Seattle Office of City Auditor

MEMORANDUM

Date: December 11, 2020

To: Saad Bashir, Chief Technology Officer, Information Technology Department

From: David G. Jones, Office of City Auditor

RE: Follow Up on Recent Loss Reports filed by the Information Technology Department

How This Loss Report Follow Up Project Came About

The City-Wide Accounting (CWA) Division of the Department of Finance and Administration Services (FAS) requires the Information Technology Department (ITD) to conduct an inventory of their deployed assets every two years. ITD conducted this inventory during fourth quarter 2019. The inventory resulted in several Loss Reports for assets ITD could not find. Our office is supposed to receive copies of every Loss Report filed in the City. We received several Loss Reports submitted by ITD in late 2019 and one in 2020, which documented the status of equipment ITD reported as "Missing" in the fourth quarter 2019 inventory. We did some work to follow up on these Loss Reports because they reported the loss of over 1,000 assets.

Summary of Results

After ITD's submission of its loss reports in late 2019, it did work to verify their accuracy, which resulted in ITD finding many of the items initially reported as Missing. We make eight recommendations that would improve ITD's management of assets; ITD indicated that they concurred with the recommendations.

Chronology of ITD Loss Reports

- **Network Equipment –** Loss Report submitted on November 21, 2019 for 30 missing assets.
- **Small Attractive Assets (i.e., laptops/tablets/iPads)** – Initial Loss Report covering all deployed Small Attractive Assets was submitted on December 20, 2019 reported 1,058 items as missing with a cost of $1.585 million.
  - ITD then did more work to locate the items reported as Missing and found most of them.
    - ITD submitted a revised Loss Report on April 23, 2020 that reduced the number of Small and Attractive Asset items reported as Missing from

1,058 to 160 that were purchased between 2014 and 2016 with a cost of over $211,000.

- ITD submitted another revised Loss Report on June 20, 2020 that categorized 46 more items as Missing that were purchased between 2017 and 2019 with a total cost of about $86,000. This increased the total of reported Missing items to 206.

- On June 12, 2020, ITD submitted a list of 70 items purchased between 2014 and 2016 that they had found after the submission of the April Loss Report. This reduced the total number of Small Attractive Assets reported as Missing to 136 with a cost of about $184,000.

Description of Work Performed

- We interviewed key members of management from two ITD divisions, Network Services and Frontline Digital Delivery Services, about the procedures they follow for tracking and recording inventory equipment.

- We interviewed the ITD Asset Management Manager about procedures for receiving equipment, recording and tracking inventory, managing inventory warehouses, fulfilling orders for end-users, and surplus procedures.

- We interviewed ITD Accounting officials about the inventory audit of deployed Network Equipment and Small Attractive Assets. We also interviewed ITD Accounting about the annual physical count of the inventory in ITD's warehouses and the inventory held at a third-party warehouse. We reviewed ITD's documentation of their latest physical warehouse count, conducted in 2019.

- We interviewed the ITD manager whose team is responsible for ITD's asset management system project.

- We interviewed the FAS Surplus unit management about procedures for declaring ITD equipment as surplus.

- We reviewed and analyzed the data in the Loss Reports.

Inventory Processes, Observations, and Recommendations

ITD Equipment Workflow and Inventory Management

When ITD needs to purchase equipment for purchase request fulfillment, the group that needs it completes a request in Service Hub or, for non-standard items, completes a Purchase Intake Request (PIR). Requests are reviewed by IT Asset Management; approved requests are sent to the ITD Purchasing Team. Purchasing submits a Purchase Order (PO) to the vendor. The vendor ships the equipment to one of the following locations: 1) ITD's Supply Room warehouse in the Seattle Municipal Tower (SMT), 2) the secondary ITD warehouse on Rainier Avenue, 3) a third-party warehouse called Denali, or 4) to a pre-specified customer location. ITD purchases deployment and integration services from Denali to receive, store, tag, and deliver hardware to

ITD for fulfillment to customers. This is hardware that ITD usually orders in large quantities. The received equipment is tagged with a City asset number when it arrives at the ITD or Denali warehouses. ITD Asset Management records computer equipment in the IT service hub Configuration Management Database (CMDB).   If the cost of the item is $5,000 or more, ITD Accounting records it as a capital asset in the City's Fixed Assets system, which is a module of Peoplesoft 9.2. When a customer needs equipment that is kept in on-hand inventory stock, the applicable ITD group completes a Material Request (MR) form to get it staged for pickup from the warehouse. An ITD Deployment Team picks up the item(s) and delivers and installs it at the end-user's location. ITD uses a service management system, called Service Hub, to facilitate the fulfillment of purchase requests.

Small Attractive Assets Inventory Management

Small Attractive Assets that are kept in on-hand inventory stock are recorded in a software application called Facilities Center (FC). One of the ways ITD uses FC is to track the inventory stock levels for frequently used Small Attractive Assets so they know when to reorder stock. Most of these Small Attractive Assets are delivered from the vendor to Denali's warehouse. ITD Asset Management requests deliveries from Denali when the inventory stock in ITD's Supply Room warehouse is getting low.

When an end-user requests a Small Attractive Asset by submitting a purchase request, ITD Asset Management creates a Service Request ticket or processes one that is submitted directly into the IT Service Hub to record the purchase request, and as needed, initiate purchasing or a stock pull and the ensuing tasks, which include tracking receiving, tagging, updating inventory, payment or chargeback to the end-user, and deployment. Asset Management updates CMDB to show that the asset has been assigned to a department and a user. CMDB is part of Service Hub and is used to track the status of Small Attractive Assets. It should be noted that CMDB was only created in 2018 after the information technology functions in the City were consolidated in 2016 and ITD assumed responsibility for tracking all the City's technology assets. The Manager of ITD Asset Management told us that some of the CMDB data for assets purchased before 2017 is not complete because ITD had to compile the inventory data from several sources (i.e., vendor purchasing records, department inventory lists, physical inventories, and device management tools), which had inaccuracies built into them. However, ITD Finance reported that this is being cleaned up as part of the 2019 physical inventory effort.

Network Equipment Inventory Management

ITD Asset Management enters Network equipment into FC when it is received at the warehouse so they can keep track of what inventory is on-hand and available to fulfill orders. When the Network equipment is deployed, ITD Facilities enters the items by their serial numbers into a few different tracking systems so they can keep track of where things are. ITD management said there is no integrated inventory management system for Network equipment. The various

tracking systems for Network equipment do not tie into the purchasing, inventory accounting, or order fulfillment systems. This results in lots of manual data input, which is inefficient and leads to data inconsistencies. ITD is currently working on addressing this issue with a system project that is underway. This project will integrate asset management for Network equipment and other ITD asset categories with its Service Manager system. ITD estimates they will begin work on the project phase that deals with Network equipment by the beginning of 2021.

Recommendation #1: The Information Technology Department (ITD) should implement the planned IT Service Management Asset Management (ITAM) module that will provide asset management functionality for Network equipment. After this is completed, ITD Asset Management should ensure all Network equipment is accurately recorded in ITAM.

ITD Response: The IT Asset Management and Network Services teams recognize the need to integrate service request and incident workflows into the ITAM to record the accurate disposition of assets. Also, to integrate monitoring and detection tools into the ITAM to maintain accurate inventory statuses in an automated way.

ITD Inventory Audits - Process and Results

Audit of Deployed Assets

The 2019 fourth quarter inventory audit of ITD's deployed assets was conducted by ITD Accounting, Asset Management, Network/Infrastructure, and Seattle Channel. The audit refers to "deployed assets" for equipment that has been deployed from inventory stock and put into service with an end-user. ITD selected a random sample of 3% of the assets to verify their existence and location. ITD Asset Management used a host of software tools to help with the asset verification effort.

Asset Management said they used network scanning and device management tools (i.e., InTune and SCCM) to verify the Small Attractive Assets. Network Services said they use SolarWinds software to monitor network devices. SolarWinds will discover the network device, record the serial number of the device, and monitor the device using "Ping." If the device goes down SolarWinds will send an alert via email/Page. ITD can search SolarWinds for a device by its serial number and the software will report the device location if it is on the network. In addition to using software tools, ITD reported that they followed up with emails, phone calls, and sometimes physical visits to the location of the asset. The Seattle Channel physically verified all its technology assets.

Inventory Audit Results for Deployed Small Attractive Assets

Assets Reported as Missing - ITD is currently reporting a total of 100 items with a cost of $155,000 as Missing for Small Attractive Assets that were recorded in CMDB as five years old or less in age. The departments that have the largest number of Small Attractive Assets recorded as

Missing and less than five years old in age are ITD, Parks and Recreation, and the Seattle Department of Construction and Inspection (SDCI). However, ITD has continued to locate Small Attractive Assets reported as Missing. ITD may continue to locate more of the remaining Small Attractive Assets reported as Missing.

ITD also reported many Small Attractive Assets as Missing that are listed as five years old or older in the Loss Reports. Because five years is the age at which ITD proactively replaces this type of equipment, the ITD Director of the Frontline Digital Services Division thought it was most likely that either these older devices had been declared surplus without the records being properly updated or that they had been put in storage somewhere. Whatever the case, ITD officials believe these older devices would have little value because they are older than their life expectancies.

Primary User Recorded as "Unknown" - Of the 100 Small Attractive Assets currently reported as Missing and recorded as less than five years old, 68 are recorded in CMDB with "Unknown" for the primary user. The cost for these 68 items totaled about $104,000. The departments with the largest number of items reported Missing with an "Unknown" primary user are ITD, Parks, and SDCI. As noted above, part of this issue could be because CMDB wasn't created until 2017 after the City's consolidation of information technology functions. ITD inherited some inaccurate data that was input to CMDB.

Recommendation #2: The Information Technology Department (ITD) should continue searching for the Small Attractive Assets reported as Missing that are less than five years old.

Recommendation #3: The Information Technology Department (ITD) should review their procedures for tracking deployed Small Attractive Assets and ensure the "Primary User" is consistently recorded accurately in the Configuration Management Database (CMDB).

ITD Response: We acknowledge these recommendations and have developed an inventory verification process to 1) inform our departments of their inventory 2) communicate the IT Asset Management validation process using device management / monitoring / detection tools, 3) initiate outreach to the last known users of items that we were not able to validate using tools to personally validate the existence of the asset 4) report back the assets that were not validated using the previous methods to the owning department to perform their own validation or submit a lost / stolen report.

Inventory Audit Results for Deployed Network Equipment

ITD Accounting randomly selected the audit sample for deployed Network equipment from the Peoplesoft Fixed Assets system. However, assets are only recorded in Peoplesoft if they are worth $5,000 or more. This meant that the audit population used for the sample excluded Network equipment that was worth less than $5,000. Once the audit sample was selected, ITD

Accounting and ITD Asset Management worked with the three primary Software Analysts to verify whether the Network equipment assets were in the City's custody.

Assets Reported as Missing - ITD reported a total of seven Network equipment assets (i.e., switches and modules) as missing that were less than five years old. ITD management estimated the total cost of these seven assets to be about $122,000. Four of the seven items reported as Missing were purchased in 2018 and did not have a City asset number. The Network Manager believes that several or all the items are still in service in the City's network, but he has not been able to use their serial numbers to locate them.

ITD also reported many Network assets as Missing that were five years old or older. But, because five years is the age at which ITD told us they replace this type of equipment, these Missing items are not as valuable as newer items. For these older items, the Network Operations Manager said it is most likely that they were either "cannibalized for parts" or declared surplus without the records being properly updated.

Recommendation #4: The Information Technology Department (ITD) should revise how they determine their audit population of deployed Network equipment assets to ensure that items worth less than $5,000 are included in any audits that they conduct. In the meantime, ITD should consider conducting some additional auditing of a sample of Network equipment items that are worth less than $5,000.

ITD Response: We acknowledge that we need to further define the small and attractive definition for network equipment, excluding equipment that cannot be easily misappropriated because it is secured in locked facilities or physically mounted or installed securely out of reach. We will work with IT accounting to further clarify this definition and ensure that inventory processes for these network small and attractive assets are established and followed.

With the implementation of an asset database ITAM for network equipment we will implement a cycle count inventory process to regularly validate network equipment inventory against detection and monitoring tools.

Recommendation #5: The Information Technology Department (ITD) should review their receiving procedures for Network equipment and ensure that all new equipment is tagged with a City asset number.

ITD Response: During consolidation, Seattle IT inherited pallets of equipment previously owned by its supported departments. The processing and tracking of this equipment was not handled consistently. We are nearing the end of the implementation of this equipment and will be implementing a process of inventorying and tagging all remaining equipment. Since consolidation, all equipment is following a consistent process of recording, tagging, and tracking.

Physical Count of ITD's Warehoused Inventory

In addition to the biennial audit of ITD's deployed assets, ITD conducts an annual physical count of its warehoused inventory. ITD maintains two warehouses for equipment inventory – the primary warehouse in the Seattle Municipal Tower (SMT) that is staffed by the Asset Management unit and one on Rainier Avenue that is used less often and is not staffed. In addition, ITD uses a third-party warehouse, called Denali, to store additional laptops and other computer equipment that ITD orders in large quantities. ITD Asset Management and ITD Accounting work together to conduct the physical count. They count 100% of the inventory items, including the items stored at Denali's warehouse. Count results are compared to the recorded quantities and any variances - overages or shortages - are written off as an expense to Cost of Goods Sold. The most recent physical warehouse count of 2019 inventory occurred on January 2, 2020.

Physical Count/Audit Results for ITD Inventory in Warehouses

The results of the 2019 physical count of ITD's warehouse inventory indicates that a net amount of about $11,900 of recorded inventory was not found. ITD Accounting said this difference was written off to Cost of Goods Sold. Many of the inventory count variances were for assets that have a small cost value (e.g., less than $5), nevertheless they added up to $11,900.

Recommendation #6: The results of the 2019 physical count of the Information Technology Department (ITD) warehouses indicated that improved inventory controls may be needed for recording inventory and/or issuing inventory to fulfill orders. ITD Asset Management should review the inventory items that had the largest variance between the recorded and counted quantity and determine whether there are improvements that can be made to inventory controls.

ITD Response: ITD has reviewed the inventory Loss Reports and have discussed ways for improving inventory controls for recording the custodianship and disposition of inventory issued to fulfill orders. We are currently working towards implementing an IT Asset Management System (ITAM purchased in 2019) which will track inventory as it is requested, ordered, received, paid for and deployed to an ITD technician to be deployed. The ITAM will contain an inventory database to track the asset throughout these stages and ultimately to the final deployment location. (Recommendation #1). Along with the implementation of this tool, we recognize that processes and workflows must be designed to leverage the tool and provide adequate controls to allow the ability to track items accurately.

Declaring Information Technology Equipment as Surplus

ITD surpluses information technology equipment when it reaches the end of its useful life, which is usually at about five years of age according to ITD management. The steps for this process are as follows:

- Someone requests to surplus an item(s). An ITD unit normally makes the request but occasionally the end-user makes it.
- The ITD Deployment Team fills out a Surplus Form and if it is a Small Attractive Asset, they update the item's status in CMDB to "Prep for Surplus". The Deployment Team delivers the item(s) to ITD Asset Management.
- ITD Asset Management receives the item(s) for surplus and verifies the items are the same as what the Surplus Form indicates. Asset Management then updates the status in CMDB to "Surplused". Asset Management staff are the only people who can change a status in CMDB to "Surplused".
- ITD Asset Management emails a copy of the Surplus form to FAS's Surplus and Records Warehouse group.
- The FAS Surplus and Records Warehouse unit picks up the items declared surplus. They then disposition the items in one of several ways. Most of ITD's Small Attractive Assets are donated to the Seattle Public Schools, some are sold to the public (with no applications installed), and some are sent to an e-recycler. If the surplus items are sold, the Surplus Warehouse updates CMDB to the status "Surplus Completed." The Surplus Warehouse Manager said that because of security risks they don't sell any of the Network equipment and not much of the other IT equipment. All Network equipment is sent to the e-recycler after it has been scrubbed of any data.

As we noted above under "ITD Equipment Workflow and Inventory Management", ITD management believes some of the Small Attractive Assets and Network Equipment reported as Missing were declared surplus even though the Surplus Forms were either not completed or retained and the inventory tracking systems were not updated.

Recommendation #7: The Information Technology Department (ITD) should ensure that a Surplus Form is completed and filed for all ITD equipment that is declared surplus, inventory tracking records are updated, and the items are sent to the FAS Surplus unit. ITD should regularly run reports on items with a "Surplus" status and reconcile these to the Surplus Forms.

ITD Response: Prior to consolidation we did not have oversight on how the surplus process was followed and implemented. We have been working with the FAS warehouse to streamline this process to provide visibility of all surplus requests. We acknowledge the need to establish clearer surplus guidelines both internally and with our customer departments. We have gained access to FAS' repository of surplus forms for inventory validation and we have implemented internal IT surplus procedures and workflows to provide oversight and consistency.

Recommendation #8: ITD Asset Management should periodically run a report on anything in CMDB with a "Surplus" status that is less than five years old. The Manager of Asset Management should review this report against the Surplus Forms to ensure there is a form for everything on the list and to see if it appears to be reasonable since there should not be a lot of items that are declared surplus that are less than five years old. This control would also help to mitigate the risk of items being misappropriated by someone in the ITD Asset Management group without

detection. This risk exists because staff in ITD Asset Management can update the inventory records and they also have physical custody of the items during the surplus process.

ITD Response: We acknowledge that this is a best practice and have begun this review process on a quarterly basis.

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