# Performance Audit:
# Department of
# Watershed Management
# Inventory Management

**September 2014**

**City Auditor's Office**

**City of Atlanta**

File #14.01

**CITY OF ATLANTA**
City Auditor's Office
Leslie Ward, City Auditor
404.330.6452

**September 2014**

# *Performance Audit:*

## Department of Watershed Management - Inventory Management

### *Why We Did This Audit*

We undertook this audit in response to Council Resolution 14-R-3104, which expressed concerns about the Office of Safety and Security, the use of revenue generated by the department's homeland security surcharge, implementation of the department's security master plan, and loss and/or theft of inventory and equipment during the past year.

We concluded from our preliminary analysis that inventory management represented the most immediate risk because of well-publicized thefts of water meters and other equipment, and the risk inherent from the number of warehouse locations and decentralized management systems.

### *What We Recommended*

In order to strengthen inventory management, the Commissioner of the Department of Watershed Management should:

- Convert all inventory operations to one software system, Hansen 8
- Limit user software access based on job requirements
- Purchase an inventory barcode system
- Develop new policies and procedures to standardize inventory management
- Establish monitoring and control procedures for employee compliance
- Establish regular inventory reports
- Review non-inventory labeling practices
- Reconcile meters purchased with meters installed and on-hand inventory levels
- Develop new physical access controls
- Install additional security cameras

Once watershed has shifted to Hansen 8, the Chief Information Officer should:

- Implemented updated security controls in the department's inventory software applications

For more information regarding this report, please contact Stephanie Jackson at 404.330.6678 or sjackson@atlantaga.gov

### *What We Found*

Although department management has been aware of inventory management problems for several years, it has yet to put consistent processes in place to track inventory and safeguard against loss and theft. Inconsistent and incomplete recording of inventory transactions render records unreliable for tracking items, for ensuring accountability for use of materials, and for detecting loss. We identified control gaps in all aspects of inventory management and in all locations.

Unreliable data prevent a reasonable estimate of inventory shrinkage, but the exposure could be large. The Department of Watershed Management spent an average of $21 million annually on inventory, non-capital equipment, and supplies between 2009 and 2013. Further, more than 10,000 water meters, about 7% of the meters purchased between 2006 and 2013, are unaccounted for based on review of vendor-produced records and the department's billing system.

We observed security weaknesses at warehouse locations, including non-functioning key card access points, lack of control of warehouse keys, and no separation of visitor and employee parking. The department's homeland security measures are geared toward reducing risks to the city's water supply and do not focus on securing its inventory.

Decentralization contributes to the control weaknesses. Watershed management houses inventory in ten locations that use different processes and software applications for managing inventory. Based on our review of manual records of items issued from the warehouses in October 2013, the department could consolidate locations to better focus its efforts.

We visited all 10 inventory locations (warehouses and storerooms) and completed most of the audit work during June 2014.

## Management Responses to Audit Recommendations

| Summary of Management Responses | | |
|---|---|---|
| **Recommendation #1:** | The Commissioner of the Department of Watershed Management should convert all inventory operations to one software system. | |
| **Response & Proposed Action:** | The department is in the process of consolidating all systems into Hansen 8. | **Agree** |
| **Timeframe:** | Establish oversight committee by September 2014; Finish project no later than Q3 2016 | |
| **Recommendation #2:** | The Commissioner of the Department of Watershed Management should review user account access and limit the number of users who can adjust inventory balances consistent with the principle of least privileges. | |
| **Response & Proposed Action:** | The department has disabled excess user privileges, and will conduct bi-annual reviews of Hanson user roles and access levels. | **Agree** |
| **Timeframe:** | September 30, 2014 | |
| **Recommendation #3:** | The Commissioner of the Department of Watershed Management should purchase a barcode system to enable real-time recording of transactions. | |
| **Response & Proposed Action:** | The department will implement a barcode system. | **Agree** |
| **Timeframe:** | June 2015 | |
| **Recommendation #4:** | The Commissioner of the Department of Watershed Management should develop policies and procedures that update and standardize inventory management across all facilities: | |
| **Response & Proposed Action:** | The department will review and redevelop policies and procedures related to inventory management, and re-map business processes as necessary. | **Agree** |
| **Timeframe:** | December 2014 | |
| **Recommendation #5:** | The Commissioner of the Department of Watershed Management should establish monitoring reports and control activities to ensure that employees comply with the policies and procedures. | |
| **Response & Proposed Action:** | The department will establish monitoring & control reports, as well as configure required transactions fields to ensure they are made mandatory. | **Agree** |
| **Timeframe:** | October 2014 (Maximo 7); June 2015 (Hansen 8) | |
| **Recommendation #6:** | The Commissioner of the Department of Watershed Management should establish regular reports to monitor inventory levels. | |
| **Response & Proposed Action:** | The department will establish inventory level monitoring reports. | **Agree** |
| **Timeframe:** | October 2014 (Maximo 7); June 2015 (Hansen 8) | |
| **Recommendation #7:** | The Commissioner of the Department of Watershed Management should establish regular reports to monitor use of materials and designate responsibility for investigating anomalies. | |
| **Response & Proposed Action:** | The department will establish material usage reports. | **Agree** |
| **Timeframe:** | October 2014 (Maximo 7); June 2015 (Hansen 8) | |

| | | |
|---|---|---|
| **Recommendation #8:** | The Commissioner of the Department of Watershed Management should discontinue the practice of designating items stored in the warehouses as non-inventory. | |
| **Response & Proposed Action:** | The department will centralize the warehousing of consumable items, and continue on-going departmental efforts to eliminate surplus items. | **Agree** |
| **Timeframe:** | Consolidate warehousing by June 2015; Eliminate surplus by June 2016 | |
| **Recommendation #9:** | The Commissioner of the Department of Watershed Management should create procedures for periodically verifying quantities on hand, documenting inventory counts, investigating variances, and approving adjustments made to reconcile inventory counts consistent with industry best practices. | |
| **Response & Proposed Action:** | The department will implement a Cyclical Inventory Program, requiring 10% of all inventory items along with high value items are counted monthly. | **Agree** |
| **Timeframe:** | Short term – October 2014; Long term – July 2015 | |
| **Recommendation #10:** | The Commissioner of the Department of Watershed Management should reconcile meters purchased to meters installed and on hand in the warehouse and update enQuesta to reflect an accurate count of meters. | |
| **Response & Proposed Action:** | The department will reconcile meter inventory in the various systems used. | **Agree** |
| **Timeframe:** | Short term – October 2014; Long term – June 2015 | |
| **Recommendation #11:** | The Commissioner of the Department of Watershed Management should secure inventory assets by controlling physical access including ensuring that key card pads are operational and that all locations are staffed. | |
| **Response & Proposed Action:** | The department will re-key all security door locks, install additional keypads, and ensure proper licensing for the use of proprietary key-card software. | **Agree** |
| **Timeframe:** | June 2015 | |
| **Recommendation #12:** | The Commissioner of the Department of Watershed Management should install additional cameras in areas containing inventory assets to provide comprehensive coverage. | |
| **Response & Proposed Action:** | The department will install additional cameras throughout warehouses and storerooms. | **Agree** |
| **Timeframe:** | June 2015 | |
| **Recommendation #13:** | Once Watershed Management has converted all inventory systems to Hansen 8, the Chief Information Officer should update security controls in the department's inventory software applications. | |
| **Response & Proposed Action:** | DIT has already applied appropriate changes to password and account privilege policies. The department will begin periodic reviews of accounts to determine appropriate access levels for accounts, and to find terminated employees and remove them from the system. | **Agree** |
| **Timeframe:** | September 15, 2014 | |

# CITY OF ATLANTA

**CITY AUDITOR'S OFFICE**
68 MITCHELL STREET SW, SUITE 12100
ATLANTA, GEORGIA 30303-0312
(404) 330-6452
FAX: (404) 658-6077

**LESLIE WARD**
City Auditor
*lward1@atlantaga.gov*

**AMANDA NOBLE**
Deputy City Auditor
*anoble@atlantaga.gov*



September 9, 2014

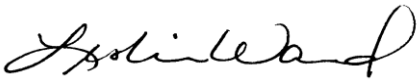
Honorable Mayor and Members of the City Council:

We undertook this audit of the Department of Watershed Management in response to Council Resolution 14-R-3104, which expressed concerns about the Office of Safety and Security, use of revenue generated by the department's homeland security surcharge, implementation of the department's security master plan, and loss and/or theft of inventory and equipment during the past year. Our preliminary analysis of the areas covered by the resolution found that inventory management represented the most immediate risk.

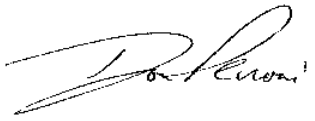
Although department management has been aware of inventory management problems for several years, it has yet to put consistent processes in place to track inventory and safeguard against loss and theft. Inconsistent and poorly monitored inventory procedures across all inventory locations create an incomplete picture of current inventory. Physical security weaknesses at multiple warehouse locations increase the risk of theft, and so far, department security efforts have focused on reducing risks to the city's water supply rather than on inventory control.

Our recommendations to watershed focus on the standardization and enforcement of inventory policies and procedures to create a consistent picture of current inventory, as well as the improvement of physical security controls. Our recommendation to the chief information officer focuses on updating system security once watershed has consolidated its software systems. The department agreed with all 13 recommendations and proposed actions to implement all but one of them no later than June 2015.

The Audit Committee has reviewed this report and is releasing it in accordance with Article 2, Chapter 6 of the City Charter. We appreciate the courtesy and cooperation of city staff throughout the audit. The team for this project was Jamie Amos, Christopher Armstead, Rhonda Sadler Collins, Brad Garvey, Susannah Laramee Kidd, Kwasi Obeng, Michael Schroth, and Stephanie Jackson.



Leslie Ward
City Auditor



Don Penovi
Audit Committee Vice Chair

# Department of Watershed Management - Inventory Management

## Table of Contents



## List of Exhibits

## List of Figures

# Introduction

We undertook this audit of the Department of Watershed Management in response to Council Resolution 14-R-3104. Adopted by City Council on February 3, the resolution expressed concerns about the Office of Safety and Security, use of revenue generated by the department's homeland security surcharge, implementation of the department's security master plan, and loss and/or theft of inventory and equipment during the past year.

We concluded from our preliminary analysis of the areas covered by the resolution that inventory management represented the most immediate risk because of well-publicized thefts of water meters and other equipment, and the risk inherent from the number of warehouse locations and decentralized management systems.

Departmental internal audits, consultant studies initiated by Watershed management, and an Atlanta Police Department assessment have identified control weaknesses in one or more warehouse operations dating from 2011. The most recent assessment, conducted by a consultant and released in February 2014, identified similar problems and made similar recommendations to those of previous assessments.

## Background

The Department of Watershed Management is responsible for water treatment and distribution, wastewater collection and treatment, and stormwater management. The department's Office of Business and Customer Service is responsible for the department's customer service unit, relations with inter-jurisdictional customers, management of the customer service billing system, procurement, central warehouse and fleet, central document control, and management and maintenance of buildings and grounds.

Watershed management has 37 positions within the Office of Business and Customer Service directly responsible for managing inventory and loss prevention, as of July 2014 (see Exhibit 2). The director of the office reports directly to the commissioner. The staff consists of regular and extra help positions.

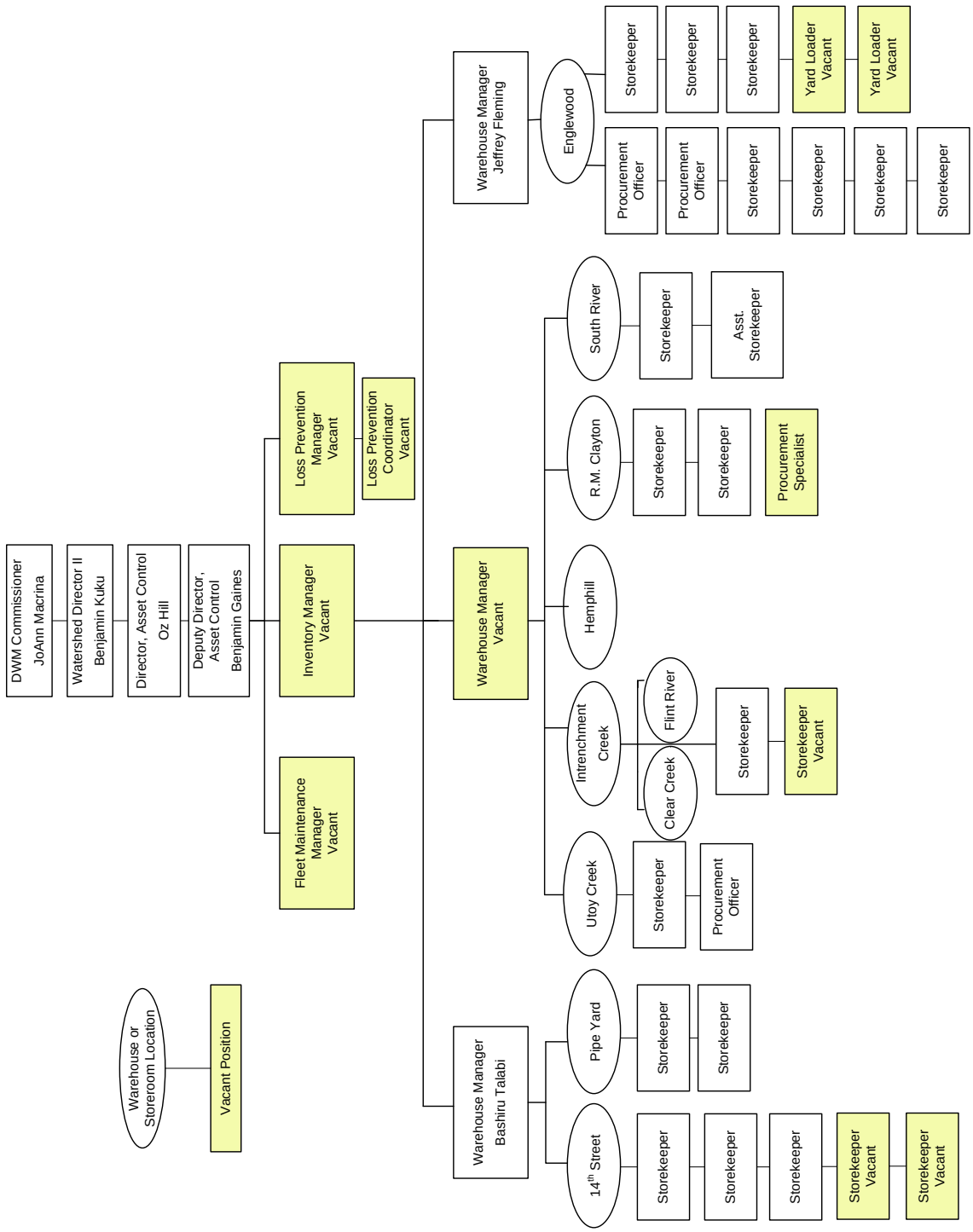
The department maintains inventory at eight warehouses and two ancillary storerooms located throughout the city (see Exhibit 1). The warehouses are generally located close to the facilities and operational functions they support. Staff from the Intrenchment Creek warehouse supports the Clear Creek and Flint River storerooms; 14th Street storekeepers support the Hemphill warehouse.

**Exhibit 1 Department of Watershed Management Warehouses and Storerooms**

| Facility | Address | Hours | Items Stored |
|---|---|---|---|
| Warehouses | | | |
| 14th Street | 651 14th Street Atlanta, GA 30318 | 7:00 AM – 3:30 PM | Water meters and meter accessories |
| Englewood | 360 Englewood Ave. Atlanta, GA 30315 | 8:00 AM – 4:30 PM | Personal protective equipment, consumables, metal lids and covers |
| Hemphill | 650 17th Street Atlanta, GA 30318 | Covered by staff at 14th Street | Water accessories and personal protective equipment |
| Intrenchment Creek | 1510 Key RD. Atlanta, GA 30316 | 6:00 AM – 4:30 PM | Electrical supplies, consumables, water accessories, high value pumps, and CSO inventory |
| RM Clayton | 2440 Bolton Rd. Atlanta, GA 30318 | 7:00 AM – 3:30 PM | Water accessories, personal protective equipment, consumables, electrical equipment, and oil |
| Utoy Creek | 750 Selig Drive Atlanta, GA 30336 | 7:30 AM - 3:30 PM | Water accessories, personal protective equipment,, and consumables |
| Pipe Yard | 2750 Peyton Rd. Atlanta, GA 30318 | 7:00 AM – 3:30 PM | Pipes and valves |
| South River | 2640 Jonesboro RD. Atlanta, GA 30315 | 7:00 AM – 3:30 PM | Water accessories, consumables, and high value Englewood inventory |
| Storerooms | | | |
| Clear Creek | 1320 Monroe Drive NE, Atlanta, GA 30306 | Covered by staff at Intrenchment Creek | Water accessories, pumps, and CSO inventory |
| Flint River | 2500 Airport Loop Rd. Atlanta, GA 30337 | Covered by staff at Intrenchment Creek | Water accessories, pipes, and core samples |

**Source:** Compiled by audit staff based on site visits and interviews

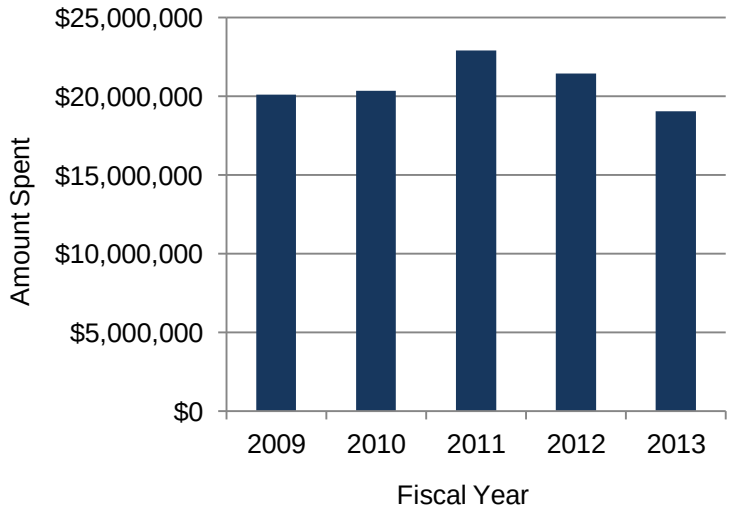
## Exhibit 2 Watershed Employees Responsible for Inventory Management




**Source:** Created by audit staff in consultation with the Department of Watershed Management on July 18, 2014

The Department of Watershed Management spent an average of about $21 million annually for inventory, supplies, and non-capital equipment over the past five fiscal years (see Exhibit 3). The highest amount was in fiscal year 2011 and the lowest was in fiscal year 2013. Some of these purchases may not be stored in the warehouses as inventory.

**Exhibit 3 Watershed Management Spending on Inventory, Equipment, and Supplies FY09 - FY13**




**Source:** Oracle Financials, fiscal years 2009 through 2013

## Audit Objectives

This report addresses the following objectives:

- What control weaknesses contributed to the recent thefts of inventory and equipment?
- What is the estimated magnitude of loss?
- Are there any barriers to implementing previous recommendations intended to improve controls and safeguard the department's inventory?

We had originally planned to assess whether the number and qualifications of warehouse staff is adequate, but did not because the department has been reorganizing the operation throughout the audit. The department's inventory manager and loss prevention coordinator were removed and placed in other positions. The loss

prevention manager became the interim inventory manager and then became the deputy director of asset control. The safety and security manager for emergency management became the water utility development director and then became the director of asset control. Currently, the inventory manager, loss prevention manager and loss prevention coordinator positions remain vacant. The department does not yet have job descriptions for the asset control director, asset control deputy director, loss prevention manager, and loss prevention coordinator. The organizational chart reflects staff assignments and departmental working titles as of July, but the department does not consider assignments and titles to be permanent.

## Scope and Methodology

We conducted this audit in accordance with generally accepted government auditing standards. Our analysis covered the Department of Watershed Management's inventory data as of June 2014. Expenditure data focused on fiscal years 2009 through 2013. We reviewed water meter purchases since 2006.

Our audit methods included:

- Visiting each warehouse to observe and understand processes for ordering, receiving, issuing, storing, securing, and disposing of materials and supplies
- Reviewing the department's policies and procedures related to inventory management
- Interviewing warehouse staff to understand inventory management procedures and practices
- Conducting a physical count of water meters to compare to inventory records contained in the customer information and billing system
- Reviewing available vendor-produced records of water meters the city purchased since 2006
- Analyzing information technology controls including password settings, authorized users, and user access levels
- Compiling a database of items issued from warehouse locations in October 2013 from 1,064 manual records to determine the percentage of materials issued that were associated with a

work order and to identify activity levels at the different facilities

- Researching best practices for inventory management
- Interviewing executive staff to understand the administrative processes for developing, approving, and communicating standard procedures

We analyzed records of items dispensed from warehouses in October 2013 because it was the last full month before the public investigation started with no holidays, and we therefore concluded that activities could be considered normal.

Generally accepted government auditing 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.

# Findings and Analysis

## Weak Inventory Management Controls Leave the Department Vulnerable to Loss and Theft

Although department management has been aware of inventory management problems for several years, it has yet to put consistent processes in place to track inventory and safeguard against loss and theft. Inconsistent and incomplete recording of inventory transactions render records unreliable for tracking items, for ensuring accountability for use of materials, and for detecting loss. We identified control gaps in all aspects of inventory management and in all locations.

Unreliable data prevent a reasonable estimate of inventory shrinkage, but the exposure could be large. The Department of Watershed Management spent an average of $21 million annually on inventory, non-capital equipment, and supplies between 2009 and 2013. Further, more than 10,000 water meters, about 7% of the meters purchased between 2006 and 2013, are unaccounted for based on review of vendor-produced records and the department's billing system.

We observed security weaknesses at warehouse locations, including non-functioning key card access points, lack of control of warehouse keys, and no separation of visitor and employee parking. The department's homeland security measures are geared toward reducing risks to the city's water supply and do not focus on securing its inventory.

Decentralization contributes to the control weaknesses. Watershed management houses inventory in ten locations that use different processes and software applications for managing inventory. Based on our review of manual records of items issued from the warehouses in October 2013, the department could consolidate locations to better focus its efforts.

**We recommend** watershed management convert all operations to one software system, preferably Hansen 8 because the city already plans to interface it with Oracle Financials. Until the interface is complete, staff should manually reconcile purchases to inventory.

Prior to converting, staff should map business processes and develop written policies and procedures for using Hansen to accurately record transactions. The commissioner should also purchase a barcode system to facilitate prompt and accurate inventory tracking.

Policies and procedures should establish clear responsibilities and ensure that incompatible duties are segregated. No individual should be responsible for authorizing requisitions, maintaining custody of items, and keeping records. The department should also establish regular reports to monitor inventory levels, establish re-order points, and monitor use of materials. The department should establish a method to verify periodically quantities on hand and to investigate variances, consistent with industry best practices.

The commissioner should also require staff to reconcile meters purchased to meters installed and on hand in the warehouse and update enQuesta to reflect an accurate count of meters.

**Warehouse Operations Lack Consistent Procedures and Controls**

We identified control gaps in all aspects of inventory management—requisitioning, purchasing, receiving, issuing, re-ordering, and disposing of obsolete and surplus items—and in all locations. Practices across warehouse facilities are inconsistent because of a lack of policies and procedures and the use of different software applications. Staff record transactions inconsistently. Storekeepers at some warehouses record receipt of goods and/or issuance of items as positive or downward balance adjustments, making it impossible to reconcile items received into the warehouse with items purchased or to track when and to whom items were dispensed and for what purpose. In fiscal year 2013, warehouse staff at South River recorded nearly $10 million in downward balance adjustments. Warehouse staff at 14$^{th}$ Street recorded nearly $5 million in downward balance adjustments.

The warehouses still rely on paper forms and manual data entry into the different software applications, which adds delay and increases the potential for error, especially if the manual forms are illegible or incomplete. Our review of manual records of items issued from the warehouses in October 2013 found that 42% of the non-supply materials were not associated with a work order; 16% of the water meters issued from the warehouses were not associated with a work order.

Effective monitoring, verification, and reconciliation processes are key controls that rely on accurate records. The department will be unable to track items, detect loss, and ensure accountability for use of materials without complete, accurate, and timely records of transactions.

**Use of four different software systems to record inventory transactions weakens controls.** The Department of Watershed Management uses three different versions of Maximo and one version of Hansen in its warehouse operations (see Exhibit 4). The three versions of Maximo are not integrated and none of the systems interface with the city's financial system. Storekeepers told us that because of the lack of integration, they must record transfers of items between facilities on paper forms. The department cannot transfer products or access work orders in Maximo between South River and the other wastewater facilities - Intrenchment Creek and Utoy Creek.

**Exhibit 4 Inventory Systems at Warehouses**

| Facility | Maximo Version | Hansen Version |
|---|---|---|
| 14th Street/Hemphill | 7.1 | 8 |
| Pipe Yard | 7.1 | 8 |
| Englewood | 6.21 | 8 |
| Intrenchment Creek/Clear Creek/Flint River | 6.21 | |
| RM Clayton | 6.21 | |
| Utoy Creek | 6.21 | |
| South River | 6.23 | |

**Source**: Department of Information Technology

Storekeepers at 14th Street, Hemphill, and Pipe Yard create duplicate entries by receiving and issuing items in both Maximo and Hansen. The Pipe Yard storekeeper does not have access to Hansen, so he sends copies of work orders and issue ticket forms to the 14th Street storekeeper for Hansen entry. These duplicate entries can lead to data entry errors and the department has no guarantee that the inventory is captured in both systems or that a compilation of reports from different systems will accurately reflect inventory on-hand.

**Policies and procedures do not address all systems and all inventory-related processes, allowing inconsistent practices.** Although the department's warehouse policies and procedures state that Maximo 7.1 is the primary database for the department, the document also states that some facilities use Hansen and that older versions of Maximo are used to carry out the business needs of the department. It is unclear what business needs are addressed by having the different versions and the policies and procedures do not state these needs. The department's policies and procedures do not address different procedures for each Maximo version and do not explicitly state when staff should also make entries in Hansen. Further, the policies and procedures do not describe how to request items for purchase, how to designate scrap, or how to designate and track obsolete or surplus inventory. We observed inconsistent practices in our walk-throughs of warehouse facilities.

**Inconsistent purchasing and re-ordering practices weaken controls.** The 14th Street, Pipe Yard, and Hemphill facilities use manual forms to request items for purchase, while the other facilities enter a requisition transaction in Maximo. Using the system to initiate requisitions provides an automated method to flag when ordered items are not received into inventory, indicating potential theft or error. The department can also establish system controls to segregate incompatible duties—different individuals should be responsible for requisitioning and receiving to reduce opportunities for employees to make purchases for personal gain. Some facilities allow any warehouse employee to request items, while other facilities only allow supervisors and managers to request items.

Warehouse facilities also follow inconsistent re-ordering practices. The policies and procedures say that a stock room employee can physically observe when an item is low and the procedures describe which reports employees can use to determine when they should purchase items. Some warehouse staff told us they visually decide when they should purchase items, without using system reports. As a result, facilities could order too much or too little product, which could lead to obsolete inventory or disguise theft.

**Inconsistent receiving practices weaken controls.** Storekeepers at the 14th Street, Hemphill, and Pipe Yard facilities record receipt of goods as positive balance adjustments, making it impossible to reconcile items received with items purchased and introducing opportunity for undetected theft. Storekeepers at Englewood and South River facilities are using the receiving function in Maximo.

We observed instances when employees did not enter complete data when recording receiving transactions in the system. If employees do not enter the item number in the appropriate field, Maximo is unable to update the inventory balance because it cannot identify which item to increase.

The department's inventory systems are not integrated with the city's financial system and we found no evidence that the department is reconciling the items received into the inventory systems with purchase records in Oracle Financials. Dual data entry weakens controls in each system intended to segregate incompatible duties and ensure that items are accounted for when received. The city plans to interface Oracle and Hansen 8 after the Oracle upgrade is completed.

**Inconsistent issuing practices weaken controls.** Based on the high number of downward adjustments, it is likely that storekeepers record some issuance of goods as downward balance adjustments, making it impossible to use the system to track when and to whom items were dispensed and for what purpose. In fiscal year 2013, warehouse staff at South River recorded nearly $10 million in downward balance adjustments and warehouse staff at 14th Street recorded nearly $5 million in downward balance adjustments (see Exhibit 5).

**Exhibit 5 Downward Balance Adjustments Recorded in Maximo Systems in Fiscal Year 2013**

| Site | Number of Adjustments | Quantity Adjusted | Value of Adjustments |
|---|---|---|---|
| RM Clayton | 395 | (8,011) | -$756,838.88 |
| Intrenchment Creek | 271 | (20,011) | -$101,297.09 |
| Utoy Creek | 139 | (1,544) | -$211,968.25 |
| South River | 239 | (6,964) | -$9,855,426.10 |
| 14th St/Hemphill | 2,357 | (118,846) | -$4,672,449.08 |
| **Total** | **3,402** | **(155,377)** | **-$15,597,979.40** |

**Source**: Auditor generated from software systems

Even when entering issuing transactions into the system, warehouse staff does not consistently enter the work order number in the work order number field. Attaching materials to a work order when staff remove them from inventory is a key control for establishing accountability for the use of materials and detecting potential loss or theft. Some warehouse staff enters the work order number in the comments field, which still invalidates reports that use the work

order field. The policies and procedures states that employees should not populate the work order number field but also states that staff must present a work order number on a paper issue ticket before materials are given out. Further, employees do not always enter the item number when recording issuing transactions in the system; this practice results in the system being unable to update the inventory balance, or the person to whom the materials were issued, which reduces accountability

While most warehouse facilities use manual issue tickets to record issuance of materials or supplies, the issue tickets do not allow adequate tracking of materials. Some storekeepers told us they do not require the use of issue tickets to issue supplies. We collected and analyzed 1,064 issue tickets from seven warehouses for the month of October 2013. Most forms were incomplete, some were at least partially illegible, and the forms were not standardized across facilities. Overall, 42% of non-supply items issued in October were not associated with a work order (see Exhibit 6) and 16% of the water meters issued from seven warehouses in October were not associated with a work order. Hemphill, Flint River, and Clear Creek had no issue tickets.

**Exhibit 6 Percent of Non-Supply Materials Issued Without a Work Order by Location, October 2013**

| Location | Non-Supply Items Issued | Number With a Work Order | Number Without a Work Order | Percent Issued Without a Work Order |
|---|---|---|---|---|
| 14th Street | 1,327 | 573 | 754 | 57% |
| Englewood | 739 | 632 | 107 | 14% |
| Pipe Yard | 72 | 72 | 0 | 0% |
| Intrenchment Creek | 34 | 0 | 34 | 100% |
| South River | 28 | 14 | 14 | 50% |
| RM Clayton | 16 | 3 | 13 | 81% |
| Utoy Creek | 7 | 1 | 6 | 86% |
| Hemphill | 0 | 0 | 0 | 0% |
| Clear Creek | 0 | 0 | 0 | 0% |
| Flint River | 0 | 0 | 0 | 0% |
| **Total** | **2,223** | **1,295** | **928** | **42%** |

**Source:** Compiled from issue tickets for October 2013

**Delay in recording transactions leave inventory vulnerable to undetected loss and theft.** Storekeepers told us it can take up to 30 days before they input goods received at the warehouse into the inventory software system. Items that are not received into the system are unaccounted for and vulnerable to undetected loss or theft, particularly in the absence of procedures to reconcile receipt of goods with purchases. Similarly, warehouse staff said it can take up to a week to input issue tickets into the system. The delay in recording transactions weakens internal controls. We observed one storekeeper try and fail to attach a work order with an issue transaction from his backlog because the work order was already closed. The lag time in recording these manual processes introduces the possibility of data entry errors, especially when the manual forms are illegible or incomplete. In the issue tickets we analyzed from October 2013, 47% of the issue tickets had an undecipherable or missing issuing party and 43% had an undecipherable or missing receiving party. In addition, a majority of issue tickets for non-supply materials were missing item numbers, a key field for tracking materials in the software system.

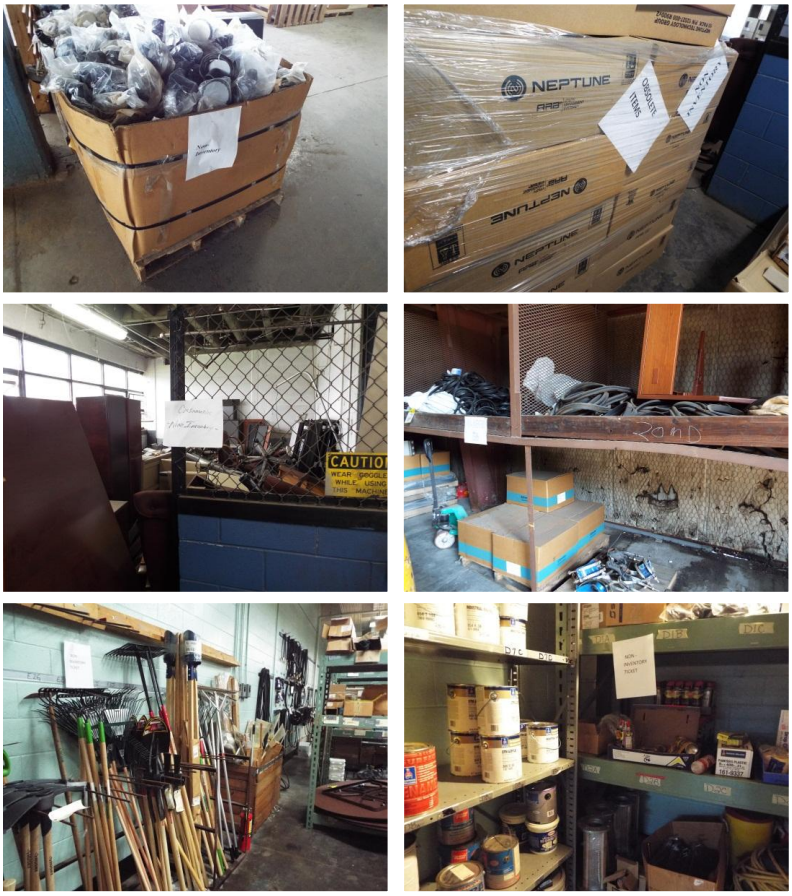
**The department has not clearly defined non-inventory and obsolete materials.** We observed items at four warehouse locations that employees had labeled "non-inventory." The pictures in Exhibit 7 show examples of items labeled as non-inventory at 14th Street, Pipe Yard, and South River. It is unclear how the facilities define non-inventory or obsolete items. We observed meters labeled both obsolete and non-inventory and we observed supplies, such as bug spray, paint, and shovels; broken materials; functional materials that the city no longer uses; and surplus office furniture labeled non-inventory. In most locations, the items marked non-inventory are located proximally to the inventory items. The department's warehouses at 14th Street, Englewood, Intrenchment Creek, and Utoy Creek each have designations in their systems for obsolete items, but no system contains a non-inventory designation. These items may be stored at the warehouses but not added to the inventory system, which makes them susceptible to loss or theft and could weaken controls for other items if there is no expectation that all items stored in the warehouse should be secured and accounted for.

Although the department has procedures for handling scrap disposal, it has no procedures for handling obsolete or surplus materials. The department developed its scrap policy to reduce the opportunities for employees to remove scrap metal after completing work. The policy states that employees should return scrap metal at the

completion of work and warehouse personnel load scrap metal into a designated scrap bin; contact the city's scrap metal contractor when the bin is full; follow the contractor to the scrap yard to verify scrap weight; and pick up a check from the contractor made payable to the city for the scrap material.

While the policies describe what storekeepers should do with scrap, the policies do not describe how to designate scrap or how to designate and how to track obsolete or surplus inventory. The policies and procedures have a placeholder for handling obsolete material, but nothing is written in that section. The lack of systematic identification and removal of obsolete and surplus items from the warehouses could lead to theft. In addition, lack of surplus and obsolete item removal could lead to carrying costs, material depreciation, and inflation of inventory amounts.

**Exhibit 7 Items Labeled As Non-Inventory at 14th Street, Pipe Yard, and South River**




**Source:** Photographs taken during May 2014 observations by the City Auditor's Office

In order to ensure that inventory transactions are completely and accurately recorded, we recommend the commissioner of watershed management:

- Convert all inventory operations to one software system, preferably Hansen 8 because the city already plans to interface it with Oracle Financials. Prior to converting, the department should re-map business processes and develop written policies and procedures for using Hansen.
- Purchase a barcode system to enable real-time recording of transactions and ensure that all facilities are equipped to record the transactions when items are physically received and issued.
- Develop policies and procedures that:
    - Segregate incompatible duties. No individual should be responsible for authorizing requisitions, maintaining custody of items, and keeping records.
    - Ensure that all facilities use the requisition and receiving module in the system to purchase and receive items.
    - Require staff to manually reconcile purchases to inventory until Hansen and Oracle are interfaced.
    - Describe how to establish re-order quantities.
    - Clearly define what items should be attached to work orders and require staff to input work order numbers in the work order field in Hansen as they issue items.
    - Describe how to identify, track, and dispose of obsolete and surplus items.
- Establish monitoring reports and control activities to ensure that employees comply with the policies and procedures; some of the control activities could be accomplished through validation controls in the system that prevent entering transactions without required information.

In order to reduce opportunities for theft, we also recommend the commissioner of watershed management:

- Establish regular reports to monitor inventory levels.
- Establish regular reports to monitor use of materials and designate responsibility for investigating anomalies.

- Discontinue the practice of designating items stored in the warehouses as non-inventory.

**Multiple Software Applications Lack Most Standard Safeguards**

Controlling access to records is a key preventive control for ensuring the integrity of data necessary to monitor operations. Our review of password settings, authorized users, and levels of access in each of the four inventory systems that the department currently uses identified multiple problems:

- Password settings were not consistent with city policy
- Administrative access (ability to add/modify/delete) was not limited to application administrators
- Application administrators used a shared generic account
- The process to document request and approval of new user access did not include the level of access requested and rationale
- 13% of active user accounts were associated with employees who no longer worked for the city
- The read-only security group established in Maximo 6.21 had the ability to adjust current inventory balances

The lack of controls could allow unauthorized or inappropriate access to system records; 481 user accounts had the ability to adjust inventory balances in the Maximo systems (see Exhibit 8). One individual could have more than one user account. Staff members told us that when there are variances between the current balance of an item in the Maximo systems and the actual physical on-hand count of that item, they adjust the current balance in the Maximo systems. These transactions are indistinguishable from transactions to receive or issue materials when storekeepers use adjustments as a method of recording those transactions.

**Exhibit 8 Users Who Can Adjust Inventory Balances in Maximo as of June 3, 2014**

| Maximo Version | Number of Accounts |
|---|---|
| 7.1 | 103 |
| 6.23 | 118 |
| 6.21 | 260 |

**Source:** Department of Watershed Management's versions of Maximo, June 3, 2014

We provided detailed recommendations to the Department of Information Technology to correct immediate problems. As part of the conversion to Hansen 8, the chief information officer should:

- Ensure that password settings comply with city policy
- Establish a unique account for each application administrator
- Establish a process to document approval of access for new users
- Establish a process to ensure that access is removed for terminated employees
- Establish a periodic review to recertify that user access, at a functional level, continues to be appropriate based on job function

The commissioner of Watershed Management should review user account access and limit the number of users who can adjust inventory balances consistent with the principle of least privileges. Employees should have no more system access than is required to fulfill their job responsibilities.

**Physical Inventory Counts Are Ineffective**

The Department of Watershed Management also lacks adequate segregation of duties for periodic physical inventory counts and does not require approval or documentation for employees to adjust quantities in the system.

**Inadequate controls during inventory counts leave inventory data vulnerable.** Warehouse staff told us there is no approval process for the adjustments they make to the quantities in the system after physical counts of inventory. Personnel do not have to document the reason for variances between the amount in the warehouse and the amount listed in the inventory system; they simply adjust the system amounts to reflect the quantity in the warehouse. Without review and approval of the variances after a physical count, instances of theft or loss could go undetected. In only two locations did staff tell us that someone other than the storekeeper(s) at that location was responsible for physically counting the items. In addition, staff told us in only one location that an individual who does not have custody of inventory items on a daily basis was responsible for adjusting the system as a result of physical counts. The department's policies and procedures do not address inventory

count procedures, responsibility for system adjustments, investigation of variances, or approval for adjustments.

According to the US Government Accountability Office, documented policies and procedures and performance measures are integral to achieving consistent and accurate inventory counts. Best practices for inventory counts encourage segregation of duties such that no one has overlapping responsibilities in physically counting, making adjustments in the system after a count, or approving adjustment transactions. Ideally, personnel who normally have custodial responsibilities for inventory should not be involved in the physical count. If this is not practical, management can introduce additional controls such as blind counts, increased supervision, and two-member count teams into the physical count procedures.

**We recommend** the department create procedures for periodically verifying quantities on hand, documenting inventory counts, investigating variances, and approving adjustments made to reconcile inventory counts consistent with industry best practices.

**Combined Weaknesses Render Inventory Records Inaccurate**

The inconsistent and incomplete recording of inventory transactions along with weak system access controls and weak controls over physical inventory counts render inventory system records unreliable. We are therefore unable to estimate inventory shrinkage, but the exposure could be large based on the department's annual average spending on inventory, supplies, and non-capital equipment. Further, more than 10,000 water meters, about 7% of the meters purchased between 2006 and 2013, are unaccounted for based on review of vendor-produced records and the department's billing system.

**The department cannot account for nearly 11,000 water meters.** Watershed management purchased 148,150 water meters between 2006 and 2013, based on order information from the city's vendor. The department purchased the majority of the water meters in 2007 and 2008 during watershed's conversion to automated meter reading. The vendor provided the department electronic files containing the serial numbers of water meters included in each order. The department's policy is to upload the meter serial numbers into enQuesta, the billing system, when they are purchased so that billing staff can tie them to customer accounts on installation. The billing system also tracks when the meters are scrapped.

As of June 2014, the system contained 14,533 meters in inventory. We counted 4,327 meters in the 14th Street warehouse on June 17, 2014 (see Exhibit 9). The difference is 10,206. We also identified 382 serial numbers provided by the vendor that were not uploaded into the billing system, bringing the total number of missing meters to 10,588. The department was unable to locate all vendor files, so it is possible that more serial numbers of purchased meters are missing from the billing system, which would increase the number of meters not accounted for.

Watershed management told us some of the meters it purchased during the automated meter reading project were delivered to the contractor responsible for installing the meters, which is corroborated by contemporaneous records. Department management acknowledged that staff did not reconcile the meters the city purchased with the meters installed by the contractor and the meters stored in inventory. It is possible that the city purchased the missing meters, but they were never stored in department warehouses.

**Exhibit 9 Comparison of Inventory Meters in Billing System and On the Shelf**

| Meter Size | Inventory in Billing System | | | On Shelf | | |
|---|---|---|---|---|---|---|
| | Neptune | Hersey | Other | Neptune | Hersey | Other |
| DEFAULT | 109 | 220 | 102 | 0 | 0 | 0 |
| 5/8" | 370 | 99 | 276 | 0 | 378 | 0 |
| 3/4" | 6,749 | 1,336 | 137 | 1,366 | 0 | 0 |
| 1" | 2,727 | 28 | 45 | 1,211 | 241 | 0 |
| 1 1/2" | 964 | 0 | 46 | 434 | 0 | 0 |
| 2" | 1,163 | 1 | 32 | 298 | 0 | 0 |
| 3" | 20 | 0 | 51 | 58 | 0 | 0 |
| 4" | 8 | 3 | 0 | 133 | 0 | 0 |
| 6" | 25 | 8 | 2 | 151 | 2 | 0 |
| 8" | 9 | 1 | 0 | 31 | 1 | 0 |
| 10" | 0 | 0 | 0 | 21 | 0 | 0 |
| 12" | 1 | 1 | 0 | 0 | 2 | 0 |
| Subtotal | 12,145 | 1,697 | 691 | 3,703 | 624 | 0 |
| **Total** | | | **14,533** | | | **4,327** |

**Source:** enQuesta system as of June 2014 and auditor counts at the 14th Street warehouse June 17, 2014.

**We recommend** the department reconcile meters purchased to meters installed and on hand in the warehouse and update enQuesta to reflect an accurate count of meters.

**Security Measures Target Risk to Water Supply**

Controlling access to inventory assets is a key preventive control to protect against loss and theft. The department has improved some aspects of facility security through its strategic plan to protect the drinking water supply and implemented some recommendations from inventory assessments conducted in 2012 and 2014. We observed some similar weaknesses to those identified in the previous inventory assessments.

**Departmental security initiatives focus on protecting people, buildings, and drinking water assets and continuity of business operations.** A 2006 security plan outlined steps to protect critical infrastructure at an estimated cost of about $33.4 million through fiscal year 2014. A 2012 security assessment placed the implementation date through fiscal year 2015 without a cost estimate. The goals for the 2012 assessment included prevention of loss of life and injury, protection of critical assets, and prevention of loss of operations. Physical initiatives included controlling and restricting access to facilities as well as within them. Electronic security initiatives included detective controls such as a closed circuit television system to monitor facilities. The 2012 plan prioritized initiatives by location based on risk and did not categorize all locations with warehouses as critical. We observed camera feeds for facilities with limited coverage of warehouses. The camera coverage of warehouses appeared to be the unintentional result of implementing the strategic plan.

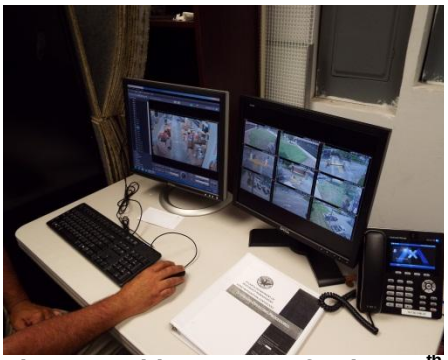


**Figure 1 Video camera feed at 14th Street**

**Figure 2 Camera with motion sensor in RM Clayton central warehouse**

**We observed security issues/lapses at all ten locations where inventory is stored.** We observed security weaknesses at warehouse locations, including unstaffed facilities, non-functioning key card access points, lack of control of warehouse keys, no separation of visitor and employee parking, propped open doors, keys left in padlocks locks, and unstocked inventory. Security recommendations from assessments conducted in 2012 and 2014 to control inventory remain unimplemented. The reports recommended:

- providing camera coverage for the interior of all buildings;
- installing programmable access controls and facility locks;
- clearing visual blockages from fence lines;
- removing obsolete items from warehouse facilities; and
- restricting parking at facilities for private vehicles.

Three of the ten locations we visited had no staff assigned to issue items. The storekeeper at Intrenchment Creek is responsible for issuing items from two of them. One of the two locations was locked and in a remote area, but the other location is in an active CSO facility and employees can take items from the facility. The storekeeper told us he uses an "honor system" for employees to record when they take items from storage. Warehouse staff at the 14th Street facility is responsible for issuing items from a nearby, unstaffed facility. The South River facility houses high value inventory outdoors for the Englewood facility.

**Figure 3 High value pump in unstaffed location**

**Figure 4 Unstaffed and remote location**


**Figure 5 Sign directing staff to not cut chain or lock at RM Clayton**

**Figure 6 Unstaffed location**

**Figure 7 High value Englewood inventory at South River**

Facilities lacked consistent access controls. We observed key access at all the warehouses we visited. Staff was unaware of the number of keys or who had copies of keys to the RM Clayton, Clear Creek, and Flint River warehouses. The plant manager, on-call supervisor, and on-call mechanic have keys to the South River warehouse, and staff can take items after hours from the Englewood yard. The Clear Creek and RM Clayton warehouse key card readers were not working when we visited in May. There were key card readers at four warehouses for after hours access. We did not verify whether key cards were operational at 14th Street because we visited during the hours of operation when the card readers were not turned on. A consultant previously recommended that the card readers remain on at all times. According to the department, card readers were not operational at Hemphill and RM Clayton due to a lack of software licensing agreements.

We observed inconsistent designation and enforcement of parking areas for personal vehicles at five warehouse facilities. Several warehouses lacked cameras or had cameras that were non-operational. One facility lacked a guard at the entrance. Five warehouses had fencing near foliage; one of these warehouses had a

hole in the fence by a tree. We observed non-inventory items at several facilities in warehouse areas and in yards.

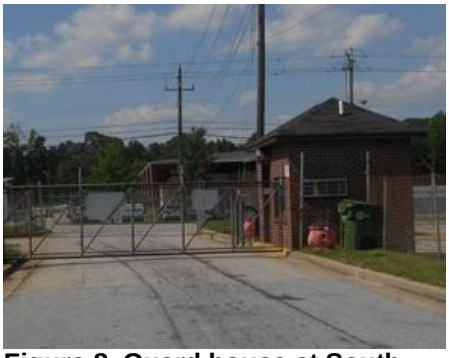


**Figure 8 Guard house at South River**

**Figure 9 Cut in fence in tree line next to street at Pipe Yard**

**Figure 10 Scrap material in yard at Intrenchment Creek**

**Figure 11 Obsolete items at Englewood**

We observed that the department had cleared the fence line at most facilities and improved camera coverage at 14th Street and Hemphill, as recommended in the inventory assessments. The department also cleared brush and visual blockages around the Pipe Yard warehouse and restricted parking inside the compound.

**Figure 12 Separate personal vehicle parking at Pipe Yard**

**We recommend** the department develop a plan to secure inventory assets by controlling physical access including ensuring that key card pads are operational and that all locations are staffed.

**We also recommend** the department install additional cameras in areas containing inventory assets to provide comprehensive coverage.

### Consolidation Could Reduce Need for Staffing and Enhanced Security

Decentralization contributes to the control weaknesses. Based on our review of manual records of items issued from the warehouses in October 2013, the department could consolidate locations to better focus its efforts.

**Two facilities accounted for the bulk of issuing activity.** Analysis of manual issue records for October 2013 shows very different levels of activity in the warehouses. The Englewood warehouse accounted for about two-thirds of the issue tickets and just under half of the total materials issued. The 14th Street warehouse accounted for about one third of the materials issued. Together the two facilities accounted for 86% of materials issued during the month (see Exhibit 10).

**Exhibit 10 Issuing Activity from Department Inventory Locations, October 2013**

| Warehouse | Items Issued (Materials and Supplies) | Number of Issue Tickets |
|---|---|---|
| Englewood | 1,772 | 681 |
| 14th Street | 1,351 | 189 |
| RM Clayton | 272 | 97 |
| Intrenchment Creek | 78 | 53 |
| Pipe Yard | 72 | 15 |
| South River | 36 | 18 |
| Utoy Creek | 30 | 11 |
| Hemphill | 0 | 0 |
| Clear Creek | 0 | 0 |
| Flint River | 0 | 0 |
| **Total** | **3,611** | **1,064** |

**Source:** Compiled from issue tickets for October 2013

The types of materials issued also varied (see Exhibit 11). About 60% of the items issued from the Englewood warehouse were supplies, such as work gloves, disposable suits, batteries, cleaning supplies, and bug spray. Only about one percent of the materials

issued from the 14th Street warehouse were supplies; the department issued 60% of all non-supply materials from 14th Street. These non-supply materials include items such as meters, registers, pipe, copper wire, couplings, pumps, and lumber. We were unable to classify about 3% of the item as supplies or otherwise because the writing was indecipherable or listed only a size, quantity, or color such as "2x" or "white." In addition, because the item numbers were usually blank on the forms and the narrative descriptions of even similar items varied, we did not try to assess the dollar value of items issued from the warehouses.

The differences in levels of activity and types of materials issued suggest that the department has opportunities to consolidate facilities. Best practices for inventory management suggest applying levels of security based on the value of items stored. For example, high value items could be stored separately within a warehouse in a location with monitored access. Consolidation into fewer facilities and by types of materials could allow the department to better control items with fewer staff and less investment in physical security, technology, and training.

**Exhibit 11 Types of Materials Issued from Department Inventory Locations, October 2013**

| Warehouse | Supply Items | Non-Supply Items | Unable to Determine | Total |
|---|---|---|---|---|
| 14th Street | 24 | 1,322 | 5 | 1,351 |
| Englewood | 1,033 | 652 | 87 | 1,772 |
| Hemphill | 0 | 0 | 0 | 0 |
| Intrenchment Creek | 44 | 31 | 3 | 78 |
| Pipe Yard | 0 | 72 | 0 | 72 |
| RM Clayton | 256 | 7 | 9 | 272 |
| South River | 8 | 19 | 9 | 36 |
| Utoy Creek | 23 | 7 | 0 | 30 |
| Clear Creek | 0 | 0 | 0 | 0 |
| Flint River | 0 | 0 | 0 | 0 |
| **Total** | **1,388** | **2,110** | **113** | **3,611** |

**Source:** Compiled from issue tickets for October 2013

When developing the security and staffing plan for inventory operations, the commissioner of watershed management should analyze the volume of warehouse activity and types of items stored to consider opportunities for consolidation.

# Recommendations

In order to strengthen inventory management controls in the department's inventory software applications, the Commissioner of the Department of Watershed Management should:

1. Convert all inventory operations to one software system, preferably Hansen 8 because the city already plans to interface it with Oracle Financials. Prior to converting, the department should re-map business processes and develop written policies and procedures for using Hansen.
2. Review user account access and limit the number of users who can adjust inventory balances consistent with the principle of least privileges. Employees should have no more system access than is required to fulfill their job responsibilities.
3. Purchase a barcode system to enable real-time recording of transactions and ensure that all facilities are equipped to record the transactions when items are physically received and issued.

To ensure that Watershed warehouses have consistent procedures and controls for inventory management, the Commissioner of the Department of Watershed Management should:

4. Develop policies and procedures that:
    - Segregate incompatible duties. No individual should be responsible for authorizing requisitions, maintaining custody of items, and keeping records.
    - Ensure that all facilities use the requisition and receiving module in the system to purchase and receive items.
    - Require staff to manually reconcile purchases to inventory until Hansen and Oracle are interfaced.
    - Describe how to establish re-order quantities.
    - Clearly define what items should be attached to work orders and require staff to input work order numbers in the work order field in Hansen as they issue items.

- Describe how to identify, track, and dispose of obsolete and surplus items.

5. Establish monitoring reports and control activities to ensure that employees comply with the policies and procedures; some of the control activities could be accomplished through validation controls in the system that prevent entering transactions without required information.
6. Establish regular reports to monitor inventory levels.
7. Establish regular reports to monitor use of materials and designate responsibility for investigating anomalies.
8. Discontinue the practice of designating items stored in the warehouses as non-inventory.
9. Create procedures for periodically verifying quantities on hand, documenting inventory counts, investigating variances, and approving adjustments made to reconcile inventory counts consistent with industry best practices.
10. Reconcile meters purchased to meters installed and on hand in the warehouse and update enQuesta to reflect an accurate count of meters.

To ensure the physical security of city assets, the Commissioner of the Department of Watershed Management should:

11. Develop a plan to secure inventory assets by controlling physical access including ensuring that key card pads are operational and that all locations are staffed.
12. Install additional cameras in areas containing inventory assets to provide comprehensive coverage.

Once Watershed Management has converted all inventory systems to Hansen 8, the Chief Information Officer should:

13. Implement the following controls in the department's inventory software applications:
    - Ensure that password settings comply with city policy
    - Establish a unique account for each application administrator
    - Establish a process to document approval of access for new users

- Establish a process to ensure that access for employees who no longer need access is terminated and periodically review access levels
- Establish a periodic review to recertify that user access, at a functional level, continues to be appropriate based on job function

# Appendices

**Appendix A**
**Management Review and Response to Audit Recommendations**

| Report # 14.01 | Report Title: Department of Watershed Management Inventory Management | Date: 9/2/2014 |
|---|---|---|
| **Recommendation Responses – Commissioner of Watershed Management** | | |
| **Rec. #1** | The Commissioner of the Department of Watershed Management should convert all inventory operations to one software system, preferably Hansen 8 because the city already plans to interface it with Oracle Financials. Prior to converting, the department should re-map business processes and develop written policies and procedures for using Hansen. | **Agree** |

| | |
|---|---|
| **Response:** | The Commissioner of the Department of Watershed Management kicked-off an initiative in 2012, to consolidate five (5) siloed CMMS systems into one (1) system, Infor Hansen 8, with input from a business case completed by IT under the direction of the Commissioner.<br><br>The Infor Hansen 8 Consolidation strategy consists of six (6) major phases (each with a Plan, Design, Procure, Build/Test, Train and Deploy stage) - **Phase I:** Consolidate Maximo v.5 to Maximo v.7; **Phase II:** Consolidate Hansen 7 and Maximo v.7 Linear Assets/Field; **Phase III:** Implement Mobile Hansen and Integrate with Siebel (311); **Phase IV:** Consolidate all Warehouse Inventory & Implement Bar Code Scanning Technology; **Phase V:** Integrate with upgraded CIS (enQuesta v4) and Oracle ERP*; **Phase VI:** Consolidate Vertical Assets/Plants.<br><br>The Department of Watershed Management has completed Phases I and II and projects the remaining four (4) phases to be completed no later than Q3 2016, under the oversight of a newly formed CMMS Executive Steering Committee (ESC).<br><br>**Schedule dependent on feasibility assessment to integrate with current vs. upgraded version of Oracle (complete by 12/31/2014); and results of PMT Task Order #27 - CMMS Assessment related to vertical assets/plants. (complete by 1/31/2015)* |
| **Proposed Action:** | 1. Formally establish the CMMS Executive Steering Committee (ESC).<br>2. Complete the remaining four (4) phases of the CMMS Consolidation project. |
| **Implementation Timeframe:** | 1. September 2014<br>2. Phase III – Nov./Dec. 2014<br>Phase IV – June 2015<br>Phase V – September 2015 |
| **Responsible Person:** | Oz Hill, Director, Sr.<br>Daphne Rackley, Deputy CIO |

| | | |
|---|---|---|
| **Rec. #2** | The Commissioner of the Department of Watershed Management should review user account access and limit the number of users who can adjust inventory balances consistent with the principle of least privileges. Employees should have no more system access than is required to fulfill their job responsibilities. | **Agree** |
| **Response:** | The Commissioner of the Department of Watershed Management will work in conjunction with DIT to conduct a user access review for Maximo (until consolidation) and Hansen on a bi-annual basis, as is in place for other critical systems such Oracle, Kronos, enQuesta and other similar systems. The user access review is conducted alongside the role access reviews in order to verify that employee application privileges are appropriate with job functions. The setting that permitted inventory adjustments has been disabled for all roles except for system administrators and the mid-year review is currently in progress. The system also has an audit log to track when/if user access levels are changed. | |
| **Proposed Action:** | 1. Disable user privileges to adjust inventory balances for all roles outside of system administrator.<br>2. Conduct bi-annual Hansen user roles & access reviews. | |
| **Implementation Timeframe:** | 1. Completed July 2014<br>2. September 30, 2014 | |
| **Responsible Person:** | Oz Hill, Director, Sr.<br>Daphne Rackley, Deputy CIO | |
| **Rec. #3** | The Commissioner of the Department of Watershed Management should purchase a barcode system to enable real-time recording of transactions and ensure that all facilities are equipped to record the transactions when items are physically received and issued. | **Agree** |
| **Response:** | The Commissioner of the Department of Watershed Management will work in conjunction with DIT to implement a barcode system as a part of the Phase IV CMMS Consolidation Strategy (see response to recommendation #1) that will have the ability to interface with Oracle ERP (Phase V).<br>While Phase III is still active, the barcode scanning project phase is being implemented in parallel (i.e. the planning stage is in progress). The barcode scanning technology will be comprehensive and scalable, making it applicable for other departments where there are similar inventory receiving and issuing detailed record keeping needs. | |
| **Proposed Action:** | Implement a barcode system, for real-time recording of inventory transactions. | |
| **Implementation Timeframe:** | June 2015 (Phase IV) | |
| **Responsible Person:** | Oz Hill, Director, Sr.<br>Daphne Rackley, Deputy CIO | |

| | | |
|---|---|---|
| **Rec. #4** | The Commissioner of the Department of Watershed Management should develop policies and procedures that:<br>• Segregate incompatible duties. No individual should be responsible for authorizing requisitions, maintaining custody of items, and keeping records.<br>• Ensure that all facilities use the requisition and receiving module in the system to purchase and receive items.<br>• Require staff to manually reconcile purchases to inventory until Hansen and Oracle are interfaced.<br>• Describe how to establish re-order quantities.<br>• Clearly define what items should be attached to work orders and require staff to input work order numbers in the work order field in Hansen as they issue items.<br>• Describe how to identify, track, and dispose of obsolete and surplus items. | **Agree** |

| | |
|---|---|
| **Response:** | The Commissioner of the Department of Watershed Management has initiated a comprehensive review of all policies and procedures relevant to creating "checks and balances" in the business processes for requisitioning; procuring; warehousing; tracking; and disposing of obsolete and surplus items. The review of existing policies and procedures has already resulted in the re-assignment of roles and responsibilities for several business functions related to the management of DWM inventory. The development of new policies and procedures will complement the implementation of the Hansen 8 inventory management system and Infor Barcoding System. However, in the interim, the refinement of existing policies and procedures to achieve and maintain greater efficiency and control of inventory business processes will continue. |
| **Proposed Action:** | 1. Review policies and procedures related to all functions of inventory management.<br>2. Re-engineer/map business processes related to all functions of inventory management. |
| **Implementation Timeframe:** | December 2014 (Phase IV) |
| **Responsible Person:** | Oz Hill, Director, Sr. |

| | | |
|---|---|---|
| **Rec. #5** | The Commissioner of the Department of Watershed Management should establish monitoring reports and control activities to ensure that employees comply with the policies and procedures; some of the control activities could be accomplished through validation controls in the system that prevent entering transactions without required information. | **Agree** |
| **Response:** | The Commissioner of the Department of Watershed Management will work in conjunction with DIT to define reporting needs, identify required transaction information, and ensure that the system, Hansen 8, is configured accordingly. The short-term (interim) plan will be to make more immediate adjustments in the current Inventory CMMS, Maximo 7, until the long-term consolidation occurs with Hansen 8. | |
| **Proposed Action:** | 1. Establish monitoring & control reports: short-term in Maximo v7 and long-term in Hansen 8.<br>2. Configure required transactions fields to ensure they are made mandatory: Short-term in Maximo v7 and long-term in Hansen 8. | |
| **Implementation Timeframe:** | Short-term: October 2014<br>Long-Term: June 2015 | |
| **Responsible Person:** | Oz Hill, Director, Sr.<br>Daphne Rackley, Deputy CIO | |
| **Rec. #6** | The Commissioner of the Department of Watershed Management should establish regular reports to monitor inventory levels. | **Agree** |
| **Response:** | The Commissioner of the Department of Watershed Management will work in conjunction with DIT to define reporting needs to monitor inventory levels. The short-term (interim) plan will be to create reports in the current Inventory CMMS, Maximo 7, until the long-term consolidation occurs with Hansen 8. | |
| **Proposed Action:** | Establish inventory level monitoring reports: short-term in Maximo v7 and long term in Hansen 8. | |
| **Implementation Timeframe:** | Short-term: October 2014<br>Long-Term: June 2015 (Phase IV) | |
| **Responsible Person:** | Oz Hill, Director, Sr.<br>Daphne Rackley, Deputy CIO | |

| | | |
|---|---|---|
| **Rec. #7** | The Commissioner of the Department of Watershed Management should establish regular reports to monitor use of materials and designate responsibility for investigating anomalies. | **Agree** |
| **Response:** | The Commissioner of the Department of Watershed Management will work in conjunction with DIT to define reporting needs to monitor use of materials and help identify anomalies. The short-term (interim) plan will be to create reports in the current Inventory CMMS, Maximo 7, until the long-term consolidation occurs with Hansen 8. A person will be identified with responsibility for investigating anomalies | |
| **Proposed Action:** | Establish material usage reports: short-term in Maximo v7 and long-term in Hansen 8. | |
| **Implementation Timeframe:** | Short-term: October 2014<br>Long-Term: June 2015 (Phase IV) | |
| **Responsible Person:** | Oz Hill, Director, Sr.<br>Daphne Rackley, Deputy CIO | |
| **Rec. #8** | The Commissioner of the Department of Watershed Management should discontinue the practice of designating items stored in the warehouses as non-inventory. | **Agree** |
| **Response:** | The Commissioner of the Department of Watershed Management has implemented a program to consolidate consumables and remove or dispose of all excess, surplus, and obsolete items (non-inventory items) that are stored in all warehouse facilities. Only items that are actively used in operations will be stored in warehouse facilities. A separate store room(s) will be established at each warehouse facility to consolidate all excess, surplus, and obsolete items prior to the appropriate controlled/documented disposal measures being imposed to eliminate the items from the respective facility. Excess, surplus, and obsolete (non-inventory) items should not remain in a store room(s) used for consolidation more than 120 days. | |
| **Proposed Action:** | 1. Centralize the warehousing of all consumable items in one location.<br>2. Continue on-going departmental efforts to eliminate excess, surplus and obsolete inventory items. | |
| **Implementation Timeframe:** | 1. June 2015<br>2. June 2016 | |
| **Responsible Person:** | Oz Hill, Director, Sr. | |

| | | |
|---|---|---|
| **Rec. #9** | The Commissioner of the Department of Watershed Management should create procedures for periodically verifying quantities on hand, documenting inventory counts, investigating variances, and approving adjustments made to reconcile inventory counts consistent with industry best practices. | **Agree** |
| **Response:** | The Commissioner of the Department of Watershed Management will implement a Cyclical Inventory Program which mandates that 10% of all inventory items in the database along with high value items are counted on a monthly basis. Implementation of this methodology for the Cyclical Inventory Program will ensure that prior to the Annual Financial Inventory and Warehouse Accountability Audit conducted by the Office of Financial Administration at the end of the fiscal year all inventory line items have been reviewed at least once. Additionally, this approach also enhances accountability of high value items by ensuring they are physically counted on a monthly basis to complement the daily accountability processes and procedures for each high value item. | |
| **Proposed Action:** | Implement a Cyclical Inventory Program. | |
| **Implementation Timeframe:** | Short-term: October 2014<br>Long-Term: July 2015 | |
| **Responsible Person:** | Oz Hill, Director, Sr. | |
| **Rec. #10** | The Commissioner of the Department of Watershed Management should reconcile meters purchased to meters installed and on hand in the warehouse and update enQuesta to reflect an accurate count of meters. | **Agree** |
| **Response:** | The Commissioner of the Department of Watershed Management will re-institute a more efficient and comprehensive process to reconcile meters within the four (4) systems (Oracle, Maximo, enQuesta and Hansen*). Then work in conjunction with DIT to make any associated system changes that would be required in Maximo 7 and enQuesta (CIS). That reconciliation process would then be incorporated, and further streamlined, in the Phase IV consolidation into Hansen and Phase V integration with Oracle ERP.<br><br>**DWM's current primary inventory system is Maximo 7, therefore inventory/assets associated with field related work orders, such as meters, is also maintained in what is considered a "virtual" or "secondary" warehouse in Hansen 8 so that the asset can be attached to the work order. This is a manual reconciliation process that is extremely inefficient and will be addressed with the consolidation of inventory into Hansen during Phase IV.* | |
| **Proposed Action:** | Redesign a more efficient process to reconcile meter inventory in the four systems (Oracle, Maximo, enQuesta, Hansen 8). | |
| **Implementation Timeframe:** | Short-term: October, 2014<br>Long-term: Phase IV June 2015 | |
| **Responsible Person:** | Oz Hill, Director, Sr.<br>Daphne Rackley, Deputy CIO | |

| | | |
|---|---|---|
| **Rec. #11** | The Commissioner of the Department of Watershed Management should develop a plan to secure inventory assets by controlling physical access including ensuring that key card pads are operational and that all locations are staffed. | **Agree** |
| **Response:** | The Commissioner of the Department of Watershed Management has completely re-keyed the physical security door locks at all DWM warehouse facilities. Licensing authorizations required for utilization of the proprietary key card software system, at the DWM warehouses where the access key pads are installed, have been procured. All warehouses that have access control hardware installed on entry doors have operational access control systems. Quotes are being solicited to install key card access controls on the Water Reclamation Center warehouses. | |
| **Proposed Action:** | 1. Re-key security door locks in all warehouse facilities; install additional key pads.<br>2. Ensure proper licensing agreement. | |
| **Implementation Timeframe:** | June 2015 | |
| **Responsible Person:** | Oz Hill, Director, Sr. | |
| **Rec. #12** | The Commissioner of the Department of Watershed Management should Install additional cameras in areas containing inventory assets to provide comprehensive coverage. | **Agree** |
| **Response:** | The Commissioner of the Department of Watershed Management has directed the installation of 16 high resolution cameras and motion activated digital recorders with extended storage capacity for the 14th Street Central Warehouse and 14th Street Meter Warehouse since the city auditors completed their Performance Audit of the Department of Watershed Management. An additional 15 cameras are programed for Water Treatment Facility warehouses which stock the preponderance of the department's high value inventory items. The installation of the cameras and electronic surveillance systems are complemented by the assignment of an interim Loss Prevention Coordinator who monitors the cameras and accountability for the inventory stockage contained in the 14th Street Warehouse Complex. Assessments are on-going to determine camera and electronic surveillance system requirements for the Water Reclamation Facility warehouses. | |
| **Proposed Action:** | Install additional cameras throughout warehouses and storerooms. | |
| **Implementation Timeframe:** | June 2015 | |
| **Responsible Person:** | Oz Hill, Director, Sr.<br>Daphne Rackley, Deputy CIO | |

| Report # 14.01 | Report Title: Department of Watershed Management Inventory Management | Date: 8/28/2014 |
|---|---|---|

## Recommendation Responses – Chief Information Officer

| | | |
|---|---|---|
| **Rec. #1** | Once Watershed Management has converted all inventory systems to Hansen 8, the Chief Information Officer should:<br>• Ensure that password settings comply with city policy<br>• Establish a unique account for each application administrator<br>• Establish a process to document approval of access for new users<br>• Establish a process to ensure that access for employees who no longer need access is terminated and periodically review access levels<br>• Establish a periodic review to recertify that user access, at a functional level, continues to be appropriate based on job function | **Agree** |

| | |
|---|---|
| **Proposed Action:** | 1. Password settings were adjusted to comply with our password policy. In addition, password configuration reviews will be performed biannually to ensure these settings remain in place.<br>2. Each Administrator has their unique accounts with the appropriate privileges to perform job functions. Logging is turned on for the system administrator account to track usage for any unique function that might require such use in the future.<br>3. DIT currently uses a requisition form which has to be signed by the hiring manager in order to grant access to the network and IT applications. This form was recently modified to have managers indicate the level of access required for the new employees or employees requiring elevated privileges.<br>4. User access reviews for all applications will be conducted bi-annually and documented for future reference. In addition, quarterly reviews will be performed by the QA/QC group to check terminated/retired user lists against active accounts to find gaps. Notifications will be sent to application and system owners to take appropriate action on user accounts that should have been disabled.<br>5. User access level review is conducted alongside the user access reviews to in order to verify that employee application privileges are appropriate with their current job functions. A mid-year review is currently in progress and will be completed by early September. |
| **Implementation Timeframe:** | Items #1 – 3 have been completed. Items #4 and #5 – Complete by September 15, 2014 |
| **Responsible Person:** | Daphne Rackley, DCIO |