efficiently identify the purchasing records in Munis of all technology assets.	Concur	**Expected Completion:** 1/1/2023
Plan of Action:	IT and Fiscal Services will coordinate to develop policies and procedures to provide a clear roadmap for departments purchasing technology with a purchasing card.		**Responsibility:** Chief Information Officer
Risk: High	2. IT should develop a policy and procedure to inspect and receive ordered items in Munis when they are delivered.	Concur	**Expected Completion:** 10/1/2022
Plan of Action:	IT will develop an internal procedure for inspection and receiving items purchased using the Munis system.		**Responsibility:** Chief Information Officer
Risk: Low	3. There may be a business justification for a technology purchase to not be centralized. In these instances, the business justification for purchasing an item outside City policy should be clearly documented. Alternatively, the City could implement a policy establishing the criteria for when Departments are allowed to make their own technology purchases.	Concur	**Expected Completion:** 10/1/2022
Plan of Action:	IT will coordinate with all department heads and CMO and identify specific circumstances where a department can purchase technology items without involvement of IT.		**Responsibility:** Chief Information Officer
Risk: High	4. The City should develop new strategies for tracking technology assets at every stage of the asset life cycle. In developing this strategy, the City should consider new systems, processes, and policies to plan for technology replacement efficiently and effectively.	Concur	**Expected Completion:** FY24
Plan of Action:	The IT department will pursue a software solution with the ability to track and manage the entire life cycle of each asset. IT policies and processes will be updated and or developed to ensure the visibility and insight of each IT asset.		**Responsibility:** Chief Information Officer

Risk: High	5. To get the most output from technology assets, IT should be continuously evaluating user technology utilization through robust processes and systems. Once IT can accurately track and collect these data, they should update hardware standards, policies, and procedures to ensure these assets are being utilized efficiently and effectively – including timely deployment and replacement.	Concur	**Expected Completion:** FY25
Plan of Action:	IT will use the same IT Asset Management system for asset lifecycle tracking to measure asset utilization. Future asset purchases can be based on historical usage of the asset. Historical usage can be used to develop appropriate hardware standards for expected future needs.		**Responsibility:** Chief Information Officer
Risk: Low	6. IT should develop policies and procedures for computer replacement and disposal which provide guidelines for (1) determining the disposal method, (2) improving documentation of replaced and disposed computer assets, and (3) providing objectives related to the timeliness of replacement, storage, and disposal.	Concur	**Expected Completion:** FY24
Plan of Action:	IT will coordinate with Fiscal Services to develop policies and procedures with the goal of improving asset disposal tracking. These policies and procedures will also include the lifecycle tracking capabilities in the IT Asset Management system to be purchased in FY24.		**Responsibility:** Chief Information Officer

The Office of City Internal Auditor was established in accordance with the City of College Station Charter as an independent office reporting to City Council to help establish accountability and improve City services. The Office of City Internal Auditor is responsible for conducting performance audits of Departments, offices, boards, activities, and agencies of the City and providing recommendations for improvement.

Audit Team

Ty Elliott
City Internal Auditor

Ana Mazmishvili
Assistant City Internal Auditor

Tarek Natsheh
Internal Audit Intern

City Auditor

Ty Elliott

Office of the City Internal Auditor

979.764.6269
telliott@cstx.gov
cstx.gov/AuditReports

cstx.gov/AuditReports

CITY OF COLLEGE STATION
Home of Texas A&M University®